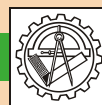


FOUNDRY SUPPLIES

**HOHNEN & CO**

PATTERN MAKING SUPPLIES



**FOUNDRY SUPPLIES**



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111, Avenue du General de Gaulle  
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Fax: (3) 33 26 97 24  
E-Mail: akiarima@aol.com

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e-mail: firmapost@glbeijer.no

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E-Mail: berg@bergs.com

## Sweden

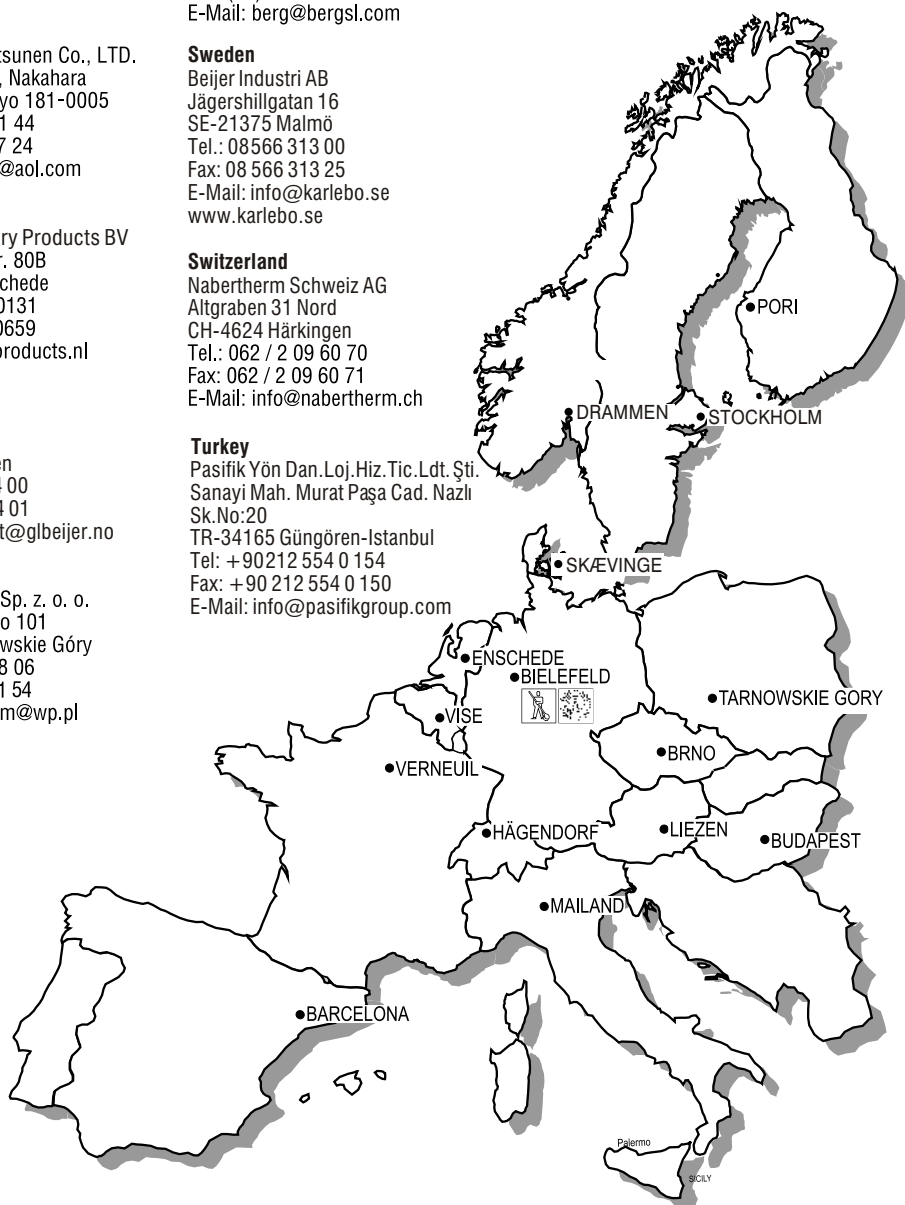
Beijer Industri AB  
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FOUNDRIY SUPPLIES

**HOHNEN & CO**

PATTERN MAKING SUPPLIES



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**CATALOGUE**

**No. 17 F**

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## ☐ Inquiry

To:



# HOHNEN & Co. KG

P.O.B 21 90 33  
D-33697 Bielefeld  
Phone (00 49 - 521) 9 22 12-0

Sender:

**FAX (00 49 - 521) 9 22 12-20**

Item No.	Quantity	Item

Order values below EUR 50,00 will cause an additional charge of EUR 5,00.

Adress:

Person to contact:

Telephone:

Fax:

Department:

Signature:

Date:



Page **125 – 139**

**We are partners  
of the foundry industry  
and the pattern-makers  
for many decades.**

---

Please regard:

Although this catalogue is already very extensive it can only show a part of our possibilities. For many items there is special and more detailed information. Please ask for it!

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Illustrations and descriptions are valid at the time of going to press and not binding.

We reserve the right to alter designs and to introduce changes without notice.

Our products are designed for industrial use and postulate experience and know-how.

---

Please respect our minimum order value  
of EUR 50,00.

## Welded ladles

### of standard quality steel, with two lips

001

Please observe the instructions below!

#### 1) Handle ladles (handles see below)

Size		1	2	3	4	5	6
Capacity (alu) abt. kg		3	5	7	8	10	13
Top dia. mm		160	180	200	210	230	240
Bottom dia. mm		120	145	155	160	180	180
Height mm		150	190	205	230	230	260
Wall/bottom thckn.		Item No.					
2/2 mm		001.011*	001.021*	001.031*	-	-	-
2/3 mm		001.012	001.022	001.032	001.041*	001.051	001.061
3/3 mm		-	-	-	-	001.052*	001.062*
3/4 mm		001.013	001.023	001.033	001.042	001.053	001.063
4/5 mm		001.014	001.024	001.034	001.043	001.054	001.064

#### 2) Fork ladles (carrying forks see p. 2)

Size		7	8	9	10	11	12	13
Capacity (alu) abt. kg		17	23	25	33	40	50	70
Top dia. mm		255	275	300	330	350	350	380
Bottom dia. mm		215	225	240	255	260	290	300
Height mm		250	275	275	300	330	360	400
Wall/bottom thckn.		Item No.						
4/4 mm		001.071*	001.081*	001.091*	-	-	-	-
4/5 mm		001.072	001.082	001.092	001.101*	001.111*	001.121*	001.131*

#### \* Standard thickness

All sizes are inside dims.

Other sizes and wall thicknesses upon request. Quantity should be specified.



## Welded ladles

### heat resistant, with two lips

002

Please observe the instructions below!

#### Steel qualities available:

**HB** heat resistant stainless steel (nonscaling property up to abt. 800 °C)

**HHB** highly heat resistant stainless steel (nonscaling property up to abt. 1050 °C)

**S-HHB** special alloy, highly heat resistant stainless steel (nonscaling property up to abt. 1200 °C)

#### 1) Handle ladles (handles see below)

Size		1	2	3	4	5	6
Capacity Copper abt.* kg		10	15	20	25	30	40
Top dia. mm		160	180	200	220	230	240
Bottom dia. mm		120	150	160	170	180	190
Height mm		150	200	205	220	230	240
Wall/bottom thck. mm		2/3	2/3	2/3	2/3	3/3	3/3
Quality		Item No.					
HB		002.011	002.021	002.031	002.041	002.051	002.061
HHB		002.012	002.022	002.032	002.042	002.052	002.062
S-HHB		002.013	002.023	002.033	002.043	002.053	002.063

#### 2) Fork ladles (carrying forks see p. 2)

Size		7	8	9	10	11	12	13
Capacity Copper abt.* kg		50	70	75	100	125	150	200
Top dia. mm		255	275	300	330	350	350	380
Bottom dia. mm		215	225	240	255	260	290	300
Height mm		240	275	275	300	350	360	400
Wall/bottom thck. mm		4/4	4/4	4/4	4/5	4/5	4/5	4/5
Quality		Item No.						
HB		002.071	002.081	002.091	002.101	002.111	002.121	002.131
HHB		002.072	002.082	002.092	002.102	002.112	002.122	002.132
S-HHB		002.073	002.083	002.093	002.103	002.113	002.123	002.133

\* Capacity related to copper always. All sizes are inside dims.

Other sizes and wall thicknesses upon request. Quantity should be specified.

#### Remarks with regard to item 001 & 002: sizes 1 to 6 are available

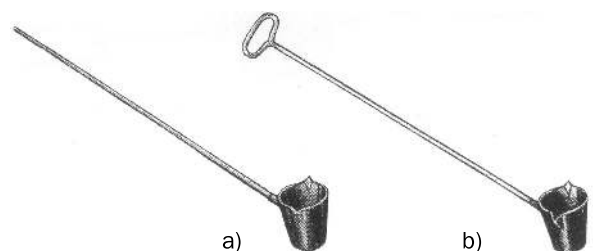
- a) with gas-pipe handle (Item No. 001.200) or  
b) with solid D-handle (Item No. 001.300)  
handle length: 1,250 mm

#### INSTRUCTIONS for the use of foundry tools:

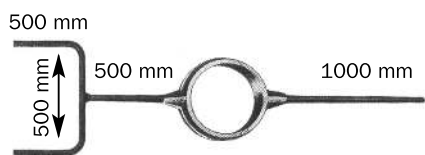
##### Coat well!

Do not overheat, do not allow to cool and reheat tools too often as decarburization and embrittlement would result.

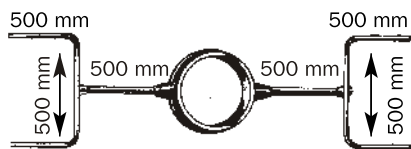
**Remark:** Coatings see items 435 - 441.



## 003



Design 1 & 2



Design 3



Design 4 (dimensions like design 3)

## Carrying forks for ladles (ladles see p. 1)

### in four designs:

- 1) fork of welded tubing
- 2) fork of solid steel
- 3) double-fork of welded tubing
- 4) fork of tubing (rotatable)

Size	7	8	9	10	11	12	13
Ring dia. mm	235	250	270	295	305	320	340
Thickness inch	3/4	3/4	3/4	1	1	1	1 1/4
Available design	Item No.						
1)	003.071	003.081	003.091	003.101	003.111	003.121	003.131
2)	003.072	003.082	003.092	003.102	003.112	003.122	003.132
3)	003.073	003.083	003.093	003.103	003.113	003.123	003.133
4)	003.074	003.084	003.094	003.104	003.114	003.124	003.134

At extra charge also available with fitting bail (item no. 003.201) as designed at item no. 005 (see below).

## 004



Type A

## Welded siphon-ladles (upon request)

Available in all sizes as mentioned under handle and fork-type ladles, Item No. 002.

Type **A** with welded radial pipe

Type **B** with parallel pipe

Type **C** with welded partition as siphon

These ladles are specially made for the customer. Therefore they cannot be exchanged or returned.

Suitable **carrying forks** are also available.

## 005



## Welded crane ladles of standard quality steel with double-fork, bail and ratchet

Item No.	005.101	005.201	005.301	005.401	005.501
Capacity*	kgs 300	400	500	750	1000
Top dia.	mm 450	450	540	590	690
Bottom dia.	mm 400	400	500	550	650
Height	mm 450	540	550	650	680
Wall/bottom thckn.	mm 4/6	5/6	5/6	6/8	6/8
Accessories	Item No.				
Double-fork	005.102	005.202	005.302	005.402	005.502
Bail	005.103	005.203	005.303	005.403	005.503
Ratchet	005.104	005.204	005.304	005.404	005.504

\* Capacity related to iron. All sizes are outside dims. All parts are available individually.

The ladle body is also available in heat resistant steel quality (see Item No. 002).

## Insulating shells for ladles

006

no preheating required; substantial energy savings;  
metal remains liquid for a longer period; improved quality of castings .  
Shell and bottom thickness 30 mm.

Item No.	Capacity (alu) abt. kgs	Capacity ltr.	Inside dia. mm top	Inside dia. mm bottom	Height mm inside
006.302	20	7,3	220	150	275
006.306	25	9,9	230	200	275
006.307	40	15,7	324	194	300
006.308	55	21,8	332	232	350
006.301	80	30,7	355	310	355
006.303	80	30,7	342	272	416
006.300	95	36,3	362	298	426
006.309	125	47,1	402	332	446
006.304	130	47,9	402	322	466
006.305	190	70,5	488	397	460
006.310 *	250	96,9	548	457	490

Other dimensions and designs upon request.

\* No. 006.310 is made with two long lips.



## Pouring ladles of standard quality steel

006A

for the above insulating shells, without lips

Item No.	For shell	Top dia. mm	Bottom dia. mm	Height mm	Wall thckn. mm	Bottom thckn. mm
006.402	006.302	300	230	315	4	4
006.406	006.306	310	280	315	4	4
006.407	006.307	405	275	340	4	4
006.408	006.308	415	315	390	4	4
006.401	006.301	435	390	400	4	4
006.403	006.303	425	355	460	4	4
006.400	006.300	445	380	470	4	4
006.409	006.309	485	415	485	4	4
006.404	006.304	485	405	510	4	4
006.405	006.305	580	480	500	4	4
006.410	006.310	650	560	540	5	5

We recommend to fill appr. 20 mm of sand between the pouring ladle and the ladle shell to compensate for any diameter differences. We also recommend to put a 25 mm thick layer of ramming or pouring compound on the bottom of the shell to extend the service life of the shell.

We also supply **fibrous mortar** or **refractory patch compound** for lining existing pouring ladles.

Suitable **carrying forks** (see ill.) may be delivered as follows:

Item No.	006.500	006.501	006.502	006.503	006.504	006.505
fitting for ladle	006.400	006.401	006.402	006.403	006.404	006.405
Item No.	006.506	006.507	006.508	006.509	006.510	
fitting for ladle	006.406	006.407	006.408	006.409	006.410	



## Melting crucibles (upon request)

007

Especially for magnesium casting,  
welded inside and outside with special electrodes:  
Size and shape in accordance with customer's specifications  
and drawing. Please specify quantity!



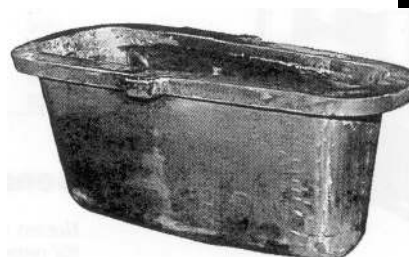
## Melting crucibles of cast iron or stainless steel

008

for die casting machines; suitable for melting aluminium, zinc, lead,  
zamak, etc.

We supply all kinds of cast crucibles **to your specifications**.

Please attach a drawing or sketch to your inquiry or order and specify quantities.

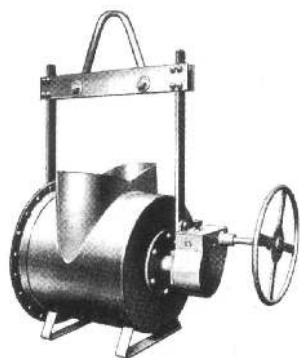
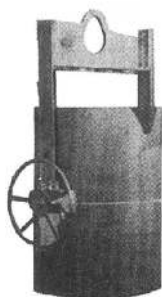
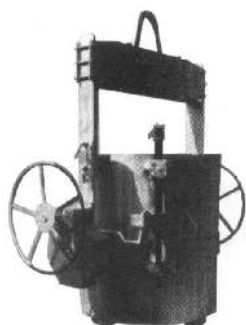
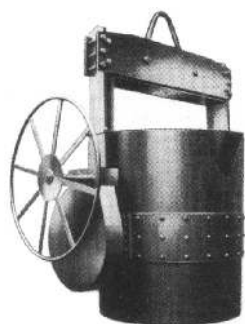


## Crane ladles

Our heavy-duty crane ladles are especially made for using in foundries and metallurgical plants. The ladles are equipped with an oil-lubricated planetary gearing.

The given ladle capacity is for grey cast iron (in kgs); convert other melts in accordance with the specific weights given below (f.ex. aluminium, cast steel or nodular cast iron).

grey cast iron = 7, cast steel = 6,8, nodular cast iron = 6, aluminium = 2,5



Cast iron-cap.	Diameter		height	Thickness		Cast iron-cap.	Diameter		height	Thickness	
kgs	top	bottom	mm	wall	bottom	kgs	top	bottom	mm	wall	bottom
350	500	450	550	5	5	1500	750	700	800	6	8
500	540	500	550	5	6	2000	850	800	800	6	10
750	640	600	620	5	7	3000	975	900	950	8	12
1000	650	600	720	5	8	5000	1200	1100	1100	10	13

## Stopper ladles

of the same design as described before, however, equipped with a stopper lifting device and bayonet closing device.

The given capacities in the following table are for cast steel.

Cast steel cap.	Diameter		height	Thickness		Cast steel cap.	Diameter		height	Thickness	
kgs	top	bottom	mm	wall	bottom	kgs	top	bottom	mm	wall	bottom
500	640	600	620	5	7	2000	875	800	950	6	10
1000	750	700	700	6	8	3000	1080	1000	1025	10	12
1500	850	800	800	6	10	5000	1280	1200	1200	10	14

## Treatment ladles

of the same design as described before. Such ladles are also available as bottom-pour ladles. The given capacities in the following table are for nodular cast iron.

Nod. Cast iron-cap.	Diameter		height	Thickness		Nod. Cast iron-cap.	Diameter		height	Thickness	
kgs	top	bottom	mm	wall	bottom	kgs	top	bottom	mm	wall	bottom
600	615	565	1180	6	8	2000	860	800	1600	7	10
1000	725	675	1340	7	10	3000	1075	925	1765	8	12
1500	835	785	1470	7	10	5000	1250	1000	1985	12	15

## Crane casting drums

of the same design as described before. One drum wall can be screwed off; all drums come with stand. The given capacities in the following table are for cast iron.

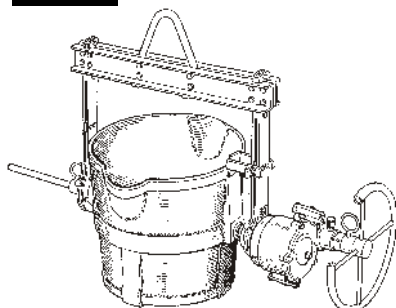
Cast iron-cap.	Drum diameter	Drum length	Thickness		Cast iron-cap.	Drum diameter	Drum length	Thickness	
kgs	mm	mm	wall	bottom	kgs	mm	mm	wall	bottom
300	500	560	5	7	1000	750	700	5	10
500	600	550	5	8	1500	855	750	6	12
750	600	720	5	8	2000	900	800	6	12

## Crane ladles and casting drums "Essex" with oil-lubricated gearing

**Low-cost alternative** to the versions with planetary gearing - esp. for smaller capacities. Robust, often approved construction for high stress. Outer cover with a fortification ring in the middle and further rings on top and bottom. Trunnions made of high-class steel, suspension made in U-construction with screwed brackets. All capacities are available as above mentioned.

## Special-design ladles

Besides the above mentioned standard ladles and drums, we can also supply ladles for transportation by fork lift trucks as well as other custom-made ladles.





# ONE-PIECE FOUNDRY TOOLS (drawn)

**INSTRUCTIONS** for the use of foundry tools:

**Coat well!** Do not overheat, do not allow to cool and reheat tools too often as decarburization and embrittlement would result.

**Remark:** Coatings see item nos. 435 – 441.

The spoons are **not stocked**. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

## Pouring bowls No. 1300

**Quality IV**, semispherical, without handle; without or with one or two lips

**010**

## Pouring spoons No. 1304

**Quality IV**, semispherical, with a flat handle; with one or two lips

Outside dia. mm	50	60	70	80	90	100	110	120	130	140	150	160
Wall thicken. mm	2	2	2	2	2	2	3	3	3	3	3	3
Design	Item No.											
1300	010.105	010.106	010.107	010.108	010.109	010.110	010.111	010.112	010.113	010.114	010.115	010.116
1304	010.205	010.206	010.207	010.208	010.209	010.210	010.211	010.212	010.213	010.214	010.215	010.216

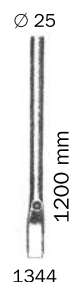
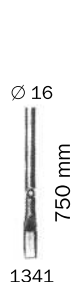
Outside dia. mm	170	180	190	200	210	220	230	240	250	260	280	300
Wall thicken. mm	4	4	4	4	4	5	5	5	5	5	5	5
Design	Item No.											
1300	010.117	010.118	010.119	010.120	010.121	010.122	010.123	010.124	010.125	010.126	010.128	010.130
1304	010.217	010.218	010.219	010.220	010.221	010.222	010.223	010.224	010.225	010.226	010.228	010.230



## Steel pipe handles (for spoon No. 1304)

For dimensions see illustrations

Handle No.	For spoon Ø	Item No./Design			
		sep.	welded	riveted	screwed
1341	50 – 70 mm	010.301	010.302	010.303	010.304
1342	80 – 100 mm	010.401	010.402	010.403	010.404
1343	110 – 160 mm	010.501	010.502	010.503	010.504
1344	170 – 220 mm	010.601	010.602	010.603	010.604
1345	230 – 260 mm	010.701	010.702	010.703	010.704
1346	280 – 300 mm	010.801	010.802	010.803	010.804



**010A**

## Pouring spoons No. 1302

**Quality IV**, semispherical, with welded round handle (length 400 mm), with or without wooden handle and one or two lips

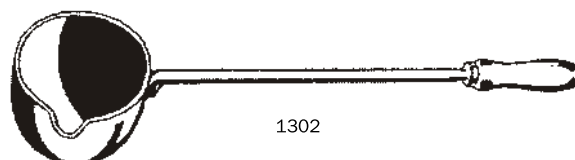
Outside dia. mm	50	60	70	80	90	100	110	120
Wall thicken. mm	2	2	2	2	2	2	3	3
Item-No.	011.105	011.106	011.107	011.108	011.109	011.110	011.111	011.112

Outside dia. mm	130	140	150	160	170	180	190	200
Wall thicken. mm	3	3	3	3	4	4	4	4
Item-No.	011.113	011.114	011.115	011.116	011.117	011.118	011.119	011.120

Spare wooden handles available at extra charge:

Item-No.	017.501	017.502
For spoon dia. mm	50 – 90	100 – 200



**011**

## Skimmers, Quality IV, 1/4 sphere

**No. 1311** with flat handle

**No. 1312** without handle

Outside dia. mm	120	150	180	200	220	240	300	340
Wall thicken. mm	6	6	6	6	8	8	8	8
No. of holes	5	5	9	9	13	13	13	13
Hole dia. mm	12	12	12	12	12	12	20	20
Design	Item-No.							
1311	012.112	012.115	012.118	012.120	012.122	012.124	012.130	012.134
1312	012.212	012.215	012.218	012.220	012.222	012.224	012.230	012.234



**012**

## Immersion bells, Quality IV, wall thickness 8 mm, 8 holes – diameter 12 mm

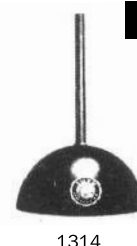
a) with welded round iron handle, dia. 18 mm, length 1000 mm

b) without handle

**No. 1313** 1/3 sphere

**No. 1314** 1/2 sphere

Outside dia. mm	120	150	180	200	230	250
Design	Item-No.					
1313 with handle	013.112	013.115	013.118	013.120	013.123	013.125
without handle	013.212	013.215	013.218	013.220	013.223	013.225
1314 with handle	013.312	013.315	013.318	013.320	013.323	013.325
without handle	013.412	013.415	013.418	013.420	013.423	013.425



**013**



# ONE-PIECE FOUNDRY TOOLS (forged)

**INSTRUCTIONS** for the use of spoons, bells and skimmers etc.:

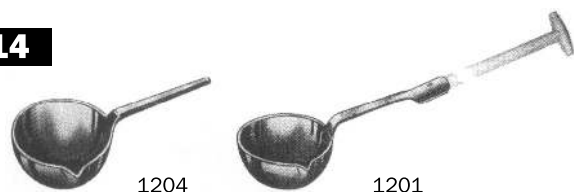
**Coat well!**

Quality I & II: quench tools in a cold liquid several times daily to prevent decarburization and formation of cracks.

Quality III: do not overheat, do not allow to cool and reheat tools often as decarburization and embrittlement would result.

**Remark:** Coatings see item nos. 435 – 441.

**014**



**Pouring spoons No. 1204, semispherical**

with flat handle; with one or two lips  
wall thickness 2 to 3 mm; quality III = 1000°C

**Pouring spoons No. 1201**, Spoon as described under  
No. 1204, with socket and beech T-handle, length 1000 mm

Outside dia. mm	60	80	100	120	140	160	180	200	220	240	260	280	300
Design	Item No.												
1204	014.106	014.108	014.110	014.112	014.114	014.116	014.118	014.120	014.122	014.124	014.126	014.128	014.130
1201	014.206	014.208	014.210	014.212	014.214	014.216	014.218	014.220	014.222	014.224	014.226	014.228	014.230

**015**



**Pouring spoons No. 1205, semispherical**

with square handle; with 1 or 2 lips, to be welded to gas pipe handles,  
wall thickness 5 mm (thinner walls upon request!)

**Quality I** – red marking  
highly heat resistant up to 1400°C for heavy metals

**Quality II** – blue marking  
heat resistant up to 1200°C for heavy metals

**Quality III** – without marking  
resistant up to 1000°C for aluminium

Outside dia. mm	60	80	100	120	140	160	180	200	220	240	260	280	300
Design	Item No.												
Qual. I	015.106	015.108	015.110	015.112	015.114	015.116	015.118	015.120	015.122	015.124	015.126	015.128	015.130
Qual. II	015.206	015.208	015.210	015.212	015.214	015.216	015.218	015.220	015.222	015.224	015.226	015.228	015.230
Qual. III	015.306	015.308	015.310	015.312	015.314	015.316	015.318	015.320	015.322	015.324	015.326	015.328	015.330

**016**

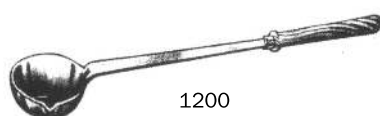


**Pouring spoons No. 1203, semispherical**

with hook handle, left lip, wall thickness 5 mm, quality III = 1000°C

Outside dia. mm	60	80	100	120	140	160	180	200	220	240	260	280	300
Item No.	016.106	016.108	016.110	016.112	016.114	016.116	016.118	016.120	016.122	016.124	016.126	016.128	016.130

**017**



**Pouring spoons No. 1200, semispherical**

with left lip and tapered handle, length 400 mm, to be used with a wooden handle (to be ordered separately), quality III = 1000°C

a) wall thickness 2 mm = No. 1200 A  
b) wall thickness 5 mm = No. 1200 B

Outside dia. mm	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
Design	Item No.																			
1200 A	017.106	017.107	017.108	017.109	017.110	017.111	017.112	017.113	017.114	017.115	017.116	017.117	017.118	017.119	017.120	017.121	017.122	017.123	017.124	017.125
1200 B	017.306	017.307	017.308	017.309	017.310	017.311	017.312	017.313	017.314	017.315	017.316	017.317	017.318	017.319	017.320	017.321	017.322	017.323	017.324	017.325

**017A**



**Wooden handles for pouring spoons No. 1200**

Item No.	Length	Diameter	For spoon dia.
017.501	16cm	23mm	60 – 90 mm
017.502	30cm	32mm	100 – 250 mm

**Capacities of pouring spoons in kgs (for aluminium)**  
semispherical

Dia.	mm	60	80	100	120	140	160	180	200	220	240	260	280	300
Depth	mm	30	40	50	60	70	80	90	100	110	120	130	140	150
Cap. Alum.	kgs	0,07	0,21	0,42	0,83	1,25	2,1	2,9	3,3	5,5	7,2	9,2	12,0	14,5
Vol.	ltr.	0,03	0,1	0,2	0,4	0,55	0,9	1,3	1,5	2,4	3,2	4,0	5,2	6,5

# ONE-PIECE FOUNDRY TOOLS (forged)

**INSTRUCTIONS** for the use of spoons, bells and skimmers etc.: See page 6  
**Remark:** Coatings see item nos. 435 – 441.

## Pouring bowls No. 1100

semispherical, with or without lip, wall thickness 5 mm, quality III = 1000 °C

Outside dia. mm	60	80	100	120	150	180	200
Item No.	018.106	018.108	018.110	018.112	018.115	018.118	018.120



1100

**018**

## Melting bowls No. 1102

wall thickness 10 mm, quality III = 1000 °C. Also available with lip and 80 mm flange at extra charge

Outside dia. mm*	250	300	350	400
Design	Item No.			
Without lip	019.125	019.130	019.135	019.140
With lip	019.225	019.230	019.235	019.240
With 80 mm flange	019.325	019.330	019.335	019.340

\* without flange



1102 with flange

**019**

## Lead melting bowls No. 1101

with lip, wall thickness 6 to 10 mm, quality III = 1000 °C

- a) with bail
- b) with lateral shank

Can also be supplied with 3 legs at extra charge.

Outside dia. mm	150	180	200	220	240	260	280	300
Design	Item No.							
With bail	020.115	020.118	020.120	020.122	020.124	020.126	020.128	020.130
With lateral shank	020.215	020.218	020.220	020.222	020.224	020.226	020.228	020.230
Extra charge for 3 legs	020.301							



1101 with bail

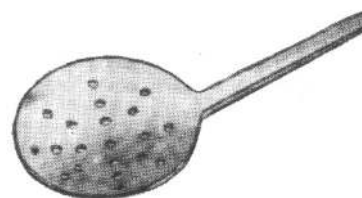
**020**

## Skimmers No. 1211

with square handle, hole diameter 12 mm, wall thickness 6 mm, 1/4 sphere

**Quality I** – red marking  
 Nichotherm – highly heat resistant up to 1400 °C, for heavy metals  
**Quality II** – blue marking  
 Thermax – heat resistant up to 1200 °C, for heavy metals  
**Quality III** – without marking  
 Ferrum – resistant up to 1000 °C, for aluminium

Dia. mm	120	160	200	250	300
No. of holes	5	5	9	13	18
Design	Item No.				
Qual. I	021.112	021.116	021.120	021.125	021.130
Qual. II	021.212	021.216	021.220	021.225	021.230
Qual. III	021.312	021.316	021.320	021.325	021.330



1211

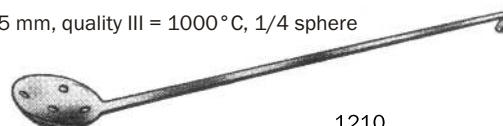
May on request also be delivered **without holes**.

**021**

## Skimmers No. 1210

with hook handle, length 1000 mm, hole diameter 12 mm, wall thickness 5 mm, quality III = 1000 °C, 1/4 sphere

Dia. mm	120	160	200
No. of holes	5	5	9
Item No.	022.112	022.116	022.120



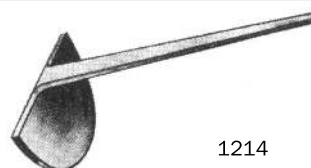
1210

**022**

## Crucible irons No. 1214

90° offset, wall thickness 10 mm, with square handle, hemispherical

Width mm	120	160	200
Item No.	023.112	023.116	023.120



1214

**023**

## Chipping irons No. 1215

of hardened steel, chipping edge ground, handle dia. approx. 15 mm, chipping edge width approx. 20 mm

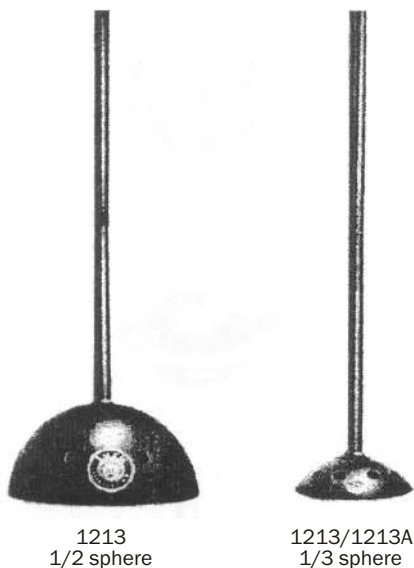
Length mm	300	400	500
Item No.	024.130	024.140	024.150



1215

**024**

Also available in **chrome-vanadium-steel**! Please specify length and quantity in your inquiry.

**025****Immersion bells No. 1213, forged**

wall thickness 5 mm, with 4 holes (dia. 12 mm) and welded round steel handle (St. 37), dia. 18 mm, length 1000 mm

Also available without handle (price reduction), see remark below\*

**a) 1/3 sphere**

**b) 1/2 sphere**

**Bell**

**Quality I** - red marking

Nicotherm - highly heat resistant up to 1400 °C, for heavy metal

**Quality II** - blue marking

Thermax - heat resistant up to 1200 °C, for heavy metal

**Quality III** - without marking

Ferrum - resistant up to 1000 °C, for aluminium

**025A****Immersion bells No. 1213A**

Design as mentioned under item 1213, 1/3 sphere

**however, bell and handle of quality I Nicotherm**

highly heat resistant up to 1400 °C, red marking, for heavy metals

Dia. mm		120	160	200
<b>Design 1213</b>				
1/3 sphere	Qual. I	025.111	025.112	025.113
	Qual. II	025.121	025.122	025.123
	Qual. III	025.131	025.132	025.133
1/2 sphere	Qual. I	025.211	025.212	025.213
	Qual. II	025.221	025.222	025.223
	Qual. III	025.231	025.232	025.233
<b>1213A</b>	Qual. I	-	025.301	-

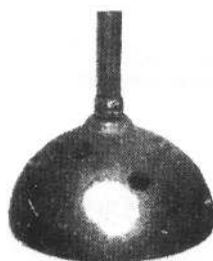
\* Remark: for bells without handle please add "A" to the item-no., for ex. 025.121A

**INSTRUCTIONS** for the use of forged immersion bells:**Coat well!**

Quality I & II: quench tools in a cold liquid several times daily to prevent decarburization and formation of cracks.

Quality III: do not overheat, do not allow to cool and reheat tools often as decarburization and embrittlement would result.

**Remark:** Coatings see item nos. 435 - 441.

**026****Immersion bells of spheroidal graphite iron, without handle**

high heat resistance, wall thickness 10 mm

Item. No.	026.101	026.102	026.103	026.103A
Size	1	2	3	3A
Outside dia. mm	140	170	210	220
Depth	1/2	1/2	1/2	1/3
No. of holes	11	11	20	8
Hole dia. mm	13	15	20	20

**Fitting handles::** diam. 25 mm x length 1500 mm, with metric thread M20 and lock nut

**Item No. 026.998**

**027****Immersion bells of graphite for melt refinement, with handle**

Item. No.	Size	Bell height inside mm	Bottom diam. mm	Lenght mm	Tube diam. inch
027.201	TC 1	90	65	850	½"
027.202	TC 2	120	95	850	½"
027.203	TC 3	160	95	850	½"
027.204	TC 4	200	120	850	½"

## Foundry tongs No. 1216

leg dia. abt. 10 mm, riveted

Item No.		028.118	028.122	028.126
Leg lenght	mm	180	220	260
Jaw lenght	mm	70	80	90
Weight	kg	0,2	0,3	0,4



028

## Foundry tongs No. 1217

leg dia. abt. 16 mm, riveted

Item No.		028.222	028.230	028.238
Leg lenght	mm	220	300	380
Jaw lenght	mm	80	100	120
Weight	kg	1,0	1,3	1,5



028A

## Withdrawal tongs 'D'

of **chrome-vanadium steel**, leg dia. 10 mm, riveted  
jaw inside with crosscut

Item No.		029.001
Leg lenght	mm	320
Jaw lenght	mm	110
Weight	kg	0,8



029

## Jaw tongs

riveted

Item No.		030.130	030.140	030.150	030.160
Leg lenght	mm	300	400	500	600
Jaw lenght	mm	45	50	65	70
Weight	kg	0,5	0,8	1,2	1,6
Jaw capacity	mm	1 - 8	3 - 12	6 - 20	15 - 30



030

## Ingot tongs

of special tool steel, oil hardened, head polished

### 1) heavy-duty design, straight head

		031.016	031.033
Length	mm	250	370
Jaw Length	mm	75	75
Head thickn.	mm	6	8
Weight	kg	0,4	0,5

### 2) light-duty design

Item No.		031.220	031.320
Length	mm	200	200
Jaw Length	mm	60	60
Head thickn.	mm	3,5	3,5
Head		straight	head with 20° rank
Weight	kg	0,2	0,2



1)



2)

031

## Gripping pliers, 4-position adjustable

made of Chrome Vanadium electric steel, oil-hardened, head Chrome plated,  
with serrated gripping jaws, handles plastic coated

Item No.	Length	Working area	Weight
031.523	230 mm	25 - 65 mm	0,3 kg



031A

## Charging tongs

leg thickness abt. 15 mm, flat jaw thickness 8 to 10 mm, riveted

Item No.	leg length	jaw to rivet	jaw width	weight
032.001	600 mm	140 mm	80 mm	2,0 kg
032.002	1000 mm	180 mm	150 mm	5,0 kg



032

**033**

## Forged tongs

of prime quality steel, heat-treated (strength of 135 to 140 kgs/mm<sup>2</sup>), light-weight tongs with excellent grip and long life, with half-round rivet, no re-riveting required

### Flat tongs

Item No.		033.130	033.140	033.150	033.160
Length	mm	300	400	500	600
Jaw length	mm	45	50	65	70
Weight	kg	0,5	0,75	1,2	1,6
For material	mm	1 – 4	8 – 10	13 – 14	17 – 18

### Lap jaw tongs

Item No.		033,250
Length	mm	500
Jaw length	mm	65
Weight	kg	1,25
For material dia.	mm	11 – 13 x 21 – 23

### Riveting tongs

Item No.		033,540	033,550	033,560
Length	mm	400	500	600
Jaw length	mm	50	65	70
Weight	kg	0,5	0,85	1,3
For material dia.	mm	9	13	18

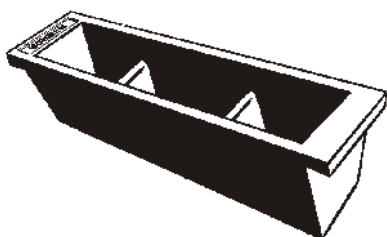
### Auvil tongs

Item No.		033.640	033.650	033.660
Length	mm	400	500	600
Jaw length	mm	50	65	70
Weight	kg	0,75	1,2	1,7
For material	mm	20	25	40

### Mandrel tongs

Item No.		033,730	033,740	033,750	033,760
Length	mm	300	400	500	600
Jaw length	mm	45	50	65	70
Weight	kg	0,5	0,75	1,2	1,7
For material dia.	mm	13 – 15	19 – 20	25 – 28	33 – 36

Other lengths and models upon request!

**034**

## Pig moulds

of cast iron, tapered, for remains of aluminium

Item No.	Size	Top length inside mm	Top width inside mm	Depth inside mm	Partitions	Wall thickn. abt. mm	Weight abt. kg	Cap. abt. ltr.
034.001	1	345	80	70	2	15	8,0	1,2
034.002	2	530	90	70	1	15	13,5	2,4

**Moulds must always be well coated!**

Other moulds and sizes (in accordance to drawing or sample) also available upon request!

**034A**

## Racks for pig moulds for remains of aluminium

Made of robust, galvanized angle steel, fitting for pallet trucks. Fitting for up to 5 pig moulds size 2 (see above) complete with necessary mounting parts. The pig moulds are **mounted lockable** in the rack.

Item No.	Design	Dimensions mm	Weight kg
034.201	galvanized rack, without pig moulds	1030 x 750 x 780	52
034.202	pig mould size 2 compl. with mounting parts	530 x 90 x 70	17

## Pouring spoons, press molded, stress free

035

smooth surface, with forged lip

Designs:\*

A) bowl without handle  
with or without lip

B) bowl with welded handle shank  
length 130 mm, with 1 or 2 lips

each available: 1) semispherical  
2) with higher rim

C) bowl with welded handle, length 350 mm,  
and wooden handle (up to a dia. of 200 mm), with 1 or 2 lips

Longer handles (up to 1000 mm) are available at extra charge.  
Also available without wooden handle (price reduction).

### INSTRUCTIONS for the use of foundry tools:

**Coat well!** Do not overheat, do not allow to cool and reheat tools too often as decarburization and embrittlement would result.

**Remark:** Coatings see item nos. 435 – 441.

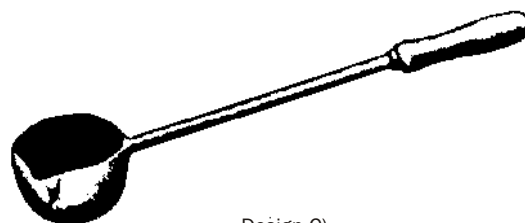
(All given diameters are inside diameters)

Spoon No.*	D mm	h mm	S mm	H mm	Spoon No.*	D mm	h mm	S mm	H mm
035.2400	40	20	2	–	035.2850	85	43	2	–
035.2405		–	2	25	035.2855		–	2	53
035.3400		20	3	–	035.3850		43	3	–
035.3405		–	3	25	035.3855		–	3	53
035.4400		20	4	–	035.4850		43	4	–
035.4405		–	4	25	035.4855		–	4	53
035.2450	45	23	2	–	035.2900	90	45	2	–
035.2455		–	2	28	035.2905		–	2	55
035.3450		23	3	–	035.3900		45	3	–
035.3455		–	3	28	035.3905		–	3	55
035.4450		23	4	–	035.4900		45	4	–
035.4455		–	4	28	035.4905		–	4	55
035.2500	50	25	2	–	035.2950	95	48	2	–
035.2505		–	2	30	035.2955		–	2	58
035.3500		25	3	–	035.3950		48	3	–
035.3505		–	3	30	035.3955		–	3	58
035.4500		25	4	–	035.4950		48	4	–
035.4505		–	4	30	035.4955		–	4	58
035.2550	55	28	2	–	035.2100	100	50	2	–
035.2555		–	2	35	035.2105		–	2	60
035.3550		28	3	–	035.3100		50	3	–
035.3555		–	3	35	035.3105		–	3	60
035.4550		28	4	–	035.4100		50	4	–
035.4555		–	4	35	035.4105		–	4	60
035.2600	60	30	2	–	035.2110	110	55	2	–
035.2605		–	2	38	035.2115		–	2	65
035.3600		30	3	–	035.3110		55	3	–
035.3605		–	3	38	035.3115		–	3	65
035.4600		30	4	–	035.4110		55	4	–
035.4605		–	4	38	035.4115		–	4	65
035.2650	65	33	2	–	035.2120	120	60	2	–
035.2655		–	2	40	035.2125		–	2	70
035.3650		33	3	–	035.3120		60	3	–
035.3655		–	3	40	035.3125		–	3	70
035.4650		33	4	–	035.4120		60	4	–
035.4655		–	4	40	035.4125		–	4	70
035.2700	70	35	2	–	035.2130	130	65	2	–
035.2705		–	2	45	035.2135		–	2	75
035.3700		35	3	–	035.3130		65	3	–
035.3705		–	3	45	035.3135		–	3	75
035.4700		35	4	–	035.4130		65	4	–
035.4705		–	4	45	035.4135		–	4	75
035.2750	75	38	2	–	035.2140	140	70	2	–
035.2755		–	2	48	035.2145		–	2	80
035.3750		38	3	–	035.3140		70	3	–
035.3755		–	3	48	035.3145		–	3	80
035.4750		38	4	–	035.4140		70	4	–
035.4755		–	4	48	035.4145		–	4	80
035.2800	80	40	2	–	035.5140		70	5	–
035.2805		–	2	50	035.5145		–	5	80
035.3800		40	3	–					
035.3805		–	3	50					
035.4800		40	4	–					
035.4805		–	4	50					

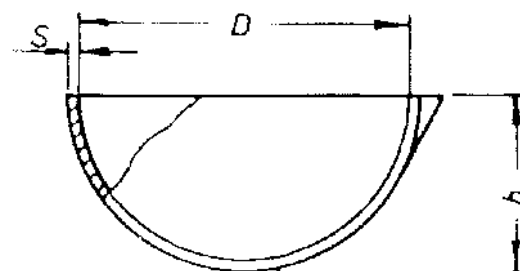
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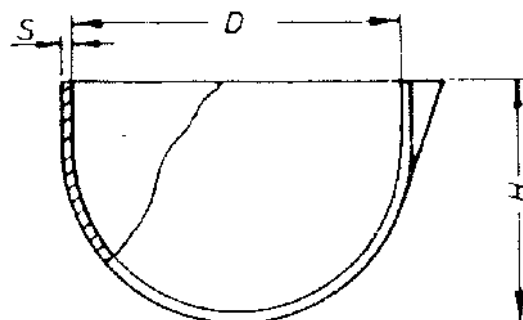
Design B)



Design C)



1. Semispherical shape



2. With higher rim

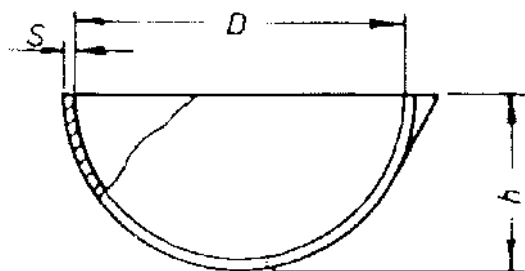
\* Please add handle design A, B or C (f. ex. 035.2110B = with short handle), (035.2110 C = with long handle) to item no.

The spoons are not stocked. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

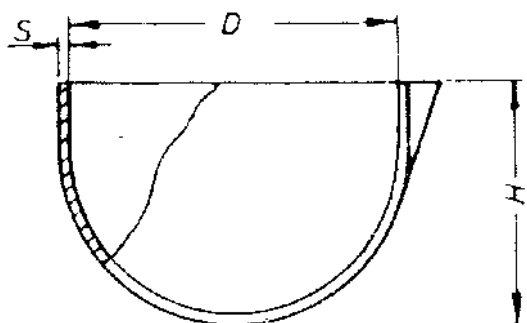




1. Semispherical shape



2. With higher rim



## Pouring spoons, press molded (continued)

(All given diameters are inside diameters)

Please observe INSTRUCTIONS on page 11!

Spoon No.*	D mm	h mm	S mm	H mm	Spoon No.*	D mm	h mm	S mm	H mm
035,2150	150	75	2	—	035,4220	220	110	4	—
035,2155		—	2	85	035,4225		—	4	125
035,3150		75	3	—	035,5220		110	5	—
035,3155		—	3	85	035,5225		—	5	125
035,4150		75	4	—	035,6220		110	6	—
035,4155		—	4	85	035,6225		—	6	125
035,5150	160	75	5	—	035,4240	240	120	4	—
035,5155		—	5	85	035,4245		—	4	135
035,2160		80	2	—	035,5240		120	5	—
035,2165		—	2	90	035,5245		—	5	135
035,3160		80	3	—	035,6240		120	6	—
035,3165		—	3	90	035,6245		—	6	135
035,4160	180	80	4	—	035,4250	250	125	4	—
035,4165		—	4	90	035,4255		—	4	145
035,5160		80	5	—	035,5250		125	5	—
035,5165		—	5	90	035,5255		—	5	145
035,4180		90	4	—	035,6250		125	6	—
035,4185		—	4	105	035,6255		—	6	145
035,5180	200	90	5	—	035,4280	280	140	4	—
035,5185		—	5	105	035,4285		—	4	160
035,6180		90	6	—	035,5280		140	5	—
035,6185		—	6	105	035,5285		—	5	160
035,4200		100	4	—	035,6280		140	6	—
035,4205		—	4	115	035,6285		—	6	160
035,5200	200	100	5	—					
035,5205		—	5	115					
035,6200		100	6	—					
035,6205		—	6	115					

\* Please add handle design A, B or C (f. ex. 035,2110B = with short handle), (035,2110 C = with long handle) to item no.

The spoons are not stocked. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

## Spoon capacities for aluminium (inside dia.)

## 1) Semispherical shape

Dia.	mm	40	60	80	100	120	140	160	180	200	220	240	250	280
Depth	mm	20	30	40	50	60	70	80	90	100	110	120	125	140
Cap. AL	kgs	0,04	0,125	0,29	0,60	1,00	1,70	2,10	3,50	4,70	6,25	8,15	9,15	12,90
Vol.	ltr	0,02	0,05	0,13	0,25	0,44	0,75	0,9	1,5	2,0	2,8	3,6	4,0	5,7

## 2) With higher rim

Dia.	mm	40	60	80	100	120	140	160	180	200	220	240	250	280
Depth	mm	25	38	50	60	70	80	90	105	115	125	135	145	160
Cap. AL	kgs	0,07	0,17	0,38	0,75	1,25	1,95	2,90	4,25	5,25	7,60	9,70	11,40	15,70
Vol.	ltr	0,03	0,07	0,17	0,33	0,55	0,9	1,3	1,9	2,3	3,4	4,3	5,0	7,0



## Scoops No. 920, of stainless steel, drawn

Semispherical, without lip, with flat steel handle with hook, wall thickness 1 mm

**036**

Item No.	036.106	036.108	036.110	036.112	036.114	036.116	036.120
Diam. mm	60	80	100	120	140	160	200
Vol. ltr.	0,06	0,12	0,25	0,5	0,75	1,0	2,0
Wall thickn. mm	240	330	360	380	420	470	430

Other diam. upon request!



## Bowls No. 877, of stainless steel, drawn

Semispherical, without lip

**036A**

Item No.	036.206	036.208	036.210	036.212	036.214	036.216	036.220
Diam. mm	60	80	100	120	140	160	200
Vol. ltr.	0,06	0,12	0,25	0,5	0,75	1,0	2,0
Wall thickn. mm	1,4	1,6	1,9	1,9	1,9	2,1	1,2

Other diam. upon request!



## Skimmers, press-molded

**037**

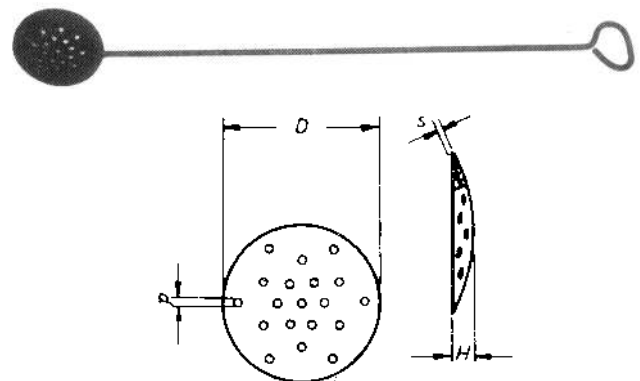
A) without handle

B) with welded handle shank, length abt. 120 to 150 mm

C) with handle and hand ring, length abt. 1000 mm

Item No. *)	D mm	s mm	d mm	No. of holes	H mm
037.5120	120	5	12	12	15
037.6120		6	12	12	15
037.1120		10	12	12	25
037.5150	150	5	12	12	15
037.6150		6	12	12	15
037.1150		10	12	12	25
037.5180	180	5	12	12	18
037.6180		6	12	12	18
037.1180		10	12	12	28
037.5200	200	5	12	13	18
037.6200		6	12	13	18
037.1200		10	12	13	28
037.5250	250	5	12	13	20
037.6250		6	12	13	20
037.1250		10	12	13	30
037.5300	300	5	12	20	20
037.6300		6	12	20	20
037.1300		10	12	20	30

Other nos. or diam. of holes upon request!



\* Please add handle design A, B or C (f. ex. 037.5150 A = without handle), (037.5150 C = with long handle) to item No.

The tools are not stocked. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

## Skimmers of malleable cast iron, Item No. 037.820

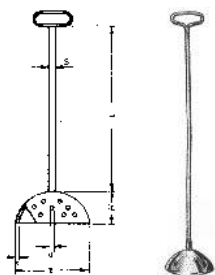
**037A**

Dia. 220 mm, wall thickness 7 mm, with 163 5-mm-holes, handle length 120 mm, weight abt. 1900 gr. Often used as a approved problem solver where other skimmers will break down! Excellent cost-performance ratio! Other designs upon request, specify quantity.



**038****Plunger, press-molded**

A) without handle B) with handle and hand ring, length 1000 mm C) with handle and hand ring, length 1500 mm

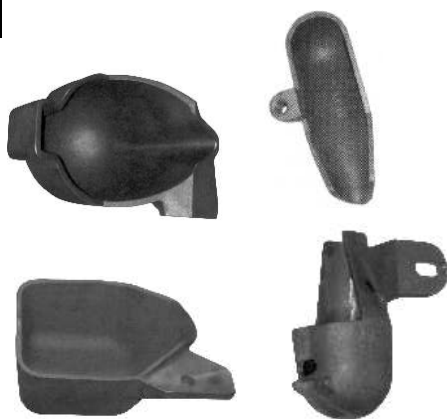
**INSTRUCTIONS** for the use of foundry tools:**Coat well!** Do not overheat, do not allow to cool and reheat tools too often as decarburization and embrittlement would result.**Remark:** Coatings see item nos. 435 – 441.

\* Please add handle design A, B or C (f. ex. 038.5150 A = without handle), (038.5150 C = with handle length 1500mm) to item No.

The tools are not stocked. Therefore certain delivery times should be taken into account. Exchange or return should be agreed with us.

Other nos. or diam. of holes upon request!

Item No. *)	D mm	s mm	H mm	d mm	No. of holes	L mm	S mm
038.5120	120	5	55	15	10	1000 / 1500	15
038.6120	120	6	55	15	10	1000 / 1500	15
038.5150	150	5	70	15	10	1000 / 1500	15
038.6150	150	6	70	15	10	1000 / 1500	15
038.5180	180	5	85	15	12	1000 / 1500	18
038.6180	180	6	85	15	12	1000 / 1500	18
038.5200	200	5	95	15	12	1000 / 1500	18
038.6200	200	6	95	15	12	1000 / 1500	18
038.5230	230	5	110	15	12	1000 / 1500	20
038.6230	230	6	110	15	12	1000 / 1500	20
038.5250	250	5	120	15	12	1000 / 1500	20
038.6250	250	6	120	15	12	1000 / 1500	20

**039****Pouring spoons** of cast iron with batching feature for ingot and die casting machines

More than 100 types available, for cap. from 1 to 120 kgs.  
Please ask for your specific requirements!

**040****Sample cups of EN-GJS-400-15****Item No. 040.001**

With handle shank and one lip, hemispherical, outside dia. 90 mm, depth inside 40 mm, wall thickness 9 to 10 mm, weight abt. 700 gr.  
Other shapes available upon request, please specify quantity.

**041****Sample cups of ceramic fibers**

Suitable for cast iron, aluminium and copper melts, good heat insulation and temperature resistance, melt not affected by coating, lightweight, long durability, can be used several times.

Item No.	041.101	041.102	041.103	041.105	041.106
Diameter	1,5"	2,5"	3,5"	5,0"	6,0"
Capacity	50	150	250	1000	1500 cm <sup>3</sup>

## High-performance melting crucibles of graphite

When placing an order for a melting crucible, please state the **metal to be molten** as well as the **type of heating system** (gas, oil, coke, inductive or resistance heating system). Remark with regard to size **tolerances**: Possible size tolerances  $\pm 3\%$ .

Shape A	Heavy metal cap. in kgs or No.	H Outside height mm	D Top outside dia. mm	d Bottom outside dia. mm	Cap. liter
Item No.					
042.101	6/0	29	25	19	0,004
042.102	5/0	35	32	25	0,009
042.103	4/0	51	41	27	0,022
042.104	3/0	54	48	32	0,036
042.105	2/0	57	52	36	0,041
042.106	1/0	72	60	42	0,076
042.108	1/2	80	74	50	0,133
042.110	1	90	90	55	0,208
042.111	1 1/2	100	95	60	0,283
042.112	2	110	100	65	0,357
042.113	3	130	110	70	0,481
042.114	4	140	115	75	0,616
042.115	5	150	125	85	0,806
042.116	6	165	130	90	0,975
042.117	7	175	140	95	1,08
042.118	8	180	155	110	1,46
042.120	10	200	160	115	1,74
042.121	12	210	170	120	1,90
042.122	14	220	175	120	2,10
042.123	15	230	180	120	2,40
042.126	20	255	200	135	3,18
042.128	25	260	220	150	3,9
042.129	30	290	230	160	4,9
042.130	35	300	240	170	5,7
042.131	40	310	260	190	7,4
042.133	50	330	270	200	8,5
042.135	60	345	285	200	9,9
042.136	70	360	295	205	11,2
042.137	80	375	305	215	12,3
042.138	90	380	315	225	13,3
042.139	* 100	400	325	235	14,7
042.141	120	410	345	245	17,5
042.142	130	420	350	245	17,7
042.143	* 150	450	370	260	23,4
042.145	* 200	500	400	285	29,3
042.146	* 250	515	420	295	33,0
042.147	* 300	540	440	300	42,5
042.148	* 350	590	475	330	49,0
042.149	* 400	600	500	340	61,0
042.150	* 500	650	510	350	66,5
042.151	* 600	680	530	380	78,7
042.152	* 800	800	560	380	100,0

\*) These sizes are also available as **isostatically press-molded crucibles** (please specify when ordering).

Shape BU	Size	Light metal capacity kg	H Outside height mm	D Top outside dia. mm	d Bottom outside dia. mm
Item No.					
042.302	BU 50	50	395	400	215
042.303	BU 60	60	430	400	215
042.305	BU 75	75	375	465	280
042.306	*BU 100	100	400	525	305
042.307	*BU 125	125	450	525	305
042.308	*BU 150	150	490	525	305
042.309	*BU 175	175	550	525	305
042.310	*BU 200	200	600	525	305
042.312	*BU 250	250	630	615	355
042.313	*BU 300	300	700	615	355
042.314	*BU 350	350	800	615	355
042.316	*BU 500	500	750	775	435
042.317	*BU 600	600	900	780	380
042.319	BU 750	750	880	880	450
042.320	BU 800	800	1000	890	450

\*) These sizes are also available as **isostatically press-molded crucibles** (please specify when ordering).

## Crucibles of graphite

- Shape BP
- Shape C
- Shape R/FU
- Shape TP
- Shape BUK
- Retorts

available in all standardized sizes

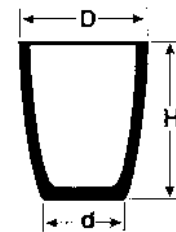


**Shape A**

with lip

**for stationary furnaces**

for light and heavy metals



Upto no. A8 not glazed, from no. 10 glazed (upon request also for smaller types possible).  
Upto no. A350 with lip. For bigger types only on request.

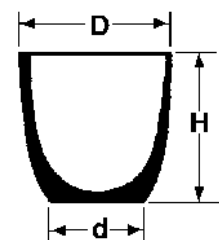


**Shape BU**

without lip

**for casting and holding furnaces**

for light metals



Can also be supplied with **pyrometer pocket**.



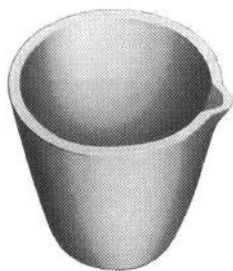
shape BP



shape R/FU



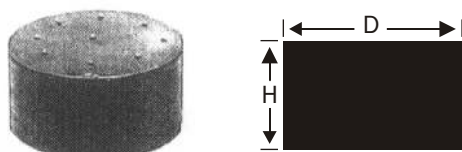
shape TP

**042B**

## Special crucibles

made of: clay, aluminium oxide, Mullite, Zirconiummullite or Zirconiumoxide, round shape, with or without lip, with lid or stand

Depending on the composition of the crucible material, suitable for nickel, molybdenum, cadmium, bismuth, platinum, paladium, rhodium, vanadium, iridium, chrome. Available upon request!

**043**

## Stands for crucibles

with or without knob

H mm \ D mm	200	230	250	280	300	320	360	400	440	540
60	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•
150	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•
250	•	•	•	•	•	•	•	•	•	•
280	•	•	•	•	•	•	•	•	•	•
300	•	•	•	•	•	•	•	•	•	•
350	•	•	•	•	•	•	•	•	•	•
380	•	•	•	•	•	•	•	•	•	•

**043A**

## Insulating stands

of highly insulating material, preventing loss of heat, lightweight, for the use in electric melting furnaces for aluminium, for temperatures up to 1.000° C.

Sizes available:

Height	40	50	80	100 mm
Dia.	Item No.			
305 mm	043.101	—	043.104	—
360 mm	—	—	—	043.205
435 mm	043.301	043.302	043.304	043.305

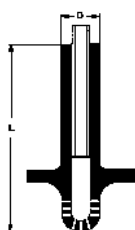
This item will be discontinued - available while stock lasts.

**044**

## Scoops of graphite, without handle, with two lips

Item No.	Capacity ltr.	Inside dia. mm	Depth dia. mm	Connector thread
044.001	0,13	90	56	M 10
044.002	0,33	104	75	M 16
044.003	0,50	125	75	M 16
044.004	0,60	125	85	M 16
044.005	0,75	125	100	M 16
044.006	1,50	146	130	M 16
044.007	1,20	170	100	M 16
044.008	2,20	190	125	M 16
044.009	3,20	230	140	M 16

Upon request also available with 200 mm handle shank of graphite, as well as skimmers made of graphite!

**044A**

## Gassing lances of ceramic

for degassing aluminium melts by means of nitrogen or argon through 22 2-mm-holes which are arranged at the circumference of the lance in three levels, dish diameter 200 mm

Item No.	L mm	D mm	Pipe
044.104	750	60	1/2"
044.106	1000	60	1/2"
044.105	1300	60	1/2"
044.108	1500	60	1/2"

## Graphite pyrometer pipes

### 1) standard pipes (without iron pipe)

L (mm)	D (mm)	l (mm)
300, 400, 500, 600,	40,50,	20, 25
800, 1000, 1200	55,60	30

### 2) with iron pipe and threaded connectors

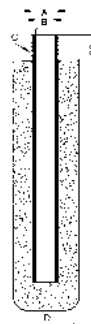
Item No.	Pipe outside dia. mm A	Pipe inside dia. mm B	Connector thread C	Prot. pipe dia. mm D
045.201	17	12	3/8"	52
045.202	21	15	1/2"	52
045.203	27	21	3/4"	60

045.201 – 045.203 available in the following lengths:  
150; 255; 305; 405; 460; 510; 560; 610; 710; 760; 915; 1065; 1220 mm

Pyrometer pipes of SiC (silicon-carbide), Syalon, cast iron or heat-resisting steel and other dimensions on request!



Design 1



Design 2

045

## Crucible accessories of graphite



headpieces



lid with knob



furnace lids



ducts



pipes

also

- plugs
- stirring rods

046

## Crucible powder, in 25 kgs-bags

Item No. 047.001

for crucible stands, to prevent them from sticking to the crucible

047

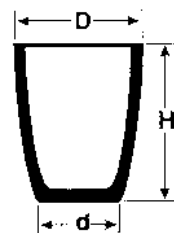
## SIC-melting crucibles (isostatically press-molded)

Shape AC Item No.	Size	Heavy metal cap. kgs	H mm	D mm	d mm
048.101	AC 2	2	115	105	70
048.102	AC 4	4	145	120	80
048.102A	AC 6	6	165	140	95
048.103	AC 8	8	185	155	105
048.103A	AC 10	10	205	155	110
048.104	AC 12	12	220	165	115
048.105	AC 16	16	240	195	130
048.105A	AC 18	18	240	200	130
048.106	AC 20	20	255	200	130
048.107	AC 25	25	260	220	145
048.108	AC 30	30	290	230	155
048.109	AC 35	35	300	240	160
048.110	AC 40	40	310	260	165
048.111	AC 50	50	330	270	175
048.112	AC 60	60	345	285	190
048.113	AC 70	70	360	295	200
048.114	AC 80	80	370	305	200
048.115	AC 90	90	380	325	220
048.116	AC 100	100	400	325	220
048.117	AC 120	120	410	345	235
048.118	AC 150	150	450	370	260
048.119	AC 175	175	470	370	260
048.120	AC 200	200	500	400	280
048.121	AC 250	250	515	420	280
048.122	AC 300	300	540	440	265
048.123	AC 350	350	590	465	290
048.124	AC 400	400	600	510	360
048.126	AC 500	500	650	515	360

Shape BUC Item No.	Size	Light metal cap. kgs	H mm	D mm	d mm
048.302	BUC 50	50	395	395	215
048.303	BUC 60	60	430	395	215
048.304	BUC 75	75	375	465	280
048.305	BUC 100	100	400	525	310
048.306	BUC 125	125	450	525	310
048.307	BUC 150	150	490	525	310
048.308	BUC 175	175	550	525	310
048.309	BUC 200	200	600	525	310
048.310	BUC 202	215	620	525	310
048.312	BUC 250	250	630	615	355
048.313	BUC 300	300	700	615	355
048.314	BUC 350	350	800	615	355
048.315	BUC 360	400	900	615	355
048.316	BUC 500	500	750	775	400
048.317	BUC 600	600	900	780	400



Shape AC



for stationary furnaces

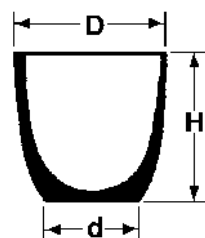
for light and heavy metals

Sizes AC 10 to AC 14 and AC 25 to AC 175  
with lip. For other types also on request.



Shape BUC

without lip



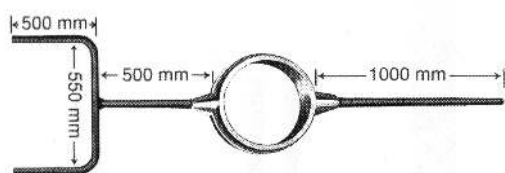
for casting und holding furnaces

for light metals

048

**SIC-melting crucibles (silicon-carbide) in other shapes and accessories upon request!**

**049**



## Crucible shanks No. 1002

strong welded structure of piping, for crucibles of shape **A**  
Also available with double fork, rotatable on one side, with crane bail.

Crucible size	A 50	A 80	A 100	A 150	A 200
Ring dia.	260	290	310	360	385 mm
Pipe dia.	3/4"	3/4"	1"	1"	1 1/4"
Design	Item No.				
Pipe structure	049.101	049.102	049.103	049.104	049.105
Double fork structure	049.201	049.202	049.203	049.204	049.205
Crane bails for all sizes	049.301				

Please check diameter of existing crucible when ordering!  
Other sizes upon request available!

**050**



## Crucible tongs

for gripping small crucibles  
leg thickness 10 mm, leg length abt. 500 mm  
Jaw size abt. 25 x 5 mm, riveted

Item No.	050.300	050.301	050.302	050.303	050.304
Size	0	1	2	3	4
Jaw dia. abt. mm	55	70	90	100	120
For crucible cap. kg	1/0 - 1/2	1 - 1,5	2 - 4	5 - 7	8 - 10

**050A**



## Hand tongs for small crucibles

made of chrome-vanadium steel, with ratchet (avoids unintentional opening of legs).

Item No.	050.405	050.410	050.420
for crucible size	A 5	A 10	A 20
Jaw diam. ab. mm	125	160	200
Leg length ab. mm	600	800	1000
Leg thickness ab. mm	12	13	14

**050B**

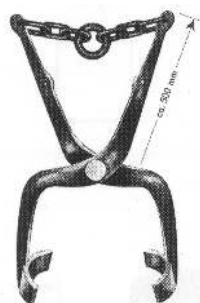


## Hand tongs for crucibles No. 1000

forged of one piece, with single or double grips welded to the jaw, for crucibles of shape **A**

Crucible size	A 50	A 80	A 100	A 150	A 200
Jaw height	200	230	260	300	400 mm
Jaw dia.	230	260	280	310	360 mm
Design	Item No.				
Single grips	050.101	050.102	050.103	050.104	050.105
Double grips	050.201	050.202	050.203	050.204	050.205

**051**



## Crane tongs for crucibles No. 1001

forged of one piece, with single or double grips welded to the jaw, for crucibles of shape **A**

Crucible size	A 100	A 120	A 150	A 200	A 300	A 500
Jaw height	260	270	300	400	410	420 mm
Jaw dia.	280	290	310	360	380	450 mm
Design	Item No.					
Single grips:						
Without ratchet	051.101	051.102	051.103	051.104	051.105	051.106
With ratchet	051.201	051.202	051.203	051.204	051.205	051.206
Double grips:						
Without ratchet	051.301	051.302	051.303	051.304	051.305	051.306
With ratchet	051.401	051.402	051.403	051.404	051.405	051.406

Your inquiry or order for **other** crucible tongs should specify the following data:

- outside dimensions of the crucible: top dia., bottom dia., height, shape
- single or double grips
- with or without ratchet

- distance from the rim of the crucible where the grips should hold the crucible (both dims for double-grip tongs)
- crucible diameter at this point
- inside diameter of the furnace

These crane tongs will be checked by the producer with double security as to function and weight carrying capacity and will be delivered with a declaration of CE-conformity and instruction manual.



## Crucible changing slings

firm grip, new crucibles are not damaged  
**Employ on cold or moderately warm crucibles only!**

### 1) Type NOLTILIFT

For lifting and easy mounting of new crucibles.  
 Fits for all types and sizes of crucibles up to a wall thickness of 65 mm. The space-saving construction needs only 60 mm space to the lining of the furnace.

Item No.	carrying cap.	max. crucible dia.	grip pliers
052.112	appr. 900 kg	1.780 mm	3



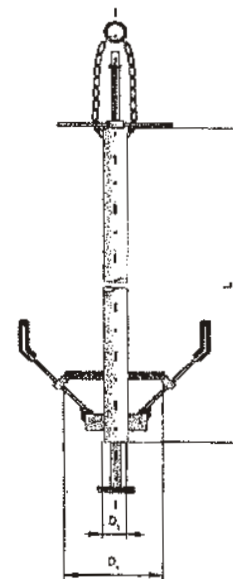
**NOLTILIFT**

### 2) Type THG

with automatically extending rubber padded carrying arms, which hold the crucible inside, therefore no space required between furnace and crucible, length 1300 mm, weight 25 kg:  
 With six spreading arms (spare shoes are available).

For the lifting of used and warm crucibles iron jackets will be available. Those afford a good hold in the scum, therefore the crucible may be lifted safely.

Item No.	crucible size	L	D <sub>1</sub>	D <sub>2</sub>	carrying cap. max.
052.201	A600 - A800 / BU200 - TP287	490	245	47	100 kg
052.202	BU250 - BU350 / TP412	490	245/290	47	200 kg
052.203	BU500 - BU700 / TP587	600	345	47	300 kg
052.204	BU800 - BU800H	850	460	56,5	400 kg

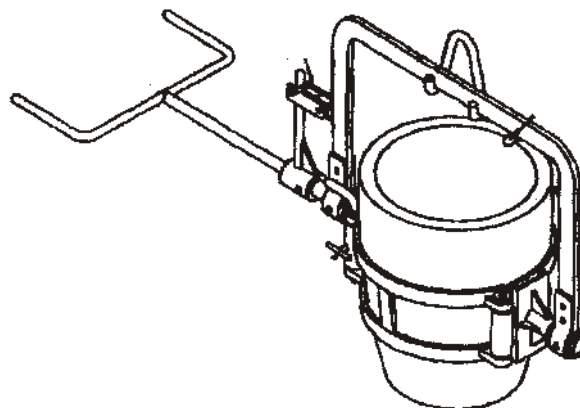


**THG**

## Handling devices for crucibles

for crane use, rotatable by shank (see ill.)  
**or also with oil-lubricated gearing.**

Upon request! Please indicate the exact type of the crucible.



**052A**



**053**



TEasy M-SL



immersion-thermocouple

## Immersion-type pyrometers with digital display

### 1. for light-metals

**Digital thermometer with installed tube fitting for measuring lances** (thermometer as described on page 21, item-no. 055.101). Measuring range 20-1200 °C, thermocouple NiCr-Ni, housing of Inconel, with wooden handle, length of tube ab. 900 mm  
**Item No. 053.601**

**Fitting measuring lances with standard plugs, diam. 6 mm**

Length	Item No.
500 mm	<b>053.613</b>
750 mm	<b>053.614</b>
1000 mm	<b>053.615</b>

Other diam. and lengths are available upon request!

Immersion depth max. 5 to 8 cm, regularly coat lance with **white coating** for longevity. When the elements will be used up, but the plugs are still okay, you'll only need the measuring tips without plug. Those may be installed easily and are at low cost.

### 2. for heavy-metals

**Digital thermometer with installed tube fitting for multi-use-thermocouples** (thermometer as described on page 21, item-no. 055.101). Measuring range 20-1350 °C, thermocouple NiCr-Ni, housing of Inconel, with wooden handle, length of tube ab. 1200 mm  
**Item No. 053.701**

**Fitting multi-use-thermocouples**  
(with 1100 mm cable)

Length	Item No.
200 mm	<b>053.301</b>
380 mm	<b>053.302</b>
610 mm	<b>053.303</b>

Lead with colour marking to ensure correct polarity.  
+ = green or yellow; - = white or red

In order to reduce the measuring time and thus increase the service life of the thermocouple, the thermocouple should be constantly moved through the melt.

To obtain the shortest reaction time, the thermocouple should be immersed 2/3 of its total length in the melt.

#### Remark:

The service life of the thermocouple can be extended considerably by preheating and coating it.

### 3. for cast iron and steel

Type **TEasy M-SL**, Item No. **053.004**  
Measuring range up to **1750 °C**, suitable for measurements in **cast iron and steel**  
response time 4 – 6 seconds  
total length: 1700 mm      angle length: abt. 300 mm  
Other lengths available upon request!

The following **immersion-thermocouples** (Pt 10% Rh/Pt) are available:

Item. No.	053.411	053.412
Type	MMT 10-300Fe	MMTHR 10-100-300
Length x Inside diam.	300 x 17,8 mm	300 x 17,8 mm
Use	one-way	several times
Design	with steel protective cap and cardboard protective shell	with 35mm long bent glass pipe w/o protective cap and cardboard prot. shell, prot. coating 100mm long

Other designs and lengths upon request!

Those pyrometers may also be delivered **calibrated** (additional charge) or may be calibrated afterwards.

**053A**



pipe type thermocouples



fork type thermocouple

## Spare parts for GISPO-pyrometers\*

Thermocouples for the former immersion pyrometers called GISPO:

	pipe type thermocouples for copper, brass and bronze melts	fork type thermocouples for lead, tin, zinc and aluminium melts
Length	Item. No.	
500 mm	053.101	053.201
750 mm	053.102	053.202
1000 mm	053.103	-

\* Discontinued. Available as long as stock lasts.

## Pyrometers "CellaPort" (non-contact measurement)

Measuring instrument for a quick, accurate and non-contact measurement, robust aluminum housing; designed for extreme industrial environments. The large control keys on the keyboard are easily to access and operate. All parameters may be configured during running operation using the rear keypad. Brightly lit 8mm LED display. True-sided through-the-lens sighting, parallax free, target spot indicator, diopter compensation, polarizing filter. Rechargeable battery pack with a life-time of appr. 15hours (based on continuous operation), USB-port, 3/8" tripod for housing and handle.

Item No.	Application	Range	Spectral range	Focus range	Distance ratio	Response time	Precision	Reproducibility
054.129*	Aluminium, polished metal surfaces	150 - 800°C	1,8 - 2,2 µm	from 0,3 m	40:1	< 50 ms (T>150°C) < 2 ms (T>350°C)	0,75% from reading, min. 3K	1K
054.130	iron and steel	500 - 2500°C	0,78 - 1,06 µm	from 0,4 m	210:1	< 50 ms (T>550°C) < 2 ms (T>750°C)	0,3% from reading, min 4 K	1K

\*054.129 is designed with a special band-stop filter and sensor. Thus the pyrometer features a response spectrum which is far less sensitive to incidental light reflections from nearby hot objects than most commonly available pyrometers which are responsive at short wavelengths. Therefore it's ideal suitable for measuring reflective metals like aluminium at low temperatures.

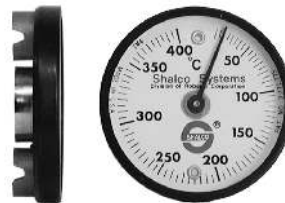


054

## Magnetic high-temp thermometer

For quick and exact measurement of temperatures from 0 to 600°C. Big, clear readable graduation. No problem to place even on hot core-boxes or pattern-plates because of the magnetic system built in.

Item No.	Meas. range	Housing diam.	Magnets
054.301	0 - 400°C	50 mm	2
054.401	0 - 600°C	80 mm	4



054A

## Digital thermometer HOCOTEMP

Item No. 055.101

to be used in connection with measuring lances (item 055A) or surface sensors (item 055B), which have 2poled flat plug (mini-plug). Display 15mm LCD, operated by a 9V-transistor battery (life-time ab. 100 hrs.). Operating temperature 0 to 50°C.

Application	light metal melts / surface of ingots or die casting moulds
Type of thermocouple	K (NiCr-Ni)
Acc.	+/- 0,5°C
Dim.	147 x 70 x 39 mm
Weight	210 grs.



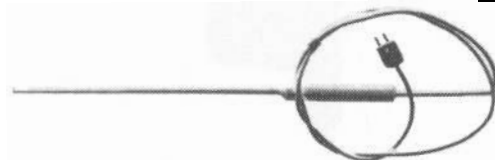
055

## Measuring lances for item 055

for light metal melts

Thermocouple type K (NiCr-Ni), measuring range up to 1000°C. length appr. 1200 mm, dia. 6 mm, with wooden handle and 1000 mm cable. Immersion depth max. 5 to 8 mm, regularly coat lance with white coating for longevity.

Item No. 055.102



055A

## Precision surface sensors

length ab. 400mm

Item No. 055.103: straight

Item No. 055.104: 90° offset

Type K Ni Cr-Ni, measuring range up to 450°C. For temperature measurements on ingots and moulds in connection with the digital thermometers of item no. 055.

The measuring head comprises thin, flexible strip sensor elements which conform to the shape of any measuring point.

Response time 7 sec.



055.103

055B

## Tempilstiks

Tempilstiks are made of materials with melting-points calibrated to a guaranteed tolerance of ± 1%. There is a total of 179 temperature ratings with melting-points between 100°F (38°C) and 2500°F (1371°C).

**Application:** Mark the workpiece before or during the heating. The dry opaque mark will change to a distinct melted mark which will occur when the temperature rating of the selected crayon has been reached. **Caution:** Any colour change that may occur during heating is insignificant!

Crayons available:

1) Item No. 056.001: Set with 20 sticks:

52, 66, 79, 93, 107, 121, 135, 149, 163, 177, 191, 204, 218, 232, 246, 260, 288, 316, 371 and 427°C.



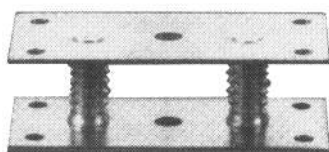
056

2) Item No. 056.101: Single stick:

Available steps: 40-300°C increasing each 10°, 320°, 350°, 400°, 460°, 500°, 550°, 600°, 625°, 700°, 816°, 899°, 1038°, 1093°C (other steps may be achieved using sticks with F-scale)

Minimum quantity 5 pcs. (also assorted)

## 057



We also supply chaplets of **pure copper, pure aluminium or stainless steel (VA)**. Please specify quantity, plate size, thickness, leg dia. and height.

## Tin-plated chaplets

prime quality, unparalleled design, of selected material

**1) With 1 leg (grooved 10 mm and up; below 10 mm with smooth leg)**

Plate size x thickness mm	Leg dia. mm	Height mm	Min. qty. to be ordered
15 x 15 x 1	4	5 – 20	1000
20 x 20 x 1	5	6 – 20	1000
25 x 25 x 1	5	6 – 30	100
	6	32 – 40	500
30 x 30 x 1	6, 8	10 – 50	500

**2) With 2 legs (grooved 10 mm and up; below 10 mm with smooth leg)**

Plate size x thickness mm	Leg dia. mm	Height mm	Min. qty. to be ordered
50 x 25 x 1	5	8 – 30	100
	6	32 – 40	500
	8	10 – 50	500
60 x 30 x 1	6, 8	10 – 50	500
60 x 30 x 1,5	8, 10, 12	12 – 50	250
80 x 40 x 1,5	8, 10, 12	12 – 70	250
80 x 40 x 2	10, 12, 15, 18, 20, 25	15 – 100	250

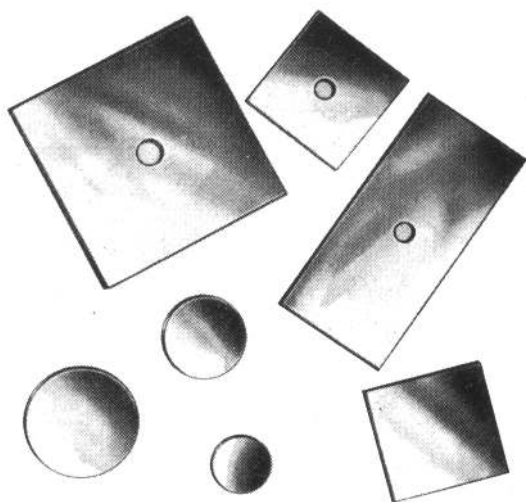
The following sizes are carried **in stock**:

Type	Plate size mm	Leg dia. mm	Height mm / Item No.					
			8	10	12	14	15	16
1 leg	25 x 25 x 1	5	057.108	057.110	057.112	057.114	057.115	057.116
2 legs	50 x 25 x 1	5	057.208	057.210	057.212	057.214	057.215	057.216

Type	Plate size mm	Leg dia. mm	Height mm / Item No.					
			18	20	22	25	28	30
1 leg	25 x 25 x 1	5	057.118	057.120	057.122	057.125	–	057.130
2 legs	50 x 25 x 1	5	057.218	057.220	057.222	057.225	057.228	057.230

With regard to all other dimensions and designs, certain delivery times should be taken into account, min. quantities should also be observed. Other sizes upon request!

## 058



## Tin-plated shims

Size mm	Thickness mm / Item No.				Min. qty. pcs.
	0,5	1,0	1,5	2,0	

**1) sq. and rectang., with hole – 25 x 25 mm and larger, smaller without hole**

10 x 10	058.011	–	–	–	20.000
15 x 15	058.021	058.022*	–	–	10.000
20 x 20	–	058.032*	–	–	100
25 x 25	–	058.042*	–	058.044	100/2.500
30 x 30	–	058.052	058.053	058.054	1.000
40 x 40	–	058.062	058.063	–	2.000
50 x 25	–	058.072*	–	058.074*	100
60 x 30	–	058.082	058.083	058.084	1.500
80 x 40	–	058.092*	058.093	058.094*	100/1.000

**2) round, available with and without hole**

Ø 10	058.401	058.501	–	–	15.000
Ø 14	058.402	058.502	–	–	10.000
Ø 15	058.403	058.503	–	–	10.000

\* stocked

With regard to all other sizes, certain delivery times should be taken into account, min. quantities should also be observed.

Other sizes as well as untinned shims or shims of aluminium, copper or stainless steel are available upon request.

## 058A



## Tin-plated trays

of press-moulded sheet metal, rims toothed, with angular corners; fuses entirely and consequently prevents porosities.

**1) square**

Size mm	Plate thckn. mm	Min. quantity	Size mm	Plate thckn. mm	Min. quantity
25 x 25	0,5 –	2500	10 Ø	0,3	2.500
50 x 25	0,5 1,0	1000	15 Ø	0,3	2.500
60 x 30	0,5 1,0	500	20 Ø	0,3	2.500
80 x 40	0,5 1,0	500	25 Ø	0,3	2.500

**2) round**

Other sizes upon request, please specify quantity.

Not stocked, please observe minimum quantities when ordering.

## Tin-plated KS chaplets with center plate for tight castings

059

**KS chaplets with center plate guarantee tight castings; tight against water, steam, oil, gas, fuel etc.**

KS chaplets feature **the plate** in the middle of the wall of the casting where it ensures perfect welding (highest temperature of the liquid metal), thus guarantees tightness of the casting.

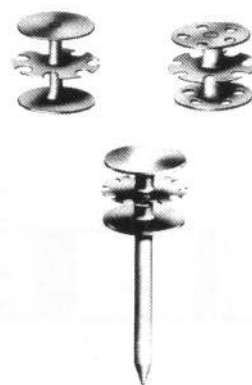
It is perfectly protected against damage, corrosion, impacts, fettling, sand-blasting and machining.



### 1) with round plates (smooth or perforated)

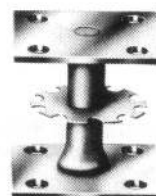
Plate dia. x thickness mm	Leg dia. mm	Center plate size mm	Height mm	Min. quantity
10 x 0,4	1,6; 2,5	11 x 0,3	6 – 20	1000
14 x 0,5	2,5	16 x 0,3	6 – 20	1000
15 x 1,0	3,0; 3,5; 4,0	16 x 0,3	8 – 25	1000
20 x 1,0	4,0; 5,0	23 x 0,5	10 – 25 (height increments=1mm)	500
25 x 1,0	5,0; 6,0	23 x 0,5	10, 12, 15, 18, 20, 22, 25, 28, 30	500

The round chaplets with center plate are also available with **welded pin**. (see item 062)



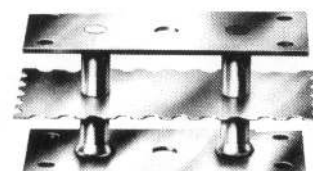
### 2) with square plates and 1 leg

Plate dia. x thickness mm	Leg dia. mm	Center plate size mm	Height mm	Min. quantity
15 x 15 x 1,0	4	16 x 0,3	10 – 20	500
20 x 20 x 1,0	5	16 x 0,3	10 – 25	500
20 x 20 x 1,0	5	23 x 0,5	10 – 25 (height increments=1mm)	500
25 x 25 x 1,0	5	23 x 0,5	10, 12, 15, 18, 20, 22, 25, 28, 30	500



### 3) with rectangular plates and 2 legs

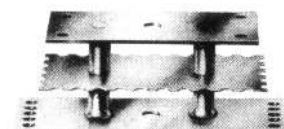
Plate dia. x thickness mm	Leg dia. mm	Center plate size mm	Height mm	Min. quantity
50 x 25 x 1,0	5	54 x 27 x 0,5	10, 12, 15, 18, 20, 22, 25, 28, 30	500
60 x 30 x 1,0	6	60 x 30 x 0,5	12, 15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40	200
60 x 30 x 1,5	8 10 12	60 x 30 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50	200
80 x 40 x 1,5	8 10 12	80 x 40 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50, 55, 60	100
80 x 40 x 2,0	10 12 15	80 x 40 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50, 55, 60	100



**Intermediate heights** upon request.

### 4) with rectangular plates, 2 legs and an extended bottom plate with fixing holes

Top plate mm	Bottom plate mm	Leg dia. mm	Center plate size mm	Height mm	Min. quantity
50 x 25 x 1,0	66 x 25 x 1,0	5	54 x 27 x 0,5	10, 12, 15, 18, 20, 22, 25, 28, 30	500
60 x 30 x 1,0	80 x 30 x 1,0	6	60 x 30 x 0,5	12, 15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40	200
60 x 30 x 1,5	80 x 30 x 1,5	8 10 12	60 x 30 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50	200
80 x 40 x 1,5	100 x 40 x 1,5	8 10 12	80 x 40 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50, 55, 60	100
80 x 40 x 2,0	100 x 40 x 2,0	10 12 15	80 x 40 x 0,5	15, 18, 20, 22, 25, 28, 30, 32, 35, 38, 40, 45, 50, 55, 60	100



**Not stocked! Please observe the min. quantities!**

**060**

Design 1)



Design 2)

## Tin-plated studs with round plates

Designs:

- 1) smooth plate, smooth leg (standard) 3) perforated plate, smooth leg  
2) smooth plate, grooved leg 4) perforated plate, grooved leg

Plate dia. mm	Plate thickness mm	Leg dia. mm	Height mm	Min. quantity
10	0,4	1,6	4 – 20	100*
10	0,4	2,5	4 – 20	5000
12	0,5	1,6	4 – 20	5000
14	0,5	2,5	5 – 20	100*
15	1,0	3,0	5 – 20	2500
15	1,0	3,5	6 – 20	5000
15	1,0	4,0	6 – 20	5000
20	1,0	4,0	8 – 25	5000
20	1,0	5,0	8 – 30	5000
25	1,0	4,0	8 – 25	2000
25	1,0	5,0	8 – 30	2000

Other sizes upon request!

\* The following types are available **from stock** in the standard version = 1)

Plate dia. mm	Leg dia. mm	Height mm / Item No.											
		4	5	6	7	8	9	10	11	12	13	14	15
10 x 0,4	1,6	060.104	060.105	060.106	060.107	060.108	060.109	060.110	060.111	060.112	060.113	060.114	060.115
14 x 0,5	2,5	–	060.205	060.206	060.207	060.208	060.209	060.210	060.211	060.212	060.213	060.214	060.215

With regard to all other sizes and heights, certain delivery times should be taken into account, min. quantities should also be observed.

**061**

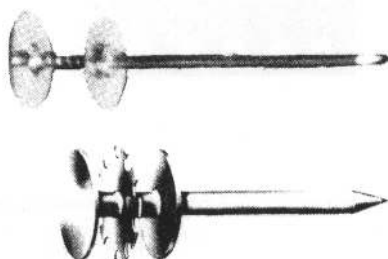
## Studs of aluminium with round plates

smooth plates, smooth leg, 10 x 0,4 mm plate dim., 1,6 mm leg dia.

Height mm	4	5	6	7	8	9	10	12
Item No.	061.104	061.105	061.106	061.107	061.108	061.109	061.110	061.112

Other sizes upon request!

(also available in copper, please specify quantity)

**062**

## Tin-plated studs with fixing pin

1) with plug-in type fixing pin

Plate dia. x thickn. mm	Leg dia. mm	Height mm	Fixing pin mm
8 x 0,4	1,5	3 – 15	1,5 x 12
10 x 0,4	1,6	4 – 15	1,6 x 13
10 x 0,4	2,5	5 – 15	2,5 x 13
14 x 0,5	2,5	5 – 15	2,5 x 13

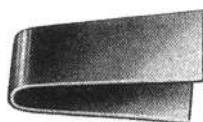
2) with welded fixing pin

Plate dia. x thickn. mm	Leg dia. mm	Height mm	Fixing pin mm
10 x 0,4	1,6	3 – 15	1,5 x 25
10 x 0,4	2,5	4 – 15	1,8 x 25
14 x 0,5	2,5	4 – 15	1,8 x 25
15 x 1,0	3,0	5 – 20	1,8 x 25/35

Other sizes upon request!

Not stocked! Min. quantity: 5000 pieces per size.

Also available with center plate (see item 059).

**063**

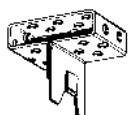
## Tin-plated core clamps

petiorated or smooth

Size mm	Length mm	Height mm
10 x 0,5	25	3 – 10
15 x 0,5	30	5 – 15

Height = parallel position of both limbs.

Not stocked! Min. quantity: 5000 pieces per size.

**064**

straight shape



curved shape

## Tin-plated anchor chaplets

straight or curved, perforated

Width x thickness	Height	Min. quantity
10 x 0,5 mm	4 – 15 mm	100/5000 p.
15 x 0,5 mm	4 – 15 mm	5000 p.
25 x 0,5 mm	4 – 20 mm	5000 p.

The following heights in size **10 x 0,5 mm** are stocked in straight shape.

Height mm	064.104	064.105	064.106	064.107	064.108	064.109	064.110	064.112	064.113	064.114	064.115
Item No.	4	5	6	7	8	9	10	12	13	14	15

With regard to all other sizes and heights, certain delivery times should be taken into account, min. quantities should also be observed.



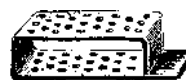
## Tin-plated perforated chaplets

straight or curved, perforated

Width x thickness	Height	Min. quantity
5 x 10 x 0,5 mm	3 - 10 mm	5000 p.
10 x 10 x 0,5 mm	3 - 12 mm	100/5000 p.
10 x 20 x 0,5 mm	3 - 15 mm	100/5000 p.
15 x 20 x 0,5 mm	4 - 15 mm	5000 p.
25 x 25 x 0,5 mm	4 - 18 mm	5000 p.

The following heights are stocked in straight shape.

Dimensions	Height mm / Item No.							
	4	5	6	7	8	9	10	12
10 x 10 x 0,5	065.104	065.105	065.106	065.107	065.108	065.109	065.110	065.112
10 x 20 x 0,5	065.304	065.305	065.306	065.307	065.308	065.309	065.310	065.312



straight shape



curved shape

With regard to all other sizes and heights, certain delivery times should be taken into account, min. quantities should also be observed.

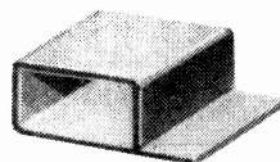
065

## Chaplets of aluminium

10 x 10 x 0,5 mm, straight, not perforated

Item No.	066.104	066.105	066.106	066.108	066.110
Height mm	4	5	6	8	10

Other dimensions upon request, also available in copper.  
Please specify quantity.



066

## Ready-glued studs and chaplets

One plate or surface at the chaplets is coated with solvent-free adhesive placed on siliconised paper.

No gasing because of the solvent-free glue. Strong bond to sand and coating.

All types and sizes of studs and chaplets with ref. 057 to 066 may be delivered ready glued!

We kindly ask for your inquiry. Quantity should be specified!



067

## Polystyrene K-Chaplets for aluminium casting

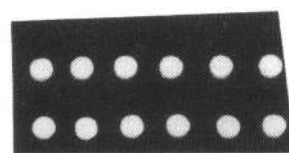
Made of extruded polystyrene, cylindrical. Vaporize during casting so that a completely homogeneous casting will be achieved.

When used in the 'drag' position it is possible that the chaplet will be compressed. So a bigger height should be chosen.

Dimensions available:

Diam.	Height	Min. quantity
9 mm	4 - 13 mm	1000 p.
12 mm	3 - 13 mm	1000 p.
16 mm	4 - 13 mm	1000 p.
20 mm	4 - 13 mm	1000 p.

All dimensions are available:  
1) ready glued  
2) without glue



067A

We have the following heights with 12 mm dia. ready-glued in stock:

Item No.	067.103	067.104	067.105	067.106	067.107	067.108	067.110	067.112
Height	3mm	4mm	5mm	6mm	7mm	8mm	10mm	12mm
Qty. p. pack. pcs.	3960	3780	3080	2660	2240	1960	1540	1260

With regard to all other sizes, certain delivery times should be taken into consideration, min. quantity should also be observed.

## Tin-plated pin studs

grooved, with straight or curved plates

Standard length: 200 mm, other lengths upon request.

Pin dia. mm	Plate size mm	Item No.		Pin dia. mm	Plate size mm	Item No.	
		straight	curved			straight	curved
3	25 x 15 x 1,0	068.103	068.203	10	80 x 40 x 2,0	068.110	068.210
4	30 x 20 x 1,0	068.104	068.204	12	85 x 45 x 3,0	068.112	068.212
5	45 x 25 x 1,0	068.105	068.205	15	100 x 60 x 3,0	068.115	068.215
6	50 x 30 x 1,5	068.106	068.206	18	120 x 70 x 3,0	068.118	068.218
8	65 x 40 x 2,0	068.108	068.208	20	150 x 80 x 3,0	068.120	068.220

Minimum quantity: 100 pieces per size.



068

## Special core supports

- shoulder core supports
- radiator core supports
- core holder
- sleeves

Upon request



069

## Tin-plated skimming gates

with or without hole or perforated

30; 40; 45; 55; 60; 70; 73; 80; 90; 110 mm dia.

Thickness: 0,20; 0,32; 0,52; 0,80; 1,00 mm

Not stocked! Minimum quantity: 1000 pieces.

Also available in aluminium.



070

**071**

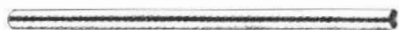
## Vent pipes of sheet metal

perforated or smooth, bright or tinned

Diam. 3,2–15,0 mm, wall thickness 0,2–1,5 mm (acc to the diam.), length 55–1600 mm (acc. to the diam.)

Your inquiry should specify length, diameter and wall thickness.

Not stocked! Minimum quantity per size: 1000 pieces.

**072**

## Slotted pipes bright, untinned

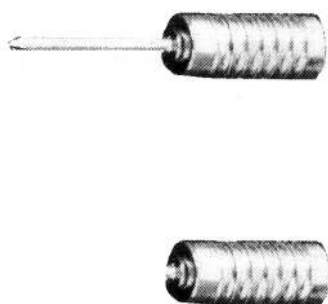
of sheet metal, wall thickness 0,5 mm, slot width 1,5 mm

Standard length 2000 mm (also available in 1000 mm length).

Item No.	072.104	072.105	072.106	072.108	072.110
Height mm	4,0	5,0	6,3	8,2	10,0

Not stocked! Minimum quantity: 100 m.

For further products for art foundries please see item 425-427

**073**

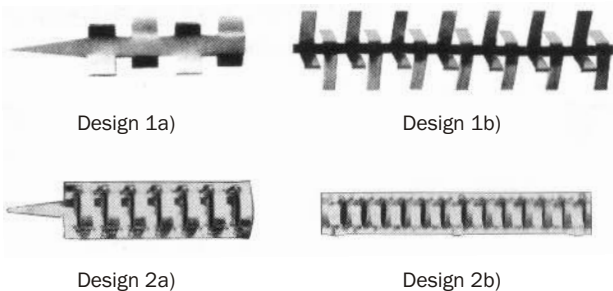
## Tin-plated cooling nails, grooved, with tip

Length mm (without tip)	Body dia. mm / Item No.					
	5	6	8	10	12	15
10	073.001	073.101	-	-	-	-
15	073.002	073.102	073.201	073.301	073.401	-
20	073.003	073.103	073.202	073.302	073.402	073.501
25	073.004	073.104	073.203	073.303	073.403	073.502
30	073.005	073.105	073.204	073.304	073.404	073.503
40	-	-	073.205	073.305	073.405	073.504
50	-	-	073.206	073.306	073.406	073.505
60	-	-	073.207	073.307	073.407	073.506
70	-	-	073.208	073.308	073.408	073.507
80	-	-	073.209	073.309	073.409	073.508
90	-	-	-	073.310	073.410	073.509
100	-	-	-	073.311	073.411	073.510

Other sizes upon request.

Not stocked! Minimum quantity to be ordered: 200 per size.

Also available **without** tip or of **stainless or acid-resistant steel (V2A)**, with or without tip.

**074**

Design 1a)

Design 1b)

Design 2a)

Design 2b)

## Tin-plated chills

a) with tip up to 100 mm long

b) without tip 500 mm long

### 1) Herringbone shaped

Width mm	12	17	22	26	30	35	45
Thickn. mm	1,0	1,0	1,0	1,0	1,0	1,0	2,0
	-	-	1,5	1,5	1,5	1,5	-
	-	-	2,0	2,0	2,0	2,0	-

### 2) Ripped

Width mm	13	22	26	35
Thickn. mm	1,0	1,0	1,0	1,0
	-	-	-	1,5

Not stocked! Minimum quantity: 100 per size.

**075**

## Tin-plated chill coils

500 mm long (Other lengths upon request)

Wire dia. mm	Outside dia. mm				Wire dia. mm	Outside dia. mm					
1,0 mm	8	10	-	-	3,0 mm	25	30	35	40	45	50
1,5 mm	10	15	20	-	4,0 mm	30	35	40	45	50	60
2,0 mm	15	20	25	30	5,0 mm	30	35	40	45	50	60
2,5 mm	20	25	30	40							

Not stocked! Minimum quantity: 100 per size.

**076**

## Tin-plated chill cages

Wire dia. mm	Outside dia. of cage mm				Height (not incl. tip) mm
1,0	8	10	-	-	15 - 40
1,5	15	20	-	-	20 - 50
2,0	15	20	25	30	25 - 50

tip passing through the centre

Wire dia. mm	Outside dia. of cage mm					Height (not incl. tip) mm
2,5	20	25	30	-	-	30 - 100
3,0	25	30	35	40	50	30 - 100
4,0	30	35	40	50	-	40 - 100
5,0	40	50	-	-	-	50 - 100

Not stocked! Minimum quantity: 100 per size.



## Core wire, not annealed (bright-hard)

077

Package size 25 kgs, endless or in 1000 mm lengths

Type	Diameter mm / Item No.				
	2,0	3,0	4,0	5,0	6,0
Endless	077.102	077.103	077.104	077.105	077.106
1000 mm length	077.202	077.203	077.204	077.205	077.206

Other diameters upon request.



## Core wire, annealed (soft)

078

Package size 25 kgs, endless or in 1000 mm lengths

Type	Diameter mm / Item No.						
	2,0	3,0	4,0	5,0	6,0	8,0	10,0
Endless	078.102	078.103	078.104	078.105	078.106	-	-
1000 mm length	078.202	078.203	078.204	078.205	078.206	078.208	078.210

Other diameters upon request.



## Core fixation KH 100 (2 parts) Item-no. 079.100 (patent-protected)

079

Especially designed for the fixation of cores in copes when using automatic moulding plants. Consists of a locking bolt, which will be shot with its main part into the core so that only the fixing pins will be outside of the core (ill.A) and a dowel, which has to be installed in the cope. During core setting both parts must be connected (ill.B). The fins of the bolt will get caught stepless by the dowel and the core will be fixed securely.

The system is designed for core weights up to 10 kgs (100N) ( for air-flow moulding machines; when chemical binder are used even higher). For bigger cores two or more systems may be used.

A



B



## Tin-plated core nails, square

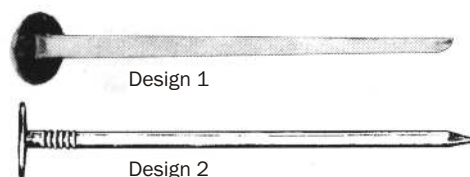
080

with large, flat head, in 5 kgs packages

Designs:

1) machine forged, tapered with tip (shape 11) preferred in the foundry industry  
For quantities of more than 250kg we grant special prices!

2) press molded, cylindrical, notched (available up to 250mm length!)



Length mm	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	200
Design	Item No.																
Tapered																	
up to 250 kg	080.103	080.104	080.105	080.106	080.107	080.108	080.109	080.110	080.111	080.112	080.113	080.114	080.115	080.116	080.117	080.118	080.120
over 250 kg	080.203	080.204	080.205	080.206	080.207	080.208	080.209	080.210	080.211	080.212	080.213	080.214	080.215	080.216	080.217	080.218	080.220
Cyl.	080.303	080.304	080.305	080.306	080.307	080.308	080.309	080.310	080.311	080.312	080.313	080.314	080.315	080.316	080.317	080.318	080.320

Core nails are also available **bright** untinned or of **pure aluminium** or **pure copper**.

## Moulder's pins, in 5 kgs packages

081

**Standard design:** with large, flat head, without tip on request available without head or with hook head; with tip.

Current dimensions (the  marked types are the **standard dimensions**)



Length mm	Width mm				
	1,0	1,1	1,2	1,4	1,6
	Item No.				
20	081.001	-	-	-	-
25	081.002	-	-	-	-
30	081.003	-	-	-	-
40	081.004	081.101	-	081.300	-
50	-	-	081.201	-	-
55	-	-	081.202	-	-
60	-	-	081.203	081.301	-
65	-	-	-	081.302	-
70	-	-	-	081.303	-
80	-	-	081.204	081.304	081.401
90	-	-	-	-	081.402
100	-	-	-	081.305	081.403
120	-	-	-	-	081.404
130	-	-	-	-	081.405
150	-	-	-	-	081.406

Length mm	Width mm				
	1,8	2,0	2,2	2,5	2,8
	Item No.				
100	081.501	081.601	-	-	-
110	081.502	-	-	-	-
120	081.503	081.602	-	-	-
130	081.504	-	081.701	-	-
140	081.505	081.603	-	-	-
150	081.506	081.604	081.702	-	-
160	-	-	081.703	-	-
170	-	-	-	081.801	-
180	-	081.605	081.704	081.802	-
190	-	-	-	081.803	-
200	-	-	081.705	081.804	081.901
220	-	-	-	-	081.902
240	-	-	-	-	081.903
260	-	-	-	-	081.904
280	-	-	-	-	081.905
300	-	-	-	-	081.906

The above sizes are standard sizes, we also supply other sizes up to 4 mm diam. and 400 mm long. Also available in **pure aluminium**, **pure copper**, **brass** or **stainless steel**; please specify quantities. Minimum quantity for not stocked dimensions: 25 kgs.

082



## Sleekers of steel (Length L = overall length)

### 1) Spoon-type sleekers

Item No.	Sleeker dims. mm	L = mm	Spoon dims. mm
082.113	90 x 37	275	85 x 30
082.115	80 x 32	250	75 x 25
082.117	70 x 27	230	70 x 23
082.117A	70 x 27	230	65 x 23
082.119	65 x 25	220	65 x 21
082.119A	55 x 19	205	55 x 18
082.121	50 x 18	190	55 x 17
082.121A	50 x 18	190	33 x 23
082.130	65 x 25	210	52 x 30
082.130A	70 x 27	230	55 x 35
089.024	30 x 12	150	30 x 12
089.024A	30 x 13	150	35 x 11
089.025	45 x 15	160	30 x 14



### 2) Shovel-type sleekers

Item No.	Sleeker dims. mm	L = mm	Shovel dims. mm
082.112	90 x 37	275	75 x 35
082.114	80 x 32	250	65 x 31
082.116	70 x 27	230	60 x 27
082.118	65 x 25	230	57 x 25
082.118A	55 x 20	205	55 x 18
082.120	50 x 18	190	45 x 12
082.120A	50 x 18	190	40 x 16

### 3) Sleekers of various types

Item No. 082.087 *	65 x 44 mm	L = 210 mm	53 x 30 mm
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Item No. 082.093A	54 x 17 mm	L = 210 mm	48 x 14 mm
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Item No. 082.122	65 x 25 mm	L = 190 mm	Fußbr. 14 mm
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Item No. 082.122A *	50 x 18 mm	L = 160 mm	Fußbr. 10 mm
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Item No. 082.124	135 x 26 mm	L = 260 mm	Head dia. 24 mm
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Item No. 082.124A	115 x 22 mm	L = 215 mm	Head dia. 19 mm
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Item No. 082.152 *	50 x 18 mm	L = 200 mm	Width 12 mm
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Item No. 082.152A *	55 x 12 mm	L = 205 mm	Width 07 mm
---------------------	------------	------------	-------------

Item No. 082.153 *	65 x 25 mm	L = 250 mm	Width 14 mm
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Item No. 082.220	31 x 15 mm	L = 165 mm	40 x 8 mm
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\* These types are being phased out; available in limited quantities only!

083



## Trowels of steel with wooden handle

The dimensions given are the dimensions of the shovel blade.

Item No. 083.080	160 x 55 mm
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Item No. 083.080A	115 x 55 mm
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Item No. 083.080B *	180 x 60 mm
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Item No. 083.081	150 x 50 mm
------------------	-------------

Item No. 083.082 *	130 x 35 mm
--------------------	-------------

Item No. 083.082B	130 x 40 mm
-------------------	-------------

Item No. 083.083	130 x 35 mm
------------------	-------------

Item No. 083.083A	130 x 40 mm
-------------------	-------------

Item No. 083.083B	100 x 35 mm
-------------------	-------------

Item No. 083.083C	130 x 20 mm
-------------------	-------------

Item No. 083.084	120 x 25 mm
------------------	-------------

Item No. 083.084A	160 x 40 mm
-------------------	-------------

Item No. 083.084B	130 x 40 mm
-------------------	-------------

Item No. 083.086H *	120 x 45 mm pointed - oval - concave
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Item No. 083.086M *	120 x 45 mm pointed - oval - straight
---------------------	---------------------------------------

Item No. 083.085A *	090 x 55 mm
---------------------	-------------

with cranked and curved handle (without wooden handle)

\* These types are being phased out; available in limited quantities only!

084



## Spare wooden handles for trowels

Item No. 084.001

dia. 35 mm, length 85 mm, with metal collar

## Vent prickers with hard-wood handle Item No. 085.001

of quality steel, round, length 300 mm, dia. 6 mm

**085**

## Calipers

with sturdy flat legs, without scale

1) No. 416 Inside caliper 2) No. 417 Outside caliper

Length	150 mm	200 mm	250 mm	300 mm	400 mm	500 mm	600 mm	750 mm	1000 mm
Meas. width	200 mm	260 mm	325 mm	390 mm	520 mm	650 mm	780 mm	975 mm	1300 mm
Type	Item No.								
No. 416	661.015	661.020	661.025	661.030	661.040	661.050	661.060	661.075	661.100
No. 417	661.215	661.220	661.225	661.230	661.240	661.250	661.260	661.275	661.300



Nr. 416 Nr. 417

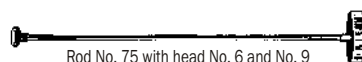
**086**

## 'Colonne'-steel rod No. 75

1) Rod No. 75 Item No. 087.075

2) suitable heads

Material/Design	Item No.							
Steel	087.001	—	087.003	087.004	087.006	—	—	—
Bronze	087.101	087.102	—	—	—	087.107	087.108	087.110
Dia. mm	31	31	17	17	24	41	41	50
Width mm	8	8	14	14	8	14	14	16
Edges	sharp	rounded	sharp	rounded	rounded	sharp	rounded	rounded



Rod No. 75 with head No. 6 and No. 9

**087**

No. 1 & 2 3 & 4 6 7 & 8 10  
These types are being phased out;  
available in limited quantities only!

## Jaggers of steel (Length given L = overall length)

**088**

1) Cranked

Item No. 088.097 *	400 x 25 mm
Item No. 088.099 *	350 x 20 mm
Item No. 088.101	300 x 18 mm
Item No. 088.103	300 x 13 mm
Item No. 088.105	260 x 14 mm

Item No. 088.107	260 x 10 mm
Item No. 088.109	200 x 12 mm
Item No. 088.111	210 x 7 mm
Item No. 088.111A	300 x 7 mm



2) Uncranked

Item No. 088.147 *	350 x 15 mm
Item No. 088.147B *	345 x 20 mm



3) Blunt food

Item No. 088.096 *	400 x 25 mm
Item No. 088.100 *	300 x 18 mm
Item No. 088.100A *	390 x 18 mm
Item No. 088.102 *	300 x 13 mm
Item No. 088.104 *	260 x 14 mm

Item No. 088.104A *	330 x 14 mm
Item No. 088.106 *	260 x 10 mm
Item No. 088.106A *	330 x 10 mm
Item No. 088.108 *	200 x 12 mm
Item No. 088.110A *	300 x 7 mm



\* These types are being phased out; available in limited quantities only!

## Small moulder tools of steel (Length given L = overall length)

**089**

Item No. 089.001

45 x 15 mm L = 180 mm 35 x 13 mm



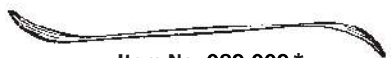
Item No. 089.002

30 x 13 mm L = 150 mm 27 x 13 mm



Item No. 089.007

30 x 13 mm L = 200 mm 30 x 3 mm



Item No. 089.009 \*

30 x 5 mm L = 170 mm 30 x 4 mm



Item No. 089.010 \*

30 x 5 mm L = 170 mm 30 x 6 mm



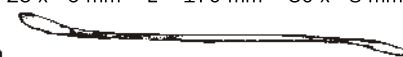
Item No. 089.014

25 x 8 mm L = 175 mm 30 x 8 mm



Item No. 089.015

25 x 6 mm L = 170 mm 30 x 8 mm



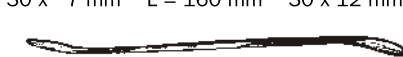
Item No. 089.016

25 x 7 mm L = 170 mm 25 x 6 mm



Item No. 089.016A

30 x 7 mm L = 160 mm 30 x 12 mm



Item No. 089.017

25 x 4 mm L = 175 mm 30 x 5 mm



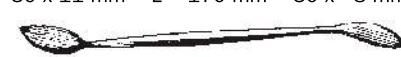
Item No. 089.019 \*

18 x 12 mm L = 135 mm 10 x 7 mm



Item No. 089.022A

30 x 11 mm L = 170 mm 30 x 8 mm



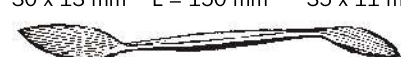
Item No. 089.024

30 x 12 mm L = 150 mm 30 x 12 mm



Item No. 089.024A

30 x 13 mm L = 150 mm 35 x 11 mm



Item No. 089.025

45 x 15 mm L = 160 mm 30 x 14 mm

\* These types are being phased out; available in limited quantities only!

## 090

### Finishing buttons of bronze (ill. depicts 1/3 of the actual size)

Item Nos.



090.012A



090.013



090.013A



090.020A



090.021



090.026



090.027



090.028



090.036



090.040



090.044



090.045



090.204

These types are being phased out; available in limited quantities only!

## 091

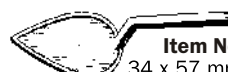
### Finishing spoons of bronze (Length given L = overall length)



Item No. **091.085Z**  
60 x 38 mm L = 140 mm



Item No. **091.085M**  
44 x 80 mm L = 155 mm



Item No. **091.085D**  
34 x 57 mm L = 120 mm

These types are being phased out; available in limited quantities only!

## 092

### Finishing spoons of steel (Length given L = overall length)



Item No. **092.050B**  
75 x 48 mm L = 180 mm

Item No. **092.050M**  
85 x 47 mm L = 200 mm



Item No. **092.138A**  
62 x 36 mm L = 190 mm



Item No. **092.138B**  
65 x 35 mm L = 190 mm



Item No. **092.138C**  
70 x 41 mm L = 210 mm

## 093

### Metal tool boxes

with tray and handles, sturdy design, with lock,  
with baking enamel, size: appr. 690 x 360 x 310 mm Item No. **093.101**



## Cutting pliers

with polished head, heavy-duty type

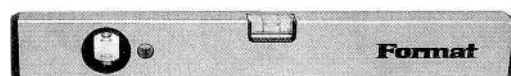
Item No.	094.001	094.002	094.003	094.004
Length	160 mm	180 mm	210 mm	225 mm



094

## Precision spirit levels of light metal

Item No.	095.102	095.104	095.105	095.106
Length	400	600	800	1000 mm



095

## Moulders brushes

1) Round brush with quill sleeve

Type 680 (goat hair = red sleeve)

Type 605 (fine hair = green sleeve)



096

Size	0	2	4	6	8	10	12	14	16	18	20	22	24	26
Collar dia.	4	6	8	10	12	14	16	18	20	22	24	26	28	30 mm
Hair length	23	26	32	36	39	42	46	51	54	56	59	61	64	68 mm
Type	Item No.													
680	096.100	096.102	096.104	096.106	096.108	096.110	096.112	096.114	096.116	096.118	096.120	096.122	096.124	096.126
605	096.200	096.202	096.204	096.206	096.208	096.210	096.212	096.214	096.216	096.218	096.220	096.222	096.224	096.226

2) Round brush with metal sleeve

Type 683 (goat hair)

Type 610 (fine hair)



No.	2	4	6	8	10	12	14	16	18	20	22	24
Collar dia.	8,5	10	13	17	20	23	26	29	32	36	39	43 mm
Hair length	23	28	32	40	44	50	55	60	62	65	70	75 mm
Type	Item No.											
683	096.302	096.304	096.306	096.308	096.310	096.312	096.314	096.316	096.318	096.320	096.322	096.324
610	096.402	096.404	096.406	096.408	096.410	096.412	096.414	096.416	096.418	096.420	096.422	096.424

## Angle brushes

Type 681 (goat hair)

Type 606 (fine hair)

No.	6	10	14	18	22
Collar dia.	10	14	18	22	26 mm
Hair length	36	42	51	56	61 mm
Type	Item No.				
681	097.106	097.110	097.114	097.118	097.122
606	097.206	097.210	097.214	097.218	097.222



097

## Flat brushes

Standard handle length: 12-17 cm (longer handles at extra charge)

Width	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
1) Type 686 (goat hair)								
Item No.	098.005	098.007	098.010	098.015	098.020	098.025	098.030	098.040
HL mm	32	33	35	40	43	45	48	52
Thickn. mm	3,5	3,5	3,5	4,5	5,5	6,0	6,5	8,5

2) Type 621 (fine hair)

Item No.	098.105	098.107	098.110	098.115	098.120	098.125	098.130	098.140
HL mm	30	30	32	36	38	40	42	48
Thickn. mm	3,5	3,5	3,5	4,5	5,5	6,0	6,5	8,5

3) Type 845 (half-white bristles)

Item No.	098.205	098.207	098.210	098.215	098.220	098.225	098.230	098.240
BL mm	26	29	31	33	35	38	40	45
Thickn. mm	5,0	5,0	5,0	5,5	6,5	6,5	8,0	8,5

4) Type 860 (similar to 845, however, substantially stronger)

Item No.	098.305	098.307	098.310	098.315	098.320	098.325	098.330	098.340
BL mm	35	36	37	40	45	52	56	64
Thickn. mm	6,0	6,0	6,0	6,5	7,0	7,5	9,0	9,5

5) Type 820 (half-white bristles), with round handle

Item No.	098.401	098.402	098.403	098.404	098.405	098.406
Width appr.	12	13,5	17	19	21	23 mm
BL appr.	30	30	30	35	35	40 mm
Thickn. appr.	5,0	5,0	5,0	6,0	7,0	7,0 mm



098



**099**

## Pointed brushes

half-white bristles, with metal sleeve

**Type 270**, round      **Type 705**, flat

Size	2	4	6	8	10	12
<b>Type 270 Dia.</b>	2,25	3,25	4	4,75	6	7 mm
<b>Item No.</b>	099,102	099,104	099,106	099,108	099,110	099,112
<b>Type 705 Width</b>	2,8	4,5	6,3	8,3	10	12 mm
<b>Item No.</b>	099,202	099,204	099,206	099,208	099,210	099,212

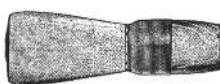
Size	14	16	18	20	22	24
<b>Type 270 Dia.</b>	8,5	10,5	12	14	16	17 mm
<b>Item No.</b>	099,114	099,116	099,118	099,120	099,122	099,124
<b>Type 705 Width</b>	14,3	16,8	18	21	23,8	26,8 mm
<b>Item No.</b>	099,214	099,216	099,218	099,220	099,222	099,224

**100**

## Annular brushes Type 1040

standard bristles, with plastic collar

<b>Item No.</b>	100,102	100,104	100,106	100,108	100,110	100,112	100,114	100,116
Size	2	4	6	8	10	12	14	16
Collar dia.	20	25	30	35	40	45	50	55 mm
BL	60	65	65	70	75	80	85	85 mm

**101**

Type 1405

**101A**

Type 1415

## Tapered brushes

**Type 1405**

standard bristles

<b>Item No.</b>	101,108	101,112	101,116	101,120	101,124	101,208	101,210	101,212	101,214	101,216
Size	8	12	16	20	24	8	10	12	14	16
Collar dia.	25	31	36	40	44	17	20	23	26	29 mm
BL	48	55	60	70	75	42	42	45	50	55 mm

## Tapered brushes

**Type 1415**

half-white bristles

**102**

## Radiator brushes Type 1200

standard bristles, handle length 360 mm, thickness of bristles 10 mm

<b>Item No.</b>	102,110	102,115	102,120	102,125	102,130
Width	1"	1 1/2"	2"	2 1/2"	3"
Bristle length	41	42	46	48	55 mm

**103**

## Water droplet brushes Item No. 103.001

prime horsehair, with wire handle, 24 mm collar dia., 350 mm total length, 125 mm long horse hair

**104**

## Mason brushes of fibers

good quality, short handle

<b>Item No.</b>	104,001
Diameter	55
Bristle length	90

**105**

## Hand brooms

with wooden handle

<b>Item No.</b>	105,001	105,002	Longer handle upon request!
Material	horsehair	coco fibers	

**106**

## Workshop brooms

length of bristles 90 mm, 5 rows, wood 310 x 65 mm (larger brooms also available)

<b>Item No.</b>	106,001	106,002
Material	horsehair	coco fibers

**106A**

## Workshop brooms, narrow

1) with fine, black-grey fibers 'Arenga' (similar to coco fibers)

2) with red, smooth plastic bristles of 'Elaston'

Width	40	50	60	80	100 cm
Material	<b>Item No.</b>				
Arenga	106,201	106,202	106,203	106,204	106,205
Elaston	106,301	106,302	106,303	-	-

**107**

## Pattern brushes, prime quality horsehair

handle length 150 mm, length of horsehair 80 mm

<b>Item No.</b>	107,002
Diameter	80 mm

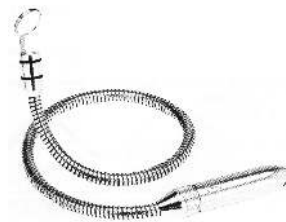


## Control mirrors Item No. 108.002

flexible, with light, overall length 680 mm

### Design:

With two replaceable mirrors (one round diam. 30 mm, one rectangular 43x65 mm), magnetic holder of mirror with LED-lamp (3 Lumen), flexible metal tube shank, handle suitable for one AA-lithium SL 760 battery (contained in delivery). The light is reflected by the mirror onto the area to be checked.



108

## Halogen magnetic lamps

with flexible arm, Item No. 109.001

with prot. glass, special reflector, total reflector dia. 70 mm, length 600 mm, with a 12 Volt/20 Watt halogen bulb, built-in transformer and clamping attachment



109

## Water atomisers, tin plated

with brass riser and handle

Item No.	110.101	110.102
Cap.	0,5 ltr.	1,0 ltr.



110

## Water atomisers

with light-metal reservoir; top part, spray pipe, riser and nozzle of brass

Nozzle dia.	0,5	0,8	1,0	1,5	2,0	3,0 mm	Spares		
Cap.	Item No.						Top part	Reservoir	Riser
0,5 ltr.	111.101M	111.102M	111.103M	111.104M	111.105M	111.106M	111.401M	111.411	111.421
0,3 ltr.	111.201M	111.202M	111.203M	111.204M	111.205M	111.206M	111.402M	111.412	111.422
Spare Nozzle	111.301	111.302	111.303	111.304	111.305	111.306	-	-	-

May also be delivered with reservoir of polyethylene.



111

## Measuring jugs

with handle, of hard pl. material, natural colour, with scale

Item No.	112.001*	112.002	112.005	112.010	112.020	112.030	112.050
Cap.	Ltr.	0,1	0,25	0,5	1,0	2,0	5,0
Height	mm	75	120	135	170	205	267
Scale increment	ml	10	5	50	50	100	100
Material		PP	PP	PP	PE	PE	PE

\* without handle



112

## Plasticine (modeling compound)

to be used at room temperature, non toxic, not smearing. According to producers' declaration **free of sulphur**. Therefore usable also in connection with silicones (tests should be done in before nevertheless). Temperature resistant up to 40 °C, in 500 gr packages (red also in 1kg packages available).

Item No.	916.001	916.002	916.003	916.004	916.005	916.006	916.007	916.008	916.009	916.101
Colour	green	brown	yellow	blue	red	grey	black	white	violet	red (1kg p.)

Other colors upon demand!



113

## Industry plasticine (Design Clay) brown

inherently stable modeling compound, after heating to 50 ° - 60 °C soft and pliable, between - 30 ° to + 40 °C absolutely stable, surfaces can be smoothed after cooling, even plaster casts can be made from the original pattern, therefore also ideal for rapid prototyping.

Item No.	916.201M	916.202
Version	Standard	Light
spec. weight g/cm³	1,45	0,86
workg. temperature	55-60 °C	55-60 °C
Weight/Pack.	2,3 kgs	1,3 kgs

Remark: the Light-version is 100% free of sulphur, has the same volume and the same productiveness as the standard type.



113A

## Super plasticine

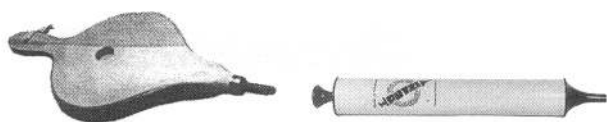
considerably **softer and of greater plasticity** than the standard plasticine, excellent workability, 650 gr packages (compl. carton contains 32 p.)

Item No.	917.001	917.002
Colour	yellow	red

According to producers' declaration **free of sulphur**. Therefore usable also in connection with silicones (tests should be done in before nevertheless).



114

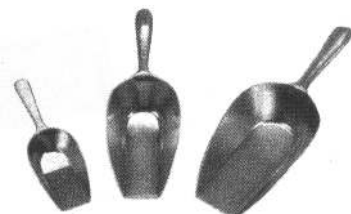
**115**

pear shape

cyl. shape

**Bellows**

Item No.	115.101	115.201
Design	Pear-shaped, of hard wood	Cyl. shape
Dimension	200 x 280 mm	Ø 75 x 500 mm lg.

**116****Shovels for weighing, made of aluminium**

with handle, poured in one piece, very stable version, handy to use, hygienic

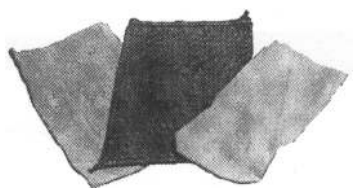
Item No.	116.185	116.210	116.250	116.265	116.290	116.310	116.350	116.400	116.430
Length	185 mm	210 mm	250 mm	265 mm	290 mm	310 mm	350 mm	400 mm	430 mm
Vol. ab.	0,1 l	0,2 l	0,3 l	0,4 l	0,5 l	0,6 l	1,2 l	2,1 l	3,3 l

**117****Water or blacking pots**

galvanized, pot with handle and lugs

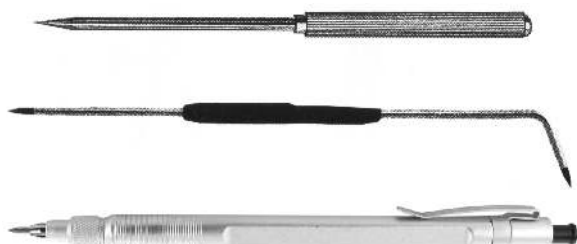
Item No.	Diameter	Height	Capacity
117.001	140 mm	90 mm	1,0 Ltr.
117.002	140 mm	150 mm	2,0 Ltr.
117.003	160 mm	185 mm	3,0 Ltr.
117.005	220 mm	190 mm	6,0 Ltr.

Other sizes upon request!

**118****Dust bags**

with rounded edges

Item No.	Material	Dimensions
118.001	fine muslin	27 x 15 cm
118.002	coarse linen	30 x 20 cm
118.003	coarse jute	30 x 20 cm

**119****Hard metal scribers**

for hard materials, such as steel and castings

1) with knurled handle, dia. 8 mm, dia. of needle 4 mm

Item No.	Design	Length
666.103	1 straight needle	180 mm
666.104	1 straight and cranked needle	250 mm

2) Lead pencil shape No. 3540

Item No.	Design	Length	Spare needles
667.001	HM-insert with feeder	150 mm	667.002

**120****Metal etching pen**

Item No. 906.001

Each handy pen always contains two interchangeable, transparent cartridges. Writes and marks simply, cheaply and instantaneously; for permanent or temporary use. Distinctive black marking also on hardened, thin walled or delicate components. May be used on steel, copper, nickel and other non-ferrous metals (but **not** on aluminium).

Spare cartridges are available (Item No. 906.002)

**120A****Marking paste LYRA-mark**

marks quickly and legible on all surfaces. Temperature resistant up to 1000°C. Especially suitable also for rusty, oily, smooth and wet surfaces! Easy to use. Tube of 50ml cont.

Item No.	120.201	120.204*	120.206	120.208
Color	white	yellow	black	blue

\* yellow only up to 250°C resistant

## Folding rules with springs

**121**

Material	Length	Width	Elem.	Grad.:	1% shrink.	1,25% shrink	2% shrink.	mm/mm
Wood	1 m	16 mm	6	Item No.	-	-	668.120	668.100
Wood	2 m	16 mm	10		668.210	-	-	668.200
Plastic	1 m	16 mm	5		668.310	-	-	-
Plastic	2 m	16 mm	10		-	668.312	-	-
Plastic	1 m	13 mm	10		-	-	-	668.300



**Remark:** 2 % shrinkage is being discontinued and therefore available in limited quantities only.

## Roll-tape measures with shrinkage graduation length 2 mtrs.

**121A**

Tape measure of hardened steel, built in an impact housing, auto-roll back and stop-key, shrinkage graduation at the lower edge, accuracy acc. to DIN 866, stop at the 0-position.

Item No.	668.410	668.412	668.415	668.420
Graduation	1,0%	1,25%	1,5%	2,0%



Other shrinkage graduations upon request!

## Wooden rammers with flat head

**122**

shaft dia. 28 mm, thickness 15 mm

Item No.	122.001	122.002	122.003	122.004	122.005
Total length mm	250	500	750	1000	1250
Width top mm	90	90	100	100	100
bottom mm	80	80	80	80	80
Head length mm	120	130	170	180	180



## Strickles, strong design

**123**

25 mm triangular steel

Item No.	123.001	123.002	123.003	123.004	123.005	123.006
Length cm	40	50	60	70	80	100



Other length upon request.

## Simplex – soft headed hammers with malleable cast iron clamping housing,

**124**

with replaceable hammer elements and amazonas wood handle

Following **elements** are available in all combinations:

TPE-soft, blue (soft)	Plastic, red (hard)
Rubber compound, black (medium)	Nylon, white (extremely hard)
Super plastic, white (medium)	Soft metal, Silver (high strength)



Size = Head dia.	Head length	Hammer length	Type / Item No.											
			TPE-soft		Rubber compound		Super plastic		Plastic		Nylon		Soft metal	
			complete	element	complete	element	complete	element	complete	element	complete	element	complete	element
30 mm	90	300 mm	124.003	124.030	124.203	124.230	124.403	124.430	124.503	124.530	124.603	124.630	124.703	124.730
40 mm	110	330 mm	124.004	124.040	124.204	124.240	124.404	124.440	124.504	124.540	124.604	124.640	124.704	124.740
50 mm	135	350 mm	124.005	124.050	124.205	124.250	124.405	124.450	124.505	124.550	124.605	124.650	124.705	124.750
60 mm	145	405 mm	124.006	124.060	124.206	124.260	124.406	124.460	124.506	124.560	124.606	124.660	124.706	124.760
80 mm	175	490 mm	-	-	124.208	124.280	124.408	124.480	-	-	124.608	124.680	124.708	124.780

Item No. of spare parts

Type	Size = Head diameter				
	30	40	50	60	80 mm
Housing	124.903	124.904	124.905	124.906	124.908
Handles	124.913	124.914	124.915	124.916	124.918

Upon request these hammers may also be delivered with **light metal housings**.

## Simplex – sledge hammer with malleable cast iron housing

**125**

and replaceable inserts and hickory wood handle.  
For description of the elements see item no. 124!

Size = Head dia.	mm	80	100	125	140
Head length	mm	175	200	215	215
Hammer length	mm	800	1000	1040	1045
Handle length	mm	700	900	900	900

Size = Head dia.	Type / Item No.					
	Super plastic		Rubber compound		Spare	
	complete	element	complete	element	housing	handles
80 mm	125.108	125.180	125.008	125.080	125.208	125.308
100 mm	125.110	125.181	-	-	125.210	125.310
125 mm	125.112	125.182	-	-	125.212	125.312
140 mm	125.114	125.183	-	-	125.214	125.314



**126**



## Supercraft-Nylon hammers

no kick-back, no striking power loss

Head diameter	Hammer length mm	Handle / Item No.		Spares	
		Hickory	Steel pipe	Inserts	Hickory handles
20 mm	300	126.020	–	126.220	126.320
25 mm	305	126.025	126.125	126.225	126.325
30 mm	330	126.030	126.130	126.230	126.330
35 mm	335	126.035	126.135	126.235	126.335
40 mm	360	126.040	126.140	126.240	126.340
45 mm	365	126.045	126.145	126.245	126.345
50 mm	370	126.050	126.150	126.250	126.350
60 mm	370	126.060	126.160	126.260	126.360
70 mm	370	126.070	126.170	126.270	126.370
80 mm	380	126.080	–	126.280	126.380
80 mm*	880	126.081	–	126.281	126.381
100 mm*	1000	126.100	–	126.300	126.400

\* sledge hammers

**127**



## Rubber hammers with wooden handle

hard quality, ab. 90° Shore A, with flat sides

Item No.		127.001	127.002	127.003	127.004	127.005
Head dia.	mm	40	55	65	75	90
Head length	mm	80	90	115	130	140
Weight with handle	gr	170	300	480	800	1100

**128**

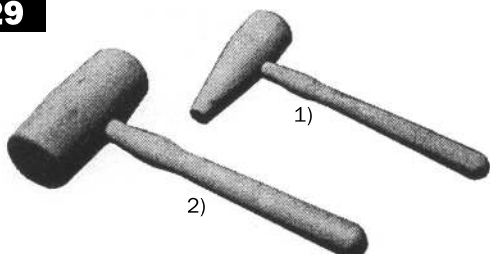


## FERROPLEX combination hammer

unifies the properties of fitters hammers and soft headed hammers. One side hammer head of high quality steel, on the other side replaceable nylon element, steel handle fixed at the hammer head.

Item No.		128.330	128.335
Head dia.	mm	30	35
Head length	mm	104	104
Hammer length	mm	290	295
Weight	gr	600	800

**129**



## Wooden mallets without metal shell

of prime hardwood, with handle

- 1) **Item No. 129.101 tapered\***  
height 130 mm, head dia. 50 x 20 mm, handle length 23 cm
- 2) barrel shape

Item No.		129.201	129.202	129.203	129.204	129.205	129.206
Height	mm	100	120	140	160	180	200
Diameter	mm	50	60	70	80	90	100
Handle length	cm	20	20	26	26	30	32

\* Discontinued. Available as stock lasts.

**130**



## Wooden mallets 'Triumph' with oval ash handle

and pressed on metal shell, white beech wood

Item No.		130.101	130.102	130.103	130.104	130.105	130.106
Head length	mm	100	120	140	160	180	200
Head diameter	mm	50	60	70	80	90	100
Handle length	cm	28	31	32	35	38	40
Weight appr.	kg	0,2	0,4	0,55	0,8	1,1	1,5

**131**



## Fitters hammers (No. 1)

with ash handle

Item No.		131.020	131.030	131.040	131.050	131.060	131.080	131.100	131.150	131.200
Hammer weight gr.		200	300	400	500	600	800	1000	1500	2000
Handle length cm		28	30	32	32	33	35	36	38	40

**132**



## Fettling hammers Item No. 132.001

with ash handle

300 gr. head  
with cutting edge at 90° to the handle  
handle length 32 cm

## Sledge hammers

with or without ash handle

	Weight / Item No.					
Size	3	4	5	6	8	10 kg
Without handle	133.003	133.004	133.005	133.006	133.008	133.010
With handle	133.103	133.104	133.105	133.106	133.108	133.110



**133**

## Hand hammer with ash handle DIN 6475

Item No.	134.100	134.150	134.200	134.300	134.500
Weight gr.	1000	1500	2000	3000	5000



**134**

## Pick-axes

with oval handle hole, DIN 20109, with or without ash handle

	Weight / Item No.				
Size	1,5	2,0	2,5	3,0	3,5 kg
Without handle	135.001	135.002	135.003	135.004	135.005
With handle	135.101	135.102	135.103	135.104	135.105



**135**

## Crowbar, straight edge and tip, dia. 30 mm, blue

Item No.	135.210	135.212	135.215	135.217	135.220
Length mm	1000	1250	1500	1750	2000
Weight kg	4,5	6,5	8,0	9,5	11,0



**135A**

## Watering cans, galvanized, Item No. 136.001

with rose, 12 l capacity, oval shape  
of extra thick sheet metal  
with handle, height 290 mm



**136**

## Plastic buckets

1) without lip, with handle and scale, heavy-duty version

Item No.	137.102	137.105	137.110	137.112
Cap. ltr.	2,5	5	10	12
Top dia. mm	165	210	250	295
Bottom dia. mm	145	155	200	235
Height mm	160	205	240	230

2) with lip, of polyethylene, with handle and scale  
heavy-duty version, acid-resistant

Item No. 137.215 Cap. 17 ltr., top dia. 330 mm  
bottom dia. 240 mm, height 315 mm



**137**

## Galvanized buckets, tapered, with handle

Item No.	Cap.	Lid	Top dia.	Bottom dia.	Height
138.114	15 L	without	315 mm	220 mm	275 mm
138.211	11 L	with	280 mm	200 mm	325 mm

Remark: Bucket with lid especially suitable for inflammable liquids!



138.114

138.211

**138**

## Wire baskets, round, with two grips

each wire cross electrically welded, fully galvanized

Item No.	Top dia. mm	Bottom dia. mm	Height mm	Weight appr. kg	Carryg. cap. appr. kg
139.030	400	300	250	1,5	15
139.050	440	350	330	2,5	25
139.075	490	340	430	3,1	37



**139**



## 140



Magdeburg-shovel



Holstein-shovel



Dutch-shovel



Frankfurt-shovel



Rim shovel

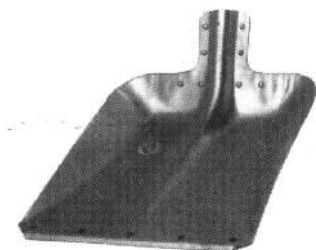


Halle-rim shovel

## Moulder's shovel of prime sheet metal

Item No.	Description	Size	Shovel dim.	Weight
<b>Magdeburg-shovel</b>				
140.001	silver	4	270 x 250 mm	1,25 kg
<b>Holstein-sand shovel</b>				
140.002	silver	2	270 x 250 mm	1,00 kg
140.003		3	280 x 260 mm	1,10 kg
140.102	red finish, oil-hardened	2	270 x 250 mm	1,00 kg
140.103		3	280 x 260 mm	1,10 kg
<b>Dutch-sand shovel</b>				
140.004	silver	2	300 x 250 mm	1,10 kg
140.104	red finish, oil-hardened	2	300 x 250 mm	1,10 kg
<b>Frankfurt-shovel</b>				
140.005	silver	5	300 x 270 mm	1,10 kg
140.105	red finish, oil-hardened	5	300 x 270 mm	1,10 kg
<b>Rim shovel</b>				
140.006	silver	5	340 x 260 mm	1,60 kg
<b>Halle-rim shovel with strengthened socket</b>				
140.007	silver	7	340 x 325 mm	1,60 kg
140.008		9	380 x 380 mm	2,00 kg

## 140A



## Lightweight rim shovel

of hard-aluminium, stainless, lightweight, strong as steel, with protective edge of steel

Item No.	Description	Size	Shovel dim.	Weight
<b>Rim shovel</b>				
140.202		5	340 x 265 mm	0,80 kg
<b>Halle-rim shovel</b>				
140.204		7	340 x 325 mm	0,85 kg
140.206		9	380 x 380 mm	1,00 kg

### Spares available:

steel protective edges, galvanized, with holes and rivets.

## 141



## Gravel forks

with slotted sockets, round tines, tine ends flattered

Item No.	No. of tines	Tine length/ width at tip	Spacing between the tines at tip	Weight
141.309	9	33/25 cm	22/20 mm	1,8 kg

**Remark:** Handles see page 39.



## Shovel handles (long handle)

Item No. 142.001

130 cm long, curved, ash, with round head



142

## D-shovel handles

Item No. 143.001

90 cm long, curved, ash



143

## Ax handles, cow-foot shape

Item No. 144.001

80 cm long, 62 x 25 mm, ash



144

## Pickax handles

Item No. 145.001

95 cm long, 76 x 44 mm, oval, ash



145

## Sledge hammer handles

Item No. 146.001

80 cm long, 48 x 28 mm, oval, ash

Upon request also available made of hickory or rubinia wood



146

## Broom handles

Item No. 147.001

1400 x 24 mm, brazil pine wood, with round head



147

## Hammer handles, ash

Item No.	148.028	148.030	148.032	148.033	148.035	148.036	148.038	148.040
Length cm	28	30	32	33	35	36	38	40
For hammers gr.	200	300	400/500	600	800	1000	1500	2000
Head end size mm	19 x 11	21 x 12	26 x 15	28 x 16	29 x 17	31 x 18	33 x 20	37 x 22

Upon request also available made of hickory or rubinia wood



148

## Hand hammer handles, ash

Item No.	148.126	148.128	148.130
Length cm	26	28	30
For hands gr.	1000	1500	2000
Head end size mm	31 x 18	33 x 20	37 x 22



148A

## THURA-flexible handles, DIN 5111/12

practically unbreakable durability 15 to 20 times of conventional handles

### a) Thura hammer handles

Item No.	149.026	149.028	149.030	149.032	149.033	149.035	149.036	149.038	149.040
Length cm	26	28	30	32	33	35	36	38	40
For hammer gr.	100	200	300	500	600	800	1000	1500	2000
Head end size mm	17 x 10	19 x 11	21 x 12	26 x 15	28 x 16	29 x 17	31 x 18	33 x 20	37 x 22

### b) Thura-sledge hammer handles

Item No.	149.060	149.080	149.180	149.090	149.190	149.290
Length cm	60	80	80	90	90	90
For hammer kg	3 a, 4	5 a, 6	6	8	8, 9 a, 10	12 a, 15
Head end size mm	42 x 25 (oval)	47 x 27 (oval)	42 x 32 (sq.)	52 x 31 (oval)	59 x 35 (oval)	50 x 35 (sq.)

### c) Thura-hand hammer handles

Item No.	149.326	149.328	149.330
Length cm	26	28	30
For hands gr.	1000	1500	2000
Head end size mm	31 x 18	33 x 20	37 x 22

### d) Thura-pickax handles\*

Item No.	149.095
Length cm	95
Head end size mm	74 x 42

\* Discontinued. Available as long as stock lasts.



149

## Metal wedges 'SFIX' (hammer wedges)

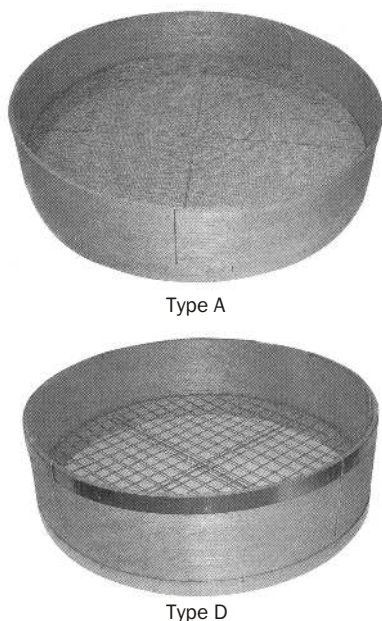
for fast and firm attachment of hammer heads to handles

Item No.	150.001	150.002	150.003	150.004	150.005	150.006	150.007	150.008	150.009
Size	00	0	1	2	3	4	5	5,5	6
For handle length cm	28	30	31 - 33	35	36 - 38	40	60 - 70	80 - 90	90
Wedge width mm	13	16	20	23	26	29	33	40	50



150

**151**



## Moulder's riddles

**A) with smooth beech rim**

and beech reinforcements at the bottom rim as well as galvanized strong wire meshing and bracing wires

**B) with outer iron hoop at the bottom rim**

**C) with outer iron hoop at the top rim**

**D) with outer iron hoop at the bottom and top rim**

Mesh width	Diameter / Item No.*				
	400	450	500	550	600 mm
1 mm	151.101	151.121	151.141	151.161	151.181
2 mm	151.102	151.122	151.142	151.162	151.182
3 mm	151.103	151.123	151.143	151.163	151.183
4 mm	151.104	151.124	151.144	151.164	151.184
5 mm	151.105	151.125	151.145	151.165	151.185
6 mm	151.106	151.126	151.146	151.166	151.186
8 mm	151.107	151.127	151.147	151.167	151.187
10 mm	151.108	151.128	151.148	151.168	151.188
12 mm	151.109	151.129	151.149	151.169	151.189
16 mm	151.110	151.130	151.150	151.170	151.190
20 mm	151.111	151.131	151.151	151.171	151.191

\* Please add 'A', 'B', 'C' or 'D' for the rim version to the Item No., f. ex. 151.145A

**152**



## Dust riddles with smooth beech rim

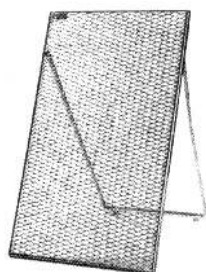
A) of galvanized steel wire mesh

B) of brass wire mesh (only 0.75 mm and 0.6 mm mesh width)

Mesh width	Diameter / Item No.*				
	400	450	500	550	600 mm
0,75 mm	152.101	152.111	152.121	152.131	152.141
0,60 mm	152.102	152.112	152.122	152.132	152.142
0,50 mm	152.103	152.113	152.123	152.133	152.143
0,43 mm	152.104	152.114	152.124	152.134	152.144

\* Please add 'A' or 'B' for the mesh version to the Item No.

**153**

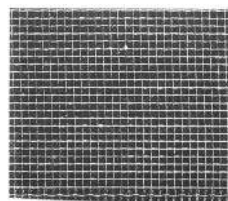


## Screens

frame of angle iron with welded wire-netting made of extended metal, mesh width ab. 50 x 20 mm (rhombic). With tiltable support made of angle iron. Completely galvanized.

Item No.	153.101	153.102	153.103
Width mm	600	800	800
Height mm	1000	1000	1200

**154**



## Wire mesh

galvanized or bright, mesh sizes 0.02 to 20.0 mm

copper mesh

brass mesh

Available upon request.

**155**



## Stainless steel riddles in accordance with ISO 3310-1

Sieve mesh of stainless steel, wire with soft solder seam, temperature resistant up to 170°C, mesh width: 0,02 - 125 mm in all standard increments.

Most common mesh sizes acc. ISO (mm): 0.02; 0.025; 0.045; 0.063; 0.09; 0.125; 0.18; 0.25; 0.355; 0.5; 0.71; 1.0; 1.4; 2.0; 2.8; 4.0; 5.6; 8.0; 11.2; 16.0; 22.4

Also available: st. steel lids and collecting vessels.

Diameter mm	100	150	200	200	300	400	500
Height inside mm	45	50	25	50	55	60	80
Item No. sieve	155.010	155.015	155.020	155.021	155.030	155.040	155.050
Item No. lid	155.110	155.115	155.120	155.121	155.130	155.140	155.150
Item No. vessel	155.210	155.215	155.220	155.221	155.230	155.240	155.250

Please specify the desired mesh sizes!

## Core box and ingot mould locks

galvanized, complete with screw adjustment feature and fixing holes

Item No.	Model	Adjustable length	Thread	Max. width	Design
528.000	530S-00	80 – 100 mm	M6	27 mm	punched
528.001	1042-10	100 – 125 mm	M6	34 mm	punched
528.002	420-00	200 – 225 mm	M8	65 mm	punched
528.004	102 C	100 – 115 mm	M6	50 mm	forged
528.005	103 C	120 – 140 mm	M8	70 mm	forged

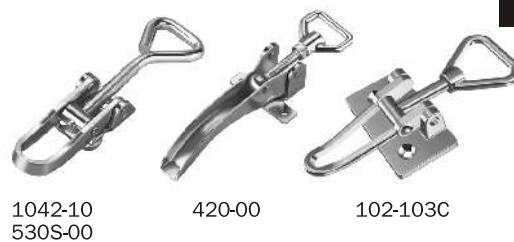
**Suitable hooks** (to be ordered separately)

### Type C

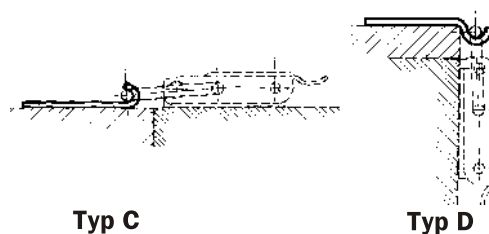
Item No.	Model	Width x length mm	Suitable for locks
528.100	C 15-01	15 x 45	530S-00
528.101	C 18-01	18 x 45	1042-10
528.103	C 28-01	28 x 40	420-00
528.107	31 C	30/18 x 20	102 C
528.109	41 C	45/22 x 30	103 C

### Type D

Item No.	Model	Width x length mm	Suitable for locks
528.100A	D 15-00	15 x 50	530S-00
528.102	D 18-00	18 x 50	1042-10
528.104	D 28-01	28 x 85	420-00
528.108	10 C	30 x 55	102 C
528.110	20 C	40 x 70	103 C



**156**



Typ C

Typ D

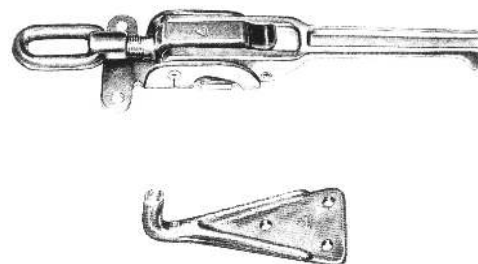
## Heavy duty excentric locks

for core boxes and/or ingot moulds, with screw holes and safety key

Item No.	528.300	528.301
Adjustable length	225 – 240 mm	270 – 295 mm
Thread	M 10 x 1,5 mm	M 14 x 1,5 mm
Eye inside	26 x 14 mm	40 x 16 mm
Eye thickness	8 mm	10 mm
Max. width	65 mm	86 mm

**Fitting hooks:** 60mm width x 120mm length, with 3 screw holes of 8.5mm hook diam. 12mm,

**Item No. 528.310** (Please order separately!)



**156A**

## Date plates, showing the casting date

**I) slide-in frame of brass, with dovetail groove, platelet and screw, 5mm thickness**

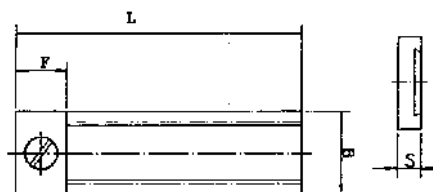
Letter size A mm	4	6	8	10	13	20
Frame width B mm	10	15	20	20	25	30
Suitable	Length L mm					
for 4 letters/figures	26	34	42	48	58	92
<b>Item No.</b>	553.041	553.061	553.081	553.101	553.131	553.191
for 5 letters/figures	30	40	50	57,7	69,5	110
<b>Item No.</b>	553.042	553.062	553.082	553.102	553.132	553.192
for 6 letters/figures	34	46	58	67	81	128
<b>Item No.</b>	553.043	553.063	553.083	553.103	553.133	553.193
for 7 letters/figures	38	52	66	76,5	92,5	146
<b>Item No.</b>	553.044	553.064	553.084	553.104	553.134	553.194
for 8 letters/figures	42	58	74	86	104	164
<b>Item No.</b>	553.045	553.065	553.085	553.105	553.135	553.195
for 10 letters/figures	50	70	90	105	127	200
<b>Item No.</b>	553.046	553.066	553.086	553.106	553.136	553.196

**Platelet complete with screw**

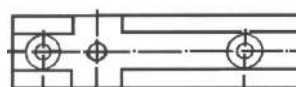
Width F mm	10	10	10	10	12	20
<b>Item No.</b>	553.048	553.068	553.088	553.108	553.138	553.197



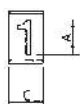
**157**



Other types upon request!



**Sliding strips made of PVC, grey,** length 2 mtrs also available! Those must be machined by the customer: cutted to the desired length; milled, drilled and threaded for the platelet; drilled for screw holes.



**II) Letters & figures: 0 to 9, A to Z, point, colon, blank, platelet, slash & hyphen** (other letters upon request)  
**1) cast of babbitt metal, raised characters**  
**2) milled of brass, sunk characters**  
**3) milled of brass, raised characters**  
 Available:  
**a) block type**  
**b) mirror image type**

Letters height A mm	4	6	8	10	13	20
Platelet width C mm	4	6	8	9,5	11,5	18
Platelet thickness mm	1,5	2	2	2	2	2
Raised: babbitt metal mm	1,0	1,0	1,2	1,4	1,8	2,0
brass mm	1,0	1,0	1,0	1,0	1,0	2,0
Sunk: brass mm	0,5	0,6	0,8	1,0	1,0	1,3

Letters height A mm	4	6	8	10	13	20
Design	Item No.					
1a) babbitt metal, raised	553.204	553.206	553.208	553.210	553.213	553.220
1b) babbitt metal, raised	553.224	553.226	553.228	553.230	553.233	553.240
2a) brass, sunk	553.304	553.306	553.308	553.310	553.313	553.320
2b) brass, sunk	553.324	553.326	553.328	553.330	553.333	553.340
3a) brass, raised	553.344	553.346	553.348	553.350	553.353	553.360
3b) brass, raised	553.364	553.366	553.368	553.370	553.373	553.380

**158**



## Pattern clocks of blue plastics

for showing the casting date on wood and resin patterns. Fix clock by means of a screw and set month so that the year marker points to the appropriate month.

Item No.	554.001	Clock, dia. 20 mm
Item No.	554.001-30	Clock, dia. 30 mm
Item No.	554.002	Arrow, length 8 mm

(Division 1-12)

Other divisions upon request!

**158A**



## Pattern clocks of blue plastics, 3 components

consisting of the insert for the year with screw hole and one ring each for month and day

Item No.	Description
554.101	Set of rings for month and day, diam. 28mm
554.102	Insert for the year, diam. 11mm

**159**



## Ingot mould clocks of steel (Division 1-12)

for showing the casting date on ingot moulds. Fix clock to ingot mould and set to the appropriate month (to be adjusted from behind), length 15mm

Ring of month		Fitting insert for year	
Diameter	Item No.	Diameter	Item No.
20 mm	555.001	8 mm	555.002
15 mm	555.101	7 mm	555.102
12 mm	555.201	6 mm	555.202
10 mm	555.301	5 mm	555.302

Other sizes and versions upon request.

**160**



## Logos

Can be supplied in any design in accordance with sample or drawing:

- 1) of plastic, **also self-adhesive**
- 2) of babbit metal, cast
- 3) as slide-in characters
- 4) of brass sheet metal, with base or without holes
- 5) of brass sheet metal, with pins
- 6) of plywood (for individual logos)

**161**



## Material quality plates

of blue plastic, to be glued to the mould, with rectangular base

Plate type	0.2091	0.2601	0.6015	0.6020		0.6025		0.6025C	0.6025CM	
Charact. size mm	16, 25	13, 16, 25	13	13, 20, 25, 32, 40		13, 16, 20, 25, 32, 40		13, 20	20	
Plate type	0.7038	0.7040	0.7042		0.7045		0.7050	0.7060	0.7070	
Charact. size mm	20, 25	13	13, 20, 25, 40		13, 16, 20, 32		13,16, 20, 25, 40	13, 20, 25, 40	13, 25	
Plate type	1.0416	1.0443	1.0553	1.2363		1.2379		1.2601	1.2769	1.2769P
Charact. size mm	13, 20	13, 16, 20	13, 20	10, 13, 16, 20, 25		10, 13, 16, 20, 25		6,13,16,20	10, 13, 16, 20, 25	20
Plate type	1.4825	1.4832	1.4848	1.4849	1.4852	1.4855	1.6020	1.6025C	1.7050	
Charact. size mm	6,8	6,8	6,8	6,8	6,8	6,8	20	20	13	
Plate type	1.7225	2.4879	3.3243	3.4848	3.4849	3.4852	3.4952	3.5101	3.5102	
Charact. size mm	20	6,8	6,8	6,8	6,8	6,8	6,8	6,8	6,8	
Plate type	CrMo		DN		PN	CrNiMo	Rg 5	Rg 10	GBz 10	
Charact. size mm	13, 16, 20, 25		4, 5, 10, 13		4, 5, 10, 13	10	8	8	8	

Other types and sizes upon request!

**162**



## Special signs 'material quality' of blue plastic, to be glued to the mould

Sign type	EN-GJL-150	EN-GJL-200	EN-GJL-250	EN-GJL-300	EN-GJL-350	EN-GJL-400	EN-GJL-500	EN-GJL-600
Charact. size mm	6, 8, 13	6 - 25	6 - 25	6 - 25	6 - 20	10	10	10
EN-JL-1030	EN-JL-1040	EN-JL-1050	EN-GJS-150	EN-GJS-200	EN-GJS-250	EN-GJS-300	EN-GJS-350-2	EN-GJS-350-22
6 - 20	6 - 25	10 - 20	6, 8	6, 8	6, 8	6, 8	13	10, 13, 20
EN-GJS-400	EN-GJS-400-15	EN-GJS-400-15-LT/RT	EN-GJS-400-18	EN-GJS-400-18-LT	EN-GJS-400-18-LT/RT	EN-GJS-400-18-LT/RT	EN-GJS-400-18-LT/RT	EN-GJS-400-18-LT/RT
10	6 - 25	13 - 25	6 - 20	6 - 20	6 - 20	6 - 20	6 - 20	6 - 20
EN-GJS-500-7	EN-GJS-600-3	EN-GJS-700	EN-GJS-700-2	EN-GJS-800-2	EN-GJS-800-8	EN-GJS-1000-5	EN-GJS-1200-2	EN-GJS-1200-2
6 - 25	6 - 25	10	6 - 25	6, 8	6, 8	6, 8	6, 8	6, 8
EN-GJS-1400-1	EN-GJS-1025	EN-GJS-1030	EN-GJS-1040	EN-GJS-1049	EN-GJS-1050	EN-GJS-1070	EN-GJS-1070h	EN-GJS-1070h
6, 8	6 - 10	6, 8	13	4 - 20	6, 10	13	13	13
EN-JS-1072	EN-JS-1082	EN-JS-1092	EN-JS-1102	EN-JS-1122	EN-JS-2070	EN-JS-3011	EN-JS-3031	EN-JS-3031
10 - 20	10 - 20	10 - 20	10 - 20	10 - 20	13, 25	6, 8, 20, 25	6, 8, 20, 25	6, 8, 20, 25

The possibilities of signs will be completed continuously. Please ask for your special desires! Also available: signs according to the old standard (like GGG-40).

Sign type	Meehanite cast iron	Meehanite sph. graph. iron	Vacuum casting
Charact. size mm	8, 10, 13, 15, 17, 20, 22, 26, 30, 34	10, 15, 20, 25, 30	20, 25, 30

Signs available f. ex. with base, web or rim. Other types and sizes upon request.

**You will find our complete pattern sign program in our catalogue 'Pattern making supplies'!**  
**Please ask for it!**



## Pattern signs of blue plastic

signs vaporize completely, without holes, suitable for glueing to the mould.

**Available in**

- 1) **block type** A-Z, 0-9, a-z, &, point, comma, +, @
- 2) **mirror image block type** A-Z, 0-9 only

Character height	4 mm	5 mm	6 mm	8 mm	10 mm	13 mm	16 mm	20 mm	25 mm	32 mm	40 mm
Design	Item No.										
block type	543.104	543.105	543.106	543.108	543.110	543.113	543.116	543.120	543.125	543.132	543.140
mirror type	543.204	543.205	543.206	543.208	543.210	543.213	543.216	543.220	543.225	543.232	543.240



**163**

## Pattern signs of black plastic

(the low-cost alternative!)

**Available in**

- 1) **block type** A-Z, 0-9, a-z, &, point, comma, +, @
- 2) **mirror image block type** A-Z, 0-9 only

Character height	4 mm	5 mm	6 mm	8 mm	10 mm	13 mm	16 mm	20 mm	25 mm	32 mm	40 mm
Design	Item No.										
block type	543.304	543.305	543.306	543.308	543.310	543.313	543.316	543.320	543.325	543.332	543.340
mirror type	543.404	543.405	543.406	543.408	543.410	543.413	543.416	543.420	543.425	543.432	543.440



**163A**

**Remark:** According to the very special calculation those signs may be delivered only in complete packages of 100 pcs. each off any letter or number.

**You will find our complete pattern sign program in our catalogue 'Pattern making supplies'!**  
**Please ask for it!**

## HOCO-superglue (CA-instant adhesive)

Type	Viscosity / Application	Cont.	Item No.
<b>HC 0</b>	<b>very low viscosity</b> , extremely quick bonding of smooth surfaces of plastics, rubber or pattern boards	25 gr.	937.525
<b>HC 1</b>	<b>low viscosity</b> , instantly bonding for high-strength bonding of plastics and/or metals	25 gr.	937.125
		50 gr.	937.150
<b>HC 3</b>	<b>medium viscosity</b> , for glueing porous surfaces, ideal for wood, rubber, ceramics, cork a.s.o.	25 gr.	937.625
		50 gr.	937.650
<b>HC 2</b>	<b>viscous</b> , a little longer wet life, for very porous surfaces and parts where a gaps must be filled	25 gr.	937.225
		50 gr.	937.250



HOCO-superglue



Activator spray/  
Catalyst



Glue  
remover

**163B**

Designation/Characteristics	Cont.	Item No.
<b>Activator spray/Catalyst</b> to be used together with the HOCO-superglue	150 ml	937.300

Designation/Characteristics	Cont.	Item No.
<b>Glue remover</b> for HOCO-superglue Removes deposits of glue from hands, cushions, plastics and many other materials	20 gr.	937.800

## Lettering sets of galvanized metal

block letters 0-9, A-Z, a-z

Height	Item No.		
	0 - 9	A - Z	a - z
10 mm	565.010	565.110	565.210
20 mm	565.020	565.120	565.220
30 mm	565.030	565.130	565.230
40 mm	565.040	565.140	565.240
50 mm	565.050	565.150	565.250
60 mm	565.060	565.160	565.260
80 mm	565.080	565.180	565.280
100 mm	565.100	565.200	565.300

Fitting lettering colour also available



Other heights or types upon request!

**164**

## Die sets, standard quality SE

Letters and numbers in plastic boxes, precise lettering for material strength up to appr. 800 N/mm<sup>2</sup>

Height	1 mm	2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	15 mm
□ x Lg.	6 x 65 mm	6 x 65 mm	6 x 65 mm	7 x 65 mm	8 x 65 mm	9 x 75 mm	11 x 76 mm	12 x 80 mm	14 x 80 mm	18 x 85 mm
Design	Item No.									
0 - 9	566.001	566.002	566.003	566.004	566.005	566.006	566.008	566.010	566.012	566.015
A - Z, &	566.101	566.102	566.103	566.104	566.105	566.106	566.108	566.110	566.112	566.115
a - z, +	566.201	566.202	566.203	566.204	566.205	566.206	566.208	566.210	566.212	566.215

Mirror image characters also available at extra price.  
(Individual dies also available)

Other heights upon request.



Illustration = standard lettering

**165**

## 166

Standard  
lettering



Mirror image  
lettering



Individual dies also available

## Precision stamps Type TB, depth of impact limited

for material up to appr. 1600 N/mm<sup>2</sup>  
hardness of engraving 58 - 60 HRC, in plastic boxes

Height	1 mm	1,5 mm	2 mm	2,5 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm
□ x Lg.	7 x 75 mm	7 x 75 mm	7 x 75 mm	7 x 75 mm	7 x 75 mm	8 x 78 mm	9 x 80 mm	11 x 80 mm	12 x 85 mm	14 x 90 mm
Design	Item No.									

### 1) Stamps for standard lettering

0 - 9	567.010	567.015	567.020	567.025	567.030	567.040	567.050	567.060	567.080	567.100
A - Z, &	567.110	567.115	567.120	567.125	567.130	567.140	567.150	567.160	567.180	567.200

### 2) Stamps for mirror image lettering

0 - 9	567.310	567.315	567.320	567.325	567.330	567.340	567.350	567.360	567.380	567.400
A - Z, &	567.410	567.415	567.420	567.425	567.430	567.440	567.450	567.460	567.480	567.500

## 166A



## Special stamps

In a variety of versions upon request!

Important remark for all stamps: Please always specify whether you want **left engraved** (legible after stamping) or **right engraved** (mirror image after stamping)!

## 166B



## Manual punch marking stamps, length ab. 135 mm

Marks by means of spring tension with adjustable power (11-22kp) letters, figures or special signs. Head with plastic protection, body nickel plated.

Fitting insert-stamps may be delivered as: 0-9, A-Z, a-z, combinations of letters and figures (i.e A1, 32, 1B, Az), logos, signs for shifts, and a variety of other graphic representable signs (Please ask for a special list). Height 2-3 mm.

Item No.	Punch Marker	567.601
	Insert	567.602

## 167



## Embossing press M 11 Item No. 568.001

Strong heavy-duty press for embossing of aluminium or stainless steel tapes. Height 4,8 mm

Delivery contains the press and one roll each of item 568.102 and 568.103 as well as symbol discs for standard and mirror image lettering.

Tapes available:

Item No.	568.101	568.102	568.103
Material	Aluminium	Aluminium	Steel
Colour	silver	silver	silver
Adhesive coat	with	without	without
Strip length	3,65 m	4,80 m	6,40 m

## 167A



## Embossing press Dymo 1540 Item-no. 568.154

Robust housing made of ABS-plastic, two symbol discs for horizontal and vertical printing. For plastic-tapes with 9mm width, height 5mm while horizontal printing; 4mm while vertical printing.

**Fitting self-adhesive tapes**, width 9mm, strip length 3 m

Item No.	568.155	568.156	568.157	568.158
Colour	black	blue	red	green

## 167B



## ROOVER-letter embossing presses

ideal for numbering pattern and core boxes, **high raised characters**, robust design, simple to operate

Embossing press			Aluminium embossing tapes			
Item No.	Type	Letter height	Item No.	Tape width	Thickn. appr.	Length appr.
568.201	T 10 A	6,35 mm (1/4")	568.211	12,7 mm (1/2")	0,35 mm	36,5 mtr.
568.202	T 20	9,55 mm (3/8")	568.222	22,2 mm (7/8")	0,55 mm	24,5 mtr.

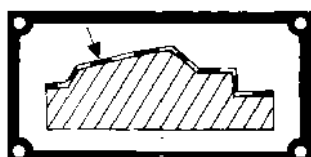
## 168



## Inventory labels

of aluminium, steel, stainless steel, brass, copper or galvanized metal, with or without holes, in all sizes and with all inscriptions; please specify quantity!

## 169



## Pattern contour signs

of anodised aluminium, background silver, lettering black, size 80 x 40 x 1,0 mm, acute corners, 4 holes.

Available in **4 designs**:

Design	Item No.	Design	Item No.
Stamp outside contour (see ill.)	570.001	Die outside contour	570.003
Stamp inside contour	570.002	Die inside contour	570.004



## Brass slotted vents

170

with concave bottom and knurled rim

Bottom thickness: 3-10 mm diam. = 2 mm; 12-30mm diam. = 2,5 mm  
Height: 3-20 mm diam. = 7 mm; 25-30mm diam. = 8 mm

Each package contains 100 p. per dia.

1) self-cleaning with **tapered slots**, from 10 mm dia. with one, 18 mm dia. and up with two reinforcing rings

a) slot width **0,3 mm (standard version)**

b) slot width **0,2 mm (for very fine sand)**

2) \* **Super-ring vents** – with up to **68 % more venting surface** thanks to tapered ring slots and conical vent channels, other features as described under 1)

3) with **0,3 mm straight slots** and reinforcing ring (10 mm dia. and up)

a) slot width **0,3 mm (standard version)**

b) slot width **0,2 mm (for very fine sand)**

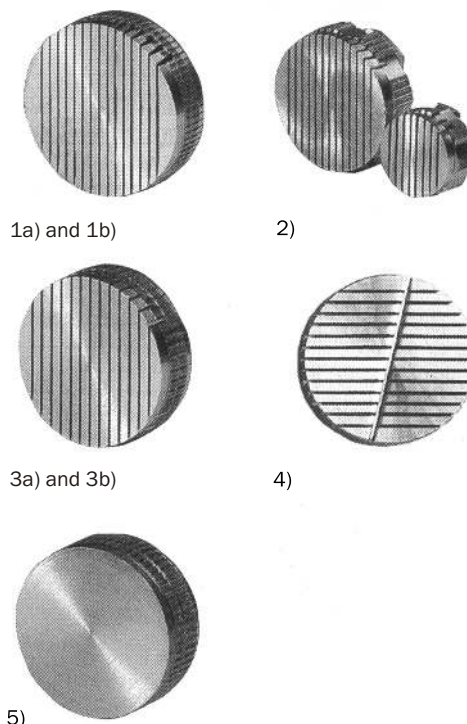
4) with **0,3 mm tapered slots** and reinforced front

5) **Blind vents** (without slots)

Diameter	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm	12 mm
Design	Item No.								
1a)	571.103	571.104	571.105	571.106	571.107	571.108	571.109	571.110	571.112
1b)	571.703	571.704	571.705	571.706	571.707	571.708	571.709	571.710	571.712
2)	-	-	-	-	-	-	-	571.210	571.212
3a)	571.303	571.304	571.305	571.306	571.307	571.308	571.309	571.310	571.312
3b)	571.803	571.804	571.805	571.806	571.807	571.808	571.809	571.810	571.812
4)	-	-	-	-	-	571.408	-	571.410	571.412
5)	571.503	571.504	571.505	571.506	571.507	571.508	571.509	571.510	571.512

Diameter	13 mm	14 mm	15 mm	16 mm	18 mm	20 mm	25 mm	26 mm	30 mm
Design	Item No.								
1a)	571.113	571.114	571.115	571.116	571.118	571.120	571.125	571.126	571.130
1b)	571.713	571.714	571.715	571.716	571.718	571.720	571.725	571.726	571.730
2)	-	571.214	571.215	571.216	571.218	-	-	-	-
3a)	571.313	571.314	571.315	571.316	571.318	571.320	571.325	571.326	571.330
3b)	571.813	571.814	571.815	571.816	571.818	571.820	571.825	571.826	571.830
4)	-	571.414	571.415	571.416	571.418	571.420	571.425	-	571.430
5)	571.513	571.514	571.515	571.516	571.518	571.520	571.525	571.526	571.530

\* Discontinued, available as long as stock lasts.



**Remark:** These vents are also available with a **different slot width**, a **different bottom thickness**, a **different height** or with **imperial dimensions**.

## Brass venting rims

170A

Especially designed for use on moulding machines where a maximum venting area in small places is necessary.

Standard slot type: 0,3 mm tapered (other slot types and non-slotted parts for screw holes also available!)

Standard sizes:

Width	Height	Length
15mm	12mm	30-200mm (max.)
20mm	10mm	30-200mm (max.)



## Steel slotted vents

171

for croning and hotbox core boxes, bottom thickness 2 mm, height 10 mm, from 10 mm dia. with one, 18 mm dia. and higher with two reinforcing rings.

Each package contains 100 p. per dia.

1) with **0,3 mm tapered slots** self-cleaning

2) with **0,3 mm straight slots** for light duties

3) with **0,2 mm straight slots** (ingot vents)

4) with **0,15 mm straight slots** (for ingots and low-pressure die casting)

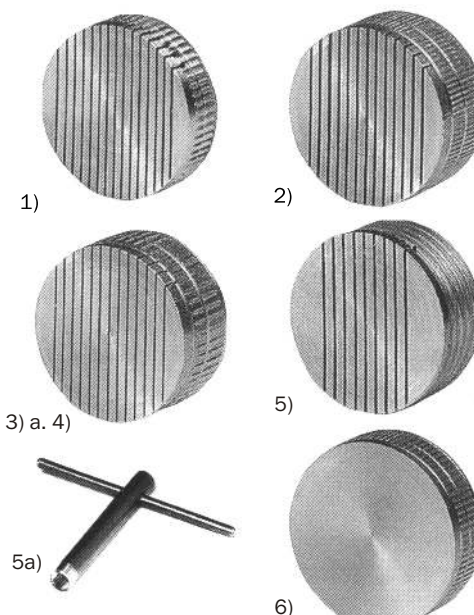
5) with **0,3 mm tapered slots, external thread and hexagonal recess**

5a) Key for screwing in the vent

6) **Blind vents** (without slots)

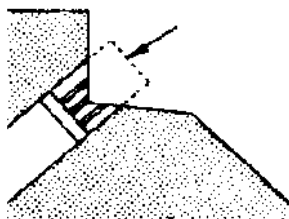
Diameter	2 mm	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm	12 mm
Type	Item No.									
1)	-	572.103	572.104	572.105	572.106	572.107	572.108	572.109	572.110	572.112
2)	-	572.203	572.204	572.205	572.206	572.207	572.208	572.209	572.210	572.212
3)	572.302	572.303	572.304	572.305	572.306	572.307	572.308	572.309	572.310	572.312
4)	-	572.353	572.354	572.355	572.356	-	572.358	-	572.360	572.362
5)	-	-	572.404	-	572.406	-	572.408	-	572.410	572.412
5a) Key	-	-	572.504	-	572.506	-	572.508	-	572.510	572.512
6)	-	572.603	572.604	572.605	572.606	572.607	572.608	572.609	572.610	572.612

Diameter	14 mm	15 mm	16 mm	18 mm	20 mm	25 mm	26 mm	30 mm
Type	Item No.							
1)	572.114	572.115	572.116	572.118	572.120	572.125	572.126	572.130
2)	572.214	572.215	572.216	572.218	572.220	572.225	-	-
3)	572.314	572.315	572.316	572.318	572.320	572.325	572.326	-
4)	572.364	572.365	572.366	572.368	572.370	-	-	-
5)	572.414	-	572.416	572.418	572.420	-	-	-
5a) Key	572.514	-	572.516	572.518	572.520	-	-	-
6)	572.614	572.615	572.616	572.618	572.620	572.625	572.626	572.630



**Remark:** These vents are also available with a **different slot width**, a **different bottom thickness**, a **different height** or with **imperial dimensions**

## 171A



## Deep slotted vents of steel

with a bottom **thickness of 6 mm**, slot width 0.3 or 0.2 mm, height 10 mm, for use in ingot moulds and low-pressure casting. These vents can be installed in corners, at radii or grooves thanks to the large bottom thickness (can be ground off).

Diameter	6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm
Slot width	Item No.								
0.3 mm	572.706	572.708	572.710	572.712	572.714	572.715	572.716	572.718	572.720
0.2 mm	572.726	572.728	572.730	572.732	572.734	572.735	572.736	572.738	572.740

**Each package contains 100 p. per diameter.**

Vents with a larger height and thicker bottom upon request.

## 171B



## Sintered vents made of steel

used for very difficult venting problems in gravity or low-pressure die-castings. A **maximum of venting** results from a large number of straight, parallel and uniform pores.

Tolerances: height +/- 0,5mm, diameter: + 0,08 mm; - 0,05 mm

Minimum quantity = 10 pcs. per item

Diam. mm	Pore diam. 0,5 mm			Pore diam. 0,3 mm			Pore diam. 0,1 mm			Pore diam. 0,05 mm			Pore diam. 0,03 mm		
	Number of pores	Item No.		Number of pores	Item No.		Number of pores	Item No.		Number of pores	Item No.		Number of pores	Item No.	
		Height 10 mm	Height 15 mm		Height 10 mm	Height 15 mm		Height 10 mm			Height 10 mm			Height 10 mm	
3	37	572.823	-	-	-	-	-	-	-	-	-	-	-	-	-
4	37	572.824	-	-	-	-	-	-	-	-	-	-	-	-	-
5	61	572.825	-	89	572.805	572.845	-	-	-	-	-	-	-	-	-
6	61	572.826	572.866	89	572.806	572.846	-	-	880	572.946	880	572.966	-	-	-
8	96	572.828	572.868	200	572.808	572.848	880	572.928	880	572.948	880	572.968	-	-	-
10	200	572.830	572.870	340	572.810	572.850	880	572.930	880	572.950	880	572.970	-	-	-
12	200	572.832	572.872	340	572.812	572.852	-	-	-	-	-	-	-	-	-
14	341	-	572.874	-	-	-	-	-	-	-	-	-	-	-	-
16	341	-	572.876	-	-	-	-	-	-	-	-	-	-	-	-
18	553	-	572.878	-	-	-	-	-	-	-	-	-	-	-	-
20	550	-	572.880	-	-	-	-	-	-	-	-	-	-	-	-
28	970	-	572.888	-	-	-	-	-	-	-	-	-	-	-	-
Design	solid						partial solid								

## 172



## Brass vents (mesh vents)

with mesh of stainless steel wires (Monel-metal) with a particularly high venting capacity, height 8 mm, **mesh width 0.4 mm**.

**Package with 100 p. per diameter.**

Item No.	573.004	573.005	573.006	573.008	573.010	573.012	573.014	573.015	573.016	573.018	573.020	573.025
Diameter	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm	25 mm

## 173



## Screen vents 'Super Vent' made of stainless steel

self-cleaning thanks to undulated wire openings, the air can escape through more than 43% of the surface area

**Mesh width 0.25 mm, package with 100 p. per diameter.**

Height	Diameter / Item No.											
	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm
6 mm	574.103	574.104	574.105	574.106	574.108	574.110	574.112	-	-	-	-	-
8 mm	-	-	-	574.206	574.208	574.210	574.212	574.214	574.215	574.216	574.218	574.220
10 mm	-	-	-	574.306	574.308	574.310	574.312	574.314	574.315	574.316	574.318	574.320

## 173A



## Perforated "Super Vents Hole" made of stainless steel

Hole-diam. 0.5mm, package with 100 pcs. per diameter

Height	Diameter / Item No.											
	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm	
6 mm	574.103L	574.104L	574.105L	574.106L	-	-	-	-	-	-	-	-
8 mm	-	-	-	574.206L	574.208L	574.210L	574.212L	574.214L	574.216L	574.218L	574.220L	
10 mm	-	-	-	574.306L	574.308L	574.310L	574.312L	574.314L	574.316L	574.318L	574.320L	

## 174



## Plastic vents, height 8 mm

Slot width (tapered)	Diameter / Item No.							
	6 mm	8 mm	10 mm	12 mm	15 mm	20 mm	25 mm	30 mm
0,3 mm	575.106	575.108	575.110	575.112	575.115	575.120	575.125	575.130
0,6 mm	575.206	575.208	575.210	575.212	575.215	575.220	575.225	575.230

## Vents for polystyrene

of **brass** or **aluminium**, with **0.2 or 0.3 mm straight slots**, knurled rim, without reinforcing rings, bottom thickness 2.0 mm.  
Height: 3-20mm diam. = 7mm; 25-26mm diam. = 8mm

**Package with 100 p. per diameter.**



**175**

Material	slot with	Diameter / Item No.																
		3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm	12 mm	13 mm	14 mm	15 mm	16 mm	18 mm	20 mm	25 mm	26 mm
Brass	0.3 mm	576.103	576.104	576.105	576.106	576.107	576.108	576.109	576.110	576.112	576.113	576.114	576.115	576.116	576.118	576.120	576.125	576.126
	0.2 mm	576.303	576.304	576.305	576.306	-	576.308	-	576.310	576.312	-	-	-	-	-	-	-	-
Alu	0.3 mm	576.203	576.204	576.205	576.206	576.207	576.208	576.209	576.210	576.212	576.213	576.214	576.215	576.216	576.218	576.220	576.225	576.226
	0.2 mm	576.403	576.404	576.405	576.406	-	576.408	-	576.410	576.412	-	-	-	-	-	-	-	-

Different slot width or bottom thickness available upon request!

## Perforated vents of aluminium

with holes and knurled rim, hole dia. 0.8mm, bottom thickness 1mm

Item No.	577.102	577.103	577.104	577.104-V	577.105	577.106	577.108
Diam. mm	2	3	4	4(4sq.)	5	6	8
Height mm	7						
No. of holes	1	1	4	4	5	6	12

Item No.	577.110	577.210	577.112	577.212	577.113	577.115
Diam. mm	10	10	12	12	13	15
Height mm	5,5					
No. of holes	19	28	22	36	36	30

Other heights, diam. of holes, bottom thicknesses or materials (brass, steel) upon request! Also blind vents!

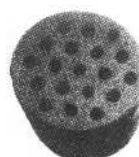


**176**

## Perforated vents 'Regitz system' of plastic

for cold-box, CO<sub>2</sub>- and vacuum-method, max. temperature 80°C, self-cleaning (conical holes widening from 0.4 to 0.8 mm), height 6 mm

Item No.	577.006	577.010
Diameter	6 mm	10 mm

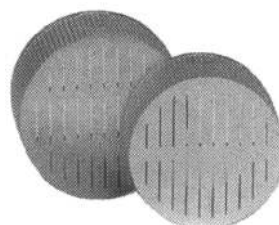


**176A**

## SV-vents made of stainless sinter steel

Especially designed for low-pressure die-casting of aluminium alloys. Improved stability, quick exchange, improved economy in operation. Also for high temperatures.

Diam. mm	Height mm	Joint	Slot width / Item No.				
			0.1 mm str.	0.12 mm tap.	0.2 mm tap.	0.25 mm tap.	0.3 mm tap.
2,5	5	without	-	-	578.302	-	-
3	5	without	-	-	578.303	-	-
4	5	without	-	-	578.304	-	-
5	5	without	-	-	578.305	-	-
6	10	without	578.106	578.206	578.306	578.406	578.506
8	10	without	578.108	578.208	578.308	-	578.508
8	10	with	578.108S	-	-	578.408S	-
10	10	without	578.110	578.210	578.310	-	578.510
10	10	with	578.110S	-	-	578.410S	-
12	10	without	578.112	578.212	578.312	-	578.512
12	10	with	-	-	-	578.412S	-
14	10	with	-	578.214S	578.314S	-	578.514S
16	10	with	-	578.216S	578.316S	-	578.516S
18	10	with	-	-	578.318S	-	578.518S
20	10	with	-	578.220S	578.320S	-	578.520S



**177**

## Vent cleaner

for slotted vent of all kinds

**1) Standard version** length 140mm, with rimmed screw and knife-blade  
**Item No. 579.001**

**Fitting spare blades:**

Item No.	579.002	579.003
Thickness of blade	0,2 mm	0,15 mm
for slot width	0,3 mm	0,2 mm

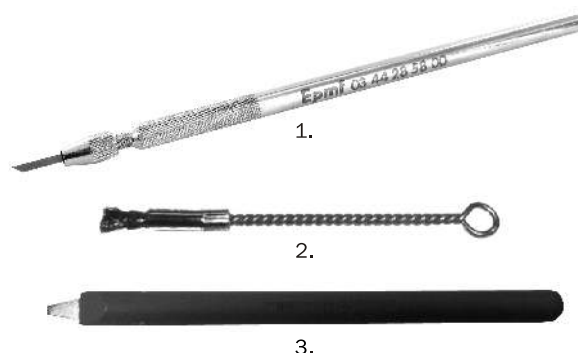
**2) Scrubbing brushes for vents:** tube handle length 150mm with interior thread and screwed brush made of steel wire, 0,25mm thick  
**Item No. 579.101**

**Spare brushes Item No. 579.102**

Spare brushes with other thickness or length or made of other material upon request!

**3) with a handle made of blue plastic**, handle-length about 150mm, 10mm Ø, blade not exchangeable, thickness of blade 0.25mm

Item No.	579.201	579.202
visible length of blade	10 mm	18 mm



**178**

III. 3) shows item 579.201 with the short blade

179

## Special HSS-step drills

for drilling vent holes in wood, resin, cast iron and steel.



Item No.	For vent dia.	Step dia.	Step length	Total length	Shaft dia.
580.003	3 mm	2,5 mm	15 mm	100 mm	3 mm
580.004	4 mm	3,5 mm	20 mm	120 mm	4 mm
580.005	5 mm	4,0 mm	30 mm	132 mm	5 mm
580.006	6 mm	5,0 mm	30 mm	139 mm	6 mm
580.007	7 mm	6,0 mm	30 mm	156 mm	7 mm
580.008	8 mm	6,0 mm	30 mm	165 mm	8 mm
580.009	9 mm	7,0 mm	30 mm	175 mm	9 mm
580.010	10 mm	8,0 mm	30 mm	185 mm	10 mm
580.012	12 mm	10,0 mm	30 mm	205 mm	12 mm
580.013	13 mm	11,0 mm	30 mm	205 mm	13 mm
580.014	14 mm	12,0 mm	30 mm	215 mm	14 mm
580.015	15 mm	13,0 mm	30 mm	220 mm	15 mm
580.016	16 mm	14,0 mm	30 mm	227 mm	16 mm
580.018	18 mm	16,0 mm	30 mm	240 mm	16 mm
580.020	20 mm	18,0 mm	30 mm	254 mm	16 mm
580.025	25 mm	23,0 mm	30 mm	230 mm	16 mm
580.030	30 mm	28,0 mm	30 mm	240 mm	16 mm

179A

## Multipin

The Multipin-system allows to get places for vents and degassing-systems during production and **before** using resins. There's no more need for drilling the finished core-box.

**Advantages:** Benefit of time up to 80%, saving of tools. Vents may be placed in an optimal position.

**The system is available as follows:**

### 1) Multipin-system-box, complete (Item No. 580.101)

containing all accessories:

25 pcs. Multipin each of vents-diameter 4, 6, 8, 10, 12, 15, 18, 20, 25, 30mm

15 pcs. Multifill (to close not used holes)

each of the same diameter as Multipin

2 mtr. tubes, each of diameter 2, 4, 6, 8 mm

and other material for setting.

### 2) Spare parts:

For vents dia.	4 mm	6 mm	8 mm	10 mm	12 mm	15 mm	18 mm	20 mm	25 mm	30 mm
Item No. <b>MULTIPIN</b>	580.104	580.106	580.108	580.110	580.112	580.115	580.118	580.120	580.125	580.130
<b>MULTIFILL</b>	580.304	580.306	580.308	580.310	580.312	580.315	580.318	580.320	580.325	580.330
<b>Tube</b>	580.202	580.204			580.206			580.208		

179B



## Supports for core-box vents, brass

These supports for the core-box vents will be placed during the production of resin core-boxes where the vents shall be placed later on.

So later boring is no longer necessary and the vents may be placed on **optimal** positions (also on positions where it would be very difficult to place borings).

Besides this gain of time and facilitation of work the supports will render possible a **quick and simple change of vents** when these will be damaged .

The dimension of the supports are fitting perfectly to the core-box vents made of brass with conical slots.

Fitting **tubes** are also available .

For vent dia.	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm
Boring back-side	3 mm	3,5 mm	4 mm	5 mm	7 mm	8 mm	10 mm	10 mm	10 mm	13 mm	16 mm
Item No.	580.504	580.505	580.506	580.508	580.510	580.512	580.514	580.515	580.516	580.518	580.520
Ref. No. of tube	-	-	580.604	580.605	580.607	580.608		580.610		580.613	580.616

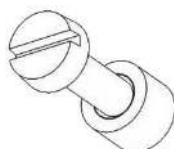
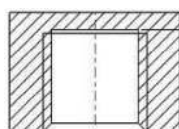
179C

## "Pseudo"-steel-vents

for an efficient core-box-production

These "pseudo-vents" allow to get places for vents already during production without later drilling. Optimal position of the vents.

They are delivered with an undersize of 0.2 mm for a solid fixation of the vents later on. May be screwed-out with a metric screw which can be screwed into the internal metric thread. Height 7 mm, bottom thickness 1 mm, fitting for vents of brass or aluminium.



Item No.	580.706	580.708	580.710	580.712	580.714	580.715	580.716	580.720
For vent dia.	6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	20 mm
internal thread	M 3			M 6				



## Core box clamps

180

of light metal and Conidur perforated sheet  
for sealing lateral core box openings

### 1) Gooseneck-shapes

Diameter	581.001	581.003	581.004	581.005	581.006	581.007	581.008
Item No.	36 mm	60 mm	70 mm	80 mm	110 mm	125 mm	160 mm

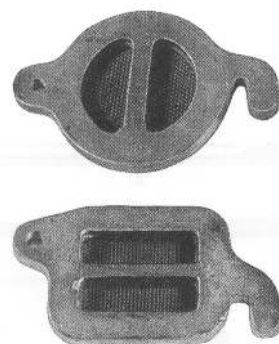
(diameter from c/l hole to c/l recess on the opposite side)

### 2) Rectangular shape

Length x width	581.021	581.022	581.023	581.024	581.025
Item No.	50 x 40 mm	60 x 50 mm	70 x 60 mm	100 x 80 mm	110 x 90 mm

(net body length **without** lateral projections)

The item will be discontinued, available in limited quantities only!



## Perforated brass sheet metal

180A

pickled and straightened

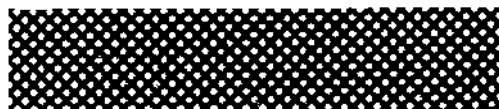
Available types and sizes:

### Item-No. 581.101:

2000 x 600 x 0,6 mm, hole-diam. 0,8 mm (also cuts available)

### Item-No. 581.201:

445 x 335 x 3 mm, hole-diam. 0,3 mm (no cuts available)



## Special sealing rope for gassing plates

181

for cold and thermo-setting method, of silicon, trapezoidal shape (for insertion into the milled groove)

### Item No. 181.001

Size: 12 x 10 x 5 mm; 10 degrees, 8 mm high, 4,5 mm hole diameter

Resistant up to 200°C.

## Dovetail cutter for sealing rope Item No. 181

Item No. 181.101, carbide-tipped, shank dia. 12 mm



181A

## Sealing ropes of silicone, round, solid

181B

transparent, 60° shore

Item No.	181.206	181.208	181.209	181.210	181.212
Diam. mm	6	8	9	10	12

Also in green or with interior diam. of 2-3 mm available.

Minimum quantity 25m per diam.



## UNITUBE blow-tubes

182

for blowing the core sand into the core boxes.

Made of impact-resistant plastics, inexpensive and uniquely flexible.

The depth may be adjusted by the rimmed screw and may be cut to accommodate virtually any flow rate, thus eliminating the need to stock several sizes.

Item No.	182.001	182.002
Design	Unitube	Unitube-screw
Dimension ab.	Ø 30 x 180 mm	M 30 x 2

### Available accessories:

Special cutter for the setting  
(for this cutter a 1" chuck will be needed)

Thread drill M 30 x 2mm

Item No. 182.101

Item No. 182.102



## Sealing caps

182A

for a safe sealing of blow-tubes dipping into the core box

There is a lot of different types and dimensions for Hot-Box, Croning, Cold-box or CO<sub>2</sub> available.

**Upon request!** Please indicate the desired quantity!



183



(Clamp w/tommy 777.400)

## Malleable cast iron screw clamps

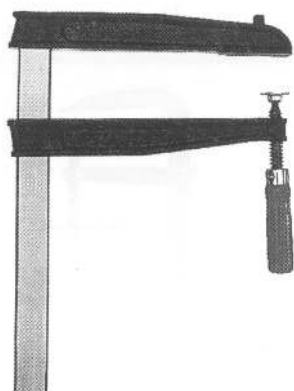
**up to 400 mm with clamping protection** Clamping force up to 7000N

Profile rail fluted on both sides, spindle galvanized, with plastic protectors up to 400 mm clamping width. **Anti-slip-system**, with wooden handles.

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
777.010	<b>TG 10</b>	100	50	15 x 5	0,26
777.012	<b>TG 12</b>	120	60	20 x 5	0,42
777.016*	<b>TG 16</b>	160	80	25 x 6	0,66
777.020*	<b>TG 20</b>	200	100	27 x 7	1,06
777.025*	<b>TG 25</b>	250	120	29 x 9	1,54
777.030*	<b>TG 30</b>	300	140	32 x 10	2,20
777.040*	<b>TG 40</b>	400	175	32 x 10	2,70
777.050*	<b>TGK 50</b>	500	120	35 x 11	2,70
777.060	<b>TGK 60</b>	600	120	35 x 11	3,00
777.080	<b>TGK 80</b>	800	120	35 x 11	3,53
777.100*	<b>TGK 100</b>	1000	120	35 x 11	4,00
777.125	<b>TGK 125</b>	1250	120	35 x 11	4,69
777.150*	<b>TGK 150</b>	1500	120	35 x 11	5,38
777.200*	<b>TGK 200</b>	2000	120	35 x 11	6,66
777.250*	<b>TGK 250</b>	2500	120	35 x 11	7,94
777.300*	<b>TGK 300</b>	3000	120	35 x 11	9,22

\* Those types may be also delivered with tommy (see ill., item-no. 777.400). Other intermediate sizes upon request

184



## Deep throat screw clamps

Clamping force up to 7000N

with rail fluted on both sides, spindle galvanized, with red vamish handle

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
778.030	<b>TGN30T20</b>	300	200	35 x 11	3,11
778.040	<b>TGN40T20</b>	400	200	35 x 11	3,41
778.060	<b>TGN60T20</b>	600	200	35 x 11	3,97
778.080	<b>TGN80T20</b>	800	200	35 x 11	4,67
778.100	<b>TGN100T20</b>	1000	200	35 x 11	5,15
778.140	<b>TGN40T25</b>	400	250	40 x 11	4,50
778.160	<b>TGN60T25</b>	600	250	40 x 11	5,06
778.180	<b>TGN80T25</b>	800	250	40 x 11	5,71
778.200	<b>TGN100T25</b>	1000	250	40 x 11	6,63

Clamps with larger reach and intermediate sizes as well as tommy also available.

185



## Clamp trolleys (without clamps)

**heavy-duty design** holds about 90 clamps

Item No.	Type	Lateral clamp holder	Dimension	Weight kg
779.001	<b>ZW 1</b>	without	500 x 600 x 1460	16,5
779.002	<b>ZW 2</b>	1	1000 x 600 x 1525	33,0

186



## All-steel screw clamps

Clamping force up to 6000N

**annealed, high-polish galvanized**

20% more clamping force with optimised rail profile, maximum security with linear transfer of force at the sliding arm, ergonomically shaped wood handle.

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
780.010	<b>GZ 10</b>	100	60	15 x 6	0,30
780.012	<b>GZ 12</b>	120	60	15 x 6	0,31
780.016	<b>GZ 16</b>	160	80	17,5 x 6,8	0,52
780.020	<b>GZ 20</b>	200	100	22 x 8,5	0,95
780.025	<b>GZ 25</b>	250	120	24,5 x 9,5	1,34
780.030	<b>GZ 30</b>	300	140	28 x 11	1,96
780.040	<b>GZ 40</b>	400	120	28 x 11	2,06
780.050	<b>GZ 50</b>	500	120	28 x 11	2,27
780.060	<b>GZ 60</b>	600	120	28 x 11	2,47
780.080	<b>GZ 80</b>	800	120	28 x 11	2,82
780.100	<b>GZ 100</b>	1000	120	28 x 11	3,22
780.125	<b>GZ 125</b>	1250	120	28 x 11	3,77

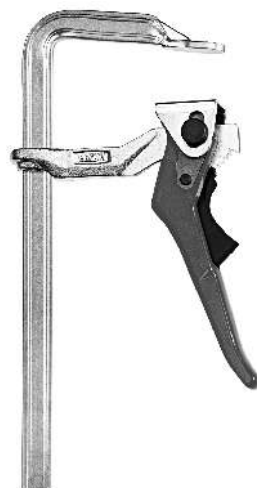
Intermediate sizes or tommy bar upon request!



## All-steel lever clamp annealed and high-polish galvanized

greater reserves of power with optimised rail profile, for even clamping force build-up, non-slip trigger release, quick, secure, strong, clamping force up to 8500N

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
781.012	<b>G12H</b>	120	60	13,5 x 5,6	0,49
781.016	<b>G16H</b>	160	80	16 x 7,5	0,64
781.020	<b>G20H</b>	200	100	19,5 x 9,5	1,11
781.025	<b>G25H</b>	250	120	22 x 10,5	1,44
781.030	<b>G30H</b>	300	140	25 x 12	2,27
781.040	<b>G40H</b>	400	120	25 x 12	2,41
781.050	<b>G50H</b>	500	120	25 x 12	2,61
781.060	<b>G60H</b>	600	120	25 x 12	2,84
781.080	<b>G80H</b>	800	120	27 x 13	3,58
781.100	<b>G100H</b>	1000	120	27 x 13	4,06



**187**

## All-steel clamp extra heavy-duty design

annealed, high polish galvanized, strength and breakage tested, special pressure plate, easily moveable and replaceable, spindle hardened, **clamping force appr. 22000 N** at 150 mm clamping width

Item No.	Type	Clamping width mm	Reach mm	Steel rail mm	Weight kg
782.130	<b>STB 30M</b>	300	175	40 x 20	5,61
782.140	<b>STB 40M</b>	400	175	40 x 20	6,10
782.150	<b>STB 50M</b>	500	175	40 x 20	6,67
782.160	<b>STB 60M</b>	600	175	40 x 20	7,23
782.180	<b>STB 80M</b>	800	175	40 x 20	8,35
782.200	<b>STB 100M</b>	1000	175	40 x 20	9,42
782.225	<b>STB 125M</b>	1250	175	40 x 20	10,77
782.250	<b>STB 150M</b>	1500	175	40 x 20	12,20

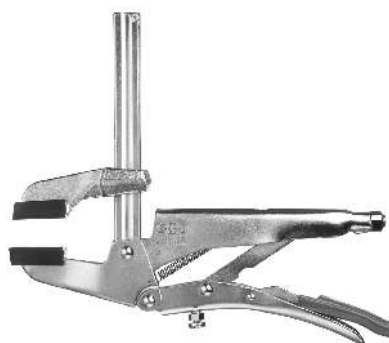


**188**

## Grip Pliers GRZ

parallel jaw faces, prism recess for small round parts, inclusive pressure caps for a gentle clamping of sensitive surfaces

Item No.	Type	Clamping width mm	Reach mm	Weight kg
189.010	<b>GRZ 10</b>	100	65	1,0
189.020	<b>GRZ 20</b>	200	65	1,2

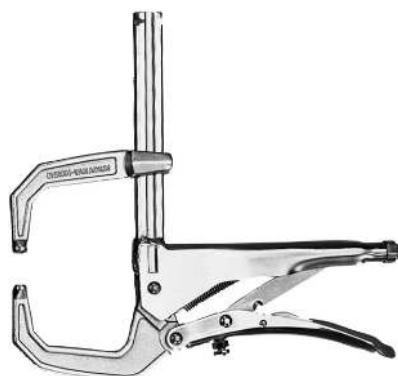


**189**

## Grip Pliers GRZC

for step-over clamping from both sides

Item No.	Type	Clamping width mm	Reach mm	Clamping depth mm	Weight kg
189.110	<b>GRZC</b>	110	80	40	1,1

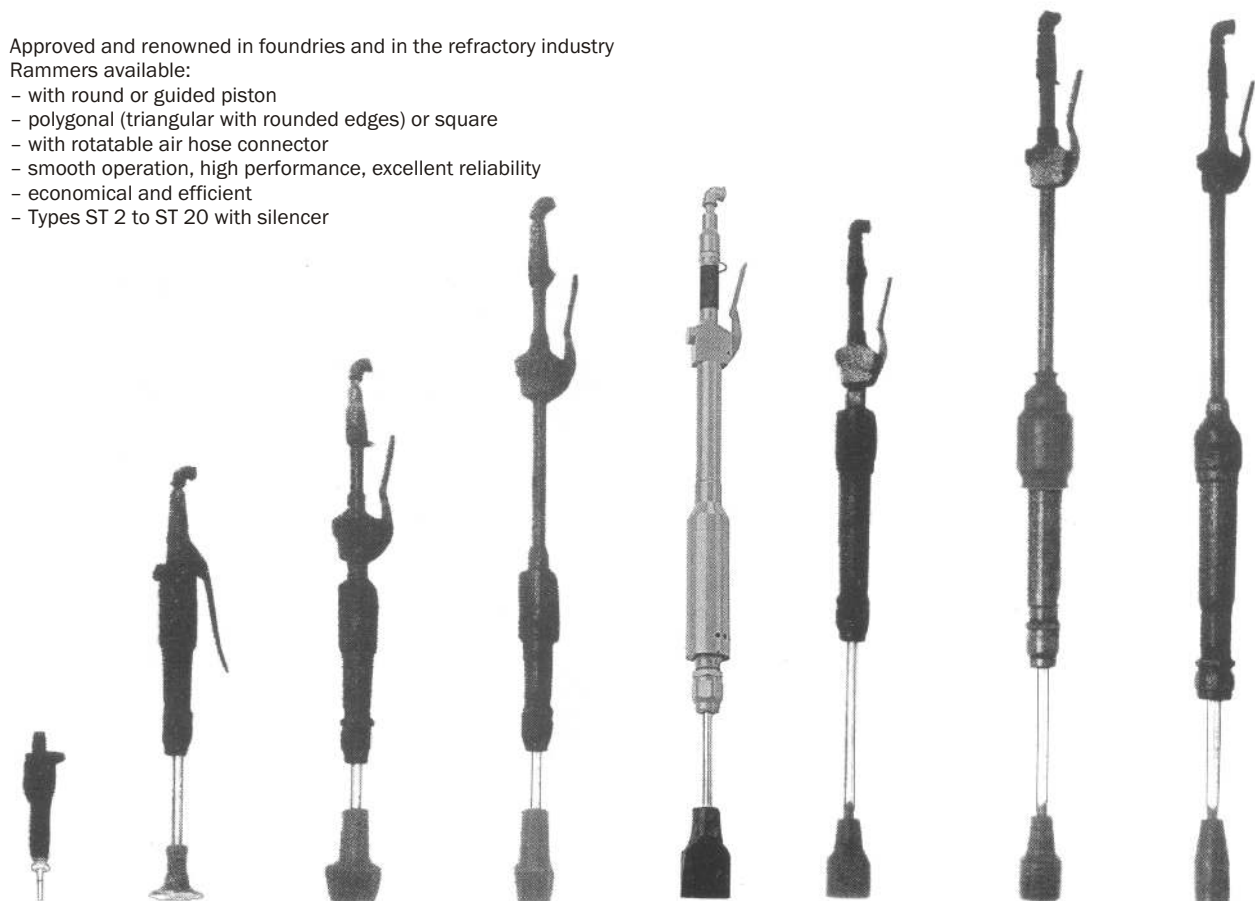


**189A**

Approved and renowned in foundries and in the refractory industry

Rammers available:

- with round or guided piston
- polygonal (triangular with rounded edges) or square
- with rotatable air hose connector
- smooth operation, high performance, excellent reliability
- economical and efficient
- Types ST 2 to ST 20 with silencer



ST 03 R

ST 02  
ST 1

ST 1 A.2

ST 1 A.1

ST 1 AP1G

ST 2

ST 20 with silencer

ST 38

Type	Item No.			Weight		Length mm	Piston				No. of strokes	Air- cons.	Air con.	Hose i. d.
	without silencer	with silencer	with vibration damper*	kg	Ram max. kg		Dia. mm	Stroke mm	MK	Form				
ST 03 R	190.001	—	—	1.0	0.30	230	16	40	Metr. 10	round	2500	0,20	R 1/4"i	10
ST 02 R	190.002	—	—	2.5	0.75	365	23	70	1	round	1900	0,40	R 1/4"i	10
ST 02 V	190.003	—	—	2.5	0.75	365	23	70	1	square	1900	0,40	R 1/4"i	10
ST 1 R.2	190.004	—	—	5.0	0.85	515	26	125	2	round	900	0,50	R 3/8"i	13
ST 1 P.2	190.005	—	—	5.0	0.85	515	26	125	2	polyg.	900	0,50	R 3/8"i	13
ST 1 AR.2	190.006	—	—	5.2	0.85	665	26	125	2	round	900	0,50	R 3/8"i	13
ST 1 AR.2G	—	—	190.006 G	7.1	0.85	865	26	126	2	round	1080	0,64	R 3/8"i	13
ST 1 AP.2	190.007	—	—	5.2	0.85	665	26	125	2	polyg.	900	0,50	R 3/8"i	13
ST 1 AR.1	190.008	—	—	5.6	0.85	915	26	125	2	round	900	0,50	R 3/8"i	13
ST 1 AR.1G	—	—	190.008 G	7.3	0.85	865	26	126	2	round	1080	0,64	R 3/8"i	13
ST 1 AP.1	190.009	—	—	5.6	0.85	915	26	125	2	polyg.	900	0,50	R 3/8"i	13
ST 1 AP.1G	—	—	190.009 G	7.3	0.85	935	26	126	2	polyg.	1080	0,64	R 3/8"i	13
ST 1 AP.2G	—	—	190.015 G	7.2	1.10	865	26	126	2	polyg.	1080	0,64	R 3/8"i	13
ST 2 R.1	190.010	190.010 S	—	8.8	1.80	1190	32	180	2	round	800	0,65	R 3/8"i	13
ST 2 R.1G	—	—	190.010 G	12.5	1.80	1031	32	179	2	round	800	0,64	R 3/8"i	13
ST 2 P.1	190.011	190.011 S	—	8.8	1.80	1190	32	180	2	polyg.	800	0,65	R 3/8"i	13
ST 2 P.1G	—	—	190.011 G	12.5	1.80	1031	32	179	2	polyg.	800	0,64	R 3/8"i	13
ST 20 R.1	190.012	190.012 S	—	9.4	1.80	1190	32	240	2	round	750	0,70	R 3/8"i	13
ST 20 P.1	190.013	190.013 S	—	9.4	1.80	1190	32	240	2	polyg.	750	0,70	R 3/8"i	13
ST 2 R.2G	—	—	190.016 G	13.3	1.80	1313	32	179	2	round	800	0,64	R 3/8"i	13
ST 2 P.2G	—	—	190.017 G	13.3	1.80	1313	32	179	2	polyg.	800	0,64	R 3/8"i	13
ST 38 P	190.014	—	—	12.5	3.0	1340	38	215	2	polyg.	750	0,75	R 1/2"i	13

\* These types are with a vibration damper: strain reduction 75%

Spare parts available.

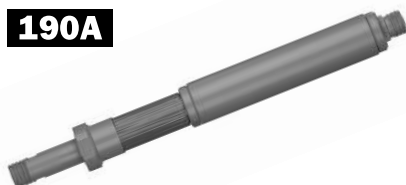
**Scope:** hose fittings and connectors as well as rammer heads must be ordered separately.

**Rammer heads**  
see item 191

**Compressor air hoses**  
see item 235

**Hose fittings**  
see item 238

## 190A



## Vibration damper for the backfitting of compressed-air rammers

This vibration dampers are made to satisfy the requirement of the European rule 2006/42/EG postulating the reduction of the unhealthy vibrations of hand-operated tools. They reduce the strain up to 50% (f.e. ST2R.1 without damper 25.2m/s<sup>2</sup>, with damper 9.8m/s<sup>2</sup>!). Weight ab. 2.4kg, length ab. 440mm

Item No.	190.020	190.020A
for rammers	ST 1	ST 2 - ST 20

## Pivot joint VARIACOR for all compressed-air tools

pivoting 90°, rotatable 360°

No bending of tubes, relaxation of wrist, simple and flexible working, direct connection to the tool, tube and tools may be placed in an ideal position

Item No.	Thread int. x ext.	Inside Ø	Flow	Weight
190.301	1/4" x 1/4"	7 mm	12 l/sec	72 gr.
190.302	3/8" x 3/8"	11 mm	30 l/sec	126 gr.
190.303	1/2" x 1/2"	11 mm	30 l/sec	132 gr.



**190B**

## Pneumatic tools servicing cartridge

Item No. 190.201

for cleaning, lubricating and protecting compressed air tools to ensure full service and reliability, even after extended periods of standstill

Each package includes 50 pieces.



**190C**

## Solid rubber rammer heads for compressed air rammers

Type	Shape	Dimensions	Weight abt. gr.	Item No.		
				MK1	MK2	MK3
1	rectangular	45 x 75 mm	480	191.101	191.201	-
2	sq.	80 x 80 mm	700	191.102	191.202	-
2a	sq.	100 x 100 mm	1260	-	191.222	191.322
3	round	75 mm Ø	690	191.103	191.203	-
4	round	40 mm Ø	400	191.104	191.204	-
8	round	50 mm Ø	450	191.108	191.208	-
8a	round	60 mm Ø	640	191.118	191.218	-
9	wedge-shape	50 x 50 mm	460	-	191.209	-
10	wedge-shape	50 x 70 mm	510	-	191.210	-
11	wedge-shape	25 x 50 mm	460	191.111	191.211	-
11a	wedge-shape	25 x 60 mm	490	191.121	191.221	-
12	wedge-shape	25 x 75 mm	480	191.112	191.212	-



Type 1



2 and 2a



3



Type 4



8 and 8a



9 and 10



Type 11 and 11a



12

### IMPORTANT!

Please specify **Morse-taper** when ordering!



Morse taper	Top dia. mm = D	Bottom dia. mm = d	Hole depth mm = L
MK 1	12	10	48
MK 2	18	15	57
MK 3	24	20	72

## Metal rammer heads for compressed air rammers

Shape	Morse taper	Dimensions mm	Steel		Aluminium	
			Weight kg	Item No.	Weight kg	Item No.
round	metr. 10	30 Ø	0.10	191.7183	-	-
	MK 1	40 Ø	0.20	191.9010	0.13	191.9019
		50 Ø	-	-	0.16	191.9029
		60 Ø	0.50	191.9030	-	-
		80 Ø	-	-	0.34	191.9039
	MK 2	40 Ø	0.30	191.9210	-	-
		50 Ø	-	-	0.16	191.9229
		60 Ø	0.57	191.9230	-	-
		80 Ø	0.85	191.92501	-	-
	metr. 10	40 x 40	0.10	191.7190	-	-
Square	MK 1	40 x 40	0.24	191.9014	-	-
		60 x 60	0.43	191.9034	-	-
		40 x 40	0.36	191.9214	-	-
	MK 2	60 x 60	0.59	191.9234	-	-
		80 x 80	0.85	191.9254	-	-
		60 x 20	0.25	191.9060	-	-
Rectangular	MK 1	60 x 20	0.75	191.92311	-	-
		70 x 15	0.80	191.9241	-	-
	MK 2	75 x 50	0.78	191.9252	-	-
		75 x 50	0.78	191.9252	-	-



round



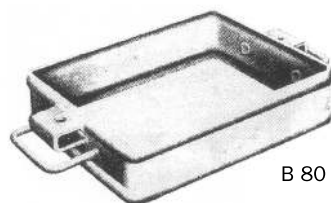
square



rectangular

**191A**

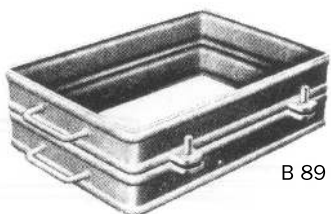
**192**



B 80



B 85



B 89

## Moulding boxes of sectional steel

### B 80

box of 8-mm sectional steel, with two double-guide brackets and two handles

### B 85

box of 7.5-mm sectional steel, with two double-guide brackets/handles (registered design) with round hole with steel bushing and oblong hole.

### B 89

complete two-piece mould box of 7-mm sectional steel, with four fixed pin guides, handle on each narrow side.

We supply all kinds of mould-box designs, sizes and sectional steels.

#### Please specify in your inquiry or order:

Quantity, inside dimensions (length, width, height), center-line distance, hole dia., guide cam, handle details, clamp, lifting cam and crossbar details.

**193**



## Moulding box lifting gear

**for manual turning of moulding boxes.** The balance point may be changed by transfer of the turning rollers. Equipped with easy going, not drifted rolls of plastic, lift eye. The working width may be adjusted by the welded-on ribs.

**The lifting belts are not included, but must be ordered separately (see item-no. 193A)**

#### Standard sizes:

Item No.	Carrying cap.	Eye width	adj. working width	Weight
193.501	500 kg	80 mm	500-1000 mm	ca. 18 kg
193.502			1000-2000 mm	ca. 43 kg
193.503			1500-3000 mm	ca. 65 kg
193.511	1000 kg	100 mm	500-1000 mm	ca. 20 kg
193.512			1000-2000 mm	ca. 45 kg
193.513			1500-3000 mm	ca. 67 kg
193.521	2000 kg	130 mm	500-1000 mm	ca. 35 kg
193.522			1000-2000 mm	ca. 55 kg
193.523			1500-3000 mm	ca. 80 kg

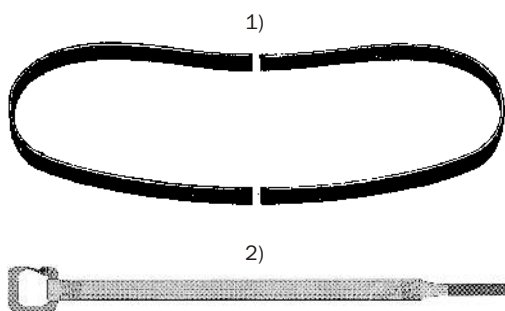
When asking for *other dimensions* please specify:

**carrying capacity of the system  
maximum and minimum working width  
length of lifting belt or chains (endless)**

#### Remark:

Lifting gears **operated electrically** with adjustment of working width by motor and remote control **upon request!**

**193A**



## Lifting belts

### 1) Endless lifting belts

galvanized, PU-coated, absolutely non-twisting, shortest length 1 m (circumference).

Item No.	Carryg. cap	Belt width x thickness
193.015	1500 kg	40 x 10 mm
193.025	2500 kg	50 x 10 mm
193.040	4000 kg	80 x 13 mm
193.060	6000 kg	80 x 13 mm
193.120	12000 kg	120 x 15 mm
193.240	24000 kg	150 x 25 mm

### 2) Textile lifting belts

acc. to DIN EN 1492-1, with Powerflex-coating and C-type quick-clamp

Item No.	Carryg. cap	Belt width x thickness	Loop dim.	Shortest length
193.601	1000 kg	30 x 7,0 mm	30 x 300 mm	2 mtr.
193.602	2000 kg	60 x 7,0 mm	35 x 300 mm	2 mtr.
193.603	3000 kg	90 x 7,0 mm	50 x 400 mm	2 mtr.

Belts can be supplied in any length.

## Plastic guides for flaskless moulding,

consisting of two parts

Item No. 194.200

To be placed on the pattern-plate. The female part is to be centered by a pin, the male one by a hole in the pattern-plate. Big negative draught to get maximum hold to the moulding-material. The joint of the guide is hold together using a special cement meanwhile normal core-glue should be applied to one of the mould-halves.

Holding power: about 350 kg per guide, normally two guides are enough per mould.

**Dimensions:** Peg diameter 40 mm, max. diameter 70 mm, height of male part 83 mm, height of female part 65 mm, height of jointed guide 125 mm.



194

## Mould box pins of steel

for round and oblong holes, with variable diameter

Secure positioning in the top box as the pin is spring-loaded. No backlash between pin and hole. Pressure is released by actuating the handle.

Pin can easily be retracted (pin is tapered).

Diameter: 19 – 30 mm

Guide pin length: 100 – 300 mm

The following mould pin sizes are stocked (for round hole):

Item No.	195.406	195.411	195.416	195.417
Dimension mm	22 x 150	22 x 200	22 x 250	22 x 300

For other dimensions the minimum quantity will be **10 pcs. per type** and a longer time of delivery must be taken into account.



195

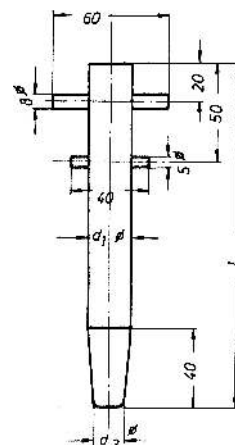
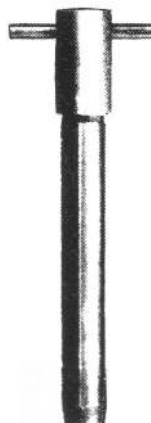
## Rigid mould box bolts of steel

hardened and ground,  
for round and oblong holes.

Please specify all  
dimensions required  
(see drawing).

Table of dimensions available.

Not stocked, certain times of delivery should be taken into account.



196

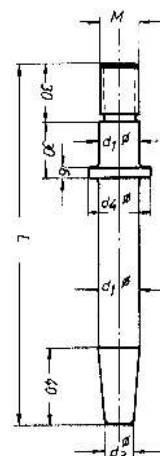
## Rigid pattern plate pins of steel

hardened and ground,  
for round and oblong holes  
(also available with internal thread).

Please specify all  
dimensions required  
(see drawing).

Table of dimensions available.

Not stocked, certain times of delivery should be taken into account.



197



**198**

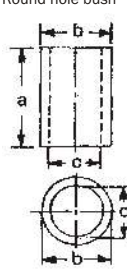
Round hole bush



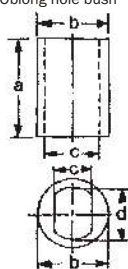
Oblong hole bush



Round hole bush



Oblong hole bush



## Steel guide bushes for mould boxes

hardened, with round or oblong hole  
Standard dimensions in mm:

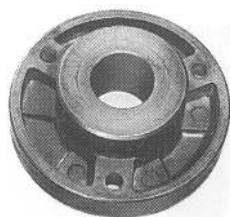
Standard dimensions in mm.						
Round hole bush				Oblong hole bush		
A	B	C	Item No.	C	D	Item No.
40	30	18	198,001	18	24	198,101
40	30	19	198,002	19	24	198,102
40	32	20	198,003	20	25	198,103
40	35	21	198,004	21	26	198,104
40	35	22	198,005	22	27,5	198,105
40	38	25	198,006	25	30	198,106
40	45	30	198,007	30	37,5	198,107

Other sizes upon request!

Table of dimensions available.

Not stocked, certain times of delivery should be taken into account.

**199**



## Guiding bushes for mould plates

of die cast aluminium, Fit H 7, for use in plywood plates, top dia. 65 mm, bottom dia. 38 mm, with three countersunk holes (dia. 5 mm).

Item No.	199.016	199.017	199.018	199.019	199.020	199.021
Inside dia.	16 mm	17 mm	18 mm	19 mm	20 mm	21 mm

Item No.	199.022	199.023	199.024	199.025	199.026	199.028	199.030
Inside dia.	22 mm	23 mm	24 mm	25 mm	26 mm	28 mm	30 mm

Also available as **turned** bush.

**199A**

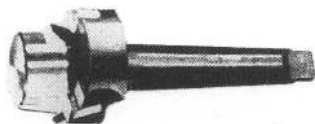


## Cylindrical boring bits for Item No. 199

**38 mm dia.**, shank 16 x 50 mm, 140 mm long

Item No.	514.238	514.338
Design	HS (HSS)	HW (HM)

**199B**



## Cylindrical boring bits Item No. 199.101

(for Item No. 199)

**carbide tipped, dia. 65 mm, with MK 3**, however, 115 mm long,

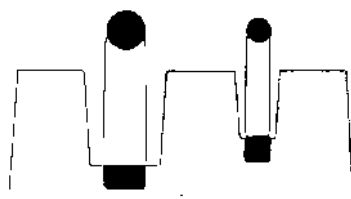
total length 165 mm, exchangeable **pilot 38 x 21 mm**,

collar 22 x 4 mm, wrench size 32 x 9 mm, thread M 16 x 1,5 x 15 mm

At extra charge boring bits for use on CNC-machines

(Item No. 199.102)

**201**



## Pattern ejectors of plastic

for automatic moulding machinery (for example Disamatic)

for holes which are mouldable with extreme difficulty

**a) of black hard plastic (shore A 65) b) of white silicon (shore A 25)**

Diameter	5 mm	6 mm	7 mm	8 mm	10 mm	12 mm	14 mm
Height of cyl. part	5 mm	5 mm	6 mm	7 mm			
Material	Item No.						
Plastic black	201.005	201.006	201.007	201.008	201.010	201.012	201.014
Silicon white	201.205	201.206	201.207	201.208	201.210	201.212	201.214

Diameter	15 mm	16 mm	18 mm	20 mm	25 mm	30 mm
Height of cyl. part	7 mm				8 mm	
Material	Item No.					
Plastic black	201.015	201.016	201.018	201.020	201.025	201.030
Silicon white	201.215	201.216	201.218	201.220	201.225	201.230

Minimum quantity per size: 100 each.

**201A**



## Pneumatic "Lift-Boys"

Facilitate the draft of the cores, therefore **very short draft and station time** possible. **Any size of cores may be produced.** The surface of the cores will be clean and smooth, therefore no refinishing necessary, no damage of the core-box while drafting, no tongues inside of the cast piece.

Item No.	201.301	201.303	201.304	201.305	201.306	201.308	201.310
Dimension	30 x 20 mm (oval)	30 mm Ø	40 mm Ø	50 mm Ø	60 mm Ø	80 mm Ø	100 mm Ø
Thickness	20 mm	20 mm	20 mm	25 mm	25 mm	25 mm	25 mm

## Holding magnets

### I) Bar magnets, round

useable for steel or iron

#### 1) Normal type with round AlNiCo-magnetic-core

straight, with fitting tolerances; magnetic screening. Max. operation temperature 450 °C.

Item No.	Dimensions mm			Weight gr.	Holding force N
	d	H	h*		
529.106	6	10	2	2	1,7
529.108	8	12	3	4	4
529.110	10	16	6	9	8,5
529.113	13	18	6	17	12
529.116	16	20	6	29	20
529.120	20	25	6	57	50
529.125	25	30	10	110	115
529.132	32	35	5	200	200
529.140	40	45	5	420	240
529.150	50	50	2	720	420
529.163	63	60	5	1340	600

Tolerances: for d: h6; for H:  $\pm 0,2$  mm

\* Dim. h gives the length which can be reduced from the opposite side of the bar magnet's adhesive surface without affecting the adhesive power.

The adhesive surface shouldn't be shortened more than 2 mm to avoid loss of the holding force.

#### 2) of SmCo (SECOLIT) with a holding force which is five times stronger than the normal type

The magnet bars are fitted with a brass casing. Max. operation temperature 200 °C.

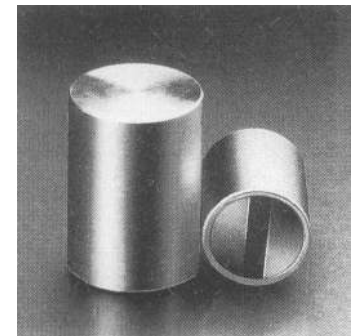
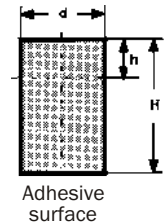
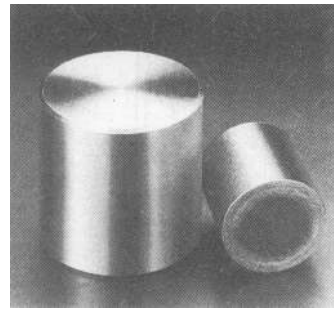
Item No.	Dimensions mm			Weight gr.	Holding force N	Distance to iron mm**
	d	H	h*			
529.206	6	20	10	4	8	1,5
529.208	8	20	10	8	22	1,5
529.210	10	20	8	12	40	2
529.213	13	20	6	20	60	2,5
529.216	16	20	2	32	125	3
529.220	20	25	5	60	250	4
529.225	25	35	7	140	400	5
529.232	32	35	5	265	600	6

Tolerances: for d: h9; for H:  $\pm 0,2$  mm

\* Dim. h gives the length which can be reduced from the opposite side of the bar magnet's adhesive surface without affecting the adhesive power.

#### Mounting devices:

To avoid magnetic short circuits it is very important to maintain the above mentioned determined distances between the coat of the magnet and a iron surrounding.

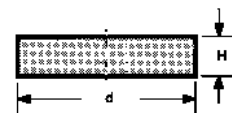


\*\* These distances are valid for the casing and the reverse in case dim. h is cut from the bar magnet, but not for the magnetic base.

### II) Flat magnets, without thread liner

Item No.	Dimensions mm		Weight gr.	Holding force N
	d	H		
529.310	10	4,5	3	5
529.313	13	4,5	5	12
529.316	16	4,5	6	30
529.320	20	6	10	40
529.325	25	7	17	49
529.332	32	7	28	90
529.340	40	8	52	130
529.350	50	10	100	220
529.363	63	14	220	300
529.380	80	18	460	550

Flat magnets with thread liner on special demand.



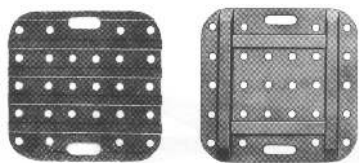
## Permanent magnetic collector 'MS'

Magnetic collectors for small parts, will be used to collect loose material or cuttings and to separate cast iron parts from the blasting medium. The magnetic field will be switched on by drawing up to handle.

Item No.	Dimension (L x W x H)	Weight	max. load	housing
202.001	155 x 100 x 200mm	1,4 kg	0,6 kg	plastic
202.003	110 x 110 x 200mm	2,5 kg	1,2 kg	stainl. steel
202.004	210 x 110 x 200mm	4,8 kg	2,4 kg	stainl. steel

Other magnetic lifters (also electric) upon request!



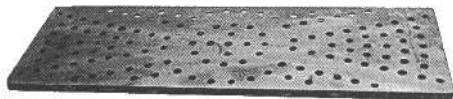
**203**

## Roller track plates

of light metal, beech wood or heat-resistant fibroconcrete

lightweight, very durable, wide variety of shapes, rectangular, square, with round edges, with holes and ribs, or only with ribs, with and without hand hole.

Please specify quantity!

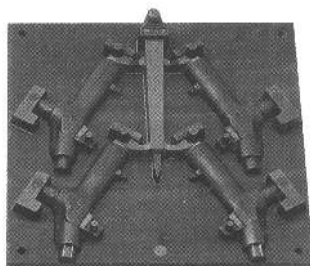
**203A**

## Light-metal core drying plates

for use in the core-shop, torsion-proof

Practical, light-weight, long-life, in several models and dimensions.

On request. Please specify quantity!

**204**

## Pattern plates made of laminated resin/wood (plywood)

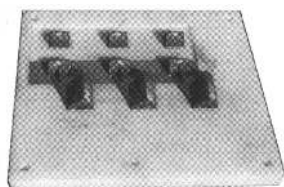
for all types of molding and compaction systems.

We supply: a) standard sizes, not machined in different thicknesses 6 to 100 mm

b) standard sizes machined (cut sizes and/or machined to exact required thickness)

c) machined ready to use acc. to your drawing or description, drilled or fitted with bushes.

Upon request! Please specify quantity, sizes and type of machining.

**204A**

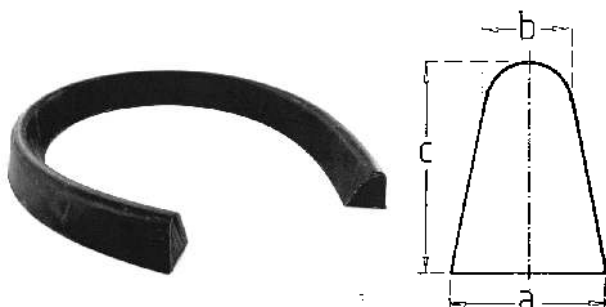
## Moldingplates/Gassingplates

made of material 'S', technical and economical reasonable, high abrasion resistance, slow slide friction coefficient, no moisture absorption, density 0,96, absolutely tight against gas

Sizes: 500 x 1000, 1000 x 1000, 1000 x 2000, 650 x 6000 mm

Thicknesses 2 - 250 mm

or according to your drawing, also machined ready to use available

**205**

## Casting ducts

of soft PVC

sold per meter, max. temperature 60°C, durable and reusable, the ducts can easily be fixed on moulding plates; they can easily be removed from the mould thanks to its smooth, wear-resistant surfaces. Bending these ducts does not produce creases.

Item No.	Base (a) mm	Radius (b) mm	Height (c) mm	Cross section mm <sup>2</sup>
205.001	10	3,5	10	75
205.002	12	4,0	13	116
205.003	14	4,0	17	168
205.004	17	5,0	20	280
205.005	20	6,0	22	323
205.006	24	7,0	26	509
205.007	30	10,0	35	845

**206**

## Sealing ropes, asbestos-free

(for sealing mould boxes)

ready for use in cardboard boxes containing 80 cm lengths, consisting primarily of modified mineral oil fractions and selected silicates, practically unlimited storage life, stays flexible and soft – even under extreme temperature fluctuations, perfectly seals mould box halves, guarantees accurate and precise castings, prevent losses and intrusion of liquid metal into air ducts

Item No.	206.003	206.004	206.0045	206.005	206.006	206.007	206.008	206.009
Dia.	3 mm	4 mm	4,5 mm	5 mm	6 mm	7 mm	8 mm	9 mm
Pack. cont.	672 mtr.	604 mtr.	499 mtr.	414 mtr.	307 mtr.	394 mtr.	312 mtr.	249 mtr.

Item No.	206.010	206.012	206.014	206.016	206.018	206.020	206.024
Dia.	10 mm	12 mm	14 mm	16 mm	18 mm	20 mm	24 mm
Pack. cont.	211 mtr.	158 mtr.	112 mtr.	83 mtr.	67 mtr.	62 mtr.	36 mtr.

**206A**

## Sealing agent ADM

Plastic compound for sealing foundry moulds. It consists mainly of aluminium silicates with addition of graphite and special binders. To be applied in consistent thickness before closing cope and drag. It is important to avoid contact with molten metal, to prevent casting inclusions or gas defects. Causes no problems when reclaiming the sand (contrary to the use of core glue).

Item No. 206.101 in tubes of 1 kg (or in hobbicks containing 40 tubes)

## Nylon vent ropes

for discharging air and gases from moulds and cores

207

Item No.	207.002	207.003	207.004	207.005	207.006	207.007	207.008	207.010
Diameter	2 mm	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	10 mm
Rope length	100 mtr.	100 mtr.	100 mtr.	100 mtr.	50 mtr.	50 mtr.	50 mtr.	50 mtr.

Item No.	207.012	207.015	207.018	207.020	207.022	207.025	207.030
Diameter	12 mm	15 mm	18 mm	20 mm	22 mm	25 mm	30 mm
Rope length	50 mtr.	50 mtr.	25 mtr.	25 mtr.	25 mtr.	25 mtr.	25 mtr.



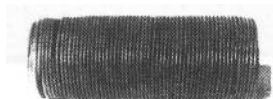
## Waxed vent ropes (white) with jute core

to be fitted in the immediate proximity to mould cavities during moulding

208

Item No.	208.002	208.003	208.004	208.005	208.006	208.008	208.010
Diameter	2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm

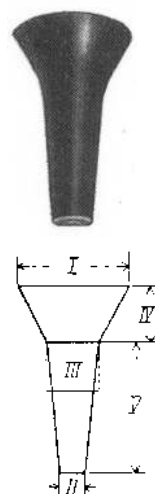
Larger diameters upon request!



## Rubber pouring funnels, solid

209

Item No.	I mm	II mm	III mm	IV mm	V mm	Total length mm	Item No.	I mm	II mm	III mm	IV mm	V mm	Total length mm
209.001	85	30	45	40	95	135	209.021	100	40	50	105	245	345
209.002	65	30	40	35	65	100	209.022	65	30	35	35	70	105
209.003	50	20	25	40	45	85	209.023	55	25	30	35	70	105
209.004	50	20	20	45	40	85	209.024	55	15	25	15	100	115
209.005	70	25	40	45	80	125	209.025	50	10	25	25	60	85
209.006	80	25	40	65	115	180	209.026	60	15	25	25	60	85
209.007	50	25	30	40	80	120	209.027	70	15	25	40	50	90
209.008	45	25	30	20	50	70	209.028	55	25	30	40	110	150
209.009	55	25	30	40	90	130	209.029	75	25	40	30	100	130
209.010	60	23	30	40	110	150	209.030	50	20	25	30	70	100
209.011	55	23	30	40	135	175	209.031	50	20	25	30	70	100
209.012	60	25	30	40	45	85	209.032	60	25	30	30	60	90
209.013	60	25	30	35	50	85	209.033	80	25	55	30	90	120
209.014	60	25	30	30	70	100	209.034	40	25	30	20	70	90
209.015	60	25	35	35	95	130	209.035	60	20	30	25	90	115
209.016	70	25	35	60	140	200	209.036	60	25	30	50	70	120
209.017	65	25	45	20	65	85	209.037	100	50	70	35	85	120
209.018	55	25	35	60	185	245	209.038	90	20	30	40	210	250
209.019	80	35	50	50	205	255	209.039	60	25	30	40	160	200
209.020	85	35	60	80	215	295							



## Pouring funnels 'Flexi' of a rubber-plastic compound

top part of soft rubber with cavity, shaft of hard plastic so that the lower section will not bend or be deformed during ramming.

Available in all sizes mentioned under Item No. 209.

Other sizes also available upon request; please specify dimensions and quantities.

Minimum quantity 5 pieces per size



209A

## Rubber risers, wedge-shaped/rectangular

210

Item No.	Top mm	Bottom mm	Height mm
210.001	75 x 50	50 x 15	140
210.002	80 x 55	50 x 15	200
210.003	70 x 40	50 x 15	100



## Rubber risers, round/tapered

211

Item No.	D mm	d mm	L mm	Item No.	D mm	d mm	L mm
211.001	25	15	95	211.013	60	55	50
211.002	30	25	105	211.014	50	40	50
211.003	40	25	150	211.015	60	25	55
211.004	55	25	90	211.016	70	60	65
211.005	60	50	135	211.017	30	25	135
211.006	70	30	125	211.018	60	50	100
211.007	45	10	90	211.019	60	50	80
211.008	90	75	155	211.020	60	40	105
211.009	55	30	140	211.021	60	40	80
211.010	80	50	60	211.022	40	20	40
211.011	65	25	45	211.023	50	45	40
211.012	75	55	80	211.024	60	40	105





**212**

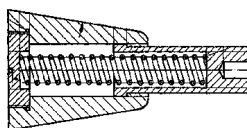


## Rubber pouring basin

Item No.	Length mm	Width mm	Height mm
212.001	205	85	70
212.002	150	60	80

All dimensions  $\pm 3$  mm

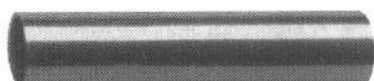
**213**



## Spring loaded funnel (entirely of brass) round shape

Upon request!

**214**



## Cylindrical brass pipes

for pouring funnels  
wall thickness 1 mm, seamless pipe

Length: 300 mm

Item No.	214.001	214.002	214.003	214.004	214.005	214.006	214.007	214.008	214.009
Diameter	10 mm	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	50 mm

Other lengths upon request.

**215**

## Insulating risers

High strength and exact size of the inside diameters. The excellent insulating effect allows a important reduction of the riser's size. They may be used up to 1250°C permanent temperature.

### 1) Pipe-shaped riser

a) of mineral fibres, brown, harmless, contain no dangerous substances

I.D. mm	WS mm	Length H 150 mm		Length H 300 mm	
		Item No.	Carton contains	Item No.	Carton contains
20	9	215.011MF	648	215.011MFL	178
25	9	—	—	215.013MFL	240
30	9	215.012MF	378	215.012MFL	178
40	9	215.001MF	270	215.001MFL	136
50	9	215.007MF	189	215.007MFL	85
60	9	215.002MF	135	215.002MFL	70
80	9	215.003MF	84	215.003MFL	40
100	9	215.004MF	60	215.004MFL	28
120	10	215.005MF	45	215.005MFL	18
140	10	215.006MF	36	215.006MFL	14

### b) of white, ceramic fibres

I.D. mm	WS mm	Length H 150 mm		Length H 300 mm	
		Item No.	Carton contains	Item No.	Carton contains
20	6	215.011	208	215.011-L	104
25	6	215.013	208	215.013-L	104
30	6	215.012	180	215.012-L	90
40	6	215.001	120	215.001-L	60
50	6	215.007	90	215.007-L	45
60	6	215.002	64	215.002-L	32
80	6	215.003	42	215.003-L	21
100	6	215.004	24	215.004-L	12
120	6	215.005	16	215.005-L	6

### 2) Dome-shaped riser with center hole, w. th. 9 mm

of mineral fibres, brown, harmless, contain no dangerous substances

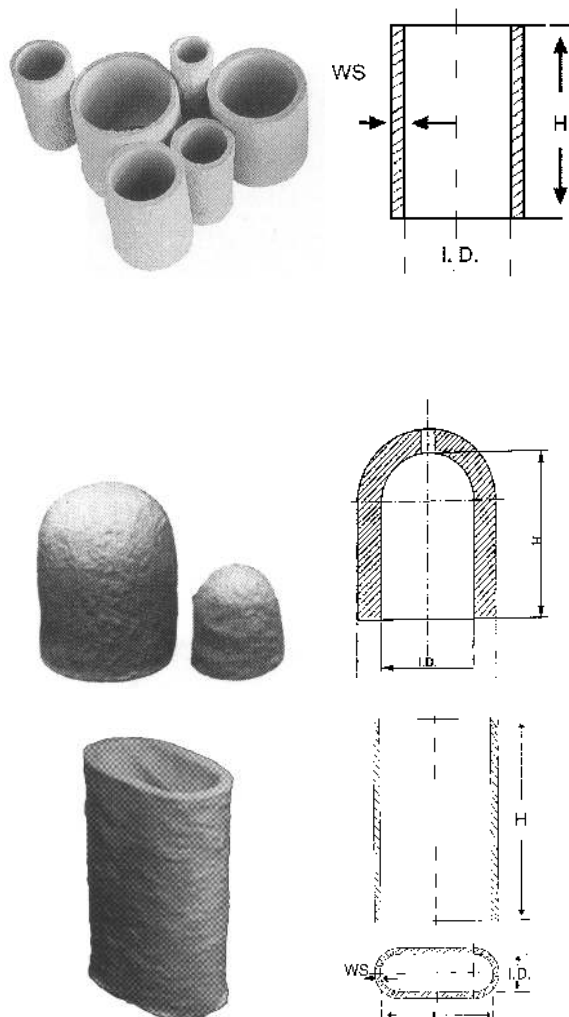
I.D. mm	H mm	Item No.	Carton contains
30	45	215.100MF	960
41	60	215.101MF	468
54	80	215.102MF	315
64	94	215.103MF	164
75	112	215.104MF	84
90	105	215.105MF	96

### 3) Ovale riser, w. th. 9 mm, H 150 mm

of mineral fibres, brown, harmless, contain no dangerous substances

I.D. mm	L mm	Item No.	Carton contains
40	80	215.202MF	150
40	120	215.203MF	105
60	145	215.204MF	64
80	160	215.205MF	45

Other dimensions and designs upon request!



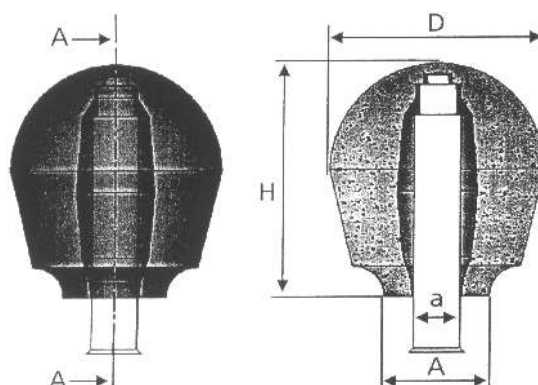


## Exothermic feeder-systems EXHOF-L

216

High yield, low feeder height, reduced mould contact area, breaker core not required, rigid locating pins (without spring), adjustable location heights, superior mould hardness under the feeder and excellent micro-structure in feeder metal area.

Item No.	Feeder size D mm	Modulus cm	Vol. cm <sup>3</sup>	H mm	A mm	a mm
216.060	60	1.1	18	60	30	15
216.070	70	1.3	28	80	34	17
216.080	80	1.5	50	90	40	19
216.090	90	1.7	73	100	44	21
216.100	100	2.0	112	110	48	23
216.120	120	2.3	186	120	54	25
216.130	130	2.7	260	130	58	27
216.140	140	3.3	332	140	62	29
216.140L	140L	3.5	410	160	62	29
216.170	170	4.1	625	170	94	34



## Ceramic foam filters

217

for filtration of cast iron or light metals

### Properties:

Porous, ceramic filter material, large filtering surface due to the structure of the material.

Even very fine impurities in the melt can be strained by the ceramic filter thanks to the mechanical and physical filtering properties of the material.

### 1) Quality SKF for cast iron up to 1450 °C and heavy metals

- a) Porosity 10 ppi for grey cast iron (GG) and sph. graphite (GGG)
- b) Porosity 20 ppi for grey cast iron (GG) and malleable cast iron (GT)
- c) Porosity 30 ppi for malleable cast iron (GT)

### 2) Quality AOF for light metals up to 1200 °C

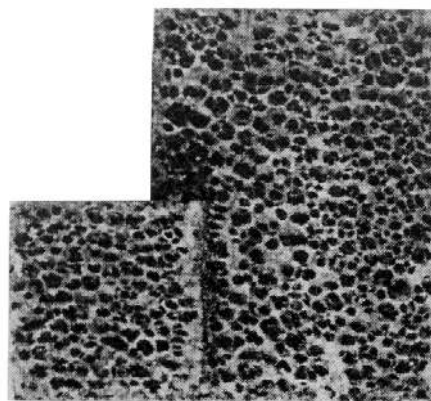
- a) Porosity 10 ppi for standard castings
  - b) Porosity 20 ppi for sensitive castings
  - c) Porosity 30 ppi for high-quality castings
- ppi: Pores per Inch

### 3) Quality LDF, upfloating for all aluminium alloys up to 850 °C

Upon request available:

Foam filters based on zirconiumoxide for **steel castings**.

Standard thickness 22 mm - other thicknesses (from 15 mm) upon request.



Standard dimensions - other dimensions upon request.

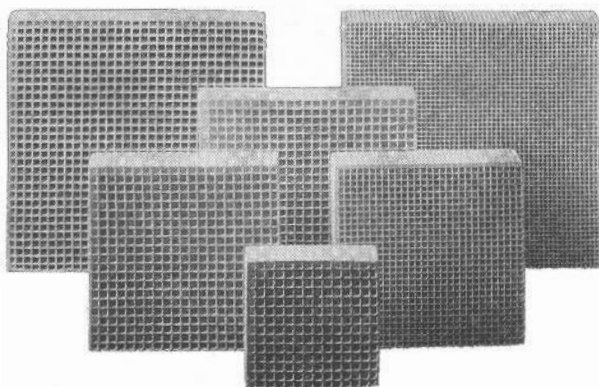
Tolerances: + 0/- 2,0mm, from 100mm + 0/- 3,0mm

### 1) rectangular types

	Item No.									Carton contains pieces
Dimensions mm	Quality SKF			Quality AOF			Quality LDF			
	10 ppi	20 ppi	30 ppi	10 ppi	20 ppi	30 ppi	10 ppi	20 ppi	30 ppi	
35 x 35	217.101	217.102	217.103	217.201	217.202	217.203	217.204	217.205	217.206	1260
40 x 40	217.181	217.182	217.183	217.281	217.282	217.283	217.284	217.285	217.286	936
50 x 30	217.111	217.112	217.113	217.211	217.212	217.213	217.214	217.215	217.216	1008
50 x 50	217.121	217.122	217.123	217.221	217.222	217.223	217.224	217.225	217.226	630
50 x 75	217.131	217.132	217.133	217.231	217.232	217.233	217.234	217.235	217.236	441
50 x 100	217.141	217.142	217.143	217.241	217.242	217.243	217.244	217.245	217.246	315
75 x 75	217.151	217.152	217.153	217.251	217.252	217.253	217.254	217.255	217.256	252
75 x 100	217.161	217.162	217.163	217.261	217.262	217.263	217.264	217.265	217.266	189
100 x 100	217.171	217.172	217.173	217.271	217.272	217.273	217.274	217.275	217.276	135

### 2) round types

Item No.										Carton contains pieces
Dia. mm	Quality SKF			Quality AOF			Quality LDF			
	10 ppi	20 ppi	30 ppi	10 ppi	20 ppi	30 ppi	10 ppi	20 ppi	30 ppi	
40	217,301	217,302	217,303	217,401	217,402	217,403	217,404	217,405	217,406	936
50	217,311	217,312	217,313	217,411	217,412	217,413	217,414	217,415	217,416	630
55	217,321	217,322	217,323	217,421	217,422	217,423	217,424	217,425	217,426	486
60	217,331	217,332	217,333	217,431	217,432	217,433	217,434	217,435	217,436	486
70	217,391	217,392	217,393	217,491	217,492	217,493	217,494	217,495	217,496	315
75	217,341	217,342	217,343	217,441	217,442	217,443	217,444	217,445	217,446	280
80	217,351	217,352	217,353	217,451	217,452	217,453	217,454	217,455	217,456	256
90	217,361	217,362	217,363	217,461	217,462	217,463	217,464	217,465	217,466	216
100	217,371	217,372	217,373	217,471	217,472	217,473	217,474	217,475	217,476	135
110	217,381	217,382	217,383	217,481	217,482	217,483	217,484	217,485	217,486	120

**217A****Extruded ceramic metal filters**

These filters are produced by continuous pressing of ceramic material through the matrix of the desired cross-selection of die. Subsequently the ceramic material is cut and fired to the required size or thickness. They are produced with a variety of opening sizes for various foundry requirements; 100 or 300 CSI (cell per square inch). Many cross sections are possible, by extruding very thin walls.

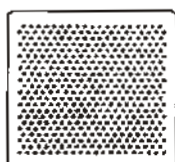
Designed for filtration of ferrous and non-ferrous metals up to 1450 °C temperature of casting.

**Standard sizes:**

Size mm	Item No. cells / sq. inch			Pieces contained in a box
	100csi	200csi	300csi	
40 x 40 x 13	217.581	–	–	1216
43,5 x 43,5 x 13	217.511	–	217.513	1216
50 x 50 x 13	217.521	217.522	–	756
55 x 55 x 13	217.531	–	217.533	250
66 x 66 x 13	217.541	–	217.543	375
75 x 75 x 13	217.551	–	–	360
81 x 81 x 13	217.561	–	–	240
round Ø 59 x 12	217.591	217.592	–	720

Tolerances: Length/Width/Diameter +/-1 mm, Thickness -0,5mm

Other sizes upon request!

**217B**

RLF

**Ceramic round hole filters**

for casting of light or heavy metals and also iron up to 1470 °C

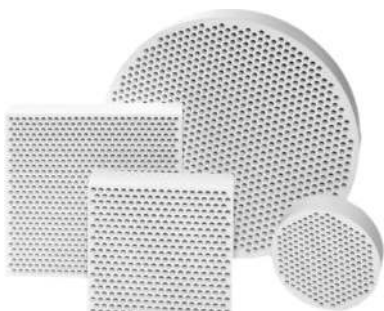
**High mechanical and heat resistance**

exact openings for constant and calculable times of casting.

Item No.	Size mm	Hole dia. mm	No. of holes	Open area mm <sup>2</sup>	Packing pcs.
217.606	37 x 37 x 9,5	2,17	143	529	730
217.607	40 x 40 x 15	2,17	187	691	400
217.608	40 x 40 x 22	2,17	187	691	275
217.620	50 x 30 x 22	2,17	182	673	285
217.609	50 x 50 x 12,5	2,31	247	1035	300
217.610	50 x 50 x 15	2,31	247	1035	260
217.611	50 x 50 x 18	2,31	247	1035	225
217.612	50 x 50 x 22	2,31	247	1035	180
217.613	50 x 75 x 22	2,17	374	1382	120
217.614	50 x 100 x 22	2,17	510	1885	90
217.630	55 x 55 x 13	2,17	367	1357	250
217.615	67 x 67 x 12,7	2,17	550	2033	170
217.616	75 x 75 x 22	2,17	634	2344	84
217.617	75 x 100 x 22	2,17	850	3142	56
217.618	82 x 82 x 12,7	2,58	585	3057	110
217.619	100 x 100 x 22	2,17	941	3478	36
217.621	133 x 133 x 22	3,8	880	9975	22
217.622	150 x 100 x 22	2,81	1087	6738	28
217.623	150 x 150 x 22	3,8	941	10667	22

Other sizes upon request!

Tolerances: Length/Width +0/-2mm, Thickness +0/-1mm

**217C****HIPERCAST round hole filters**

for iron and steel castings, extremely resistant, stable and efficient

Item No.	Size mm	Hole dia. mm	No. of holes	Open area mm <sup>2</sup>	Packing pcs.
217.700	50 x 50 x 22	2,5	161	790	180
217.701	75 x 75 x 25	3,17	279	2201	66
217.702	100 x 100 x 25	3,8	378	4285	34
217.703	125 x 125 x 25	3,17	821	6476	19
217.704	133 x 133 x 25	3,8	585	6631	14
217.705	150 x 150 x 35	3,9	686	8191	10
217.706	175 x 175 x 35	4,3	821	11917	8
217.721	Ø 75 x 25	3,17	211	1664	72
217.722	Ø 90 x 25	3,8	235	2664	44
217.723	Ø 125 x 25	3,17	625	4930	26
217.724	Ø 150 x 25	3,9	511	6101	10
217.725	Ø 200 x 25	3,9	925	11044	8

Other sizes upon request!

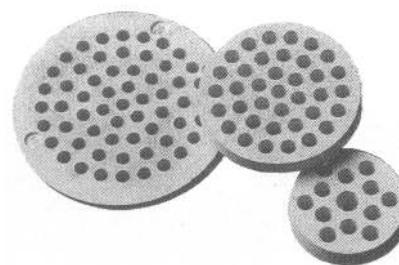
Tolerances: Length/Width +0/-3mm (bigger than 120mm: -4mm), thickness +0/-2mm

## Ceramic strainer cores, round

of a special material, heat resistant up to 1470 °C

For building up a defined accumulation of liquid metal

- for steadying the flow of liquid metal
- for effectively separating slag before the metal enters the mould
- for facilitating topping up the casting system
- for putting refining and other treatment agents on the screen. Thanks to the reduced velocity of the liquid metal flow a high effectiveness is guaranteed; the agent is distributed evenly throughout the liquid metal.



**218**

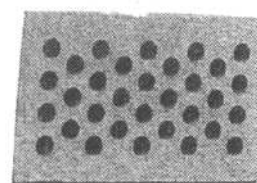
Item No.	Type	Dia. mm	Height mm	No. of holes x dia. mm	Cross section mm <sup>2</sup>
218.207	10/ 410	55	6,0	46 x 3,4	417
218.209	10/ 440	60	7,0	37 x 4,0	465
218.216	10/ 690	66	8,0	64 x 3,7	688
218.218	10/ 710	59	7,0	36 x 5,0	707
218.219	10/ 710-10	59	10,0	36 x 5,0	707
218.224	10/ 880	60	7,0	38 x 5,3	838
218.225	10/ 881	60	10,0	37 x 5,5	879
218.230	10/0266	108	10,0	113 x 4,5	1796
218.232	10/ 930	70	8,0	97 x 3,5	933
218.233	10/ 930-10	70	10,0	97 x 3,5	933
218.234	10/ 940	59	10,0	37 x 5,7	944
218.235	10/ 950	70	9,5	20 x 7,8	955
218.236	10/ 950-12	70	12,0	20 x 7,8	955
218.237	10/ 990	74	7,5	28 x 6,7	987
218.238	10/ 990-12	74	7,5	28 x 6,7	987

Item No.	Type	Dia. mm	Height mm	No. of holes x dia. mm	Cross section mm <sup>2</sup>
218.250	11/ 800-7	55	7,0	19 x 7,3	795
218.251	11/ 800	55	10,0	19 x 7,3	795
218.252	11/ 801	79	11,0	22 x 7,0	846
218.254	11/ 855	70	10,0	121 x 3,0	855
218.256	11/1177	90	12,0	60 x 5,0	1178
218.257	11/1177-16	90	16,0	60 x 5,0	1178
218.259	11/1201	69	10,0	31 x 7,2	1262
218.260	11/1250	88	14,0	31 x 7,2	1262
218.261	10/0218	80	11,0	31 x 8,3	1676
218.264	11/3000	150	20,0	217 x 4,7	3763
218.265	11/4000	150	20,0	132 x 6,5	4378
218.266	11/5000	150	20,0	65 x 10,0	5103
218.267	11/6000	150	20,0	19 x 20,0	5966
218.268	11/8650	230	30,0	49 x 15,0	8655
218.269	11/8560	238	30,0	109 x 10,0	8557

## Ceramic strainer cores, rectangular

of special material, heat resistant up to 1470 °C

Item No.	Type	Size mm	Height mm	No. of holes x dia. mm	Cross section mm <sup>2</sup>	Corner shape
218.309	12/1200	88 x 57	13,0	81 x 4,5	1288	pointed
218.314	12/2350	114 x 66	20,0	99 x 5,5	2351	pointed
218.326	12/2965	137 x 67	20,0	59 x 8,0	2964	rounded



**218A**

## Fibreglass strainers for light metal castings

1) sold by the sq. m from rolls (1,00 to 1,47 m width) - depending on availability

2) Cut-to-size (any size and shape)

Please specify when ordering: quantity, size, shape, type of netting.

Type	G 13	G 61	G 45	G 90	G 67	G 65	G 35
Mesh							
width mm	1.3 x 1,5	1.0 x 0,8	1.3 x 1,5	2.5 x 2,5	1.3 x 1,5	1.0 x 0,8	1.6 x 1,6
Colour	black	brown	yellow	yellow	black	black	black
Quality	gas-free	evolving gas	evolving gas	evolving gas	gas-free	gas-free	gas-free
Item No.							
Sold by sq. m.	219.213	219.261	219.260	219.225	219.267	219.265	219.235
Cut-to-size	219.213A	219.261A	219.260A	219.225A	219.267A	219.265A	219.235A



**219**

**Wire mesh sieves and baskets** f.e. for low pressure castings upon request!

Please indicate the desired dimensions, wire type and quantity!

## Fibreglass strainers for cast iron and steel castings

redbrown, suitable for temperatures up to 1620 °C.

1) sold by the sq.m. from rolls of 800 mm

2) Cut-to-size, or filtration baskets

Type	SiO <sub>2</sub>	per sq.m.	Item No.
Mesh	1,5 x 1,2 mm	cut-to-size	219.301
			219.301A



**219A**

## Insulating mats for casting 500 to 1000 °C

For slow heat dissipation of preheated castings, free of asbestos or ceramics, therefore toxicological harmless, mechanical resistant. Loss of energy will be diminished, the heat remains within the castings. Fibrous web.

Item No.	Design	Size
220.805	Insulating mat up to 500 °C	1000 x 1000 x 20 mm
220.810	Foundry mat up to 1000 °C	1000 x 1000 x 50 mm

Other sizes upon request, may be connected with others by hook-and-loop fastener, press buttons or buckles.



**220**

## 220A



## Insulating products made of ceramic fibres

**1) Fibre mats** in rolls of 610 mm width

**Standard quality:** Classification temperature: 1260°C.  
Bulk density: 130 kg/m<sup>3</sup>  
Shrinkage: 3.3%  
Analysis: AL<sub>2</sub>O<sub>3</sub>: 42-47%  
SiO<sub>2</sub>: 53-58%

Item No.	220.105	220.107	220.110	220.115	220.120
Thickness	12.7 mm	19.1 mm	25.4 mm	38.1 mm	50.8 mm
Length of roll	14.64 m	9.76 m	7.32 m	4.88 m	3.66 m
sq. m. per roll	8.93	5.95	4.47	2.98	2.23

Other qualities and classification temperatures upon request! F.e. made of harmless mineral fibres without classification as dangerous good.

**For fitting glue see item-no. 415C!**

**2) Insulating cords**, glass-fibre reinforced (upon request also chrom-nickel-wire reinforced). Working temp. 600-700°C, flexible, excellent insulation, high tear strength, abrasion and chemical resistant.

Item No.	220.206	220.208	220.210	220.212	220.215	220.220	220.225	220.230	220.240	220.250
Diameter	6 mm	8 mm	10 mm	12 mm	15 mm	20 mm	25 mm	30 mm	40 mm	50 mm
Length of roll	100 m	100 m	100 m	100 m	50 m	50 m	25 m	20 m	20 m	10 m
Weight per roll	1.6 kg	2.5 kg	3.9 kg	5.8 kg	4.4 kg	7.8 kg	12.2 kg	8.8 kg	12.6 kg	14.7 kg

Other qualities and designs (tapes, fabrics, paper, boards) upon request!

## 220B



## Insulating lids

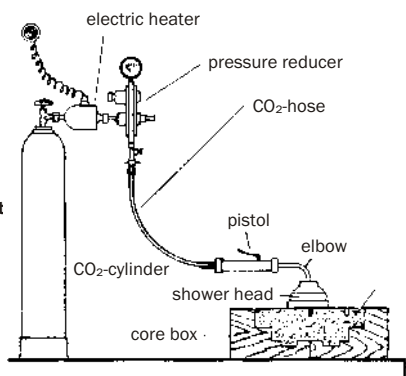
for insulating melting furnaces or bigger crucibles during melting and transportation of liquid metal. Consisting of a shell plate and a changeable refractory modulus. The insulating material saves the temperature of the liquid metal, is indifferent against crucibles and liquid metals, light weight, easy to use

Diameter	550mm	600mm	650mm	750mm
Item No.				
lid complete	220.550	220.600	220.650	220.750
Changeable mod.	220.551	220.601	220.651	220.751

Other sizes upon request! **For refractory concretes see item-no. 415A!**

## 221

The illustration shows the complete equipment required for manual gassing by means of a shower head.



## Fittings and accessories for CO<sub>2</sub>-solidification process

**1) Electric heater 220V, 50Hz, CE-sign, item-no.221.102, 200W**

ready to use with 3-pole plug and 2m long cable, very compact housing, firm connections



**2) Pressure reducer of brass Item No. 221.006**

with spring safety valve  
Cylinder pressure manometer 0- 315/200 kp/cm<sup>2</sup>  
Working pressure manometer 0 - 16/10 kp/cm<sup>2</sup>

Upon request also available for manual connection to the bottle (changing of the bottle without key)



**3) Pistol Item No. 221.008**

to be connected to hose, 10 mm ins. dia. , with 5/8" connector

**3a) Suitable rubber seal - Item No. 221.009**



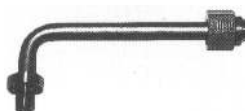
Item No. 221 is continued on the next page



## Continuation Item No. 221

221

- 4) **Brass elbow** Item No. 221.010  
with 5/8" connection nut  
and M 12x1 connector



- 5) **Rubber shower head** with built-in nozzle  
internal thread M 12x1

Item No.	221.011	221.014	221.015
Diameter	60 mm	115 mm	135 mm
Colour	red	red	red



- 6) **Brass lance**  
with 5/8" connection nut

Item No.	Dia.	Length	Item No.	Dia.	Length
221.018	6 mm	400 mm	221.020	6 mm	800 mm
221.019	6 mm	600 mm	221.021	6 mm	1000 mm



- 7) **CO<sub>2</sub>-hose** Item No. 221.022  
Inside dia. 10 mm, wall thickness 3 mm



## Lever arm pump HZP 1

Item No. 222.202

All-metal pump, with screw connection M 64x4mm and R2", for drum up to 200 ltrs. Stable, curved telescopic suction tube, capacity ab. 0,45 ltrs./pass, suitable for oils up to SAE 90, also oil residues, diesel oil, petroleum, fuel oil a.s.o.



222

## Gas burners PROMATIC

Ergonomic handle made of a two-compound plastic, with integrated **piezo ignition**. "On/Off"-function and bayonet joint for a quick change of the burner without instruments. A rotatable hose connection prevent torsion of the hose, connection R 3/8" left.  
All-purpose as well for propane and butane as for similar gases. Optimal working pressure 4 bars.

- 1.) **Handle**  
Item-no. 223.100, length 180mm, height 80mm, weight 0.3kg

- 2.) **Burner lances (w/o handle)**

Item No.	Length mm	Weight kg	Burner-head Ø mm	Power kW	Consumption of gas at 4 bar
223.101	250	1,0	60	102	8.000
223.102	600	1,1			

- 3.) **Recommended accessories:**

a.) **pressure controller** item-no. 223.105, fixed working pressure of 4 bars, with protection against hose-break, R 3/8" left, max. flow rate 12kgs/h, weight 0.5 kgs.

b.) **Set of high-pressure-hose**, item-no. 223.106, 6,3 x 5mm, length 5 m, R 3/8" left x R 3/8" left. Other lengths upon request.

Other systems of gas-burners upon request.

1.)



2.)



3a.)



3b.)



223

## Compressed air oil blowlamps "PERPLEX-2"

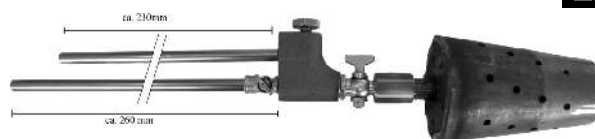
Item No. 223.300

With safety and oil valve, oil nozzle dia. 2 mm, oil consumption 32l/hr (max.). Can be connected directly to a compressed air system (constant air pressure abt. 6 bar).

The blower is especially designed for

- drying/flame treatment of moulds and cores
- final drying of repaired moulds and cores
- preheating of moulds for steel- and aluminum-casting
- light-up of cupola furnaces without wood within 15 min., oil-consumption 7 to 8 ltrs.
- drying of ladles of any size - for upright ladles: through the nozzle
- sooting of chills for steel casting (instead of other coatings)

Fitting flame tubes: Item-no. 223.301



Oil blowlamp complete with flame tube  
(please order flame tubes separately)

223A



**224**



## Compressed air blacking system

for spraying blacking, coating, release agent or also graphite. To be connected to compressed air systems (pressure appr. 6 bar)

Item No.	Nozzle	Connection air	Connection medium
224.101	4 mm Ø	10 mm Ø	10 mm Ø
224.102	7 mm Ø	10 mm Ø	10 mm Ø

**225**



## Compressed air spraying pistols

for blackings and coatings  
3 mm nozzle, pipe length 230 mm (standard), extension upon request, hose connector 8 mm

Item No.	Type	Description	Reservoir		
			Cap.	Material	Coupling
225.001	SP 1	rigid, straight pipe	1,0 l	Aluminium	Bayonet
225.001A			0,7 l	Aluminium	Thread
225.001K			0,7 l	Plastic	Thread
225.002	SP 2	bent swivel pipe	1,0 l	Aluminium	Bayonet
225.003	SP 3	revolving, straight pipe with swivel nozzle	1,0 l	Aluminium	Bayonet
225.003A			0,7 l	Aluminium	Thread
225.003K			0,7 l	Plastic	Thread

**225A**



## Spraying pistol SSP 3 for coatings

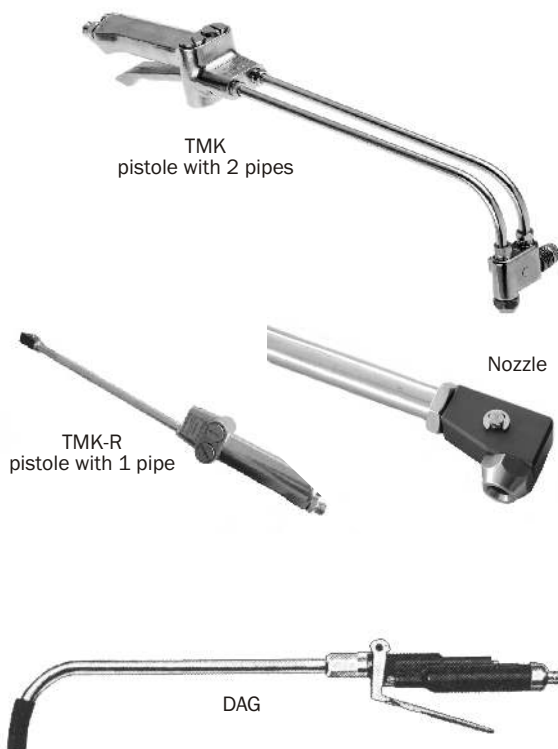
Ideal for a fine and all-over coating, individually adjustable! Air nozzle 1.5mmØ (standard, other Ø upon request). Medium nozzle 1.5mm adjustable in height (Standard, other Ø upon request), reservoir of aluminium with thread, air-connection R 1/4" int. thread

Item No.	Reservoir cap.
225.501NT	0,5 ltr.
225.502NT	1,0 ltr.

Non-drippy version!

Special design for **alcohol coatings** with screw plug to avoid evaporation upon request!

**226**



## Spraying pistols

heavy-duty design, easy and handy to operate, self-priming step valve allows the workpiece to be blown out first and to be sprayed with lubricant subsequently.

### 1) Model MAFA-TMK

#### a) pistols with two pipes

Air and agent connections each 1/4" ext. thread, 90° angle.

2 possible pipe diam.: 8mm (standard) or 10mm (increased level of liquid agent)

Pipe-Ø	Pipe length / Item No.		
	450 mm	750 mm	900 mm
8 mm*	226.800	226.801	226.802
10 mm	226.810	226.811	226.812

\* Standard

#### b) pistols with 1 pipe

Air and agent connections each 1/4" ext. thread, 90° angle

Spraying head of metal with continuous regulation of quantity via regulation screw, air- and agent tube may be regulated separately. Pipe-Ø 12mm

Item No.	226.900	226.901	226.902
Pipe length	450 mm	750 mm	900 mm

Other designs (e.g. with DUO-head, spraying to both sides or with swivel pipe) upon request!

**Fitting medium hose:** complete sucking hose (with assembly for the drum) to be screwed to the LIQ-entry

Item No.	226.830	226.840
Length	3 m	4 m

### 2) Model DAG 087-F

#### a) Pistol without spraying pipe: Item No. 226.001

Remark: Pistol with 2 hose adapters each of 6 mm and 10 mm for the air agent connection.

#### b) Spraying pipe:

Item No.	226.010	226.011	226.012	226.020	226.021
Pipe head	90°			T-Head*	
Length	300 mm	500 mm	1000 mm	300 mm	500 mm

\* (not self-priming)

## SURE-SHOT-spraying cans

### especially for parting compounds

No propellant, just compressed air

Can be refilled; refill liquid and admit compressed air (pressure 6 to 15 bar) can be used for all liquids up to 10 SAE

Item No.	227.001
Cap.	1 ltr.

#### Accessories:

Extensions:				Set of nozzles
Item No.	227.101	227.102	227.103	227.200
Length	75 mm	150 mm	300 mm	with coarse, fine, wide and special nozzle



227

## Parting compound spraying cans SG

for liquid parting compounds

Without propellant, environmentally friendly, as compressed air is used, max. pressure 10 bar, optimum pressure 7,5 bar, volume up to 0,7 l parting compound. Different spray and jet nozzles are included in the scope of supply; can be refilled and reused.

Item No.	975.001
Cont.	0,7 ltr.

**Set of spares Item No. 975.101** comprises valve, 200 mm long extension tube as well as 4 different spray heads

**Fill nozzle Item No. 975.116** to fill the can with compressed air



228

## Compressed air spraying pistols 'SATA'

for blackings, coatings and parting compounds

with built-in compressed air micrometer, infinitely adjustable round/wide spray and volume adjustment, air connector R 1/4"a.

SATAjet 1000 B-RP 0,75 l alu-reservoir \*

SATAjet 1000 H-RP 1 l alu-reservoir (hanging)

SATAjet 1000 K-RP for connection to sep. reservoirs

Nozzle dia.	0,8	1,0/1,1	1,3	1,5/1,6	1,7/1,8	2,0	2,5	3,0
Item No. 1000B	229.001	229.002	229.003	229.004	229.005	229.006	229.007	229.008
1000H	-	-	-	229.104	229.105	229.106	-	-
1000K	229.201	229.202	229.203	229.204	229.205	229.206	229.207	229.208

**Extensions** with round, wide or inclined spray as well as angle-head available (each 200, 300 or 400mm long).

\* upon request also with plastic reservoir



1000B



1000H



1000K

229

## Compressed air spraying pistols 'Pilot'

for blackings, coatings and parting compounds

with built-in air micrometer, infinitely adj. spray and volume adjustment, air connector 1/4"a.

Pistol body of brass, handle of hardwood, 1/2 l alu-reservoir

a) **Pilot IV** with round/wide spray head

#### Extensions:

straight, 45° or 90° offset

b) **Pilot IV EM\*** with round spray head for spraying pulpy compounds

Nozzle dia.	0,5 mm	0,8 mm	1,0 mm	1,2 mm	1,5 mm	1,8 mm	2,0 mm
Item No. Pilot IV	230.001	230.002	230.003	230.004	230.005	230.006	230.007

Nozzle dia.	2,5 mm	3,0 mm	3,5 mm	4,0 mm	4,5 mm	5,0 mm
Item No. Pilot IV	230.008	230.009	230.010	-	-	-
Item No. Pilot IV EM	230.101	-	-	230.104	230.105	230.106



Pilot IV



Pilot IV EM \*

230

\* Discontinued, available as stock lasts

## Compressed air spraying pistols 'MAFA' 9022 F

Low cost, robust pistol of aluminium, nozzle needle of steel, nozzle head self-centering, for round, wide and flat sprays.

Standard Nozzle dia. 1.5 mm.

Quick-connect/-disconnect air coupling.

Other nozzles sizes upon request!

Item No.	230.201
Design	Plastic reservoir 0.5 l



230.201

230A

## Blasting nozzles Standard version

Nozzle dia. 2 mm, Ø 22mm x 115mm long

Hose connector mm	6 mm	10 mm	13 mm	15 mm
Material	Item No.			
Light metal	231.001	231.002	231.003	231.004
Brass	231.101	231.102	231.103	231.104

**Accessories:** low noise nozzle; safety nozzle



231

**231A****Aluminium blasting nozzles with high air flow**

Big size version, **nozzle diam. 8mm**, for blasting big castings, diam. 35 x 185 mm long.

Item No.	231.201	231.202
Hose connector	13 mm	19 mm

**232****Blasting nozzles with rubber nozzle**

**Nozzle dia. 3 mm**

valve opens by depressing the rubber mouthpiece, closes automatically

Hose connector mm	6 mm	8 mm	10 mm	13 mm
Part	Item No.			
Compl. valve	232.001	232.002	232.003	232.004
Hose connector	232.011	232.012	232.013	232.014
Rubber piece	232.021			

**233****Blasting pistols of light metal**

Robust, handy, especially suitable for continuous service, with galvanized steel nozzle, long lever, suspension lug

**Available types:**

**1) Standard version**, as described above; nozzle diam. 1.5mm

**2) Safety version**, with round spray which prevents particles from being blown back at the operator;

**3) Soft version** with a special, low noise level nozzle at 5 bar pressure 62 dB(A) instead of 84 dB(A);

**4) Maxi version**, with 300% higher air flow, very high performance, also if used with small capacity compressors;

**5) Heavy-duty industrial version**, robust, especially suitable for rough service; nozzle especially for use with water atomizer/3,0mm diam.

Extensions 150mm straight or bent also available!

Upon request those pistols may delivered also completed by a 3m **PU-spiral tube**.

Item No.		
Hose connector		
6 mm	10 mm	13 mm
233.001	233.002	233.003
233.101	233.102	233.103
233.201	233.202	233.203
233.301	233.302	233.303
233.401	233.402	233.403

**233A**

Pistol 233.550 with screwed-on 90mm pipe

**Safety blasting pistols**

**With valve for stepless air flow control, nozzle dia. 2.5 mm**

Made of robust, impact-resistant plastic, handy, lightweight, low noise level, hose connector 1/4" int. thread.

The different pipes may be screwed on.

Item No.	233.550	233.551	233.552	233.553
Design	pistol without pipe	pipe 90mm bent	pipe 300 mm straight	pipe 500 mm straight

**Accessories:** by-pas extension for pressure reduction, silencer nozzle, chip protector

**234****Hermetikus blasting nozzles**

of light metal or brass

Size	Outer diameter	Nozzle diameter	Hose connector	Item No.	
				Light metal	Brass
0	18 mm	2 mm	6 mm	234.001	234.101
			10 mm	234.002	234.102
1	24 mm	3 mm	10 mm	234.003	234.103
			13 mm	234.004	234.104
2	28 mm	5 mm	13 mm	234.005	234.105
			16 mm	234.006	234.106

**234A****Hermetikus extension nozzles** of brass

Size	Thread	Length	Nozzle diameter	Item No.	
				straight	bent
0	M 8 x 1	160 mm	2 mm	234.201	234.202
1	M 10 x 1	185 mm	3 mm	234.203	234.204

**234B**

Model A

Model B

**Hermetikus low noise level nozzles** of aluminium

reduce the noise level considerably – below the permissible limits, replace the standard single-hole nozzles.

Size	Model	Thread	Wrench size	Item No.
0	A	M 8 x 1	13 mm	234.301
1	A	M 10 x 1	14 mm	234.302
2	B	M 24 x 1,5	27 mm	234.303

## Industrial hoses

235

on 40 m rolls or partial lengths

### 1) Compressed air hoses

black, tough standard quality, with pressure-resistant reinforcements

Item No.	235.001	235.002	235.003	235.004	235.005
Size	10 x 4.5 mm	13 x 5 mm	15 x 6 mm	19 x 6 mm	25 x 7 mm

### 2) Compressed air hoses 'Trix-Blaustrahl'

for highest requirements with cord reinforcements

Item No.	235.101	235.102	235.104
Size	10 x 5 mm	13 x 5 mm	19 x 6 mm

### 2a) AIRSTAR-hoses

PVC-hose, outside blue, inside black, reinforced by fabric, highly flexible but nevertheless excellent buckling strength

Item No.	235.151	235.152	235.153
Size	6 x 3 mm	9 x 3 mm	13 x 3.5 mm

### 3) Sand blasting hoses

black, with a strong rubber core and strong pressure-resistant fabric reinforcements

Item No.	235.201	235.202	235.203	235.204	235.205
Size	13 x 7 mm	19 x 7 mm	25 x 7 mm	32 x 8 mm	38 x 9 mm

### 4) Water hoses

red outside, black inside, with fabric reinforcements

Item No.	235.301	235.302	235.304	235.305
Size	10 x 3 mm	13 x 3 mm	19 x 4 mm	25 x 4 mm

### 5) Safety cover hoses PYROJACKET PJ

made of woven E-glass-yarns. coated with silicone. Abrasion-resistant, also resistant against chemicals, oils and grease, UV- and infrared-resistant, self-extinguishing, extremely flexible, fits to all radii. Shuts of liquid metal will roll off immediately, so only very small heat can attack hoses or pipes. Heat resistant: permanently 260 °C, while flame treated ab. 800 °C for 30 min., radiation heat ab. 1090 °C for 15 to 20 min., liquid metal ab. 1670 °C for 30 sec.  
on 15 m rolls (shorter lengths are also possible from 1 m on.)

Item No.	235.511	235.513	235.519	235.522	235.525	235.532
Inside-Ø	11 mm	13 mm	19 mm	22 mm	25 mm	32 mm

Other diameters (6 to 127 mm) upon request!



#### Important:

The dimensions given are **inside** diameter and wall thickness; the **outside** diameter of the hose is obtained adding 2 x wall thickness to the inside diameter.

For example: 10 x 5 means 10 mm inside diameter and 5 mm wall thickness; outside diameter is 20 mm

Spiral hoses with or without connectors available upon request!

## Compressed air fittings

236

### 1) Ball valves, internal thread on both sides

Thread acc. to ISO 228, made of brass, galvanized, gasket: PTFE/Teflon, temp.-range -20 °C to +150 °C depending on working pressure

Item No.	236.121	236.122	236.123	236.124	236.125
Internal thread	3/8"	1/2"	3/4"	1"	1 1/4"

### 2) Tap cocks acc. DIN 3489 (former DIN 3486 or 3487)

made of malleable cast iron with screwed coupling and rubber gasket

Item No.	236.101	236.102	236.103
Internal thread	1/2"	3/4"	1"

### 3) Jaw-type hose couplings acc. DIN 3489 (former DIN 3483)

made of malleable cast iron, galvanized, jaw spacing 42 mm

Hose connector	6 mm	10 mm	13 mm	15 mm	19 mm	25 mm	32 mm
Gasket	Item No.						
Rubber	236.301	236.302	236.303	236.304	236.305	236.306	236.307
Brass	-	-	236.311	236.312	236.313	236.314	-

### 4) Jaw-type internal thread couplings acc. DIN 3489 (former DIN 3482)

made of malleable cast iron, galvanized, jaw spacing 42 mm

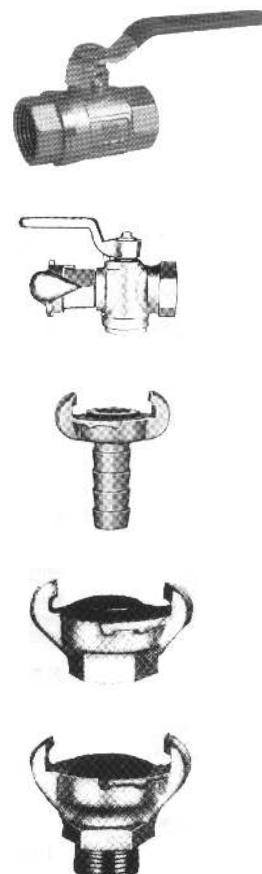
Internal thread	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"
Gasket	Item No.					
Rubber	236.401	236.402	236.403	236.404	236.405	236.406
Brass	-	-	236.411	236.412	236.413	-

### 5) Jaw-type external thread couplings acc. DIN 3489 (former DIN 3481)

made of malleable cast iron, galvanized, jaw spacing 42 mm

External thread	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"
Gasket	Item No.					
Rubber	236.501	236.502	236.503	236.504	236.505	236.506
Brass	-	-	236.511	236.512	236.513	-

Spare rubber gaskets for items 1 to 5: Item No. 236.600



**237**


1) Coupling



2) Connector



3) Connector

## Compressed air quick-connect/disconnect couplings

especially robust design

each package contains 10 p. per type

Size	Item No.	Thread	WR. mm	Dia. mm
------	----------	--------	-----------	------------

### 1) Coupling of galvanized steel

DN 5	237.001 237.002	1/4" a 3/8" a	17 19	27 27
DN 8	237.003 237.004	3/8" a 1/2" a	24 24	38 38

### 2) Connector of galvanized steel

DN 5	237.201 237.202	1/4" a 3/8" a	17 19	- -
DN 8	237.203	3/8" a	19	-

Size	Item No.	WR. mm	Dia. mm
------	----------	-----------	------------

### 3) Connector of galvanized steel

DN 5	237.101 237.102	6 9	14,5 14,5
DN 8	237.104 237.105 237.106 237.107	6 9 11 13	19

**238**


## Hose fittings, galvanized

### 1) external thread sleeve of steel,

for secure connection of hoses to compressed air tools

Package contains 10 p. per type.

Inside hose dia.	Thread / Item No.			
	1/4"	3/8"	1/2"	3/4"
10 mm	238.101	238.102	-	-
13 mm	238.103	238.104	238.105	238.106
15 mm	-	-	238.107	238.108
19 mm	-	-	238.109	238.110

### 2) Hose connecting sleeves, DIN 20038, of steel

Item No.	238.201	238.202	238.203	238.204	238.205	238.206	238.207	238.208
Inside hose dia.	10 mm	13 mm	15 mm	19 mm	25 mm	32 mm	38 mm	53 mm

### 3) Hose claws of steel\*

Item No.	238.301*	238.302*	238.305*	238.306*
Inside hose dia.	6 mm	8 mm	15 mm	19 mm

\* These sizes are being discontinued and will be available in limited quantities only!

### 4) 2-piece hose clips, DIN 3017, of steel

Item No.	238.401	238.402	238.403	238.404	238.405	238.406
Clamping range	8 – 12 mm	10 – 16 mm	12 – 20 mm	16 – 25 mm	20 – 32 mm	25 – 40 mm
Clip with	9 mm			12 mm		

Item No.	238.407	238.408	238.409	238.410	238.411	238.412
Clamping range	32 – 50 mm	40 – 60 mm	50 – 70 mm	60 – 80 mm	70 – 90 mm	80 – 100 mm
Clip with	12 mm					

### 5) 2-piece hose clips, DIN 20039A, of malleable cast iron

Item No.	238.501	238.502	238.503	238.504	238.505
Clamping range	22 – 29 mm	28 – 34 mm	32 – 40 mm	39 – 49 mm	48 – 60 mm
Package	10 St.	10 St.	10 St.	10 St.	5 St.

Item No.	238.506	238.507	238.508	238.509	238.510
Clamping range	60 – 76 mm	77 – 94 mm	94 – 115 mm	115 – 145 mm	135 – 155 mm
Package	5 St.	5 St.	1 St.	1 St.	1 St.

**239**


Coupling with external thread



Plug-in nipple with external thread



Coupling with internal thread



Plug-in nipple with internal thread



Coupling with hose sleeve



Plug-in sleeve

## One-hand quick connect/disconnect couplings

(Type DN 7,2) of brass. Package contains 10 p. per type

Item No.	Thread	I.D. mm	WR. size mm	Dia. mm
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### 1) Coupling with external thread

239.001	1/8"	-	22	27
239.002	1/4"	-	22	27
239.003	3/8"	-	22	27
239.004	1/2"	-	24	27

### 2) Coupling with internal thread

239.101	1/8"	-	22	27
239.102	1/4"	-	22	27
239.103	3/8"	-	22	27
239.104	1/2"	-	24	27

### 3) Coupling with hose sleeve

239.201	-	6	-	27
239.202	-	9	-	27
239.203	-	13	-	27

Item No.	Thread	I.D. mm	WR. size mm	Dia. mm
----------	--------	------------	----------------	------------

### 4) Plug-in nipple with external thread

239.301	1/8"	-	13	-
239.302	1/4"	-	17	-
239.303	3/8"	-	19	-
239.304	1/2"	-	24	-

### 5) Plug-in nipple with internal thread

239.401	1/8"	-	13	-
239.402	1/4"	-	17	-
239.403	3/8"	-	19	-
239.404	1/2"	-	24	-

### 6) Plug-in sleeve

239.501	-	6	-	12
239.502	-	9	-	12
239.503	-	13	-	15



## Compressed air chisels

240

sensitive regulating valve, recoil dampening construction, sound-dampening exhaust ring, easy to service

Type		FK 101.1	FK 111.1	FK 101.2	FK 111.2	FK 101.3	FK 111.3
Weight	kg	0.68	0.77	0.77	0.81	0.72	0.82
Piston dia.	mm	16	16	16	16	16	16
Stroke	mm	30	45	30	45	30	45
No. of strokes	1/min	6100	4400	6100	4400	6100	4400
Length	mm	180	188	172	194	172	193
Air consumption	m³/min	0.32	0.32	0.32	0.32	0.32	0.32
Air connection	int. th.	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Hose inside dia.	mm	8	8	8	8	8	8
Shape of handle		Pistol grip		Straight with button		Straight with lever	
Tool holder		Spring cap, oval, 31 x 18 mm, stop ring					
Chisel bush		Item No.					
S 12.5 x 36		240.001	240.003	240.005	240.007	240.009	240.011
R 10.3 x 36		240.002	240.004	240.006	240.008	240.010	240.012

Type		FK 101.4	FK 111.4	FK 102 G*	FK 102.4	FK 103 G*	FK 103.4	FK 102.5	FK 103.5
Weight	kg	1.04	1.14	2.4	1.8	2.6	2.12	3.1	3.4
Piston dia.	mm	16	16	20	20	20	20	20	20
Stroke	mm	30	45	60	60	90	90	60	90
No. of strokes	1/min	6100	4400	3200	3200	2200	2200	3200	2200
Length	mm	214	236	315	290	365	335	310	358
Air consumption	m³/min	0,32	0,32	0,42	0,44	0,42	0,46	0,44	0,50
Air connection	int. th.	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Hose inside dia.	mm	8	8	8	10	8	10	10	10
Shape of handle		Open (AL)		Open (AL)			Closed (St)		
Tool holder		Spring cap, oval 31 x 18 mm, with stop ring		Spring cap, 23 mm dia. with stop ring			Spring cap, 23 mm dia. with stop ring		
Chisel bush		Item No.							
S 12,5 x 36		240.013	240.015	-	-	-	-	-	-
R 10,3 x 36		240.014	240.016	-	-	-	-	-	-
RS 14,3		-	-	240.025	240.017	240.027	240.019	240.021	240.023
RS 14,3 x 50		-	-	240.026	240.018	240.028	240.020	240.022	240.024

\* with vibration damper, strain reduction ab. 60%

Scope: hose fittings and plug-in tools have to be ordered separately.

Servicing cartridge (Item No. 190.201) see page 53.

Spare part lists are available!

Pivot joint VARIACOR for all compressed-air tools see item 190B



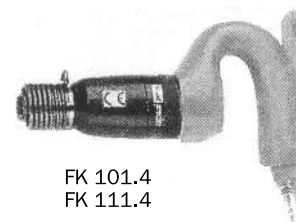
FK 101.1  
FK 111.1



FK 101.3  
FK 111.3



FK 101.2  
FK 111.2



FK 101.4  
FK 111.4



FK 102.4/FK 103.4



FK 102.5 and FK 103.5 with closed steel handle.  
The higher weight dampens vibrations – for ease of handling.

## Plug-in tools with collar suitable for Item No. 240

240A

Tool shank drawing						
Description	Useful length mm	Width mm	S 12,5 x 36	R 10,3 x 36	RS 14,3	R 14,3 x 50
Chisel shaft	125	-	240,101	240,102	-	-
	150	-	-	-	240,113	-
Pointed chisel	125	-	240,201	-	-	-
	135	-	-	-	240,213	240,214
	200	-	240,221	-	240,223	-
	250	-	-	-	240,233	240,234
Flat chisel	125	15	240,301	240,302	-	-
	135	20	-	-	240,313	240,314
	135	30	-	-	240,323	-
	180	40	-	-	240,333	-
	195	15	240,341	240,342	-	-
	200	20	-	-	240,353	-
	250	15	240,361	240,362	-	-
	250	20	-	-	240,373	240,374



Chisel shaft



Pointed chisel



Flat chisel

Other dimensions upon request!



Pneumatic chisel with spring cap



Pneumatic chisel with screw-on cap

**Pivot joint VARIACOR** for all compressed-air tools see item 190B



## Compressed air chisels

**Easy to handle:** Smooth surfaces facilitate handling the tool; excellent handling means greater safety and better performance.

**Low noise level:** Thanks to a high-quality plastic silencer the noise level is reduced to a low level; the air can be discharged into any direction by rotating the exhaust ring.

**Vibration dampening:** Thanks to a vibration-dampening connection between cylinder and handle, the effects of the vibrations are substantially diminished. The operator can work the chisel for longer periods as no-load strokes are much easier to cope with.

**Ease of service:** The simple construction facilitates maintenance; the use of proven materials extends service life and reduces maintenance and repair expenses as well as down-time costs.

Type		FK 2.3	FK 3.3	FK 4.3	FK 5.3	FK 6.3	DR 5F*
Weight	kg	3.7	4.1	6.3	6.9	7.9	5.8
Piston dia.	mm	23	23	30	30	30	25
Stroke	mm	54	83	72.5	103	137	132
No. of strokes	1/min	2800	2100	3200	1500	1200	3200
Length	mm	315	345	365	415	460	430
Air consumption	m <sup>3</sup> /min	0.54	0.62	0.82	0.9	1.0	0.7
Air connection	int. th.	R 3/8" i	R 3/8" i	R 3/8" i	R 3/8" i	R 3/8" i	R 3/8" i
Inside hose dia.	mm	13	13	13	13	13	10
Tool holder	Spring cap, oval						
Chisel bush DIN 8530	Item No.						
RS 17,5	241.001	241.011	241.031	241.041	241.051	241.021A	
R 17,5 x 60	241.002	241.012	241.032	241.042	241.052	—	
RS 20	241.003	241.013	241.033	241.043	241.053	241.023A	
R 20 x 60	241.004	241.014	241.034	241.044	241.054	—	

\* especially vibration dampening: acceleration force 2.71m/sec<sup>2</sup>

Type		FK 2	FK 3	FK 4	FK 5
Weight	kg	4.15	4.48	6.25	6.73
Piston dia.	mm	23	23	30	30
Stroke	mm	54	83	72	102
No. of strokes	1/min	2800	2100	3200	1500
Length	mm	338	374	378	430
Air consumption	m <sup>3</sup> /min	0.54	0.62	0.82	0.9
Air connection	int. th.	R 3/8" i	R 3/8" i	R 3/8" i	R 3/8" i
Inside hose dia.	mm	13	13	13	13
Tool holder	Screw-on cap				
Chisel bush DIN 8530	Item No.				
RS 17,5	241.061	241.071	241.081	241.091	
RS 20	241.062	241.072	241.082	241.092	

Scope: Hose fittings and plug-in tools have to be ordered separately. Servicing cartridge see item 190C.

Spare parts lists are available!

## 241A



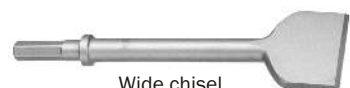
Chisel shaft



Pointed chisel



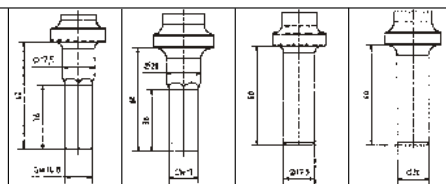
Flat chisel



Wide chisel

## Plug-in tools with collar suitable for Item No. 241

Tool shank drawing



Description	Useful length mm	Width mm	RS 17,5	RS 20	R 17,5 x 60	R 20 x 60
Chisel shaft	250	—	241.301	241.302	241.303	—
	350	—	—	—	—	241.314
Pointed chisel	250	—	241.401	241.402	241.403	241.404
	350	—	241.411	241.412	—	241.414
	450	—	241.421	241.422	241.423	—
Flat chisel	250	30	241.501	241.502	241.503	241.504
	350	30	241.511	241.512	—	—
	450	30	241.521	241.522	—	—
	600	30	241.531	241.532	—	—
	750	30	241.541	241.542	241.543	—
	1000	30	—	241.552	—	—
Wide chisel	210	40	—	—	241.603	—
	210	60	241.611	241.612	—	—
	210	90	241.621	—	—	—
	750	90	—	241.632	—	—

Other dimensions upon request!

## Compressed air straight grinder

ergonomic design, exhaust air released to the rear by included exhaust air hose, easy to use, safety valves, 73 to 76 dB (A)

Item No.	242.551	242.357H	242.357D	242.232
Application	light fettling		heavy-duty fettling	
Type of valve	rotary valve	lever valve	rotary valve	lever valve
Revs	1/min	55.000	35.000	35.000
Power	W	100	290	290
Incl. chuck	mm	3	6	6
Weight w/o hose	kgs	0.15	0.50	0.50
Ø x length	mm	14 x 120	36 x 170	36 x 170
Hose connection	plug-in sleeve	G 1/4" i	G 1/4" i	G 1/4" i



242.551



242.357H



242.232

## Compressed air angular grinder

unbalance will be settled automatically, built-in speed governor, low angular head, easy to use. Exhaust air released to the rear by included exhaust air hose

Item No.	243.121
Type of valve	lever valve
Revs	12.000 min <sup>-1</sup>
Power	1100 W
Max. Ø for gr. wheel	125 mm Ø
Weight w/o hose	2.1 kg
Height x length	98 x 240 mm
Hose connection	G 1/2" i

### Remark:

Pivot joint VARIACOR for all compressed-air tools see item 190B



243

## Steel wire hand brushes

Wood slightly curved, total length appr. 290 mm, bristle area appr. 140 mm, steel bristle height 25 mm

No. of rows	Width mm		Steel wire, round 0,30/0,35 mm (STANDARD)	Undulated, round 0,2 mm	Undulated, round 0,3 mm
2	22	Item No.	244.592	244.512	244.522
3	30	Item No.	244.593	244.513	244.523
4	35	Item No.	244.594	244.514	244.524
5	40	Item No.	244.595	-	-
6	45	Item No.	244.596	-	-



244

**Special hand brushes** Wood slightly curved, total length appr. 290 mm, bristle area appr. 140 mm, steel bristle height 25 mm

No. of rows	Width mm		Und. steel wire V2A 0,2 mm	Und. brass wire			Und. phosphorbronze wire	
				0,1 mm	0,15 mm	0,25 mm	0,15 mm	0,20 mm
2	22	Item No.	245.352	245.452	245.472	245.482	-	-
3	30	Item No.	245.353	245.453	245.473	245.483	245.643	245.653
4	35	Item No.	245.354	245.454	245.474	245.484	245.644	245.654
5	40	Item No.	245.355	245.455	245.475	245.485	245.645	245.655



245

## Round brushes, round cast steel wire, 300 mm long

Item No.	246.010	246.015	246.020	246.022	246.025	246.030	246.035	246.040
Diameter	10 mm	15 mm	20 mm	22 mm	25 mm	30 mm	35 mm	40 mm

Other diameters and tapered designs upon request!



246

## Wire scrubbing brushes

Wood size: 220 x 60 mm, 6 rows, height of bristles 25 mm

Item No.	Wire material
247.001	smooth steel wire 0.30-0.40 mm
247.004	undulated brass wire 0.20 mm

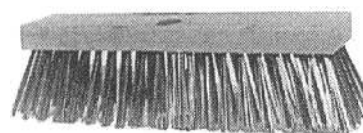


247

## Steel wire brooms

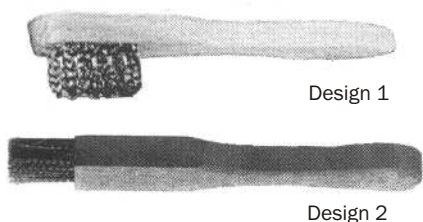
Wood size: 310 x 60 mm, 6 rows, bristle height 70 mm

Item No.	Wire material
248.066	smooth steel wire 0.40-0.60 mm
248.266	flat steel wire 1.8 x 0.45 mm



248

**249**



Design 1

Design 2

## Die brushes 1) Standard version, with wooden handle,

height of bristles 15 to 18 mm.

a) steel wire

Item No.	No. rows	Wire thckn.	Length
249.023	3	0,15 mm	150 mm
249.024	4	0,20 mm	180 mm
249.025	5	0,20 mm	180 mm

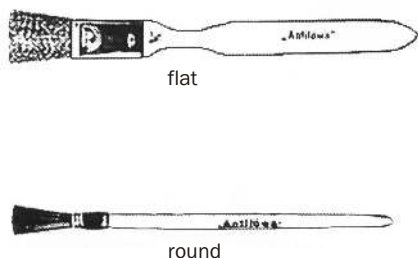
b) brass wire

Item No.	No. rows	Wire thckn.	Length
249.123	3	0,15 mm	150 mm
249.124	4	0,20 mm	180 mm
249.125	5	0,20 mm	180 mm

## 2) Cup-shaped brush, with wooden handle, Item No. 249.276

wood length 160 mm, height of bristles 30 mm, 4 rows, undulated brass wire 0,20 mm

**250**



flat

round

## Wire brushes for lubricating and parting compounds

undulated wire, with wooden handle, absorbent, durable, highly heat-resistant

### 1) of phosphor bronze wire

Design	Item No.				round	
	flat				Nr. 2 = 8 mm Ø	Nr. 4 = 10 mm Ø
Handle length	1/2"	3/4"	1"	1 1/2"		
appr. 200 mm	250.101	250.102	250.103	250.104	250.111	250.112
appr. 320 mm	250.121	250.122	250.123	250.124	250.131	250.132

### 2) of stainless steel wire

Design	Item No.			
	flat			
Handle length	1/2"	3/4"	1"	1 1/2"
appr. 200 mm	250.201	250.202	250.203	250.204
appr. 320 mm	250.211	250.212	250.213	250.214

**251**



## Fuel and oil brushes with twisted wire handle and lug

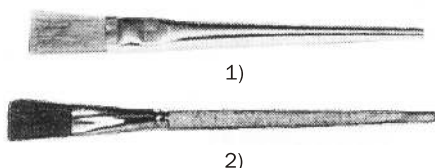
### 1) undulated brass wire

Item No.	Collar dia.	Length
251.070	12 mm	240 mm

### 2) mixture of bristles

Item No.	Collar dia.	Length
251.701	6 mm	145 mm
251.702	8 mm	210 mm
251.703	10 mm	230 mm

**252**



1)

2)

## Soldering brushes, pure bristles

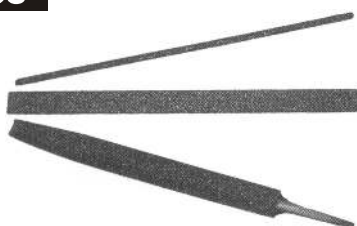
### 1) tin plate sleeve

Item No.	Width of sleeve	Length
252.692	13 mm	135 mm
252.693	15 mm	150 mm
252.694	21 mm	175 mm

### 2) metal clamp with round wooden handle

Item No.	Width of sleeve	Length
098.401	12 mm	160 mm
098.402	13,5 mm	160 mm
098.403	17 mm	160 mm
098.404	19 mm	165 mm
098.405	21 mm	165 mm
098.406	23 mm	170 mm

**253**



## Core files coated with tungstencarbide

abrasion resistant special coating, the thin types are highly flexible, as adaptable to the shapes of the core. Roughness 60 grit.

Item No.	253.300	253.300A	253.310	253.311
Design	round		half-round, tapered	
Length mm	200	200	150	210
Section mm	3,2 Ø	1,6 Ø	16 x 5	20 x 5,5

Item No.	253.301	253.302	253.303	253.304	253.307	253.308	253.305	253.305A	253.306	253.313
Design	flat									
Length mm	200	200	200	200	250	250	300	300	300	300
Section mm	6,4 x 1,6	6,4 x 3,2	12,7 x 1,6	12,7 x 3,2	19 x 1,6	19 x 3,2	25,4 x 1,6	25,4 x 2	25,4 x 3,2	50 x 3,2

**253A**

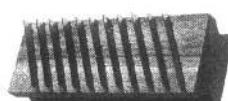


## Core files triangular, made of corundum

The triangular shape enables both large size and fine working.

Item No.	253.501
Dim. (L x W x H)	230 x 40 x 4 mm

**254**



## Core brushes with hard wooden handle

Item No. 254.003

with embedded steel sheets  
165 x 60 mm

**254A**



## Core scratcher Item-No. 254.101

wire width 52 mm, overall width 56 mm, steel bristle height 10 mm, band thickness 4 mm, with multiplast backing.



## High-performance rotary brushes

255

Firmly gripped to steel pipe; with lateral disks and axle hole

**Type I 'Biol'**, undulated steel wire, 0,3 or 0,5 mm.

Brush dia.	Brush width	Axle hole dia.	Pipe dia.	Item No.	Wire thickness	
					0,30 mm	0,50 mm
100 mm	16 mm	13 mm	40 mm		255,101	255,201
	25 mm				255,102	255,202
	33 mm				255,103	255,203
125 mm	16 mm	13 mm	50 mm		255,111	255,211
	25 mm				255,112	255,212
	33 mm				255,113	255,213
150 mm	18 mm	20 mm	60 mm		255,121	255,221
	27 mm				255,122	255,222
	36 mm				255,123	255,223
175 mm	18 mm	20 mm	77 mm		255,131	255,231
	27 mm				255,132	255,232
	36 mm				255,133	255,233

Brush dia.	Brush width	Axle hole dia.	Pipe dia.	Item No.	Wire thickness	
					0,30 mm	0,50 mm
200 mm	20 mm	20 mm	96 mm		255,141	255,241
	30 mm				255,142	255,242
	40 mm				255,143	255,243
250 mm	22 mm	25 mm	96 mm		255,151	255,251
	33 mm				255,152	255,252
	44 mm				255,153	255,253
300 mm	55 mm	30 mm	96 mm		255,154	255,254
	22 mm				255,161	255,261
	33 mm				255,162	255,262
	44 mm				255,163	255,263

### Type II 'Universal'

Brush dia.	Brush width	Axle hole dia.	Pipe dia.	Item No.	Und. steel wire			Und. st.-steel wire V2A	
					0,20 mm	0,30 mm	0,50 mm	0,20 mm	0,30 mm
100 mm	20 mm	13 mm	40 mm		255,301	255,401	–	255,601	255,701
125 mm	20 mm	13 mm	50 mm		255,311	255,411	–	–	255,711
150 mm	20 mm	20 mm	60 mm		–	255,421	255,521	255,621	255,721
	27 mm				255,322	255,422	255,522	255,622	255,722
175 mm	20 mm	20 mm	77 mm		–	255,431	255,531	255,631	255,731
	30 mm				255,332	255,432	255,532	255,632	255,732
200 mm	20 mm	20 mm	96 mm		255,341	255,441	255,541	255,641	255,741
	30 mm				255,342	255,442	–	255,642	255,742
250 mm	33 mm	25 mm	96 mm		255,351	255,451	255,551	255,651	–
	40 mm				255,352	255,452	255,552	–	–
300 mm	35 mm	30 mm	96 mm		–	255,461	–	–	255,761
	44 mm				–	–	–	255,662	255,762

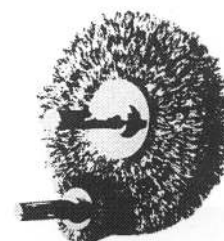


## Decarburizing brushes with clamping shank, dia. 6 mm

256

Shank length appr. 30 mm, can be used on high-speed tools, for removing rust, scale, enamel, burrs and impurities on internal surfaces and hard-to-reach places.

Brush dia.	Brush width	Item No.	Undulated steel wire			Und. st.-steel wire V2A		Und. brass wire
			0,15 mm	0,20 mm	0,30 mm	0,20 mm	0,30 mm	0,20 mm
30 mm	6 mm		256,111	256,211	–	256,511	–	–
	10 mm		–	256,212	–	256,512	–	256,712
	14 mm		–	256,213	–	–	–	–
40 mm	9 mm		256,121	256,221	256,321	256,521	–	256,721
	14 mm		–	256,222	–	256,522	–	256,722
	20 mm		–	256,223	–	256,523	–	–
50 mm	10 mm		–	256,231	256,331	256,531	256,631	256,731
	18 mm		256,132	256,232	256,332	256,532	256,632	256,732
	11 mm		–	256,241	256,341	256,541	–	256,741
60 mm	18 mm		256,142	256,242	256,342	256,542	256,642	256,742
	25 mm		–	256,243	256,343	–	–	–
	12 mm		–	256,251	256,351	256,551	256,651	–
70 mm	18 mm		256,152	256,252	256,352	256,552	256,652	256,752
	25 mm		–	256,253	256,353	256,553	256,653	–

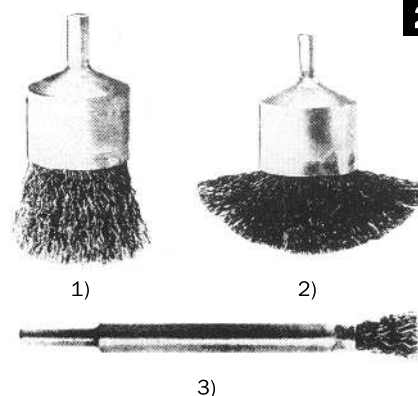


## Rotary wire brushes with 6 mm dia. shank

Especially suitable for treating moulds and castings with hard-to-reach places, such as corners and recesses.

Length of cap and shaft appr. 45 mm

Brush dia.	Cap dia.	Visible wire length	Max. speed	Und. steel wire			Und.st.-steel wire	Und. brass wire
				0,20 mm	0,30 mm	0,50 mm	0,30 mm	0,30 mm
<b>1) Standard shape</b>				<b>Item No.</b>				
10 mm	10 mm	20 mm	18,000	256,801	256,811	–	256,831	256,841
17 mm	15 mm	25 mm	18,000	256,802	256,812	256,822	256,832	256,842
25 mm	22 mm	25 mm	18,000	256,803	256,813	256,823	256,833	256,843
30 mm	29 mm	25 mm	15,000	256,804	256,814	256,824	256,834	256,844
<b>2) Wide version</b>				<b>Item No.</b>				
50 mm	22 mm	n.a.	15,000	–	256,815	–	–	–
70 mm	29 mm	n.a.	15,000	–	256,816	–	–	–
<b>3) Extra long version (length of cap &amp; shank abt. 100 mm)</b>								
12 mm	11 mm	18 mm	10,000	256,808	256,818	–	256,838	256,848



Other wire thicknesses and qualities upon request; please specify quantities.



# DICK files for metal treatment

Each package unit contains 5 files; single files available at extra charge.

Cut 1 = coarse, cut 2 = semi coarse, cut 3 = medium, cut 4 = medium fine, 5 = fine, cut 6 = extra fine

**257**



## Flat bunt precision files

### 1) Normal width shape (1112 P)

Dimensions mm	Item No.					
	Cut 1	2	3	4	5	6
100 x 9,5 x 2,5	708.111	708.112	708.113	708.114	708.115	-
125 x 12,5 x 3,2	708.121	708.122	708.123	708.124	-	-
150 x 16 x 4	708.131	708.132	708.133	708.134	708.135	708.136
200 x 21,3 x 4,8	708.141	708.142	708.143	708.144	708.145	-
250 x 25,5 x 6,3	708.151	708.152	708.153	708.154	-	-
300 x 29,5 x 7,8	708.161	708.162	708.163	-	-	-

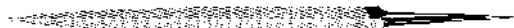
### 2) Semi-narrow shape (1113 P)

Dimensions mm	Item No.		
	Cut 1	2	3
150 x 12 x 4	708.231	708.232	708.233
200 x 14,5 x 4,5	708.241	708.242	708.243
250 x 18 x 5	708.251	708.252	708.253

### 3) Narrow shape (1114 P)

Dimensions mm	Item No.				Dimensions mm	Item No.		
	Cut 1	2	3	4		Cut 1	2	3
125 x 8 x 3	708.321	708.322	708.323	-	250 x 15 x 5	708.351	708.352	708.353
150 x 8 x 3,8	708.331	708.332	708.333	708.334	300 x 18 x 5	-	-	708.363
200 x 12 x 4	708.341	708.342	708.343	708.344				

**258**



## Triangular precision files

### 1) Normal, pointed shape (1136 P)

Dimensions mm	Item No.			
	Cut 1	2	3	4
100 x 5,8	709.111	709.112	709.113	-
125 x 8,3	-	709.122	709.123	-
150 x 10,3	709.131	709.132	709.133	709.134
200 x 14,2	709.141	709.142	709.143	-
250 x 17,2	709.151	-	709.153	-

### 2) Narrow shape (1135 P)

Dimensions mm	Item No.	
	Cut 2	3
150 x 7,5	-	709.233
200 x 10	709.242	-

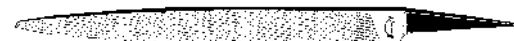
**259**



## Square precision files (1146 P)

Dimensions mm	Item No.			Dimensions mm	Item No.		
	Cut 1	2	3		Cut 1	2	3
100 x 3,6	710.111	710.112	710.113	200 x 7,5	710.141	710.142	710.143
125 x 4,5	710.121	-	710.123	250 x 9,4	710.151	710.152	710.153
150 x 5,5	710.131	710.132	710.133				

**260**



## Knife-shaped precision files

(1176 P) back without cut

Dimensions mm	Item No.		
	Cut 1	2	3
150 x 18 x 3,5	711.131	711.132	711.133
200 x 22 x 4,2	711.141	711.142	711.143

**261**



## Birds tongue-shaped precision files

(1196 P) unequally rounded

Dimensions mm	Item No.			Dimensions mm	Item No.			
	Cut 2	3			Cut 1	2	3	4
100 x 12 x 3,5	712.112	712.113		150 x 15 x 5	712.131	712.132	712.133	712.134
125 x 13 x 4	712.122	-		200 x 21 x 6,3	712.141	-	712.143	-

**262**



## Half round precision files

### 1) Normal, pointed shape (1156 P)

Dimensions mm	Item No.				
	Cut 1	2	3	4	5
100 x 13 x 3,5	713.111	713.112	713.113	713.114	-
125 x 13 x 4	713.121	713.122	713.123	713.124	-
150 x 18 x 5,5	713.131	713.132	713.133	713.134	713.135
200 x 21 x 6,5	713.141	713.142	713.143	713.144	-
250 x 26 x 7,5	713.151	713.152	713.153	-	-

### 2) Narrow, pointed shape (1155 P)

Dimensions mm	Item No.			
	Cut 1	2	3	4
125 x 10 x 3	-	713.222	-	-
150 x 13 x 3,5	713.231	713.232	713.233	713.234
200 x 15 x 4,5	713.241	713.242	713.243	-
250 x 15 x 4,5	713.251	713.252	713.253	-

**263**



## Round precision files

### 1) Normal, pointed shape (1166 P)

Dimensions mm	Item No.				Dimensions mm	Item No.		
	Cut 1	2	3	4		Cut 1	2	3
100 x 4	714.111	714.112	714.113	-	200 x 7,8	714.141	714.142	714.143
125 x 5	714.121	714.122	714.123	-	250 x 9,4	714.151	714.152	714.153
150 x 6	714.131	714.132	714.133	714.134				

### 2) Thin, pointed shape (1165 P)

Dimensions mm	Item No.	
	Cut 2	
150 x 3,9	714.232	

Remarks for item Nos. 257 - 263: Supplied without handle. Handles see Item No. 267.

# Files for metal working (Cut 0 = extra coarse, cut 2 = semi-coarse)

## Special files for light metals

264

(aluminium files) cut 0

### 1) flat, blunt (1312)

both flat sides and one narrow side with cut

a) standard width shape

Item No.	717.130	717.140	717.150
Dimensions mm	150 x 16 x 4	200 x 21 x 5	250 x 25 x 6,3

b) narrow shape

Item No.	717.230 *
Dimensions mm	150 x 8 x 3

### 2) half-round (1352)

a) standard width shape

Item No.	717.330	717.340	717.350	717.360 *
Dimensions mm	150 x 18 x 5,5	200 x 20 x 6	250 x 24 x 7,5	300 x 30 x 9

b) narrow shape

Item No.	717.440 *
Dimensions mm	200 x 12,5 x 4,2

\* Discontinued. Available as long as stock lasts.



## Special files for soft metals

265

(tin files) cut 0

### 1) flat, blunt (1612 w)

both flat sides and one narrow side with cut

Item No.	718.140 *	718.150	718.160
Dimensions mm	200 x 20 x 5	250 x 25 x 6,0	300 x 30 x 6,5

### 2) half-round (1652 w)

Item No.	718.240	718.250	718.260
Dimensions mm	200 x 21 x 6	250 x 25 x 7	300 x 30 x 9

\* Discontinued. Available as long as stock lasts.



## Hardness testing files, triangular (1133), extra hard

266

All three faces with special double cut; edges with single cut.  
Application: for testing the hardness of hardened materials;  
max. hardness 63 HRC

Item No. 266.032 150 x 10,3 mm, cut 2

Package contains 5 files.

Single files available at extra price.



Remark for Item Nos. 264 - 266: Supplied without handle. Handles see below!

## File handles

267

### 1) hardwood handle in accordance with DIN 395, ground and waxed, with clamp

Item No.	715.108	715.110	715.112	715.114	715.116
Length of handle	80 mm	100 mm	120 mm	140 mm	160 mm
for file length	100 mm	125 - 175 mm	200 mm	250 - 300 mm	400 mm

### 2) plastic handle, handy, impact resistant, excellent grip Sizes 110 and 120 with insert

Item No.	715.210	715.211	715.212
Length of handle	100 mm	110 mm	120 mm
for file length	100 - 150 mm	200 - 250 mm	250 - 300 mm



## File brushes

268

For easily cleaning files and for removing fillings, thus increasing the performance.

Item No.	716.134	716.334
Length mm	115	115
Width mm	40	55



**269**



610



611



640



650



660

## Milled hand files (milled cut)

cut 1 = coarse cut 2 = medium cut 3 = fine

Package contains 5 files. Single files available at extra price.

### 1) No. 610 flat, blunt, diagonal toothing, both flat sides and one narrow side toothed

Dimensions mm	Item No.		
	250 x 26 x 7	300 x 31 x 8	350 x 34 x 9
Cut 1	719.151	719.161	719.171
Cut 2	719.152	719.162	719.172
Cut 3	-	719.163	-

### 2) No. 611 flat, blunt, radial toothing, both flat sides and one narrow side with radial cut

Dimensions mm	Item No.		
	250 x 24 x 6,2	300 x 29 x 8	350 x 34 x 9,2
Cut 1	719.251	719.261	719.271
Cut 2	719.252	719.262	-

### 3) No. 640 square, all four sides toothed \*

Dimensions mm	Item No.	
	250 x 10	300 x 12
Cut 1	-	719.461
Cut 2	719.452	719.462

### 4) No. 650 half-round, concave, curved, externally toothed only

Dimensions mm	Item No.		
	250 x 23	300 x 27	350 x 30
Cut 1	719.551	719.561	719.571
Cut 2	719.552	-	-

### 5) No. 660 round, tapered \*

Dimensions mm	Item No.	
	250 x 10	300 x 12
Cut 1	719.651	719.661

\* Discontinued. Available as long as stock lasts.

**270**



## Mini-multi-purpose files (1102 MZ)

with PVC-coated steel handle

Special cut for dressing soft metals, plastics and wood.

Item No.	Shape	Total length	Cut length	Width x thickness
703.100	flat, bunt	200 mm	100 mm	10 x 4 mm

**270A**



## Multi-purpose files (1104 MZ)

with special cut, one face coarse (roughing), the other side fine (smoothing), for dressing steel, non-ferrous metals, soft metals, plastics and wood

Item No.	Shape	Dimensions
703.220	flat, bunt	200 x 20 x 5 mm
703.225		250 x 25 x 6,3 mm

**Remark for Item Nos. 269 - 270A:** Supplied without handle. Handles see Item No. 267.

**271**



719.810/815

719.811

719.820/822

719.830

719.814

719.821

719.860

## Hand deburring tool Item No. 719.800

complete set with universal handle, tool holder and one tool No. 719.810 a. 719.820

**Tools available** (shaft dia. 2,6 mm, each package contains 10 pieces):

Item No.	Application
719.810	universal-HSS-tool for steel and aluminium
719.815	tin-coated-HSS-tool with greater hardness
719.814	HM-tool for long shavings materials
719.811	diamond-coated tool for hardened steel
719.820	light HSS-tool for brass and plastics
719.822	tin-coated-HSS-tool with incr. hardness
719.821	HM-tool for short shavings materials
719.830	light HSS-tool for deburring holes in steel and aluminium
719.860	HSS-tool for deburring places which are hard to reach

## Saw files, triangular (sharpening files)

with blank tip, single cut, cut 2

### 1) No. 1232, most common version

Item No.	704.110*	704.112*	704.115	704.117	704.120
Length of cut x width mm	100 x 9	125 x 11	150 x 13	175 x 14	200 x 16

### 2) No. 1237, small, thin

Item No.	704.210	704.211*	704.212	704.215	704.217*	704.220
Length of cut x width mm	100 x 6,3	113 x 7,1	125 x 7,2	150 x 9	175 x 11,2	200 x 12

\* Discontinued

**272**



## Fine saw files No. 1240, parallel, single cut, cut 3

Item No.	705.100
Length of cut x width mm	110 x 7 x 5

**272A**



## Band saw files, triangular

### No. 1231, round edges, cut 2

Item No.	706.115	706.117	706.120
Length of cut x width mm	150 x 15	175 x 16	200 x 17

**273**



**Remark for Item Nos. 272 - 273:** Supplied without handle. Handles see Item No. 267.

## Machine band saw files, triangular

### single cut, No. 3231

with rounded edges, cut 2, without handle and slot

Item No.	707.100
Length of cut x width mm	215 x 15

**274**



## Surform-tools

for working hardwood and softwood as well as plastics of all kinds, soft metals and for smooth fillers

### 1) Multi-purpose plane

**Item No. 726.122**

can be used as a plane with upright handle or otherwise as a file; red plastic handle, black metal body



**275**

### 2) Standard plane

**Item No. 726.296**

with a plane handle of black plastic, black metal body



### 3) Standard file

**Item No. 726.295**

ideal file shape; black plastic handle, black metal body



### 4) Round file

**Item No. 726.297**

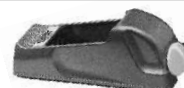
for enlarging holes and for working and smoothing round edges, ideal for turnery, strong plastic handle



### 5) Block plane

**Item No. 726.399**

handy tool for working corners and small surfaces; red metal body, with adjustable blade



### 6) Scraper

**Item No. 726.115**

handy plastic handle; increased cutting action by slightly curved blade; blade exchangeable within seconds

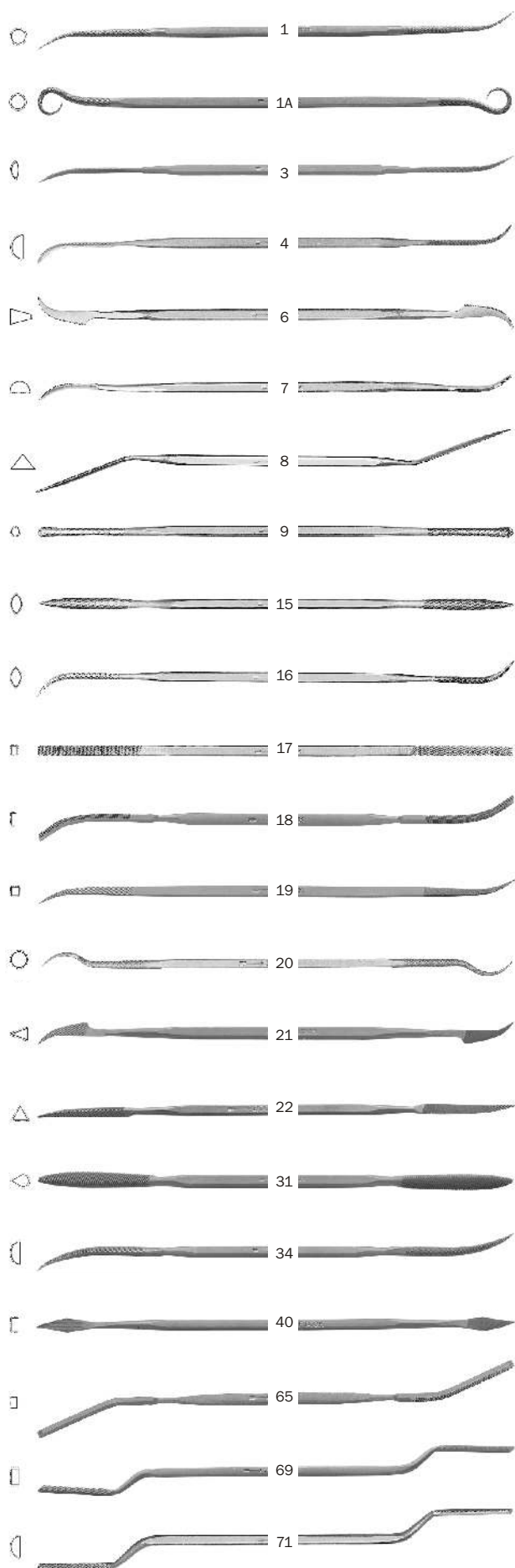


### 7) Spare blades

Item No.	Description	Size	For tool No.
726.293	Standard blade	250 x 42 mm	726.122, 726.296, 726.295
726.393	Fine blade	250 x 42 mm	726.122, 726.296, 726.295
726.299	Half-round blade	250 x 42 mm	726.122, 726.296, 726.295
726.291	Round blade	250 x 15 mm	726.297
726.398	Blockplane blade	140 x 42 mm	726.399
726.515	Scraper blade	60 x 42 mm	726.115



Type



## Light-duty files for metal working

with high precision cuts

Type 1 to 74, in two different sizes:

**Size B** = 150 mm total length

**Size E** = 170 mm total length

Cut 1 = coarse (**pref. for alu-working**)

Cut 2 = medium

**Cut** is adapted to the size of the file; cut 1 of size B is for example finer than cut 1 of size E

Type	Size	Cut 1	Cut 2
		Item No.	
<b>1</b>	B	720.01B1	720.01B2
	E	720.01E1	720.01E2
<b>1A</b>	B	720.1AB1	720.1AB2
	E	720.1AE1	720.1AE2
<b>3</b>	B	720.03B1	720.03B2
<b>4</b>	B	720.04B1	720.04B2
<b>6</b>	B	-	720.06B2
<b>7</b>	B	720.07B1	720.07B2
	E	720.07E1*	-
<b>8</b>	B	720.08B1	-
	E	720.08E1	-
<b>9</b>	B	720.09B1	720.09B2
<b>15</b>	B	-	720.15B2
<b>16</b>	B	-	720.16B2
<b>17</b>	B	-	720.17B2
<b>18</b>	B	720.18B1	720.18B2
	E	-	720.18E2
<b>19</b>	B	720.19B1	720.19B2
	E	720.19E1	720.19E2
<b>20</b>	B	-	720.20B2
<b>21</b>	B	720.21B1	720.21B2
	E	-	720.21E2
<b>22</b>	B	720.22B1	720.22B2
	E	720.22E1*	720.22E2
<b>31</b>	B	-	720.31B2
<b>34</b>	B	-	720.34B2
<b>40</b>	B	-	720.40B2
<b>65</b>	B	720.65B1	720.65B2
	E	720.65E1	-
<b>69</b>	B	-	720.69B2
<b>71</b>	B	-	720.71B2

**Files of size E, cut 1** are available from stock.

Min. quantities for all other types is 5 pieces per type.

\* Discontinued. Available as long as stock lasts.



## Heavy-duty files for metal working

with high precision cuts

Type 101 to 143, in three different sizes:

**Size F** = 180 mm total length

**Size G** = 200 mm total length

**Size R** = 315 mm total length

Cut 1 = coarse (**pref. for alu-working**)

Cut 2 = medium

Cut 3 = fine

**Cut** is adapted to the size of the file; cut 1 of size F is for example finer than cut 1 of size R

Type	Size	Cut 1	Cut 2	Cut 3
Item No.				
<b>101</b>	F	720.101F1	720.101F2	-
	G	720.101G1	-	-
	R	720.101R1	720.101R2	720.101R3
<b>102</b>	F	720.102F1	720.102F2	-
	G	720.102G1	-	-
	R	720.102R1	720.102R2	-
<b>103</b>	F	720.103F1	720.103F2	-
	G	720.103G1	-	-
	R	720.103R1	720.103R2	720.103R3
<b>104</b>	F	720.104F1	720.104F2	-
	G	720.104G1	-	-
	R	720.104R1	720.104R2	-
<b>105</b>	F	720.105F1	720.105F2	-
	G	720.105G1	-	-
	R	720.105R1	720.105R2	720.105R3
<b>106</b>	F	720.106F1	720.106F2	-
<b>107</b>	F	720.107F1	720.107F2	-
<b>108</b>	F	720.108F1	720.108F2	-
	G	720.108G1	-	-
	R	-	720.108R2	-
<b>109</b>	F	720.109F1	720.109F2	-
<b>110</b>	F	-	720.110F2	-
<b>111</b>	F	-	720.111F2	-
<b>113</b>	F	720.113F1	720.113F2	-
<b>142</b>	F	720.142F1*	-	-
	G	720.142G1	-	-
<b>143</b>	F	720.143F1	-	-
	G	720.143G1	-	-
	R	720.143R1*	720.143R2*	720.143R3

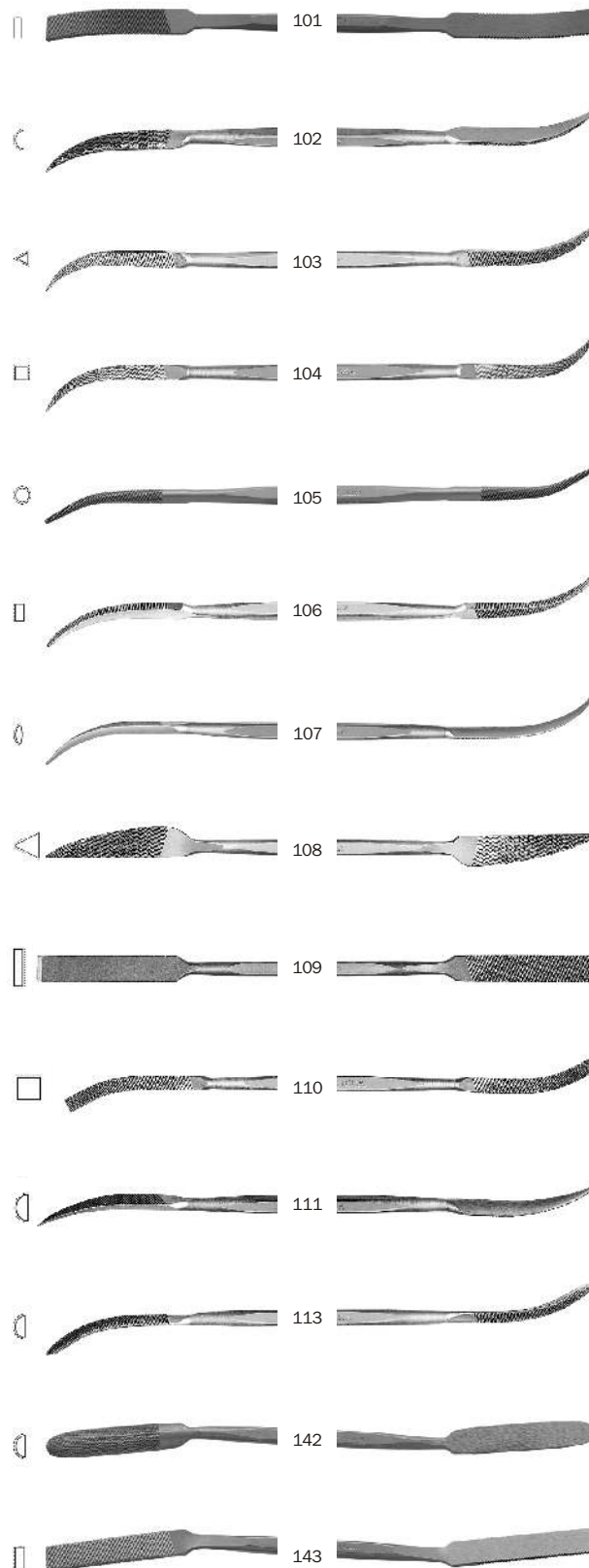
**Files of size F, cut 1** are available from stock.

Min. quantities for all other types is 5 pieces per type.

\* Discontinued. Available as long as stock lasts.

**276A**

Type















**277****Needle point files with round handle**

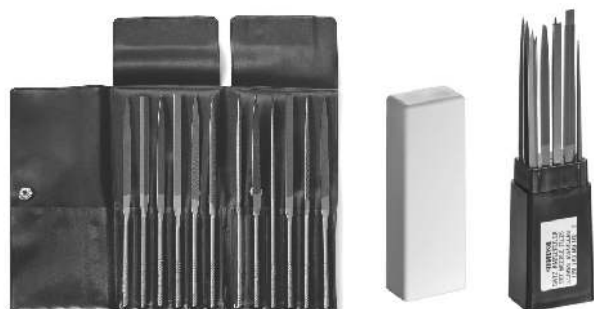
Shaft dia. 2,25 mm

Cuts: 00 (coarse), 2 (medium) or 4 (fine)

(Other cuts upon request)

Minimum quantity per shape and cut: 5 pieces

	Type	Shape	Total length	100 mm	140 mm	160 mm	180 mm	200 mm			
			Length of cut	50 mm	70 mm	80 mm	90 mm	100 mm			
	2112	flat, blunt		Item No.							
			Cut 00	–	–	721.130	721.140	721.150			
			2	721.112	721.122	721.132	721.142	721.152			
			4	721.114	721.124	721.134	721.144	721.154			
	2113	flat, blunt with rounded edges	Cut 2	721.162	–	721.182	721.192	721.202			
	2122	flat, pointed	Cut 00	–	–	721.230	–	–			
			2	721.212	721.222	721.232	721.242	721.252			
			4	–	–	722.234	–	–			
				2123	flat, pointed with rounded edges	Cut 2	721.262	–	721.282	–	721.302
	2132	triangular	Cut 00	–	–	721.330	721.340	721.350			
			2	721.312	721.322	721.332	721.342	721.352			
			4	721.314	721.324	721.334	721.344	721.354			
				2142	square	Cut 00	–	–	721.430	721.440	721.450
	2152	half-round	2	721.412	721.422	721.432	721.442	721.452			
			4	721.414	721.424	721.434	–	721.454			
			Cut 00	–	–	721.530	721.540	721.550			
			2	721.512	721.522	721.532	721.542	721.552			
	2162	round	4	721.514	721.524	721.534	721.544	721.554			
			Cut 2	721.612	721.622	721.632	721.642	721.652			
			4	721.614	721.624	721.634	–	721.654			
				2172	knife	Cut 2	721.712	721.722	721.732	721.742	721.752
	2182	sword	4	–	721.724	721.734	–	–			
			Cut 2	721.812	–	721.832	–	–			
				2192	birds tongue	Cut 2	721.912	721.922	721.932	721.942	721.952
				2102	cant	Cut 00	–	–	721.030	–	721.050
2	721.012	721.022				721.032	721.042	721.052			
4	721.014	721.024				721.034	–	721.054			

**277A****Set of needle point files**

comprising 12 different shapes, shapes are listed under No. 277 cut 2

1) in a plastic case, No. 2100

2) in a plastic box, No. 2101

Total length	Item No.				
	100 mm	140 mm	160 mm	180 mm	200 mm
Type 2100	721.960	721.964	721.966	721.968	721.970
Type 2101	–	721.974	721.976	–	–

**277B****Plastic handles**

Item No. 721.980

with collet, total length 80 mm, for needle point files with total length 140 – 200 mm

closed form

## Diamond files

278

For working hardened steel, hard metal, ceramic and other hard materials. Indispensable in tool and jig making. Just apply **light pressure** as high pressure increases the wear, but not the performance, clean files with a metal brush in petroleum.

### 1) Multi-purpose-diamond files

Handle with comfortable **PVC-coating**

**Grain D 126 (medium)** - for multi-purpose application)

**Length available:** Total length mm length with coating mm **160** **215**  
50 80

Model	Length	160 mm	215 mm
	Shape	Item No.	
2312	flat, blunt	722.011	722.013
2332	triangular	722.021	722.023
2342	square	722.031	722.033

Model	Length	160 mm	215 mm
	Shape	Item No.	
2352	half-round	722.041	722.043
2362	round	722.051	722.053
2300	compl. 5-p.-set	722.061	722.063



### 2) Needle point diamond files

shapes as illustrated under Needle point files - Item No. 277

**3 different grain sizes:**

**D 91 (fine)**, for fine filing);

**D 126 (medium)**, for multi-purpose);

**D 181 (coarse)**, for rough filing)

Model	Grain	D 91	D 126	D 181
	Shape	Item No.		
D 2112	flat, blunt	722.111	722.112	722.113
D 2113	flat, blunt with trimmed edges	722.115	722.116	722.117
D 2122	flat, pointed	722.121	722.122	722.123
D 2132	triangular	722.131	722.132	722.133

**Total length 140 mm**, length with diamond coating 70 mm, shaft dia. 3 mm

Model	Grain	D 91	D 126	D 181
	Shape	Item No.		
D 2142	square	722.141	722.142	722.143
D 2152	half-round	722.151	722.152	722.153
D 2162	round	722.161	722.162	722.163
D 2172	knife	722.171	722.172	722.173
D 2182	sword	722.181	722.182	722.183
D 2192	birds tonque	722.191	722.192	722.193



## VALTITAN®-needle point files

279

with **yellow** shaft (Swiss make)

hardened (1200 HV), for working extremely hard materials such as titanium, molybdenum or polyester, acrylic or similar materials.

Stainless, non-clogging, simply beat out to remove filings

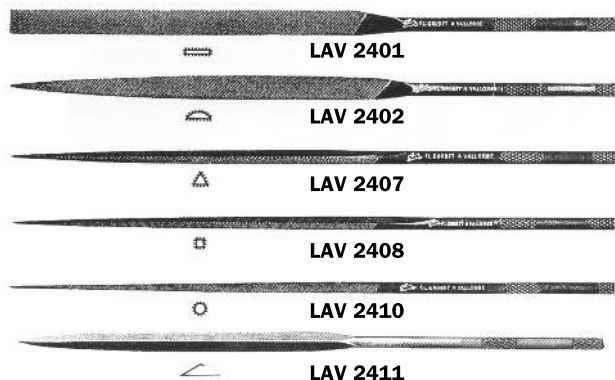
**Cuts available:** Swiss cut **0 2**  
equal to German cut **1 3**  
**Total length 180 mm**, shaft dia. 3,8 mm

Model	Cut	0	2
	Shape	Item No.	
LAV 2401	flat, blunt	722.310	722.312
LAV 2402	half-round	722.320	722.322
LAV 2407	triangular	722.340	722.342

Model	Cut	0	2
	Shape	Item No.	
LAV 2408	square	722.350	722.352
LAV 2410	round	722.360	722.362
LAV 2411	cant	722.370	722.372
LAV 2495	Set (6 pcs.)	722.380	722.382

Package contains 12 pieces.

Individual files are available at extra charge (except set 2495).



## HABILIS-files with integrated handle (Swiss make)

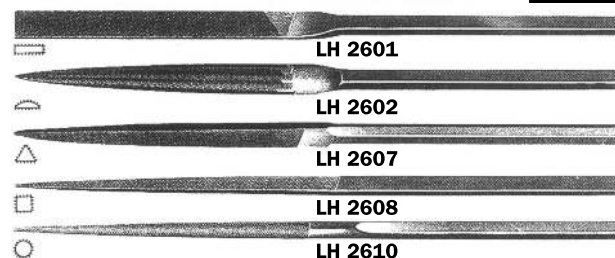
279A

with cylindrical forged tongue which makes the use of a handle obsolete. Especially suitable for tool and jig making. Thanks to its narrow shape hard-to-reach-places can be worked. More robust than needle paint files, therefore higher working pressure can be applied.

**Cuts available:** Swiss cut **00 1**  
equal to German cut **0 2**  
**Total length 215 mm**, length of cut 105 mm

Model	Cut	00	1
	Shape	Item No.	
LH 2601	flat, blunt	722.410	722.411
LH 2602	half-round	722.420	722.421
LH 2607	triangular	722.430	722.431

Model	Cut	00	1
	Shape	Item No.	
LH 2608	square	722.440	722.441
LH 2610	round	722.450	722.451
LH 2630	5-p.-set	722.460	722.461



Package contains 12 pieces. Individual files are available at extra charge (with the exception of set 2630)

## Set of warding files Item No. 723.001 (1187 S)

279B

assortment of 6 shapes, with wooden handle, in a plastic case, length of cut 100 mm, cut 2

Shapes						
	flat, blunt	half-round	triangular	square	round	flat, pointed
Width x thickness mm	10 x 1,4	9 x 2,5	5	3,2	3,2	10 x 1,4

All shapes are also available individually.





## Tapered shank-type cutters for light metal, plywood and plastics

face-cutting, 35° spiral-fluted cutter, Material: HSS-E (5 % Co.)

**1) with straight shank**, 3 cutting edges, No. 2100

Item No.	Shank dia. h 8 mm	Angle	Min. dia. (face dia.) mm	Max. dia. mm	Cutting length mm	Total length mm
737.101	8	0°	8,0	8,0	40	90
737.102	8	30'	7,3	8,0	40	90
737.103	8	1°	6,6	8,0	40	90
737.104	8	1° 30'	5,9	8,0	40	90
737.105	8	2°	5,2	8,0	40	90
737.106	8	3°	3,8	8,0	40	90
737.107	8	5°	4,0	11,0	40	90
737.122	14	0°	14,0	14,0	75	130
737.123	14	30'	12,7	14,0	75	130
737.124	14	1°	11,4	14,0	75	130
737.125	14	1° 30'	10,07	14,0	75	130
737.126	14	2°	8,7	14,0	75	130
737.127	14	3°	6,2	14,0	75	130
737.128	14	5°	6,2	19,3	75	130



**2) with Morse-taper and thread**, No. 2110

up to pos. 737.214 with 3 cutting edges, all other cutters with 4

Item No.	MK shank/ thread	Angle	Min. dia. (face dia.) mm	Max. dia. mm	Cutting length mm	Total length mm
737.208	3/M12	0°	24,0	24,0	115	216
737.209	3/M12	30'	22,0	24,0	115	216
737.210	3/M12	1°	20,0	24,0	115	216
737.211	3/M12	1° 30'	17,98	24,0	115	216
737.212	3/M12	2°	16,0	24,0	115	216
737.213	3/M12	3°	12,0	24,0	115	216
737.214	3/M12	5°	12,0	32,0	115	216
737.215	4/M16	0°	35,0	35,0	150	307
737.216	4/M16	30'	32,4	35,0	150	307
737.218	4/M16	1° 30'	27,64	35,5	150	307
737.219	4/M16	2°	25,0	35,5	150	307
737.220	4/M16	3°	20,0	35,7	150	307
737.221	4/M16	5°	20,0	46,2	150	307

The HSS-types are being phased out and replaced by solid tungsten carbide cutters (see item-no. 280A)!

Available in limited quantities only.

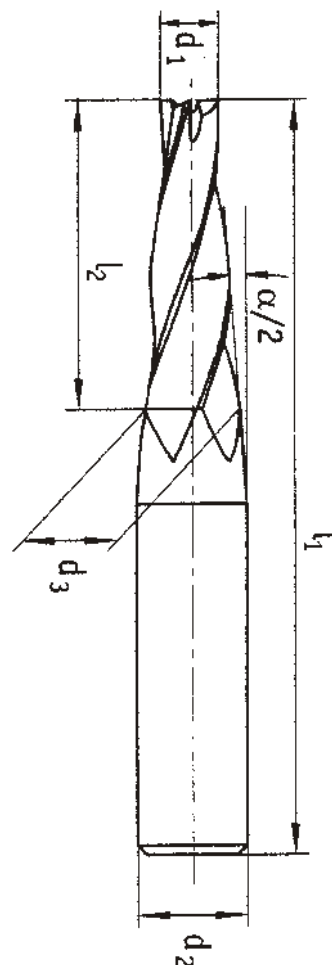
## Tapered shank-type cutters of solid tungsten-carbide

**280A**

Shank acc. to EN 6535HA, cutting material K40F finest grain, spiral 30°, tooth N, face and circuit cutting. For materials up to max. 58 HRC(A).

The given inclination is the angle to the middle axis. Tolerances: cutting diam. d1=k10, shank-diam. d2=h6.

Item No.	$\alpha/2$	d1 mm	d3 mm	l2 mm	l1 mm	d2 mm	T
738.1101	0,5°	2	2,35	20	75	6	3
738.1102	0,5°	3	3,44	25	75	6	3
738.1103	0,5°	4	4,52	30	75	6	3
738.1104	0,5°	5	5,52	30	75	6	3
738.1105	0,5°	6	6,70	40	100	8	3
738.1106	0,5°	8	8,79	45	100	10	4
738.1107	0,5°	10	10,79	45	100	12	4
738.1108	0,5°	12	12,79	45	100	14	4
738.1109	1°	2	2,70	20	75	6	3
738.1110	1°	3	3,87	25	75	6	3
738.1111	1°	4	5,05	30	75	6	3
738.1112	1°	5	5,98	28	75	6	3
738.1113	1°	6	7,40	40	100	8	3
738.1114	1°	8	9,57	45	100	10	4
738.1115	1°	10	11,57	45	100	12	4
738.1116	1°	12	13,57	45	100	14	4
738.1201	1,5°	2	3,05	20	75	6	3
738.1202	1,5°	3	4,31	25	75	6	3
738.1203	1,5°	4	5,57	30	75	6	3
738.1204	1,5°	5	6,83	35	100	8	3
738.1205	1,5°	6	7,83	35	100	8	3
738.1206	1,5°	8	10,36	40	100	12	4
738.1207	1,5°	10	12,88	55	125	14	4
738.1208	1,5°	12	15,14	60	125	16	4
738.1209	2°	2	3,40	20	75	6	3
738.1210	2°	3	4,75	25	75	6	3
738.1211	2°	4	5,96	28	75	6	3
738.1212	2°	5	7,79	40	100	8	3
738.1213	2°	6	9,14	40	100	10	3
738.1214	2°	8	11,14	45	100	12	4
738.1215	2°	10	13,84	55	125	14	4
738.1216	2°	12	15,84	55	125	16	4
738.1301	3°	2	4,10	20	75	6	3
738.1302	3°	3	5,62	25	75	6	3
738.1303	3°	4	7,98	38	100	8	3
738.1304	3°	5	10,00	48	100	10	3
738.1305	3°	6	11,24	50	100	12	3
738.1306	3°	8	13,76	55	125	14	4
738.1307	3°	10	15,76	55	125	16	4
738.1308	3°	12	17,76	55	125	18	4
738.1309	5°	2	5,50	20	75	6	3
738.1310	5°	3	7,90	28	100	8	3
738.1311	5°	4	9,95	34	100	10	3
738.1312	5°	5	12,00	40	100	12	3
738.1313	5°	6	13,87	45	100	14	3
738.1314	5°	8	15,87	45	125	16	4
738.1315	5°	10	17,87	45	125	18	4
738.1316	5°	12	19,87	45	125	20	4
739.1002	10°	2	9,05	20	75	10	3
739.1003	10°	3	13,58	30	100	14	3
739.1004	10°	4	15,64	33	100	16	4
739.1005	10°	5	15,58	30	100	16	4
739.1006	10°	6	17,64	33	100	18	4
739.1008	10°	8	19,64	33	100	20	4
739.1502	15°	2	12,72	20	100	14	3
739.1503	15°	3	15,86	24	100	16	4
739.1504	15°	4	17,40	25	100	18	4
739.1505	15°	5	17,86	24	100	18	4
739.1506	15°	6	19,40	25	100	20	4
739.1508	15°	8	19,79	22	100	20	4
739.2002	20°	2,5	9,78	10	75	10	3
739.2005	20°	5	19,56	20	100	20	4
739.3002	30°	2,5	14,05	10	75	16	4
739.3004	30°	4	24,78	18	100	25	4
739.4503	45°	3	25,00	11	100	25	4




Upon request also available with additional ALCRONA-coating!




## Types of serration and applications

## Serration 1




light metals (long chips),  
light metal alloys, lead, tin,  
plastics

## Serration 2




light metals (short chips),  
brass, copper alloys

## Serration 3



steel and cast steel,  
alloyed and unalloyed,  
cast iron and  
malleable cast iron

## Serration 5



steel and cast  
steel, alloyed and  
unalloyed

## Cyl. shape 'AS' with face serration

\* without face serration

Type	A 0304*	A 0607*	AS 0616	AS 0820	AS 1013	AS 1225	AS 1625
Head size	3 x 4 mm	6 x 7 mm	6 x 16 mm	8 x 20 mm	10 x 13 mm	12 x 25 mm	16 x 25 mm
Serration/ 1	-	-	742.031	-	-	742.061	742.071
Item No. 2	-	-	742.032	-	742.052	742.062	742.072
3	-	-	742.033	742.043	742.053	742.063	742.073
5	742.015	742.025	742.035	-	-	-	-

## Pointed arch shape G

Type	G 0618	G 1220	G 1225	G 1230	G 1630
Head size	6 x 18 mm	12 x 20 mm	12 x 25 mm	12 x 30 mm	16 x 30 mm
Serration/ 1	742.211	742.221	-	742.241	742.251
Item No. 2	742.212	742.222	-	742.242	742.252
3	742.213	742.223	742.233	742.243	742.253
5	-	-	-	742.245	742.255

## Spherical shape D

Type	D 0302	D 0403	D 0504	D 0605	D 0807	D 1009	D 1210	D 1614
Head size	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	16 mm
Serration/ 1	-	-	-	-	742.451	-	742.471	742.481
Item No. 2	-	-	-	742.442	742.452	742.462	742.472	742.482
3	742.413	742.423	742.433	742.443	742.453	742.463	742.473	742.483
5	-	-	-	-	742.455	742.465	-	-

## Flame shape H

Type	H 0305	H 0820	H 1230	H 1635	H 1750
Head size	3 x 5 mm	8 x 20 mm	12 x 30 mm	16 x 35 mm	17 x 50 mm
Serration/ 1	-	-	-	-	742.551
Item No. 3	-	742.523	742.533	742.543	-
5	742.505	-	-	-	-

## Acute taper shape M

Type	M 0304	M 0607	M 0618	M 0820	M 1020	M 1225	M 1230
Head size	3 x 4 mm	6 x 7 mm	6 x 18 mm	8 x 20 mm	10 x 20 mm	12 x 25 mm	12 x 30 mm
Serration/ 1	-	-	742.831	-	-	742.861	742.871
Item No. 2	-	-	742.832	-	742.852	-	742.872
3	-	-	742.833	742.843	742.853	742.863	742.873
5	742.815	742.825	-	-	-	-	742.875

## rounded cyl. shape 'C'

Type	C 0304	C 0620	C 0850	C 1020	C 1225
Head size	3 x 4 mm	6 x 20 mm	8 x 50 mm	10 x 20 mm	12 x 25 mm
Serration/ 1	-	742.121	742.131	-	742.151
Item No. 2	-	742.122	742.132	-	742.152
3	-	742.123	-	742.143	742.153
5	742.115	742.125	-	-	742.155

## Drop shape E

Type	E 0607	E 1220	E 1625
Head size	6 x 7 mm	12 x 20 mm	16 x 25 mm
Serration/ 1	-	742.321	742.331
Item No. 2	-	-	742.332
3	-	742.323	742.333
5	742.315	-	-

## Club shape K

Type	K 0620	K 1230
Head size	6 x 20 mm	12 x 30 mm
Serration/ 2	742.612	742.622
Item No. 3	742.613	742.623

## Rounded taper shape L

Type	L 1020	L 1230	L 1630
Head size	10 x 20 mm	12 x 30 mm	16 x 30 mm
Serration/ 1	-	-	742.731
Item No. 2	742.712	-	742.732
3	742.713	742.723	742.733
5	-	-	742.735

## Angle shape N

Type	N 0303	N 0606	N 1213	N 1230
Head size	3 x 3 mm	6 x 6 mm	12 x 13 mm	12 x 30 mm
Inclination	20°	20°	17°	8°
Serration/ 1	-	-	742.931	-
Item No. 3	-	-	742.933	742.943
5	742.915	742.925	-	-

types of serration and fields of application see above

Fitting cutter bolts see Item 282 A

	Cyl. form AS with face serration			Pointed arch shape G	Round taper shape L	
Type	AS 2215			G 3555	L 2055	
Head size	22 x 15 mm			35 x 55 mm	20 x 55 mm	
Intern. thread	M 8			M 12	M 10	
Serration/ 1	-			744.221	744.611	
Item No. 2	-			-	-	
3	744.113			-	-	
	Spherical shape D			Drop shape E	Flame shape H	Acute taper sh. M
Type	D 2018			E 2535	H 2055	M 2540
Head size	20 mm Ø			25 x 35 mm	20 x 55 mm	25 x 40 mm
Intern. thread	M 8			M 12	M 10	M 10
Serration/ 1	-			-	744.511	-
Item No. 2	-			-	744.512	-
3	744.413			744.313	-	744.713

## Cutter bolts for internal-thread cutters

(see page 88, Item 282)

Item No.	744.801	744.802	744.803	744.811	744.812	744.821
Shank dia.	6 mm			8 mm		10 mm
Thread	M 10	M 12	M 8	M 10	M 12	M 10
Total length	52 mm	54 mm	50 mm	52 mm	54 mm	52 mm

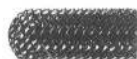


**282A**

## Rotating files of tungsten carbide, shank 6 x 40mm

The micro-cut of the new tungsten-carbide rotating files is similar to the cut of files and avoid the clogging of the tools even when cutting soft materials.

### Cut 1



steel, cast iron, malleable cast iron

### Cut 2



steel and cast steel, alloyed and unalloyed

### Cut 3



steel and cast steel, alloyed and unalloyed

	Cyl. shape AS with face serration		Rounded cyl. shape C		Spherical shape D
Type	AS 0616FH	AS 1225FH	C 0616FH	C 1225FH	D 1009FH
Head size	6 x 16 mm	12 x 25 mm	6 x 16 mm	12 x 25 mm	10 mm Ø
Cut/	1	-	-	745.221HM	-
Item No.	2	745.112HM	-	745.222HM	745.312HM
	3	745.113HM	-	-	-
Type	G 0618FH	G 1230FH	M 1225FH		
Head size	6 x 18 mm	12 x 30 mm	12 x 25 mm		
Cut/	1	-	-		
Item No.	2	745.512HM	745.722HM		
	3	745.513HM	-		

## Engraving cutters of HSS with straight shanks

Serration 5 (see ill.) Shaft: 3 x 40 mm



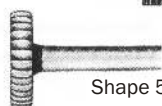
Shape 1

Item No.	Head dia. x length mm
748.827	4 x 2,8
748.828	5 x 3,5
748.829	6 x 4,2
748.831	8 x 5,5
748.837	6 x 6
748.839	8 x 8



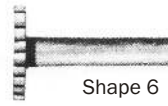
Shape 3

Item No.	Head dia. mm
748.848	1,6
748.849	2,3
748.850	3,2
748.851	4,0
748.852	5,0
748.853	6,0
748.854	7,0
748.855	8,0



Shape 5

Item No.	Head dia. x thckn. mm
748.868	8 x 2
748.869	10 x 2,3
748.870	12 x 2,6
748.871	14 x 3



Shape 6

Item No.	Head dia. x thckn. mm
748.872	6 x 1
748.873	8 x 1
748.874	10 x 1



Shape 2

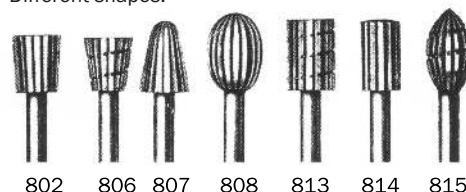
Item No.	Head dia. x length mm
748.840	1,6 x 2,8
748.841	2,3 x 4
748.842	3,2 x 5,6
748.843	4 x 7
748.844	5 x 8,7
748.845	6 x 10,5
748.846	7 x 12,5
748.847	8 x 14



Shape 4

Item No.	Head dia. x thckn. mm
748.864	8 x 2
748.865	10 x 2,5
748.866	12 x 3
748.867	14 x 3,5

Different shapes:



Item No.	Head dia. x length mm
748.802*	7 x 8
748.806	7 x 7,5
748.807	7 x 10
748.808	8 x 11

Item No.	Head dia. x length mm
748.813	7 x 10
748.814	6 x 10
748.815	7 x 12

\* Discontinued. Available as long as stock lasts.

The above engraving millers cannot be resharpened!

**284**

## Reducers (adapters)

The above reducers are required when using 3-mm shank tools on machines with 6-mm chucks or 6 mm shank tools on machines with 8 mm chucks.

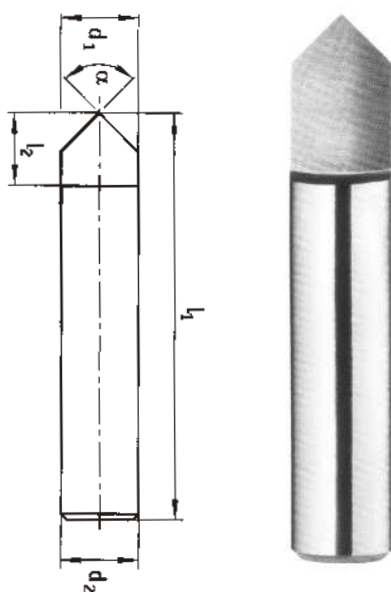


Item No.	749.001	749.002
Outside dia. mm	6	8
Inside dia. mm	3	6
Total length mm	25	30

**284A**

## Engraving cutters of solid tungsten carbide

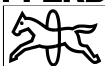
made of K40F finest grain, useable for all materials up to 40HRC, 1 tooth



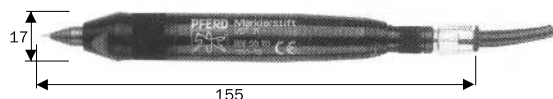
d1 = d2 mm	l2 mm	l1 mm	Design/ Item No.	
			$\alpha = 60^\circ$	$\alpha = 90^\circ$
2	7	40	750.402	750.452
3	8	50	750.403	750.453
4	8	60	750.404	750.454
5	10	60	750.405	750.455
6	10	75	750.406	750.456
8	12	100	750.408	750.458
10	15	100	750.410	750.460
12	17	100	750.412	750.462

Other profiles and qualities are also available.  
Please specify the desired quantity!

## 285A PFERD



**Front exhaust**  
**Air consumption 25–30 m³/min**  
**For 4 mm ID air supply hose**  
**Frequency: 500 - 600 strokes/sec.**  
**Hose length: 2000 mm**  
**Operating pressure 6 - 7 bar**  
**Supplied complete with air supply**



## Marking pen MST 31, compressed-air operated

Item No. 285.001

Patented pneumatic engraving pen working on a new principle at about three times the frequency of existing similar products.

For engraving markings in metal, glass, plastics and even heat-treated tool steel (with fine needle). Does not transmit harmful vibrations to the hand.

Delivery contains tungsten carbide engraving needle medium.

Also available:

Spare-Needle type	Fine	Medium	Coarse
Item No.	285.101	285.102	285.103

Bag fine filter Item No. 285.110 (recommended!)

## 286 PFERD



## Tungsten carbide miniature burrs with 3 mm shank

A high stock removal capability over the entire tool life ensures maximum results within a minimum of time. Thus, PFERD quality burrs and rotary cutters will help you to reduce labour costs.

### Cut 3 PLUS (3P)



- Universal use on ferrous and non-ferrous metals and plastics.
- Fetting of castings.
- Surface machining.
- No loading problems.
- Produces even, smooth surfaces.

### Cut 5



- For hardened and high-strength materials, die steels and steel castings.
- For tough welded claddings, weld seam dressing.
- Deburring and chamfering.
- Cut 5 produces a smoother surface than cut 3

	Cylindrical ZYAS with end cut				Flame shape B		Cylindrical radius end WRC			Ball shape KUD		
Type	ZYAS 0210	ZYAS 0313	ZYAS 0607	ZYAS 0613	3B 0307	3B 0613	WRC 0210	WRC 0313	WRC 0613	KUD 0302	KUD 0403	KUD 0605
Head dim	2 x 10 mm	3 x 13 mm	6 x 7 mm	6 x 13 mm	3 x 7 mm	6 x 13 mm	2 x 10 mm	3 x 13 mm	6 x 13 mm	3 mm Ø	4 mm Ø	6 mm Ø
Cut/ Item No.	3P 751.002	751.012	751.022	751.032	-	-	751.062	751.072	751.082	751.122	751.132	751.142
	5 751.005	751.015	751.025	751.035	751.045	751.055	751.065	751.075	751.085	751.125	751.135	751.145
	Oval shape TRE		Tree shape RBF		Pointed tree shape SPG			Conical SKM			Inverted cone shape WKN	
Type	TRE 0307	TRE 0610	RBF 0307	RBF 0613	SPG 0307	SPG 0313	SPG 0613	SKM 0307	SKM 0311	SKM 0613	WKN 0307	WKN 0607
Head dim	3 x 7 mm	6 x 10 mm	3 x 7 mm	6 x 13 mm	3 x 7 mm	3 x 13 mm	6 x 13 mm	3 x 7 mm	3 x 11 mm	6 x 13 mm	3 x 7 mm	6 x 7 mm
Cut/ Item No.	3P 751.112	751.232	751.182	751.222	751.192	751.202	751.212	751.152	751.162	751.172	751.092	751.102
	5 751.115	751.235	751.185	751.225	751.195	751.205	751.215	751.155	751.165	751.175	751.095	751.105

**Remark:** 6-mm dia. reducers for 3-mm shank tools see item no. 284 A

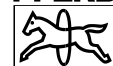
## Tungsten Carbide Burrs with straight shank

A high stock removal capability over the entire tool life ensures maximum results within a minimum of time. Thus, PFERD quality burrs and rotary cutters will help to minimize labour costs.

Recommendation: The harder the material the finer the cut should be.

**286A**

**PFERD**



### Cut ALU



- Greasy aluminium alloys, all soft non-ferrous metals and structural thermoplastics.
- Deburring.
- No loading of flutes, even with greasy materials. Robotized use on aluminium castings.

### Cut NON-FERROUS



- highly effective on non-ferrous-metals, brass, copper, plastics and fiber-reinforced plastics
- for universal use

### Cut CAST



- extremely high effective on cast iron
- quiet cutting
- reduces vibrations and noise

### Cut 1



- Easily machineable light metal alloys, non-ferrous alloys, soft stainless steels, plastics.
- Deburring.
- Weld dressing on light alloy parts. Coarse plastic fettling work.
- High cutting performance, suitable for high r.p.m.

### Cut 3



- For high-strength steels, die steels, steel castings, tough welded claddings, weld seams.
- Deburring work (including robotized).
- Without chip breaker, for scratch-free surfaces.

### Cut 3 PLUS (3P)



- Universal use on ferrous and non-ferrous metals and plastics.
- Fettling of castings.
- Surface machining.
- No loading problems.
- Produces even, smooth surfaces.

### Cut 4



- For high-strength and ductile material, high-strength stain less steels, alloyed steel castings, fibre-reinforced plastics.
- Edge and surface work.
- Minimum axial forces due to short cutting.
- For enhanced surface qualities facilitating subsequent surface coating.

### Cut 5

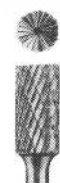


- For hardened and high-strength materials, die steels and steel castings.
- For tough welded claddings, weld seam dressing.
- Deburring and chamfering.
- Cut 5 produces a smoother surface than cut 3.

Type/ Shank	Head dim. mm	Cut / Item No.							
		Alu	Non-Ferrous	CAST	1	3	3Plus	4	5
Cylindrical ZYA (without end cut)									
ZYA0413/6	4 x 13	-	-	-	-	-	751.242	751.244	751.245
ZYA0616/6	6 x 16	-	751.256	-	-	751.253	751.252	751.254	751.255
ZYA0820/6	8 x 20	-	-	-	-	751.263	751.262	751.264	751.265
ZYA1013/6	10 x 13	-	-	-	-	-	751.272	751.274	751.275
ZYA1020/6	10 x 20	-	-	-	751.281	751.283	751.282	751.284	751.285
ZYA1025/6	10 x 25	-	-	-	-	-	751.292	751.294	-
ZYA1225/6	12 x 25	-	751.306	-	751.301	751.303	751.302	751.304	751.305
ZYA1225/8	12 x 25	-	751.310	-	-	-	751.307	751.309	-
ZYA1625/6	16 x 25	-	-	-	-	751.313	751.312	751.314	-
ZYA1625/8	16 x 25	-	-	-	-	-	751.317	-	-
Cylindrical ZYAS (with end cut)									
ZYAS0413/6	4 x 13	-	-	-	-	-	751.322	751.324	751.325
ZYAS0616/6	6 x 16	751.330	-	751.336	-	751.333	751.332	751.334	751.335
ZYAS0820/6	8 x 20	751.340	-	-	-	751.343	751.342	751.344	751.345
ZYAS1013/6	10 x 13	-	-	-	-	-	751.352	-	-
ZYAS1020/6	10 x 20	751.360	-	751.366	-	751.363	751.362	751.364	751.365
ZYAS1025/6	10 x 25	-	-	-	-	-	751.372	751.374	-
ZYAS1225/6	12 x 25	751.380	-	751.386	-	751.383	751.382	751.384	751.385
ZYAS1225/8	12 x 25	751.390	-	-	-	-	751.387	-	-
ZYAS1625/6	16 x 25	751.391	-	-	-	751.393	751.392	751.394	751.395
Cylindrical radius end WRC									
WRC0413/6	4 x 13	-	-	-	-	-	751.432	751.434	-
WRC0616/6	6 x 16	751.440	751.446	751.447	751.441	751.443	751.442	751.444	751.445
WRC0820/6	8 x 20	751.450	-	-	751.451	751.453	751.452	751.454	751.455
WRC1020/6	10 x 20	751.460	-	751.466	751.461	751.463	751.462	751.464	751.465
WRC1020/8	10 x 20	-	-	-	-	-	751.467	-	-
WRC1025/6	10 x 25	-	-	-	-	751.473	751.472	751.474	-
WRC1225/6	12 x 25	751.480	751.480A	751.488	751.481	751.483	751.482	751.484	751.485
WRC1225/8	12 x 25	751.486	-	-	-	-	751.487	751.489	-
WRC1625/6	16 x 25	751.490	-	-	751.491	751.493	751.492	751.494	-
WRC1625/8	16 x 25	-	-	-	-	-	751.497	-	-
Ball shape KUD									
KUD0403/6	4 Ø	-	-	-	-	-	751.502	-	751.505
KUD0605/6	6 Ø	751.510	-	751.516	751.511	751.513	751.512	751.514	751.515
KUD0807/6	8 Ø	751.520	751.526	-	751.521	751.523	751.522	751.524	751.525
KUD1009/6	10 Ø	751.530	-	751.536	751.531	751.533	751.532	751.534	751.535
KUD1210/6	12 Ø	751.540	751.540A	751.548	-	751.543	751.542	751.544	751.545
KUD1210/8	12 Ø	-	-	-	-	-	751.547	-	-
KUD1614/6	16 Ø	751.550	-	-	751.551	-	751.552	751.554	751.555
KUD1614/8	16 Ø	-	-	-	-	-	751.557	-	-
KUD2018/6	20 Ø	-	-	-	-	751.563	751.562	-	-
KUD2018/8	20 Ø	-	-	-	-	-	751.567	-	-
Tree shape RBF									
RBF0618/6	6 x 18	751.660	-	751.666	-	751.663	751.662	751.664	751.665
RBF0820/6	8 x 20	751.670	-	-	-	751.673	751.672	751.674	-
RBF1020/6	10 x 20	751.680	-	751.686	-	751.683	751.682	751.684	751.685
RBF1225/6	12 x 25	751.690	-	751.698	751.691	751.693	751.692	751.694	751.695
RBF1225/8	12 x 25	751.696	-	-	-	-	751.697	-	-
RBF1630/6	16 x 30	751.700	-	-	-	751.703	751.702	751.704	-
RBF1630/8	16 x 30	-	-	-	-	-	751.707	-	-



Shape ZYA



Shape ZYAS



Shape WRC



Shape KUD

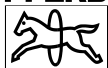


Shape RBF



286A

PFERD



Shape SPG



Shape KEL



Shape TRE



Shape SKM



Shape KSJ/KSK



KSJ 0605/KSK 0603



Shape B

Type/ Shank	Head dim. mm	Cut / Item No.		
		CAST	3	3Plus
Flame shape B				
B 0820/6	8 x 20	–	751.403	751.402
B 1230/6	12 x 30	751.416	751.413	751.412
B 1635/6	16 x 35	–	–	751.422



Shape V

Type/ Shank	Head dim. mm	Item- No.
<b>Concave radius burrs V, cut 3</b>		
V 1015/6	10 x 15	751.883
V 1215/6	12 x 15	751.893
V 1315/6	13 x 15	751.903
With 10 mm cut radius.		



Shape N

Type/ Shank	Head dim. mm	Item- No.
<b>Rim shape N, cut 3</b>		
N 2503/8	25 x 3/90°	751.803
N 2506/8	25 x 6/90°	751.813



Shape WKN

Type/ Shank	Head dim. mm	Item- No.
<b>Inverted cone shape WKN, cut 3</b>		
WKN 1013/6	10 x 13/10°	751.913
WKN 1213/6	12 x 13/20°	751.923
WKN 1613/6	16 x 13/20°	751.933

## Tungsten Carbide Burrs (continued)

Toothing illustrated on page 89

Type/ Shank	Head dim. mm	Alu	Non-Ferrous	CAST	Cut / Item No.				
					1	3	3Plus	4	5
Pointed tree shape SPG									
SPG0618/6	6 x 18	-	-	751.716	751.711	751.713	751.712	751.714	751.715
SPG1020/6	10 x 20	-	-	751.726	751.721	751.723	751.722	751.724	751.725
SPG1020/8	10 x 20	-	-	-	-	-	751.727	-	-
SPG1225/6	12 x 25	-	-	751.736	751.731	751.733	751.732	751.734	751.735
SPG1225/8	12 x 25	-	-	-	-	-	751.737	751.739	-
SPG1230/6	12 x 30	-	-	-	751.741	751.743	751.742	751.744	751.745
SPG1630/6	16 x 30	-	-	-	751.751	751.753	751.752	751.754	-
SPG1630/8	16 x 30	-	-	-	751.756	-	751.757	-	-
Cone radius end KEL									
KEL1020/6	10 x 20	751.760	751.766	-	-	751.763	751.762	751.764	-
KEL1225/6	12 x 25	-	-	-	-	751.773	751.772	751.774	-
KEL1225/8	12 x 25	-	-	-	-	-	751.777	-	-
KEL1230/6	12 x 30	751.780	751.780A	751.788	751.781	751.783	751.782	751.784	751.785
KEL1230/8	12 x 30	751.786	-	-	-	-	751.787	-	-
KEL1630/6	16 x 30	751.790	-	-	-	-	751.792	751.794	-
KEL1630/8	16 x 30	-	751.798	-	-	-	-	-	-
Oval shape TRE									
TRE0610/6	6 x 10	-	-	-	-	-	751.822	-	751.825
TRE0813/6	8 x 13	-	-	-	-	-	751.832	751.834	751.835
TRE1016/6	10 x 16	-	-	-	-	-	751.842	751.844	-
TRE1220/6	12 x 20	-	-	751.856	751.851	751.853	751.852	751.854	751.855
TRE1220/8	12 x 20	-	-	-	-	-	751.857	751.859	-
TRE1625/6	16 x 25	-	-	-	751.861	-	751.862	751.864	-
TRE1625/8	16 x 25	-	-	-	-	-	751.867	-	-
Conical SKM									
SKM0618/6	6 x 18	-	-	-	751.571	751.573	751.572	751.574	751.575
SKM1020/6	10 x 20	-	-	-	-	751.583	751.582	751.584	751.585
SKM1225/6	12 x 25	-	-	751.596	751.591	751.593	751.592	751.594	751.595
SKM1225/8	12 x 25	-	-	-	-	-	751.597	-	-
Conical cone KSJ / KSK									
KSJ0605/6*	6 x 5/60°	-	-	-	-	751.603	-	-	-
KSK0603/6*	6 x 3/90°	-	-	-	-	751.613	-	-	-
KSJ1008/6	10 x 13/60°	-	-	-	-	751.623	-	-	-
KSK1005/6	10 x 10/90°	-	-	-	-	751.633	-	-	-
KSJ1613/6	16 x 16/60°	-	-	-	-	751.643	-	-	751.645
KSK1608/6	16 x 13/90°	-	-	-	-	751.653	-	-	751.655

\* KSJ 0605 and KSK 0603 are toothed at both head ends.



Shape X

Type/ Shank	Head dim. mm	Item- No.
<b>Miniatur burrs X</b>		
X 0204/3	2,5 x 4	751.954
X 0408/3	4 x 8	751.964
X 0610/6	6 x 10	751.974
X 0810/6	8 x 10	751.984
X 1010/6	10 x 10	751.994

Available only with diamond cut, similar to cut 4, but significantly finer



R 1618



R 0615/0830

Type/ Shank	Head dim. mm	Cut radius	Item- No.
<b>Radius burrs R</b>			
R 1618/8	16 x 18	6,0 mm	751.870
R 0625/6	n.a.	1,5 mm	751.871
R 0830/8	n.a.	3,0 mm	751.872

Special cut



Tungsten carbide burrs with 150 mm long shanks upon request!



## Rotary grinding tools

(suitable grinders see Item No. 287A)

5 elements per package

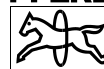
Item No.	Type	Dia. x height mm	Shank dia. mm	Max. speed rpm	Min. speed rpm
Cylindrical shapes					
758,009	GK 0410/3	4 x 10	3	55000	30000
758,010	GK 0410/6	4 x 10	6	55000	30000
758,019	GK 0610/3	6 x 10	3	55000	30000
758,020	GK 0610/6	6 x 10	6	55000	30000
758,029	GK 0810/3	8 x 10	3	55000	30000
758,030	GK 0810/6	8 x 10	6	55000	30000
758,040	GK 1010/6	10 x 10	6	44000	30000
758,050	GK 1020/6	10 x 20	6	44000	30000
758,060	GK 1310/6	13 x 10	6	44000	30000
758,070	GK 1325/6	13 x 25	6	44000	30000
758,080	GK 1510/6	15 x 10	6	36000	25000
758,090	GK 1530/6	15 x 30	6	36000	25000
758,100	GK 1925/6	19 x 25	6	30000	20000
758,110	GK 2220/6	22 x 20	6	26000	18000
758,110H	GK 2220/6H	22 x 20	6	26000	18000
758,120	GK 2525/6	25 x 25	6	22900	16000
758,130	GK 3020/6	30 x 20	6	19100	13000
758,140	GK 3030/6	30 x 30	6	19100	13000
758,140H	GK 3030/6H	30 x 30	6	19100	13000
758,150	GK 3825/6	38 x 25	6	15100	10000
758,160	GK 4530/6	45 x 30	6	12700	8500
758,160H	GK 4530/6H	45 x 30	6	12700	8500
758,170	GK 5125/6	51 x 25	6	11200	7500
758,180	GK 6030/6	60 x 30	6	9500	6500
758,188	GK 6030/8	60 x 30	8	9500	6500
758,190	GK 7530/8	75 x 30	8	7600	5000
Tapered shapes					
758,220	GK 201463/6	20 / 14 x 63	6	26000	18000
758,230	GK 362260/6	36 / 22 x 60	6	15900	10000

**Rubber hardness 'H':** Rubber holders marked by the letter 'H' have a greater hardness for increased working pressures. They are less elastic and therefore suitable for edge breaking.

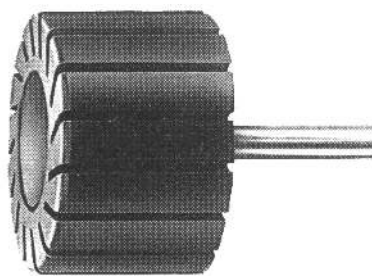
**Remark:** Reducers 6 mm dia. for 3-mm shank tools see Item No. 284 A.

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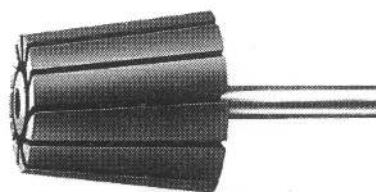
PFERD



Designs:



cylindrical



tapered

## Rotary grinders (for the above grinding tools)

**Design:** Backing of an artificial resin bonded material with high tearing strength guaranteeing a long service life.

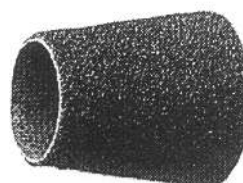
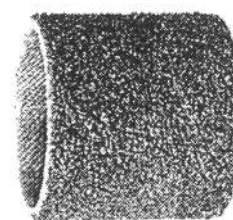
**Remark:** We recommend that grease or grinding oil should be added, especially when working light metals. Recommended circumferential speed: appr. 20 m/sec.

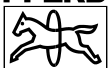
Type	Suitable for tool	Grains / Item No.					Contents p. package
		40	60	80	150	240	
Cylindrical shapes							
KSB 0410	GK 0410	–	–	–	758,014	–	25 pcs
KSB 0610	GK 0610	–	–	–	758,024	–	25 pcs
KSB 0810	GK 0810	–	–	–	758,034	–	25 pcs
KSB 1010	GK 1010	–	–	758,043	758,044	–	25 pcs
KSB 1020	GK 1020	–	–	758,053	758,054	758,055	25 pcs
KSB 1310	GK 1310	–	–	758,063	758,064	–	25 pcs
KSB 1325	GK 1325	–	–	758,073	758,074	–	25 pcs
KSB 1510	GK 1510	–	758,082	758,083	758,084	–	25 pcs
KSB 1530	GK 1530	–	758,092	758,093	758,094	758,095	25 pcs
KSB 1925	GK 1925	–	758,102	758,103	758,104	758,105	25 pcs
KSB 2220	GK 2220	–	758,112	758,113	758,114	758,115	25 pcs
KSB 2525	GK 2525	–	758,122	758,123	758,124	758,125	25 pcs
KSB 3020	GK 3020	758,131	758,132	758,133	758,134	–	25 pcs
KSB 3030	GK 3030	758,141	758,142	758,143	758,144	758,145	25 pcs
KSB 3825	GK 3825	758,151	758,152	758,153	758,154	–	25 pcs
KSB 4530	GK 4530	758,161	758,162	758,163	758,164	758,165	10 pcs
KSB 5125	GK 5125	758,171	758,172	758,173	758,174	–	10 pcs
KSB 6030	GK 6030	758,181	758,182	758,183	758,184	–	10 pcs
KSB 7530	GK 7530	758,191	758,192	758,193	758,194	–	10 pcs
Tapered shapes							
GSB 201463	GK 201463	–	758,222	–	758,224	–	100 pcs
GSB 362260	GK 362260	–	758,232	–	–	–	100 pcs

Other grains upon request!

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PFERD

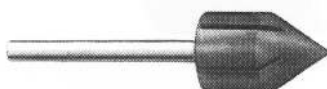


**288****PFERD**

Shape A



Shape C



Shape G



Shape L

## POLICAP-rotary grinding tools

Consisting of slotted rubber element and seamless grinder cap. Due to the centrifugal force the grinders sits firmly on the rubber element; easily exchangeable. **Each package contains 5 tools of each type.**

Item No.	Type	Dia. x height mm	Shank dia. mm	Rec. speed rpm
<b>Shape A</b>				
759,010	PCT 0510 A	5 x 10	3	40000
759,020	PCT 0712 A	7 x 12	3	30000
759,030	PCT 1015 A	10 x 15	3	20000
759,040	PCT 1317 A	13 x 17	6	16000
759,050	PCT 1626 A	16 x 26	6	12000
<b>Shape C</b>				
759,060	PCT 0511 C	5 x 11	3	40000
759,070	PCT 0713 C	7 x 13	3	30000
759,080	PCT 1015 C	10 x 15	3	20000
759,090	PCT 1317 C	13 x 17	6	16000
759,100	PCT 1626 C	16 x 26	6	12000
<b>Shape G</b>				
759,110	PCT 0511 G	5 x 11	3	40000
759,120	PCT 0713 G	7 x 13	3	30000
759,130	PCT 1015 G	10 x 15	3	20000
759,140	PCT 1317 G	13 x 17	6	16000
759,150	PCT 1626 G	16 x 26	6	12000
<b>Shape L</b>				
759,160	PCT 0515 L	5 x 15	6	40000
759,170	PCT 1125 L	11 x 25	6	20000
759,180	PCT 1632 L	16 x 32	6	12000
759,190	PCT 2140 L	21 x 40	6	9500

**Remark:** Reducers 6 mm dia. for 3-mm shank tools see Item No. 284 A.

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Shape A



Shape C



Shape G



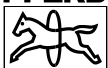
Shape L

## POLICAP-grinder caps for the above grinding tools

**Each package contains 50 caps per type.**

Type	Suitable for tool	Grain / Item No.		
		60	150	280
Shape A				
PC 05 A	PCT 0510 A	759.011*	759.012	759.013
PC 07 A	PCT 0712 A	759.021	759.022	759.023
PC 10 A	PCT 1015 A	759.031	759.032	759.033
PC 13 A	PCT 1317 A	759.041	759.042	759.043
PC 16 A	PCT 1626 A	759.051	759.052	759.053
Shape C				
PC 05 C	PCT 0511 C	759.061*	759.062	759.063
PC 07 C	PCT 0713 C	759.071	759.072	759.073
PC 10 C	PCT 1015 C	759.081	759.082	759.083
PC 13 C	PCT 1317 C	759.091	759.092	759.093
PC 16 C	PCT 1626 C	759.101	759.102	759.103
Shape G				
PC 05 G	PCT 0511 G	759.111*	759.112	759.113
PC 07 G	PCT 0713 G	759.121	759.122	759.123
PC 10 G	PCT 1015 G	759.131	759.132	759.133
PC 13 G	PCT 1317 G	759.141	759.142	759.143
PC 16 G	PCT 1626 G	759.151	759.152	759.153
Shape L				
PC 05 L	PCT 0515 L	759.161*	759.162	759.163
PC 11 L	PCT 1125 L	759.171	759.172	759.173
PC 16 L	PCT 1632 L	759.181	759.182	759.183
PC 21 L	PCT 2140 L	759.191	759.192	759.193

\* gr. 80

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## POLICAP-tools for grinding sleeves

**Each package contains 5 tools**

Item No.	Type	Dia. x height mm	Shank dia. mm	Rec. speed rpm
760,010	PCT 0585 L	8 x 85	6	12000
760,020	PCT 1185 L	13 x 85	6	12000
760,030	PCT 1685 L	18 x 85	6	12000
760,040	PCT 2185 L	23 x 85	6	12000

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## POLICAP-rotary grinding sleeves

**For Item No. 289. Each package contains 10 sleeves**

Type	Suitable for tool	Grain / Item No.		
		60	150	280
PCH05 L	PCT 0585L	760,011	760,012	760,013
PCH11 L	PCT 1185L	760,021	760,022	-
PCH16 L	PCT 1685L	760,031	760,032	-
PCH21 L	PCT 2185L	760,041	760,042	-

## POLIROLL-rotary grinding rolls

for deburring and surface grinding, excellent performance with polishing effect. Do not use the entire surface, but only the tip, as otherwise the bond may be damaged by the heat.

Each package contains 50 rolls.

Type	Dia. x height	Grain/Item No.			Suitable holder	Max. speed
		50	80	150		
Cylindrical shape						
PR 0625	6 x 25	–	761.011	761.012	3 a.6-18-3	25000
PR 0635	6 x 35	–	761.021	761.022	6-24-3	25000
PR 0925	9 x 25	–	761.031	761.032	6-18-3	23000
PR 0935	9 x 35	–	761.041	761.042	6-24-3	23000
PR 1225	12 x 25	761.050	761.051	761.052	6-18-3	17000
PR 1235	12 x 35	761.060	761.061	761.062	6-24-3	17000
PR 1835	18 x 35	761.070	761.071	761.072	6-25-5	12000
PR 1850	18 x 50	761.080	761.081	761.082	6-30-5	12000
Tapered shape						
PRK 1025	10 x 25	–	761.091	761.092	3 u. 6-18-3	23000
PRK 1225	12 x 25	761.100	761.101	761.102	6-18-3	17000
PRK 1235	12 x 35	761.110	761.111	761.112	6-24-3	17000
PRK 1535	15 x 35	761.120	761.121	761.122	6-24-3	15000



Shape PR



Shape PRK

## POLICO-rotary grinding cones

for deburring bores or hard-to-reach places; self-chucking due to fluted conical holder.

Each package contains 50 cones per grain

Type	Dia. x height	Grain/Item No.		Suitable holder	Max. speed	Taper
		80	150			
PCO 1050	10 x 50	761.201	761.202	6-50-8	23000	5°



Shape PCO

## Holders for POLIROLL- and POLICO-grinding tools

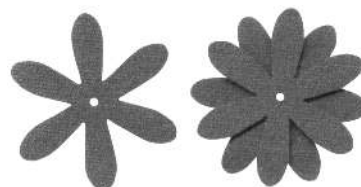
Item No.	762.318	762.618	762.624	762.625	762.630	762.650
Type	3-18-3	6-18-3	6-24-3	6-25-5	6-30-5	6-50-8
Shank dia. mm	3	6	6	6	6	6
Suitable for	PR 0625	PR 0625	PR 0635	PR 1835	PR 1850	PCO 1050
POLIROLL	PRK 1025	PR 0925	PR 0935			
PR = cylindrical		PR 1225	PR 1235			
PRK = tapered		PRK 1025	PRK 1235			
POLICO PCO		PRK 1225	PRK 1535			holder taper 5°



## POLISTAR abrasive pads

Flexible tools for grinding on internal surfaces of bores or pipes. The pads can be stacked in several layers. To benefit from a maximum abrasive surface area, ensure that the lobes of the individual star pads are aligned

Type	Diam. mm	Hole-dia. mm	for bore-diam. mm	suitable holder	Grain/Item no.			Contents per package
					60	80	120	
PST 20	20	1,6	7-15	BO 3	763.121	763.122	763.123	100 pcs.
PST 30	30	1,6	10-20	BO 3	763.131	763.132	763.133	100 pcs.
PST 40	40	3,0	15-25	BO 6	763.141	763.142	763.143	100 pcs.
PST 50	50	3,0	20-40	BO 6	763.151	763.152	763.153	100 pcs.



## Holders for POLISTAR

Important reduction of the time for assembling because the POLISTAR pads may be changed without removing the holder from the machine.

Item No.	Type	Shank diam.	Chuck range	Content p. pack.
764.103	BO 3	3mm	1-5mm	10 pcs.
764.106	BO 6	6mm	1-6mm	1 pc.



## POLINOX abrasive pads

Made of non woven polyamide with embedded abrasive material. Especially designed for narrow working areas such as bore holes, cavities and other hard-to-reach areas.

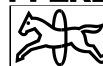
Type	Diam. mm	No. of layers	Grain/Item No.		Contents per package
			100 (medium)	280 (very fine)	
PNST 19-2A	19	2	–	765.293	20 pcs.
PNST 25-2A	25	2	765.301	765.303	20 pcs.
PNST 38-3A	38	3	765.311	765.313	20 pcs.
PNST 50-2A	50	2	765.321	765.323	20 pcs.

Fitting holders: Item No. 765.401 6 x 75 mm  
Item No. 765.402 6 x 125 mm



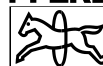
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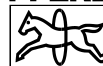
290A

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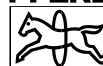
291

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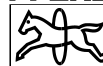
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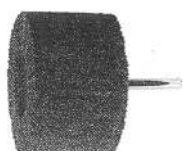
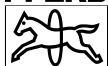
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PNL



PNR



PNZ

## POLINOX-grinding tools, shank dia. 6 mm

**1) Type PNL:** The abrasive elements of type 'PNL' are aligned radially. The abrasive elements are available with abrasive **A (corundum)** or **C (silicon-carbide)** for grinding surfaces.

**2) Type PNR:** The abrasive elements of type 'PNR' are aligned axially, therefore good adaption to contours.

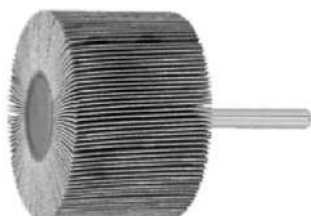
**3) Type PNZ:** The abrasive elements are radially aligned and they produce a coarser grinding pattern and increase the performance.

**Each package contains 10 tools per type.**

Type	Dia. x height mm	Grains (A = corundum; C = sil.-carb.)/Item No.				
		A 100	A 180	A 280	C 180	C 280
PNL 4020	40 x 20	766.110	766.111	766.112	766.114	766.115
PNL 5030	50 x 30	766.120	766.121	766.122	766.124	766.125
PNL 6050	60 x 50	766.130	766.131	766.132	766.134	766.135
PNL 8050	80 x 50	766.140	766.141	766.142	766.144	766.145
PNR 6050	60 x 50	766.210	766.211	766.212	-	-
PNR 8050	80 x 50	766.220	766.221	766.222	-	-
PNZ 4020	40 x 20	766.310	766.311	-	-	-
PNZ 6050	60 x 50	766.320	766.321	-	-	-
PNZ 8050	80 x 50	766.330	766.331	-	-	-
PNZ 10050	100 x 50	766.340	766.341	-	-	-

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## Rotary surface grinder tools 'F'

for grinding radii, smaller surfaces or hard-to-reach places.

**Each package contains 10 tools per type.**

Type	Dia. x height mm	Shank dia. mm	Grain/Item No.						
			60	80	120	150	180	240	320
F2010/3	20 x 10	3	-	-	767.014	767.015	767.016	-	-
F2010/6	20 x 10	6	-	767.023	767.024	767.025	767.026	-	-
F2515/6	25 x 15	6	-	767.033	767.034	767.035	767.036	-	-
F2525/6	25 x 25	6	-	767.043	767.044	767.045	767.046	-	-
F3005/3	30 x 5	3	767.052	767.053	767.054	767.055	767.056	767.057	767.058
F3005/6	20 x 10	6	767.062	767.063	767.064	767.065	767.066	767.067	767.068
F3010/3	30 x 10	3	767.072	767.073	767.074	767.075	767.076	767.077	767.078
F3010/6	30 x 10	6	767.082	767.083	767.084	767.085	767.086	767.087	767.088
F3015/6	30 x 15	6	767.102	767.103	767.104	767.105	767.106	767.107	767.108
F3030/6	30 x 30	6	767.112	767.113	767.114	767.115	767.116	767.117	767.118
F4010/6	40 x 10	6	767.122	767.123	767.124	767.125	767.126	767.127	-
F4015/6	40 x 15	6	767.132	767.133	767.134	767.135	767.136	767.137	767.138
F4020/6	40 x 20	6	767.142	767.143	767.144	767.145	767.146	767.147	-
F5010/6	50 x 10	6	767.152	767.153	767.154	767.155	767.156	767.157	767.158
F5015/6	50 x 15	6	767.162	767.163	767.164	767.165	767.166	767.167	767.168
F5020/6	50 x 20	6	767.172	767.173	767.174	767.175	767.176	-	767.178
F5030/6	50 x 30	6	767.182	767.183	767.184	767.185	767.186	767.187	767.188
F6015/6	60 x 15	6	767.192	767.193	767.194	767.195	-	767.197	767.198
F6020/6	60 x 20	6	767.202	767.203	767.204	767.205	-	767.207	767.208
F6030/6	60 x 30	6	767.212	767.213	767.214	767.215	767.216	767.217	767.218
F6040/6	60 x 40	6	767.232	767.233	767.234	767.235	-	767.237	767.238
F6050/6	60 x 50	6	767.242	767.243	767.244	767.245	-	767.247	767.248
F8015/6	80 x 15	6	767.252	767.253	767.254	767.255	-	-	-
F8020/6	80 x 20	6	767.262	767.263	767.264	767.265	-	-	-
F8030/6	80 x 30	6	767.272	767.273	767.274	767.275	-	767.277	767.278
F8040/6	80 x 40	6	767.292	767.293	767.294	767.295	-	767.297	-
F8050/6	80 x 50	6	767.302	767.303	767.304	767.305	-	767.307	767.308

Other dimensions upon demand.

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PFERD



## Polishing-paste bars

Five different pastes, indicating its purpose by different colours.  
Bar size 70 x 50 x 140 mm.

Item No.	Type	Colour	Purpose
768.101	PP1 VP FE	green	Pre-polishing of steel and stainl. steel
768.102	PP2 VP MS	grey	Pre-polishing of aluminium and brass
768.103	PP3 VP NE	brown	Pre-polishing of nonferrous metals
768.104	PP4 HGP	pink	high-gloss of all metals
768.105	PP5 HGP K	beige	high-gloss polishing of plastics



## Grinding oils

Grinding oils avoid both too high temperatures and the contamination of the abrasive materials by shavings. Also the surface quality of the work-piece will be ameliorated. The life-time of surface grinder tools (see item 296) will increase using grinding oil. The oils prevents nonferrous metals from irritating spots and effect rust prevention for ferrous metals.

Purpose	Packing/Item No.		
	Spray can 470 ml	Bottle 1 ltr.	Bottle 5 ltr.
Iron and steel	769.100	769.101	769.105
Nonferrous metals	769.110	769.111	769.115



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PFERD



## COMBI-DISC-grinding tools

ideal composition of reusable holder and grinding sheets or grinding disks by means of a **metal screw connection**, very easy to handle, quick tool change.

### 1) COMBI-DISC-holder in 3 degrees of hardness

**soft** for contours; **medium** for radii, **hard** for surfaces

Item No.	Type	Dia. mm	Degree of hardn.	Shank dia.	Max. speed
770.601	SBH 38 W	38	soft	6	25.000
770.602	SBH 50 W	50		6	19.000
770.603	SBH 75 W	75		6	12.500
770.611	SBH 20 M	20	medium	6	47.500
770.612	SBH 25 M	25		6	38.000
770.613	SBH 38 M	38		6	25.000
770.614	SBH 50 M	50		6	19.000
770.615	SBH 75 M	75		6	12.500
770.621	SBH 38 H	38	hard	6	25.000
770.622	SBH 50 H	50		6	19.000
770.623	SBH 75 H	75		6	12.500

### 2) COMBI-DISC-grinding sheets in 2 versions

**corundum A**, dark brown, for normal use

**ceramic grain CO**, red-brown for grinding with outstanding abrasive results, to be used with powerful machines

Type	Dia. mm	Grain/Item No.								Pack. cont.
		A 60	A 80	A120	A180	A320	CO 36	CO 60	CO 80	
CD 20	20	770.631	770.632	770.633	770.634	770.635	-	-	-	100
CD 25	25	770.641	770.642	770.643	770.644	770.645	-	-	-	100
CD 38	38	770.651	770.652	770.653	770.654	770.655	-	-	-	100
CD 50	50	770.661	770.662	770.663	770.664	770.665	770.667	770.668	770.669	100
CD 75	75	770.671	770.672	770.673	770.674	770.675	770.677	770.678	770.679	50

### 3) COMBI-DISC-grinding disks in two degrees of hardness

**hard:** for all kinds of surface working, open structure, flexibility determined by the degree of hardness of the holder

**soft:** for finely grinding surfaces and contours, very open structure

Type	Dia. mm	Degree of hardn.	Grain/Item No.				Pack. cont.
			coarse	medium	fine	very fine	
VRH 20	20	hard	-	-	-	770.704	50
VRH 25	25		770.711	770.712	-	770.714	50
VRH 38	38		770.721	770.722	-	770.724	50
VRH 50	50		770.731	770.732	-	770.734	50
VRH 75	75		770.741	770.742	-	770.744	25
VRW 50	50	soft	-	770.752	770.753	770.754	50
VRW 75	75		-	770.762	770.763	770.764	25

Other types of COMBIDISC-grinding tools (other abrasives, brushes, felts) upon demand! Please ask for our special catalogue!

## COMBIDISC Mini-Polifan grinding tools

Ideal for weld dressing in hard-to-reach areas. Longer tool life and higher stock removal rate when compared to grinding discs.

**Abrasive: Aluminium oxide A** for general purpose

**Zirconia alumina Z** for coarse grinding

Type	Ø mm	Grain/Item No.							
		A 40	A 60	A 80	A 120	Z 40	Z 60	Z 80	Z 120
CD PFF 50	50	770.771	770.772	770.773	770.774	770.775	770.776	770.777	770.778
CD PFF 75	75	770.781	770.782	770.783	770.784	770.785	770.786	770.787	770.788

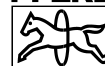
### Fitting holders (shank 6 x 40 mm):

Item No.	Type	Fitting for
770.791	BO PFF 50	CD PFF 50
770.792	BO PFF 75	CD PFF 75

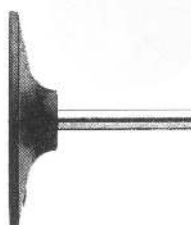
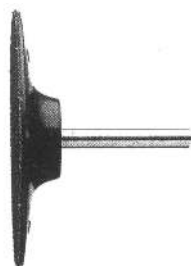


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PFERD







## Rubber supporting disks and plane grinding disks

### 1) self-adhering

#### a) rubber supporting disk 'GTH'

Item No.	Type	Diameter	Shank dia. x length mm	Max. speed rpm
771.110	GTH018.03	18	3 x 30	20,000
771.120	GTH030.03	30	3 x 30	12,500
771.130	GTH030.06	30	6 x 40	12,500
771.140	GTH045.06	45	6 x 40	10,000
771.150	GTH060.06	60	6 x 40	8,000
771.160	GTH075.06	75	6 x 40	6,000
771.170	GTH120.06	120	6 x 25	4,000
771.180	GTH120.08	120	8 x 25	4,000

5 per package (2 per package 75 mm dia. and up)

#### b) self-adhering plane grinding disks 'PSH'

Type	Dia. mm	Grain/Item No.						
		60	80	120	150	180	240	320
PSH018A	20	771.111	771.112	771.113	771.114	771.115	771.116	771.117
PSH030A	33	771.121	771.122	771.123	771.124	771.125	771.126	771.127
PSH045A	48	771.141	771.142	771.143	771.144	771.145	771.146	-
PSH060A	63	771.151	771.152	771.153	771.154	771.155	771.156	771.157
PSH075A	78	771.161	771.162	771.163	771.164	771.165	771.166	771.167
PSH120A	125	771.171	771.172	-	-	-	-	-

Package contains 100 pieces per type

### 2) self-adhesive

#### a) rubber disk 'GTK'

Item No.	Type	Diameter	Shank dia. x length mm	Max. speed rpm
771.210	GTK018.03	18	3 x 30	20,000
771.220	GTK030.03	30	3 x 30	12,500
771.230	GTK030.06	30	6 x 40	12,500
771.240	GTK045.06	45	6 x 40	10,000
771.250	GTK060.06	60	6 x 40	8,000
771.260	GTK075.06	75	6 x 40	6,000

5 per package (2 per package 75 mm dia.)

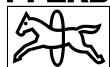
#### b) self-adhesive plane grinding disks 'PSK'

Type	Dia. mm	Grain/Item No.					
		60	80	120	150	180	240
PSK018A	21	771.211	771.212	771.213	771.214	771.215	771.216
PSK030A	33	771.221	771.222	771.223	771.224	771.225	771.226
PSK045A	48	771.241	771.242	771.243	771.244	771.245	771.246
PSK060A	63	771.251	771.252	771.253	771.254	-	-
PSK075A	78	771.261	771.262	771.263	771.264	-	-

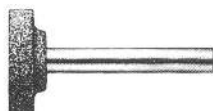
Package contains 100 pieces per type

Remark: 6mm dia. reducers for 3-mm shank tools see p. 89, Item No. 284 A

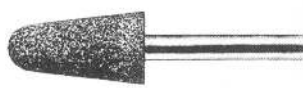
**PFERD**



Cylinder



Disk



Cone



Ball

### 1) with straight shank, diameter 6 mm, length 40 mm

Cylinder		Disk	
Item No.	Head dia. x length	Item No.	Head dia. x length
772.101	3 x 6 mm	772.121	20 x 6 mm
772.102	4 x 8 mm	772.122	25 x 6 mm
772.103	5 x 10 mm	772.123	40 x 10 mm
772.104	6 x 13 mm	<b>Cone</b>	
772.105	8 x 10 mm		
772.106	10 x 13 mm	Item No.	Head dia. x length
772.107	13 x 13 mm	772.131	20 x 32 mm
772.108	16 x 20 mm	772.132	20 x 40 mm
772.109	10 x 32 mm	<b>Ball</b>	
772.110	13 x 40 mm		
772.111	16 x 40 mm	Item No.	Head dia.
772.112	20 x 40 mm	772.141	16 mm
772.113	32 x 20 mm	772.142	32 mm
772.114	40 x 20 mm		

## Ceramic grinding tools

of electro-corundum, pink colour, hardness 'O', for steel and cast iron, grinding speed appr. 25 to 40 m/sec.

**Min. quantity 10 per type.**

We can also supply ceramic grinding tools in different degrees of hardness and of different materials and different shapes.

### 2) with straight shank, diameter 3 mm, length 30 mm

Cylinder		Disk	
Item No.	Head dia. x length	Item No.	Head dia. x length
772.202	2 x 5 mm	772.221	13 x 3 mm
772.203	3 x 6 mm	772.222	16 x 4 mm
772.204	4 x 8 mm	772.223	20 x 6 mm
772.205	5 x 10 mm	<b>Ball</b>	
772.206	6 x 10 mm		
772.207	8 x 10 mm	Item No.	Head dia.
772.208	8 x 16 mm	772.241	5 mm
772.209	10 x 10 mm	772.242	8 mm
772.210	10 x 13 mm	772.243	10 mm
772.211	13 x 13 mm	772.244	13 mm

Remark: 6mm dia. reducers for 3-mm shank tools see p. 89, Item No. 284 A

## Polishing tools, rubber bonded

302

### Quality P1 rubber-bonded polishing tools, gr. 100

for fine polishing cast metals, hardened and unhardened, alloyed and unalloyed steels; max. circumferential speed 50 m/sec.

### Quality P2 soft rubber-bonded flexible polishing tools, gr. 120

for fine and high polishing prefinished surfaces; very fine finish; max. circumferential speed 15 m/sec.

Min. quantity 20 per type.

#### Cylinder (other shapes upon request)

Head dia. x lg. mm	Shank dia. mm	Item No.		Head dia. x lg. mm	Shank dia. mm	Item No.	
		Qual. P1	Qual. P2			Qual. P1	Qual. P2
4 x 8	3	773.101	773.201	13 x 20	6	773.109	773.209
5 x 10	3	773.102	773.202	16 x 16	3	773.110	773.210
6 x 10	3	773.103	773.203	16 x 20	6	773.111	773.211
8 x 10	3	773.104	773.204	16 x 32	6	773.112	773.212
8 x 16	6	773.105	773.205	20 x 20	6	773.113	773.213
10 x 10	3	773.106	773.206	20 x 32	6	773.114	773.214
10 x 20	6	773.107	773.207	32 x 10	6	773.115	773.215
13 x 13	3	773.108	773.208	40 x 20	6	773.116	773.216

Remark: 6 mm dia. reducers for 3-mm shank tools see p. 89, Item No. 284A



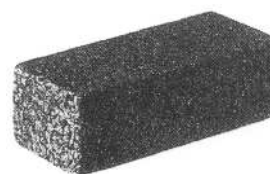
## Grinder blocks

303

of silicon carbide, for trimming and shaping grinding tools or also for core-rubbing

Item No.	Length mm	Width mm	Height mm
303.001	50	25	15
303.002	100	30	15
303.003	100	50	25
303.004	150	50	25

Packages contains 5 pieces per size.



## Flexible shaft machine 'Mammut'

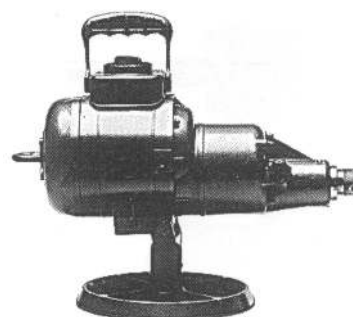
powerful tools, multi-purpose application for milling, grinding and polishing

**7 speed ranges:** 12.000; 8.000; 5.700; 3.200; 2.100; 1.600; 850 rpm

In connection with the overdrive ST 103 (see p. 100, item 306/5) the drive speed may be transmitted in a ratio of 1:3.

Motor design	Three-phase curr. 50 Hz 220 / 380 V	Weight kg
<b>Mammut</b>	<b>Item No.</b>	
- Motor with base (see ill.)	774.100	16,5
- hanging	774.101	16,0
- in overhead trolley	774.102	17,0
- on base trolley	774.103	44,5
Wattage/horsepower (output)	736 / 1	
Wattage (input)	1000	
Dimensions (L x W x H) mm	460 x 160 / 240 x 400	
Motor connection	DIN 10	
Tool holder	6 mm collet	
Shaft connector	DIN 10	
Standard shaft	10 ZG DIN 10 (see item 306)	
Additional shafts		
a) for light duty	4 ZG DIN 10; 7 ZG DIN 10 (see item 306)	
b) for heavy duty	12 ZG DIN 10 (see item 306)	

The machines are supplied without plug and shaft.  
Please order the shafts separately (see item 306)



Flexible shaft drives  
with electronic upon request!

304



## Record universal motor RU 8/180 SI with speed control

For general use in milling, grinding and polishing work. Extremely low noise development, particularly suitable for use in tool and mould construction.

Item No.	775.201
<b>Technical data:</b>	
Dimension	222 x 98 x 98mm
power input	1020W
power output	600W
motor connection	DIN 10
RPM*	0-18.000
Suitable shafts	4ZG and 7ZG/ZGU (see item 306)

\* Variable speed by **combi-speed control**

Recommended accessories:

1) **Table stand TSL 1400** with screw clamp for bench tops up to 65mm in thickness.

The telescopic system allows individual height adjustment up to max. 140cm. **Item No. 775.203**

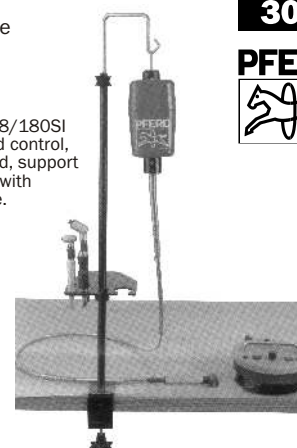
2) **Handpiece support TSA L 1400** matches the table stand and allows you to place optimally various handpieces, ready for use **Item No. 775.204**

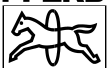
The machine is delivered **without a flexible shaft**. Please order separately (see item no. 306).

305



Motor RU 8/180SI  
with speed control,  
table stand, support  
and shaft with  
handpiece.



**306****PFERD**

## Accessory tools for Item No. 304 to 305

**1) Flexible shafts** (connector to motor acc. to DIN 10), cpl. with handle  
Core of piano wire, core coupling M 10. Protective hose of oil-resistant rubber, hose coupling 30 mm dia.

**Core or protective hose cannot be repaired.**

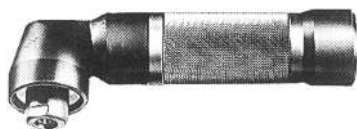
Item No.	776.101	776.102	776.103	776.104	776.105
Type	4 ZG DIN 10	7 ZG DIN 10	7 ZGU DIN 10	10 ZG DIN 10	12 ZGA DIN 10
Core dia. x length mm	4 x 1330	7 x 1590	7 x 2090	10 x 1600	12 x 2100
Hose dia. mm	13	18	18	22	25
Handle Item No.	4 ZGB	7 ZGA	7 ZGA	10 ZGE	12 ZGA
Handle size dia. x length mm	19,5 x 110	27 x 130	27 x 130	33 x 170	33 x 162
Handle connector	G 16	G 22	G 22	G 28	G 28
Handle coupling dia. mm	16	22	22	28	28
Standard collet mm	6	6	6	6	12
Opt. available collets mm	1/1,5/2/2,5/3/3,5/4/5	1/2/2,5/3/3,5/4/5/7/8/9			3/4/5/6/7/8/9/10
Max. speed revs/min.	40.000	25.000	25.000	18.000	12.000
Weight kg	0,6	1,5	2,0	2,5	4,25

**Rigid or flexible extensions** available upon request!



## 2) Pre-assembled replacement cores

Item No.	776.601	776.602	776.603	776.604	776.605
For shaft	4 ZG	7 ZG	7 ZGU	10 ZG	12 ZGA



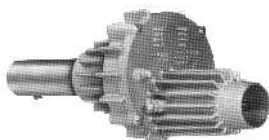
## 3) Angle tool holder

Item No.	776.201	776.202	776.204
Type	WZ 4A	WZ 7B	WZ 10B
For shaft	4 ZG	7 ZG / 7 ZGU	10 ZG / 12Z GA
Head height x length mm	43 x 111	55 x 157	55 x 166
Max. speed revs/min.	20.000	17.000	17.000
Weight kg	0,27	0,60	0,58
Collets mm	3 mm	6 mm	6 mm



## 4) Chuck

Item No.	776.301
Type	207
Shank dia. mm	6
Chuck range mm	0 - 6
Weight kg	0,14



## 5) Overdrive ST 103 DIN 10 Item No. 776.501

Ratio 1:3; i.e. threefold rpm (f.e. fitting for machine Mammut - item. 304)  
Length ab. 245 mm, diam. of coupling 30 mm.

Replacement cores are available!

**307**

## Compressed-air filing machine FRV 110

with lever

For fettling and filing in design and construction. Extremely low vibrations: 2,0 m/s<sup>2</sup>, highly precise, smooth running, for files with 6 mm cylinder shank.

Item No.	No. o. strokes	Frequency	Stroke	Weight	Ø x length	Air con.	Tube
307.110	9000 min <sup>-1</sup>	150 Hz	8 mm	1,0 kg	41 x 180 mm	G 1/4" i	6 mm I.W.

**Fitting files**, shank diam. 6 mm, useable length 80 mm, cut 1

Item No.	Shape	Cross section
307.201	flat	12,3 x 6,3 mm
307.202	half round	12,0 x 6,0 mm
307.203	triangular	9,0 x 9,0 mm
307.204	square	8,0 x 8,0 mm
307.205	round	6,0 mm Ø

Remark:

**Pivot joint VARIACOR** for all compressed-air tools see item no. 190B



## Portable sand blasting equipment, Type 'TF'

308

operating pressure 2 to 6 bar, for metallic and non-metallic blasting media.

The blasting media is sucked in by means of compressed air. After use the blasting media falls into the vessel through the screen for reuse and refeeding.

**Scope of supply:** complete, ready for use, blasting equipment including vessel, pedestal, carrying strap and screen, blasting pistol complete with air and blasting nozzles, 3 m long blasting media hose and 3 m long air hose.

**TF 10** = cont. 10 l blasting media vessel dia. 250 mm, height 440 mm  
**TF 50** = cont. 50 l blasting media vessel dia. 400 mm, height 700 mm

**Nozzle diameter to be determined in accord. with the following table:**

Air nozzle dia.	3,0 mm	4,0 mm	7,5 mm
Blasting nozzle dia.	6,0 mm	8,0 mm	13,0 mm
Air consumption at 6 bar: m³/h	36	60	210
		<b>Item No.</b>	
Unit	TF 10	308.011	308.012
	TF 50	308.051	308.052
			308.053

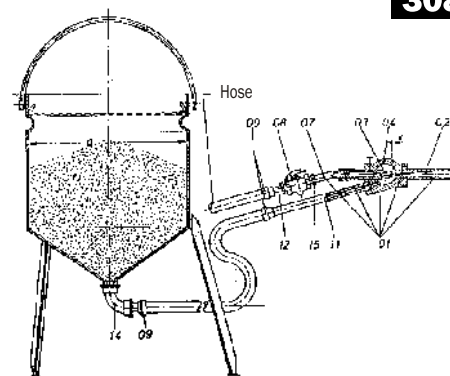


Operating instructions are available!

## Spares and wearing parts

Part No.	Air nozzle dia.	3,0 mm	4,0 mm	7,5 mm
as per ill.	Description	Item No.		
01	complete system	308.101	308.102	308.103
02	blasting nozzle	308.111	308.112	308.113
03	complete air nozzle	308.121	308.122	308.123
04	nozzle head (without nozzle)	3 0 8 . 1 3 1		
07	bent pipe	3 0 8 . 1 3 4		
08	two-way valve	3 0 8 . 1 3 5		
09	hose clip	3 0 8 . 1 3 6		
11	hose connector 265 mm	3 0 8 . 1 3 8		
12	hose connector 90 mm	3 0 8 . 1 3 9		
14	elbow	3 0 8 . 1 4 1		
15	reducer	3 0 8 . 1 4 2		

308A



## Portable sand blasting equipment, Type JUNIOR

309

operating pressure 6 bar, for metallic and non-metallic blasting media.

The blasting media is sucked by means of compressed air. After use the blasting media falls into the vessel through the **optional screen** for reuse and refeeding.

**Scope of supply:** complete with vessel with handle, legs, blasting pistol, air nozzle and blasting nozzle, 2-m long blasting medium hose and 4-m long compressed air hose.

**Optional: vibrating screen (item no. 309.210)**

vessel capacity: appr. 40 l.

vessel diameter: 330mm height: 800 mm

**Nozzle diameter to be determined in accord. with the following table:**

Air nozzle dia.	2,0 mm	2,5 mm	3,0 mm	3,5 mm
Blasting nozzle dia.	5,0 mm	6,0 mm	7,0 mm	8,0 mm
Air consumption at 6 bar: m³/h	15	24	34	45
<b>Item No.</b>				
Complete unit	309.202	309.203	309.204	309.205

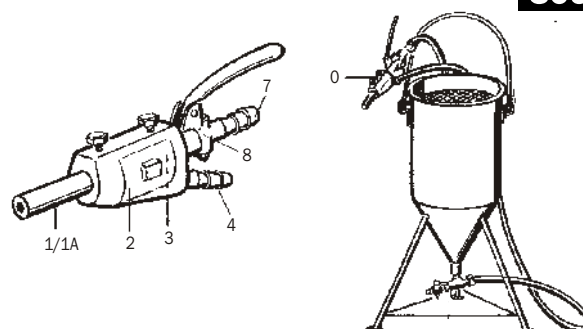


Operating instructions also available!

## Spares and wearing parts

Part No.	Air nozzle dia.	2,0 mm	2,5 mm	3,0 mm	3,5 mm
as per ill.	Description	Item No.			
0	complete blasting pistol	309.212	309.213	309.214	309.215
1*	blasting nozzle	309.222	309.223	309.224	309.225
1A*	borcarbide-blasting nozzle	309.242	309.243	309.244	309.245
3	air nozzle	309.232	309.233	309.234	309.235
2	cast body	309.301			
8	lever valve	309.302			
4	blasting hose connector 13 mm	309.305			
7	air hose connector 9 mm	309.306			

309A



\* Standard blasting nozzle service life appr. 20 hrs.  
 Borcarbide-nozzle service life appr. 300 - 400 hrs.

**Other blasting equipment** available upon request!  
**Protective clothing** see item no. 350



**310**

## Blasting pistols for small workpieces

Item No. 310.002

**low cost** pistol, with 6 mm blasting nozzle, low air consumption, min. pressure 4 bar, 6 mm hose connector, with 1 l aluminium vessel

**Spare blasting pipe:**

Item No. 310.102 standard pipe, hardened and galvanized

Item No. 310.103 pipe of special material, considerably longer life.

**310A**

## Blasting unit RAPID Item No. 310.201

Robust, handy pistol made of aluminium die casting. For direct extraction of blasting materials out of bags, drums, buckets a.s.o. Suction hose (length 3m), with a special sucking-in element completely made of metal. Air connection 1/4" ext. thr., 6 mm blasting- and 3 mm air-nozzle.

**Spare suction hose** (length 3m) cpl. with sucking-in element, 1/4" ext. thr.

Item No. 310.202

**Spare blasting pipes** as above mentioned (item 310)

**311**

## Metallic blasting medium, in 25 kgs bags (minimum quantity = 150 kgs)

Type	Cast steel blasting media GS-R, round	Steel wire bits StD-Z, cyl.	Chilled iron blasting media GH-K, square	Light metal blasting media GRANAL
Field of appl.	fettling of castings, (scoop wheel system)		fettling of castings (compr. air system)	fettling in compr. air and scoop wheel systems
Hard- ness	HV 1,0, 420 – 480 $\pm$ HRC 42, 7 – 47,7	HV 450 $\pm$ 1580/1770 N/mm <sup>2</sup>	HV 1,0, ca. 700 – 800 $\pm$ HRC 60,1 – 64,0	HV 0,2 90 – 120
Particle size available	<b>Item No.</b> particle size mm	<b>Item No.</b> particle size mm	<b>Item No.</b> particle size mm	<b>Item No.</b> particle size mm
	311.004 0,2 – 0,4	311.204 0,4	311.304 0,2 – 0,4	311.404 0,2 – 0,4
	311.006 0,3 – 0,6	311.206 0,6	311.306 0,3 – 0,6	311.408 0,4 – 1,0
	311.008 0,4 – 0,8	311.209 0,9	311.308 0,4 – 0,8	311.412 0,8 – 1,2
	311.010 0,6 – 1,0	311.212 1,2	311.310 0,6 – 1,0	311.418 1,0 – 1,8
	311.013 0,8 – 1,3	311.215 1,5	311.313 0,8 – 1,3	311.425 1,8 – 2,5
	311.016 1,0 – 1,6		311.316 1,0 – 1,6	
	311.020 1,3 – 2,0		311.320 1,3 – 2,0	
	311.022 1,6 – 2,2		311.322 1,6 – 2,2	
	311.028 2,0 – 2,8		311.328 2,0 – 2,8	
	311.032 2,4 – 3,2		311.332 2,4 – 3,2	

Other graines and types upon request!

**312**

## Non-metallic blasting media, in 25 kgs bags (minimum quantity = 150 kgs)

Type	Slag granules TESTRA	Glass beads MGL	Glass grains	Walnut shells
Field of appl.	fettling of castings	cleaning of ingot moulds and moulds		surface treatment non-abrasive
Hard- ness	Mohs 7	Knoop 5150 N/mm <sup>2</sup> HRC 47	Mohs 5 - 6	Mohs 2, 5
Particle size available	<b>Item No.</b> particle size mm	<b>Item No.</b> particle size $\mu$	<b>Item No.</b> particle size $\mu$	<b>Item No.</b> particle size mm
	312.007 0,25 – 0,70	312.105 0 – 50	312.313 80 – 150	312.420 0,20 – 0,45
	312.010 0,25 – 1,00	312.108 40 – 80	312.321 100 – 200	312.445 0,45 – 1,00
	312.014 0,25 – 1,40	312.111 50 – 105	312.330 200 – 300	312.480 0,80 – 1,30
	312.020 0,25 – 2,00	312.115 75 – 150	312.350 300 – 600	312.490 1,00 – 1,70
	312.030 0,50 – 1,00	312.121 105 – 210	312.380 300 – 800	312.493 1,30 – 1,70
	312.034 0,50 – 1,40	312.125 150 – 250	312.384 400 – 1400	312.497 1,70 – 2,40
	312.040 0,50 – 2,00	312.130 180 – 300		
	312.050 1,00 – 2,00	312.142 250 – 420		
		312.159 420 – 590		
		312.184 420 – 840		

**Other blasting media on request.**

Our blasting media pose **no health hazard**. They are neither silicogenous nor carcinogen nor toxic. The blasting media are in accordance with the German regulations concerning dangerous substances at the workplace.



## Truing devices **Item No. 583.001**

for grinding wheels, with guard and steel handle, length 39 cm, with four 50 mm-dia. wheels, hole dia. 10 mm.

Complete sets of spare wheels: **Item no. 583.002**

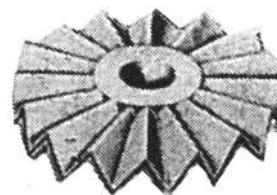


**313**

## Truing wheels

- 1) of prime-quality special cast iron, deburred, **corrugated**
- 2) of prime-quality **steel**, hardened, with 16 to 20 teeth

Diameter	30 mm	40 mm	50 mm	50 mm	60 mm
Hole dia.	7 mm	10 mm	10 mm	13 mm	10 mm
Material	Item No.				
Cast iron	-	-	583.101	-	583.102
Steel	583.201	583.202	583.203	583.204	-



**314**

## Bandsaw machines for metal working

for economic handling especially of aluminium.

Very rigid construction, perfectly flat, heavy duty and very large iron table for universal and flexible use, safe working in combination with high performance and utmost durability.

### Technical equipment:

- closed, modern housing in a rigid construction
- safety doors with limit stop switch
- vulcanized rubber covering on aluminium wheels
- top and bottom precision roller guide
- mechanical height adjustment of the top guide
- automatic brake
- efficient, compact V-belt drive
- standard speed 800 mtrs./min, others upon request

### Special accessories:

- electromotive high adjustment
- pneumatic suspension of the blades
- variable speed
- bigger cutting heights
- different speeds

Item No.	Type	roll-diam.	cut width	cut height	table size	blade length	motor
315.630	UH630/M	630 mm	610 mm	470 mm	630x 630 mm	4700 mm	3,0 kW/400 V
315.800	UH800/M	800 mm	780 mm	500 mm	800x 950 mm	5600 mm	4,0 kW/400 V
315.900	UH900/M	900 mm	870 mm	700 mm	800x1000 mm	6550 mm	5,5 kW/400 V

Please ask for further informations!



**315**



**Tooth shape S** (standard toothing) for universal use for steel, cast iron or hard non-ferrous metals



**Tooth shape K** (claw teeth) outstanding efficiency for non-ferrous metals and steels of lower strength

## High-performance metal band saw blades

with flexible back

tooth shape S or K, ready for use, sharpened and set.

**Saw blades available:**

- 1) 30 m rolls
- 2) cut-to-size, also ready-welded blades  
(min. quantity 5 blades per size).

**A) Type 510** of tungsten-silicon alloy steel with annealed back, cannot be resharpened

Width x thickness mm	Item No.		Teeth per inch (tpi)	
	roll	endless	tooth shape S	tooth shape K
6 x 0,65	832.306	832.406	6,8,10,14,18	6
8 x 0,65	832.308	832.408	6,8,10,14,18	4,6
10 x 0,65	832.310	832.410	6,8,10,14,18	3,4,6
13 x 0,65	832.313	832.413	4,6,8,10,14	3,4,6
16 x 0,65	832.316	832.416	4,6,8,10	3,4,6
16 x 0,80	832.317	832.417	10	3,4,6
20 x 0,80	832.320	832.420	8,10	3,4,6
25 x 0,90	832.325	832.425	4,6,8,10	3,4,6

Please specify tooth shape and tpi as well as length (for **endless** blades).

**B) Type 526 of cobalt-bi-metal**, teeth of HSS, band of flexible steel, for highest requirements, can be resharpened up to 6 tpi.

Width x thickness mm	Item No.		Teeth per inch (tpi)	
	roll	endless	tooth shape K	
13 x 0,65	832.513	832.613	4,6	
13 x 0,90	832.514	832.614	3,4,6	
20 x 0,90	832.520	832.620	3,4,6	

Please specify tooth shape and tpi as well as length (for **endless** blades).

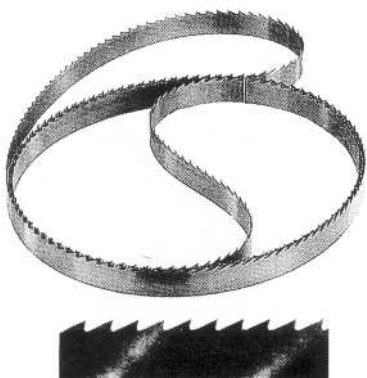
**C) Type 540 carbide tipped**, teeth tips made of a special hard-wearing carbide, band with 4%Cr, highly flexible especially designed for casting with inclusions of sand

Width x thickness mm	Item No.		Teeth per inch (tpi)	
	roll	endless	tooth shape S	tooth shape K
13 x 0,80	832.713	832.813	4	-
20 x 0,80	832.720	832.820	4	3
27 x 0,90	832.727	832.827	2,3,4	2,3,4
34 x 1,10	832.734	832.834	2,3	2,3

Please specify tooth shape and tpi as well as length (for **endless** blades).

Besides the normal constant tooth pitches with a uniform tooth distance, 2tpi f.e., it is also possible to get **variable tooth pitches** with different tooth distances within one toothing interval. Variable tooth pitches, for instance 2-3 tpi, can be characterized by two measures: 2 tpi stands for the maximum tooth distance and 3 tpi stands for the minimum tooth distance in the toothing interval. This guarantees a **smooth running** of the blade even for savings prone to vibrations. Upon request!

## 316A



**Tooth shape A**

## Metal band saw blades for aluminium

of genuine Swedish steel

tooth shape A, ready for use, set and sharpened, can be resharpened.

**Saw blades available:**

- 1) 50 or 100 m rolls
- 2) cut-to-size, also ready-welded blades  
(min. quantity 2 blades per size).

Width x thickness mm	Item No.		Teeth spacing appr. mm
	roll	endless	
10 x 0,60	833.010	833.110	4
25 x 0,80	833.025	833.125	6

Please specify length for **endless** blades.

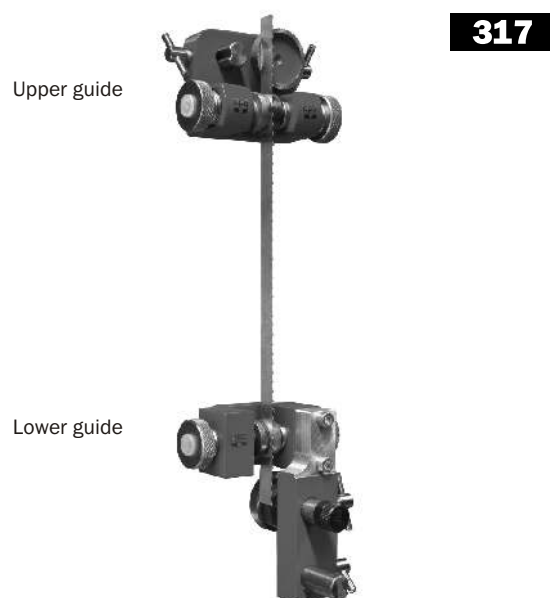
## Bandsaw guides APA type 2

with ball bearing back roller, exchangeable especially abrasionproof sliding ring, side roller finely adjustable.

May be used both for wood- and metalworking band saws.

Spare parts may be exchanged without disassembling the complete guide.

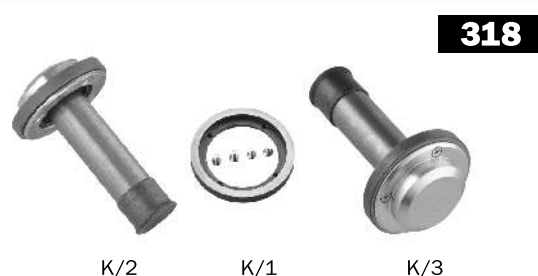
Size	2
for wheel-diam.	600-900
for blade-width	5-40
	<b>Item No.</b>
upper guide	836.276
lower guide	836.277



## Spare parts for saw blades guides item No. 317 and type 1057 (made until 2004)

Part No.	Size	III	IV	VI
	dia. of rear roller	58 mm	65 mm	78 mm
	Description	Item No.		
K/2	ball bearing rear roller (top) with sleeve & cap	839.168*	839.169	839.170
K/3	ball bearing rear roller (bottom) with sleeve & cap	839.171*	839.172	839.173
K/1	spare treads with screws	839.174*	839.175	839.176

\* These parts fit for the guide APA 2 (Item No. 317)



## Special oil 1059 for band saw guides

Only this oil should be used for lubricating lateral and rear roller bearings. A different oil or ball bearing grease influences the smooth motion of the rollers and the special oil extends the life of the saw guides.

Item No. 840.059 in 20 ml bottles



## Rubber cork lining for band saw wheels

of a special flexible quality, thickness 5 mm

Item No.	841.020	841.025	841.030	841.035	841.040	841.045
Width	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm
Item No.	841.050	841.055	841.060	841.065	841.070	841.080
Width	50 mm	55 mm	60 mm	65 mm	70 mm	80 mm

Can be supplied in the following lengths or also per meter:

Wheel dia. mm	300	400	500	600	700	800	900	1000
Length mm	1000	1320	1620	1950	2280	2600	2900	3200



## Cork lining cement Type 1014

for glueing cork linings to band saw wheels

Item No.	842.500
Contents	640 gr.
Results	7,8 m



**322**



## Band saw welding device

For blunt-welding of band saw blades and knives without solder and flux; fast welding of saw blades, lasting and high-strength joints, simple to operate, minimum of maintenance required.

For welding bimetal saw blades, welding devices can be equipped with an electronic heating attachment.

Available for voltages from 110 to 380 V, 50/60 cps, with additional transformer also up to 500 V, 50/60 cps.

Welding devices BSS 040 to BSS 060 must be equipped with water-cooled electrodes for welding tungsten-alloy saw blades.

Type	Saw blades for		Wattage kVA	Item No.			
	metall mm	wood mm		basic device	device w/shears	w/shears & grindg. attach.	w/heating attachment
BSS 016	6 - 12	3 - 16	2	-	843.016	843.017	843.018
BSS 025	6 - 19	4 - 25	3	-	843.025	843.026	843.027
BSS 040	6 - 27	6 - 40	4	843.040	843.041	843.042	843.043
BSS 050	6 - 34	6 - 50	8	843.050	-	-	843.051
BSS 060	6 - 34	6 - 60	8	843.060	-	-	843.061

**323**



## Shears for Item No. 322

The band shears have been especially developed for burless, straight and rectangular cuts guarantee clean cuts and no twisting. A clean and rectangular end is a prerequisite for immaculate butt welding.

Item No.	Type	For band width	For welding machine
844.025	AHM 025	up to 25 mm	BSS 016/025 (incl.)
844.040	AHM 040	up to 40 mm	BSS 040 (f. attachmt)
844.050	AHE 050	up to 50 mm	BSS 050 (separate)
844.060	AHE 060	up to 60 mm	BSS 060 (separate)

**324**



## Grinding machines for Item No. 322

Filling devices and grinding machines are used for redressing blade welds. The grinding machine grinds the welds of butt welded blades or facets the blade ends for overlap soldering.

Item No.	Type	For band width	For welding machine
845.025	ESM 025	up to 25 mm	BSS 016/025 (av. built-in)
845.040	ESM 040	up to 40 mm	BSS 040 (av. built-in)
845.060	SMH 060	up to 60 mm	BSS 050/060 (separate available)

**325**



## Cooling lubricant stick 'Manitou Easy Cut'

Item No. 847.100 in sticks of appr. 350 gr.

Used in metal-cutting and metal forming.

Reduces friction between tool and workpiece, excellent adhesion, economical in use for sawing, grinding and thread-cutting.

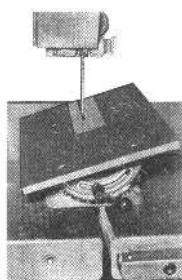
**326**



## Blade solder

Item No.	Description
847.270	silver solder 10 mm (3,0 m)
847.280	silver solder 15 mm (3,0 m)

**327**



## Bevel cut desk for band saws

Item No. 848.001

Tiltable by 40° to both sides, can also be used on grinding machines, very strong, easy to install and fast to remove, can be set at any angle, protects the blade.

Rest dimensions: 440 x 260 mm

Height: 100 mm



## Surface-control-gauge

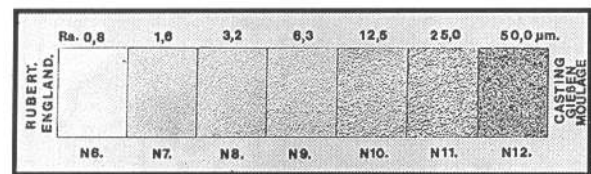
328

### Item No. 328.001

For checking and determination of the surface quality of castings made of any ferrous or non-ferrous metal for all casting systems by means of simply comparison of touching and viewing; made of stainless steel and longlife.

The 7 pieces of the set represent the normal surface qualities which may be obtained by casting from die-casting (class N6/ Ra 0,8 my) along investment and gravity-die-casting down to hand-moulded sand-casting (N12/ra 50 my) according to DIN 4766 T2, as well as all metals (light-metals, cast iron and heavy metals).

An additional surface structure produced by the die-casting-die or gravity-die is superposed on the roughness samples N6, N7 and N8.



## Impact hardness tester 'POLDI' Item No. 329.001

329

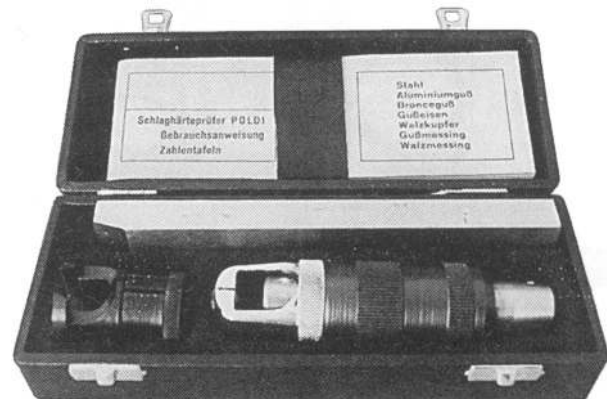
This pocket size instrument enables you to verify the Brinell hardness by comparison of stroke of hammer to the workpiece and a gauge bar. It may be used everywhere for pieces with weight of more than 5 kg.

Complete with magnifier, gauge bar, tables, manual and case (175 x 65 x 35 mm) for workpieces with hardness between 35 and 220 kg/sqmm = 100 – 600 Brinell.

**Gauge bars: 12,5 x 12,5 x 150 mm hardness: 70 kp/sqmm** valid for 40 – 50 tests.

Spare parts:

Item No.	Description
329.002	gauge bars 12,5 x 12,5 x 150 mm, 70 kp/sqmm
329.003	comparison table
329.004	holder with ball
329.005	impact housing
329.006	single striker
329.007	spare spring
329.008	8 times magnifier



## Impact hardness tester COMBI Item No. 329.101

329A

This instrument is based on the same method as the POLDI-tester (see above). The penetrating tool is constructed in such manner that even small parts with a thickness of a few mm may be tested. The table is sufficient for all metals.

Complete with DUCON twin-cone, POLDI head, COMBI table, POLDI table, gauge bar, microscope (magnification 20 times) and case (185 x 145 x 75 mm).

Spare parts:

Item No.	Description
329.102	gauge bars 12,5 x 12,5 x 150 mm, 70 kp/sqmm
329.003	POLDI table
329.103	POLDI head
329.104	COMBI table
329.105	twin-cone
329.106	holder for twin-cone
329.107	case
329.108	microscope (magnification 20 times) with light



## Portable hardness tester EQUOTIP 550

330

Light weight, portable hardness tester, runs by a battery. Easy to use and ready for a wide range of applications.

**Units, applications:**

### Unit D, Item-no. 330.001

For testing materials up to 955 HV or 68HRC.

Cast iron: 90-664 Brinell. Aluminium casting 19-164 Brinell.

**Unit D contains** indicating device EQUOTIP with battery, impact device D with cable, test block D, coupling paste, cleaning brush, carrying case and operating instruction, software.

### Unit G, item-no. 330.002

Special features: bigger test tips, energy of impact 9 times higher than the D type, low requirements as to the surface preparation. Only for measurements acc. Brinell/650HB. For large and heavy components, such as cast and forged parts.

Unit G contains indicating device EQUOTIP with battery, impact device G with cable, test block G, cleaning brush, carrying case and operating instruction, software.

**Further accessories upon request!**





**330A**

## Portable hardness tester EQUOTIP piccolo 2

Item-no. 330.101

Scratch proofed anodized aluminium housing – rugged and durable, compact size at just 145 x 44 x 20 mm, large bright LCD display with 3-button keypad for easy readings and simple device control, wide measurement range on most common hardness scales (HV, HB, HRC etc.). On-site testing in metal production and processing, excellent for material selection, acceptance and quality control tests, also for production level testing of heavy and big parts. Handy for difficult to access or confined test locations, also curved sample surfaces. The impact body type D is launched and loaded for the next test in a single motion!

**Unit:** includes testing device with impact device D, USB-cable, cleaning brush, carrying case, support rings, operating instructions, calibration certificate.

**Further accessories upon request!**

**331**

## Moisture testing instrument C-M-B

for the fast determination of the moisture content of foundry sands

The C-M-instrument uses the following system for determining and measuring the moisture content of the sand: carbide is dissociated by water by which acetylene evolves which increases the pressure in the steel cylinder. The water content of the sample can be determined from the pressure increase and the weight of the sample by means of the table.

### 1) C-M-instrument with case Item No. 331.001

comprising all instruments required for carrying out measurements: stainless steel pressure vessel with manometer, hammer, chisel, scales, mortar and tin with 20 capsules of calcium-carbide, testing medium for manometer and scales as well as manual (all components also available individually)

### 2) Capsules with calcium-carbide

Item No. 331.003 tin containing 100 capsules

Item No. 331.004 tin containing 20 capsules

**332**

## Moisture testing balance UX 3011

for moulding sands

Item No. 332.001

For almost all solid and liquid substances.

The principle is drying by means of infrared radiation with simultaneous weighing, the lost of weight will be indicated in percentage. All parameters that can be preselected for the application-oriented operations can be displayed as a menu on a LCD as well as the radiation intensity. The UX 2011 is available alternatively with or without an in-built printer. The printout of all important data is GLP compliant.

**Item No. with printer: 332.001D**

Furthermore all data are put out through the standard V24/ RS 232 interface for separated printers or PCs.

### Technical data:

Weighing range	750 g
Increment	0,001 g
Radiator performance	250 watt
Sample weight	appr. 4 g
Sample volume	max. 95 cm <sup>3</sup>
Drying pan	dia. 110 mm (re-usable!)
Power supply	230 V
Dimensions	appr. width 385 x depth 275 x height 420 mm
Weight	appr. 8,5 kg

**Other balances upon request!**

**333**

PSA-D plus

## Electronic Laboratory Sifter PSA-D Plus (Digital plus T)

with automatic amplitude control, test sieve diameters 200 or 203 mm, continuous measurement of the acceleration of the whole sieve tower by using the G-control-system. Three-dimensional sieving action, self-readjusting amplitude, digital control, electromagnetic drive, memory for ten test sieve parameters sets, quiet and maintenance free, approx. 3kgs sample weight, max. weight of the full sieve tower: 8,7kgs.

### Technical data:

Power supply 230V, 50Hz or 110V, 60HZ, constant amplitude, automatically controlled, ab. 3,0 mm max., timer 0-99 min., or continuous operation, 185VA, weight ab. 34 kgs.

Item No.	Unit
333.201	PSA-D plus incl. cover and clamping device "Classic" for 9 sieves of 50mm height or 18 sieves of 25mm height, <b>but without the sieves</b>
333.202	fitting sieves mesh. 1,4; 1,0; 0,71; 0,5; 0,355; 0,25; 0,18; 0,125; 0,09; 0,063 mm

**Remark:** for testing sieves see also item no. 155

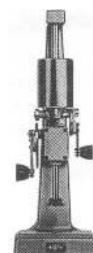
## Ramming instrument type PRA Item No. 334.001

for producing cylindrical sand specimen (tensile test and bending test specimen)

Height appr. 643 mm, width appr. 205 mm, depth appr. 216 mm

### Accessories:

Item No.	Type	Application
334.002	PMU	det. of sand height in test tube
334.003	PFB/R	det. of sand flowability
334.004	PBK/R	prod. of bedding test specimen
334.005	PAB	discharge of test bodies & cleaning of the test body tube



**334**

## Digital permeability testing instrument type PDU-D (digital)

Item No. 335.001

for measuring the permeability of the sand to gas.

Height appr. 305 mm, width appr. 260 mm, depth appr. 378 mm



**335**

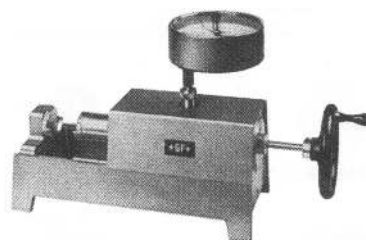
## Strength testing instrument type PFG Item No. 336.001

Hand operated hydraulic press for determining the crushing and shearing strength of cylindrical specimen.

Height appr. 350 mm, width appr. 613 mm, depth appr. 180 mm

### Accessories:

Item No.	Type	Application
336.002	PSP	splitting strength and dry
336.003	PQS	tensile strength testing
336.004	PHV	transverse strength testing



**336**

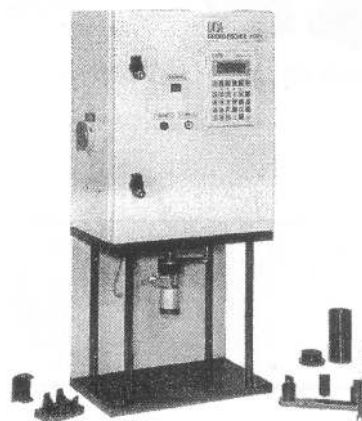
## PVF-C Minilab

Multi-purpose instrument to prepare test specimen and to determine the most frequently required sand values on a foundry:

- Preparation of cylindrical standard test specimen of green sand  $\varnothing 50 \times 50$  mm or  $\varnothing 50,2$  mm x 2 inches and core sand test bars 22,4 x 22,4 x 170 mm (option)
- Determination of compactability [%]
- Green compressive strength [N/cm<sup>2</sup>]
- Splitting strength [N/cm<sup>2</sup>]
- Twin transverse shear strength [N/cm<sup>2</sup>]
- Transverse strength [N/cm<sup>2</sup>]
- Elasticity [N/cm<sup>2</sup>]
- Tensile strength [N/cm<sup>2</sup>]

### Accessories:

- Tool for preparation of specimen and to carry out all tests indicated
- Sand chute



**337**

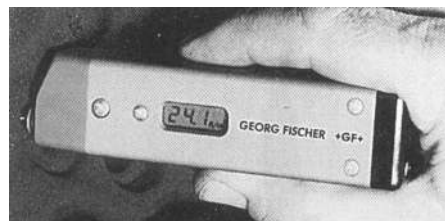
## Electronic mould strength tester

Type PFP Item No. 338.101

For examination of the compaction effect of moulding machines and the compaction susceptibility of moulding sands. Measurement is carried out by means of a crystal oscillator sensing element. The force measured corresponds to the actual penetration resistance as a measure of the mould strength. This device measures and memorizes the maximum reading, automatically calibrates the zero point and is disconnected also automatically with the last measured value remaining stored.

### Technical data:

Measuring range:	0,2 - 31 N/cm <sup>2</sup>
Resolution:	1 N (power)
Reproducibility:	+/-1 Digit
Weight:	0,125 kg
Dimensions:	130 x 30 x 22 mm
Battery capacity:	ab. 2.500 measurements



**338**

**339**

### Viscosity measuring instrument ('Ford-cup')

Handy cup (cont. 100 ml) of aluminium for measuring the viscosity and time of drop-out for all kinds of chemical liquids.

#### Instruction:

Dip the cup into the liquid until it will be full. Take out the cup and stop the time until the nozzle will be visible.

Item No.	339.004	339.002	339.003	339.005	339.006	339.008
Dia. of nozzle	4 mm (Standard)	2 mm	3 mm	5 mm	6 mm	8 mm

**339A**

Mould SK 02



Kokille SK 02

Mould SK 03



Kokille SK 03



Kokille SK 04



Kokille SK 05



Kokille BR 150



Kokillenzange ZA 01

### Moulds for sample taking

Item No.	Mould	Application	Sample dimensions:
339.102	SK 02	For non-ferrous metal alloy samples with a tendency for precipitations and segregations. The flow gate is removed and the sample is milled or turned.	6 x 45 mm dia.
339.103	SK 03	For high purity FE-, Ni-, Co-, Cu-base samples with low segregation. No pin cutting is necessary. The base of the sample is ground, milled or turned.	20 x 40 mm dia.
339.104	SK 04	For high purity FE-, Ni-, Co-, Cu-base samples with low segregation. The side of the sample is ground, milled or turned.	20 x 40 x 40 mm dia.
339.105	SK 05	Mould with asymmetric funnel for pig and cast iron samples.	4 x 40 mm dia.
339.150	BR 150	For cast and ductile iron, mould made of steel, casting on a copper unit to get a chilled structure. Easy to close system of the two parts.	5 x 34-36 mm dia.
339.190	ZA 01	Mould tong for cast iron. The copper inserts may be delivered also as spare-parts.	4 x 36 mm dia.

**340**

### Analytical apparatus for molten aluminium

#### 1.) Checking device for density-index

(This index will give information about the quality of molten material)

##### Combi-package I

Item No. 340.101

contains the static apparatus 3VT + MK 2210. The delivery contains the following accessories: crucible-tong, crucible for samples, aluminium coating and insulating stone.

Technical data 3 VT: L 590 x W 570 x H 329 mm, ab. 42 kgs.

Technical data MK 2210: L 330 x W 210 x H 210 mm, ab. 5,2 kgs.

##### ALSP II

Item No. 340.102

This mobile instrument consists of a underpressure density-checking device with fitted balance. The delivery contains the following accessories: crucible-tong, pouring spoon, crucible for samples, aluminium coating and insulation stone.

Technical data: 750 x 1330 x 700 mm, ab. 115 kgs.

#### 2.) Thermo-analysis system TA 110

Item No. 340.201

Static device for monitoring grain refinement and modification of AlSi melts. Thus results a note for attainable material data. Analysis will be made by means of the delivered software. The delivery contains the following accessories: Stand, flat tong, crucible for samples, aluminium coating protective tube, checked thermocouple, USB-Sticks, cable with transformer 100-230 VAC.

Technical data: L 280 x W 180 x H 100, ab. 15kgs.

**For these items we only act upon request as an agent!**

## Laboratory mixer ZZ 3 PE Item No. 341.103

341

Stationary mixer with detachable mixing pan.

When the power is on but the tilting arm is in the raised position the mixing star cannot rotate. When the mixing pan is in place, the lowering of the tilting arm actuates the mixing star, which is let down into the material to be mixed. Raising the tilting arm automatically stops the mixing star. The tilting arm is raised and lowered pneumatically. All functions can be selected using a membrane keypad. The separate control panel and the control cabinet can be located on the left or the right side of the machine.

The current machine parameters can be seen on the LCD display.



Batch capacity (ready-made mix)	ltrs.	3	Power mixing star	kW	0,25
Dry charge, max. approx.	ltrs.	4	Power mixing pan	kW	0,12
Dry charge, max. approx.	kgs	6	Pneumatic bar	bar	min. 6bar, 17 ltrs./min
Mixing pan diameter	mm	280	Voltage	V	230
Mixing pan design > operated		detachable	Frequenzy	Hz	50
Tilting arm design > operated		pneumatically	Weight approx.	kgs	100

## ZYKLOS-Forced-flow-mixers

341A

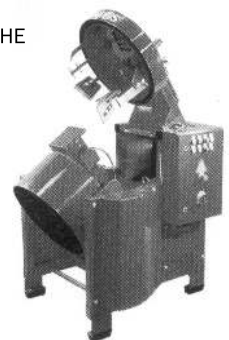
The offset mixing star rotates synchronously with the mixing pan thus producing high levels of shearing effect and kinetic energy release. Due to the high relative velocity of the batch a homogenous mixture is quickly achieved. Statically mounted mixing tools on the gear arm effect a horizontal and vertical stirrance within the batch.

A wall scraper continuously removes batch residues from the wall pan and deposits this back into the batch flow stream.

The pressure of the batch against the wall and the bottom of the mixing pan, produced by the mixing tools, makes the mixing pan turn co-currently without any extra drive. This rotation can be supported – if necessary – by an additional pan drive. In order to intensify the mixing process, we can supply high speed agitators (as an option).



ZZ 30 HE



ZK 30 HE/ZK 50 HE



ZZ 150 HE

Item No.	341.130	341.131	341.150	341.175	341.250	341.251	341.350
Type	ZZ 30	ZK 30	ZK 50 HE	ZZ 75 HE	ZZ 150 HE	ZK 150 HE	ZK 250 HE
Batch capacity <sup>1)</sup> [L] (ready made mix)	30	30	50	75	150	150	250
Max. dry charge <sup>1)</sup>							
[L]	40	40	56	108	170	170	365
[kg]	50	50	80	120	240	240	400
Mixing pan							
diameter [mm]	512	512	597	800	900	900	1250
height [mm]	294	294	300	322	392	392	446
Design	removable	manually tiltable	electr. tiltable	transportable	transportable	hydraul. tiltable	hydraul. tiltable
Gear arm movement	manual	manual	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
Drive performance							
mixing star [kW]	1,5	1,5	1,5	2,2	4	4	7,5
hydraulics [kW]	–	–	1,1	1,1	1,1	1,5	4
mixing pan [kW]	–	–	0,75	–	–	1,5 <sup>2)</sup>	1,5 <sup>2)</sup>
agitator <sup>2)</sup> [kW]	0,37	0,37	0,37	1,5	4	4	4
Connected loads							
voltage [V]	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz	400 V / 50 Hz
safety fuse [A]	16	16	16	16	16	16 (32)	32
Approx. weight [kg]	180	180	450	460	600	800	1400

1) The batch capacity depends on the product, the data applies to normal concrete.

2) Special equipment.

For further technical information please ask for individual prospectus for the mixers.

Other sand mixers upon request!

## Mixer 'Rührfix'

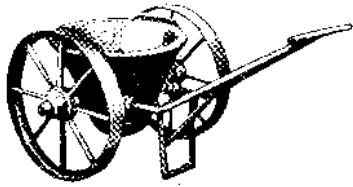
341B

reasonable mixer for mixing 50 kgs at one time, strong, solid, easy to handle, homogeneous mixtures, mixes thoroughly without residues. Complete with impeller, bucket and cover.

Item No.	Cont. max.	Motor			Weight	Spare parts	
		Voltage	Power	RpM		Bucket	Impeller
961.065	65 l	230 V	0,75 kW	68	44 kg	961.165	961.265





**342**

## Slag car

for taking and transporting liquid slag, capacity 105 liters, with reinforced rim and overflow baffle, two wheels of profile steel, dia. 860 mm, with cast hub, roller bearings and hub protectors.

### 1. Model B with a detachable, cone-shaped ladle Item No. 342.001

The ladle can be set down at the furnace, undercarriage with rigid support and pole. For emptying the ladle one jaw with hole. When empty, the ladle veers around, width 1160 mm, total length 2000 mm

### 2. Model M with a firmly fitted ladle Item No. 342.002

with double-arm pole and adjustable support, width 1000 mm, total length 1600 mm

### 3. Spares

Description	Item No.	
	For model B	For model M
spare ladle	342.102	-
spare wheel	342.104	342.103

**343**

## Capito-wheelbarrows IK85

especially designed for heavy-duty application, strong frame of angle steel, wheelbarrow trough of thick-walled sheet metal, welded, rim with reinforcements, capacity 85 liters, **3 mm thick sheet metal**

Trough: 820 mm long, front width 680 mm, rear width 655 mm

Item No.	Model	Wheel design	Wheel size	Wheel bearing
343.001	1.17.51	tire wheel	400/100 mm	ball bearing
343.004	1.17.54	solid rubber wheel	400/100 mm	roller bearing

Also available:

Description	Item No. for type	
	1.17.51	1.17.54
spare wheel	343.101	343.104
spare trough	3 4 3 . 1 0 5	
add. wooden bottom	3 4 3 . 1 0 2	
add. sheet metal bott.	3 4 3 . 1 0 3	
spare handles	3 4 3 . 1 2 0	

**344**

## Capito-wheelbarrows WEK 85

strong frame of angle steel, wheelbarrow trough of sheet metal, welded, capacity 85 liters, **1,25 mm thick sheet metal**

Trough: 850 mm long, front width 640 mm, rear width 570 mm

Item No.	Model	Wheel design	Wheel size	Wheel bearing
344.002	1.15.52	tire wheel	400/100 mm	ball bearings
344.021	1.15.71	solid rubber wheel	400/100 mm	roller bearings

Also available:

Description	Item No. for type	
	1.15.52	1.15.71
spare wheel	344.102	344.121
spare trough	3 4 4 . 1 0 5	
add. wooden bottom	3 4 4 . 1 0 3	
add. sheet metal bott.	3 4 4 . 1 0 4	
spare handles	3 4 4 . 1 4 0	

**345**

## Capito-wheelbarrows 'Export'

galvanized trough, non-warping frame, reinforced run, capacity 85 l, **1,20 mm thick sheet metal**

Trough: 880 mm long, front width 680 mm, rear width 625 mm

Item No.	Model	Wheel design	Wheel size	Wheel bearing
345.006	1.10.06	tire wheel	400/100 mm	plastic slide bearings
345.007	1.10.07	tire wheel	400/100 mm	ball bearings
345.017	1.10.17	solid rubber wheel	400/100 mm	roller bearings

Also available:

Description	Item No. for type		
	1.10.06	1.10.07	1.10.17
spare wheel	345.106	345.107	345.117
spare trough	3 4 5 . 1 2 0		
tipping bracket	3 4 5 . 1 0 8		
spare handles	3 4 5 . 1 2 2		



## Capito-deep trough 'Eurocar'

345A

sturdy wheelbarrow with **deep trough**, easily filled with a shovel, can be emptied **completely**, trough galvanized, flat trough bottom, **tipping bracket**, low load weight at handles, easy to empty, contents **100 liters**, **sheet metal thickness 1,0 mm**.

Trough size: length 880 mm, width front 590 mm, width rear 550 mm

Item No.	Model	Wheel design	Wheel size	Wheel bearing
345.619	1.16.19	tire wheel	400/100 mm	ball bearings
345.622	1.16.22	solid rubber wheel	400/100 mm	roller bearings

Also available:

Description	Item No. for type	
	1.16.19	1.16.22
spare wheel	345.651	345.652
spare trough	345.660	
spare handles	345.670	



## Fagro-wheelbarrows

346

wheelbarrow for heavy-duty application trough enameled

trough rim with reinforcement, extra strong wheelbarrow frame, trough 25 mm thick deep-drawn sheet metal

Size of trough 346.085/185: length 890 mm; front width 720 mm; rear width 640 mm

Size of trough 346.095/195: length 1020 mm; front width 750 mm; rear width 650 mm

Item No.	Cont.	Wheel design	Wheel size	Wheel bearing
346.085	85 ltr.	tire wheel	400/100 mm	ball bearing
346.185	85 ltr.	solid rubber wheel	400/ 80 mm	ball bearing
346.095	95 ltr.	tire wheel	400/100 mm	ball bearing
346.195	95 ltr.	solid rubber wheel	400/ 80 mm	ball bearing

Also available:

	Item No. for type			
Description	346,085	346,185	346,095	346,195
spare wheel	346,301	346,302	346,301	346,302
spare trough	346,285		346,295	
spare handles	3 4 6 , 3 0 3			



## Capito-wheelbarrows 'Compact'

347

easy to handle and move, even when fully loaded, easy to tip up, 100% discharge, wheelbarrow frame of angle steels, wheels with roller bearings

Item No.	Model	Carrying cap.	Dimensions (l x w x h mm)	Wheel design	Wheel size
347.100	1.21.00	150 ltr.	1526 x 780 x 710	tire wheel	400/100 mm
347.101	1.21.01			solid rubber wheel	400/100 mm
347.200	1.22.00	200 ltr.	1580 x 780 x 810	tire wheel	400/100 mm
347.201	1.22.01			solid rubber wheel	400/100 mm
347.300	1.23.00	250 ltr.	1630 x 780 x 900	tire wheel	400/100 mm
347.301	1.23.01			solid rubber wheel	400/100 mm



## Capito-bag trucks

348

crossbar curved, PVC-enamel, safety handles, wheels with roller bearings

Item No.	Model	Carrying cap.	Dimensions (l x w mm)	Shovel size mm	Wheel design	Wheel size
348.000	1.30.00	300 kg	1100 x 600	415 x 275	tire wheel	260/ 85 mm
348.001	1.30.01				solid rubber wheel	250/ 50 mm
348.100	1.31.00	400 kg	1200 x 600	400 x 190	tire wheel	260/ 85 mm
348.101	1.31.01				solid rubber wheel	250/ 50 mm



## Drum barrows with swing axle

349

Very reduced effort when loading drums of 200 ltrs. by means of optimized shifting of weight; riskless and facile placing of drums on pallets. Auto-standing, galvanized. Carrying cap. 350 kgs, dim. 420 x 750 x 1540 mm (L x W x H).

Item No.	Type	Wheel design	Weight
349.101	FP-V	solid rubber wheel	20 kgs
349.102	FP-L	tire wheel	17 kgs



350



## Shotblast respiratory protector 5510

(compressed-air maintained)

Upon request

351



## AIRSTREAM anti-dust helmets

Respirator, safety-helmet and face protection in one product!

Powered by a belt-mounted battery the integral motor fan draws contaminated air through filters in the helmet. It then directs a cooling stream of clean air over the wearer's face.

For extremely contaminated or oxygen-lacking air compressed-air operated helmets are available! Upon special request!

352



## Respiratory protective hood 5001 MFH

Upon request

353



## Sand blasting suits

with reinforcement made of leather

**1) jackets**, olive-green, with collar, buttoned up, 2 pockets, front of sleeves with reinforcement made of leather

**2) trousers**, olive-green, normal style, 2 pockets, leather reinforcement from top to knee.

**3) combination-suits (one-piece)**, made of red cotton-fabric with leather reinforcement. Front with snap-fasteners.

Type/ Design	Size/Item-No.					
	50	52	54	56	58	60
Jacket	353.050	353.052	353.054	353.056	353.058	353.060
Trousers	353.250	353.252	353.254	353.256	353.258	353.260
Combin.-suit	353.350	353.352	353.354	353.356	353.358	353.360

**4) Five-finger gloves, right oder left hand (to be ordered separately)**  
black, size 10, extra-long: 82 cm. Neoprene with lining, abrasion-resistant, tough, with maximum grip.

Item No.	353.401	353.402
Design	for right hand	for left hand

Please order separately for right and left hand!

## Protective foundry clothing

Protection against drops of molten aluminium or cast iron at low radiant heat. Made of MARLAN material. Resistance to burn trough has been tested in acc. to EN 531 (class A, B1, C1, D2, E3). Very comfortable due to the light weight of only 310 g/m². High safety and long life.

- 1.) **Protective jacket** length 750 mm, 2 pockets, outside with flaps
- 2.) **Protective trousers** length 1000 mm, 2 side pockets
- 3.) **Dungarees** with adjustable shoulder straps, bib and two flaps
- 4.) **Foundryman's shirt** length 750 mm, inset sleeves and opening in the mid.

Type	Size/Item-No.							
	46	48	50	52	54	56	58	60
Jacket	354.346	354.348	354.350	354.352	354.354	354.356	354.358	354.360
Trousers	354.446	354.448	354.450	354.452	354.454	354.456	354.458	354.460
Dungarees	354.646	354.648	354.650	354.652	354.654	354.656	354.658	354.660
Shirt	354.546	354.548	354.550	354.552	354.554	354.556	354.558	354.560



354

## Asbestos-free heat protective clothing

**Design A:** of special fabric 'ARAMOLL' 8258 ZM (yellow), weight appr. 580 gr/sqm, with muslin lining (with flame-retardant finishing) up to appr. 300°C.

**Design B:** as described above, however, with an **aluminium coating** (protection against radiation heat)

	Item-No.	
	Design A	Design B
<b>1) Foundryman's coat</b> collar inside with leather-lining, velcro fastening  1.100 mm long 1.300 mm long	—	<b>355.211</b> <b>355.212</b>
<b>1a) Apron with long sleeves</b> poppers fastening sides held together at the back by means of a brass chain width 1.000 mm front 1.100 mm long front 1.300 mm long	— —	<b>355.257</b> <b>355.257A</b>
<b>2) Trousers</b> with shoulders straps, however, without bib  1.000 mm long 1.150 mm long	<b>355.021</b> <b>355.022</b>	<b>355.221</b> <b>355.222</b>
<b>3) Dungarees</b> with shoulder straps  1.000 mm long 1.150 mm long	<b>355.031</b> <b>355.032</b>	<b>355.231</b> <b>355.232</b>
<b>4) Jackets</b>  780 mm long 1.000 mm long	<b>355.041</b> <b>355.042</b>	<b>355.241</b> <b>355.242</b>

When ordering please specify size.

<b>5) Hoods</b> with shoulder protection standard size, with sight glass of laminated glass (150 x 90 mm) spare glass	<b>355.071</b> <b>355.075</b>	<b>355.271</b> <b>355.275</b>
<b>6) Aprons</b> with bib and straps  <b>length x width</b> 800 x 1.000 mm 1.000 x 1.000 mm 1.100 x 1.000 mm 1.200 x 1.000 mm 1.300 x 1.000 mm	<b>355.051</b> <b>355.052</b> <b>355.053</b> <b>355.054</b> <b>355.055</b>	<b>355.251</b> <b>355.252</b> <b>355.253</b> <b>355.254</b> <b>355.255</b>



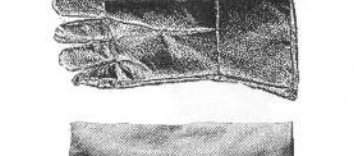
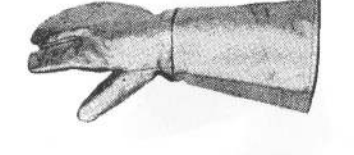
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Continued on page 114

## Asbestos-free heat protective clothing

**Design A:** of special fabric 'ARAMOLL' 8258 ZM (yellow), weight appr. 580 gr/sqm, with muslin lining (with flame-retardant finishing) up to appr. 300°C.

**Design B:** as described above, however, with an **aluminium coating** (protection against radiation heat)



	Item-No.	
	Design A	Design B
<b>7) Sleeves</b> with elastic at both ends 430 mm long 500 mm long	<b>355.081</b> <b>355.082</b>	<b>355.281</b> -
<b>8) Mittens</b> with thumb lat. for using right/left 290 mm long 430 mm long 650 mm long	<b>355.091</b> <b>355.092</b> <b>355.093</b>	<b>355.291</b> <b>355.292</b> <b>355.293</b>
<b>8a) Mittens</b> as descr. (8), however, with reinforcement for the palm  290 mm long 430 mm long 650 mm long	<b>355.094</b> <b>355.095</b> <b>355.096</b>	<b>355.294</b> <b>355.295</b> <b>355.296</b>
<b>8b) Mittens</b> as descr. (8), however, with leather reinforcement for the palm and thumb  290 mm long 430 mm long 650 mm long	<b>355.097</b> <b>355.098</b> <b>355.099</b>	<b>355.297</b> <b>355.298</b> <b>355.299</b>
<b>8c) Mittens</b> as descr. (8), however, with add. wool lining  290 mm long 430 mm long 650 mm long	<b>355.100</b> <b>355.101</b> <b>355.102</b>	<b>355.300</b> <b>355.301</b> <b>355.302</b>
<b>9) Three-finger gloves</b> (thumb, index and middle fingers, ring and small fingers together)  290 mm long 430 mm long 650 mm long	<b>355.111</b> <b>355.112</b> <b>355.113</b>	<b>355.311</b> <b>355.312</b> -
<b>10) Five-finger gloves</b> 290 mm long 430 mm long	<b>355.121</b> <b>355.122</b>	<b>355.321</b> <b>355.322</b>
<b>11) Bags without thumb</b> 300 x 180 mm 430 x 200 mm 630 x 200 mm	<b>355.131</b> <b>355.132</b> <b>355.133</b>	- - -
<b>12) Spats</b> with extra large foot protection, appr. 385 mm long with straps with velcro-fastening	<b>355.141</b> <b>355.142</b>	<b>355.341</b> <b>355.342</b>



## Hightemp heat protective gloves

all models have flame-retardend molton insulation.

Those products are generellay certified by accredited institutes according to the latest standard, like DIN EN ISO 11612 for clothing, DIN EN 388 and DIN EN 407 for gloves. The company is also audited every year according to ISO 9001.

### 1) for short-term use up to 500 °C.

made of Para-Aramid fabric (650 g/sqm)

Item No.	Length
a) Mitts, can be worn on both sides, size 11	
356.101	300 mm
356.102	400 mm
b) Five-finger gloves, size 11	
356.111	300 mm
356.112	400 mm

### 2) for short-term use up to 600 °C.

made of Preox/Para-Aramid fabric (600 g/sqm)

Item No.	Length	Additional insulation
Mitts, can be worn on both sides, size 11		
356.142	400 mm	flame-retardent molton

### 3) for short-term use up to 800 °C.

made of PBI/Para-Aramid fabric (750 g/sqm)

Item No.	Length	Additional insulation
Mitts, can be worn on both sides, size 11		
356.151	300 mm	flame-retardent
356.152*	400 mm	wool-fabric and quilted glass fibre

\* Gauntlet of Para-Aramid fabric

### 4) Cover heat gloves

Flexible glove replacement line, additional protection of standard gloves, only "cover glove" needs to be replaced, increased service life of basic glove, therefore reduces costs, **economical**.

Item No.	Length	Material	Heat resistant
356.171	240 mm	Para-Aramid (360g/m <sup>2</sup> )	500 °C
356.172	240 mm	PBI/Para-Aramid/glass fabric (750g/m <sup>2</sup> )	800 °C

## Heat resistant 5-finger-gloves ATF 500

made of cut-resistant Para-Aramid terry-fabric, for using up to 500 °C, size 11

Item No.	Length
356.401	400 mm

## Heat resistant 5-finger gloves GP-8206-S

for core makers

resistant **up to 280 °C** contact heat, esp. designed for the production of **hot-box-cores**, excellent insulation by terry-cloth fabric, long-life type, hard-wearing, very reasonable, size 10

Item No.	Length
356.203	330 mm

## Mitten made of aramide fabric with chains

**extremly cut-resistant, cover up to 1100 °C**

Mitten size 11, acc. EN 307, EN 388, made of yellow aramide fabric with chains of stainless steel, double-insulated, can be used on both sides.

Item No.	Length
356.501	300 mm
356.502	400 mm

## 5-Finger-gloves of heat-resisting leather

made of brown, impregnated skiver, resistant up to 250-300 °C contact heat, sewed with Kevlar-yarn, insulating lining, length ab. 350 mm

Item No.	Type	Feature	Available sizes
356.303	FULDA-ISO	GS-checked	8 - 12 (standard = 10)
356.311	WORK-GIESSER	economical solution	10
356.321	ALU-SEBATAN	palm of hands made of Sebatan leather outside aluminized preox-aramide fabric for radiated heat up to 1000 °C	10

**356**



356.111



356.101



356.142



356.151



356.171

**356A**



**356B**



**356C**



**356D**



356.303



356.321



**357**

### Leather mittens for use on either hand

Length	Cuff	Design/Item No.	
		Grain leather	Skiver
23 cm	without	357.123	357.223
28 cm	with	357.128	357.228
35 cm	with	357.135	357.235

**358**

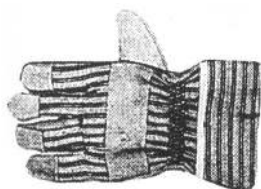
### Leather three-finger gloves with cuff

Length	Design/Item No.			
	Grain leather right/left	Grain leather either hand	Skiver right/left	Skiver either hand
28 cm	358.128	358.228	358.328	358.428
35 cm	358.135	358.235	358.335	358.435

**359**

### Leather five-finger gloves for use right/left, with cuff

Length	Design/Item No.	
	Grain leather	Skiver
28cm	359.128	359.228
35cm	359.135	359.235

**360**

### Leather five-finger gloves model 'Export' for use right/left, with fabric cuffs, size 10.

back of the hand of cotton fabric, appr. 26 cm long

Item No.	360.001	360.003	360.004
Design	Grain leather standard	Skiver standard qual.	Skiver - extra strong quality

**361**

### 5-finger gloves, heat resistant

with Neoprene-coating

A comfortable "slip on" inverting glove with fleece lining. The heatproof material offers protection against contact heat with a temperature of up to 260 °C (e.g. for **core-marking**) over the entire length of 36 cm. The full coating of the glove secures a outstanding pavement grip as well as abrasion firmness by the texturised surface.

Item No.	361.205
Length	36 cm

**362**

### Nappa-leather five-finger gloves

of extra soft **sheep nappa**

For use right/left, without cuff, 24 cm long

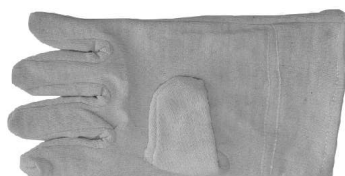
Design	Size/Item No.			
	7	8	9	10
Of nappa	362.107	362.108	362.109	362.110
With fabric back	362.207	362.208	362.209	362.210

**363**

### Hand leather

3 to 4 mm thick, 210 x 150 mm

Item No.	363.001	363.002
Design	Grain leather	Skiver

**364**

### Five-finger gloves right/left, of white cotton fabric for use right/left, without cuffs, length 28 cm.

- 1) of a light tricot-tissue
- 2) of a heavy jersey-fabric

Design	Size/Item No.	
	small (8)	large (12)
Tricot	364.001	364.002
Jersey	364.101	364.102

## Rubber 5-finger gloves Type 720

365

medium heavy-duty glove, appr. 300 mm long, inside with velour lining  
dark grey, resistant against many organic and anorganic acids, oil and grease  
well flexible at low temperature, heat resistant up to about 120 °C.



Item No.	365.307	365.308	365.309	365.310	365.311
Size	7	8	9	10	11

## PEVA skin protection system

366

1) Skin cleaner PEVASTAR – pasty hand cleaning products for strong dirt, cleans gently and deeply by means of high-class synthetic rubbing compounds.

Item No.	992.505	992.506	992.503
Packing	1 ltr.-pouch	3 ltr.-tin	10 ltr.-pail

2) Skin cleaner PEVALIN – cleaning cream for strong adhesive dirt and smell, long lasting protective effect.

Item No.	992.515	992.516	992.513
Packing	1 ltr.-pouch	3 ltr.-tin	10 ltr.-pail

Other packings and dispenser-system upon request!



## Leather sleeves

367

with strap and button as well as strap and buckle above the wrist, total height appr. 55 cm

Item No.	367.001	367.002
Design	Grain leather	Skiver



## Leather spats with shoe protection

368

Design	Grain leather		Skiver		
Height	15 cm	35 cm	15 cm	20 cm	35 cm
Fastening	Item No.				
Straps	368.115	368.135	368.315	–	368.335
Velcro-fastening	368.215	368.235	368.415	–	368.435
Hooks and eyes	–	–	–	368.520	368.535



## Leather aprons

369

1) with bib and straps, 80 x 100 cm  
2) without bib, with straps, 60 x 70 cm

Size	Design/Item No.	
	Grain leather	Skiver
80 x 100 cm	369.101	369.102
60 x 70 cm	369.201	369.202



## Guttasyn aprons (MB 5/12)

370

of thermoplastic soft PVC, with fabric backing and bib, 80 x 120 cm, 0,5 mm thick, durable and chemically resistant

Item No.	370.001	370.002
Colour	black	white



## Canvas aprons

370A

red-brown, with bib, 80 x 100 cm

Item No.	370.101	370.102
Design	standard	belly with add. leather strengthening



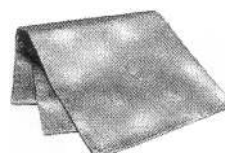
## Heat and flame protection covers

371

Protection against drops of molten metal, flying sparks, beads of sweating a.s.o. Made of blue textile fabric, heat resistant up to 1100 °C, weight ab. 1100 gr/m². The covers are sewed in several webs, edges bordered.

Item No.	371.101	371.102	371.103	371.104	371.105
Size	1000 x 1000	1000 x 1500	1000 x 2000	2000 x 2000	2000 x 3000

Other sizes and qualities upon demand!



**372**



INAP Master-6



INTEX



INAP PCG

## Protective helmets in accordance with DIN EN 397

**INAP Master-6**, progressive shape with a large rebound zone and large front area for company logos, straight shell made of PE, side slots for ear muffs, holes for effective ventilation, with 6-point webbed harness KAN/90/6 with highly absorbent sweatband and angled neckband for perfect fit. Adjustable size: ranging from 51 - 64 cm, durability 5 years.

Item No.	372.101	372.102	372.103	372.104	372.105
Colour	white	yellow	blue	green	red

**INTEX-1**, made of phenolic resin fabric, straight shell, secure, very comfortable 6-point webbed harness KAN-W with genuine leather sweatband and foam cushion band, adjustable ventilation. **Colour: natural brown**, easily identifiable as **heat protection helmet**. Varnished or metal coated on request, durability 8 years, anti-static, conforming with Category III of EU-regulations No. 89/688/ETU.

**Item No. 372.201**

**INAP-PCG**, made of glass fibre reinforced polycarbonate, straight shell with rainwater groove, extremely rigid sides, secure, very comfortable 6-point webbed harness KAN-W with highly absorbent sweatband, holes for ventilation on request. Standard colours: white and yellow, other colours on request. Durability: 10 years, very suitable for use in **hot zones** (detailed information and comparative tests on request).

**Additional testing:** MM-test against metal splashings, conforming with category III of EU-regulations No. 89/686/ETU.

Item No.	372.401	372.402	
Colour	white	yellow	Other colours upon demand!

**372A**



372.301/2



372.303/3A



372.304/305

## Spares and accessories for Item No. 372

Item No.	Description
372.301	Internals KAN-90/6 for INAP-Master
372.302	Internals KAN-W for INTEX- & PCG-Helmets
372.303	Sweatband for INAP-Master
372.303A	Leather sweatband 400mm for INAP-PCG and INTEX
372.304	Neck protection of skiver appr. 480 x 200 mm for all helmets
372.305	Neck protection as above, but 480 x 300 mm

**373**



373.001



373.002

## Shield holder

for attaching face shields (Item No. 374) to helmets (Item No. 372)

**a) Item-No. 373.001 (for INAP Master-6)**

Aluminium U-profile, swing-up strap which can be locked in 4 positions, 3 fixation pins, 2 lateral wing-nuts, semi-round

**b) Item-No. 373.002 (for INTEX and INAP-PCG)**

as above, but more wide, a bit angular.

**374**



374.401



374.410



374.402/403



374.412

## Wire screen protectors with aluminium rim

attachable to the shield holders, Item No. 373.001/2 of galvanized gauze, back with glare-free black finish

**1) with integrated glass-holders**

**a) for glasses 50 mm diam.**

**(w/o glasses)**

Item No.	374.401
Size mm	240 x 130

**b) for glasses 120 x 60 mm**

**(w/o glasses)**

Item No.	374.402	374.403
Size mm	240 x 130	300 x 180

**2) without glass holders**

**a) Item No. 374.410**

with aluminium rim 300 x 180mm

**b) Item No. 374.412**

500 x 300mm, with flanged rims, with bevelled corners

Shatterproof protective glasses:

Design	Size/Item No.	
	60 x 120 mm	50 mm Ø
Achrom. furnace glasses		
degr. of prot. 4-6 DIN	374.501	374.502
Atherm. glass		
degr. of prot. 6	374.511	374.512
Colourless glass	374.521	374.522

Other degrees of protection or reflecting coatings upon demand!

Wire screen protectors to be screwed directly to the helmets upon demand!

**374A**



374.420-22



374.423-25

## Face shields of polycarbonate

**1 mm thick** attachable to the shield holders Item No. 373.001/2 heat resistant up to 135 °C

**1) crystal clear**

Item No.	Size mm
374.420	280 x 220
374.421	350 x 300
374.422	500 x 250 (curved)

**2) gold vaporized**

**a) Item No. 374.423**

500 x 250mm, curved

**b) Item No. 374.423G**

as above, but with green back for additional anti-glare effect.

**c) Item No. 374.425**

350 x 300mm

The gold vaporized types may be delivered with an additional scratching resistant varnish. Thus the golden coating gets an increased durability when working with hot materials!

## Protective goggles of plastic, model 'Perlex'

**375**

strong, everlasting, flexible, heat resistant, excellent protection against spatters and sparks, glass size 60 x 52 mm, with easily replaceable side protectors and glasses

Model	Bow-design	Glasses/Item No.		
		Polycarb. glasses 2 mm thick, colourless	Shatterproof glasses colourless	Ath. DIN 5
1425	not adjustable	375.101	375.201	375.205
1427	length adjustable	375.301	375.401	375.405
Pair of spare glasses		375.501	375.601	375.605
Pair of side protectors		375.701		

Other glasses upon request!



## Fettler goggles with shatterproof glasses

**377**

Item No.	Model	Description	Spare glasses
377.001	1130	<b>extra light weight</b> fine wire gauze, soft with leather trimmed moss rubber collar, wide adjustable rubber head band, fits over all types of specs, dia. 50 mm	374.522



## Trendy protective goggles

### Model AIRSIGHT PH No. 1611

Protective goggles with only one sheet (made of polycarbonate), surface hardened, non-clouding, adjustable bow-length, very comfortable and light-weight (only 28 g)

Item No.	378.101	378.102	378.103
Colour of shield	clear	yellow	grey
function	high mechanical and UV-protection	mechanical and UV-protection better contrast	sun filtration mechanical and dazzling protection optimal sight of alarm colours

Other designs upon request!



**378**

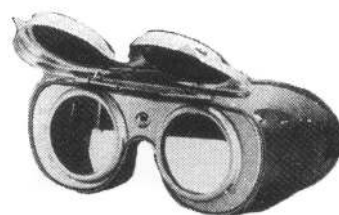
## Swing-up protective glasses

### for spectacle-wearers, with shatterproof glasses

extremely lightweight, front of heat resistant aluminium, body of flame retardant plastic material, with concealed ventilation openings for excellent ventilation, dia. of glasses 50 mm

Model	Padding	Glasses internal	External glasses/Item No.	
			colourless	Ath. DIN 5
1128	plastic	without	379.001	379.005
	body	colourless	379.101	379.105
1138	moss rubber	without	379.201	379.205
		colourless	379.301	379.305
Spare glasses			374.522	374.512

Other glasses upon request!



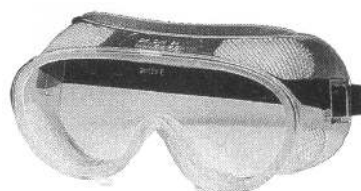
**379**

## Full-vision goggles

### Item No. 380.001

with replaceable, crystal-clear plastic glass 155 x 75 mm, non-clouding, protecting against dust and liquid spatters, fits over all types of specs, excellent fit, with soft, transparent frame with vent openings.

Non-clouding spare glasses: **Item No. 380.099**



**380**

All goggles and glasses in accordance with EN 166.

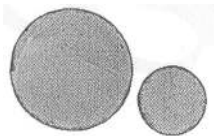


**381**

### Inspection glasses for cupola furnaces

Standard size: dia. 50 mm x 2 mm (other sizes upon request)

Item No.	381.006
Class of protection	4 – 6A DIN

**382**

### Mica glasses

bright, 0,15 - 0,20 mm thick

Item No.	382.035*	382.040*	382.045	382.050	382.055	382.060	382.070	382.080
Dia.	35 mm	40 mm	45 mm	50 mm	55 mm	60 mm	70 mm	80 mm

\* Discontinued

**383**

### Head guard according to DIN EN 11612

Item No. 383.001

made of aluminium-coated Para-aramide fabric. Fits to our INTEX- and other helmet-models. Face shield with aluminium frame for 100 x 220 mm wide-angle window. Will be delivered without windows, which should be ordered separately (see below).

Special shaped shoulders, rubber band at back. Length at front and back 60 cm from bottom edge of helmet. Loop for hanging.

Available windows 100 x 220 mm:

Item No.	Design
383.101	furnace inspection glass, curved, prot.-level 4 - 7A DIN
383.102	as above, but gold-coated laminated glass
383.103	gold-coated polycarbonate, flexible

**384**

5216000

### Goggle mask

effective protection against heat radiation and reflection radiation, leaves both hands free, allows free movement, extremely lightweight, of soft and supple leather, fits over all types of specs, swing-up glass holder for external glasses.

Model	Design	Item No.		
		Internal glasses	External glasses	
5216000	standard	without	384,001	–
		colourless	–	384,019
5216200	w/add. hood	without	384,101	–
		colourless	–	384,119
5216400	w/add. hood & neck protection	without	384,201	–
		colourless	–	384,219
Spare glasses		376.501	–	384,509

Other glasses upon request!

**385**

5217100

### Goggle mask, aluminium coated

Similar to art. 384, but made of aluminium coated Rayon-fabric for protection against radiation heat up to 600°C, with swing-up, heat resistant aluminium goggle, for glass diam. 50mm

Model	Design	Item No.		
		Internal glasses	External glasses	
5217100	with add. ear protection	without	385,101	–
		colourless	–	385,119
5217300	with add. ear protection and hood	without	385,301	–
		colourless	–	385,319
5217400	with add. neck protection	without	385,401	–
		colourless	–	385,419
Spare glasses		376.501	–	384,509

**386**

386.202

### Protective shields for welders

(Will be delivered without glasses; please order the desired glasses separately according to the index below.)

Item No. 386.201: standard version made of vulcanized fibre

Item No. 386.202: very tough version made of glass fibre reinforced polyester

Glasses 90 x 110 mm fitting for the shields (Packing cont. 10 pcs.)

Design	colourless shatter pr.	Class of protection			With refl. coating		
		DIN 9	DIN 10	DIN 12	DIN 9	DIN 10	DIN 12
Item No.	386.401	386.409	386.410	386.412	386.509	386.510	386.512

Other glasses upon request!



## Protective masks for welders

**Model 5260** of leather, swing-up feature, with helmet ring so the mask can be attached to any protective helmet.  
Size of the glass 90 x 110 mm

Model	Glass/Item No.			
	without	DIN 9	DIN 10	DIN 12
5260	387.101	387.109	387.110	387.112
Spare glasses	Item No.			
	colourless	DIN 9	DIN 10	DIN 12
90 x 110 mm	386.401	386.409	386.410	386.412



5260

**387**

## Self-acting protective helmets for welders with electro-optical cassette

Self-dimming, variable degree of protection 9-13, variable time of clearing, solar-powered, no battery.  
Large size of cassette: 95 x 47 mm

Item No.	Mask	Spare parts	
	388.101	388.110	388.120
time of dimming sec.	0,0001	Shield for outside	Shield for inside
time of clearing sec.	0,2-0,8	110 x 90 x 1mm	107 x 51 x 1mm, degr. 0
weight gr.	548	(pack. = 10 pcs.)	(pack. = 10 pcs.)
colour	blue		



**388**

## Swing-up protective shields

of crystal-clear plastic (flame retardant), excellent protection against chips, splinters and spatters; head band of vulcanized fibre with soft foam padding; shield easily exchangeable.

Shield size: 42 cm width, 29 cm high, thickness 1 mm

Item No.	Model	Description
389.001	5524	standard design
389.002	5527	with additional dust hood
389.003	5124	with holder for protective helmet
389.101		spare shields (standard design) for all helmets



5524



5527

**389**

## Respirator half-masks

### 1) Type GAMMA

**Item No. 390.201**

- filter connection special thread 95 mm
- anatomically shaped mask body made of non-irritating, soft EPDM adapts easily and comfortably to any shape of face
- exhaled air led away from spectacles
- new type of 4-point harness ensures optimum weight distribution
- excellent close-fitting owing to low weight
- comfortable owing to the short distance between the filter and mask

### 2) Type Polimask230

**ItemNo. 390.202**

- filter connection special thread 95mm
- broad, supple inner sealing lips guarantees close-fitting
- made of soft EPDM
- special construction ensures a large field of vision and low breathing resistance.
- owing to the special design the mask is suitable for spectacle wearers



Type GAMMA



Type Polimask 230

**390**

### Filters available, fitting for both types

Item No.	Filter type	Filter class	Application	VE
390.210	Gas filter	A1	protection against organic gases and vapours with a boiling point >65°C,	2 pcs.
390.211	Combined filter	A1-P3R D	protection against organic gases and vapours with a boiling point >65°C, as well as particles of toxic and highly toxic substances	2 pcs.
390.220	Prefilter		extends the useful life of the respiratory filter	20 pcs.
390.230	Prefilter-Holder		for combined filters	1 pc.
390.231	Prefilter-Holder		for gas filters	1 pc.

## 391



8710 E



8825



8835

### Particle filtering respirators made of non-woven fabric

no protection against gases and vapours

#### No. 8710-E (Item No. 391.002)

against particles up to factor 4 of allowed concentration, protection class FFP 1. Very lightweight (only 8 gr.), excellent fit, reliable, effective protection without limitation of sight, hygienic, economical in use.

Package: 20 pieces per box

#### No. 8825 (Item No. 391.003)

against fine dusts, oil or water-based mists and metal fume up to factor 10 of allowed concentration, protection class FFP 2D. Lightweight (29 gr.), comfortable with soft sealing ring, cool flow valve.

Packing: 5 pieces per box.

#### No. 8835 (Item No. 391.004)

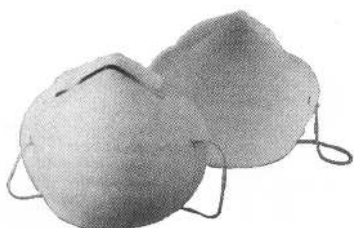
against fine dusts, oil or water-based mists and metal fume up to factor 30 of allowed concentration, protection class FFP 3D. Lightweight (30 gr.), comfortable with soft sealing ring, expanded filter area, reduced breathing resistance.

Packing: 5 pieces per box.

Model	Protection against							
	Coarse dust	Fine dust	Metal fume	Low toxic dust	Asbestos	Oil mist	Toxic dust	Virus or microbes
8710-E	●	●	-	-	-	-	-	-
8825	●	●	●	●	●	●	-	-
8835	●	●	●	●	●	●	●	●

All masks are in accordance with EN 149:2001 and have the CE-sign.

## 391A



### Mouth masks

#### (Item No. 391.001)

Protection from coarse dust. No protection against gases and vapours, super light (4gr. only), no restriction, hygienic, kind to the skin, low-cost mask.

Box contains 50 masks.

## 392



H510A



H510B



H510P3

### Hearing protectors

in accordance with EN 352-1 and EN 352-3

Excellent sound muffling, comfortable fit, for intermittent noise situations.

#### Model H510A with headband (Item No. 392.002)

Light hearing protector (180 gr.) with flat muffs; wide padded headband guarantees a comfortable fit; muffs can be swivelled and adjusted to any height, thus optimal adaptability to any head shape.

Sound attenuation value 27 dB

#### Model H510B with neckband (Item No. 392.003)

Very light (165 gr.), flat, muffs similar to model H510A; strong neckband with plastic coating guarantees excellent fit; especially suitable where head protection and/or shield must be worn.

Sound attenuation value 26 dB

#### Model H510P3 for helmet wearers (Item No. 392.004)

Light (205 gr.). This model can be attached to nearly any protective helmet. If not required, it can be swung up because of the rotatable helmet mounts, pressure and height-adjustable.

Sound attenuation value 26 dB

## EAR-plugs

### 1) Classic II

of soft polymeric foam, excellent sound attenuation, easy to wear, hygienic safe, easy fit and economical; sound attenuation value 28 dB

Item No.	393.001	393.002
Package	Containing 5 pairs	Dispenser containing 250 pairs (packed in pairs)

### 2) Soft

**conically shaped**, especially soft, comfortable, good sound attenuation; sound attenuation value 28 dB

Item No.	393.011	393.012
Package	Containing 1 pair	Dispenser containing 200 pairs (packed in pairs)



Classic II

Soft

**393**

## EAR-headband ear plugs

### 1) EAR-Caboflex Item No. 393.101

Extremely light (only weighs 13 gr.), ideal for intermitting noise situations, soft plug of EAR-foam with silicone coating; fit into any auditory canal, easily cleaned; sound attenuation value 21 dB

### 2) EAR-Caps Item No. 393.102

protection against all noise ranges, ideal for visitors, only weighs 8 gr., comfortable to wear, easily cleaned; sound attenuation value 23 dB



Caboflex

EAR-Caps

**393A**

## Bilsom ear plugs

### 1) Bilsom 303

Plug of polyurethane foam with a high sound attenuation value, available in two sizes: S (small) for narrow auditory canals, L (large) for medium to wide auditory canals; sound attenuation value 37,9 dB.

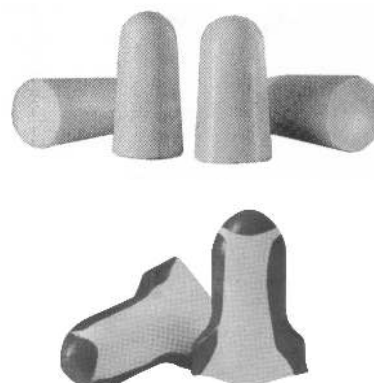
Package	Type/Item No.	
	303 S (small)	303 L (large)
Pocket package with 10 pairs	394.311	394.321
Refill package for dispenser LS 400 with 200 pairs (see item 394A)	394.313	394.323

### 2) Laser Lite

Soft foam, fitting without pressure. Ideal for long periods of wearing. Easy to attach and to remove because of its T-style. Easy to recognize and high acceptance due to its popping colour. One size. Sound attenuation value 35 dB.

Package contains 200 pairs

**Item No. 394.011**



**394**

## Dispenser LS 400

Approved dispenser for Bilsom ear-plugs at workplace.

Easy to refill.

Delivered completely with 400 pairs of one of the following plug-types:

Item No.	394.420	394.421
Content 400 pairs	303L	303S



**394A**

## FUSION - reusable ear plugs in two sizes

Extremely comfortable ear plug with safety band, consisting of the strong shaft for inserting and extracting the ear plug, super-soft lamella for optimum fit, available in 2 sizes: L (large) for medium to wide auditory canals, S (small) for narrow auditory canals, comes with a useful, patented storage box; sound attenuation value 28,6 dB.

Item No.	395.101	395.102
Size	med./large	small
Colour	blue	green



**395**

# atlas® – Safety shoes

## 1) Special-purpose safety boots for the metal-working industry in accordance with EN ISO 20349

The standard EN ISO 20349 imposes extended requirements for the protective features of foundry and welding boots. The boots must withstand various test procedures in connection with exposure to extreme heat and contact with molten metal. This particularly applies to the quality of the upper material, as well as for the heat resistance of the compound sole. In a comprehensive pouring test with TÜV Rheinland, ATLAS® successfully met all requirements of EN ISO 20349 for foundry and welding boots

### DUO SOFT 760 HI

- EN ISO 20349; WG HI HRO S2
- buckles boots up to the ankles
- with top cap

### DUO SOFT 770 HI

- as type 760 HI, however without top cap

### DUO SOFT 765 HI

- EN ISO 20349; P WG HI HRO S3
- as type 765 HI, but with additional penetration resistance

### DUO SOFT 775 HI

- as type 765 HI, however without top cap

### DUO SOFT 792HI

- EN ISO 20349; P Fe HI HRO S3
- medium high, **certified foundry boot**
- top cap and penetration resistance
- thermo isolating shoeformation with quick fasteners and **zipper**

S3



### DUO SOFT 797 HI

- EN ISO 20349; P Fe HI HRO S3
- medium high, **certified foundry boot**
- penetration resistance
- thermo isolating shoeformation with quick fasteners

### DUO SOFT 798 HI

- as type 797, however with leather lining



S3

### DUO SOFT 930 HI

- EN ISO 20349; P Fe HI HRO S3
- high, **certified foundry boot**
- top cap and penetration resistance

S3



## 2) Mid-height footwear according to EN ISO 20349 S2

### TX 48

- soft grain leather
- aktiv-X®-lining
- DUOSOFT sole technology
- also available in W12 (extrabroad)

S2



### TX 600

- soft Nubuk-leather
- carbon coated tip protection
- safety reflectors
- aktiv-X®-lining
- DUOSOFT sole technology
- also available in W12 (extrabroad)

S2



#### Standard equipment

breathable aktiv-X®-lining  
3D-cushioning system  
waterproof leather  
Kevlar seams  
thermo isolating shoeformation  
DUOSOFT sole technology  
(heat-resistant up to 220°C)

Other sizes and/or models upon request!  
Please ask for our special catalogue!

Item No.										
Type	Gr. 39	Gr. 40	Gr. 41	Gr. 42	Gr. 43	Gr. 44	Gr. 45	Gr. 46	Gr. 47	Gr. 48
DUOSOFT 760 HI	396.539	396.540	396.541	396.542	396.543	396.544	396.545	396.546	396.547	396.548
DUOSOFT 765 HI	396.339	396.340	396.341	396.342	396.343	396.344	396.345	396.346	396.347	396.348
DUOSOFT 770 HI	396.039	396.040	396.041	396.042	396.043	396.044	396.045	396.046	396.047	396.048
DUOSOFT 775 HI	396.009	396.010	396.011	396.012	396.013	396.014	396.015	396.016	396.017	396.018
DUOSOFT 792 HI	396.639	396.640	396.641	396.642	396.643	396.644	396.645	396.646	396.647	396.648
DUOSOFT 797 HI	396.239	396.240	396.241	396.242	396.243	396.244	396.245	396.246	396.247	396.248
DUOSOFT 798 HI	396.839	396.840	396.841	396.842	396.843	396.844	396.845	396.846	396.847	396.848
DUOSOFT 930 HI	396.709	396.710	396.711	396.712	396.713	396.714	396.715	396.716	396.717	396.718
TX 48	396.439	396.440	396.441	396.442	396.443	396.444	396.445	396.446	396.447	396.448
TX 600	396.139	396.140	396.141	396.142	396.143	396.144	396.145	396.146	396.147	396.148

**Coal dust** in 35 kgs-bags**397**

Lustrous carbon formers for bentonite-bonded green sand moulds.

Type	Description	Chemical analysis		
<b>Item No. 397.001</b>	Of a selected stone coal quality so that only 80 to 90 % of the conventional addition must usually be added to the moulding sand, ample deposition of lustrous carbon, good softening behaviour.	coking residue	% waf	65
<b>IKO-N</b>		volatile constituent	% waf	35
<b>Item No. 397.005</b>	Consisting of a mixture of different coal grades and additives; selected raw materials which achieve best results in the foundry industry.	lustrous carbon	% wf	10
<b>IKO-Z</b>		sulfur	% wf	0,8
		coking residue	% waf	55
		volatile constituent	% waf	45
		lustrous carbon	% wf	14
		sulfur	% wf	0,9

**Coke dust and fines** in 25 kgs-bags

Upon request

**398**

0,7 to 1 % sulfur, of pure coke, in various grain sizes

**Carborizing graphite**

Upon request

**398A**

poor in sulfur, in various grain sizes

**Lamp black** in 25 kgs-bags

Item No. 399.001

**399**

used as ingot mould lubricant, carburizing and reduction medium

**Mould blacking** in 25 kgs-bags

Item No. 400.001

**400**

graphite-based, high carbon content, to be stirred into water, high yield, ready for use, apply with a brush or with spraying equipment, resistance to abrasion, gives excellent casting surface finish, for thin and thick-walled castings, can also be used for dusting moulds, without impurities

**Silver powder graphite** in 25.5 kgs-bags (**Plumbago**)

Item No. 401.001

**401**

pure quality, very finely ground, carbon content 85 to 90 %, without impurities

**Bohemian graphite** in 25 kgs-bags

Item No. 402.001

**402**

prime refined product, carbon content 50 to 55 %, ground

**Beech charcoal****403**

a) charcoal lumps in 10-15 kgs-bags

Item No. 403.001

b) finely ground charcoal dust in 50 kgs-bags

Item No. 403.003

**Coke of brown cole** in bags of 20kgs

Item No. 403.201

**403A**

Particle size 2 to 4 mm, ideal for a dense covering of the fused material

**Slag binders** in 25 kgs-bags**403B**

AlSi-based, isolating, no loss of temperature. To be applicated on the molten metal surface as reaction agent for the slag, which will be bounded so it may easily be skimmed.

a) for cast iron and steel above of 1350 °C, grain size 0,8 - 2,5 mm

Item No. 403.101

b) for heavy metals up to 1300 °C, grain size 0,5 - 0,8 mm

Item No. 403.102

**Heliodur 40-gypsum** in 50 kgs-bags

Item No. 404.002

**404**Brinell-hardness 74 N/mm<sup>2</sup>, swelling 0,24 %, mixing ratio gypsum/water 2,13/1**Alabastrite for patternmaking SUPRADURO**

Item No. 405.001

**405**in 50 kg bags. Brinell-hardness 46,0 N/mm<sup>2</sup>, swelling 0,24%, mixing ratio gypsum/water 1,61/1. Special quality finely burnt.**Clay** finely ground and dried, in 25 kgs-bags

Item No. 406.001

**406****Kaolin** washed and finely ground quality, in 25 kgs-bags

Item No. 407.001

**407****Mould powder, white** in 25 kgs-bags

Item No. 408.001

**408**

(lycopodium substitute) guaranteed silicid acid free (therefore posing no danger to health), finely ground, no residue, does not stick, to be applied wafer-thin, giving a very smooth surface of the casting

**Pure lycopodium, for art castings**

Item No. 409.001

**409**

in quantities of 1 kg and more  
screened three times, without impurities, guaranteed pure





**410****Talcum (very finely ground)**

- 1) **Grade A**, grey-green, standard grade in 25 kgs bags  
 2) **Grade B**, white, fine in 25 kgs bags  
 3) **Grade C**, super white, very fine and smooth in 25 kgs bags

Item No. **410.001**Item No. **410.002**Item No. **410.003****411****Bentonite (moulding sand binder)** in 25 kgs-bagsItem No. **411.001**

activated calcium-bentonite, as binding agent for green sand moulding, high temperature stability, high swelling, excellent coating of quartz grains.

**412****Zircon sand** fine grained, light colour, in 25 kgs-bagsItem No. **412.001**

Standard analysis:  $ZrO_2$ : min. 65 %,  $TiO_2$ : max. 0,30 %,  $Fe_2O_3$ : max. 0,25 %

**413****Antipiping powder**

to prevent the formation of shrink holes by temperature loss etc.; for producing homogenous and tight castings. Please ask for directions for use.

- a) for cast iron steel in 25 kg bags  
 b) for aluminium in 25 kg bags  
 c) for brass, aluminium-bronze and red brass, do not use for pure copper! in 25 kg bags

Item No. **413.001**Item No. **413.002**Item No. **413.003****414****Iron oxyde** grade II 235 in 25 kgs-bagsItem No. **414.001**

$Fe_2O_3$  content appr. 92 %

**415****Zircon coating** in 25 kgs-bagsItem No. **415.001**

highly refractory coating for cast steel and iron, giving smooth, impeccable surface finish

**415A****Refractory concretes**

multi-purpose for insulation, coating of ladles and casting channels; pourable materials for high thermal attacks.

Item-No.	Temperature of classifica. °C	bulk density kg/m³	mat. requisiton kg/m³	water requisiton ab. ltrs/100kgs	particle size mm	bags kgs
415.101	1100	900	940	45	12	25
415.102	1650	2300	2320	9	7	25

(Light-weight product)

Further types upon request!

**415B****Refractory cement BLAKITE**Item No. **415.201**

Temperature of classification: 1650°C, bulk density 1900 kg/m³, Basis: 43,1%  $Al_2O_3$ ; 51,7%  $SiO_2$  in pails of 20 kgs

**415C****High temperature adhesive for refractories**

May be used for the glueing of products made of ceramic fibers thanks to its outstanding flexibility. To be put on with spatulas or brushes, when thinned with water also usable as coating. After drying a rigid surface will result.

Item No.	Max. temp.	Bulk density	Packing
415.301	1350°C	1800 kg/m³	buckets of 25 kgs
415.302	1500°C	1600 kg/m³	buckets of 25 kgs

**416****Oil sand**

chemically prepared fine sand, guarantees very smooth surfaces and precision, also for making plaster patterns and artificial resin patterns, ready-made, do not add water, do not use blackings or coatings

According to the application different qualities are available:

Item-No.	Type	Application	Green shear strength	Packing
416.001	OB-E	casting of heavy metals, grey and malleable cast iron	ab. 400	bags of 25kgs
416.002T	Bentomix T	light metal castings	ab. 385 to 455	bags of 25kgs
416.002G	Bentomix G	bronze castings	ab. 490 to 560	bags of 25kgs

**416A****Regeneration agents for oil sand**

If the oil sand might loses plasticity and/or compressive strength after several uses, the sand can be regenerated in a pan grinder or a core sand mixer adding 0.1% of regenerating oil or paste.

Product	Cont./Item No.	
Regener-ating oil	5 kgs	10 kgs
	416.101	416.102
Paste	416.103	416.104

**417****Mould sealer**Item No. **417.001**

additive for hardening the surfaces of natural or synthetic moulding sands; primarily used in light metal casting for treating wet sand moulds, prevents sand from being flushed out, prevents scabbing, improves dimensional accuracy, regulates the water content, hardens mould surface.

In canisters of 30 kgs.



## Sodium silicates

418

1) **Standard quality**, without additives, 37/40° Be

a) in containers of 60 kgs

b) in containers of 30 kgs

2) **Quality WB 30**, core production with CO<sub>2</sub>-gas. Good strength at low additions, good breakdown of sand after casting, storage of cores is much improved, also for ester curing.

a) in containers of 25 kgs

b) in drums of 300 kgs

Item No. 418.101

Item No. 418.102



Item No. 418.201

Item No. 418.202

## Breakdown agent

in bags of 50 kgs

for all Cold-Box-Systems, especially in combination with sodium silicates. Ameliorated fluidity of sand, assist the removal of coresand on knock-out, smooth surfaces of the castings even for nor coated cores.

Item No. 418.301



418A

## Core adhesive

in tubes of 1 kg

(or in hoblocks containing 35 tubes) multi-purpose adhesive for the CO<sub>2</sub>, no-bake, cold-box and hot-box procedures, also for sealing mould halves, non flammable, odourless, cold setting, non-toxic, to be diluted with water

Item No. 419.001

419



## CORE PUTTY

for repair and joint flashing for all types of core production. To be used as normal putty with a sleeker (even in several layers), result smooth surfaces, setting time ab. 1h.

in 8 kgs plastic containers

Item No. 419.101

419A



## Fusion adhesive pistol MS 200

heat and shockproof housing, low weight, non dripping tip, can also be used in almost inaccessible places, with integrated stand and suspension eye, short heating-up time, ergonomic shape, exact thermostat temperature control

a) with standard tip 1,75 mm dia.

b) with slotted tip 18 x 0,5 mm

Item No. 419.410

Item No. 419.411

419B



## Hot fusion adhesive for cores

for the above pistol  
in 25 kgs-bags

Item No. 419.401

419C

## Alloys in rods

environmentally friendly, easy to use, do not form scum, dissolving quickly, high yield, long survival time, remeltable (please ask for detailed information)

420



Item No.	Product	Composition-	Properties	Instruction for use in crucibles	Available in / addition per 100 kg melt
420.001	grain refiner AlTiB	5 % titanium, 1 % boron, balance 99,7 % aluminium	highly effective refining flux for aluminium alloys, such as G-ALSi5-12 G-ALCU4Ti G-ALMgSi etc.	charge metal and melt, temperature 700-750°C, degas as required, add flux and skim, melt stir thoroughly modification process as required grain refining effect within 30 sec., effect over appr. 2-3 hrs.	in rods: 500 mm long 100 gr. add.: 2 - 5 rods
420.003	purifier AlSr 10 %	10 % strontium, balance 99,7% aluminium	highly effective purification for hypereutectic AlSi-alloys	charge metal and melt, temperature 700 - 750°C, degas as required, add flux and skim, melt add grain refinement rods as required and stir (melt surface to be skimmed before) purifying effect within 1 min., effect over about 3 hrs. <b>Important:</b> When using Sr, <b>do not treat</b> melt with phosphor, fluoride or chloride	in rods: 330 mm long 70 gr. add.: 2 - 7 rods
420.004	phosphor- copper rods	6,8 - 7 % phosphor, balance pure electrolytic copper	highly effective purifying rods for a permanent grain refinement of Si in near or hypereutectic AlSi-alloys	charge metal and melt, temperature 780 - 840°C, degas, flux and skim, melt again, stir and degas melt effect within 20-30 min. effect over more than 12 hrs., (effect is influenced by sodium and strontium)	in rods: 500 mm long 130gr. add.: 1 - 4 rods

Fluxes in other shapes, f. ex. so-called waffle-plates, also available.

## 421

## Melting, covering and refining fluxes

(please ask for leaflets and instructions for use)

Item No.	Product	Purpose	Colour	Melt	Addition	Packing
<b>1) for light metals</b> (further products upon request!)						
421.010	PROBAT-FLUSS-AL 224	purifying/degassing fusing skimming	blue powder	AlSi10Mg, AlSi7Mg, AlSi8Cu3, AlSi12, AlZn10Si8	0,2–0,5 %	25 kgs
421.011A	ARSAL 2120	fusing skimming/purifying covering	blue powder	AlSi10Mg, AlSi7Mg, AlSi8Cu3, AlSi12, AlZn10Si8	0,1–0,5 %	25 kgs
421.013	ARSAL 2125	fusing skimming/purifying covering	blue granulate	AlSi10Mg, AlSi7Mg, AlSi8Cu3, AlSi12, AlZn10Si8	0,05–0,25 %	25 kgs
421.017	PROBAT-FLUSS-AL 2126	purifying/degassing free of sodium	white powder	AlMg3, AlCu4Ti, AlSi17Cu4Ti, AlSi18CuNiMg	0,1–0,5 %	25 kgs
421.018	PROBAT-FLUSS-AL 3125	purifying/skimming free of sodium	white granulate	AlMg3, AlCu4Ti, AlSi17Cu4Ti, AlSi18CuNiMg	0,05–0,25 %	25 kgs
421.031	PROBAT-FLUSS-furnace cleaner 200	removes corundum from walls of furnaces	light grey powder		1–4 kg/m <sup>2</sup>	25 kgs
421.032	PROBAT-FLUSS-impregnator 200	to put on walls of furnaces avoids cakings	light grey powder		1–3 kg/m <sup>2</sup>	25 kgs
421.014A	EUTEKTAL T201	NA-modification	grey tablets of 0,2 kgs	AlSi7Mg, AlSi10Mg, AlSi12, AlSi8Cu4	1 tablet / 100 kgs	36 kgs
421.015	MIKROSAL AL T100	grain refiner	grey tablets of 0,2 kgs	Al-Si-cast alloys Al-Mg-cast alloys Al-knead alloy	0,1–0,2 %	32,4 kgs
421.016	DEGASAL T200	nitrogen degassing	grey tablets of 0,2 kgs	all Al-cast and knead alloy	0,2 %	32,4 kgs
421.016A	PROBAT-FLUSS	gassing	white tablets of 0,2 kgs	all Al-cast alloys	1 tablet / 100 kgs	22,8 kgs
421.102	COVERAL 105	purifying reduction of oxides	grey powder	Al with Mg < 5 %	from 0,2 %	25 kgs
421.103	NITRAL 10 MG	purifying nitrogen degassing	reddish tablets	Al with Mg > 3 %	0,1 %	21,6 kgs
421.105	COVERAL GR 2410	skimming purifying	grey granulate	Al-cast alloys except AlMg	0,1 %	25 kgs
<b>2) for heavy metals</b> (further products upon request!)						
421.020	PROBAT-FLUSS EXTRA	purifying degassing fusing	reddish powder	brass gun metal bronze	0,5 %	25 kgs
421.021	PROBAT-FLUSS EXTRA SE	removing of sulphur	black powder	brass gun metal bronze	0,5 %	25 kgs
421.022	ALUFIX	removing of aluminium	reddish powder	brass copper-tin-alloys	1,0 %	25 kgs
421.023	PROBAT-FLUSS EXTRA CARBON N	covering of molten metal, purifying	black-grey powder	copper and copper-alloys	2 cm on molten metal's surface	25 kgs
421.024	ZINKAN	refinement deoxidation fusing	red powder	zinc and zinc-alloys	0,1–0,5 %	25 kgs
421.025	PROBAT-FLUSS REDOX	refinement esp. when highly oxidating	white powder	all copper alloys also when containing AL	0,05–0,2 %	25 kgs

## 422



## Phosphor copper

for **heavy-metal** melts, deoxidising effect, in accordance to DIN 17657 resp. EN 1981:1998 or other specifications

Percentage	P-cont./Item No.		
	8 %	10 %	15 %
Checkered plates	422.111	422.001	422.101
Granulated	422.112	422.002	422.102
Tablets	–	422.003	–

## 422A



## Silicon copper

copper alloy for adding silicon, deoxidising agent, available in

- 1) 10 % cont. **Item No. 422.201**
- 2) 20 % cont. **Item No. 422.202**

## 423



## Brass and red brass blocks

in accordance with DIN or other specifications

## NAVAC

424

sodium, melted under vacuum, ready for use, in air-tight aluminium tin, for AlSi-alloys.  
After degassing, immersed by means of an immersion bell to the bottom of the ladle.

Item No.	Na-qty.	Weight of melt	Carton contains
424.112	12,5 gr	25 kgs	400 pcs
424.125	25 gr	50 kgs	250 pcs
424.150	50 gr	100 kgs	125 pcs

Other sizes upon request.  
Partial quantities cannot be supplied due to safety reasons!



## BINAL (sodium in aluminium foil)

424A

Separately packed, gasproof packed in a solid aluminium foil, grain refining and also modification of the fusion, immersed by means of an immersion bell after purification of the molten metal.

Item No.	Na-qty.	Carton contains
424.212	12,5 gr	500 pcs
424.225	25 gr	300 pcs
424.250	50 gr	200 pcs

Other sizes upon request.  
Partial quantities cannot be supplied due to safety reasons!



## Products for art and investment casting (e.g. the lost wax moulding process)

Please ask for more detailed informations!



## Investment products

425

### 1) Type 910 X Investment (R&R) Item No. 425.101 in boxes of 25 kgs

Calcium sulfate bonded pourable material for the investment-casting of Al- and/or Cu-alloys (bronze) for use in the lost wax process. May be used as moulding as well as core material. May be combined as core with ceramic shell. Excellent surface quality.

**Instruction:** Add the measured powder to the water and mix thoroughly by hand or mechanically for 1 min. Avoid air-inclusions. Pour the material quickly into the cavity.  
Dewaxing may start after about 2 hours.

### 2) RANCAST Item No. 425.102 in boxes of 22,7 kgs

Reasonably priced product, similar to 910 X, but with an ameliorated air permeability and flowability (for an easy core filling), but with less strength, therefore recommended mostly for small parts.



## REMET-products for the ceramic shell technology

425A

### 1) Products for the primary slurry formulation for non-ferrous art casters

#### a) Remasol Adbond Artcast

A polymer enhanced water-base ready-for-use binder system generating higher green strengths more quickly, proving rheology, stucco adhesion and permeability. Fast draining and rapid gelation. Incredible stability, which allows it to be used with all the standard refractories at a wide variety of viscosities.

Contains already a wetting agent and an antifoam product.

Item No.	425.201	425.202
Cont.	30 kgs	230 kgs

#### b) Remet fused silica RP 2 (120 mesh)

Item No. 425.301 in 30kgs-bags

#### c) Milled zircon flour ECG (mesh 200)

Item No. 425.302 in 25kgs-bags

### 2) For stucco application

The grain size should be adapted to the details of the casting. First use fine later coarse grains.

Item No.	425.401	425.402	425.403
Type	RG 1	RG 2	RG 3
Mesh	50/100	30/50	10/20
Weight of bag	25 kg	25 kg	25 kg



## Slotted pipes bright, untinned

425B

of sheet metal, wall thickness 0,5 mm, slot width 1,5 mm

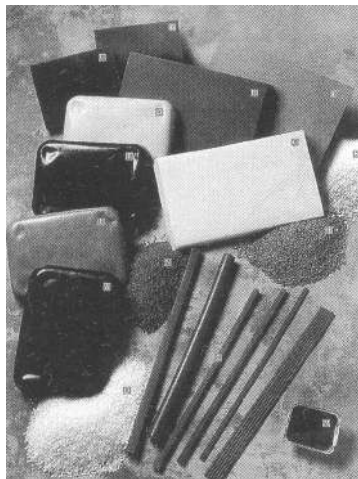
Standard length 2000 mm (also available in 1000 mm length).

Item No.	072.104	072.105	072.106	072.108	072.110
Diameter mm	4,0	5,0	6,3	8,2	10,0

Not stocked! Minimum quantity: 100 m.



## Waxes for art casting



Item No.	Type	Characteristics	Melting point	Colour
<b>a) casting waxes</b>				
426.201	ARTCAST	A medium hard slush casting wax formulated to ensure smooth surfaces, uniform texture and exceptional reproduction of details, in granules	66° C	salmon
426.202	BRUSH WAX	Gives excellent first coat properties for slush casting process. Ensures good surface reproduction. Should be brushed onto a mold so that none of the mold is visible. A back-up wax is then used at lower temperature to give strength to the cast, in granules	74° C	purple
426.203	BACK-UP WAX II	Is a cost-effective wax that may be used for second and third coats. Minimal extension, in granules	80° C	brown
426.217	CARA-CUC 17	Can be poured or injected, ensures proper hardness and plasticity for working with hand tools, in plates of ab. 5 kgs	71° C	dark brown

### b) sculpture waxes

426.301	BRONZE	A highly refined wax specifically designed for the art and sculpture application. Ideal for hand forming. Pliable but not sticky. It can be used alone or blended with a hardener, such as PX 30 Artisan, to obtain extraordinary performance slush casting wax, in plates of ab. 5 kgs	70° C	dark brown
426.302	COPPER	An extremely pliable, medium soft modeling wax. Can be slightly handwarmed before application, in plates of ab. 5 kgs	61° C	light brown
426.303	BEEES-WAX	Very fine natural wax for a developed modeling in granules	64° C	white/natural

### c) special waxes

426.401	STICKTITE	A sticky wax designed to aid the assembly of wax patterns onto spures, in granules	66° C	yellow
426.402	PATCH WAX	A high quality, soft paste wax. Easy to apply with finger-tips to repair surface defects. Assures smooth coverage and minimal shrinkage, in plates of ab. 5 kgs	75° C	white

### d) softener

426.360	WHITE OIL	Whitely mineral oil for softening waxes. In 1 kg-bottles	-	white
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Further wax types upon demand!

## 426A



## Red extruded wax shapes

Soft, **pliable** and strong shapes which allow design of a flexible assembly system. These extrusions can be shaped without fear of cracking or breaking.

Typical melting point: 75° C. Will be delivered in length of ab. 60 cm.

Package cont. ab. 20 kgs.

Item-No.	426.500	426.501	426.511	426.512	426.513
Shape	square, solid		square, cored		
Dia. ab. mm	9,25 x 9,25	12,5 x 12,5	12,5 x 12,5	19 x 19	25 x 25

Item-No.	426.521	426.522	426.523	426.523A	426.524	426.531	426.532	426.533
Shape	round, solid					round, cored		
Dia. ab. mm	Ø 3	Ø 5	Ø 6,5	Ø 9,25	Ø 12,5	Ø 12,5	Ø 19	Ø 25

Other sizes and shapes are available on request!



## HOCO-system of silicon rubbers

**Low-cost** modular system of **condensating-curing silicon rubbers**, where any type may be mixed with another one in any ratio because all types are working with the same catalyst (mixing for each type 100:1,5-2,5%). The catalyst is always contained in the delivery. Thus you may create the mixture according to your own requirements resp. hardness-shore. The following basic types are available:

Type	Characteristics	Hardness Shore +/-	Main application	Colour	Setting time	Packing incl. catalyst/Item No.		
						1 kg	5 kgs	25 kgs
<b>Silcolan NV</b>	low viscosity (ab. 24.000mPa.s) universal rubber	A 30	models with only small undercuts	white/grey	1 to 3 h	970.401	970.402	970.404
<b>Silcotin HB</b>	heat resistant (up to 400°C), low viscosity	A 48	for low melting point metals like tin	red	2 to 3 h	970.407	970.408	970.409
<b>Silcoflex HE</b>	highly elastic, excellent tear strength, low viscosity	A 8	complicated models with extensive undercuts	light blue	3 to 5 h	970.412	970.413	970.414
<b>Silcoform HV</b>	high viscosity (ab. 90.000mPa.s) brushable and stoppable	A 34	surface structures on walls and ceilings	light grey	15 to 40 min.	970.417	970.418	-
<b>Silcoval MVE</b>	medium viscosity, brushable, good tear strength, heat resistant (>150°C)	A 18	complicated molds with small undercuts	ivory	2 to 4 h	970.422	970.423	-



### Mixing list of possible combinations:

NV %	HE %	HV %	HB %	Silicon oil %	Hardn. Shore	Viscosity	Condition when vulcanised	Application
100					30	medium	medium-hard	all-round moulds
80	20				23	medium	soft-hard	all-round moulds
70	20			10	21	pourable	medium-hard	moulds for casting resins
60	40				16	pourable	soft	moulds for resins
50	40			10	12	low	very soft	sensitive moulds
40	60				14	low	very soft	moulds for waxes
20	80				11	low	extremely soft	skin-moulds (thickened)
	100				8	low	extremely soft	skin-moulds (thickened)
		100			34	high	hard	moulds for plastering
20		80			26	high	soft-hard	moulds for plastering
20		75		5	22	medium	medium-soft	shell-moulds
40		60			20	stoppable	medium-soft	shell-moulds
60		40			22	stoppable	medium-soft	allround-moulds
50		40		10	15	pourable	extremely soft	moulds for waxes
80		20			26	medium	soft-hard	moulds for plastering
40	20	40			20	pourable	medium-soft	skin-moulds (thickened)
	20	80			17	stoppable	soft	moulds for resins
	15	70		15	9	medium	extremely soft	skin-moulds (thickened)
	40	60			16	stoppable	soft	moulds for PU
			100		48	high	hard - heat resistant	moulds for tin
	20		80		26	medium	soft-hard (heat resistant)	moulds for tin (massive)
	20		70	10	18	pourable	soft (heat resistant)	moulds for tin (massive)
	60		40		18	pourable	soft (heat resistant)	moulds for tin (massive)
	80		20		14	low	very soft (heat resistant)	moulds for tin (massive)

### Accessories:

#### Catalyst

fitting for all types of rubber, addition acc. to temperature 1,5 to 2,5%. All packings will be delivered with the fittings quantity of catalyst.

For additional needs are available:

Item No.	Content	fitting for
970.441	20 ml	1 kg can
970.442	100 ml	5 kgs can

#### Silicon remover

for cleaning polluted instruments before setting or before using glue for silicon moulds (see below)

Item No.	Content
970.601	100 ml
970.602	250 ml

#### Glue for silicon moulds Item No. 970.481

Will save torn silicon moulds. First clean the parts with silicon-remover (see above), after ventilating apply the glue to both sides and press for ab. 4 to 6 hrs. After a after-reaction-time of ab. 6 hrs., the moulds may be used again. Pots of 80 grs.



Please ask for our detailed brochure „Mould design and construction“ which contains much more products!

**427A**

## HOCO-SILCOTRANS-NVT

### Transparent pourable silicon-rubber

Medium viscosity (ab. 35.000 mPa.s), pourable or brushable, high tear strength combined with extremely high flexibility. Hardness Shore ab. A 30, **mixing ratio 1:1**, results **transparent blocks**, e.g. for sealing electronic parts or parts which are very sensible as to shocks or vibrations as well as display models. The sealed part remains visible. High release property against most common resins.

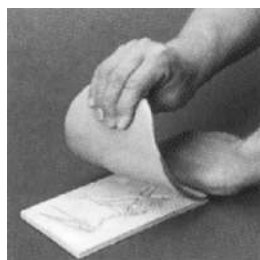
Will be delivered complete with the two components and silicon remover and a detailed instruction as follows:

Item No.	Content
970.427	1,52 kgs complete (0,75 kgs comp. A + 0,75 kgs comp. B + 0,02 kgs silicon-remover)
970.428	5 kgs complete (2,45 kgs comp. A + 2,45 kgs comp. B + 0,1 kgs silicon-remover)

**427B**

## Standard silicon rubbers

### condensating curing



Type	Characteristics	Hardness Shore +/-	Main application	Colour	Setting time	Catalyst	Packing/Item No.	
							1 kg	5 kgs
<b>Nedsil 20</b>	low viscosity, by adding 0,6% of <b>Thixo-Additive K</b> stoppable	A 20	low cost universal rubber for medium requirements	white	8 h	Nedsil 20B	427.020A	427.021A
<b>CARA-514</b>	medium viscosity (ab. 25.000mPa.s), good resistance against resins	A 25	ideal for moulds of resin with extensive undercuts	white	4 to 5 h	T 21	427.201	427.202
<b>Elastosil M 1470</b>	high viscosity kneadable, high mechanical resistance	A 50	for imprints of low structured surfaces	pink	ab. 2 h	paste T 40	427.001	427.002
<b>Elastosil M 4470</b>	low viscosity (ab. 10.000 mPa.s), heat-resistant up to 300°C	A 60	casting of low melting points like tin	redbrown	2 to 4 h	T 40	427.101	427.102
<b>Elastosil M 4440</b>	low viscosity (ab. 20.000mPa.s), casting compound	A 37	all-round moulding material when only small undercuts	white	2 to 4 h	T	427.401	427.402
<b>Elastosil RT 480</b>	medium viscosity (ab. 30.000mPa.s), brushable, no flowing	A 55	moulding material with good mechanical properties, heat resistant	light grey	2 to 4 h	T 40	427.301	427.302

### Fitting catalysts (please order separately)

Type	Content/Item No.				
	40 gr	50 gr	100 gr	200 gr	250 gr
Nedsil 20B	-	427.020B	-	-	427.021B
T 21	-	427.211	-	-	427.212
T 40	427.011	-	427.015	427.012	-
T	427.411	-	-	427.412	-

**Thixo-additive K** Item No. **427.800**  
pot of 0,5 kgs, for Nedsil 20

**427C**

## Silicon oil

for thinning silicon rubber, also useable as an impregnating or parting agent, lubricant or maintenance product.

Temperature of application: - 50 to + 250°C. Viscosity: 350

Item No.	427.601	427.605
Volume	1 ltr.	5 ltr.

## Fillet mastic VITOLUX (11.401)

easy using, excellent bond, no cracking, minimal shrinkage, quick drying (1 hr per 1 mm radius), suitable for wood, metal and resin patterns, one-component mastic

in 1,5 kgs containers	Item No. 933.001
in 1 kg tin	Item No. 933.002



428

## Wood wool ropes

tight and uniformly twisted

Item No.	429.002	429.004
Diameter	20-25 mm	25-30 mm
Length	ab. 250 m	ab. 180 m
Packing	16 rolls	16 rolls



429

## Echometer

To check wall thicknesses of sound conducting metal pieces. Measuring range (in steel) 0,7 to 400 mm. Resolution of reading 0,1 or 0,01 mm. Weight only 175 g. Different measuring adaptors, several accessories and software are available.

Upon request!



430

## Dye penetrant inspection medium 'MET-L-CHECK'

for the surface inspection of parts without demolition. The surface must be cleaned by the NPU-product, then apply the penetrant VP 30, wait acc. to temp. and material for 5 - 30 min., clean off the penetrant, dry surface and then apply the developer D 70 very thin. After short the penetrant will appear in the discontinuities such as cracks or shrinkage holes.

a) Penetrant Dye VP 30 red

b) Developer D 70 white

c) Cleaning agent NPU

Packing size		Product/Item No.		
		VP 30	D 70	NPU
Spray cans	400 ml	431.001	431.101	431.201
Bottles	1000 ml	431.002	431.102	431.202



431

## Aluminium soft solder in rods

Item No. 432.001 melting point 260 °C

for filling holes and flaws in light metal castings; heat area to 300 °C, then ream to achieve a permanent joint, rod diameter appr. 6 mm, rod length appr. 50 cm, weight appr. 100 gr.



432

## Repair compound AVOLITH 3-components

for repairing shrinkage holes or weldings, may be used as filler or primer.

The pourable or brushable AVOLITH liquids becomes pasty after adding max. 10 parts of AVOLITH-powder. Viscosity may be varied by changing the quantity of powder. To harden mixture 2 - 3 % catalyst paste must be added and mixed thoroughly - avoid air-inclusions - until the colour becomes homogenous. Working time 3 to 5 min. , machinable after 20 or 30 min.

Item	Liquid (1,5 l)	Powder (0,2 kg)	Catalyst (35 gr.)
Item No.	433.002	433.003	433.004



433

## Super-Metal silver

Item No. 929.001

2-component plastic mastic containing aluminium, for repairing aluminium or iron castings, in body repair, welding seams can be covered and smoothed.

Temp. resistant up to 220 °C for ab. 30 min.

In 1,4 kgs packages incl. setting agent



433A



## DIAMANT-Metal-Plastics, liquid metals

### DIAMANT-Multimetal (ultrametal)

### DIAMANT-DICHTOL

Types	Metal cont. in % appr.	Application	Properties	Content kgs cpl. powder + cat.	Item No.
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#### 1) Metall-Plastics metal powder & setting agent, 2-components, temperature resistant up to 160 °C permanent (220 °C short period)

Very easy to process:  
 stir setting agent into powder (more powder = pasty; less powder = pourable), mix and apply; when set can be machined in the same way as metal, setting time 15 - 30 min., contents 1 - 1,5 kgs

Ferro-plastic A	92	cast-iron	for repairing castings which are painted or sprayed	1,0 (0,65 + 0,35)	434.001
Ferro-plastic A/A	92	cast-iron	for repairing castings, depending on alloy matching to base metal after machining	1,0 (0,65 + 0,35)	434.011
Ferro-plastic superior dark	96	cast-iron	for repairing castings which are machined, after machining	1,5 (1,15 + 0,35)	434.021
Ferro-plastic superior light	96	cast-iron	excellent matching to metal and metal structure		434.031
Steel-plastic A	92	cast steel	for repairing castings which are painted or sprayed	1,5 (1,15 + 0,35)	434.041
Steel-plastic A/A	92	cast steel	for repairing castings, depending on alloy matching to base metal after machining	1,0 (0,65 + 0,35)	434.051
Steel-plastic superior	96	cast steel	for repairing castings which are machined, after machining excellent matching to metal and metal structure	1,5 (1,15 + 0,35)	434.061
Aluminium-plastic A	92	cast aluminium	for repairing castings	1,0 (0,65 + 0,35)	434.071
Aluminium-plastic A/A	92	cast aluminium	for repairing castings, depending on alloy matching to base metal after machining	1,0 (0,65 + 0,35)	434.081
Aluminium-plastic superior	96	cast aluminium	for repairing castings and castings which are machined excellent matching to metal and structure	1,5 (1,15 + 0,35)	434.091
Bronze-plastic A	92	bronze	can be machined with all tools in the same way as base metal	1,0 (0,65 + 0,35)	434.101
Brass-plastic A	92	brass		1,0 (0,65 + 0,35)	434.111
Red brass-plastic A	92	red brass		1,0 (0,65 + 0,35)	434.121
Copper-plastic A	92	copper		1,0 (0,65 + 0,35)	434.131
Iron plastic oxide	96	cast iron & steel	rusts as base metal	1,5 (1,15 + 0,35)	434.141
Alloy plastic	98	iron, steel & stainless steel	very fine metal structure (esp. for ground surfaces)	1,5 (1,15 + 0,35)	434.151
Setting agent - fast	-	for	esp. for emergency repairs	0,35	434.161
Setting agent - slow	-	all	esp. for normal repairs	0,35	434.162
Setting agent - heat resistant	-	metal	esp. for high perm. temp. (up to about 250 °C)	0,35	434.163

#### 2) Polishable metal mastic 1-component, ready to use, setting time 45-60 min., max. thickness per layer 2 mm

Liquid iron	-	cast iron	for small flaws in unmachined castings	1,0	434.201
Liquid aluminium	-	cast aluminium	with good colour matching to metal, temp. resistant up to 500 °C		434.202
Thinner	-	for liquid metals	for thinning liquid iron and liquid aluminium	0,5	434.204
Mastic light	80	cast iron & steel	for repairing castings, well matching to metal structure after machining, high temperature resistance appr. 750-800 °C, matches metal when brushed, type Superior especially suitable for polishing, with best metal effect	1,25	434.210
Mastic superior light	90	cast iron & steel		1,0	434.220
Mastic dark	80	cast iron		1,25	434.230
Mastic superior dark	90	cast iron		1,0	434.240
Mastic aluminium	75	cast aluminium		1,25	434.250
Mastic superior aluminium	90	cast aluminium		1,0	434.260
Special thinner	-	for all polishable mastics	for thinning non-set metal mastics and levelling not yet hardened mastics	0,5	434.270

#### 3) Pourable mastic 1-component, metal powder, to which water is added, temp. res. up to 650 °C, setting time 2hrs.

Types	Metal cont. in % appr.	Application	Properties	Cont.	Colour/Item No.		
Pourable iron mastic superior	80	cast iron & steel	for repairing blemish, simple and low-cost mastic	5 kgs	black-grey 434.301	blue-grey 434.311	light-grey 434.321
				10 kgs	434.302	434.312	434.322
				20 kgs	-	434.313	434.323

#### 4) Multi Metal 2-components, chemical cold welding, temperature resistant up 160 °C (permanent), setting time 24hrs, cont. each 1,5 kg

Types	Metal cont. in % appr.	Application	Properties	Content kgs cpl. powder + cat.	Item No.
Iron	-	cast iron	mix both components, can be shaped by hand, pot time appr. 1 hr., sets within 3 hrs., no cracks, no shrinkage, even on thick layers, optimum chemical and mechanical resistance, metallic character	1,5 (0,95 + 0,55)	434.401
Steel	-	cast steel		1,5 (0,95 + 0,55)	434.411
Aluminium	-	aluminium		1,5 (0,95 + 0,55)	434.421

#### 5) Dichtol 1-component, ready to use

Dichtol liquid WFT	-	all castings	low-priced, highly effective filler for micropores and microflaws, apply by brushing, spraying or dipping (without pressure or vacuum), sets after 24 hrs. at normal temperature, pressure tight up to 350 bar, temp. res. from abt. - 40 °C to 300 °C (for short periods), for per. temp. max. 200 °C, for pores up to 0,1 mm	1 l	434.581
				10 l	434.582
Dichtol WFT spray	-	all castings		0,5 l	434.583
Dichtol WFT-Makro	-	all castings	as Dichtol WFT, for pores of 0,1 to 0,5 mm	1 l	434.591
				10 l	434.592
Dichtol WFT-Makro Spray	-	all castings		0,5 l	434.593

## Ingot mould coatings

apply with brush or sprayer, dilute with water to the required consistence

### I) Heat conducting, black coatings, graphite based

#### 1) Hydrokollag

Item No.	435.001	435.002
Content	1 kg	25 kgs

#### 2) Aqualon

Item No.	435.101	435.102
Content	1 kg	30 kgs

#### 3) GA 120

Item No.	435.202
Content	25 kgs

#### 4) Cillolin AL 223

Item No.	435.301	435.302
Content	1 kg	15 kgs

#### 5) Cillolin AL 160

optimal adherent on moveable parts of ingot moulds, like core pullings

Item No.	435.934	435.935
Content	1 kg	5 kgs

### II) Insulating, pale coatings

#### 1) CG-555

white, Vermiculit based, especially for a slightly rougher surface or risers in low pressure die casting

Item No.	435.602
Content	20 kgs

#### 2) Deltacast 545

light-brown, mix of special, insulating minerals, medium-coarse, for castings with large and plane surfaces and narrow cross sections

Item No.	435.701
Content	5 kgs

#### 3) SIMSON-coating

white, Al-MG-silicate based, guarantees extremely smooth, clean and sharp-edged castings, reduces the rate of rejects

Item No.	435.801
Content	4,5 kgs

#### 4) Alu-coating

white, bentonite based

Item No.	435.901	435.902
Content	1 kg	25 kgs

#### 5) Cillolin AL 285

white, ceramic based, especially for aluminium low-pressure casting, for uniform surface texture, optimum adhesion to all ingot mould parts

Item No.	435.910	435.911
Content	1 kg	15 kgs

#### 6) Cillolin AL 285G

as described before, however, gives a uniform **coarser surface**

Item No.	435.920	435.921
Content	1 kg	15 kgs



## WOHO-ingot mould coatings in 5 kgs-containers

### 1) for light metal castings

**white Woho** for small castings with thin walls

Item No. 436.101

**green-white Woho** for medium-size castings with thin walls

Item No. 436.102

**super Woho** for large castings with thin walls

Item No. 436.103

**black Woho** for small castings with thick walls

Item No. 436.104

### 2) for light and heavy metal castings

**Hydrosol-Woho** immersion coating for cores and ingot moulds (excellent surface quality)

Item No. 436.105

### 3) for cast steel

**grey Woho** for steel and iron ingot moulds

Item No. 436.106

### 4) crucible coating

**crucible Woho** protective coating for crucibles and scoops

Item No. 436.107

### 5) for risers in low pressure die casting

**Riser Woho**, red-brown

Item No. 436.108





**437****438****438A****439****439A****440****441****442****442A**

## Boron Nitride coatings

with outstanding release and lubricant properties ("white graphite"), thermal resistant up to 900 °C, high thermal conductivity

Type	Properties	Application	Handling	Packing	Item No.
433 W	water based medium adhesion, also for hot surfaces	release agent, cast of pig irons	paint coating spraying	1 kg	437.101
				10 kgs	437.110
10 W	water based good adhesion	coating for foundry tools, pyrometer pipes impeller-systems	spraying paint coating dipping	1 kg	437.301
				10 kgs	437.310
401E	alcohol based good adhesion	like 10 W for small surfaces	spraying	500ml tins	437.202
				12 tins/box	

## Special coating LP 461 for foundry tools

To be coated on the cleaned, light warm tools by brush, reduces the adhesion of the molten aluminium and so the wastage of tools.

in 1kg tins **Item No. 438.102**

## Deltacast 696 - pouring spoon coating

Effective protection against the aggression of molten aluminium, easy application as ready to use, quickly drying, will stay for several applications, easy removable.

Item No.	438.696	438.697
Content	1 kg	25 kgs

## Tool coating CAST-M

**Multiplies the life time of casting tools made of cast iron or steel.** Water-based suspension of ceramic powders as protection aggression of aluminium. Ready to use, to be coated by brush or after addition of water also by spraying or dipping. Optimal wall thickness ab. 1,5 mm

Item No.	439.206	439.212
Content	6 kgs	12 kgs

## Tool coating 'MR' **Item No. 439.001**

red powder, to protect ladles, scoops, immersion bells and other tools against corrosion caused by aluminium. Mixing ratio: immersion 1/2,5; spraying 1/5. Stir well, apply a thin layer, immerse several times (redhot), redry at 450 °C, avoid blistering.

in 25 kgs-bags

## Ladle coating **Item No. 440.001**

white MgO-based coating, for protecting foundry tools against corrosion by aluminium, no sticking of aluminium (repellent), insulating effect. Mix 1 kg powder in appr. 5 l water. Also for risers and ladles.

in 20 kgs-bags

## Bone ash **Item No. 441.001**

finely ground, for coating moulds and ingot moulds as well as scoops, ladles, immersion bells, skimmers etc. up to 1100 °C.

Mixing ratio: ash/water 1/4, suitable for application by spraying pistols and atomizers

in 25 kgs-bags

## Oildag EU (colloidal graphite lubricant)

for lubricating drop forges, forging presses and extrusion presses for steel and non-ferrous metals, moulds and draw dies; coating for light metal die casting or for high temperature forging. Dilution: mineral oil, terpentine etc.

Item No.	442.010	442.020
Content	1 kg	25 kgs

## Graphite-oil-spray **Item No. 442.201**

Black, highly efficient lubricant also under temperature stress (up to ab. 250 °C). Reduces abrasion and noise, produces lubrication with excellent compressive strength for gears, sliding guides and/or other moveable parts of ingot moulds, moulding-ore core-making shops and maintenance.

In spray tins of 500 ml

## Graphite spray Item No. 442.101

black, quickly drying lubricant, after the vapourizing of solvent results a pressure-resistant waste-reducing film, which is waterproof, anticorrosive and long-adhesive.

Therefore useable as:

- release agent for synthetic and cold-box sands
- lubricant for sliding guides, cores, racks and pinions a.s.o.
- protective film against sand-adherences, like on core-shooting machines, mixers etc.

In spray tins of 500 ml

**442B**

## Metallic lubricant

temperature resistant up to 1400 °C, excellent adhesion to all metals, excellent resistance against acids, lyes etc., stands pressure up to 2350 kp/cm<sup>2</sup>, safe and economical in use, low friction coefficient, excellent protection against corrosion, does not contain nickel or copper.

Item No.	443.001	443.002	443.003
Available in	400 ml spray tins	as paste in 350gr. tins	as paste in 1000 gr. tins

**443**

## ALU-Spray Item No. 443.101

quick drying protection varnish, covers reparations in welded or filled aluminium castings. Also usable as cooling spray for moulds and cores where shrink marks may appear and other cooling systems are not possible.

in spray cans of 500 ml

**443A**

## High grade steel spray Item No. 443.301

steel-gray, metallic brilliant protection varnish, quick drying, excellent anti-corrosive. Also for repairing and embellishing of metal parts i.e. carrims, wheels, casting or forging pieces. Temperature resistant up to 240 °C (for short periods) or 120 °C permanently.

in tins of 500 ml

**443B**

## Antilöwa 'W' for die casting

(viscous lubricating and parting compound)

pasty, colour: blue-black, not containing graphite, for all light metal, zinc and brass parts. After a short time moulds, dies and ingot moulds have a smooth, black glossy surface with good antifriction properties. Parts, cores and castings separate easily from the moulds and dies treated with this compound; no tearing of cores and castings, reduction of rejects rate.

Item No.	444.001	444.002	444.003	444.004
Content	1 kg	5 kgs	10 kgs	50 kgs

**444**

## Releasing spray DEMOTEX-S Item No. 445.201

for all common cold-setting methods (Cold-box, furan resin, CO<sub>2</sub> a.s.o.) and green-sand systems, contains aluminium pigments.

in spray cans of 500 ml.

**445**

## Releasing spray DEMOTEX-A Item No. 445.401

colourless release spray for core moulding shops esp. for cold-box-systems in tins of 500 ml.

For special applications other DEMOTEX-products are available. Please ask for samples for your problem!

**445A**

## VITOL-silver 4/G parting compound

quick drying parting and lubricating compound for facilitating mould removal, for all moulding methods, especially for cold-setting sands (phenolic and furan resin sands).

Item No.	933.805	933.810	933.825
Content	5 ltr.	10 ltr.	25 ltr.

**446**

## Aluminium-paste-Silver-Ink T 1005

parting agent for the cold-box and CO<sub>2</sub>-methods, easy mould removal, apply by dabbing to achieve a uniform coating.

	Cont./Item No.			
Product	1 kg	5 kgs	25 kgs	50 kgs
Silver-Ink	446.001	446.002	-	446.003
Solvent	446.101	446.102	446.103	-

**446A**

**446B**

### Cleaning spray „TN“ Item No. 988.100

removes residues of releasing agents, sand or resins from core-boxes, pattern plates and machine parts. Ideal both for cold and hot setting sands, but not for sodium silicate bonded sands in tins of 500 ml.

**446C**

### Multi-Spray 4X Item No. 915.301

Four times effective, transparent multi-use spray for moulding- and core-making shops, ingot moulds and maintenance. Releases quickly and safe all tight parts, prevents effectively from corrosion, eliminates squeaking, cleans gentle and maintains, creeps under humidity. in tins of 500 ml

**447**

## ACHEM release agents for sand castings

Quality products for the special requirements of foundries

Product overview/selection criteria:

Produkt	Greensand	Coldbox	Furan/Phenol-resins	Crohnig-Hotbox a.s.o.	Sodium silicate - CO <sub>2</sub>	Red-Set - Beta-Set	Ecobloc and similar methods	Difficult demoulding	Mlt-grade demoulding	Easy demoulding	with aluminium pigments	with wax	solvent-free	VbF
SG-1007	X							X	X					n.u.
SG-1085	X							X	X	X				n.u.
SG-1142S		X			X	X	X	X	X	X			X	Spray
SG-1018		X			X	X	X	X	X					AI
SG-1018S		X			X	X	X	X	X					Spray
SG-1050		X			X	X	X	X	X					AI
SG-1260R		X	X		X	X	X	X	X			X		AI
SG-1008			X					X	X	X		X		AI
SG-1010			X					X	X		X	X		AI
SG-1031S		X	X					X	X		X	X		B
SG-3552		X	X	X	X	X	X	X	X	X			X	water-based
SG-3992	X			X			X	X	X	X			X	water-based
SG-2000				X				X	X	X			X	water-based

VbF = German regulation for inflammable liquids; n.u.: not covered by these regulations.

Type	Application/Remark	Item No. Packing	
SG-1007	Greensand, good release property for repeated demoulding	447.204 160 kgs-drum	447.203 20 kgs-hobbock
SG-1085	Greensand, good release property for repeated demoulding	447.252 160 kgs-drum	447.251 20 kgs-hobbock
SG-1142S	Solvent-free, core making spray tins of 500 ml	447.210 tin with 500 ml	
SG-1018	Core production, extremely adhesive, good slipping multiple demoulding	447.212 150 kgs-drum	447.211 20 kgs-hobbock
SG-1018S	like SG-1018 in spray tins of 500 ml box with 12 tins	447.213 tin with 500 ml	
SG-1050	adhesive, good slipping, for repeated demoulding non-flammable (acc. DIN 51755)	447.216 150 kgs-drum	447.215 20 kgs-hobbock
SG-1260R	Core-making for repeated demoulding	447.257 20 kgs-hobbock	
SG-1008	Hand moulding shops, contains wax, free of silicone, polishable release film	447.218 140 kgs-drum	447.217 20 kgs-hobbock
SG-1010	Hand moulding shops, contains wax, free of silicone, polishable release film, contains aluminium pigments	447.220 150 kgs-drum	447.219 20 kgs-hobbock
SG-1031S	like SG-1010 in spray tins of 500 ml box with 12 tins	447.224 tin with 500 ml	
SG-3552	Core production, extremely adhesive, good slipping multiple demoulding, water-based	447.244 200 kgs-drum	447.243 25 kgs-hobbock
SG-3992	Greensand, good release properties, multiple demoulding, water-based	447.246 200 kgs-drum	447.245 25 kgs-hobbock
SG-2000	Hot-and-cold-box systems may be diluted by water	447.222 200 kgs-drum	447.221 25 kgs-hobbock

**447A**

## ACHEM release agents for die castings

Quality products for the special requirements of die-foundries

Type	Application/Remark	Item No. Packing	
DG-2007	for AL and Mg, produces uniform clear surfaces mixture ratio 1:100 up to 1:250	447.302 200 kgs-drum	447.301 25 kgs-hobbock
DG-2017	for AL and Mg, produces uniform clear surfaces mixture ratio 1:30 up to 1:70	447.304 200 kgs-drum	447.303 25 kgs-hobbock
DG-2008	for AL and Mg, free of silicone mixture ratio up to 1:200	447.306 200 kgs-drum	447.305 25 kgs-hobbock

## LOST-FOAM mini-plant

for producing prototypes in a quality which may be compared with investment-casting, in nearly all kinds of alloys. Loose silica return sand (free from binder) is used - no recycling of sand required - low costs for fettling and machining.

**The ideal entry plant for this trendsetting method of casting!**

Inside dimensions ab. 300 x 300 x 500 mm, sand bunker cont. ab. 50 ltrs. head of metal ab. 900 mm, total weight ab. 180 kgs, place requirement ab. 2,5 x 2 mtrs.

**For this plant we arrange offers upon demand incl. technical support!  
Please ask for an offer!**



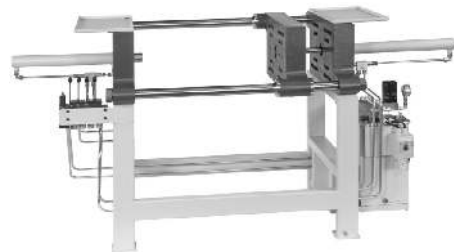
449

## Chill-casting machine GK 3

for production of aluminium ingot mould parts, fitting to requirements, flexible, quickly moveable to different working places.

Mounting table 500 x 300 mm, power unit 4,2 kW, 40-220 bar, manual slider 4fold, connection for two further power units, guide bushes and -shafts exchangeable, check-valves on both sides of the cylinder.

**For this item we act only as an agent upon request!**



450

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Melting crucibles for max. temperature of 1200°C and 1300°C

- robust construction
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451

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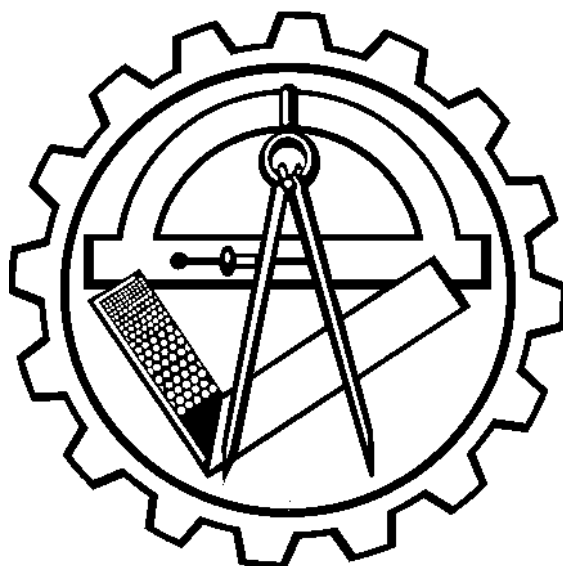
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