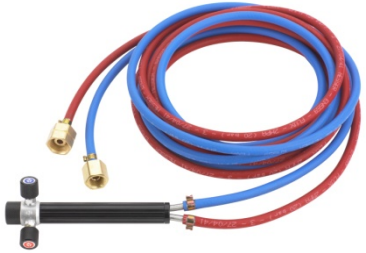



Handle				MINITHERM
Description	Hose connections	Art. No.	Cat. No.	
MINITHERM with 3 m hose	Connections 1/4" for oxygen and 3/8" LH for fuel gas	716.06111	024	
MINITHERM, handles without hoses	with hose tail for hoses DN 3,2 mm	716.06109	024	
MINITHERM, handle nickel plated	with hose tail for hoses DN 3,2 mm	716.51665 *	024	
MINITHERM, handle with knob for hanging	with hose tail for hoses DN 3,2 mm	716.05770	024	

Handle				STARLET
Description	Hose connections	Art. No.	Cat. No.	
STARLET 1302	G 1/4" for oxygen and G 3/8" for fuel gas	716.05978	024	
STARLET 2221	G 1/4" for oxygen and G 3/8" for fuel gas	716.06815	024	
STARLET 3201	Hose connections 6/6 mm	242.65000	024	
STARLET 6201	Hose connections 6/6 mm	716.01115	024	

STAR

Handle



<i>Description</i>	<i>Hose connections</i>	<i>Art. No.</i>	<i>Cat. No.</i>
STAR 1000	G 1/4" for oxygen and G 3/8" LH for fuel gas	716.05994	024



STAR 2020	G 1/4" for oxygen and G 3/8" LH for fuel gas	716.06820	024
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SUPERTHERM

Handle



<i>Description</i>	<i>Hose connections</i>	<i>Art. No.</i>	<i>Cat. No.</i>
SUPERTHERM	for oxygen: G 3/8"/DN 9 for fuel gas: G 1/2"LH/DN 11 mm	716.01818	004

AIRTHERM

Handle



<i>Description</i>	<i>Hose connections</i>	<i>Art. No.</i>	<i>Cat. Nr.</i>
AIRTHERM	G 3/8" LH for fuel gas	0.463.452	024

Valve shaft

MINITHERM

Description	Hose connections, Clamping dimensions [Ø], Length [l]	Art. No.	Cat. No.
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MINITHERM

with hose tail for hoses DN 3,2 mm
Ø = 19 mm, l = 30 mm

716.02852

039



Valve shaft

STARLET

Description	Hose connections, Clamping dimensions [Ø], Length [l]	Art. No.	Cat. No.
-------------	--	----------	----------

STARLET

for oxygen:
G 1/4" - DN 6 mm
for fuel gas:
G 3/8" LH - DN 9 mm
Ø = 30 mm, l = 70 mm

716.51192

039



Valve shaft

STAR

Description	Hose connections, Clamping dimensions [Ø], Length [l]	Art. No.	Cat. No.
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STAR

for oxygen:
G 1/4" - DN 6 mm
for fuel gas:
G 3/8" LH - DN 9 mm
Ø = 30 mm, l = 86,5 mm

716.02113

039



SUPERTHERM



Description	Hose connections, Clamping dimensions [Ø], Length [l]	Art. No.	Cat. No.
SUPERTHERM 20	for oxygen: G 3/8" - DN 9 mm for fuel gas: G 1/2" LH - DN 11 mm Ø = 32 mm, l = 130 mm	716.02190	039



SUPERTHERM 30	for oxygen: G 1/2" - DN 11mm for fuel gas: G 1/2" LH - DN 11 mm Ø = 36 mm, l = 138 mm	716.50947	039
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SUPERTHERM 30	for oxygen: G 1/2" - DN 13 mm for fuel gas: G 3/4" LH - DN 16 mm Ø = 36 mm, l = 138 mm	716.02830	039
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Copper heating nozzle

TYPE Z - AH

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
00	20 - 55	716.00978	024
0	28 - 72	716.00979	024
1	58 - 150	716.00980	024
2	155 - 285	716.00981	024
3	215 - 440	716.00982	024



Replacement nozzle

TYPE Z - AH

Size	Art. No.	Cat. No.
00	716.00983	007
0	716.00984	007
1	716.00985	007
2	716.00986	007
3	716.00987	007



Copper heating nozzle chemically Ni plated

TYPE Z - AH

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
00	20 - 55	716.50394 *	039
0	28 - 72	716.50395 *	039
1	58 - 150	716.50396 *	039
2	155 - 285	716.50397 *	039
3	215 - 440	716.50398 *	039

Replacement nozzles on request



Flexible

TYPE Z - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
2	130 - 180	716.51834	039
3	240 - 320	716.51835	039



HEATING INSERTS

MINITHERM

TYPE Z - A

Replacement nozzle flexible



Size	Art. No.	Cat. No.
2	716.51836	039
3	716.51837	039

TYPE FK - AH

Chrome plated Brass with interchangeable Copper nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	210 - 350	716.50808	024
2	210 - 420	716.50809	024

TYPE FK - B3 - A

Chrome plated Brass with interchangeable nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
3	215 - 440	716.04348	039

TYPE FK - B3 - A

Replacement Copper nozzle



Size	Art. No.	Cat. No.
3	716.04349	039

HEATING INSERTS

MINITHERM

Chrome plated Brass with interchangeable nozzle

TYPE FK - PMYE

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	210 - 350	716.50804	024
2	210 - 420	716.50805	024



Copper heating nozzle

TYPE Z - PMY

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
00	20 - 55	716.00988	024
0	28 - 72	716.00989	024
1	58 - 150	716.00990	024
2	155 - 285	716.00991	024
3	215 - 440	716.00992	024



Replacement nozzle

TYPE Z - PMY

Size	Art. No.	Cat. No.
00	716.00993	007
0	716.00994	007
1	716.00995	007
2	716.00996	007
3	716.00997	007



Copper heating nozzle chemically Ni plated

TYPE Z - PMY

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
00	20 - 55	716.50401 *	039
0	28 - 72	716.50402 *	039
1	58 - 150	716.50403 *	039
2	150 - 285	716.50404 *	039
3	215 - 440	716.50405 *	039



Replacement nozzles on request

TYPE ZD - PMY

with Chrome plated Copper heating nozzle



Size	Compressed air - consumption [l/h]	Art. No.	Cat. No.
8/2	55 - 285	716.51600 *	039
11,5/2	55 - 285	716.51601 *	039
11/4	215 - 440	716.51602 *	039

TYPE ZD - PMY

Replacement nozzle



Size	Art. No.	Cat. No.
8/2	716.02483 *	039
11,5/2	716.50937 *	039
11/4	716.02484 *	039

TYPE FK - PMYE

Chrome plated Brass with interchangeable nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	210 - 350	716.50804	024
2	210 - 420	716.50805	024

TYPE FK - PMYE

Replacement nozzle, Copper



Size	Art. No.	Cat. No.
1	716.50798	039
2	716.50799	039

HEATING INSERTS

MINITHERM

Stainless Steel nozzle

TYPE FK - PM

Size		Art. No.	Cat. No.
6	1400	716.51639 *	039
6		716.51641	039



* with interchangeable nozzle

TYPE 111 - A

with slim, interchangeable Copper nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
0	40	716.01600	024
1	80	716.01601	024
2	160	716.01602	024
3	315	716.01603	024
3,5	410	716.01820	024
4	500	716.01604	024
5	800	716.01605	024
6	1250	716.01606	024

TYPE 111 - A

Replacement nozzle, slim version, Copper



Size	Art. No.	Cat. No.
0	716.01540	007
1	716.01541	007
2	716.01542	007
3	716.01543	007
3,5	716.01882	007
4	716.01544	007
5	716.01545	007
6	716.01546	007

TYPE 211 - A

with stubby interchangeable Copper nozzles



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	80	716.01611	024
2	160	716.01612	024
3	315	716.01613	024
3,5	410	716.01830	024
4	500	716.01614	024
5	800	716.01615	024
6	1250	716.01616	024

Replacement nozzle stubby version, Copper

TYPE 211 - A

Size	Art. No.	Cat. No.
1	242.34110	007
2	242.34210	007
3	242.34310	007
3,5	716.00686	007
4	242.34410	007
5	242.34510	007
6	242.34610	007



with stubby interchangeable version, Copper

TYPE Z - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
7	1.800	716.01837	024
7 E	1.800	716.51805	024
8	2.500	716.01838	024
8 E	2.500	716.51806	024



E = with stainless steel mixing tube

Replacement nozzle stubby version, Copper

TYPE Z - A

Size	Art. No.	Cat. No.
7	242.34710	007
7 E	242.34710	007
8	242.34810	007
8 E	242.34810	007



E = for stainless steel mixing tube

Pipe welding insert, flexible

TYPE 411 - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
2	260	716.01702	007
3	315	716.01703	007
3,5	410	716.01840	007
4	500	716.01704	007
5	800	716.01705	007



HEATING INSERTS

STARLET

TYPE 411 - A

Welding nozzle, flexible



Size	Art. No.	Cat. No.
2	716.01742	007
3	716.01743	007
3,5	716.00461	007
4	716.01744	007
5	716.01745	007

TYPE F - A

with multi-jet heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
3	300 - 700	716.03443	004
4	700 - 1.200	716.01844	004
6	1.200 - 2.100	716.01846	004
8	2.300 - 4.000	716.01848	004

TYPE F - A

Replacement nozzle, Copper



Size	Art. No.	Cat. No.
3	716.02080	004
4	241.14460	004
6	242.47610	004
8	242.13811	004

TYPE FB - A

with interchangeable, low noise multi-jet heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
5	750 - 1.100	716.51809	004
6	1.150 - 1.660	716.51810	004
7	1.630 - 2.300	716.51811	004
8	2.300 - 3.320	716.51812	004

HEATING INSERTS

STARLET

Replacement nozzles

TYPE FB - A

Size	Art. No.	Cat. No.
5	716.00725	004
6	716.00726	004
7	716.00727	004
8	716.00728	004



with interchangeable Copper nozzle

TYPE Z - PMYE

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	50 - 200	716.01861	004
2	70 - 280	716.01862	004
3	130 - 500	716.01863	004
4	250 - 990	716.01864	004
6	580 - 1.920	716.01866	004
8	860 - 2.700	716.01868	004



Replacement Copper nozzle

TYPE Z - PMYE

Size	Art. No.	Cat. No.
1	716.00590	004
2	716.00591	004
3	716.00592	004
4	716.00593	004
6	716.00594	004
8	716.00595	004



with multi-jet heating nozzle

TYPE F - PME

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
4	550	716.01854	004
6	1.200 - 3.800	716.01856	004
8	2.000 - 6.100	716.01858	004



HEATING INSERTS

STARLET

TYPE F - PME

Replacement Copper nozzle



Size	Art. No.	Cat. No.
4	716.00570	004
6	716.00571	004
8	716.00596	004

TYPE F - PMY - 90°

with 90° angles mixing tube



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
2	160	716.04605	039
3	280	716.04606	039

TYPE HF - PM

with interchangeable multi-jet heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
12	4.9 - 12.0	716.51722	004
13	7.7 - 23.0	716.51723	004

TYPE HF - PM

Replacement Copper nozzle



Size	Art. No.	Cat. No.
12	716.05646	039
13	716.05647	039

HEATING INSERTS

STARLET

with multi-jet heating nozzle

TYPE F - PME

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
8E	2.000 - 6.100	716.51717	004
10 E		716.51718	004
12 E		716.51719	004

E = with Stainless Steel mixing tube



Replacement nozzle

TYPE F - PME

Size	Art. No.	Cat. No.
8E	716.01237	004
10 E	716.01238	004
12 E	716.01239	004

E = for Stainless Steel mixing tube



TYPE 210 - A

with interchangeable stubby Copper nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	80	716.01621	024
2	160	716.01622	024
3	315	716.01623	024
4	500	716.01624	024
5	800	716.01625	024
6	1.250	716.01626	024
7	1.800	716.01627	024
8	2.500	716.01628	024

TYPE 210 - A

Replacement Copper nozzle



Size	Art. No.	Cat. No.
1	242.34110	007
2	242.34210	007
3	242.34310	007
4	242.34410	007
5	242.34510	007
6	242.34610	007
7	242.34710	007
8	242.34810	007

TYPE Z - A

with interchangeable heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
9	3.300 - 4.700	716.00863	004
10	4.600 - 5.800	716.00865	004

TYPE Z - A

Replacement Copper nozzle



Size	Art. No.	Cat. No.
9	716.00170	004
10	716.00171	004

HEATING INSERTS

STAR

Pipe welding insert, flexible

TYPE 410 - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
2	160	716.01712	024
3	315	716.01713	024
4	500	716.01714	024
5	800	716.01715	024



Welding nozzle, flexible

TYPE 410 - A

Size	Art. No.	Cat. No.
2	716.01752	007
3	716.01753	007
4	716.01754	007
5	716.01755	007



KONSTANTHERM for heavy thermal loads

TYPE Z - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
6	1.250	242.56600	004
8	2.500	242.56800	004



KONSTANTHERM for heavy thermal loads

TYPE Z - A

Size	Art. No.	Cat. No.
6	677.51963	004
8	677.51965	004



HEATING INSERTS

STAR

TYPE F - A

with brazed multi-jet heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
8	2.300 - 2.700	242.54800	004
9	3.200 - 4.200	716.00864	004

TYPE F - A

with brazed multi-jet heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
18	3.000 - 6.000	71604599 *	039

HEATING INSERTS

STAR

with interchangeable low noise multi-jet Copper heating nozzle

TYPE FB - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
5	750 - 1.100	716.01915	004
6	1.150 - 1.900	716.01916	004
7	1.630 - 2.300	716.00757	004
8	2.300 - 3.300	716.00758	004
9	3.900 - 5.500	716.00759	004
10	4.500 - 6.100	716.00772	004



Replacement Copper nozzle chrome plated

TYPE FB - A

Size	Art. No.	Cat. No.
5	716.00725	004
6	716.00726	004
7	716.00727	004
8	716.00728	004
9	716.00779	004
10	716.00780	004



with interchangeable multi-jet heating nozzle

TYPE HF - PMYE

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
12	≤ 12.000	716.05642	039
13	≤ 23.000	716.05643	039
14	≤ 35.300	716.05644	039
15	≤ 54.200	716.05645	039



Replacement Copper nozzle

TYPE HF - PMYE

Size	Art. No.	Cat. No.
12	716.05646	039
13	716.05647	039
14	716.05648	039
15	716.05649	039



Stand: 04/2013

TYPE Z - PMY

with interchangeable heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
6	≤ 3.000	716.01926	004
8	≤ 6.000	716.01251	004
10	≤ 14.000	716.01252	004
12	≤ 35.000	716.01253	004

TYPE Z - PMY

Replacement Copper nozzle chrome plated



Size	Art. No.	Cat. No.
6	716.01233	004
8	716.01234	004
10	716.01235	004
12	716.01236	004

TYPE F - PMY

with interchangeable multi-jet heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
8	≤ 6.000	716.01254	004
10	≤ 14.000	716.01255	004
12	≤ 35.000	716.01256	004

TYPE F - PMY

Replacement Copper nozzle chrome plated



Size	Art. No.	Cat. No.
8	716.01237	004
10	716.01238	004
12	716.01239	004

with stubby interchangeable heating nozzle

TYPE Z - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
9	≤ 4.400	716.02092	004
10	≤ 5.900	716.02093	004



Replacement Copper nozzle

TYPE Z - A

Size	Art. No.	Cat. No.
9	716.00170	004
10	716.00171	004



with interchangeable low noise multi-jet Copper heating nozzle

TYPE F - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
9	≤ 4.800	716.02090	004
11	≤ 9.400	716.02091	004



Replacement nozzle with mixing tube

TYPE F - A

Size	Art. No.	Cat. No.
9	716.00422	004
11	716.00423	004



HEATING INSERTS

SUPERTHERM

TYPE F - A

with interchangeable multi-jet heating nozzle



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
28	≤ 12.000	716.04421	039

TYPE F - A

Replacement Copper nozzle



Size	Art. No.	Cat. No.
28	716.05094 *	039

TYPE F - PMY

with interchangeable multi-jet heating nozzle



Size (Length)	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
12 (680 mm)	≤ 18.000	716.02100	004
12 (805 mm)	≤ 18.000	716.03577	004
12 (930 mm)	≤ 18.000	716.03582	004
14 (680 mm)	≤ 45.000	716.02101	004
14 (805 mm)	≤ 45.000	716.03578	004
14 (930 mm)	≤ 45.000	716.03583	004
16 (680 mm)	≤ 52.000	716.02102	004
16 (805 mm)	≤ 52.000	716.03579	004
16 (930 mm)	≤ 52.000	716.03584	004

TYPE F - PMY

Replacement Copper nozzle chrome plated



Size	Art. No.	Cat. No.
12	716.01153	004
14	716.01154	004
16	716.01155	004

HEATING INSERTS

SUPERTHERM

High power torch with separate gas feed without nozzle

TYPE FD 20

Length [mm]	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
920	see nozzle FG + FGZ	716.02125	004



Copper nozzles for high power torch

TYPE FD - PMY

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
20/21	20.000 - 42.700	716.02081	039



Copper nozzles for high power torch

TYPE FDZ - PMY

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
20/21	20.000 - 42.700	716.03127	039



Copper nozzles for high power torch

TYPE FD - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
20/15	7.900 - 14.700	716.00967	039



Stand: 04/2013

HEATING INSERTS

TYPE FS - P

with spread flame outlet



Size	Propane-Consumption [l/h]	Art. No.	Cat. No.
12	50 - 58	716.51910	039
14	73 - 85	716.51911	039
17	107 - 124	716.51912	039
20	218 - 252	716.51913	039

TYPE FSH - P

Torch pipe



Length [mm]	Art. No.	Cat. No.
100	0.532.1240	039
200	0.532.1260	039
350	0.532.1270	039
600	0.532.1280	039
750	0.532.1290	039
1000	0.532.1300	039

TYPE FSH - P

Stainless Steel high power nozzle



Size	Propane-Consumption [l/h]	Art. No.	Cat. No.
30	590 - 1.040	716.51918	039
40	1.040 - 2.080	716.51919	039
50	1.830 - 3.760	716.51920	039
60	2.720 - 4.850	716.51921	039
80	3.220 - 5.350	716.51922	039

FORKED TORCHES

MINITHERM

Forked torches

TYPE Z - AH

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
0	60 - 140	716.50464 *	039
1	120 - 300	716.50465 *	039
2	310 - 570	716.02560 *	039
3	430 - 880	716.50466 *	039



Forked torches

TYPE FK - AH

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	420 - 700	716.50820 *	039
2	550 - 840	716.50821 *	039



Replacement nozzles

TYPE FK - AH

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	420 - 700	716.50798	039
2	550 - 840	716.50799	039



Forked torches

TYPE Z - PMYE

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
0	60 - 140	716.50469 *	039
1	120 - 300	716.50470 *	039
2	310 - 570	716.50471 *	039
3	430 - 880	716.50472 *	039



FORKED TORCHES

MINITHERM

TYPE FK - PMYE

Forked torches



<i>Size</i>	<i>O₂-Consumption [l/h]</i>	<i>Art. No.</i>	<i>Cat. No.</i>
1	420 - 700	716.50828 *	039
2	550 - 840	716.50829 *	039

TYPE FK - PMYE

Replacement nozzles



<i>Size</i>	<i>O₂-Consumption [l/h]</i>	<i>Art. No.</i>	<i>Cat. No.</i>
1	420 - 700	716.50800	039
2	550 - 840	716.50801	039

FORKED TORCHES

STARLET

Forked torches

TYPE Z - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
2	300	716.50762 *	039
3	700	716.50763 *	039
4	1.200	716.02764 *	039
5	2.500	716.50765 *	039



Copper replacement nozzles

TYPE Z - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
2	300	257.26232	039
3	700	257.26332	039
4	1.200	257.26432	039
5	2.500	257.26532	039



Forked torches

TYPE F - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	400	716.50766 *	039
2	700	716.50767 *	039
3	1.200	716.02768 *	039
4	1.700	716.50769 *	039
5	2.500	716.50770 *	039



Replacement nozzles

TYPE F - A

Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	400	716.03006	039
2	700	716.03007	039
3	1.200	716.03008	039
4	1.700	716.52217	039
5	2.500	716.52270	039



FORKED TORCHES

STARLET

TYP Z - PM

Forked torches



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	500	716.50756 *	039
2	1.100	716.50757 *	039
3	1.400	716.02758 *	039

TYPE Z - PM

Replacement nozzles



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	500	716.03011	039
2	1.100	716.03012	039
3	1.400	716.03013	039

TYPE F - PM

Forked torches



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	1.100	716.50759 *	039
2	2.100	716.50760 *	039
3	2.500	716.02761 *	039

TYPE F - PM

Replacement nozzles



Size	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
1	1.100	716.03016	039
2	2.100	716.03017	039
3	2.500	716.03018	039

LINE HEATING TORCHES



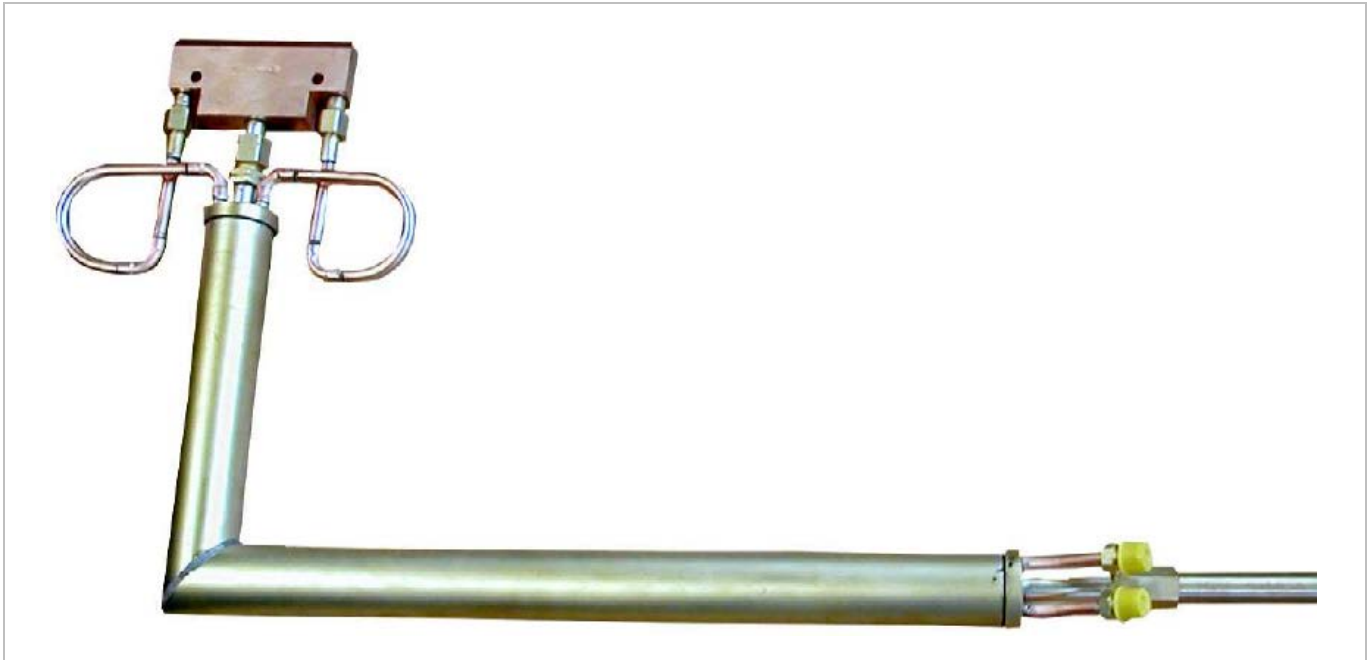
Line heating torches

Line heating torches without water cooling			TYPE T - A STAR
Flame width [mm]	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
50	1.250	716.	039
100	2.500	716.	039
150	3.750	716.	039

Line heating torches without water cooling			TYPE T - PM STAR
Flame width [mm]	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
50	3.250	716.00523	039
100	6.300	716.00524	039
150	10.600	716.00525	039

Line heating torches with water cooling			TYPE T - PMY SUPERTHERM
Flame width [mm]	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
200	15.250	716.02107	039
250	20.000	716.02108	039

LINE HEATING TORCHES



High power - Line heating torches T-H / T-PM with water cooling

SUPERTHERM 30	High power - Line heating torch with water cooling	TYPE T - PM - W	
<i>Flame width [mm] / Number of rows of jets</i>	<i>O₂-Consumption [l/h]</i>	<i>Art. No.</i>	<i>Cat. No.</i>
125 / 7	17.400 - 29.000	*	039
150 / 7	30.700 - 51.400	*	039
200 / 5	17.400 - 29.000	*	039
250 / 5	30.700 - 51.400	*	039

SUPERTHERM 30	High power - Line heating torch with water cooling	TYPE T - H - W	
<i>Flame width [mm] / Number of rows of jets</i>	<i>O₂-Consumption [l/h]</i>	<i>Art. No.</i>	<i>Cat. No.</i>
125 / 7	11.000 - 18.000	*	039
150 / 7	11.000 - 18.000	*	039
200 / 5	11.000 - 18.000	*	039
250 / 5	17.400 - 29.000	*	039

LINE HEATING TORCHES



Line heating torches
Type TF-PMY / D

STAR	Line heating torches with stainless steel ribbon packages			TYPE TF -PMY / D
	Flame width (D) [mm]	Air consumption [l/h]	Art. No.	Cat. No.
	50	4.200 - 10.300	716.51644 *	039
	100	6.500 - 16.200	716.51645 *	039
	150	8.400 - 20.600	716.51646 *	039
	200	12.800 - 31.700	716.51647 *	039

SUPERTHERM	Line heating torches with stainless steel ribbon packages			TYPE TF -PMY / D
	Flame width (D) [mm]	Air consumption [l/h]	Art. No.	Cat. No.
	250	15.100 - 37.400	716.51648 *	039
	300	19.500 - 48.000	716.51649 *	039

Stand: 04/2013

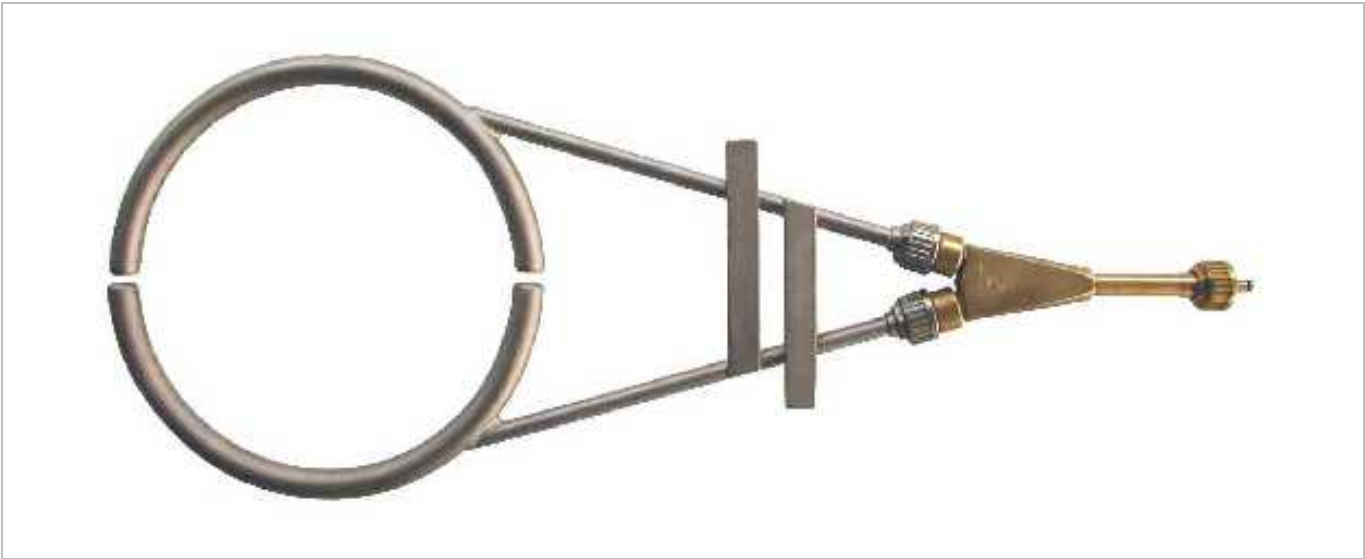
LINE HEATING TORCHES



Ring torch MINITHERM C

Ring torches with threading gap						TYPE C - A MINITHERM
Size	Inner Ø [mm] / Number of jets	Entry opening [mm]	length [mm]	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
2	36 / 3	30	171	305	716.50915	039
2	36 / 5	30	171	305	716.50916	039
3	55 / 7	30	191	485	716.50918	039
3	75 / 7	45	215	485	716.50920	039
3	90 / 8	55	227	485	716.50922	039

Ring torches with threading gap						TYPE C - PMYE MINITHERM
Size	Inner Ø [mm] / Number of jets	Entry opening [mm]	length [mm]	O ₂ -Consumption [l/h]	Art. No.	Cat. No.
2	36 / 5	30	171	305	716.50917	039
3	55 / 7	30	191	485	716.50919	039
3	75 / 7	45	215	485	716.50921	039
3	90 / 8	55	227	485	716.50923	039



Ring torch RK 1 (hinged)

**TYPE RK1 - A/PMY
STAR**

Ring torches with threading gap

<i>Pipe Ø [mm]</i>	<i>Outer Ø [mm]</i>	<i>length [mm]</i>	<i>O₂-Consumption [l/h]</i>	<i>Compressed air consumption only in acetylene</i>	<i>Art. No.</i>	<i>Cat. No.</i>
50	120	460	900 - 3.400	700 - 1.500	716.10494	039
100	170	525	1.400 - 5.300	1.100 - 2.300	716.10495	039
150	220	700	1.700 - 6.300	1.250 - 2.800	716.50775	039
200	275	820	1.900 - 7.200	1.400 - 3.200	716.10496	039
300	395	980	2.200 - 8.500	1.700 - 3.700	716.10497	039

**TYPE RK1 - A/PMY
SUPERTHERM**

Ring torches with threading gap

<i>Pipe Ø [mm]</i>	<i>Outer Ø [mm]</i>	<i>length [mm]</i>	<i>O₂-Consumption [l/h]</i>	<i>Compressed air consumption only in acetylene</i>	<i>Art. No.</i>	<i>Cat. No.</i>
400	6000	1400	2.500 - 9.400	1.900 - 4.100	716.10498	039

HEATING NOZZLES



Heating nozzle Z-A stubby version



Heating nozzle Z-A slim version

slim version					TYPE Z - A
Size	Nozzle length [mm]	Nozzle Ø [mm]	Connecting thread	Art. No.	Cat. No.
0	40	11	M 8	716.01540	007
1	40	11	M 8	716.01541	007
2	40	11	M 8	716.01542	007
3	40	11	M 8	716.01543	007
3,5	40	11	M 8	716.01882	007
4	40	11	M 8	716.01544	007
5	56	11	M 8	716.01545	007
6	56	11	M 8	716.01546	007

stubby version					TYPE Z - A
Size	Nozzle length [mm]	Nozzle Ø [mm]	Connecting thread	Art. No.	Cat. No.
0	45	13	M 10 x 1,5	242.34910	007
1	45	13	M 10 x 1,5	242.34110	007
2	45	13	M 10 x 1,5	242.34210	007
3	50	13	M 10 x 1,5	242.34310	007
3,5	50	13	M 10 x 1,5	716.00686	007
4	50	13	M 10 x 1,5	242.34410	007
5	65	16	M 12 x 1,5	242.34510	007
6	65	16	M 12 x 1,5	242.34610	007
7	80	19	M 14 x 1,5	242.34710	007
8	80	19	M 14 x 1,5	242.34810	007
9	100	22	M 18 x 1,5	716.00170	004
10	100	22	M 18 x 1,5	716.00171	004

HEATING NOZZLES



Heating nozzle Z - A flexible

TYPE Z - A MINITHERM

flexible

Size	Total length [mm]	Flexible length including tip [mm]	Ø D [mm]	Connecting thread	Art. No.	Cat. No.
2	197	174	7,9	M 6	716.51836	039
3	197	174	7,9	M 6	716.51837	039

TYPE Z - A STARLET

flexible

Size	Total length [mm]	Flexible length including tip [mm]	Ø D [mm]	Connecting thread	Art. No.	Cat. No.
2	197	174	7,9	W 8 x 1/32	716.01742	007
3	197	174	7,9	W 8 x 1/32	716.01743	007
3,5	197	174	7,9	W 8 x 1/32	716.00461	007
4	222	199	7,9	W 8 x 1/32	716.01744	007
5	222	199	7,9	W 8 x 1/32	716.01745	007

TYPE Z - A STAR

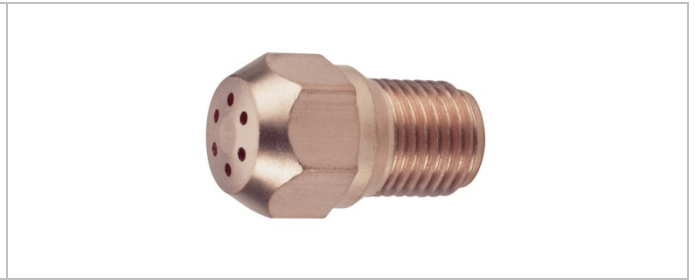
flexible

Size	Total length [mm]	Flexible length including tip [mm]	Ø D [mm]	Connecting thread	Art. No.	Cat. No.
2	197	174	7,9	M 8 x 0,75	716.01752	007
3	197	174	7,9	M 8 x 0,75	716.01753	007
4	222	199	7,9	M 8 x 0,75	716.01754	007
5	224	199	7,9	M 8 x 0,75	716.01755	007

HEATING NOZZLES



Heating nozzle ZK - A / PMY



Heating nozzle FK - PMY, A/D

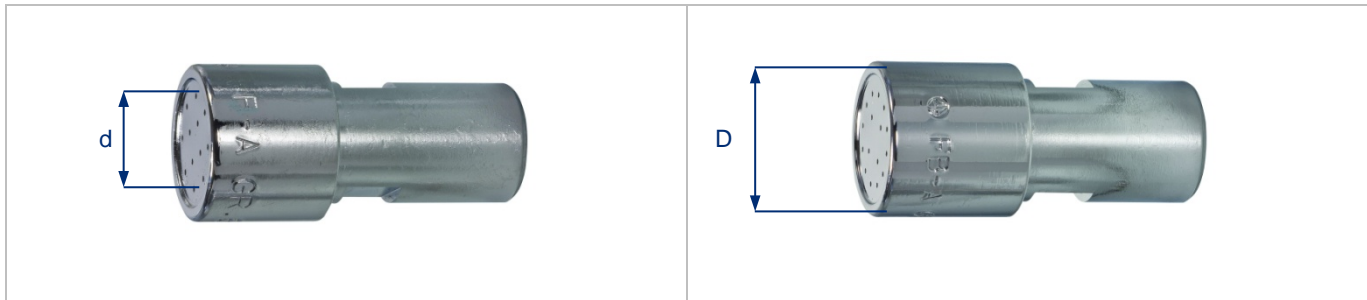
Small heating nozzle						TYPE ZK - A
Size	Total length [mm]	Spanner size	Connecting thread	Art. No.	Cat. No.	
1	20	11	M 9 x 1,0	716.03001	039	

Small heating nozzle						TYPE ZK - A
Size	Total length [mm]	Spanner size	Connecting thread	Art. No.	Cat. No.	
1	20	11	M 9 x 1,0	716.03006	039	
2	20	11	M 9 x 1,0	716.03007	039	
3	20	11	M 9 x 1,0	716.03008	039	

Small heating nozzle						TYPE FK - PMY, A/D
Size	Total length [mm]	Spanner size	Ø Pitch circle [mm]	Connecting thread	Art. No.	Cat. No.
2	20	11	5,5	M 9 x 1,0	716.03017	039
3	20	11	5,5	M 9 x 1,0	716.03018	039

Small heating nozzle with a circle of flame outlet slits						TYPE FSB - A/D
Size	Total length [mm]	Spanner size	Connecting thread	Art. No.	Cat. No.	
-	17	10	M 10 x 1,0	716.51637	039	

HEATING NOZZLES



F - A

FB - A

TYPE F - A STARLET

Multi-jet heating nozzle

Size	Total length [mm]	D [mm]	d [mm]	Connecting thread	Art. No.	Cat. No.
3	40	6,0	3,0	M 8	716.02080	004
4	50	7,0	5,0	M 8	241.14460	004
5	50	9,0	6,0	M 8	242.47610	004
6	80	12,5	8,0	M 8	716.00455	004

TYPE F - A STAR

Multi-jet heating nozzle / Multi-jet nozzle including mixing tube

Size	Total length [mm]	D [mm]	d [mm]	Connecting thread	Art. No.	Cat. No.
8	80	12,5	8,0	M 14 x 1,5	716.02080	004
9	103	24,0	9,0	incl. mixing tube Ø 14,0,	716.00422	004

TYPE F - A SUPER THERM

Multi-jet nozzle including mixing tube

Size	Total length [mm]	D [mm]	d [mm]	Connecting thread	Art. No.	Cat. No.
9	103	24,0	9,0	incl. mixing tube Ø 14,0	716.00422	004
11	103	30,0	9,0	incl. mixing tube Ø 14,0	716.00423	004

TYPE FB - A STAR / STARLET

Low noise multi-jet heating nozzle

Size	Total length [mm]	D [mm]	d [mm]	Connecting thread	Art. No.	Cat. No.
5	47,0	22,0	12,0	M 12 x 1,5	716.00725	004
6	47,0	22,0	13,0	M 12 x 1,5	716.00726	004
7	54,0	25,0	15,0	M 14 x 1,5	716.00727	004
8	54,0	25,0	16,0	M 14 x 1,5	716.00728	004
9	61,5	28,0	18,0	M 18 x 1,5	716.00779	004
10	61,5	28,0	20,0	M 18 x 1,5	716.00780	004

HEATING NOZZLES



Heating nozzle STARLET Z-PMY



Heating nozzle STAR Z-PMY

two piece with stabilised, single flame outlet TYPE Z - PMY, A/D
STARLET

Size	Nozzle length [mm]	Nozzle Ø [mm]	Connecting thread	Art. No.	Cat. No.
1	50,6	5,0	M 8 x 1,0	716.00590	004
2	50,6	5,0	M 8 x 1,0	716.00591	004
3	50,6	5,0	M 8 x 1,0	716.00592	004
4	50,6	6,0	M 8 x 1,0	716.00593	004
6	50,6	6,0	M 8 x 1,0	716.00594	004
8	50,6	6,0	M 8 x 1,0	716.00595	004

A/D = also suitable for use with Acetylene / **Compressed Air**

with stabilised, single flame outlet TYPE Z - PMY, A/D
STAR

Size	Nozzle length [mm]	Nozzle Ø [mm]	Connecting thread	Art. No.	Cat. No.
6	50,6	5,0	M 12 x 1,5	716.01233	004
8	50,6	5,0	M 14 x 1,5	716.01234	004
10	50,6	5,0	M 14 x 1,5	716.01235	004
12	50,6	6,0	M 14 x 1,5	716.01236	004

A/D = also suitable for use with Acetylene / **Compressed Air**

with stabilised, single flame outlet TYPE Z - PMY
SUPERTHERM

Size	Nozzle length [mm]	Nozzle Ø [mm]	Connecting thread	Art. No.	Cat. No.
12	78,0	16,5	M 18 x 1,5	716.01240	004
14	83,0	17,5	M 18 x 1,5	716.01241	004

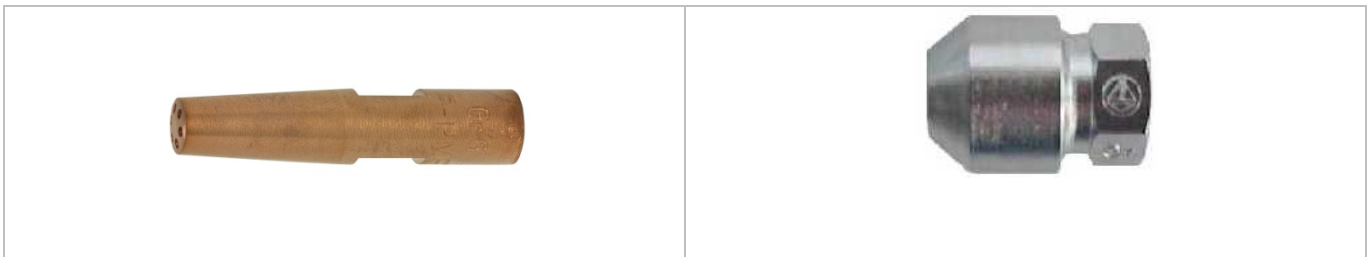


Heating nozzle FG und FGZ

TYPE FG - PMY		with two concentrically arranged pitch circle			
Size	Total length [mm]	Ø Front face [mm]	Largest pitch circle-Ø [mm]	Art. No.	Cat. No.
20/21	50	27,0	20,5	716.02081	039

TYPE FGZ - PMY		with two concentrically arranged pitch circle and central pilot flame			
Size	Total length [mm]	Ø Front face [mm]	Largest pitch circle-Ø [mm]	Art. No.	Cat. No.
20/21	50	27,0	20,5	716.03127	039

TYPE FG - A		with two concentrically arranged pitch circle			
Size	Total length [mm]	Ø Front face [mm]	Largest pitch circle-Ø [mm]	Art. No.	Cat. No.
20/15	50	27,0	22,0	716.00967	039



Heating nozzle STARLET F-PMY, A/D Size 4 + 6

Heating nozzle STARLET F-PMY, A/D Size 8

TYPE F - PME, A/D STARLET		with concentrically pitch circle			
Size	Nozzle length [mm]	Front face Ø [mm]	Connection thread	Art. No.	Cat. No.
4	50,0	8,0	M 8	716.00570	004
6	50,6	8,0	M 8	716.00571	004
8	29,5	12,0	M 10 x 1,5	716.00596	004

A/D = also suitable for use with Acetylene / **Compressed Air**



Heating nozzle F - PMY, A/D

with concentric ring slots				TYPE F - PMY, A/D	
Size	Nozzle length [mm]	Front surface Ø [mm]	Connecting thread	Art. No.	Cat. No.
8	55,0	18,5	M 14 x 1,5	716.01237	004
10	60,0	21,5	M 14 x 1,5	716.01238	004
12	65,0	26,5	M 14 x 1,5	716.01239	004

A/D = also suitable for use with Acetylene / **Compressed Air**

with concentric ring slots				TYPE F - PMY, A/D	
Size	Nozzle length [mm]	Front surface Ø [mm]	Connecting thread	Art. No.	Cat. No.
12	65,0	26,5	M 18 x 1,5	716.01153	004
14	70,0	31,5	M 18 x 1,5	716.01154	004
16	75,0	35,5	M 18 x 1,5	716.01155	004

A/D = also suitable for use with Acetylene / **Compressed Air**



Heating nozzle HF - PMYE

High powered heating nozzle STAR with integrated spacer				TYPE HF - PMYE	
Size	Nozzle length [mm]	Front face Ø [mm]	Connecting thread	Art. No.	Cat. No.
12	81,0	18,0	1/2" - 25 Gang	716.05646	039
13	76,5	25,0	1/2" - 25 Gang	716.05647	039
14	78,5	34,0	1/2" - 25 Gang	716.05648	039
15	78,5	44,0	1/2" - 25 Gang	716.05649	039



Heating nozzle Z-PM / D

TYPE Z - PM / D		with centrally arranged stabilisation slot				
Size	Nozzle length w/o thread [mm]	Outer Ø [mm]	Fuel gas jets [mm]	Connecting thread	Art. No.	Cat. No.
24 / 3,0	26,0	24,0	3,0	M 10 x 1,0	401.42012 *	039
25 / 5,0	55,0	25,0	5,0	M 12 x 1,0	401.42013 *	039
30 / 7,0	75,0	30,0	7,0	G 3/8"	401.42014 *	039
50 / 9,0	115,0	50,0	9,0	G 3/4"	401.42015 *	039



Ionisation ignition torch ZAI - A, P, M

for reliable ignition and ionic protection				IONISATION IGNITION TORCHES TYPE ZAI	
Version	Fuel gas pressure <i>p</i> [mbar]	Fuel gas consumption [l/h] / <i>p</i> [mbar]	Art. No.	Cat. No.	
AH (acetylene + hydrogen)	357 - 893	28 / 500	716.51596 *	039	
P (propane)	30 - 50	90 / 50	716.51597 *	039	
M (methane)	12 - 30	340 / 20	716.51598 *	039	

for various ignition units				IGNITION ELECTRODES + ELECTRODES CAPS	
Type	Application	Art. No.	Cat. No.		
ZE-8-42-4	machine ignition torches type MZB-A, MZB-PY, MZB-M, MZB-H	716.51505	039		
ZE-8-42-90	torch ignition unit type BZE-K	046.8001	039		
K	ionisation ignition torch ZAI	744.72941 *	039		
ionisation electrode Type K	ionisation ignition torch ZAI	744.72920 *	039		
CK 4	ionisation electrode Type ZAI, MZB	046.2419 *	039		
ZAI	Ignition electrode Type ZAI	041.15306 *	039		
ionisation electrode cap black	ZAI	041.15302 *	039		



Stand: 04/2013

IGNITION TRANSFORMERS

Ignition and monitoring units



Description	Art. No.	Cat. No.
Type WS 155 G/1 Input 24 V, 50 HZ, 400 mA, Output 12.000 V at spark gap 3-7mm, 5 mA at 100 kΩ (short impulse short circuit resistant), Duty cycle 30 % ED, Closed construction type with IP 54 n. IEC 529, Temperature range -20°C to max. 100°C, free built-in length, Weight 0,35 kg, Interference grade N to VDE 0875	047.1008	100103
Type TZI 5/20 T Input 230 V, 50/60 HZ, 550 mA (at 50 Hz), Output 5.000 V 15 mA (at 50 Hz), Duty cycle 20 % ED, Sealed in cast resin IP 20 n. IEC 529, Temperature range -20°C to max. 60°C, free built-in length Weight 0,9 kg, Interference grade N to VDE 0875	052.5077	100103
Accessories: High voltage ignition cable FZLSI 1,0 mm ² 2-pole connection socket for transformer input: 2 AC 250 V AG 2 High voltage ceramic plug CK 4	057.0199 055.0117 046.2419	004 100103 039

THERMOELECTRIC IGNITION



Description	Art. No.	Cat. No.
Safety valve in 90° version max. operating pressure 50 mbar	442.40050 *	039
Safety valve in 90° version max. operating pressure 5 bar	442.40051 *	039
Safety valve in straight version max. operating pressure 50 mbar	442.40052 *	039
Safety valve in straight version max. operating pressure 5 bar		
Thermal element, length 320 mm	465.30363 *	039
Thermal element, length 600 mm	465.30024 *	039
Thermal element, length 750 mm	465.30009 *	039
Thermal element, length 1000 mm	465.30023 *	039
Accessories: Mounting plate, Counter nut, Push button,	465.30196 * 465.30014 * 465.30309 *	039
Consisting of straight safety valve and 600 mm thermal element, mounted on the torch.	716.50935	039
Consisting of 90°-version safety valve and 600 mm thermal element.	716.52280	039
Accessories: Mounting plate, Counter nut, Push button,	465.30196 * 465.30014 * 465.30309 *	039



Flame monitor IFW 50

Ignition and monitoring units		IFW 50 FLAME MONITOR	
Description	Art. No.	Cat. No.	
<p>Technical data:</p> <p>Operating voltage: 230/240 V and 110/120 V 50/60 Hz for earthed and unearthed power.</p> <p>Input power: 4,5 W.</p> <p>Sensor current: <math>< 1\mu A</math> (max. Ionisation 42 $\mu A</math>).$</p> <p>Average switch cycle number 250.00 (depending upon cos. $\varphi</math>).$</p> <p>Output signal 2 contacts (one normally closed and one normally open) max. 2 A.</p> <p>Flame report by LED in the unit.</p> <p>Ambient temperature: -15°C to 60°C.</p> <p>Protection type: IP 40 to IEC 529.</p> <p>built-in length: free</p> <p>Weight: 400 g.</p>	052.0163	039	



(UV monitoring probe (UV probe and connecting tube))

Ignition and monitoring units		UV-MONITORING PROBE UV-S10	
Description	Art. No.	Cat. No.	
<p>Technical data:</p> <p>Spectrum 190 - 270 nm</p> <p>Max. sensitivity at 210 nm = ± 10 nm</p> <p>Min. dc signal is 1 $\mu A</math>$</p> <p>Type of protection IP ?? by IEC 529.</p> <p>10.000 operating hours life expectancy</p>	716.53393	039	

Stand: 04/2013



Pressure monitor DWR

PRESSURE MONITOR DWR Ignition and monitoring units

Type	Adjustment range [bar]	Hysteresis [bar]	max. operating press. [bar]	Art. No.	Cat. No.
1	0,2 - 1,6	0,06	6	716.51607	039
6	0,5 - 6,0	0,2	10	716.51608	039



Control panel for monitoring heating torches

CONTROL PANEL Ignition and monitoring units

Description	Art. No.	Cat. No.
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Technical data:
 Supply voltage: 230 V 50 Hz
 Control voltage: 230 V 50 Hz; 24 V AC and DC
 Size and housing type: depending on the size of the heating installation
 Type of protection: IP53 by IEC 529
 Front side:
 Main switch (Rotary switch)
 Button with white indicator lamp for torch on (Indicator lamp active if feed-back)
 Button with red indicator lamp for fault (Indicator lamp active if fault and simultaneous release after fault cleared)
 Rotary switch for selection manual or automatic operation
 Delayed fuel gas feed in (can be set in software)
 Delayed Oxygen shut-off (can be set in software)
 Underneath:
 Cable screw connections for input and outlet lines

716.50639 * 039



Gas supply panel for heating units

Ignition and monitoring units

GAS SUPPLY PANEL

Description

Art. No.

Cat. No.

Technical data for standard version:

Base-plate is powder coated with dimensions 1250 x 650 x 4 mm

- 1 x Ball valve for oxygen
- 1 x Ball valve for fuel gas
- each 1 x Filter for fuel gas and oxygen
- 2 x Pressure monitor for fuel gas (p max. und p min.)
- 2 x Pressure monitor for oxygen (p max. und p min.)
- 1 x Main gas solenoid valve for fuel gas (24 V, DC)
- 1 x Main gas solenoid valve for oxygen (24 V, DC)
- 1 x Pressure regulator for fuel gas
- 1 x Pressure regulator for oxygen
- 1 x Fuel gas distributor to ignition torch supply
- 1 x Solenoid valve for fuel gas (Main torch) (24 V, DC)
- 1 x Solenoid valve for oxygen (Main torch) (24 V, DC)
- 1 x Flashback with flame arrester type DG 91 N for fuel gas
- 1 x Flashback with flame arrester type DG 91 N for oxygen
- 1 x terminal box

for gases methane/propane (24 V =)

716.51661 *

039

for gases acetylene (24 V =)

716.51662 *

039

for gases methane/propane (230 V / 50 Hz ~)

716.51663 *

039

for gases acetylene (230 V / 50 Hz ~)

716.51664 *

039



Mechanical gas economiser



Electrical gas economiser

GAS ECONOMISER MINITHERM	Ignition and monitoring units	mechanical
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<i>Description</i>	<i>Art. No.</i>	<i>Cat. No.</i>
for lightweight welding and brazing torches with brief, intermittent use. With safety torch rest to prevent torch slipping off mechanically operated valve to shut off the full gas supply, just the ignition flame stays on		
acetylene	716.07014	004
PMY	716.07015	004

GAS ECONOMISER STARLET, STAR AND SUPERTHERM	Ignition and monitoring units	mechanical
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<i>Description</i>	<i>Art. No.</i>	<i>Cat. No.</i>
for lightweight welding and brazing torches with brief, intermittent use. With safety torch rest to prevent torch slipping off mechanically operated valve to shut off the full gas supply, just the ignition flame stays on		
acetylene	716.00140	004
PMY	716.00139	004

Ignition and monitoring units	GAS ECONOMISER ALL HANDLES
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<i>Description</i>	<i>Art. No.</i>	<i>Cat. No.</i>
for lightweight welding and brazing torches (also suitable for high power torches) with brief, intermittent use. With safety torch rest to prevent torch slipping off electrically operated valve to shut off the gas and power supply Electrical ignition when torch picked up Connection lead electrical cabinet to device = 1,4m		
all gases 24 V ~ 50/60 Hz	716.05756	039
all gases 230 V ~ 50/60 Hz	716.05755	039



Example of special production to meet customer requirements

FUNCTION

Quenchable iron materials; Mild or alloy steels with at least 0,3 % Carbon content, can be surface hardened by flame hardening to give wear protection.

The depth of hardening is some 1,0 to 8,0 mm. The depth of hardening is to be influenced by the flame temperature and the heating time.

With mechanical processes shaped torches and quenching basins are used, either working together or in sequence. With simultaneous operation one speaks of feed hardening and with sequential operation of circulation hardening.

VALUES FOR FLAME HARDENING				MATERIAL TABLE	
DIN Reference	Hardening characteristic	C content [%]	Other elements [%]	Tensile strength, tempered [N/mm ²]	Hardening temperature. [°C]
St 50.11	B	≤ 0,35	C content as certified	≥ 50	≥ 860
St 60.11	G	≤ 0,45	C content as certified	≥ 60	≥ 830
St 70.11	B	≤ 0,60	C content as certified	≥ 70	≥ 810
C 35	G	0,32 - 0,39	Mn 0,5 - 0,8; Si 0,4; Cr 0,4;Ni 0,4	600 - 750	840 - 880
C 45	G	0,42 - 0,50	Mn 0,5 - 0,8; Si 0,4; Cr 0,4;Ni 0,4	650 - 800	820 - 860
C 60	B	0,57 - 0,65	Mn 0,6 - 0,9; Si 0,4; Cr 0,4;Ni 0,4	800 - 950	800 - 840
Ck 35	G	0,32 - 0,39	Mn 0,5 - 0,8; Si 0,4; Cr 0,4;Ni 0,4	600 - 750	840 - 880
Ck 45	G	0,42 - 0,50	Mn 0,5 - 0,8; Si 0,4; Cr 0,4;Ni 0,4	650 - 800	820 - 860
Ck 60	B	0,57 - 0,65	Mn 0,6 - 0,9; Si 0,4; Cr 0,4;Ni 0,4	750 - 1000	800 - 830
37 Mn Si 5	G	0,33 - 0,41	Mn 1,1 - 1,4; Si 1,1 - 1,4	80 - 95	830 - 850
53 Mn Si 4	B	0,50 - 0,57	Mn 0,8 - 1,0; Si 0,8 - 1,0	80 - 95	820 - 850
42 Mn V 7	G	0,38 - 0,45	Mn 1,6 - 1,9; V 0,07 - 0,12	90 - 105	840 - 860
34 Cr Mo 4	G	0,30 - 0,37	Mn 0,6 - 0,9; Mo 0,15 - 0,3	750 - 1200	830 - 860
42 Cr Mo 4	G	0,38 - 0,45	Mn 0,9 - 1,2; Mo 0,15 - 0,3	800 - 1300	820 - 860
50 Cr v 4	G	0,47 - 0,55	Cr 0,9 - 1,2; V 0,1 - 0,25	850 - 1300	820 - 840
GS - 52	B	0,30 - 0,35	Mn 0,40 - 0,80	≥ 520	830 - 850
GG - 20	B	3,20 - 3,40	Mn 0,7 - 1,0; Si 2,0 - 2,4	≥ 200	840 - 860
GG - 25	B	2,90 - 3,10	Mn 0,8 - 1,1; Si 1,8 - 2,1	≥ 250	840 - 860
GG - 30	G	2,90 - 3,10	Mn 0,8 - 1,1; Si 1,6 - 1,9	≥ 300	840 - 860

Hardening characteristics: B = possibly suitable; G = good suitability

The given values are for guidance only and must be checked separately for each application.

SOLENOID VALVES

VARIOUS TYPES



2/2 way valve for acetylene and MAPP with DN 12 (Medium temp. -10 to +50)

2/2 way valve for Propane/methane with DN 8 (Medium temp. -20 to +60)

2/2 way valve for Propane/methane with DN 15 (Medium temp. -20 to +60)

for various Media									SOLENOID VALVES	
Nominal bore [DN]	Pressure range [bar]	Ambient temp. [°C]	Medium	Max. flow [m³/h]	Inner thread	Sealing material	Housing material	Operating voltage	Art. No.	Cat. No.
10	0 - 10	max. 55	A	1,7	G 1/2"	NBR Perbunan	Brass PA 66	24 V =	716.03240	039
10	0 - 10	max. 55	A	1,7	G 1/2"	NBR Perbunan	Brass PA 66	24 V ~	716.03241	039
10	0 - 10	max. 55	A	1,7	G 1/2"	NBR Perbunan	Brass PA 66	230 V ~	716.03242	039
12	0 - 10	max. 50	H + O ₂	3,4	G 1/2"	Viton	Brass PA 66	24 V =	064.7469	039
12	0 - 10	max. 50	H + O ₂	3,4	G 1/2"	Viton	Brass PA 66	24 V ~	034.6588	039
12	0 - 10	max. 50	H + O ₂	3,4	G 1/2"	Viton	Brass PA 66	230 V ~	65.9509	039
8	0 - 1,8	-20 - +60	PM	0,28	Rp 1/4"	NBR Perbunan	ALU-pressure cast	24 V =	716.51619	039
8	0 - 1,8	-20 - +60	PM	0,28/	Rp 1/4"	NBR Perbunan	ALU-pressure cast	230 V ~	716.51620	039
15	0 - 0,1	-20 - +60	PM	2,6	Rp 1/2"	NBR Perbunan	ALU-pressure cast	24 V =	716.53456	039
15	0 - 1,8	-20 - +60	PM	2,6	Rp 1/2"	NBR Perbunan	ALU-pressure cast	230 V ~	716.51622	039

A = acetylene
 PM = propane / methane
 H = hydrogen
 O₂ = oxygen

The valves are suitable for continuous operation and can be incorporated wherever required



Filter F11



Filter GFK

F 11 UND GFK		Filter						
Type	Nominal bore [DN]	max. inlet pressure [bar]	Medium	Inner thread	Length w/o handle [mm]	Housing material	Art. No.	Cat. No.
F 11	11	300	O ₂ / PMYE	G 1/2"	71	Messing	717.09405	039
GFK 25	25	4	PML	Rp 1	135	Aluminium	716.51628	039

A = acetylene
 PM = propane / methane
 O₂ = oxygen
 L = lighting gas



for the flexible supply of welding, cutting and heating torches

VARIOUS DESIGNS

Medium	Inner-Ø [mm]	Wall thickness [mm]	max. operating pressure [bar]	Colour	Norm	Art. No.	Cat. No.
O ₂	3,2	1,8	10	blue	EN ISO 3821	014.0079	043
O ₂	6,3	5,0	20	blue	EN ISO 3821	051.01010	043
O ₂	8,0	3,5	20	blue	EN ISO 3821	046.9033	000
O ₂	9,0	5,5	20	blue	EN ISO 3821	051.01060	043
O ₂	11,0	5,5	20	blue	EN ISO 3821	051.01200	043
A, M, H	3,2	1,8	10	red	EN ISO 3821	014.0078	043
A, M, H	6,3	3,5	10	red	EN ISO 3821	051.00010	043
A, M, H	9,0	3,5	10	red	EN ISO 3821	051.00040	043
A, M, H	11,0	3,5	10	red	EN ISO 3821	051.00050	100103
A, M, H	12,5	4,0	10	red	EN ISO 3821	051.00130	043
D, H ₂ O	6,0	4,0	18	black		051.01070	043
AH/ PMYE	6,0	3,5	20	red/orange	EN ISO 3821	046.2863	043
AH/ PMYE	8,0	3,5	20	red/orange	EN ISO 3821	046.2859	043
AH/ PMYE	10,0	4,0	20	red/orange	EN ISO 3821	046.2860	043

A = acetylene
 D = compressed air
 H = hydrogen
 P = propane
 M = methane
 Y = MAPP
 L = lighting gas
 O₂ = oxygen
 H₂O = water
 E = ethylene



Customised all fuel gas hoses (rubber hoses with fabric reinforcement)

VARIOUS CUSTOMISED ASSEMBLIES for the flexible supply of welding, cutting and heating torches

<i>Medium</i>	<i>Nominal bore [DN]</i>	<i>Cap nuts</i>	<i>max. operating pressure [bar]</i>	<i>Norm</i>	<i>Art. No. hoses complete.</i>	<i>Art. No. hoses per m</i>	<i>Cat. No.</i>
AH/ PMYE	6	G 3/8" LH		EN ISO 3821	716.51609	716.51610	043
AH/ PMYE	9	G 3/8" LH		EN ISO 3821	716.51611	71651512	043
AH/ PMYE	11	G 1/2" LH		EN ISO 3821	716.51613	716.51614	043
O ₂	6	G 1/4		EN ISO 3821	716.51615	716.51616	043
O ₂	9	G 3/8"		EN ISO 3821	716.51617	716.51618	043

A = acetylene
 H = hydrogen
 P = propane
 M = methane
 Y = MAPP
 L = lighting gas
 E = ethylene

ADJUSTING VALVES

FOR ALL OXYFUEL GASSES



Adjusting valve, one side external thread, other side union nut



Colour coded for medium, here Oxygen

for torches with shafts							VARIOUS DESIGNS	
Nominal bore [DN]	Version	Medium	Length [mm]	Height [mm]	Max. operating pressure [bar]	Thread	Art. No.	Cat. No.
2	1	AH/PMYE	63	42	25	G 1/4" LH	718.00874	005
6	1	O ₂	60	45	40	G 1/4"	718.00500	005
8	1	AH/PMYE	85	58	25	G 1/2" LH	718.00855	005
9	1	AH/PMYE	60	45	40	G 3/8" LH	718.00502	005
9	1	O ₂	60	45	40	G 3/8"	718.00501	005
11	1	O ₂	81	62	40	G 1/2"	160.09720	005
13	2	AH/PMYE	104	110	40	G 3/4" LH	*	005
15	1	AH/PMYE	107	105	40	G 3/4" LH	*	005

Version 1 Inlet = external thread, Outlet = union nut

Version 2 Inlet = union nut, Outlet = external thread

Medium Oxygen has blue colour code

All fuel gasses have red colour code

A = acetylene

H = hydrogen

P = propane

M = methane (natural gas)

Y = MAPP®

E = ethylene



Safety unit with asymmetric connections



Safety unit type GG

VARIOUS DESIGNS for assembly on the gas take-off point or at the torch

Type	Medium	Thread	Location	Flow rate is [m ³ /h] with an inlet pressure of 0,3 to 5,0 bar	Art. No.	Cat. No.
GG 91	AH/PMYE	G 3/8" LH	Handle	1,81 - 23,00	046.3284	041
GG 91	O ₂	G 1/4"	Handle	1,81 - 23,00	046.3285	041
DG 91 UA	AH/PMYE	G 3/8" LH	Handle	6,50 - 57,70	046.3370	041
DG 91 UA	AH/PMYE	G 1/2" LH	Handle	6,50 - 57,70	046.3371	041
DG 91 UA	O ₂	G 3/8"	Handle	6,50 - 57,70	046.3373	041
DG 91 UA	O ₂	G 1/2"	Handle	6,50 - 57,70	046.3374	041
DGN	AH/PMYE	G 3/8" LH	Gas take-off point	2,35 - 33,00	046.3282	041
DGN	O ₂	G 1/4"	Gas take-off point	2,35 - 33,00	046.3283	041
DG 91 N	AH/PMYE	G 3/8" LH	Gas take-off point	3,50 - 45,00	046.3290	041
DG 91 N	AH/PMYE	G 1/2" LH	Gas take-off point	3,50 - 45,00	046.3329	041
DG 91 N	O ₂	G 1/4"	Gas take-off point	3,50 - 45,00	046.3291	041
DG 91 N	O ₂	G 3/8"	Gas take-off point	3,50 - 45,00	046.3330	041
DG 91 N	O ₂	G 1/2"	Gas take-off point	3,50 - 45,00	046.3331	041

A = acetylene

H = hydrogen

P = propane

M = methane (natural gas)

Y = MAPP®

E = ethylene

The types DGN and DG 91 N are equipped with additional flash-back arrestors.

THREADED CONNECTORS

VARIOUS DESIGNES

for connecting shut-off, control and measuring fittings

CONICAL EXTERNAL THREAD
AND UNION NUT

External thread	Thread on union nut	Art. No.	Cat. No.
R 1/4	G 1/4"	716.51603	039
R 1/4	G 1/4" LH	716.51604	039
R 1/4	G 3/8"	716.51605	039
R 1/4	G 3/8" LH	716.50683	039
R 1/2	G 1/4"	716.04592	039
R 1/2	G 1/4" LH	716.04593	039
R 1/2	G 3/8"	716.04594	039
R 1/2	G 3/8" LH	716.04595	039
R 1/2	G 1/2"	716.04596	039
R 1/2	G 1/2" LH	716.04597	039



for connecting shut-off, control and measuring fittings

DOUBLE ENDED
OUTER THREAD

1 ST external thread	2 ND external thread	Art. No.	Cat. No.
R 1/4	G 1/4"	753.00276	039
R 1/4	G 1/4" LH	716.02501	039
R 1/4	G 3/8"	716.51606	999
R 1/4	G 3/8" LH	716.50684	039
R 1/2	G 1/4"	716.02502	039
R 1/2	G 1/4" LH	716.02503	039
R 1/2	G 3/8"	716.02504	039
R 1/2	G 3/8" LH	716.02505	039
R 1/2	G 1/2"	721.02013	11600
R 1/2	G 1/2" LH	721.02012	11600



Conical external thread to DIN EN 10226-1
Cylindrical thread to DIN EN 560

THREADED CONNECTORS

VARIOUS DESIGNES

ANGLE CONNECTIONS 90°

for connecting shut-off, control and measuring fittings



External thread	Thread, union nut	Art. No.	Cat. No.
G 1/4"	G 1/4"	718.26666	100103
G 1/4" LH	G 1/4" LH	718.26669	039
G 3/8"	G 3/8"	718.26667	100103
G 3/8" LH	G 3/8" LH	718.26670	100103
G 1/2"	G 1/2"	718.26668	039
G 1/2" LH	G 1/2" LH	718.26671	039

DOUBLE ENDED THREADED CONNECTORS

for connecting shut-off, control and measuring fittings



1 ST outer thread	2 nd outer thread	Internal bore Ø [mm]	Art. No.	Cat. No.
G 1/4"	G 1/4"	7	718.26006	043
G 1/4" LH	G 1/4" LH	7	716.50376	039
G 3/8"	G 3/8"	10	701.01361	999
G 3/8" LH	G 3/8" LH	10	718.26008	043
G 1/2"	G 1/2"	12	721.02088	100101
G 1/2" LH	G 1/2" LH	12	723.23165	100103
G 3/4"	G 3/4"	16	732.03829	100000
G 3/4" LH	G 3/4" LH	16	723.08249	100101
G 1	G 1	22	732.03830	100000

Cylindrical thread to DIN EN 560

T- AND DISTRIBUTOR PIECES

VARIOUS DESIGNES

for the connection of test guages

T-PIECE

<i>External thread</i>	<i>Thread – Union nut</i>	<i>Thread - gauge</i>	<i>Art. No.</i>	<i>Cat. No.</i>
G 1/4"	G 1/4"	G 1/4"	718.25530 *	004
R 3/8"	R 3/8"	R 3/8"	718.25532 *	004
R 3/8" LH	R 3/8" LH	R 3/8" LH	718.25534 *	004
G 1/2"	G 1/2"	G 1/2"	718.25536 *	999



to divide into two gas flows including hose tail

VERTEILERSTÜCK

<i>Both external threads</i>	<i>Union nut</i>	<i>Medium</i>	<i>Art. No.</i>	<i>Cat. No.</i>
R 3/8" LH	R 3/8" LH	Fuel gas	512.11602	038
G 1/4"	G 1/4"	Oxygen	512.11653	038



GAUGE

according to ISO 5171



Connection thread	Pressure range [bar]	Medium	Red mark at	Art. No.	Cat. No.
G 1/4" B	0 - 2,5	O ₂	1,5	064.0114	008
G 1/4" B	0 - 4,0	O ₂	2,5	064.0113	008
G 1/4" B	0 - 6,0	O ₂	4,0	064.0112	008
G 1/4" B	0 - 16,0	O ₂	10,0	064.0477	008
G 1/4" B	0 - 25,0	O ₂	16,0	064.0109	008
G 1/4" B	0 - 2,5	A	1,5	064.0479	008
G 1/4" B	0 - 2,5	PMYE	1,5	064.0070	008
G 1/4" B	0 - 4,0	PMYE	2,5	064.0069	008
G 1/4" B	0 - 6,0	PMYE	4,0	064.0068	008
G 1/4" B	0 - 16,0	PMYE	10,0	064.0066	008
G 1/4" B	0 - 25,0	PMYE	16,0	064.0065	008

BRAZING NIPPLE PN 40

VARIOUS VERSIONS



Brazing nipple type K-I



Brazing nipple type K-A

Brazing nipple, DIN EN 560						PN 40
Type	Matching union nut	Overall length [mm]	Internal bore Ø [mm]	Depth of pipe guide [mm]	Art. No.	Cat. No.
K-I	G 1/2"	30,5	9,0	7,0	677.01036	071
K-A	G 1/4"	25,0	5,0	5,0	717.00625	071
K-A	G 3/8"	33,0	8,0	6,0	549.34050	071
K-A	G 1/2"	34,0	10,0	8,0	676.51514	071
K-A	G 3/4"	41,0	13,6	8,0	512.14570	071

BRAZING NIPPLE PN 40

VARIOUS VERSIONS

BRAZING THREADED CONNECTIONS

DIN EN 560, as end piece for pipes



<i>External thread</i>	<i>Overall length [mm]</i>	<i>Shaft Internal bore Ø [mm]</i>	<i>Spanner size</i>	<i>Art. No.</i>	<i>Cat. No.</i>
G 1/4"	19,5	6,1	14	677.01019 *	004
G 3/8"	23,0	10,1	17	471.70980	008
G 3/8" LH	23,0	11,0	17	716.50064	006
G 1/2"	26,0	11,1	22	716.50063	006

Union nuts, DIN EN 560

PN 40

<i>Inner thread</i>	<i>Overall length[mm]</i>	<i>Shaft Internal bore Ø [mm]</i>	<i>Spanner size</i>	<i>Art. No.</i>	<i>Cat. No.</i>
G 1/4"	15,5	9,5	17	700.50030	008
G 1/4" LH	15,5	9,5	17	471.30250	004
G 3/8"	16,5	12,5	19	700.50130	008
G 3/8" LH	16,5	12,5	19	700.50040	008
G 1/2"	20,5	14,5	24	286.256	008
G 1/2" LH	20,5	14,5	24	286.27	008
Sealing nipple for union nut G 1/4"				471.21140	004
Sealing nipple for union nut G 3/8"				471.21150	999



PN 40

DIN EN 560, for the connection and joining of hoses



<i>Hose nominal bore [mm]</i>	<i>Size of union nut</i>	<i>Internal bore Ø [mm]</i>	<i>Art. No.</i>	<i>Cat. No.</i>
3,2	G 1/4"	2,0	716.01160	008
3,2	G 3/8"	2,0	716.01161	008
4,0	G 1/4"	3,4	471.40820*	008
4,0	G 3/8"	3,4	471.40830*	008
6,0	G 1/4"	4,9	700.50050	008
6,0	G 3/8"	4,9	700.50060	008
6,0	G 1/2"	4,9	749.114	008
8,0	G 3/8"	6,9	471.40770	008
9,0	G 3/8"	7,9	471.40090	008
9,0	G 1/2"	7,9	749.111	-
11,0	G 1/2"	9,8	471.40230	040
13,0	G 1/2"	11,8	702.03581	006
Hose clamps for MINITHERM one tube version for hoses with Ø 3,2 x 1,8 mm			080.0487	043