

Operating instructions



AB Series MIG/MAG Welding Torches



EN English Translation of the original operating instructions

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1 Designated Use

The AB series manual welding torches are used for safety welding of carbon steel and alloy steel materials. They consist of the torch neck with equipment parts and wearing parts, handle and cable assembly with Panasonic connector (or OTC/Euro connector). They correspond to the directive EN 60 974-7 and are not considered to be devices having their own functions. Arc welding can only be carried out in connection with a welding power supply.

1.1 Marking

This product fulfills the requirements that apply to the market to which it has been introduced. A corresponding marking has been affixed to the product, if required.

1.2 Technical Data

Transport and storage	- 25 °C to + 55 °C
During welding	-10 °C to +40 °C
Relative humidity	up to 90 % at 20 °C

Tab. 1 Ambient temperature

Type of voltage	DC
Polarity of the electrode	Usually positive
Shielding gas (DIN EN ISO 14175)	CO ₂ and mixed gas M21
Wire types	commercially available round wires
Guide type	Manual
Voltage rating	113 V peak value
Protection type of the machine side connections (EN 60 529)	IP3X

Tab. 2 General torch data (EN 60 974-7)

Type	Type of cooling	Type of BIKOX cable	CO ₂		M21		Wire Ø	Flow rate
			duty cycle	Load	Duty cycle	Load		
AB Series Torches			%	A	%	A	mm	l/min
20.1	air	V186	60	200	55	200	0.6 - 1.0	10 - 20
20.2	air	R4	55	200	50	200	0.6 - 1.0	10 - 20
35.1	air	V407	60	350	55	350	1.0 - 1.6	10 - 20
35.2	air	V357	50	350	45	350	1.0 - 1.6	10 - 20
50.0	air	R9A	60/35	500/600	50/25	500/600	1.2 - 1.6	15 - 20
50.1	air	V657	60	450	50	450	1.2 - 1.6	15 - 20
50.2	air	V557	50	450	40	450	1.2 - 1.6	15 - 20

Tab. 3 Product-specific torch data (EN 60 974-7)

Standard length L	3.00 m, 4.50 m, 6.00 m
Control lead	2-wire

Tab. 4 Cable assembly data

Torch type	AB20			AB35			AB50		
	3m	4.5 m	6 m	3 m	4.5 m	6 m	3 m	4.5 m	6 m
Standard	For wire Ø 0.8-1.0			For wire Ø1.2-1.4			For wire Ø1.2-1.4		
Wire liner	394.D004	394.D005	394.D006	394.D007	394.D008	394.D009	394.D007	394.D008	394.D009
Optional				For wire Ø1.6			For wire Ø1.6		
Liner				394.D010	394.D011	394.D012	394.D010	394.D011	394.D012
Gaz nozzle	145.D371			145.D373			145.D374		
Nozzle holder				768.D321			768.D322		
Tip holder	768.D585.0			768.D132			768.D133		
Gas diffuser				768.D326			768.D327		
Torch neck	768.D576.0			768.D578.0			768.D580.0		

Tab. 5 Spare parts ' list

Contact tip	∅ 0.6	∅ 0.8	∅ 1.0	∅ 1.2	∅ 1.4	∅ 1.6
T2	140.D435	140.D436 ¹	140.D438	140.D439 ²	140.D440	140.D441
Cr/Zr/Cu	140.1520	140.1521	140.1523	140.1524	140.1525	140.1526

Tab. 6 Contact tip list

1 Standard contact tip for AB20

2 Standard contact tip for AB35/50

2 Safety Instructions

Observe the enclosed document Safety Instructions.

2.1 Classification

The warning signs used in the operating instructions are divided into four different levels and are shown prior to specific work steps. Arranged in descending order of importance, they have the following meaning:

DANGER

Describes imminent threatening danger. If not avoided, it will result in fatal or extremely critical injuries.

WARNING

Describes a potentially dangerous situation. If not avoided, it may result in serious injuries.

CAUTION

Describes a potentially harmful situation. If not avoided, it may result in slight or minor injuries.

NOTE

Describes the risk of impairing work results or the risk that may result in material damage to the equipment.

2.2 Emergency information

In case of emergency, immediately interrupt the power and shielding gas. Further measures can be found in the "Power supply" user manual or in the documentation of further peripheral devices.

3 Putting into operation

⚠ DANGER

Risk of injury due to unexpected start-up.

For the entire duration of maintenance, servicing, dismantling and repair work, the following instructions must be adhered to:

- Switch off the power supply.
- Close off the gas supply.
- Disconnect all electrical connections.

3.1 Equipping the torch

⚠ CAUTION

Risk of injury

Piercing or puncture caused by electrode tip.

- Do not reach into the danger zone and wear protective gloves.

3.1.1 Equipping spare parts onto the torch neck

Equip the torch neck according to the following figure:

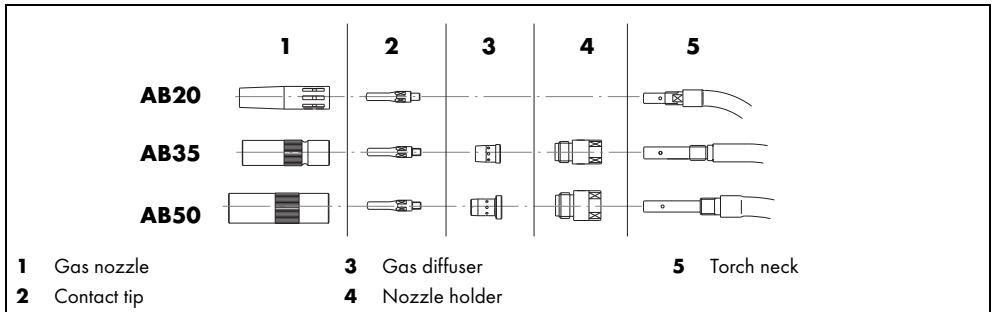


Fig. 1 Equipping the torch

3.1.2 Changing the torch neck or adjusting the torch neck's direction

- 1 Uncover the black cover cap on the handle.
- 2 Loosen the torch neck lock bolt with an inner hexagonal wrench (4 mm), but do not unscrew the bolt out.
- 3 Pull out the torch neck, insert the new torch neck in and turn it to the correct position.
- 4 Fasten the lock bolt and cover the cover cap again.

3.2 Mounting the wire guide liner

- 1 Lay the torch straight out and unscrew the gas nozzle as well as the contact tip from the torch neck.
- 2 Slide the wire guide liner into the torch up to the Panasonic connector; for the torches with Euro or OTC connector, unscrew the position holder nut on the connector, insert the wire guide liner in and then screw the position holder nut back on again.
- 3 Fold the torch side cable to a degree of 180°, cut off the wire guide liner at the end of the tip holder.
- 4 Pull out the wire guide liner.
- 5 Sharpen the wire guide liner to an angle of approx. 40° and deburr the cutting edge.
- 6 Insert the wire guide liner into the torch again; for torches with Euro or OTC connectors, please screw the position holder nut on the connector and tight with a spanner.
- 7 Screw the contact tip and gas nozzle back on again.

3.3 Connecting the torch to machine

- 1 Insert the Panasonic connector into the wire feed unit, and tight the lock bolt on the wire feed unit; for Euro or OTC connectors, screw the union nut tight.
- 2 Properly mount the connections for shielding gas.

3.4 Setting the shielding gas quantity

NOTE
<ul style="list-style-type: none">• The type and quantity of the shielding gas quantity depends on the welding task and the gas nozzle geometry.• Make all shielding gas connections gas-tight.• To prevent the shielding gas supply from becoming clogged by impurities, the cylinder valve must be opened briefly, before connecting the cylinder. This will blow out any impurities that may be present.

3.5 Feed in wire

- 1 Insert the wire in the wire feed unit as specified by the manufacturer.
- 2 Press the "Wire Jog" push-button at the wire feed unit until the wire comes out of the contact tip.

4 Operating elements

NOTE
<ul style="list-style-type: none">As the AB Series Torches torch is integrated into a welding system, the operating instructions of the welding components, such as power supply, must be observed during operation.

- 1 Press the trigger on the handle and keep it pressed = welding is started.
- 2 Release the trigger = welding is stopped.

5 Removal from service

- 1 Wait until the shielding gas flow has subsided and switch off the power supply.
- 2 Close the valve of the shielding gas cylinder.

6 Maintenance and cleaning

DANGER

Risk of injury due to unexpected start-up.

For the entire duration of maintenance, servicing, dismantling and repair work, the following instructions must be adhered to:

- Switch off the power supply and close off the gas supply.
- Pull out the mains plug.

- 1 Unscrew the torch on the wire feed unit and lay it straight out.
- 2 Dismount the wire guide liner and replace it if necessary.
- 3 Remove worn parts from the torch neck.

WARNING

Risk of injury

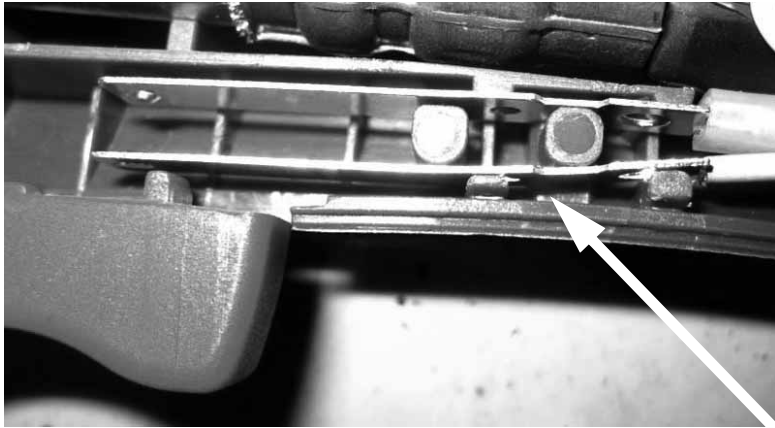
Serious injuries caused by parts swirling around.

- When cleaning the wire guide liner with compressed air, wear suitable protective clothing, in particular safety goggles.

- 4 Clean the wire guide liner from both sides with compressed air.
- 5 Mount the wire guide liner back on the torch.
- 6 Connect the torch on the wire feed unit.

NOTE

- When change contact-tip holder or torch neck, or connect Panasonic to machine side, the contact surface between parts must be clean and free from hard particles, otherwise the surface will be scraped and good contact won't be guaranteed.
- When assemble trigger contact spring onto torch handle, be care not to bend the spring and make sure the two springs are assembled with the contact points face to face. The groove on the spring must be set on the stage shown as the following photo.



1 The contact springs must be assembled with the groove set on the stage of the torch handle

Fig. 2 Assemble trigger contact spring

Notes

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