



# Safety

## Safety



**WARNING!** Incorrect operation or shoddy workmanship can cause serious injury or damage. All activities described in these operating instructions may only be carried out by trained and qualified personnel. All functions described in these operating instructions may only be used by trained and qualified personnel. Do not carry out any of the work or use any of the functions described until you have fully read and understood the following documents:

- these operating instructions
- the enclosed "Safety rules" document
- all the operating instructions for the system components, especially the safety rules.



**WARNING!** An electric shock can be fatal. There is also a risk of injury from the emerging wire electrode. Before commencing any of the work described in these operating instructions:

- turn the power source mains switch to the "O" position
- disconnect the power source from the mains
- ensure that the power source remains disconnected from the mains until all work has been completed



**CAUTION!** Welding torch components and coolant that have become hot through use can cause severe burns. Before commencing any of the work described in these operating instructions, allow all welding torch components and the coolant to cool to room temperature (+25 °C, +77 °F).



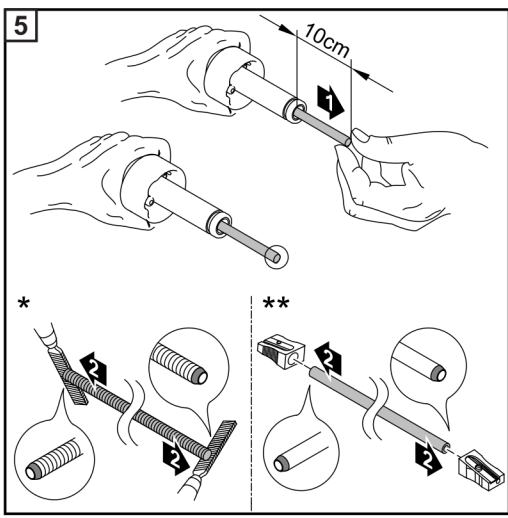
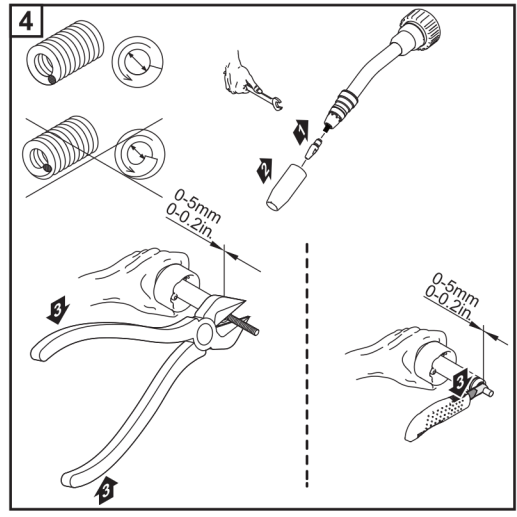
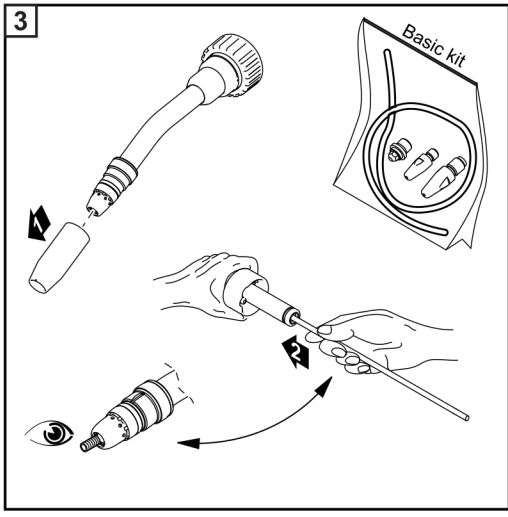
**CAUTION!** Risk of injury and damage from loose connections. All cables, lines and hosepacks must be properly secured, undamaged, insulated and adequately dimensioned at all times.



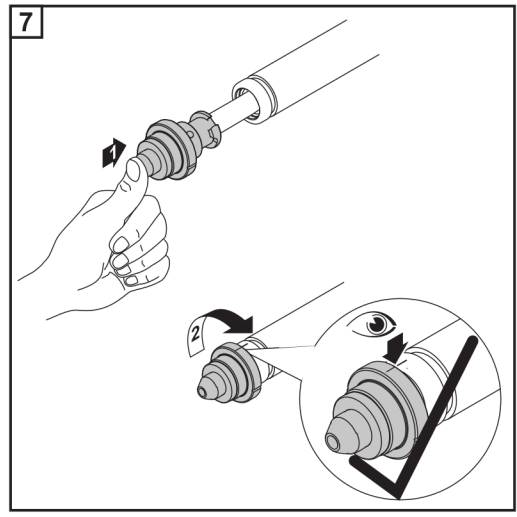
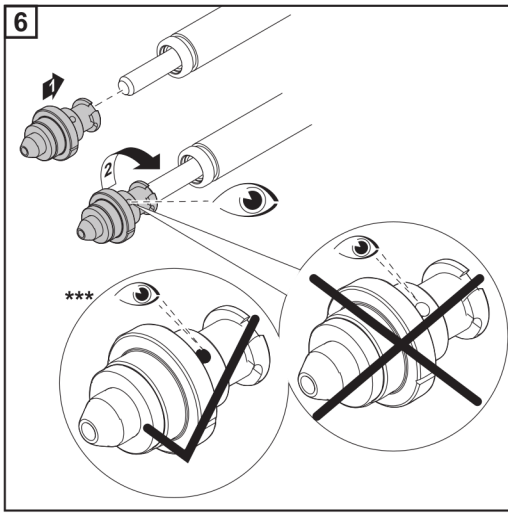
**NOTE!** Never operate a water-cooled welding torch without coolant. The manufacturer shall not be liable for any damage resulting from such action. In addition, no warranty claims will be entertained.



**NOTE!** Seal the coolant hoses on water-cooled welding torches with the plastic stoppers fitted to them if the hoses are detached from the cooling unit or the wire-feed unit.

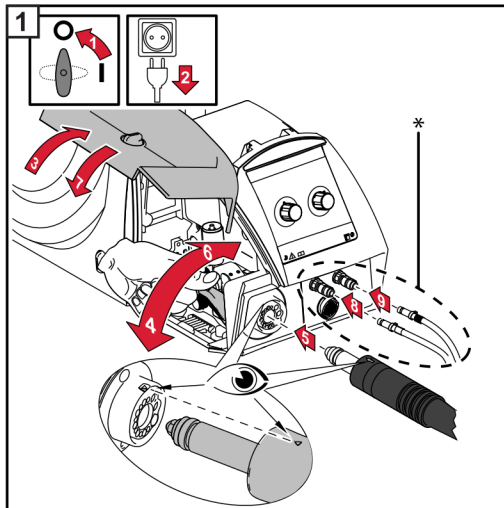


\* Steel inner liner  
 \*\* Plastic inner liner



\*\*\* Screw the cap onto the inner liner as far as it will go. The inner liner must be visible through the hole in the cap.

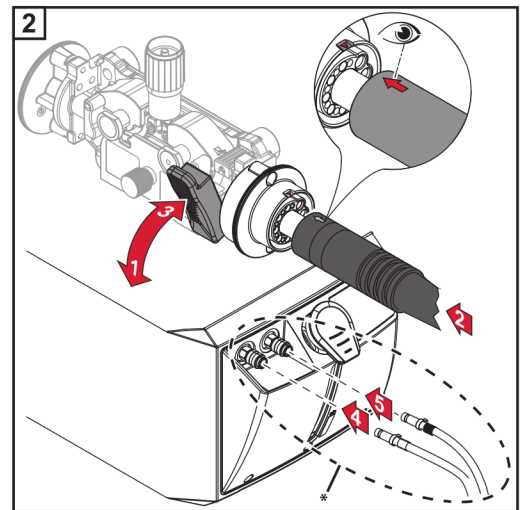
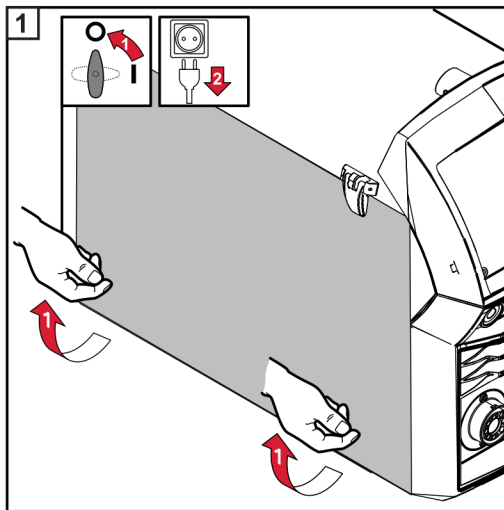
**Connecting the welding torch to the wire-feed unit**



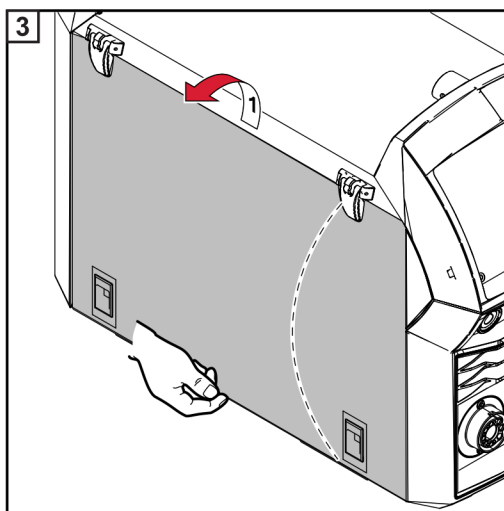
\* Only if the optional coolant connections are fitted in the wire-feed unit and when using a water-cooled welding torch.

Always connect the coolant hoses according to their colour coding.

**Connecting the welding torch to the power source and the cooling unit**



\* Only if the optional coolant connections are fitted in the cooling unit and when using a water-cooled welding torch.  
Always connect the coolant hoses according to their colour coding.



# Troubleshooting

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## Troubleshooting

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### No welding current

Power source mains switch is on, indicators on the power source are lit up, shielding gas available

Cause: Grounding (earthing) connection is incorrect

Remedy: Establish a proper grounding (earthing) connection

Cause: There is a break in the current cable in the welding torch

Remedy: Replace welding torch

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### Nothing happens when the torch trigger is pressed

Power source mains switch is on, indicators on the power source are lit up

Cause: The FSC ('Fronius System Connector' central connector) is not plugged in properly

Remedy: Push on the FSC as far as it will go

Cause: Welding torch or welding torch control line is faulty

Remedy: Replace welding torch

Cause: Interconnecting hosepack faulty or not connected properly

Remedy: Connect interconnecting hosepack properly  
Replace faulty interconnecting hosepack

Cause: Faulty power source

Remedy: Contact After-Sales Service

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### No shielding gas

All other functions are OK

Cause: Gas cylinder is empty

Remedy: Change the gas cylinder

Cause: Gas pressure regulator is faulty

Remedy: Replace gas pressure regulator

Cause: The gas hose is not connected, or is damaged or kinked

Remedy: Fit gas hose, lay out straight Replace faulty gas hose

Cause: Welding torch is faulty

Remedy: Replace welding torch

Cause: Gas solenoid valve is faulty

Remedy: Contact After-Sales Service (arrange for gas solenoid valve to be replaced)

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### Poor weld properties

- Cause: Incorrect welding parameters  
Remedy: Correct settings
- Cause: Poor grounding (earthing) connection  
Remedy: Ensure good contact to workpiece
- Cause: Inadequate or no protective gas shield  
Remedy: Check the pressure regulator, gas hose, gas solenoid valve and welding torch shielding gas connection. On gas-cooled welding torches, inspect the gas seals, use a suitable inner liner
- Cause: Welding torch is leaking  
Remedy: Replace welding torch
- Cause: Contact tip is too large or worn out  
Remedy: Replace the contact tip
- Cause: Wrong wire alloy or wrong wire diameter  
Remedy: Check wirepool/basket-type spool in use
- Cause: Wrong wire alloy or wrong wire diameter  
Remedy: Check weldability of the base material
- Cause: The shielding gas is not suitable for this wire alloy  
Remedy: Use the correct shielding gas
- Cause: Unfavourable welding conditions: shielding gas is contaminated (by moisture, air), inadequate gas shield (weld pool "boiling", draughts), contaminants in the workpiece (rust, paint, grease)  
Remedy: Optimise the welding conditions
- Cause: Welding spatter in the gas nozzle  
Remedy: Remove welding spatter
- Cause: Turbulence caused by too high a rate of shielding gas flow  
Remedy: Reduce shielding gas flow rate, recommended:  
shielding gas flow rate (l/min) = wire diameter (mm) x 10  
(e.g. 16 l/min for 1.6 mm wire electrode)
- Cause: Too large a distance between the welding torch and the workpiece  
Remedy: Reduce the distance between the welding torch and the workpiece (approx. 10 - 15 mm / 0.39 - 0.59 in.)
- Cause: Tilt angle of the welding torch is too great  
Remedy: Reduce the tilt angle of the welding torch
- Cause: Wirefeed components do not match the diameter of the wire electrode / the wire electrode material  
Remedy: Use the correct wirefeed components
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# Technical data

## General

Voltage measurement (V-Peak):

- for manually-operated welding torches: 113 V
- for mechanically-driven welding torches: 141 V


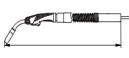
Torch trigger technical data:

- $U_{\max} = 50 \text{ V}$
- $I_{\max} = 10 \text{ mA}$

The torch trigger may only be operated in accordance with the technical data.



The product conforms to the requirements of IEC 60974-7 / - 10 Class A.

## MTG 2500 S welding torch

I (ampere) 10 min/40°C M21+C1 (EN 439)	MTG 2500 S	
	CO2	MIXED
	40% D.C.* 250	40% D.C.* 230
	60% D.C.* -	60% D.C.* 200
	100% D.C.* -	100% D.C.* 170
 [mm (in.)]	0.8-1.2 (0.032-0.047)	
 [m (ft.)]	3.5 / 4.5 (12 / 15)	

\* D.C. = Duty cycle

## MTG 2100 S welding torch

I (ampere) 10 min/40°C M21+C1 (EN 439)	MTG 2100 S	
	CO2	MIXED
	35% D.C.* 210	35% D.C.* 190
	60% D.C.* -	60% D.C.* 170
	100% D.C.* -	100% D.C.* 140
 [mm (in.)]	0.8-1.2 (0.032-0.047)	
 [m (ft.)]	3.5 / 4.5 (12 / 15)	

\* D.C. = Duty cycle





# Seguridad

## Seguridad



**¡ADVERTENCIA!** El manejo incorrecto y los trabajos realizados de forma defectuosa pueden causar graves daños personales y materiales. Todos los trabajos descritos en este manual de instrucciones deben ser realizados solo por personal técnico formado. Todas las funciones descritas en este manual de instrucciones deben ser realizadas solo por personal técnico formado. Realizar los trabajos descritos y aplicar las funciones descritas solo después de haber leído y comprendido, en su totalidad, los siguientes documentos:

- Este manual de instrucciones.
- El documento adjunto "Indicaciones de seguridad".
- Todos los manuales de instrucciones de los componentes del sistema, en particular las indicaciones de seguridad.



**¡ADVERTENCIA!** Las descargas eléctricas pueden ser mortales. Adicionalmente existe peligro de lesiones originado por la salida del electrodo de soldadura. Antes de comenzar los trabajos descritos en este manual de instrucciones:

- Poner el interruptor de red de la fuente de corriente en la posición - O -
- Separar la fuente de corriente de la red
- Asegurar que la fuente de corriente permanezca separada de la red hasta que se hayan finalizado todos los trabajos



**¡PRECAUCIÓN!** Peligro de quemaduras debido a que durante el servicio se calientan mucho los componentes de la antorcha de soldadura y el refrigerante. Antes de comenzar los trabajos descritos en este manual de instrucciones, dejar que se enfríen todos los componentes de la antorcha de soldadura y el refrigerante a temperatura ambiente (+25 °C, +77 °F).



**¡PRECAUCIÓN!** Peligro de daños personales y materiales originado por uniones inapropiadas. Todos los cables, líneas y juegos de cables siempre deben estar bien conectados, intactos, correctamente aislados y tener una dimensión suficiente.



**¡OBSERVACIÓN!** Jamás se deben poner en servicio antorchas de soldadura refrigeradas por agua sin refrigerante. El fabricante declina cualquier responsabilidad frente a los daños que se pudieran originar, se extinguirán todos los derechos de garantía.

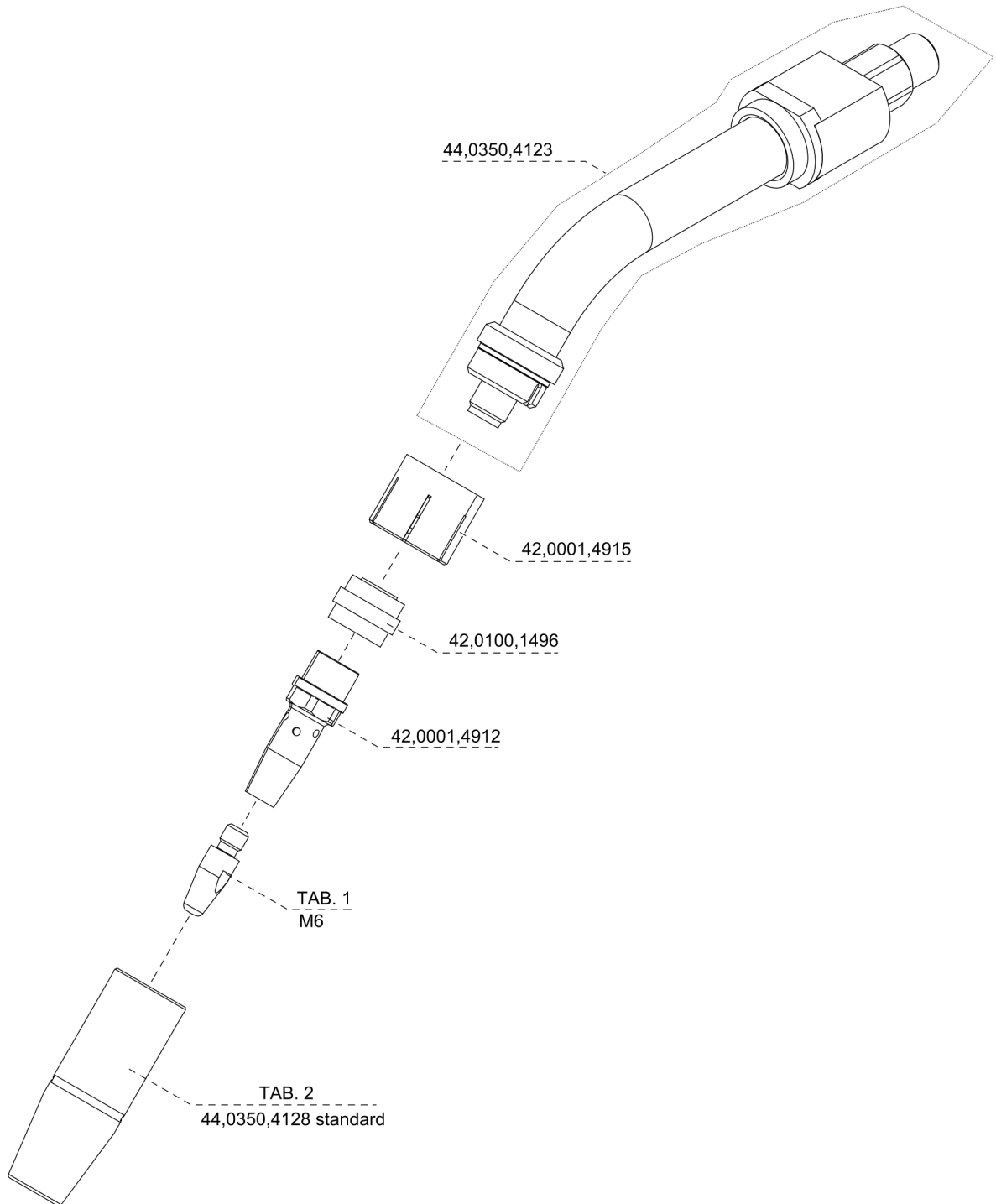


**¡OBSERVACIÓN!** Cerrar los tubos de refrigerante de las antorchas de soldadura refrigeradas por agua siempre con el cierre de plástico montado cuando se separen las mismas de la refrigeración o del avance de hilo.

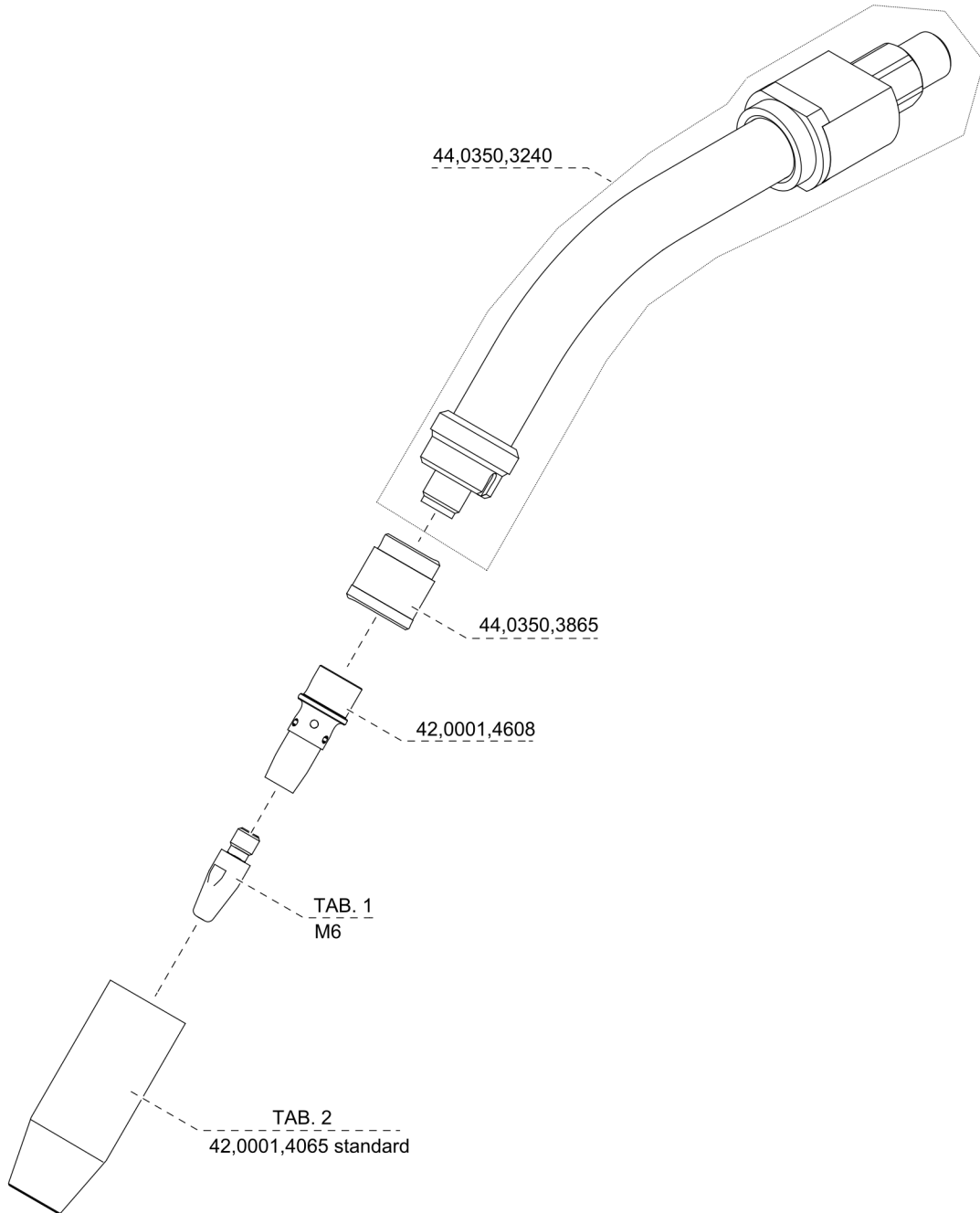
## Spare parts list: MTG 2100/2500 S

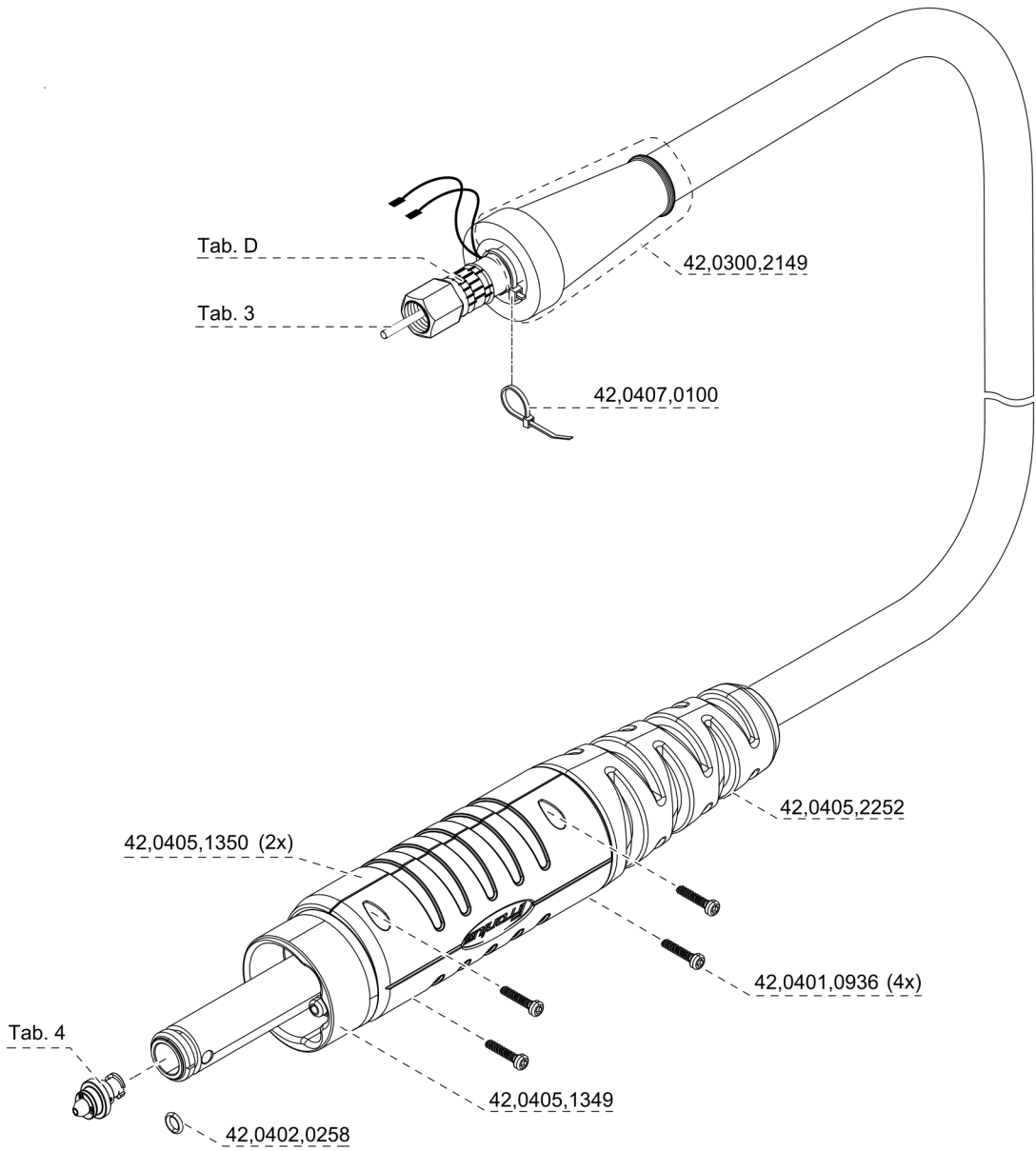
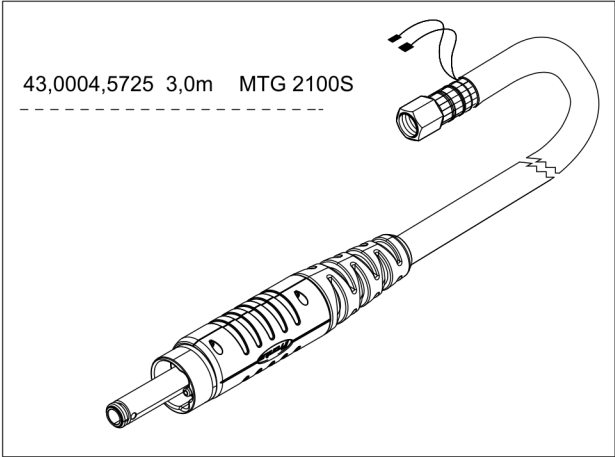
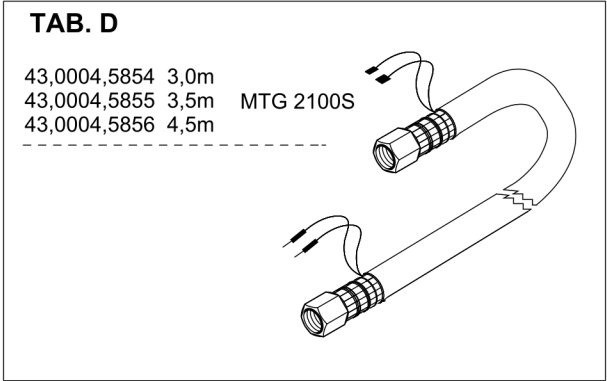
4,035,980	MTG 2500 S/FSC/3,5m/45°
4,035,981	MTG 2500 S/FSC/4,5m/45°
4,035,990	MTG 2100 S/FSC/3,0m/45°
4,035,991	MTG 2100 S/FSC/3,5m/45°
4,035,992	MTG 2100 S/FSC/4,5m/45°

**MTG 2100 S**



MTG 2500 S

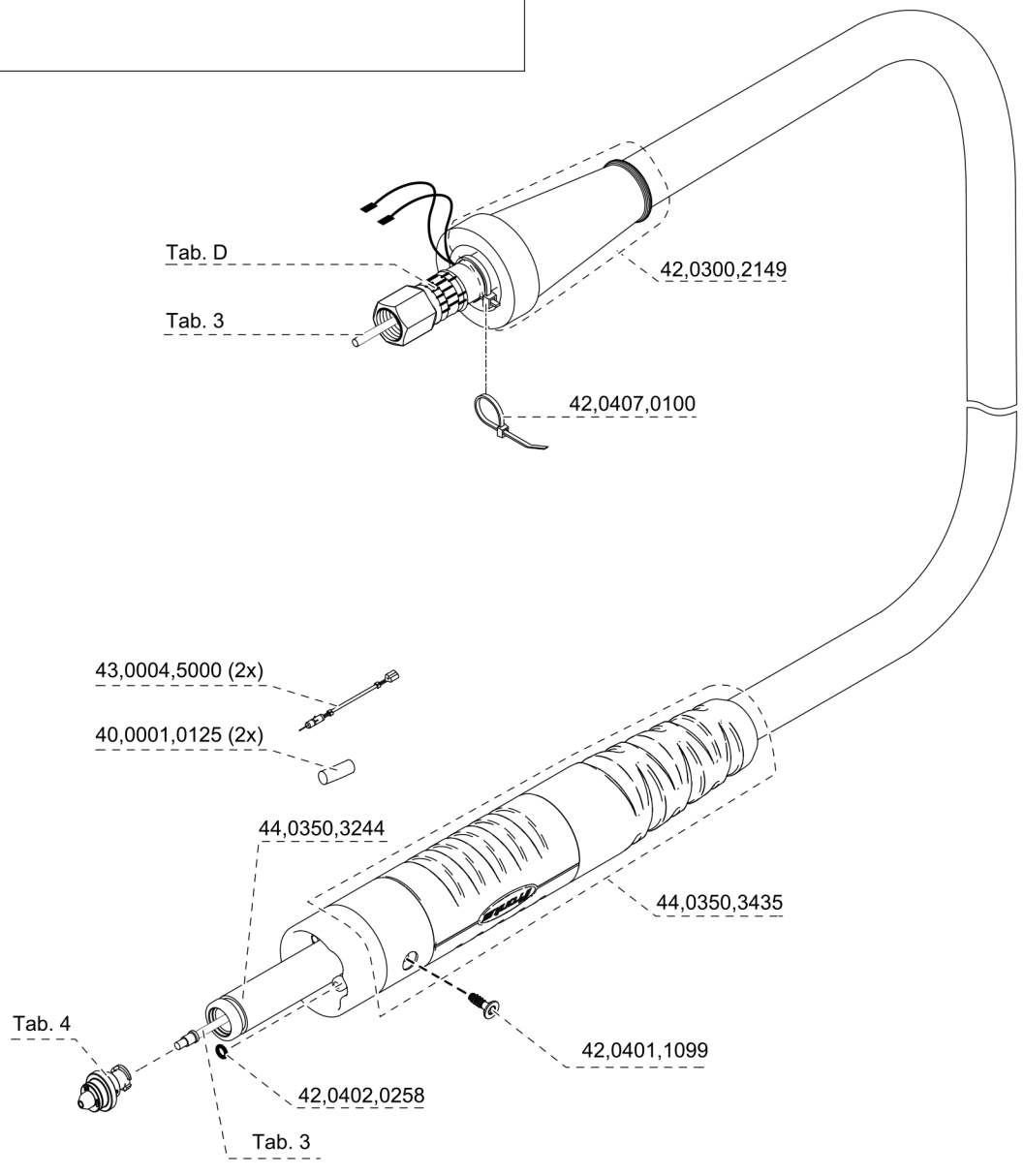




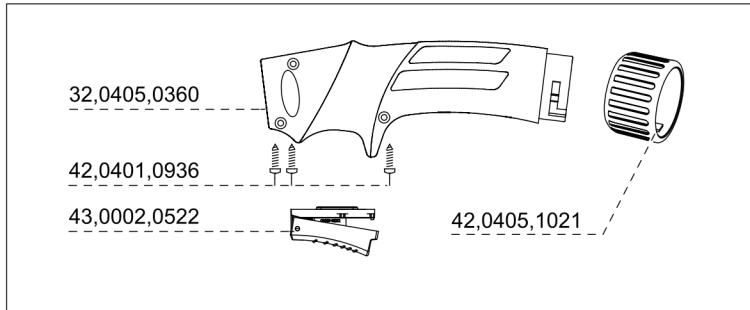
**TAB. D**

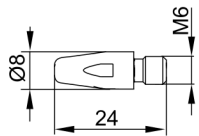
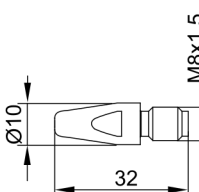
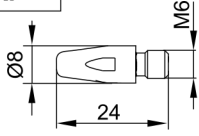
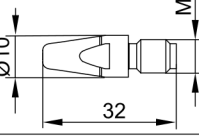
43,0004,1797 3,5m  
 43,0004,1798 4,5m

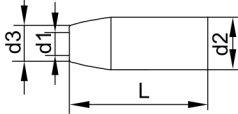

MTG 2500S


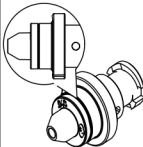
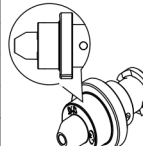
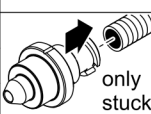


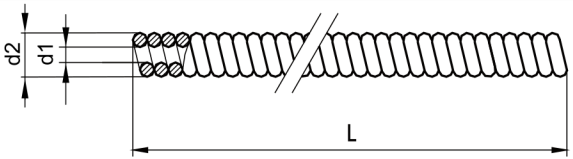

**MTG 2100S/2500S - Userinterface**

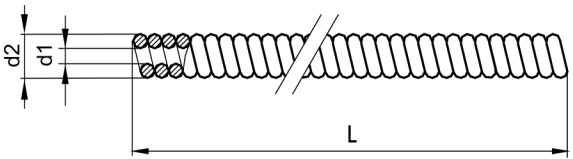
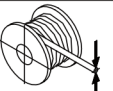


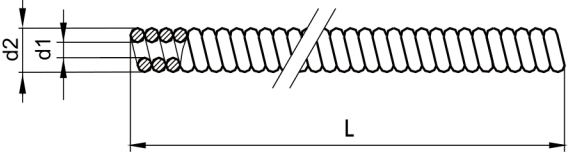
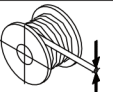
TAB. 1		Ø mm	Ø inch	Part No.
	0,6	0,023	42,0001,4928,10	
	0,7	0,027	42,0001,6524,10	
	0,8	0,030	42,0001,4461,10	
	0,9	0,035	42,0001,4462,10	
	1,0	0,040	42,0001,4463,10	
	1,1	0,043	42,0001,6527,10	
	1,2	0,045	42,0001,4464,10	
	1,3	0,051	42,0001,6529,10	
	1,4	0,052	42,0001,4465,10	
	1,5	0,059	42,0001,6522,10	
1,6	0,062	42,0001,4466,10		
	0,7	0,027	42,0001,6482,10	
	0,8	0,030	42,0001,6464,10	
	0,9	0,035	42,0001,6465,10	
	1,0	0,040	42,0001,6466,10	
	1,1	0,043	42,0001,6183,10	
	1,2	0,045	42,0001,6467,10	
	1,3	0,051	42,0001,6184,10	
	1,4	0,052	42,0001,6468,10	
	1,5	0,059	42,0001,6485,10	
	1,6	0,062	42,0001,6469,10	
	1,8	0,071	42,0001,6470,10	
	2,0	0,078	42,0001,6471,10	
	2,4	0,095	42,0001,6472,10	
	2,8	0,110	42,0001,4642,10	
<b>AI</b> 	0,8	0,030	42,0001,6525,10	
	1,0	0,040	42,0001,6526,10	
	1,2	0,045	42,0001,6528,10	
	1,6	0,062	42,0001,6523,10	
<b>AI</b> 	0,8	0,030	42,0001,6537,10	
	1,0	0,040	42,0001,4750,10	
	1,2	0,045	42,0001,4751,10	
	1,6	0,062	42,0001,4752,10	

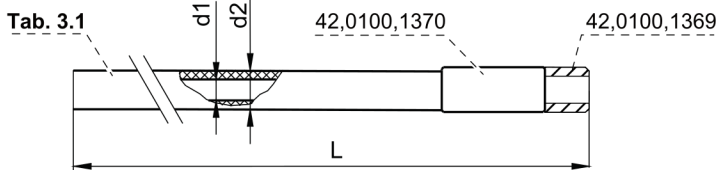
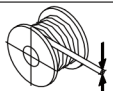
<b>TAB. 2</b> 													
		<b>d1</b>		<b>d2</b>		<b>d3</b>		<b>L</b>		<b>Part No.</b>			
		mm	inch	mm	inch	mm	inch	mm	inch				
<b>MTG 2500S</b>	M20x2	18	0.71	22	0.86	22	0.86	58	2.28	42,0001,4055	Fe		
		12	0.47	22	0.86	15,1	0.59	58	2.28	42,0001,4065	Fe	standard MTG 2500S	
		10	0.39	22	0.86	13,0	0.51	58	2.28	42,0001,4084	Fe		
		10	0.39	22	0.86	13,0	0.51	54	2.13	42,0001,4083	Fe		
		15	0.59	22	0.86	18,3	0.72	58	2.28	42,0001,4493	Fe		
		12	0.47	22	0.86	15,1	0.59	56	2.20	42,0001,4477	Fe		
		12	0.47	22	0.86	15,1	0.59	58	2.28	42,0001,4498	Al		
<b>MTG 2100S</b>		12	0.47	20	0.79	15,1	0.59	59	2.32	44,0350,4128	Fe	standard MTG 2100S	

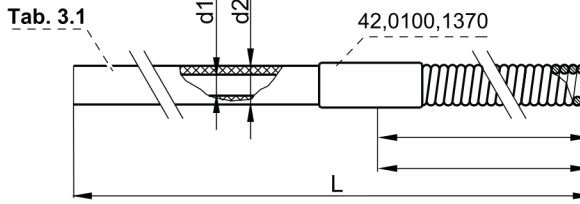
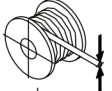
<b>Tab. 4</b> <b>MTG / MTW</b>					
		<b>Fe / CrNi</b>	<b>Alu / CuSi</b>	<b>colour</b>	
Ø mm	Ø inch				
0,8	.031		44,0350,3314	grey	
0,8	.031	44,0350,3315		grey	
0,9/1,0	.039	44,0350,3317		blue	
1,2	.047	44,0350,3318		red	
1,4/1,6	.062	44,0350,3320		black	
2,0	.078		44,0350,3321	green	
2,4	.095		44,0350,4245	brown	
2,0	.078	42,0001,4589			
2,4	.095				
2,8	.110				

<b>Tab. 3</b>													
<b>STEEL MTG/MTW</b>													
		<b>Fe</b>		<b>d1</b>		<b>d2</b>		<b>Part No. L</b>		<b>Part No. L</b>		<b>Part No. L</b>	
Ø mm	Ø inch	mm	inch	mm	inch	5m	16.4feet	15m	49.2feet	50m	160feet		
0,8	.030	1,4	.055	4,4	.176	40,0002,0040,005		40,0002,0040,015		40,0002,0040,050			
0,9-1,0	.035-.040	1,6	.062	4,8	.189	40,0002,0041,005		40,0002,0041,015		40,0002,0041,050			
1,2	.045	1,9	.074	4,9	.192	40,0002,0042,005		40,0002,0042,015		40,0002,0042,050			
1,4-1,6	.052-1/16	2,5	.098	4,9	.192	40,0002,0043,005		40,0002,0043,015		40,0002,0043,050			

<b>Tab. 3</b>													
<b>CrNi MTG/MTW</b>													
		<b>CrNi</b>		<b>d1</b>		<b>d2</b>		<b>Part No. L</b>		<b>Part No. L</b>		<b>Part No. L</b>	
Ø mm	Ø inch	mm	inch	mm	inch	5m	16.4feet	15m	49.2feet	50m	160feet		
0,8	.030	1,4	.055	4,4	.176	40,0002,0044,005		40,0002,0044,015		40,0002,0044,050			
0,9-1,0	.035-.040	1,6	.062	4,8	.189	40,0002,0045,005		40,0002,0045,015		40,0002,0045,050			
1,2	.045	1,9	.074	4,9	.192	40,0002,0046,005		40,0002,0046,015		40,0002,0046,050			
1,4-1,6	.052-1/16	2,5	.098	4,9	.192	40,0002,0047,005		40,0002,0047,015		40,0002,0047,050			

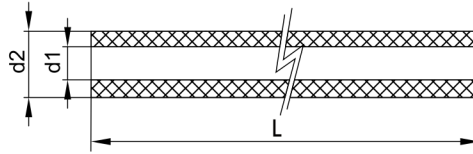
<b>Tab. 3</b>													
<b>STEEL coated MTG/MTW</b>													
		<b>universal</b>		<b>d1</b>		<b>d2</b>		<b>Part No. L</b>		<b>Part No. L</b>		<b>Part No. L</b>	
Ø mm	Ø inch	mm	inch	mm	inch	5m	16.4feet	15m	49.2feet	50m	160feet		
0,8	.030	1,4	.055	4,4	.176	40,0002,0052,005		40,0002,0052,015		40,0002,0052,050			
0,9-1,0	.035-.040	1,6	.062	4,8	.189	40,0002,0053,005		40,0002,0053,015		40,0002,0053,050			
1,2	.045	1,9	.074	4,9	.192	40,0002,0054,005		40,0002,0054,015		40,0002,0054,050			
1,4-1,6	.052-1/16	2,5	.098	4,9	.192	40,0002,0055,005		40,0002,0055,015		40,0002,0055,050			

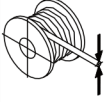
		<b>Tab. 3</b> <b>Alu</b> <b>MTW</b>					
 Ø mm   Ø inch	<b>L</b> m   feet		<b>d1</b> mm   inch		<b>d2</b> mm   inch		<b>Part No.</b>
	0,8   .030	3,8   12,4	1,2   .059	4,7   .185	44,0350,3392		
0,8   .030	4,8   15,7	1,2   .059	4,7   .185	44,0350,3396			
0,9/1,0   .035/.040	3,8   12,4	1,5   .062	4,7   .185	44,0350,3393			
0,9/1,0   .035/.040	4,8   15,7	1,5   .062	4,7   .185	44,0350,3397			
1,2   .045	3,8   12,4	1,8   .062	4,7   .185	44,0350,3394			
1,2   .045	4,8   15,7	1,8   .074	4,7   .185	44,0350,3398			
1,4/1,6   .052/.062	3,8   12,4	2,4   .098	4,7   .185	44,0350,3395			
1,4/1,6   .052/.062	4,8   15,7	2,4   .098	4,7   .185	44,0350,3399			
2,0   .078	3,8   12,4	3,0   .118	4,7   .185	44,0350,3616			
2,0   .078	4,8   15,7	3,0   .118	4,7   .185	44,0350,3617			

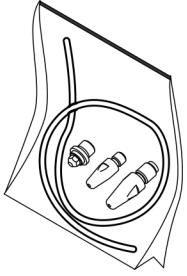
		<b>Tab. 3</b> <b>Alu</b> <b>MTG</b> <b>CuSi</b> <b>MTW / MTG</b>					
 Ø mm   Ø inch	<b>L</b> m   feet		<b>d1</b> mm   inch		<b>d2</b> mm   inch		<b>Part No.</b>
	0,8   .030	3,8   12,4	1,2   .059	4,7   .185	44,0350,3404		
0,8   .030	4,8   15,7	1,2   .059	4,7   .185	44,0350,3408			
0,9/1,0   .035/.040	3,8   12,4	1,5   .062	4,7   .185	44,0350,3405			
0,9/1,0   .035/.040	4,8   15,7	1,5   .062	4,7   .185	44,0350,3409			
1,2   .045	3,8   12,4	1,8   .062	4,7   .185	44,0350,3406			
1,2   .045	4,8   15,7	1,8   .074	4,7   .185	44,0350,3410			
1,4/1,6   .052/.062	3,8   12,4	2,4   .098	4,7   .185	44,0350,3407			
1,4/1,6   .052/.062	4,8   15,7	2,4   .098	4,7   .185	44,0350,3411			
2,0   .078	3,8   12,4	3,0   .118	4,7   .185	44,0350,3619			
2,0   .078	4,8   15,7	3,0   .118	4,7   .185	44,0350,3620			

**Tab. 3.1**

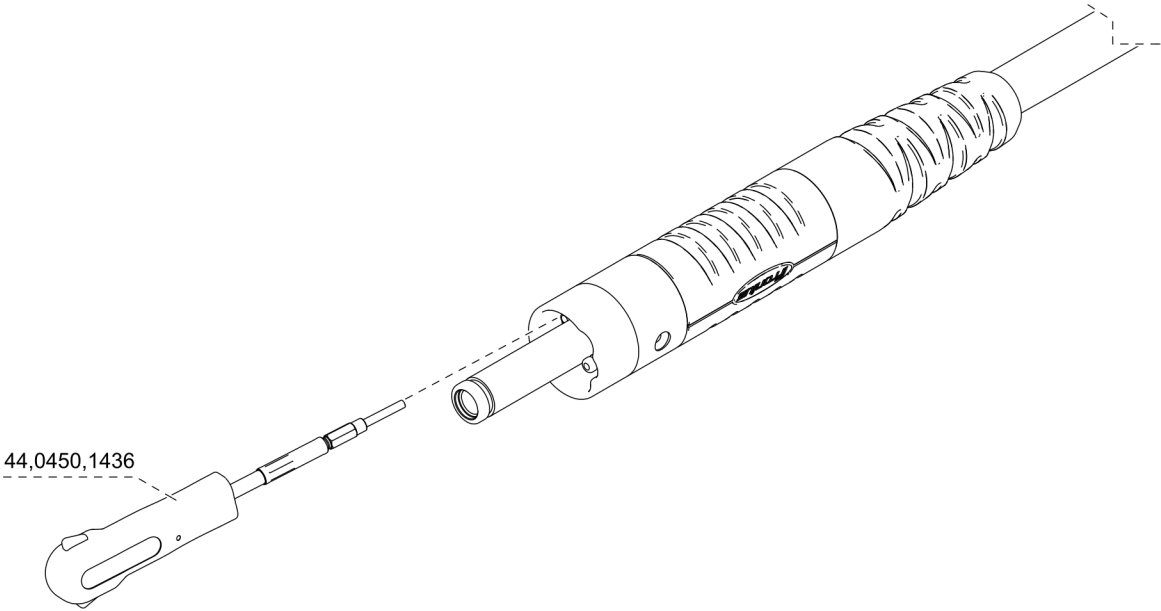
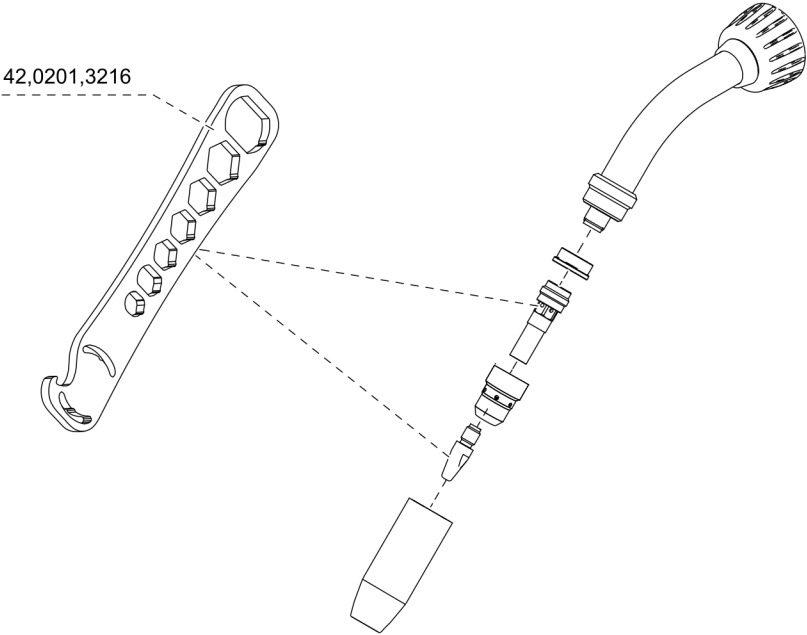
**Gaphit  
MTB W+G**



	AI		d1		d2		Part No. L		Part No. L		Part No. L	
	Ø mm	Ø inch	mm	inch	mm	inch	10m	32.8feet	30m	98feet	100m	328feet
	0,8	.030	1,2	.047	4,7	.185	40,0001,0529,010		40,0001,0529,030		40,0001,0529,100	
	0,9-1,0	.035-.040	1,5	.059	4,7	.185	40,0001,0530,010		40,0001,0530,030		40,0001,0530,100	
	1,2	.045	1,8	.070	4,7	.185	40,0001,0531,010		40,0001,0531,030		40,0001,0531,100	
	1,4-1,6	.052-1/16	2,4	.094	4,7	.185	40,0001,0532,010		40,0001,0532,030		40,0001,0532,100	
	2,0	5/64	3,0	.118	4,7	.185	40,0001,0533,010		40,0001,0533,030		40,0001,0533,100	

Basic kit 250i, 320i, 400i, 500i, 700i	Ø mm	Ø inch	m		Fe	CrNi	Alu	CuSi	Alu/CuSi
			m	feet	MTG / MTW Part No.	MTG / MTW Part No.	MTW Part No.	MTW Part No.	MTG Part No.
	0,6	.023	5,0	11.5	44,0350,5296	X	X		X
	0,8	.030	5,0	11.5	44,0350,5117	44,0350,5158	44,0350,5135		44,0350,5144
	0,9	.035	5,0	14.8	44,0350,5118	44,0350,5159	44,0350,5136		44,0350,5145
	1,0	.040	5,0	11.5	44,0350,5119	44,0350,5160	44,0350,5137		44,0350,5146
	1,2	.047	5,0	14.8	44,0350,5120	44,0350,5161	44,0350,5138		44,0350,5147
	1,4	.052	5,0	11.5	44,0350,5121	44,0350,5162	44,0350,5139		44,0350,5148
	1,6	.062	5,0	14.8	44,0350,5122	44,0350,5163	44,0350,5140		44,0350,5149
	2,0	.078	5,0	14.8	X	X	44,0350,5141		X

TOOLS









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