

TIG Welding Torch System

“ABITIG® WH” liquid cooled



Fast, safe & reliable ...

The ABITIG® WH welding torch system from ABICOR BINZEL for TIG brazing and TIG welding offers a high degree of process reliability for the joining of a wide range of different materials.

Pre-set tungsten electrodes, reproducible torch replacement and servicing work done outside the robot cell guarantee consistently high quality and system availability.

With only two design sizes in different geometries, even for the most complex of components, the TIG welding torch system ABITIG® WH covers almost all automatic TIG applications. Also available with cold wire feeding according to the push or push-pull principle.

Advantages that speak for themselves:

- Flexible and fast adaptation to changing welding tasks
- Pre-set tungsten electrode
- Reproducible torch position
- With cold wire feeding and push-pull function
- Liquid cooled up to 400 A
- Technically matured and 100% reliable
- Automatic neck change available for maximum system up-time

Degree of automation:

Low	Medium	High
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Typical areas of application:



- Automotive construction
- Bicycle industry
- Container and pipe construction
- Machine and steel construction
- Aviation and aerospace industry

Material:

- Chrome-nickel steels
- Duplex steels
- Nickel basic materials
- Mixed compounds
- Aluminium materials
- Magnesium materials
- Copper materials
- Special materials

Robot interface:

- Conventional robot
(Cable assembly external):
 - Robot mount CAT3
 - Fixed bracket RTM

up to
400 A



* Definition of the degree of automation:

- Low = Torch neck change not possible
- Medium = Torch neck change possible (manually)
- High = Torch neck change possible (manually & automatically)

“ABITIG® WH” liquid cooled System Overview & Technical Data

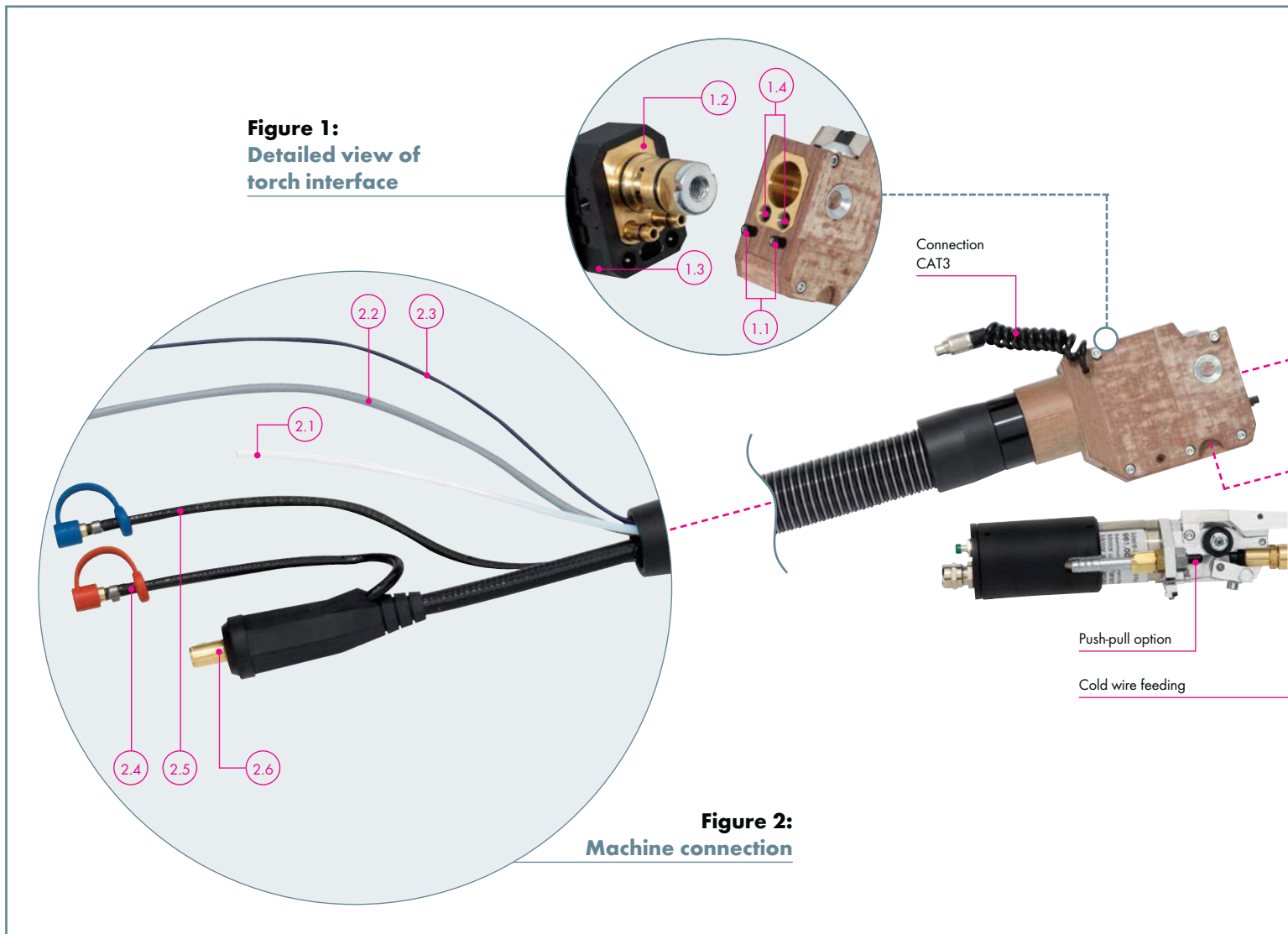


Figure 1:
Detailed view of cable assembly

- 1.1 Contacts for help with ignition
- 1.2 O-rings ensure a gas-tight connection
- 1.3 Compact and space-saving interface
- 1.4 Non-return valves for leak-free torch neck replacement

Figure 2:
Machine connection

- 2.1 Hose for inert gas feed
- 2.2 High-quality control cable
- 2.3 Flexible control cable for ignition aid (optional) or sensor
- 2.4 Coolant return hose with closure
- 2.5 Coolant feed hose with closure
- 2.6 Sturdy brass connector with high-grip rubber bend protection (machine connection available for all standard power sources)

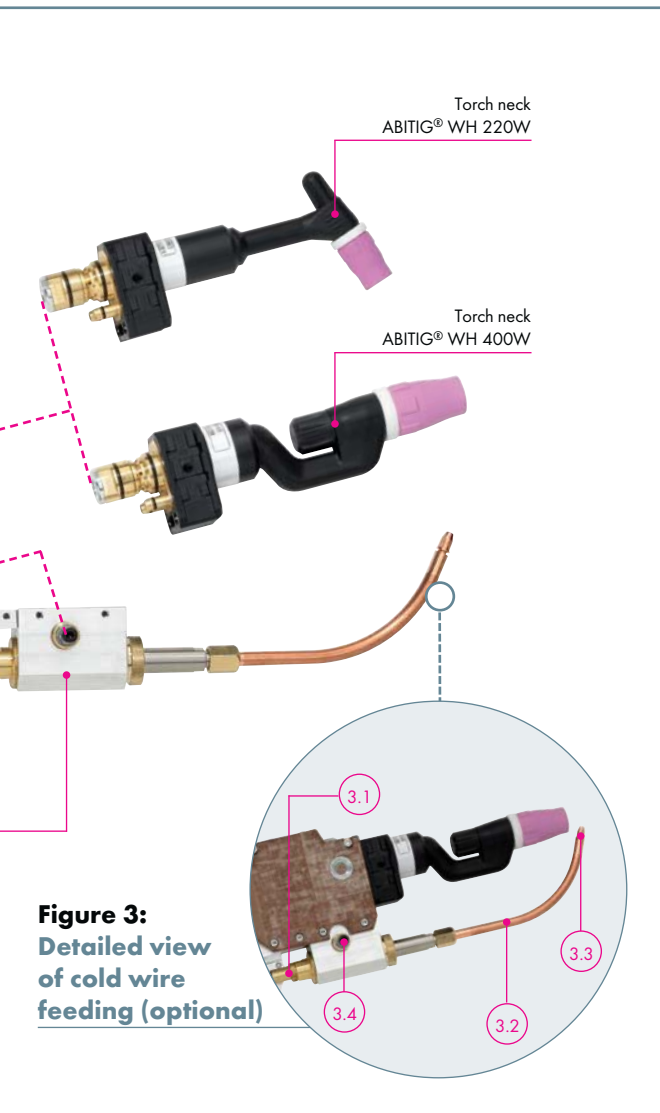
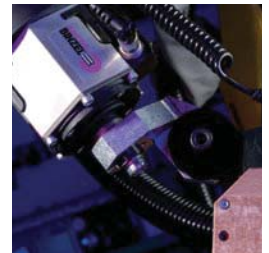
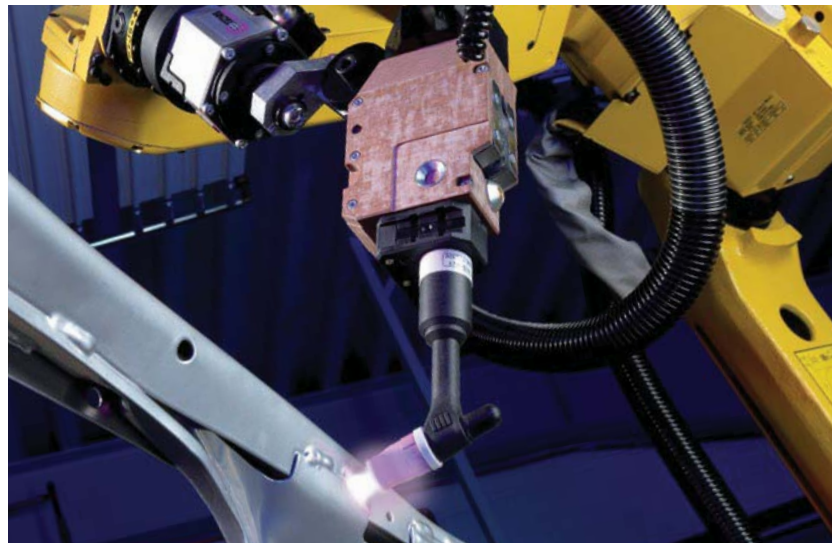


Figure 3:
Detailed view
of cold wire
feeding (optional)

Figure 3:
Detailed view of cold wire feeding

- 3.1 Cold wire feeding with and without push-pull option
- 3.2 Feeding tube
- 3.3 Feeding tip
- 3.4 Swivel function for fully automatic torch neck replacement in connection with ATS rotor



Technical data (EN 60 974-7):

ABITIG® WH 220W

Type of cooling:	liquid cooled
Rating:	220 A DC 160 A AC
Duty cycle:	100 %
Electrode-Ø:	1.0-3.2 mm
Torch geometries:	70°

ABITIG® WH 400W

Type of cooling:	liquid cooled
Rating:	400 A DC 280 A AC
Duty cycle:	100 %
Electrode-Ø:	1.6-4.8 mm
Torch geometries:	0°/45°/70°/90°

Note on the technical data:

Rating data were determined under normal conditions at low to medium reflected heat, free air circulation and at 28°C ambient temperature. When used under more difficult conditions, the rating data must be reduced by 10 - 20 %. The rating data are reduced by up to 35 % for pulse arc welding.

“ABITIG® WH” liquid cooled Torch Necks & Wear Parts

ABITIG® WH 220W



Torch neck

Features	Part-No.
Standard	781.1001
WS version	781.2010.1

Wear parts and fittings are not included in the scope of delivery! Please order these separately and according to the application!

Wear parts for ABITIG® WH 220 W



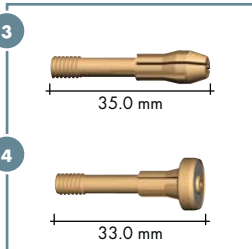
1 Torch cap
(1 pc.)



2 Insulator
(10 pcs.)

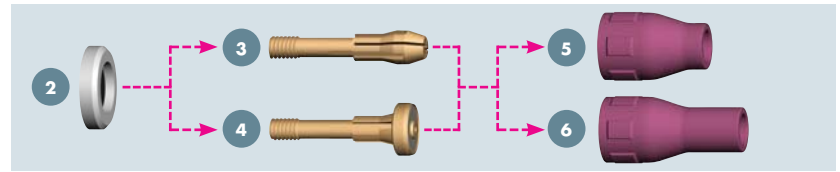
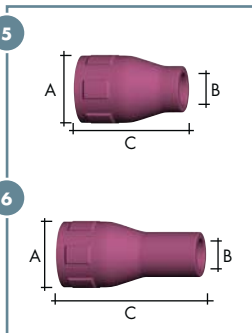


3 Electrode holder
4 Gas diffuser
(5 pcs.)



5 Gas nozzle, short

6 Gas nozzle, long
(10 pcs.)



Type	Part-No.
Standard	776.0053
WS clamping element (not illustrated)	781.2012.1

Type	Part-No.
Standard	776.1043
WS version	781.2018.1

Type	Wire-Ø	Part-No.	
		Electrode holder	Gas diffuser
Standard	Ø 1.0	776.0061	776.0171
	Ø 1.6	776.0062	776.0172
	Ø 2.0	776.0067	776.0177
	Ø 2.4	776.0063	776.0173
	Ø 3.2	776.0064	776.0174

Short type	Ø A	Ø B	Length C	Part-No.
Standard	Ø 16.8	Ø 6.5	26.0 mm	777.0081
	Ø 16.8	Ø 8.0	26.0 mm	777.0082
	Ø 16.8	Ø 9.5	26.0 mm	777.0083
	Ø 16.8	Ø 11.0	26.0 mm	777.0084

Long type	Ø A	Ø B	Length C	Part-No.
Standard	Ø 16.8	Ø 6.5	36.0 mm	777.2171
	Ø 16.8	Ø 8.0	36.0 mm	777.2172
	Ø 16.8	Ø 9.5	36.0 mm	777.2173
	Ø 16.8	Ø 11.0	36.0 mm	777.2174

"ABITIG® WH" liquid cooled Torch Necks & Wear Parts

ABITIG® WH 400W



Torch neck

Features	Part-No.			
	0°	45°	70°	90°
Standard	781.0504	781.0507	781.0501	781.0510
WS version	781.2008.1	-	-	-

Wear parts and fittings are not included in the scope of delivery! Please order these separately and according to the application!

Wear parts for ABITIG® WH 400 W



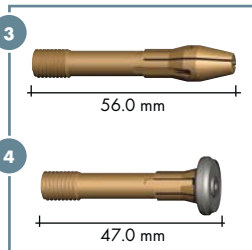
1 Torch cap
(1 pc.)



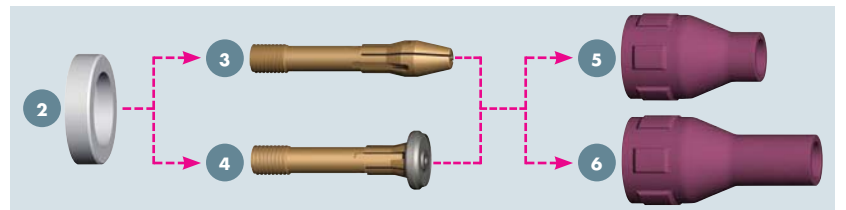
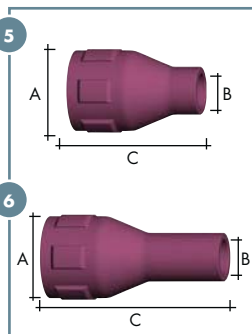
2 Insulator
(1 pc.)



3 Electrode holder
4 Gas diffuser
(5 pcs.)



5 Gas nozzle, short
6 Gas nozzle, long
(10 pcs.)



Type	Part-No.
Standard	967.1351
WS clamping element (not illustrated)	781.2006.1

Type	Part-No.
Standard	775.1043
WS version	779.4043.1

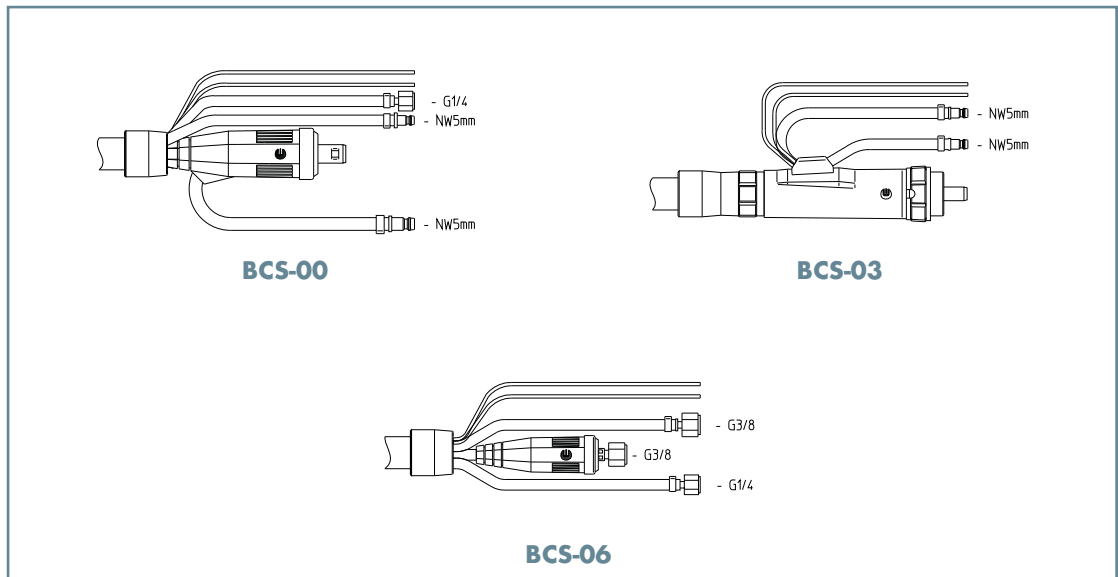
Type	Wire-Ø	Part-No.	
		Electrode holder	Gas diffuser
Standard	Ø 1.6	775.0062	773.0172
	Ø 2.0	775.0067	773.0177
	Ø 2.4	775.0063	773.0173
	Ø 3.2	775.0064	773.0174
	Ø 4.0	775.0065	773.0175
	Ø 4.8	775.0066	773.0176

Short type	Ø A	Ø B	Length C	Part-No.
Standard	Ø 23.5	Ø 7.5	37.0 mm	775.0081
	Ø 23.5	Ø 10.0	37.0 mm	775.0082
	Ø 23.5	Ø 13.0	37.0 mm	775.0083
	Ø 23.5	Ø 15.0	37.0 mm	775.0084

Long type	Ø A	Ø B	Length C	Part-No.
Standard	Ø 23.5	Ø 7.5	52.0 mm	775.2171
	Ø 23.5	Ø 10.0	52.0 mm	775.2172
	Ø 23.5	Ø 13.0	52.0 mm	775.2173
	Ø 23.5	Ø 15.0	52.0 mm	775.2174

"ABITIG® WH" liquid cooled Cable Assemblies & Options

Cable assemblies



Cable assemblies cpl.

Design	Part-No.		
	L=4.00 m*	L=6.00 m*	L=8.00 m*
BCS-00 Standard	781.0526	781.0527	781.0528
BCS-03	781.0517		781.0519
BCS-06	781.0523	781.0524	781.0525

*Further versions on request

Options

Cold wire feeding

Description	Version / specifications	Part-No.
Cold wire feeding cpl.	incl. feeding tube and tip	967.0320
Feeding tube	ABITIG® WH 220 W 70	967.0327
Feeding tube	ABITIG® WH 400 W 0	967.0326
Feeding tube	ABITIG® WH 400 W 45	967.0328
Feeding tube	ABITIG® WH 400 W 70	967.0325
Feeding tube	ABITIG® WH 400 W 90	967.0325
Feeding tube	ABITIG® WH 220/400 WS	967.0338.1
Feeding tip	for wire-Ø 0.8	967.0329
Feeding tip	for wire-Ø 1.0	967.0330
Feeding tip	for wire-Ø 1.2	967.0331
Feeding tip	for wire-Ø 1.6	967.0332
Wire conduit cpl.	4.00 m long	781.0514
Wire conduit cpl.	6.00 m long	781.0515
Wire conduit cpl.	8.00 m long	781.0516

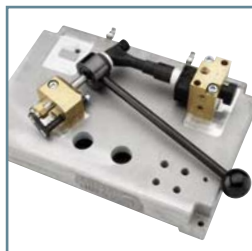
Push-pull option

Push-pull option cpl. with tacho-motor	i=13.7:1 for $\Delta V = 1.1 - 8.0$ m / min. incl. drive rolls 1.0 mm	963.0120
Push-pull option cpl. with encoder motor	i=34.3:1 for $\Delta V = 0.2 - 5.0$ m / min. incl. drive rolls 1.0 mm	963.0253.1
Drive roll	for wire-Ø 0.6	961.0268
Drive roll	for wire-Ø 0.8	961.0269
Drive roll	for wire-Ø 1.0	961.0227
Drive roll	for wire-Ø 1.2	961.0228
Drive roll	for wire-Ø 1.6	961.0267

"ABITIG® WH" liquid cooled

Accessories & Holders

Accessories



Alignment jig

for torch type	Torch geometry	Part-No.
ABITIG® WH 220 WS	70°	837.0440.1
ABITIG® WH 400 W	0°/45°/70°/90°	837.0440.1
ABITIG® WH 220 W	45° / 90°	837.0442.1

Ignition aid (not ill.)

for torch type	Part-No.
ABITIG® WH 220 W	967.0102
ABITIG® WH 400 W	967.0101

Bracket



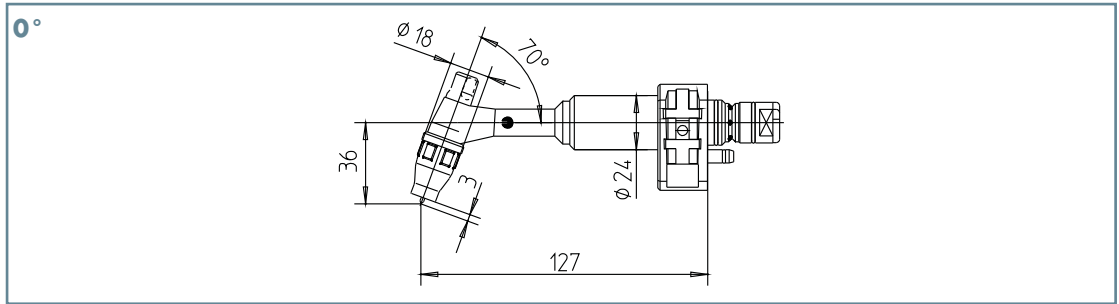
Clamp holder for ABITIG® WH

in connection with CAT3 cpl.

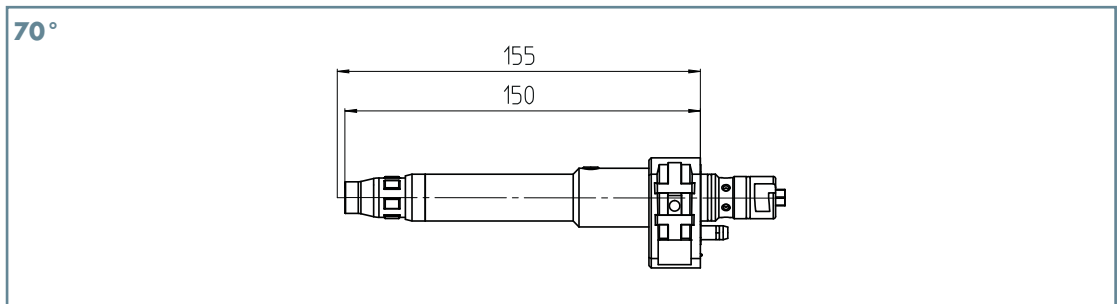
Torch type	Part-No.
ABITIG® WH	963.0007.1

"ABITIG® WH" liquid cooled Geometries

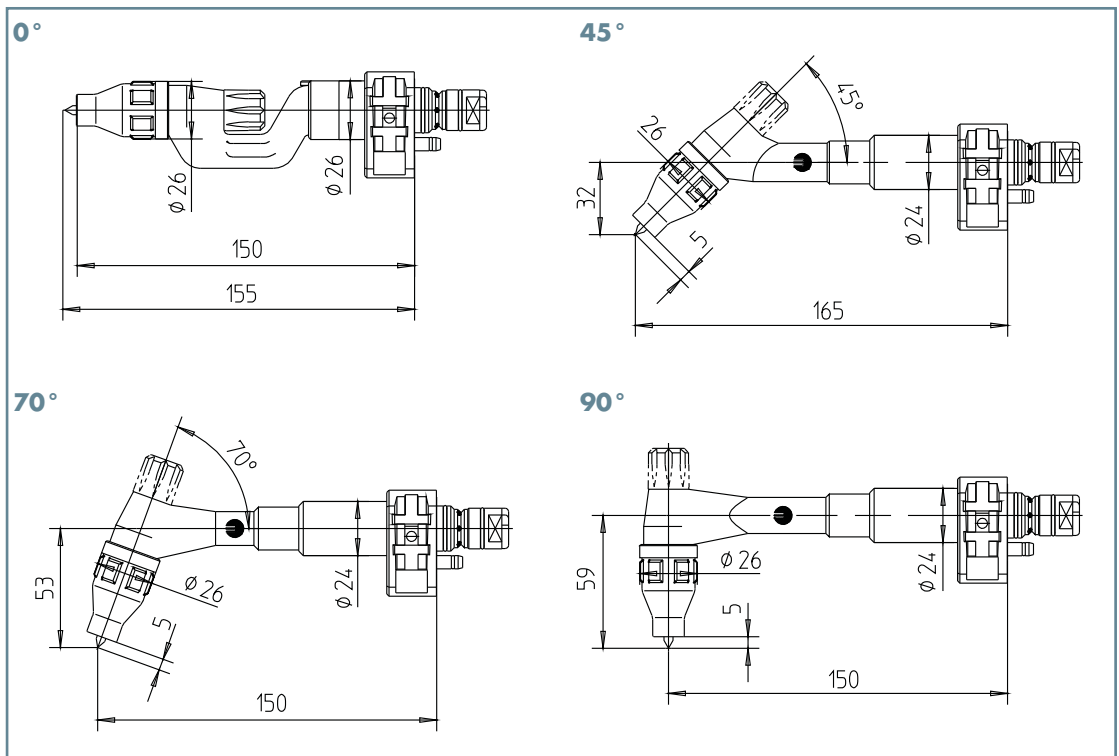
Dimensional sketch
ABITIG® WH 220 W



Dimensional sketch
ABITIG® WH 220 WS



Dimensional sketch
ABITIG® WH 400 W



Dimensional sketch
ABITIG® WH 400 WS

