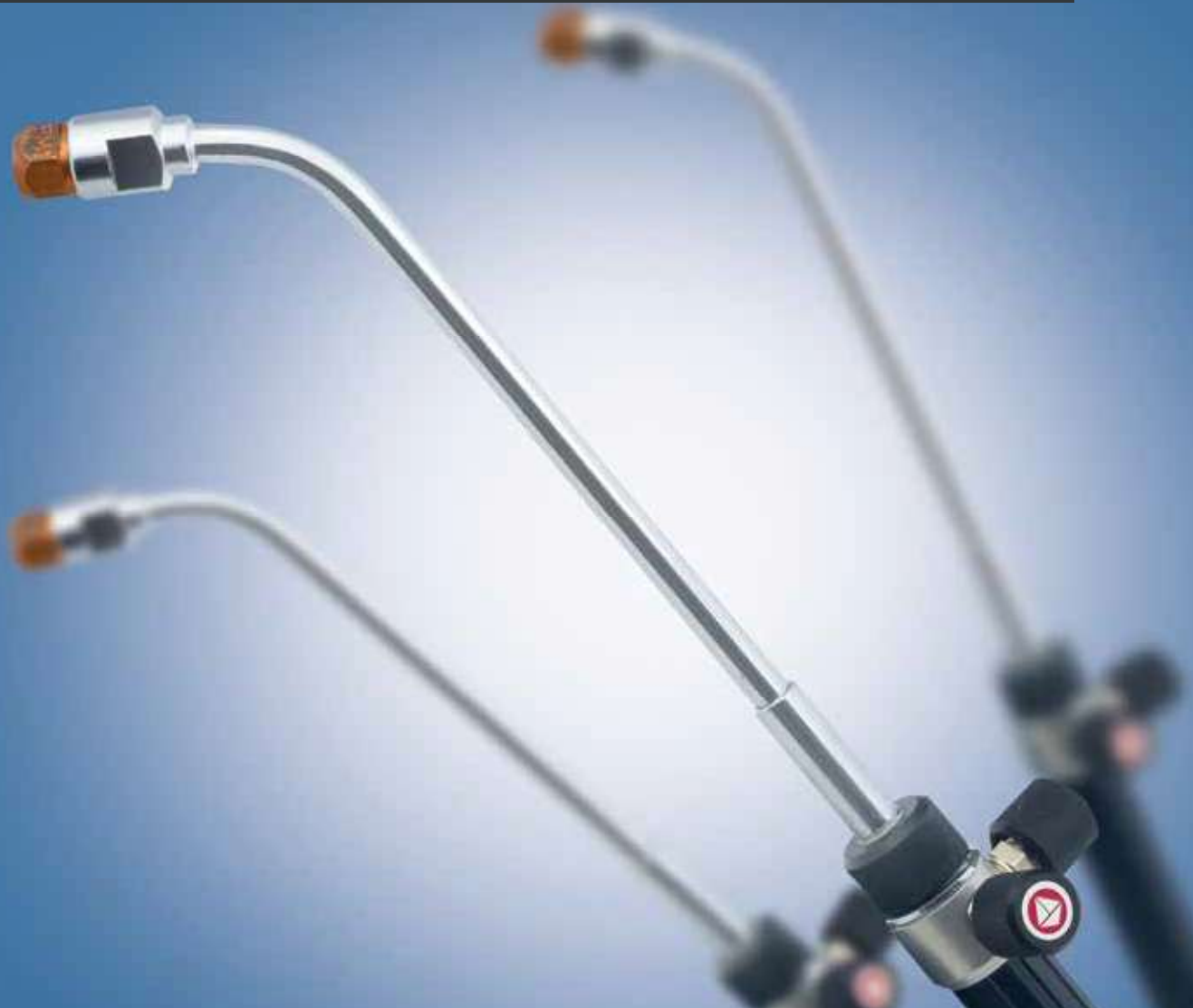


**MINITHERM®**  
MESSER CUTTING SYSTEMS



# MINITHERM®

## The featherweight welding and heating torch

The MINITHERM® torch range has been developed to meet the need of trade and industry for a small injector torch to handle special jobs.

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A large number of torch inserts with the most different flame characteristics and flame powers offer a universal, well rounded, broad spectrum of applications from the micro flame which is hardly visible to the naked eye right up to powerful welding flames.

In contrast to conventional hand gas torches, the drastically lower weight of the handle and inserts allows fatigue-free continuous work over long periods.

This is especially important in pipe-line work, in production of jewellery, dental laboratories and fine engineering as well as in mass production of hand welded, hand brazed or heated components.

Welding, brazing and heating in difficult positions and hard to reach locations can usually be carried out with adequate freedom of movement and control to give high quality results due to the small size of the handle and the various inserts.

Furthermore, the MINITHERM® Hand-Cutting-Torch allows you to cut metal sheets up to 25mm material thickness.

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### The MINITHERM® torch range includes the following products:

- Handles and shafts
  - Heating-Inserts (needle, micro, standard)
  - Ring-Torches
  - Forked-Torches
  - Cutting-Torches
  - Accessories
- 

In addition to this, our experienced staff will be happy to assist you and can also support in case of special requests. Please do not hesitate to contact us.

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<b>Handle</b>	
MINITHERM	3
<b>Heating inserts and spare nozzles</b>	
Overall view: max. flame power [kW] – Heating inserts	4 – 5
MINITHERM – Needle inserts	6
MINITHERM - Micro-inserts	7
MINITHERM Z-PM	8
MINITHERM Z-A	9
MINITHERM FKZ-PMY	10
MINITHERM FK/FKZ-AH; MINITHERM B3-AH	11
MINITHERM ZD-PM	12
MINITHERM: Pipe welding inserts (flexible)	13
MINITHERM Accessories: Table torch holder	14
MINITHERM: Glass nozzle heads with threaded clamping rings	15
<b>Forked torches and spare nozzles</b>	
MINITHERM FKZ-PMY; FKZ-AH	16
MINITHERM Z-PMYE; Z-AH	17
<b>Ringtorches</b>	
MINITHERM C-PMY; C-A	18 – 19
<b>Handcutting torch and Cutting nozzles</b>	
MINITHERM 2207; A-BF, A-BK; PB-K-PMY	20
<b>Ignition units for hand torches</b>	
Mechanical gas economizer; Electrical gas economiser	21 – 22
<b>Accessories</b>	
Shaft; Adjustment valves; Distribution pieces	23
Safety devices; Euro hose couplings	24
Cylinder pressure regulators CONSTANT	25
Double thread connections; 90° angle connections; Spare-parts, Hoses	26

Handle MINITHERM



Handle MINITHERM with 3m hoses



### Version:

- MINITHERM handle with shaped grip for a secure grip position.
- One-handed operation thanks to V shaped valve arrangement.
- Fine adjustment spindles in Oxygen and fuel gas valves.
- Can be used with all fuel gasses.

### Application:

- For use with brazing heating and welding inserts type MINITHERM with Fuel gas/Oxygen or fuel gas/compressed air.

### Technical Data:

Type MINITHERM	Weight [g]	Grip Ø [mm]	Grip length: [mm] (without hose tails)	Connections – Ø Hose tail	
				Oxygen / Compressed air	Fuel gas
Without hoses	77	16	120	3,2 mm	3,2 mm

### Handle complete with 3m hoses:

Hose connections EH	390	16	120	G1/4" RH	G3/8" LH
Hose connections BH	390	16	120	G3/8" RH	G3/8" LH
Hose connections FH	390	16	120	M16x1,5 RH	M16x1,5 LH

### Part Numbers:

Handle Type	Handle without hoses	Handle with 3m hose-pack
Standard	71606109	-
With hanging knob	71605770	-
Chemically Nickel plated	71651665	-
Hose connections EH	-	71606111
Hose connections BH	-	71606112
Hose connections FH	-	71606114

Spare parts and hoses you will find on page 26

Handle MINITHERM fitted with other hose lengths available on request.

Max. flame power [KW] – overall view brazing-, welding- and heating inserts:						
Connection	Type	Propane	Methane	Acetylene	Part No.	Page
<b>MINITHERM: Propane, Methane / Oxygen – single-hole nozzles</b>						
MINITHERM	Z-PM 00	0,34	0,21	-	71600988	8
MINITHERM	Z-PM 0	0,52	0,36	-	71600989	8
MINITHERM	Z-PM 1	1,07	0,84	-	71600990	8
MINITHERM	Z-PM 2	2,00	1,86	-	71600991	8
MINITHERM	Z-PM 3	3,09	2,88	-	71600992	8
<b>MINITHERM: Acetylene / Oxygen – single-hole nozzles</b>						
MINITHERM	Z-A 00	-	-	0,87	71600978	9
MINITHERM	Z-A 0	-	-	1,14	71600979	9
MINITHERM	Z-A 1	-	-	2,37	71600980	9
MINITHERM	Z-A 2	-	-	4,51	71600981	9
MINITHERM	Z-A 3	-	-	6,96	71600982	9
<b>MINITHERM: Propane, Methane / Oxygen – multi hole nozzles</b>						
MINITHERM	FKZ-PMY 1	2,42	1,94	-	71650804	10
MINITHERM	FKZ-PMY 2	2,91	2,32	-	71650805	10
MINITHERM*	FK-PMY 6*	9,62	7,78	-	71651639	10
<b>MINITHERM: Acetylene / Oxygen – multi hole nozzles</b>						
MINITHERM	FKZ-AH 1	-	-	5,06	71650808	11
MINITHERM	FKZ-AH 2	-	-	6,01	71650809	11
MINITHERM	FK-AH 3	-	-	7,75	71650810	11
<b>MINITHERM: Acetylene / Oxygen – single-hole nozzles</b>						
MINITHERM	B3-AH	-	-	6,96	71604348	11
<b>MINITHERM: Propane, Methane / Compressed air– single-hole nozzles</b>						
MINITHERM	ZD 8/2 PM	0,25	0,20	-	71651600	12
MINITHERM	ZD 11/4 PM	0,78	0,63	-	71651602	12
<b>MINITHERM: Acetylene / Oxygen – single-hole nozzles single-hole nozzles, flexiblebar</b>						
MINITHERM	Z-A 2	-	-	2,85	71651834	13
MINITHERM	Z-A 3	-	-	5,06	71651835	13
<b>Max. flame power [KW] – overall view Forked torches:</b>						
<b>MINITHERM: Propane, Methane / Oxygen – multi hole nozzles</b>						
MINITHERM	FKZ-PMY 1	4,86	4,27	-	71650828	16
MINITHERM	FKZ-PMY 2	5,82	4,64	-	71650829	16
<b>MINITHERM: Acetylene / Oxygen – multi hole nozzles</b>						
MINITHERM	FKZ-AH 1	-	-	10,06	71650820	16
MINITHERM	FKZ-AH 2	-	-	11,61	71650821	16
<b>MINITHERM: Propane, Methane / Oxygen – single-hole nozzles</b>						
MINITHERM	Z-PMYE 000	0,26	0,21	-	71650467	17
MINITHERM	Z-PMYE 00	0,44	0,36	-	71650468	17
MINITHERM	Z-PMYE 0	0,96	0,78	-	71650469	17
MINITHERM	Z-PMYE 1	2,08	1,66	-	71650470	17
MINITHERM	Z-PMYE 2	3,95	3,15	-	71650471	17
MINITHERM	Z-PMYE 3	6,11	4,86	-	71650472	17
<b>* Stainless steel mixing tube</b>						

Max. flame power [KW] – overall view Forked torches:						
Connection	Type	Propane	Methane	Acetylene	Part No.	Page
<b>MINITHERM: Acetylene / Oxygen – single-hole nozzles</b>						
MINITHERM	Z-AH 00	-	-	1,03	71650463	17
MINITHERM	Z-AH 0	-	-	2,01	71650464	17
MINITHERM	Z-AH 1	-	-	4,32	71650465	17
MINITHERM	Z-AH 2	-	-	8,19	71602560	17
MINITHERM	Z-AH 3	-	-	12,65	71650466	17
<b>Max. flame power [KW] – overall view Ring torches:</b>						
<b>MINITHERM C: Propane, Methane / Oxygen</b>						
MINITHERM	C2-PMY-36-5	2,11	1,69	-	71650917	18
MINITHERM	C3-PMY-55-7	3,35	2,68	-	71650919	18
MINITHERM	C3-PMY-75-7	3,35	2,68	-	71650921	18
MINITHERM	C3-PMY-90-8	3,35	2,68	-	71650923	18
<b>MINITHERM C: Acetylene / Oxygen</b>						
MINITHERM	C2-A-36-3	-	-	4,38	71650915	18
MINITHERM	C2-A-36-5	-	-	4,38	71650916	18
MINITHERM	C3-A-55-7	-	-	6,97	71650918	18
MINITHERM	C3-A-75-7	-	-	6,97	71650920	18
MINITHERM	C3-A-90-8	-	-	6,97	71650922	18

Needle insert MINITHERM G3



Injector MINITHERM G



### Version:

- One piece injector (Messing chromed) with cone connection adapter for micro needle inserts Type G. The one-piece needle insert consists of a Luer Lock brass cone adaptor piece, Nickel plated, with a brazed capillary tube stainless steel nozzle.
- Fits all handles type MINITHERM.

### Application:

- Processing fine sheets in toy and model building.
- Production of jewellery, dental products and small components.
- Processing printed circuits and wire in the electro industry.

### Operating data for gas type: Hydrogen (H) / Oxygen

Type	Pressure [bar]		Consumption [l/h]	
	Oxygen	Hydrogen	Oxygen	Hydrogen (H)
G1 H	0,5 - 1,5	> 1,0	9 - 15	25 - 42
G2 H	0,5 - 1,5	> 1,0	9 - 15	25 - 50
G3 H	0,5 - 2,0	> 0,5	9 - 21	25 - 67
G4 H	0,5 - 3,0	> 0,5	9 - 24	25 - 75

### Operating data for Gas types: Propane (P), Methane (M), MAPP (Y) / Oxygen

	Oxygen	(P M Y)	Oxygen	(P)	(M)	(Y)
G2-PMY	0,5 - 1,5	> 1,0	9 - 15	2,5 - 4,0	5,6 - 9,4	3,3 - 4,6
G3-PMY	0,5 - 2,0	> 0,5	9 - 21	2,5 - 5,6	5,6 - 13,1	3,3 - 7,8
G4-PMY	0,5 - 3,0	> 0,5	9 - 24	2,5 - 6,4	5,6 - 15,0	3,3 - 8,9
G5-PMY	0,5 - 3,5	> 0,5	9 - 27	2,5 - 7,2	5,6 - 16,9	3,3 - 10,0

### Part Numbers:

Type	Insert (Length: 41 mm)	Accessories		
		Injector Type G	O-Ring 7x1,5	O-Ring 2,5x1,2
G1 H	71605795	71650811	67330008	67330009
G2 H/PMY	71605796	71650811	67330008	67330009
G3 H/PMY	71605797	71650811	67330008	67330009
G4 H/PMY	71605798	71650811	67330008	67330009
G5 PMY	71605799	71650811	67330008	67330009

Micro insert MINITHERM



Injector MINITHERM for Micro insert



### Version:

- Single piece injector (chromed brass) with threaded connection adaptor for micro inserts Type M. Copper inserts with hammered nozzle.
- Fits all handles type MINITHERM.

### Application:

- Processing fine sheets in toy and model building.
- Production of jewellery, dental products and small components.
- Processing printed circuits and wire in the electro industry.

### Operating data for gas type: Acetylene (A), Hydrogen (H) / Oxygen

Type	Pressure [bar]		Consumption [l/h]		
	Oxygen	(A H)	Oxygen	(A)	(H)
MG-AH 2	0,2 - 0,5	> 0,5	6 - 9	6 - 9	17 - 25
MG-AH 3	0,5 - 1,5	> 0,5	9 - 15	9 - 15	25 - 42
MG-AH 4	0,5 - 0,8	> 0,5	32 - 39	32 - 39	89 - 108
MG-AH 5	0,8 - 1,0	> 0,5	39 - 43	39 - 43	108 - 120
MG-AH 6	1,0 - 1,5	> 0,5	43 - 54	43 - 54	120 - 150
MG-AH 7	1,5 - 2,5	> 0,5	54 - 76	54 - 76	150 - 210

### Operating data for gas type: Propane (P), Methane (M), MAPP (Y) / Oxygen

	Oxygen	(P M Y)	Oxygen	(P)	(M)	(Y)
MG-PMY 4	1,0 - 2,5	> 0,5	12 - 21	3 - 6	8 - 13	4 - 8
MG-PMY 5	2,0 - 4,0	> 0,5	18 - 30	5 - 8	11 - 19	6 - 11
MG-PMY 6	1,0 - 2,5	> 0,5	43 - 76	11 - 20	27 - 48	15 - 27
MG-PMY 7	2,0 - 3,5	> 0,5	65 - 98	17 - 26	41 - 60	23 - 35

### Part Numbers:

### Accessories

Type	Insert (Length: 38 mm)	Injector (A H)	Injector (P M Y)	O-Ring 7x1,5	O-Ring 2,5x1,2
MG-AH 2	71605783	71650813	-	67330008	67330009
MG-AH 3	71605784	71650813	-	67330008	67330009
MG-AH/PMY 4	71605785	71650814	71650813	67330008	67330009
MG-AH/PMY 5	71605786	71650814	71650813	67330008	67330009
MG-AH/PMY 6	71605787	71650814	71650814	67330008	67330009
MG-AH/PMY 7	71605788	71650814	71650814	67330008	67330009



Heating insert MINITHERM Z-PM



### Version:

- Chromed brass injector with O-Ring handle seals.
- Pacified Copper heating nozzle (alternatively: chemically Nickel plated), with hammered mouthpiece.
- With central flame outlet (single jet nozzle) and mixing system (injector) using under pressure mixing principle.
- Fits all handles type MINITHERM.

### Application:

- Heating and brazing applications even in out of position and hard to access places. Welding only with Acetylene.
- Production of jewellery, dental products and small components.
- Mass production hand-made or heat treated work-pieces.

### Operating data for gas type: Propane (P), Methane (M) / Oxygen

Type	Pressure [bar]			Consumption [l/h]		
	Oxygen	Propane (P)	Methane (M)	Oxygen	Propane (P)	Methane (M)
Z-PM 00	0,5 - 2,5	> 0,2	> 0,1	20 - 55	6 - 13	15 - 24
Z-PM 0	0,5 - 2,5	> 0,2	> 0,1	28 - 72	8 - 20	21 - 41
Z-PM 1	0,5 - 2,5	> 0,2	> 0,1	58 - 150	16 - 41	43 - 95
Z-PM 2	1,0 - 2,5	> 0,2	> 0,1	155 - 285	42 - 77	115 - 211
Z-PM 3	1,0 - 3,0	> 0,2	> 0,1	215 - 440	58 - 119	159 - 326

### Part Numbers:

Type	Insert compl. with Copper nozzle	Insert compl. Chemically Nickel plated	Heating nozzle Copper	Spare Parts		
				Injector chromed	O-Ring 7x1,5	O-Ring 2,5x1,2
Z-PM 00	71600988	71650401	71600993	71600998	67330008	67330009
Z-PM 0	71600989	71650402	71600994	71600999	67330008	67330009
Z-PM 1	71600990	71650403	71600995	71601001	67330008	67330009
Z-PM 2	71600991	71650404	71600996	71601002	67330008	67330009
Z-PM 3	71600992	71650405	71600997	71601003	67330008	67330009

### MINITHERM KIT:



Comprising MINITHERM handle with connected hoses, 3m long, connections G1/4"RH for Oxygen and G3/8"LH for fuel gas and five inserts type PM sizes 00 to 3 in a plastic case.

### Technical Data

Insert	Length	Part No.
Z-PM 0	123 mm	
Z-PM 1	133 mm	
Z-PM 2	143 mm	
Z-PM 3	153 mm	

Other lengths available on request.

Heating Insert MINITHERM Z-A



**Version:**

- Chromed brass injector with O-Ring handle seals.
- Pacified Copper heating nozzle (alternative: chemically Nickel plated), with hammered mouthpiece.
- With central flame outlet (single jet nozzle) and under pressure mixing system (injector).
- Fits all handles type MINITHERM.

**Application:**

- Heating and brazing applications even in out of position and hard to access places. Welding only with Acetylene.
- Production of jewellery, dental products and small components.
- Mass production hand-made or heat treated work-pieces.

**Operating data for gas type: Acetylene (A) / Oxygen**

Type	Pressure [bar]		Consumption [l/h]	
	Oxygen	Acetylene (A)	Oxygen	Acetylene (A)
Z-A 00	0,5 - 2,5	> 0,2	20 - 55	20 - 55
Z-A 0	0,5 - 2,5	> 0,2	28 - 72	28 - 72
Z-A 1	0,5 - 2,5	> 0,2	58 - 150	58 - 150
Z-A 2	1,0 - 2,5	> 0,2	155 - 285	155 - 285
Z-A 3	1,0 - 3,0	> 0,2	215 - 440	215 - 440

**Part Numbers:**

**Spare Parts**

Type	Insert complete with Copper nozzle	Insert complete chemically Nickel plated	Heating nozzle Copper	Injector Chrome plated	O-Ring 7x1,5	O-Ring 2,5x1,2
Z-A 00	71600978	71650394	71600983	71600998	67330008	67330009
Z-A 0	71600979	71650395	71600984	71600999	67330008	67330009
Z-A 1	71600980	71650396	71600985	71601001	67330008	67330009
Z-A 2	71600981	71650397	71600986	71601002	67330008	67330009
Z-A 3	71600982	71650398	71600987	71601003	67330008	67330009

**MINITHERM Kit:**

**Technical Data**

**Part No.**



Comprising MINITHERM handle with connected hoses, 3m long, connections G1/4"RH for Oxygen and G3/8"LH for fuel gas and five inserts type A sizes 00 to 3 in a plastic case.

Insert	Length	71601407
Z-A 00	113 mm	
Z-A 0	123 mm	
Z-A 1	133 mm	
Z-A 2	143 mm	
Z-A 3	153 mm	

Other lengths available on request (not as kit in case).

Heating Insert MINITHERM FKZ-PMY 1 and 2



**Version FKZ-PMY 1 and FKZ-PMY 2:**

- Brass, chromed insert.
- Interchangeable Copper multi-jet heating nozzle FKZ.
- Fits all handles type MINITHERM.

**Application:**

- Making pipelines and heat exchangers.
- Installation and assembly work.
- Production lines and assembly belts.
- Processing laboratory (quartz) glass.
- Making jewellery.
- Assembly of household equipment.
- Producing water and gas manifolds.

FKZ-PMY 1



FKZ-PMY 2



**Operating data for gas type: Propane (P), Methane (M), MAPP (Y) / Oxygen**

Type	Pressure [bar]		Consumption [l/h]			
	Oxygen	(P M Y)	Oxygen	(P)	(M)	(Y)
FKZ-PMY 1	0,5 - 1,5	> 0,5	210 - 350	56 - 93	131 - 219	75 - 125
FKZ-PMY 2	0,5 - 2,0	> 0,5	280 - 420	75 - 112	175 - 263	100 - 150

**Part Numbers:**

**Spare Parts**

**Technical Data**

Type	Insert complete	Heating nozzle Copper	Injector chromed	Connection nut	Length [mm]	Number of jets
FKZ-PMY 1	71650804	71650800	71601001	71605980	175	5
FKZ-PMY 2	71650805	71650801	71601002	71605980	175	7

**Other lengths available on request.**

Heating Insert MINITHERM FK-PMY 6



**Version FK-PMY 6:**

- Stainless steel insert with interchangeable multi-jet stainless steel nozzle.
- Insert is wear resistant even under high radiant heat.

**Application:**

- Glass industry.
- Dental laboratory.
- Heating small parts.

**Operating data for gas type: Propane (P), Methane (M), MAPP (Y) / Oxygen**

Type	Pressure [bar]		Consumption [l/h]			
	Oxygen	(P M Y)	Oxygen	(P)	(M)	(Y)
FK-PMY 6	2,5	0,5 - 1,0	1400	370	880	467

**Part Numbers:**

**Spare Parts**

**Technical Data**

Type	Insert complete.	Heating nozzle Stainless steel	Injector Ni plated	Connection nut	Length [mm]	Number of jets
FK-PMY 6	71651639	71651641	71651643	71605980	255	6

**Other lengths available on request.**

Heating Insert MINITHERM FKZ-AH



**Version FKZ-AH :**

- Brass, chromed insert.
- Interchangeable Copper multi-jet heating nozzle FKZ.
- Fits all handles type MINITHERM.

**Applications:**

- Making pipelines and heat exchangers.
- Installation and assembly work.
- Production lines and assembly belts.
- Processing laboratory (quartz) glass.
- Jewellery making.
- Assembly of household equipment.
- Producing water and gas manifolds.

FKZ-AH 1



FKZ-AH 2



**Operating data for gas type: Acetylene (A), Hydrogen (H) / Oxygen**

Type	Pressure [bar]		Consumption [l/h]		
	Oxygen	(A H)	Oxygen	Acetylene (A)	Hydrogen (H)
FKZ-AH 1	0,5 - 1,5	> 0,5	210 - 350	190 - 320	580 - 970
FKZ-AH 2	0,5 - 2,0	> 0,5	210 - 420	190 - 380	580 - 1170
FK-AH 3	1,0 - 3,0	> 0,2	270 - 540	240 - 490	750 - 1500

**Part Numbers:**

**Spare Parts**

**Technical Data**

Type	Insert complete	Heating nozzle Copper	Injector chromed	Connection nut	Length [mm]	Number of jets
FKZ-AH 1	71650808	71650798	71601001	71605980	175	5
FKZ-AH 2	71650809	71650799	71601002	71605980	175	7
FK-AH 3	71650810	71603008	71601003	71605980	175	9

Other lengths available on request.

Heating Insert MINITHERM B3-AH



**Version B3-AH:**

- Brass mixing tube, interchangeable single jet, Copper nozzle.

**Applications:**

- Brazing, heating, welding.

**Operating data for gas type: Acetylene (A), Hydrogen (H) / Oxygen**

Type	Pressure [bar]		Consumption [l/h]		
	Oxygen	(A H)	Oxygen	Acetylene (A)	Hydrogen (H)
B3-AH	1,0 - 3,0	0,5	215 - 440	215 - 440	597 - 1220

**Part Numbers:**

**Spare Parts**

**Technical Data**

Type	Insert complete.	Heating nozzle	Injector Chromed	Connection nut	Length [mm]
B3-AH	71604348	71604349	71601003	71605980	311

Other lengths available on request.

Heating Insert MINITHERM ZD 8/2 PM



Heating Insert MINITHERM ZD 11/4 PM



### Version:

- Interchangeable Copper heating nozzle (Chrome plated).
- Single jet nozzle with stabilisation holes on side.
- Fits all handles type MINITHERM.

### Application:

- Soft soldering.
- Heating of small components and thin sheets.

### Operating data for gas type: Propane (P), Methane (M) / Compressed Air

Type	Pressure [bar]		Consumption [l/h]		
	Compressed air	Propane (P) Methane (M)	Compressed air	Propane (P)	Methane (M)
ZD 8/2 PM	1,0 - 3,0	> 0,02	61 - 182	3,20 - 9,60	7,60 - 22,8
ZD 11/4 PM	1,0 - 3,0	> 0,02	190 - 569	10,0 - 30,0	23,7 - 71,2

### Technical Data:

Type	Length [mm]	Outer Ø nozzle [mm]	Ø Central flame jet [mm]
ZD 8/2 PM	159	11,5	2
ZD 11/4 PM	162	15	4

### Part Numbers:

Type	Insert complete	Spare Parts				
		Spare nozzle	Injector	Connection nut	O-Ring 7x1,5	O-Ring 2,5x1,2
ZD 8/2 PM	71651600	71602483	71601001	71605980	67330008	67330009
ZD 11/4 PM	71651602	71602484	71601003	71605980	67330008	67330009

Other lengths available on request.

Pipe welding insert MINITHERM Z-A 3 (flexible)



**Version:**

- Pipe welding insert with flexible soft Copper mixing tube.
- Sharply defined flame cone through specially processed outlet jets.

**Application:**

- Welding in operating range 1-4 mm.
- Brazing and heating in hard to reach locations.

Operating data for gas type: Acetylene (A) / Oxygen			Technical data
Type	Welding range [mm]	Consumption [m³/h] O <sub>2</sub> (2-3 bar) and Acetylene (0,5 bar)	Length complete with outstretched mixing tube [mm] To fit handle MINITHERM
Z-A 2	1 - 2	0,13 - 0,18	228
Z-A 3	2 - 4	0,24 - 0,32	228

**Part numbers:**

Type	Insert complete for handle MINITHERM	Heating nozzle (Mouthpiece + flexible mixing tube with connection threads) MINITHERM
Z-A 2	71651834	71651836
Z-A 3	71651835	71651837

Flexible nozzle MINITHERM Z-A



Table torch holder MINITHERM



Table torch holder MINITHERM with insert



### Application table torch holder MINITHERM:

- For MINITHERM handles with hanging knob (71605770) for comfortable storage in ready to use inclination.
- Especially suitable for use with the larger MINITHERM welding, brazing and heating inserts as well as the MINITHERM forked torches.

### Part Number (without heating insert):

71605781

Magnetic table torch holder MINITHERM



### Application Magnet-table torch holder MINITHERM:

- For MINITHERM standard handle without hanging knob (71606109).

### Version:

- Consists of a heavy, cast steel stand foot with seven numbered magazine holes for all MINITHERM micro Inserts, 45° angles support rack with screwed on disc magnet and chromed holding plate for mounting onto the MINITHERM handle.

### Part Number (without Heating insert):

71605782

MINITHERM Glass top piece with clamping ring threads



**Version:**

- MINITHERM:  
Injector chemically Ni plated, stainless steel threads, clamping ring of stainless steel.

**Application:**

- For clamping quartz glass nozzles (Nozzles are not in our scope of supply).
- Heating and melting of quartz and Quartz glass.

To fit handle	Size	Clamping $\varnothing$ [mm]	Total length [mm]	$\varnothing$ [mm] Nozzle outlet	Part No.
MINITHERM	00	6	69	0,50	71650485
MINITHERM	0	6	69	0,63	71650486
MINITHERM	1	6	69	0,74	71650487
MINITHERM	2	6	69	0,93	71650488
MINITHERM	3	6	69	1,35	71650489



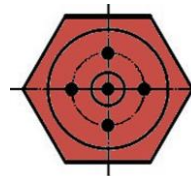
Forked torch MINITHERM FKZ-PMY



**Version:**

- Two brass torch pipes with brazed nozzle connection nipples.
- Exchangeable Copper multi-jet heating nozzles.
- Stainless steel distributor piece.

Nozzle size 1



Nozzle size 2



**Application:**

- Building pipelines and heat exchangers.
- Assembly and installation work.
- Final installation household equipment.
- Production of water and gas manifolds.
- Production lines and assembly belts.
- Glass processing.

**Operating data for gas type: Propane (P), Methane (M), MAPP (Y) / Oxygen**

Type	Pressure [bar]		Consumption [l/h]			
	Oxygen	Fuel gas (P M Y)	Oxygen	Fuel gas		
				(P)	(M)	(Y)
FKZ-PMY 1	2,0 - 4,0	> 0,5	420 - 700	112 - 187	263 - 483	150 - 250
FKZ-PMY 2	3,0 - 5,0	> 0,5	550 - 840	147 - 224	344 - 525	196 - 300

**Operating data for gas type: Acetylene (A), Hydrogen (H) / Oxygen**

Type	Oxygen	(A H)	Oxygen	Acetylene (A)	Hydrogen (H)
FKZ-AH 1	2,0 - 4,0	> 0,5	420 - 700	382 - 636	1170 - 1795
FKZ-AH 2	3,0 - 5,0	> 0,5	550 - 840	500 - 734	1528 - 2039

**To fit handle type MINITHERM:**

Weight [g]	Length [mm]	Nozzle stand-off [mm]	Nozzles Connection thread	Nozzle Outer Ø [mm]	Ø[mm] Flame circle
144	210	30 – 35	M9x1	9	5,5

**Part numbers:**

Type	Forked torch MINITHERM complete	Spare nozzle	Nozzle type
FKZ-PMY 1	71650828	71650800	FKZ-PMY 1
FKZ-PMY 2	71650829	71650801	FKZ-PMY 2
FKZ-AH 1	71650820	71650798	FKZ-AH 1
FKZ-AH 2	71650821	71650799	FKZ-AH 2

Forked torch MINITHERM Z-PMYE und Z-AH



### Version:

- Two flexible Copper torch nozzles with hammered mouthpieces.
- Brazed, non-exchangeable Copper heating nozzles. Stainless steel distribution piece.

### Application:

- Building pipelines and heat exchangers.
- Assembly and installation work.
- Final installation household equipment.
- Production of water and gas manifolds.
- Production lines and assembly belts.
- Glass processing.

### Operating data for gas type PMYE: Propane (P), Methane (M), MAPP (Y), Ethylene (E) / Oxygen

Type	Pressure [bar]		Consumption [l/h]				
	Oxygen	Fuel gas (P M Y E)	Oxygen	Fuel gas			
				(P)	(M)	(Y)	(E)
<b>To fit handle type MINITHERM:</b>							
Z-PMYE 000	0,5 - 2,0	> 0,5	15 - 38	4 - 10	9 - 24	5 - 13	8 - 20
Z-PMYE 00	0,5 - 2,0	> 0,5	26 - 65	7 - 17	16 - 41	9 - 22	14 - 34
Z-PMYE 0	0,5 - 2,0	> 0,5	56 - 140	15 - 37	35 - 88	19 - 47	29 - 74
Z-PMYE 1	0,5 - 2,0	> 0,5	120 - 300	32 - 80	75 - 188	40 - 100	63 - 158
Z-PMYE 2	1,0 - 3,0	> 0,5	310 - 570	83 - 152	194 - 356	103 - 190	103 - 300
Z-PMYE 3	1,0 - 5,5	> 0,5	430 - 880	115 - 235	269 - 550	143 - 293	226 - 463

### Operating data for gas type: Acetylene (A), Hydrogen (H) / Oxygen

Type	Oxygen	(A H)	Oxygen	Acetylene (A)	Hydrogen (H)
<b>To fit handle type MINITHERM:</b>					
Z-AH 00	0,5 - 2,0	> 0,5	26 - 65	26 - 65	72 - 181
Z-AH 0	0,5 - 2,0	> 0,5	56 - 140	51 - 127	156 - 389
Z-AH 1	0,5 - 2,5	> 0,5	120 - 300	109 - 273	333 - 833
Z-AH 2	1,0 - 3,0	> 0,5	310 - 570	282 - 518	861 - 1583
Z-AH 3	2,0 - 5,5	> 0,5	430 - 880	391 - 800	1194 - 2444

### Technical data:

Weight [g]	Length [mm]	Nozzle stand-off [ mm]	Nozzle pipe length [mm]
90	210	30 - 35	100

Part numbers:	Z-PMYE	Z-AH
size 000	71650467	-
size 00	71650468	71650463
size 0	71650469	71650464
size 1	71650470	71650465
size 2	71650471	71602560
size 3	71650472	71650466

Ring torch MINITHERM type C



**Version:**

- Small ring torch with threading opening for heating of pipes.
- Torch ring and mixing tube made of Copper piping, chemically Ni plated.
- To fit handle type MINITHERM.

**Application:**

- Building pipelines and heat exchangers.
- Assembly and installation work.
- Manufacture of gas and water manifolds.
- Production lines and assembly belts.
- Processing glass.

**Operating data for gas type: Propane (P), Methane (M), MAPP (Y) / Oxygen**

Type	Pressure [bar]		Consumption [l/h]			
	Oxygen	(P M Y)	Oxygen	Propane (P)	Methane (M)	MAPP (Y)
C2-PMY-36-5	2,5	0,5	305	81	191	102
C3-PMY-55-7	2,5	0,5	485	129	303	162
C3-PMY-75-7	2,5	0,5	485	129	303	162
C3-PMY-90-8	2,5	0,5	485	129	303	162

**Operating data for gas type: Acetylene (A) / Oxygen**

Type	Oxygen	Acetylene (A)	Oxygen	Acetylene (A)
C2-A-36-3	2,5	0,5	305	277
C2-A-36-5	2,5	0,5	305	277
C3-A-55-7	2,5	0,5	485	441
C3-A-75-7	2,5	0,5	485	441
C3-A-90-8	2,5	0,5	485	441

Technical data und Part numbers on the next page.

Ring torch MINITHERM type C



#### Version:

- Small ring torch with threading opening for heating of pipes.
- Torch ring and mixing tube made of Copper piping, chemically Ni plated.
- To fit handle type MINITHERM.

#### Application:

- Building pipelines and heat exchangers.
- Assembly and installation work.
- Manufacture of gas and water manifolds.
- Production lines and assembly belts.
- Processing glass.

Technical data:	Weight	Length	Threading	Inner $\varnothing$	Number of jets
Type	[g]	[mm]	opening [mm]	Ring [mm]	
C2-PMY-36-5	77	171	30	36	5
C3-PMY-55-7	86	191	30	55	7
C3-PMY-75-7	111	215	45	75	7
C3-PMY-90-8	111	227	55	90	8
<b>Technical data:</b>					
C2-A-36-3	77	171	30	36	3
C2-A-36-5	77	171	30	36	5
C3-A-55-7	86	191	30	55	7
C3-A-75-7	86	215	45	75	7
C3-A-90-8	111	227	55	90	8

#### Part numbers:

Type PMY	Part number	Type A	Part number
C2-PMY-36-5	71650917	C2-A-36-3	71650915
C3-PMY-55-7	71650919	C2-A-36-5	71650916
C3-PMY-75-7	71650921	C3-A-55-7	71650918
C3-PMY-90-8	71650923	C3-A-75-7	71650920
-	-	C3-A-90-8	71650922

Cutting-Torch MINITHERM 2207



Cutting-Nozzle A-BF



**Version:**

- Cutting Torch for handle MINITHERM for cutting up to 25 mm.
- Nozzle Type A-BF and A-BK: Block-Cutting-Nozzles for use of Acetylene and Oxygen.
- Nozzle Type PB-K/PMY: Block-Cutting-Nozzles for use of Propane, Methane, MAPP and Oxygen.

**Application:**

- Cutting of thin metal plates up to 25mm.

Cutting-Torch			
Type	Nozzle-Type	Fuelgas	Part-Number
MINITHERM 2207	Block nozzle	Acetylen	71607090
MINITHERM 2207	Block nozzle	Propane, Methane, MAPP	71607110
Block-Cutting Nozzles			
Type	Cutting-Range [mm]	Fuelgas	Part-Number
A-BF	0,5 – 3,0	Acetylen	71600291
A-BK	3,0 – 10,0	Acetylen	71600503
A-BK	10,0 – 25,0	Acetylen	71600504
Block-Cutting Nozzles and Heating Nozzle			
Type	Cutting-Range [mm]	Fuelgas	Part-Number
PB-K-PMY	3,0 – 10,0	Propane, Methane, MAPP	71616741
PB-K-PMY	10,0 – 25,0	Propane, Methane, MAPP	71616742
Heating Nozzle	3,0 – 25,0	Propane, Methane, MAPP	71616743

Mechanical gas economiser



Mechanical gas economiser  
with safety valve to monitor the pilot flame



**Version:**

- The gas economiser consists of a small casing in pestle-shut-off valves for Oxygen und fuel gas are housed – protected from dust and damage –, the hanging bracket for the torch (gas stop when torch sits in bracket), the permanent pilot flame and the installation plate. Inlets and outlets for Oxygen and fuel gas hoses.
- There is also a gas economiser equipped with a safety valve and thermal element to monitor the permanent pilot flame.

**Application:**

- The gas economiser is conceived for work-places equipped with lightweight brazing, heating and welding torches with frequent or regular pauses in the work with the flame, e.g. in mass production of soldered parts.

**Operating data for gas type: Propane (P) / Oxygen; Acetylene (A) / Oxygen**

**Max. operating pressures [bar]**

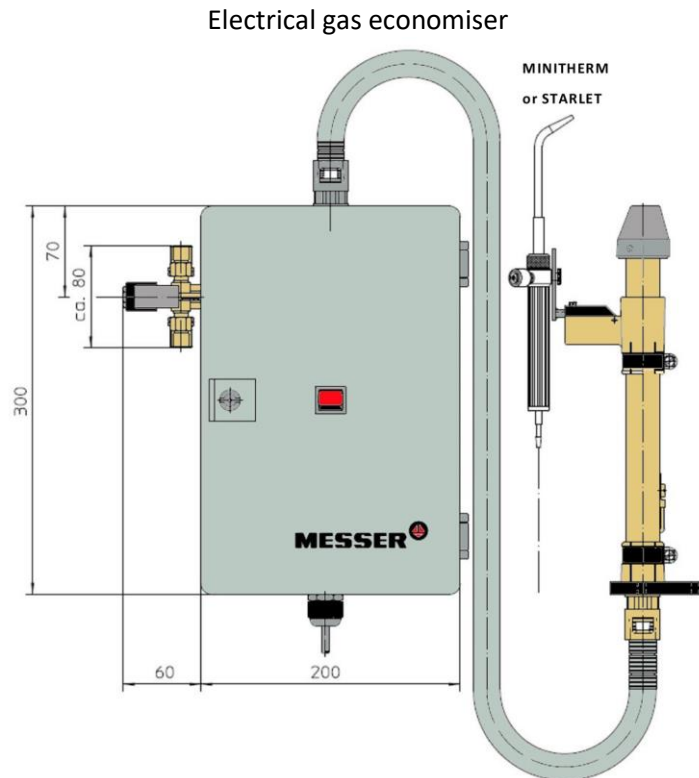
Oxygen	Fuel gas
4,0	0,5

**Technical data:**

Height [mm]	Width [mm]	Depth [mm]	Connections	
			Oxygen	Fuel gas
337	240	88	G1/4" RH - Hose 6,3 mm	G3/8" LH - Hose 9 mm

**Part numbers:**

Propane (P) / Oxygen	Acetylene (A) / Oxygen
<b>Laid out for torch type MINITHERM:</b>	
71607015	71607014
<b>Laid out for torch type MINITHERM, also with safety valve to monitor the pilot flame:</b>	
71607588	71607587



### Version:

- The electrical gas economiser consists of a small electrical cabinet with integrated ignition transformer and solenoid valves mounted on the outside with inlet and outlet connections for Oxygen and fuel gas hoses. An electrical lead from the cabinet with shielding cover runs through and to a table stand with integrated ignition head and torch holder. When the torch is hung up, the solenoid valves shut off the gas supply. When the torch is picked up the solenoid valves open and the torch can be lit directly at the ignition head. The time for ignition after picking up the torch can be set on a time relay.

### Application:

- The gas economiser is conceived for work-places equipped with small brazing, heating and welding torches type MINITHERM or STARLET and offers safe operation of the torch at work stations with frequent pauses in the work. Very safe as no open pilot flame exists.

### Technical data:

Height [mm]	Width [mm]	Depth [mm]	Connections	
			Oxygen	Fuel gas
300	200 + 60	120	G1/4" RH - hose 6,3 mm	G3/8" LH - hose 9 mm

### Part numbers:

24 V - 50/60 Hz	230 V - 50/60 Hz
71605756	71605755

Valve shaft MINITHERM



Adjustment valve – fuel gas



**Version:**

- Valve shaft made of aluminum
- Incl. adjustment valves.

**Application:**

- For use in mechanised (automated) operation of heating, welding and brazing torches.

**Version:**

- With hand-wheel.
- Brass valve body.

**Application:**

- On and shut-off valve to be installed on torch shafts, pipe lines or gas supply panels.

**Shaft:**

Type	Connection Oxygen	Connection Fuel gas	Clamping Ø [mm]	Length [mm] Clamping shaft	Part No.
MINITHERM	Hose tail DN 3,2 mm	Hose tail DN 3,2 mm	15	8	71602852

**Threads for ballcocks: see under Solenoid valves**

**Adjustment valves: Inlet external thread – Outlet cap nut: (Installed on torch inlet)**

Gas type	Connection	max. operating pressure [bar]	Nominal bore DN [mm]	Part No.
Oxygen	G1/4" RH	25	6	71800500
Fuel gas	G3/8" LH	25	9	71800502

**Adjustment valves: Inlet cap nut – Outlet external thread:**

Oxygen	G1/4" RH	40	6	71803907
Fuel gas	G3/8" LH	40	9	71803909

**Distribution piece:**



**Version:**

- 1x inlet (nut), 2x outlets (m thread)
- One adjustment knob per outlet

**Application:**

- Splitting the gas supply between two torches.

Gas type	Connection	Part No.
Oxygen	G1/4" RH	51211653
Acetylene	G3/8" LH	51211602
Fuel gas	G3/8" LH	71655018



Safety device DGN for Oxygen



Coupling D4



**Version:**

- **DGN-DK:**
  - Flow direction for **mounting on gas take-off points.**  
Inlet: cap nut – Outlet: Coupling pin following EN 561 (for D4 pin).
  - Filter, gas non-reverse flow valve, flame arrestor, post flow stop valve.
- **DGN**
  - Flow direction for **mounting on gas take-off points.**  
Inlet: cap nut – Outlet: male thread.
  - Filter, gas non-reverse flow valve, flame arrestor, post flow stop valve.
- **DG 91 N**
  - Flow direction for **mounting on gas take-off points.**  
Inlet: cap nut – Outlet: male thread.
  - Filter, gas non-reverse flow valve, flame arrestor, post flow stop valve.
  - High flow rate.

**Application:**

- To protect against creeping and sudden gas back-flow and against back-fires.

Type	Gas type	Connections	Flow rate air volume [m <sup>3</sup> /h] with inlet pressure [bar]	Part No.
DGN-DK	Oxygen	G1/4" RH	2,35 – 33,0 [0,3 – 5,0]	0463827
DGN-DK	Fuel gas	G3/8" LH	2,35 – 33,0 [0,3 – 5,0]	0463826
DGN	Oxygen	G1/4" RH	2,35 – 33,0 [0,3 – 5,0]	0463386
DGN	Fuel gas	G3/8" LH	2,35 – 33,0 [0,3 – 5,0]	0463385
DG 91 N	Oxygen	G1/4" RH	3,50 – 45,0 [0,3 – 5,0]	0463831
DG 91 N	Fuel gas	G3/8" LH	3,50 – 45,0 [0,3 – 5,0]	0463829

**Test unit for safety devices**

Test unit PVGD for annual testing of safety devices.

0463825

**Conversion factor U to calculate the gas flow rate for gas type:**

Air	Oxygen	Propane (P)	Methane (M)	MAPP (Y)	Ethylene (E)	Acetylene (A)
1	0,95	0,9; (1,0 at p=0,7)	1,40	0,80	1,012	1,20

**Max. Gas flow rate: Volume Gas = Volume Air x Conversion factor U [m<sup>3</sup>/h]**

Oxygen			Fuel gas			Non-flammable gasses		
Inlet	Outlet	Part.-No.	Inlet	Outlet	Part.-No.	Inlet	Outlet	Part.-No.

**Coupling pin D4 – Outlet external:**

Coupling	G1/4" RH	0463430	-	-	-	Coupling	G1/4" RH	0463433
Coupling	G3/8" RH	0463431	Coupling	G3/8" LH	0463432	Coupling	G3/8" RH	0463434

**DKD – Euro-Coupling: Inlet cap nut:**

G1/4" RH	Coupling	0463312	-	-	-	G1/4" RH	Coupling	0463313
G3/8" RH	Coupling	0463368	G3/8" LH	Coupling	0463311	G3/8" RH	Coupling	0463369

Cylinder pressure regulator  
CONSTANT Oxygen



Cylinder pressure regulator  
CONSTANT Propane



Cylinder pressure regulator  
CONSTANT Acetylene



### Version:

- Tested to BAM (Federal German Institute for material research and testing).
- With integrated central filter.
- High regulation accuracy even with low operating pressures and take-off quantities.
- Double protected outlet pressure limitation with blow-off valve and toothed arrestor.
- Single stage regulator (also available as two stage regulator).

### Application:

- For mounting on gas cylinders to reduce the cylinder pressure to the working pressure.

Gas type Type CONSTANT	max. outlet pressure [bar]	Cylinder connection	Hose connection	Part No.
<b>Cylinder pressure: 200 bar</b>				
Oxygen	10	G3/4" RH	G1/4" RH - DN 6	71620100
Oxygen	20	G3/4" RH	G1/4" RH - DN 6	71620101
Compressed air	10	G5/8" RH (male)	G1/2" RH - DN 15	71620141
Compressed air	20	G5/8" RH (male)	G1/2" RH - DN 15	71620142
Propane	2,5	W 21,80 x 1/14" LH	G3/8" LH - DN 9	71620108
Methane, Hydrogen	10	W 21,80 x 1/14" LH	G3/8" LH - DN 9	71620110
Methane, Hydrogen	20	W 21,80 x 1/14" LH	G3/8" LH - DN 9	71620111
MAPP	2,5	W 21,80 x 1/14" LH	G3/8" LH - DN 9	71620109
Acetylene	1,5	Clamp	G3/8" LH - DN 9	71620107
<b>Cylinder pressure: 300 bar</b>				
Oxygen	10	W 30x2 - Ø 17.3/18.3	G1/4" RH - DN 6	71706716
Oxygen	20	W 30x2 - Ø 17.3/18.3	G1/4" RH - DN 6	71706717
Compressed air	20	W30x2 - Ø 16.6/19.4	G1/4" RH - DN 6	71706724
Methane, Hydrogen	10	W 30x2LH - Ø 15.2/20.2	G3/8" LH - DN 9	71706732
Methane, Hydrogen	20	W 30x2LH - Ø 15.2/20.2	G3/8" LH - DN 9	71706733

For cylinder pressure regulators for different gasses and pressure ranges see main catalogue oxyfuel equipment. Other connections on request.

Double thread connectors



Angle connections



**Version:**

- Brass with double-ended external thread and internal sealing cone.

**Application:**

- For the connection of Oxygen, Fuel gas, Compressed air and Cooling water hoses with metallic sealing connection threads.

**Version:**

- With cylindrical inner or external threads and 90° bend.

**Application:**

- For the connection of Oxygen, Fuel gas, Compressed air and Cooling water hoses with metallic sealing connection threads.

**Double thread connections:**

Thread G1 and G2 [Inch]	Total length [mm]	Thread length G1 / G2 [mm]	Spanner size [mm]	Part No.
G1/4" RH	34	12	14	71826006
G1/4" LH	34	12	14	71650376
G3/8" RH	37	13,5	17	70101361
G3/8" LH	37	13,5	17	71826008

**90° angle connections:**

Thread G1 (female) and G2 (male) [Inch]	Part numbers
G1/4" RH	71826666
G1/4" LH	71826669
G3/8" RH	71826667
G3/8" LH	71826670

**Spare Parts / Accessories:**

Hanging Knob	71606336	
Connection nut	71605980	
O-Ring 7 x 1,5	67330008	
O-Ring 2,5 x 1,2	67330009	
Adjustment valve for fuel gas or oxygen	71606418	
	<b>Oxygen</b>	<b>Fuel gas</b>
Hose DN 3,2 mm	0140079	0140078
Hose tail 3,2	71601160	71601161
Cap nut (EH)	70050030	70050040
Cap nut (BH)	70050130	70050040
Cap nut (FH)	71602051	71602052
1-Ear hose clamps	0800487	0800487
1-Ear hose claim pliers	0994052	0994052



# CREATING SOLUTIONS BEYOND MACHINES

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### PRODUCT

Messer Cutting Systems is a global supplier of cutting edge technology for the metalworking industry.

### AUTOMATION

With over 900 employees worldwide in over 50 countries, we maintain a constant dialogue with our customers to achieve sustainable user-oriented innovation.

### DIGITAL

### SERVICES

Our portfolio embraces the themes PRODUCT, DIGITAL, SERVICES, AUTOMATION and KNOW-HOW. We will live up to our claim "creating solutions beyond machines" not just with the most modern cutting systems and solutions for oxyfuel technology.

### KNOW-HOW

Appropriate services and training, our own software applications as well as the integration of solutions from our technology partners, e. g. in the field of automation, complete the machine to give forward-looking total solutions.

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## Messer Cutting Systems India Private Limited

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