



**Mortars**, borosilicate glass. With foot and spout. With pestle.  
Low Form, inside smooth.

O. D. mm	Height mm	
100	65	5.720.001
120	75	5.720.002
145	85	5.720.003



**Mortars and pestles**, porcelain, inside rough.



Capacity ml	O. D. mm	Mortars	Head dia. mm	Length mm	Pestle
70	63	8.512.003	24	115	8.513.003
140	90	8.512.006	30	135	8.513.006
400	125	8.512.008	36	150	8.513.008
650	150	8.512.009	42	175	8.513.009
1000	180	8.512.010	55	210	8.513.010
2700	250	8.512.012	74	250	8.513.012
6500	330	8.512.014	90	320	8.513.014



**Mortars**, melamin, white. Without pestle.

Capacity ml	O. D. mm	Height mm	
300	125	75	7.055.001
500	150	90	7.055.002

**Pestles**, melamin. Solid type.

Length mm	Head-dia. mm	
125	30	7.058.001
145	35	7.058.002
160	40	7.058.003
215	42	7.058.004



**Mortas with pestle**, agate, standard quality.

Capacity ml	O. D. mm	I. D. mm	
10	50	40	5.720.101
24	75	60	5.720.102
50	100	80	5.720.103
100	125	105	5.720.104
200	150	125	5.720.105

**Stirring vessel**, melamin, white. With handle and spout.

Capacity ml	O. D. mm	Height mm	
3000	200	140	7.057.001

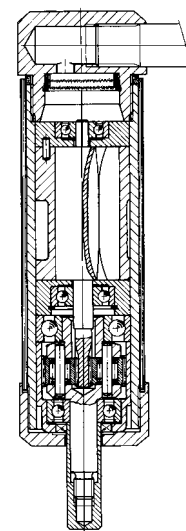




## Stirrer compressed air.

Perfect function even at low pressures > 0,1 bar. Vibration-free operation. With oiler-head to dispense oil dripwise when pressing the button. The air stream distributes the oil. The compressed air can be seized and can stream a way through a tube to reduce noise. Types RO 2, RO 3, RO 4 can be equipped with a tachometer for perfect reproduction in analytical test series. All stirrers can be regulated from 0 to maximum speed via air flow or pressure. The flowing pressure should be kept constant by a pressure reduction valve and should be as low as possible to reduce speed instabilities by pre-pressure variations. The special oilers in form of a adapter or a mounted version are manually operated and deliver a drop of oil on pressing the button. 1-2 drops per day are sufficient. The attached oiler must be used concerning stirrers with seized air (Rx2, Rx3) and with tachometers (Rx4, Rx5).

For permanent operation we recommend an automatically working oiler, which simultaneously cares for the maintenance of the apparatus. All stirrers are made of aluminum and are available in stainless steel on demand. Tachometers and oilers are made of light metal.



### Technical Data

Stirrer shaft at 6 bar P(W):	160
Operating pressure P(bar):	0.1-6
Material of housing:	Alu + V4A
Holding tube:	
Hose connection mm:	9
Housing-dia. mm:	38

#### Type RO 1

For media with low viscosity and for small quantities (up to 2 l), according to the type of the stirrer blade, high speed range, low torque. Speed range 800 /min., total length 120 mm, without epicyclic (planetary) gear, operating pressure 0.1-6 bar.

#### Type RO 2

For media with medium viscosity and for quantities up to 20 l, according to the type of the stirrer blade, medium speed range, medium torque, deliverable also with conical shaft which enables the use of a chuck (Nr. 1.445.001). Speed range 1950 min, total length 155 mm, single planetary gear, operating pressure 0.2-6 bar.

#### Type RO 3

For media with viscosity, high torque, low speed range. Speed range 700 /min, total length 190 mm, double planetary gear, operating pressure 0.3-6 bar.

#### Type RO 4

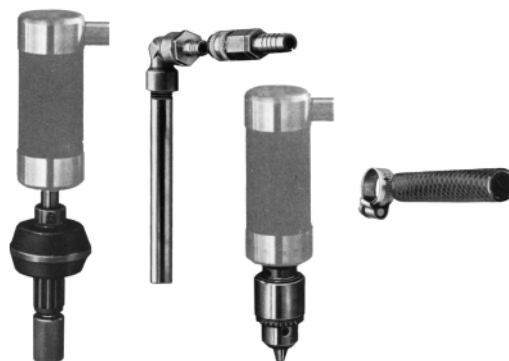
For media with highest viscosity, very high torque, drive which can be used universally for many kinds of laboratory work, for example special drives for worm conveyors, autoclaves, rotary film evaporators. Speed range 300/min, total length 225 mm, triple planetary gear, operating pressure 0.3-6 bar.

### Stirrer compressed air.

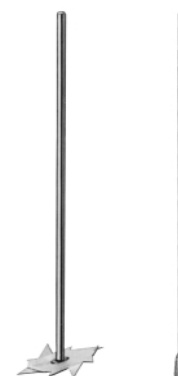
	Size	RO 1	RO 2	RO 3	RO 4
	Al, standard	1.441.001	1.442.001	1.443.001	1.444.001
	V4A, standard	1.441.002	1.442.002	1.443.002	1.444.002
	Al, pressure reduction valve	1.441.001	1.442.003	1.443.003	1.444.003
	V4A, pressure reduction valve	1.441.004	1.442.004	1.443.004	1.444.004
	Al, oiler adapter	1.441.005	1.442.005	1.443.005	1.444.004
	Al, oiler adapter, pressure reduction valve	1.441.006	1.442.006	1.443.006	1.444.005
	Al, seized air	1.441.007	1.442.007	1.443.007	1.444.006
	V4A, seized air	1.441.008	1.442.008	1.443.008	–
	Al, seized air, pressure reduction valve	1.441.009	1.442.009	1.443.009	–
	V4A, seized air, pressure reduction valve	1.441.010	1.442.010	1.443.010	–
	Al, seized air, mount. oiler	1.441.011	1.442.011	1.443.011	–
	V4A, seized air, mount. oiler	1.441.012	1.442.012	1.443.012	–
	Al, seized air, mount. oiler, pressure reduction valve	1.441.013	1.442.013	1.443.013	–
	V4A, seized air, mount. oiler, pressure reduction valve	1.441.014	1.442.014	1.443.014	–
	Al, tachometer	–	1.442.015	1.443.015	–
	Al, tachometer, pressure reduction valve	–	1.442.016	1.443.016	–
	Al, tachometer, mount. oiler	–	1.442.017	1.443.017	–
	Al, tachometer, mount. oiler, pressure reduction valve	–	1.442.018	1.443.018	–

**Accessories for „ROTEX“.**

Type	
Flexible coupling for stirrers between motor and stirrer shaft chucking breadth up to 10 mm length 70 mm	1.445.000
Chuck chromed, chucking breadth 0-8 mm	1.445.001
Tubing PVC sheathed with tissue layer inside 13/ 9x2mm	1.445.002
Pneumatic quick coupling made of brass, enables easy coupling and coupling off of tube while the inflow of compressed air is stopped at the same time	1.445.003
Socket for quick coupling with thread suitable for the stirrer, with side tube for quick coupling	1.445.004D
Hose clip (tube clamp) for fixing of tube	1.445.005
Connector, angled, for quick couplings	1.445.006

**Stirrers for „ROTEX“. V2A-18/8 steel.**

Type	Stirrer- blade mm	Shaft-dia. mm	Length mm	
Shaft stirrers (dissolving)	80	8	550	1.445.100
Shaft stirrer	60/15	6	150	1.445.300
Shaft stirrer	60/15	6	350	1.445.301
Shaft stirrer	100/24	8	320	1.445.302
Shaft stirrer	100/24	8	550	1.445.303

**Blades stirrers, PP.**

Type	Dimensions mm	
2 blades	40x15	7.150.001
U-shape	65x78	7.150.002
2 flexible blades	60	7.150.003
2 flexible blades	100	7.150.004



**Flexible couplings** to be placed between drive and stirrer shaft. Made of rubber and metal.

For shaft dia.	
8 mm	1.445.000
10 mm	1.445.010

**BEST BUY**

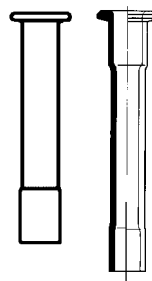
**Flexible couplings for stirres** between motor and stirrer shaft, made of PTFE/Polyamid

For shaft dia.	
8 mm	1.445.500
10 mm	1.445.510
14 mm	1.445.514
16 mm	1.445.516



**Stirrer guides**, bore of tube, interchangeable, bearing surface fire-polished.

PK-bearing-length mm	Extension	PK 10 mm	PK 14 mm	PK 16 mm
75	1	1.450.000	1.450.014	1.450.016
65 (HA)	1	1.451.000	1.451.014	1.451.016
75	2	1.452.000	1.452.014	1.452.016

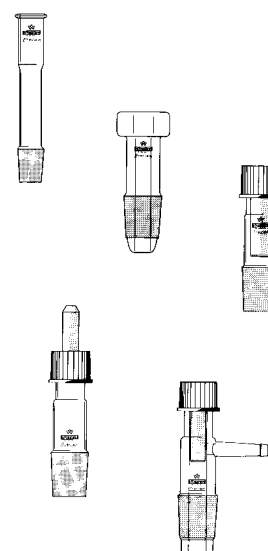


## Stirrer guides.

1. With ST-cones 10 mm.
2. With fused-on stirrer bearing. Bore of tube 10 mm.
3. GTS-vacuum-stirrer and PK 10-glass-insert, screw cap GL 25. Bore of tube 10.01 mm.
4. GTS-vacuum-stirrer, with PTFE-insert and interchangeable PTFE-vacuum-seal, screw cap GL 25. Bore of tube 10.1 mm.
5. With PP-insert, 8 mm dia. and scew cap GL 25, made of melamin.
6. With cooling jacket and PTFE-insert, with interchangeable PTFE-vacuum seal and screw cap GL 25, made of melamin. Bore of tube 10.1 mm.

Cone ST	1.	2.	3.	4.	5.	6.
19/26	1.455.019	—	—	—	—	—
24/29	1.455.024	1.460.024	1.467.024	1.468.024	1.470.024	1.475.024
29/32	1.455.029	1.460.029	1.467.029	1.468.029	1.470.029	1.475.029
45/40	—	1.460.045	1.467.045	1.468.045	—	1.475.045
Spare					parts:	
Glass part, ST 24/29-GL 25	—	—	1.467.701	1.468.001	1.470.001	1.475.000
Glass part, ST 29/32-GL 25	—	—	1.467.702	1.468.002	1.470.002	1.475.001
Glass part, ST 45/40-GL 25	—	—	1.467.703	1.468.003	—	1.475.002
Stirrer guide	—	—	1.467.704	1.468.004	—	1.475.003
PTFE-vacuum seal	—	—	—	1.468.005	—	1.475.004
Screw cap GL 25	—	—	1.467.706	1.468.006	1.470.005	1.475.005
Stirrer guide, PP	—	—	—	—	1.470.003	—
Viton O-ring seal	—	—	—	—	1.470.004	—

Available for 14 and 16 mm stirrer shafts.

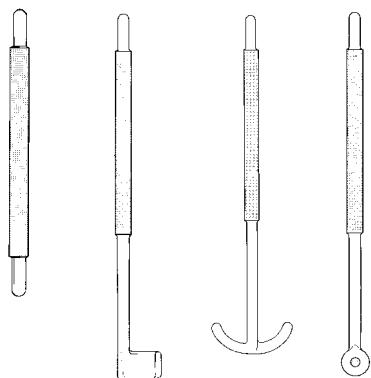


## Stirrer adapters Witorex

With PTFE stirrer guide and 2 sealing sets which can be used for pressure and vacuum operation, depending on their arrangement. All parts are exchangeable. The PTFE-cone can be screwed off and exchanged by other cone sizes. The shaft is automatically placed into the central position by the 2 sealing sets. For use with glass or metal shafts. Needs no grease.

Cone ST	Shaft dia. mm	
29/32	8	1.469.001
45/40	8	1.469.002
29/32	10	1.469.011
45/40	10	1.469.012
29/32	16	1.469.021
45/40	16	1.469.022





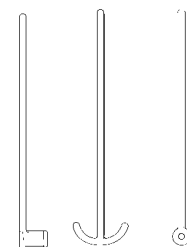
**Stirrer shafts, PK 10.** 160 mm long.  
Stirrer blade curved ends. (Total length for flasks 500/1000)

Stirrer-blade	Fits to	PK		
		14 mm	16 mm	PK
2 pivots	—	1.480.000	1.480.014	1.480.016
1, 18 mm breadth	ST 19/26, ST 24/29	1.482.000	—	—
1, 24 mm breadth	ST 29/32, ST 45/40	1.484.000	1.484.014	1.484.016
Anchor, 95 mm breadth	NW 100	1.486.000	1.486.014	1.486.016
Suitable toggle, PTFE for PTFE-stirrer blade	ST 29/32 or ST 45/40	1.488.000	1.488.014	1.488.016

Please indicate the size of flasks used.

**Stirrer shafts, 7-8 mm dia.**  
Stirrer blade with curved ends.  
For stirrer guide 1.470.\*\*\* fitting.

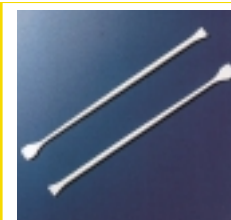
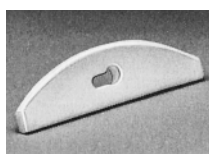
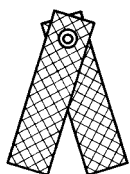
Stirrer blade	
24 mm	1.490.000
Anchor 95 mm	1.491.000
PTFE-toggle, suitable for PTFE-stirrer blade	1.492.000
PTFE-spare toggle	1.495.000



### PTFE-stirrer blades and paddles.

Exchangeable for shafts with toggle.  
Material thickness 2.5 mm.

Breadth mm	Length mm	
<b>Stirrer blade</b>		
24	50	1.496.050
24	70	1.496.070
24	90	1.496.090
24	110	1.496.110
32	125	1.496.125
<b>Stirrer paddles</b>		
10	30	1.498.030
10	50	1.498.050
10	70	1.498.070
15	90	1.498.090
20	120	1.498.120
20	150	1.498.150
<b>Stirrer discs</b>		
14	52	7.215.001
19	76	7.215.002
28	90	7.215.003



### Stirring rod with spatula, PP.

Length mm	O. D. mm	
245	7	7.151.001

### Stirring rods, unbreakable, splinter-free, PVC.

Length mm	O. D. mm	
250	7	7.152.001
300	7	7.152.002
350	7	7.152.003

**Disposable spatulas, stirring,** transparent, PS. 120 mm long.  
500 pieces in plastic sleeve, 4 sleeves in standard carton. In each carton we deliver 1 dispenser tube.

Type	
Without mixing table	5.478.000
With mixing table	5.478.100



### Stirring rods, made of glass. Ends melted.

L x dia. mm	
100x3	9.900.101
200x3	9.900.103
200x4	9.900.104
200x6	9.900.106
300x6	9.900.107
300x8	9.900.108



### Stirring rods made of wood

250x3 mm, Pack á 1000 pcs.

5.479.101
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**Magnetic stirring bars, PTFE. With permanent magnet.**

O. D. mm	Length mm	
<b>Octagonal, with ring</b>		
6	12	7.210.001
8	25	7.210.002
8	35	7.210.003
10	50	7.210.004
12	75	7.210.005
<b>Cylindrical</b>		
3	6	7.211.001
3	8	7.211.002
4	12	7.211.003
4.5	14.5	7.211.004
6	20	7.211.005
6	25	7.211.006
6	31	7.211.007
6	35	7.211.008
7.5	40	7.211.009
7.5	45	7.211.010
7.5	50	7.211.011
9	60	7.211.012
9	70	7.211.013
9	80	7.211.014
<b>Cylindrical, with ring</b>		
3	8	7.212.001
4.5	12	7.212.002
4.5	15	7.212.003
6	20	7.212.004
6	25	7.212.005
6	30	7.212.006
6	35	7.212.007
7	40	7.212.008
8	45	7.212.009
8.5	51	7.212.010
8.5	60	7.212.011
8.5	70	7.212.012



**Magnetic stirring bars, Circulus®, dumb-bell-shaped, PTFE, excellent centering.**

Length mm	Rod dia. mm	Disc dia. mm	
37	8	20	7.212.137
54	8	20	7.212.154



**Magnetic stirring bars, PTFE. With permanent magnet.**

O. D. mm	Length mm	
<b>Triangular</b>		
8	12	7.213.001
8	25	7.213.002
10	35	7.213.003
12	50	7.213.004
<b>Oval for round bottom flasks</b>		
10.5	20	7.214.001
12	25	7.214.002
15	32	7.214.003
15	34	7.214.004
20	40	7.214.005
20	50	7.214.006
20	65	7.214.007
20	71	7.214.008



**For spinner flasks**

6x25	25 ml	5.529.501
8x40	50-100 ml	5.529.502
10x80	1000-8000 ml	5.529.503
12x100	15000-36000 ml	5.529.504

**Stirring bar retrievers, PTFE, magnet only at one end**

10	240	7.218.002
11	300	7.218.003



**Stirring bars-assortment. W12.**

Consists of 10 cylindrical rods 10-80 mm, and 1 each triangular rod 25+50 mm.

Type	
	7.213.112



**Tissue homogenizers, BIOGEN.**

Capacity	Pestle	Reservoir	
ml	mm	mm	

**With pestle**

5	–	–	5.553.701
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**Conical shape**, for heart, muscle and lung samples. The long surface allows both, pre-preparation and micro-grinding down to 0.1 to 0.15 mm on the vertical mortar surfaces. The yield is higher and more constant than with Tenbroeck- or Potter-Elvehjem homogenizers.

1	115 x 6	14 x 80	5.553.711
3	207 x 6	16 x 120	5.553.712
5	220 x 8	18 x 150	5.553.713
15	278 x 10	25 x 172	5.553.714
30	310 x 10	32 x 215	5.553.715
50	345 x 16	38 x 225	5.553.716

**Dounce** for maximum nuclei and mitochondria yields with smooth samples. With two pestles for pre- and final preparation. Superior reproducibility. Very low heating effects and therefore high yields. Scope of delivers: Set with two pestles, stamp A 0.1 to 0.15 mm, stamp B 0.03 to 0.08 mm.

2	–	11 x 48	5.553.720
7	–	13 x 82	5.553.721
15	–	15 x 94	5.553.722
40	–	21 x 140	5.553.723

**Potter Elvehjem** with PTFE pestle and metal shaft also for use with motor drive units. Gap size 102 to 152 µm, advantageous with liver, brain and tumor tissues.

0.25	130 x 3	8 x 20	5.553.731
0.5	130 x 3	8 x 30	5.553.732
1	155 x 5	11 x 30	5.553.733
2	230 x 5	11 x 45	5.553.734
5	235 x 5	13 x 66	5.553.735
10	270 x 6	16 x 74	5.553.736
15	270 x 6	19 x 84	5.553.737
30	270 x 6	24 x 118	5.553.738
55	270 x 6	30 x 130	5.553.739

**Tenbroeck** with T-handle, gap size 102 to 152 µm, for manual operation or low speed drives with rubber stoppers which fit to the special shaped handle. For liver and heart tissues. The hollow pestle may be filled with ice for chilled operation.

2	160 x 50	100 x 30	5.553.741
7	195 x 50	125 x 30	5.553.742
15	210 x 65	155 x 38	5.553.743
40	315 x 90	215 x 55	5.553.744



**Gas burners .**

Gases	Type	Head/tube-dia. mm	
<b>With air regulation</b>			
–	Bunsen	11	
Normal	Teclu	13, with set screw	8.325.001
Propane	Teclu	13, with set screw	8.325.002
Natural gas	Teclu	13, with set screw	8.325.003
Normal	Teclu	13, with stopcock and pilot flame	8.326.001
Propane	Teclu	13, with stopcock and pilot flame	8.326.002
Natural gas	Teclu	13, with stopcock and pilot flame	8.326.003
Town-/bottle gas	Mecker-Fisher	30	8.330.000

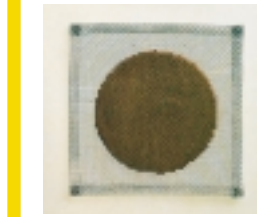
**Burners, complete.**

Gases	
<b>Bunsen burner with air regulation</b>	
Natural gas	8.321.000E
Luminous gas	8.321.000L
Propane gas	8.321.000P
<b>Bunsen burner with air regulation and needle valve</b>	
Natural gas	8.323.000E
Luminous gas	8.323.000L
Propane gas	8.323.000P
<b>Mecker burner, 20 mm flame, with air regulation and needle valve</b>	
Allgas	8.327.000A
Natural gas	8.327.000E
Luminous gas	8.327.000L
Propane gas	8.327.000P



**Tripods**, of sheet iron, painted black.

Dia. mm	Height mm	
100	180	8.303.002
120	210	8.303.003
140	220	8.303.004
160	260	8.303.005
180	280	8.303.006
100	adjustable	8.304.001
140	adjustable	8.304.002



**Iron wire gauzes.**

Dimensions mm	Iron without border	Nichrome with border	Tinned iron ceramic center
100x100	8.305.001	—	—
120x120	8.305.002	—	8.307.001
160x160	8.305.003	8.306.001	8.307.002
200x200	8.305.004	—	8.307.003

**Files.** Of tinned iron wire, pipe clay tubes.

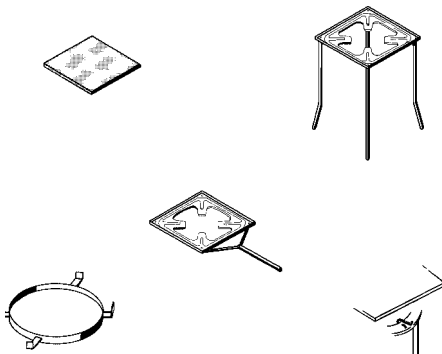
Length mm	
40	8.308.001
50	8.308.002
60	8.308.003
70	8.308.004
80	8.308.005



**CERAN-plates.**

- chemically resistant - this is important in case aggressive media are boiling over.
- high resistance to temperature changes from -200 °C to +700 °C.
- easy to clean, manually and mechanically.
- excellent heat conductivity.
- even temperature effect.

Dimensions mm	Plates	Quadrups CrNi-steel 220 mm high	Plates- holder CrNi-steel	Ring for tripods DIN 12889
135x135	5.510.001	5.165.001	5.175.001	5.180.001
155x155	5.510.002	5.165.002	5.175.002	5.180.002
175x175	5.510.003	5.165.003	5.175.003	5.180.003
Mounting clamps (4 pieces), for tripods acc. to DIN 12889		-	5.185.000	



**Spirit lamps**, borosilicate glass, flat conical shape, with ground-on cup.

Capacity ml	
100	5.760.100
200	5.760.200
Accessories:	
Wicks	5.760.300
Sockets	5.760.400

