TECHNOLOGY FOR THE WELDER´S WORLD.

ROBO CATALOG

Robotic Welding Torches & Accessories

ABICOR BINZEL® ROBOTIC SYSTEMS

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MOTOMAN

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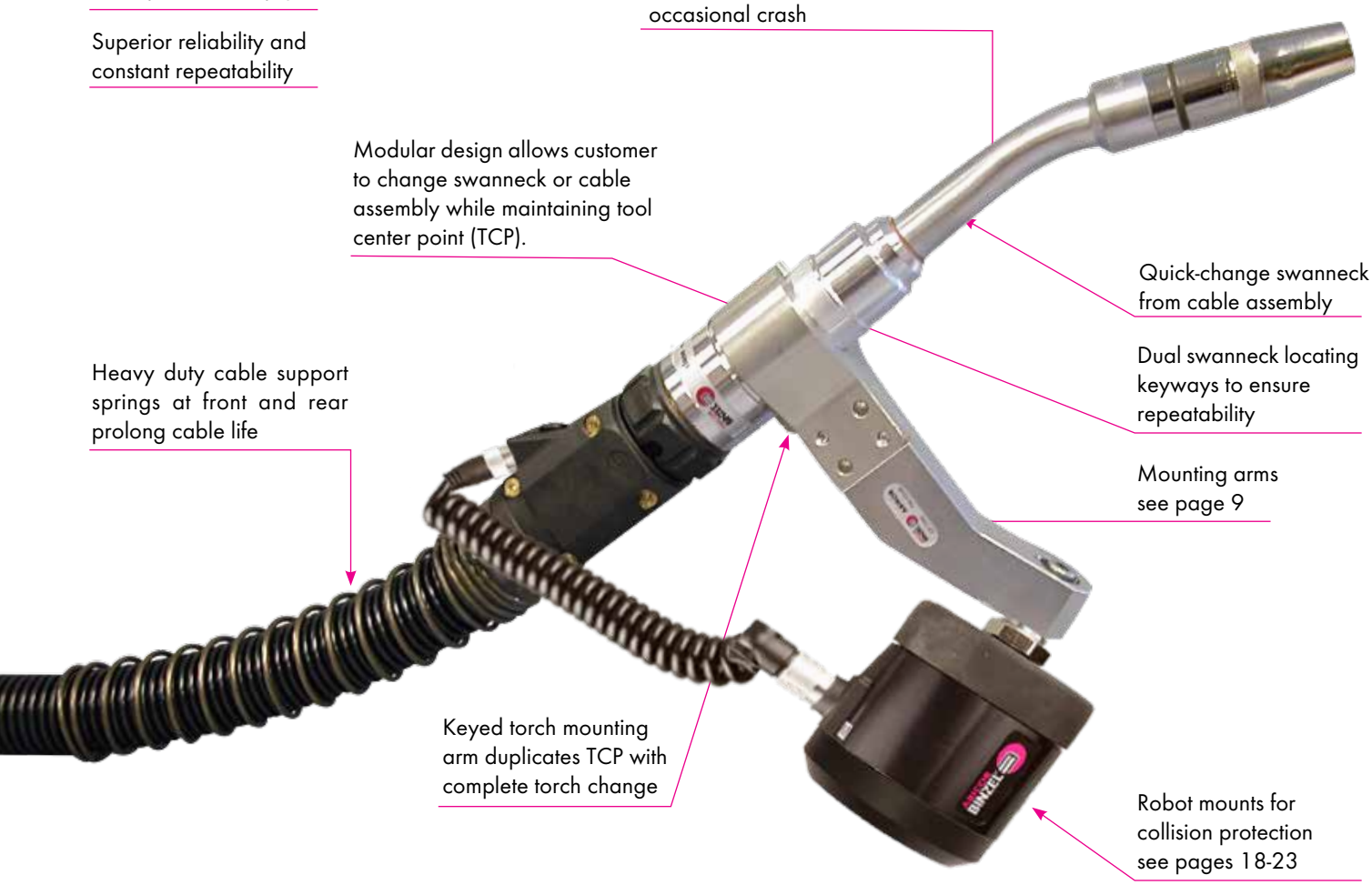
ABIROB® AIR COOLED ROBOTIC MIG GUNS
360 and 500 Amp

The modular design of the rugged, yet flexible, ABIROB® torches allow the user to quickly replace the swanneck or cable assembly while maintaining tool center point (TCP), assuring accurate repeatability and continuous precision welding. The keyed torch mounting-arm duplicates TCP with complete torch change. Available in 360 and 500 amperes, ABIROB® torches are second to none with aluminum armored swannecks for crash protection, internal air blast, internal control wire, emergency stop connector, and heavy duty cable support springs at front and rear to prolong cable life. Direct mounts allow ABIROB® torches to connect to most major wire feed models.

RUGGED YET FLEXIBLE.



ABIROB® A360 and A500 Air-Cooled

Type / Rating	*Shielding Gas CO_2	*Shielding Gas Mixed	Duty Cycle (%)	Wire Size Inches	Wire Size mm
A360	360	290	100%	.030 - .062	0.8 - 1.6 mm
A500	500	400	100%	.030 - .062	0.8 - 1.6 mm

Available torch neck geometries: 22, 35, 45, and 180 degrees.
*In case of mixed and/or pulsed arc welding, the rating data may be reduced to 35%

ABIROB® A360 / A500
With Performance Cable

ORDERING INSTRUCTIONS FOR COMPLETE ABIROB® GUNS

Example: R5A-4022EX-B

R5 (TORCH MODEL) **A** (TYPE) **-** **40** (CABLE LENGTH) **22** (SWANNECK ANGLE) **E** (BACK END) **X** (CONTROL CONNECTOR) **-** **B** (OPTIONS)

TORCH MODEL
R5 - 500 amp
R3 - 360 amp

TYPE
A - ABIROB Air-Cooled with Performance Cable

CABLE LENGTH
30 - 3 ft.
40 - 4 ft.
45 - 4.5 ft.
50 - 5 ft.
60 - 6 ft.
70 - 7 ft.
80 - 8 ft.
90 - 9 ft.
10 - 10 ft.
12 - 12 ft.

SWANNECK ANGLE
22 - 22 degree bend
45 - 45 degree bend
18 - 180 degree straight
22L- 22 degree bend long neck
45L- 45 degree bend long neck

BACK END
C - OTC Daihen® CMRE 741 AF4001
D - OTC Daihen® CM 147,231
E - Euro
F - Fronius® VR 1500/4000
K - Lincoln® PF10, 4R90
L - Lincoln® Synergic 7, LN Series
M - Miller®
P - Panasonic®
T - Motoman®/Tweco® #5

CONTROL CONNECTOR
X - None
A - ABICOR
B - Brad Harrison®
C - Burndy®
D - Fanuc®
E - Amp 4 Pin
F - Panasonic®
H - Denki® 2 Pin
K - OTC® 2 Pin

OPTIONS
A - Voltage Sense
B - Nozzle Sense
C - Wire Inch
E - No E-Stop
F - No Airblast
G - Wire Brake 035/045
H - Wire Brake 052/062

ORD.0008

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Collision Mounts
See pages 25 - 30

Mounting Arms
See Pages 8

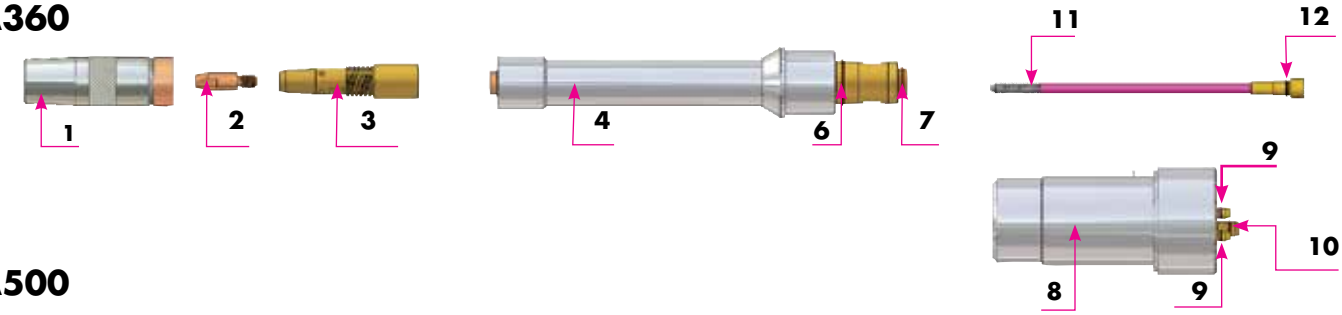
Alignment Jigs
See Page 24

ABIROB® AIR COOLED ROBOTIC MIG GUNS

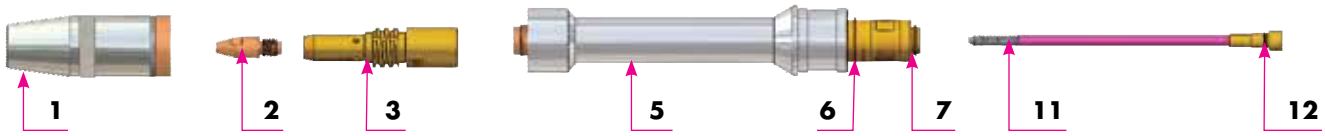
Front End

Quick-change swanneck or cable assembly while maintaining tool center point (TCP)

A360



A500

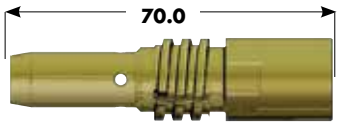


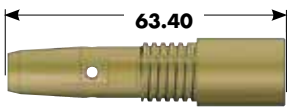
INTERCHANGEABLE PARTS
SOLD SEPARATELY

ABIROB® A360 and A500 Front End

Item No.	Description	Specifications	Part No.
1	Nozzles	See page 7	See page 7
2	Contact Tips	See page 7	See page 7
3	Diffusers/Tip Holders	See below	See below
4	Swanneck, A360	180 Degree	980.1023
4	Swanneck, A360	22 Degree	980.1024
4	Swanneck, A360 long, 13.85x1.96" (372x50mm)	22 Degree	980.1038
4	Swanneck, A360	35 Degree	980.1025
4	Swanneck, A360	45 Degree	980.1026
4	Swanneck, A360 long, 13.85x1.96" (372x50mm)	45 Degree	980.1052
5	Swanneck, A500	180 Degree	980.1012
5	Swanneck, A500	22 Degree	980.1013
5	Swanneck, A500 long, 14.09x4.21"(358x107mm)	22 Degree	980.1044
5	Swanneck, A500	35 Degree	980.1014
5	Swanneck, A500	45 Degree	980.1015
5	Swanneck, A500 long, 14.09x4.21"(358x107mm)	45 Degree	980.1108
6	O-Ring 18 x 1 mm		165.0067
7	O-Ring 10 x 1 mm		165.0081
8	Intermediate Module, A360 & A500		980.1001
9	O-Ring 3 x 1.5 mm A360 & A500		165.0007
10	O-Ring 5 x 1 mm A360 & A500		165.0072
11	Neckliner A360 & A500	See page 8	See page 8
12	O-Ring for Neckliners		165.0072
N/S	Alignment Jig	180 Degree, 22 Degree, 45 Degree	837.0500
N/S	Alignment Jig	22 Degree long, 45 Degree long	837.0510

Long neckliners required for long swannecks.
N/S = Not Shown
Alignment Jigs see Page 17

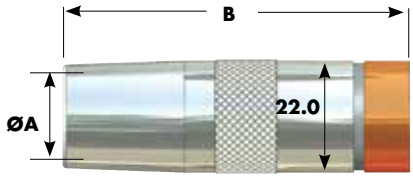




Diffusers/Tip Holders (packaged 10 per bag)

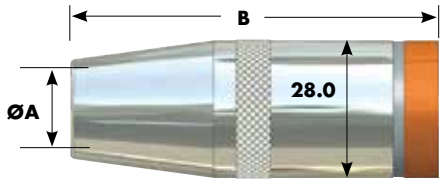
Model	Description	Part No.
A360	Diffuser/Tip Holder for M6 Contact Tips - ABIROB® A360 Standard	142.0160
A500	Diffuser/Tip Holder for M8 Contact Tips - ABIROB® A500 Standard	142.0158
A500	Diffuser/Tip Holder for M6 Contact Tips - ABIROB® A500 Optional	142.0159

Consumables: Nozzles, Contact Tips



Conical

Bottleform not shown



Conical

Bottleform not shown

A360 Nozzles (packaged 5 per bag)

Description	Part No.	Dimension A Inch	Dimension A mm	Dimension B Inch	Dimension B mm	Reamer	Clamp Set	V-Block
Conical - Flush	145.0592	5/8″	16mm	2.68″	68mm	831.0487	831.0166	831.0371
Conical - Recess 2mm	145.0593	5/8″	16mm	2.75″	70mm	831.0487	831.0166	831.0371
Conical - Stickout 3mm	145.0594	5/8″	16mm	2.56″	65mm	831.0589	831.0166	831.0371
Conical - Flush	145.0595	9/16″	14mm	2.68″	68mm	831.0592	831.0166	831.0371
Conical - Recess 2mm	145.0596	9/16″	14mm	2.75″	70mm	831.0592	831.0166	831.0371
Conical - Stickout 3mm	145.0597	9/16″	14mm	2.56″	65mm	831.0593	831.0166	831.0371
Bottleform - Flush	145.0599	1/2″	13mm	2.68″	68mm	831.0604	831.0166	831.0371
Bottleform - Stickout 3mm	145.0601	1/2″	13mm	2.56″	65mm	831.0604	831.0166	831.0371

A500 Nozzles (packaged 5 per bag)

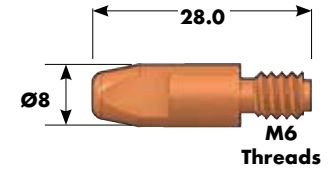
Conical - Flush	145.0580	5/8″	16mm	2.95″	75mm	831.0488	831.0148	831.0318
Conical - Recess 2mm	145.0581	5/8″	16mm	3.03″	77mm	831.0487	831.0148	831.0318
Conical - Stickout 3mm	145.0582	5/8″	16mm	2.83″	72mm	831.0591	831.0148	831.0318
Conical - Flush	*145.0589	1/2″	13mm	2.95″	75mm	**831.0180	831.0148	831.0318
Conical - Recess 2mm	*145.0590	1/2″	13mm	3.03″	77mm	**831.0180	831.0148	831.0318
Conical - Stickout 3mm	145.0591	1/2″	13mm	2.83″	72mm	**831.0169	831.0148	831.0318
Bottleform - Flush	145.0586	9/16″	14mm	2.95″	75mm	831.0592	831.0148	831.0318
Bottleform - Recess 2mm	145.0587	9/16″	14mm	3.03″	77mm	831.0592	831.0148	831.0318
Bottleform - Stickout 3mm	145.0588	9/16″	14mm	2.83″	72mm	831.0593	831.0148	831.0318
Bottleform - Flush	145.0583	5/8″	16mm	2.95″	75mm	831.0488	831.0148	831.0318
Bottleform - Recess 2mm	145.0584	5/8″	16mm	3.03″	77mm	831.0488	831.0148	831.0318
Bottleform - Stickout 3mm	145.0585	5/8″	16mm	2.83″	72mm	831.0591	831.0148	831.0318

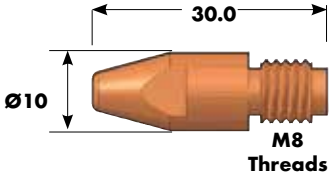
* M6 Tips recommended for use with this nozzle

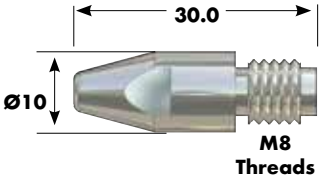
** For use with M6 Tips. Optional reamer for standard M8 Tips - Part No. 831.0413

Contact Tips

Style	Wire Size Inch	Wire Size mm	A360 M6 Part No.	A500 M8 Part No.
E - CU for Aluminum	.030	0.8	141.0001	141.0003
E - CU for Aluminum	.035	0.9	141.0004	141.0043
E - CU for Aluminum	.045	1.2	141.0082	141.0075
E - CU for Aluminum	.062	1.6	141.0020	141.0022
CuCrZr	.030	0.8	140.0054	140.0117
CuCrZr	.035	0.9	140.0172	140.0217
CuCrZr	.045	1.2	140.0382	140.0445
CuCrZr (Tight tolerance)	.045	1.2	140.1287	140.1224
CuCrZr	.052	1.4	–	140.0536
CuCrZr	.062	1.6	–	140.0590
CZ Silver Plated	.030	0.8	147.0054	147.0117
CZ Silver Plated	.035	0.9	147.0172	147.0217
CZ Silver Plated	.045	1.2	147.0382	147.0445
CZ Silver Plated (Tight tolerance)	.045	1.2	147.1287	147.1224
CZ Silver Plated	.052	1.4	–	147.0536
CZ Silver Plated	.062	1.6	–	147.0590

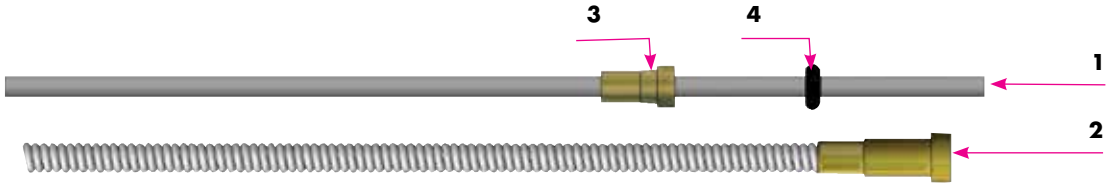






ABIROB® AIR COOLED ROBOTIC MIG GUNS

Liners, Neckliners, Replacement Cable Assemblies

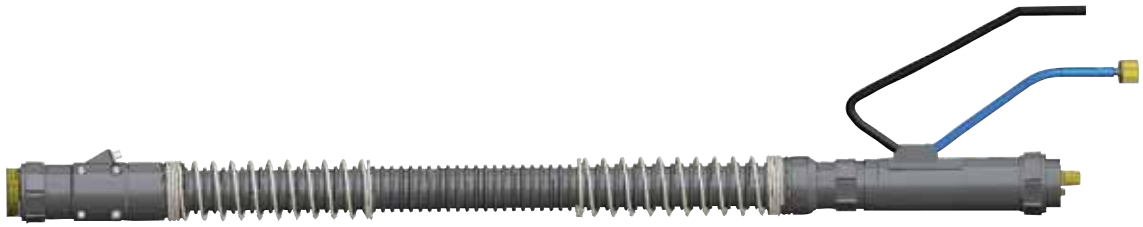


Liners

Item No.	Model	Description	Wire Size Inch	Wire Size mm	Length Feet	Length Meter	Part No.
1	A360/A500	Liner for Aluminum wire	.035"-.045"	0.9-1.2mm	12 ft	3.66M	128.9002
1	A360/A500	Liner for Aluminum wire	.052"-.062"	1.4-1.6mm	12 ft	3.66M	128.9005
2	A360/A500	Liner for Steel wire	.035"-.045"	0.9-1.2mm	17 ft	5.18M	122.9057
2	A360/A500	Liner for Steel wire	.052"-.062"	1.4-1.6mm	17 ft.	5.18M	122.9058
2	A360/A500	Liner for Steel wire	.035"-.045"	0.9-1.2mm	7 ft. 3 in.	2.23M	122.9057-7
2	A360/A500	Liner for Steel wire	.052"-.062"	1.4-1.6mm	7 ft. 3 in.	2.23M	122.9058-7
3	A360/A500	Collet	.035"-.045"	0.9-1.2mm	–	–	131.0001
3	A360/A500	Collet	.052"-.062"	1.4-1.6mm	–	–	131.0002
4	A360/A500	O-Ring 3.5 x 1.5 mm	–	–	–	–	165.0008

Neckliners

Model	Description	Wire Type	Wire Size Inch	Wire Size mm	Part No.
A360/A500	Neckliner ABIROB® A360/A500	Steel	.035"-.045"	0.9-1.2mm	149.0033
A360/A500	Neckliner ABIROB® A360/A500	Steel	.052"-.062"	1.4-1.6mm	149.0034
A360/A500	Neckliner ABIROB® A360/A500	Aluminum	.035"-.045"	0.9-1.2mm	149.0035
A360/A500	Neckliner ABIROB® A360/A500	Aluminum	.052"-.062"	1.4-1.6mm	149.0036



ABIROB® A360 Cable Assemblies

Connection	Cable Length Feet	Cable Length Meter	Part No.
EURO	4 ft.	1.22M	R3A - C - 40EX
LINCOLN	4 ft.	1.22M	R3A - C - 40LX
MILLER	4 ft.	1.22M	R3A - C - 40MX
EURO	4.5 ft.	1.37M	R3A - C - 45EX
LINCOLN	4.5 ft.	1.37M	R3A - C - 45LX
MILLER	4.5 ft.	1.37M	R3A - C - 45MX
EURO	5 ft.	1.52M	R3A - C - 50EX
LINCOLN	5 ft.	1.52M	R3A - C - 50LX
MILLER	5 ft.	1.52M	R3A - C - 50MX
EURO	6 ft.	1.83M	R3A - C - 60EX
LINCOLN	6 ft.	1.83M	R3A - C - 60LX
MILLER	6 ft.	1.83M	R3A - C - 60MX
EURO	8 ft.	2.44M	R3A - C - 80EX
LINCOLN	8 ft.	2.44M	R3A - C - 80LX
MILLER	8 ft.	2.44M	R3A - C - 80MX
EURO	10 ft.	3.05M	R3A - C - 10EX
LINCOLN	10 ft.	3.05M	R3A - C - 10LX
MILLER	10 ft.	3.05M	R3A - C - 10MX

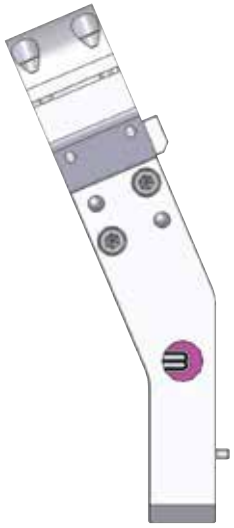
ABIROB® A500 Cable Assemblies

Connection	Cable Length Feet	Cable Length Meter	Part No.
EURO	4 ft.	1.22M	R5A - C - 40EX
LINCOLN	4 ft.	1.22M	R5A - C - 40LX
MILLER	4 ft.	1.22M	R5A - C - 40MX
EURO	4.5 ft.	1.37M	R5A - C - 45EX
LINCOLN	4.5 ft.	1.37M	R5A - C - 45LX
MILLER	4.5 ft.	1.37M	R5A - C - 45MX
EURO	5 ft.	1.52M	R5A - C - 50EX
LINCOLN	5 ft.	1.52M	R5A - C - 50LX
MILLER	5 ft.	1.52M	R5A - C - 50MX
EURO	6 ft.	1.83M	R5A - C - 60EX
LINCOLN	6 ft.	1.83M	R5A - C - 60LX
MILLER	6 ft.	1.83M	R5A - C - 60MX
EURO	8 ft.	2.44M	R5A - C - 80EX
LINCOLN	8 ft.	2.44M	R5A - C - 80LX
MILLER	8 ft.	2.44M	R5A - C - 80MX
EURO	10 ft.	3.05M	R5A - C - 10EX
LINCOLN	10 ft.	3.05M	R5A - C - 10LX
MILLER	10 ft.	3.05M	R5A - C - 10MX

Mounting Brackets and Tool Center Point

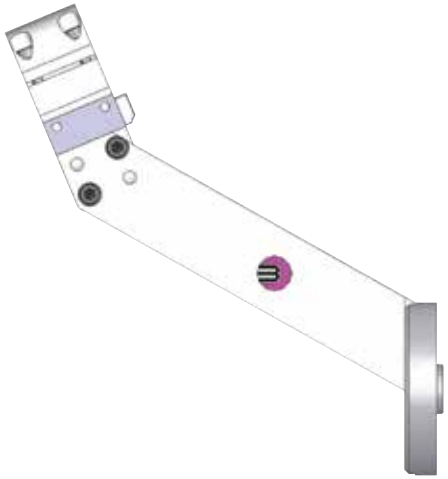
1. Mount Arm for CAT3

To be used on Robots with Binzel CAT3 collision mount

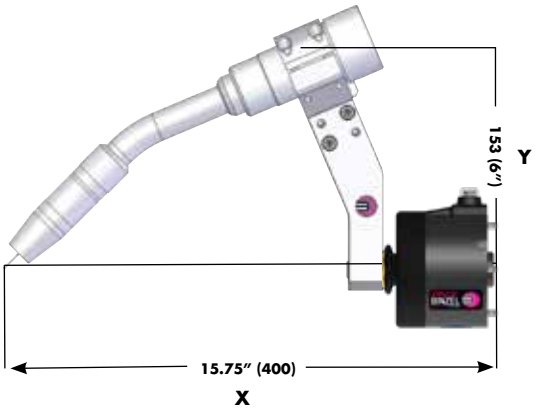


2. CAT-R Solid Torch Mount

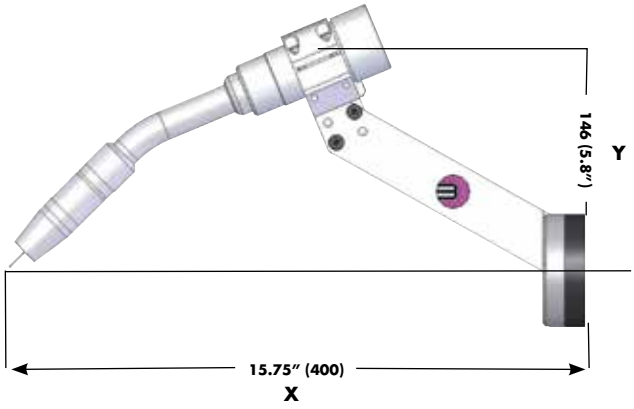
To be used on Robots with integrated collision software.



1. CAT3 Torch Mount



2. CAT-R Solid Torch Mount

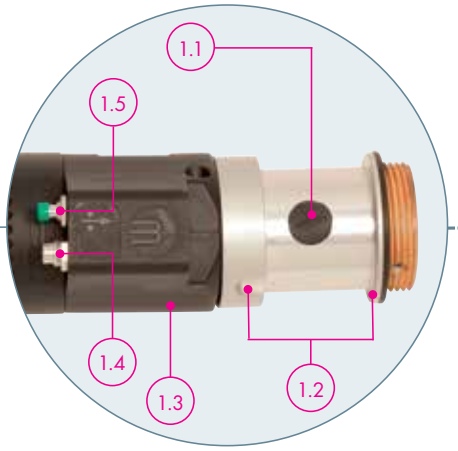


Mounting Arms and Solid Torch Mounts for ABIROB® A360 and A500

ITEM NO.	DESCRIPTION	SWANNECK	TCP/X	Y	PART NO.
1	Mounting Arm for CAT3	22 Degree	15.75" (400)	6" (153)	780.0864
1	Mounting Arm for CAT3	22 Degree	13.8" (350)	6" (153)	780.0844
1	Mounting Arm for CAT3	35 Degree	13.8 (350)	5" (126)	780.0835
1	Mounting Arm for CAT3	45 Degree	13.8" (350)	5" (126)	780.0380
1	Mounting Arm for CAT3	180 Degree	11.42 (290)	7.4" (187)	-
2	CAT-R Solid Mount	22 Degree	15.75" (400)	5.8" (146)	780.9313
2	CAT-R Solid Mount	22 Degree	12.5" (318)	5.6" (143)	780.9325
2	CAT-R Solid Mount	22 Degree	13.8" (350)	5.8" (146)	780.9312

ABIROB® WATER COOLED ROBOTIC MIG GUNS
System overview and technical data

Figure 1:
Cable assembly interface



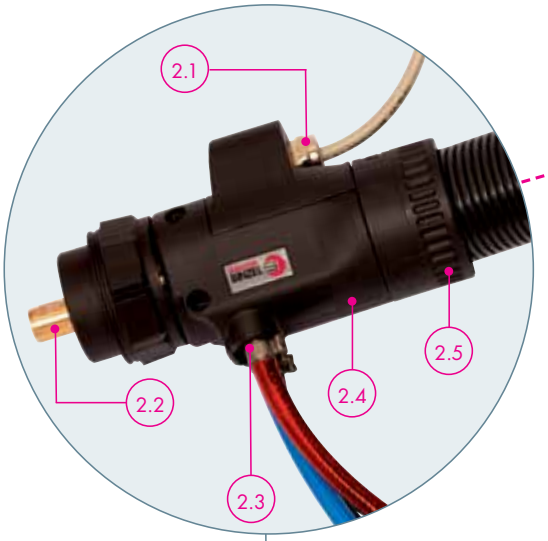


Figure 2:
Machine connection

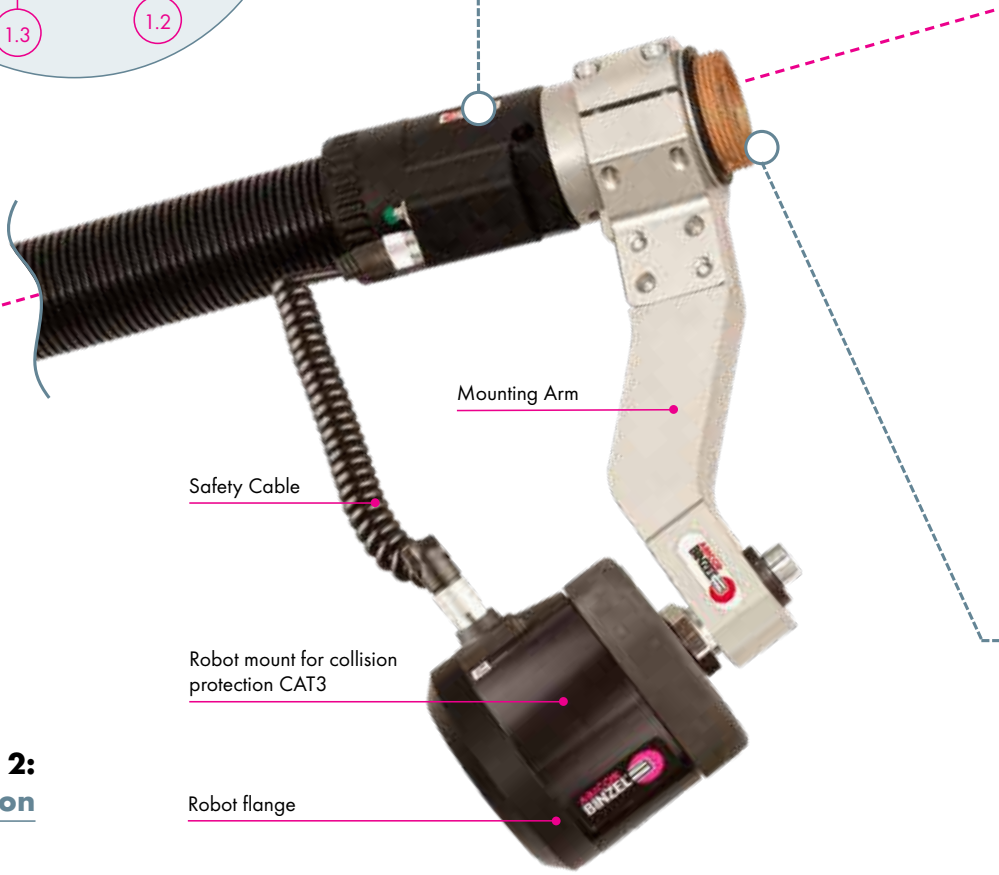


Fig. 1:
Cable assembly interface

- 1.1 Option: Connection for wire brake [2)]
- 1.2 INTERLOCK connection – reproducible cable assembly position in three dimensions
- 1.3 Short housing for optimal accessibility
- 1.4 Connection CAT3
- 1.5 Wire inching switch

Fig. 2:
Machine connection

- 2.1 Control cable with strain relief
- 2.2 Machine connection available for Euro and direct mount to most common wire feeders
- 2.3 Straight discharge for cooling liquid and airblast hoses – no bending or twisting
- 2.4 Short connection housing – high flexibility of the cable assembly
- 2.5 Rotatable outer hose connection – minimized torsional stress

Technical data

Technical data
(EN 60 974-7):

Torch neck ABIROB® W 300

Type of cooling:	water cooled
Rating:	300 A Mixed gases M21 (DIN EN 439)
Duty cycle:	100 %
Wire size:	.030" - .045"
Torch geometry:	22°/45°

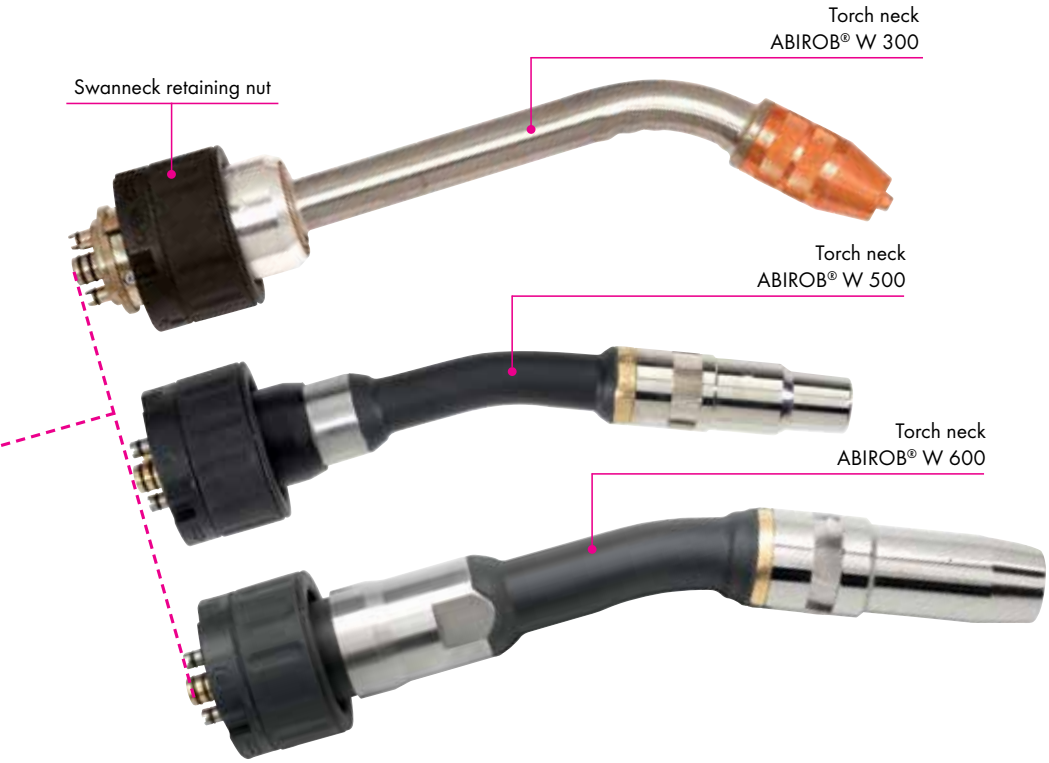
Torch neck ABIROB® W 500

Type of cooling:	water cooled
Rating:	500 A Mixed gases M21 (DIN EN 439)
Duty cycle:	100 %
Wire size:	.030"–.062"
Torch geometry:	180°/22°/45°

Torch neck ABIROB® W 600

Type of cooling:	water cooled
Rating:	550 A Mixed gases M21 (DIN EN 439)
Duty cycle:	100 %
Wire size:	.030"–.062"
Torch geometry:	180°/22°/45°

* See footnote regarding technical data.



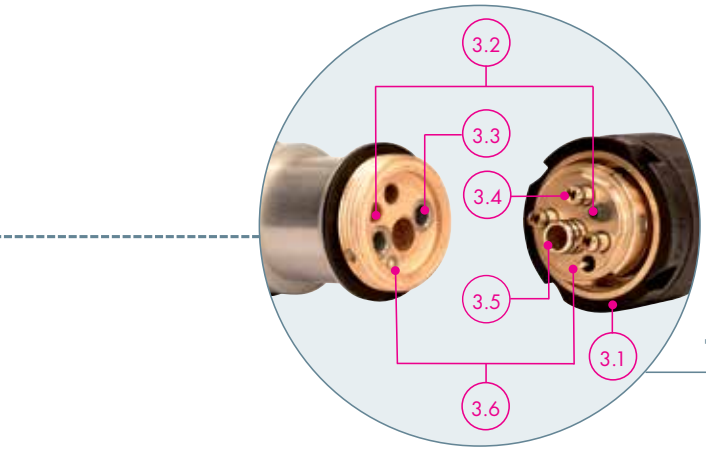


Figure 3:
Torch interface

Fig. 3:
Torch interface

3.1 High-grip swanneck retaining nut – for a fast and tight connection
3.2 Precision steel locating pin – for a reproducible torch neck change
3.3 Flow check valves – no leaking of the cooling liquid during torch neck change process
3.4 Gas and airblast – multi-purpose
3.5 One piece liner or seperate neckliner depending on torch options
3.6 Gas nozzle sensor[1)]

* **Note concerning technical data:**
Ratings determined under standard conditions at medium level of heat reflection, free air circulation and 28 °C ambient temperature. In applications with more demanding conditions the rating must be reduced by 10–20 %.

For pulsed arc welding the rating may be reduced by up to 35%.

* Hybrid cable assemblies support up to 400A mixed gases. Applications exceeding 400A require water-cooled power cables.

[1)] Torch necks supplied with gas nozzle sensor; gas nozzle sensor connection is used for tactile seam location via gas nozzle. Please ask your robot manufacturer.

[2)] Wire brake is used for tactile seam location via welding wire. Please ask your robot manufacturer.

ABIROB® Water-cooled Body/Cable Assembly

Ordering instructions for body/cable assembly

Example: AW-40EX-A

A	W	-	40	E	X	-	A
Torch Model	Type		Cable Length	Back End	Control Connector		Options

Torch Model

A - ABIROB®

Type

W - Water-cooled
H - Hybrid

Cable Length

30 - 3 Feet
40 - 4 Feet
45 - 4.5 Feet
50 - 5 Feet
60 - 6 Feet
70 - 7 Feet
80 - 8 Feet
90 - 9 Feet
10 - 10 Feet

Back End

C - OTC/Daihen CMBE 741 AF4001
D - OTC/Daihen CM 147,231
E - Euro
F - Fronius CBBA-M
G - F++
K - Lincoln PF10, 4R90
L - Lincoln
M - Miller
P - Panasonic

Control Connector

X - None
A - Abicor
B - Binzel Harnisch 5 pin
C - Binzel 12 PIN ABB from 1996
D - Amp 4 pin Motoman
E - DDK 5 pin Fanuc
F - AMP 5 pin ABB before 1996
G - AMP 7 pin Motoman optional
H - Deutsch 2 pin
J - Panasonic
L - OTC 2-Pin
M - Fronius 14-Pin

Options

A - Nozzle Sensor
B - Voltage Sensor
E - ABB Water Fittings
*G - Wire Brake 35/45 set
*H - Wire Brake 52/62 set

Collision Mounts
See pages 25 - 30

Mounting Arms
See Page 16

Alignment Jigs
See Page 24

ABIROB® WATER COOLED ROBOTIC MIG GUNS
Torch neck and wear parts

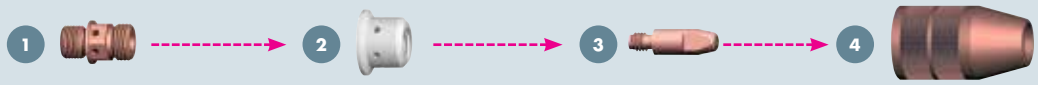
ABIROB® W 300

Torch neck

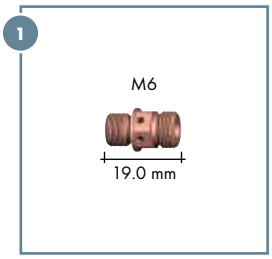
Features	180°	Part-No. 22°	Part-No. 45°
Standard	–	782.0014	782.0015

Consumables are not included in the delivery. Please order these separately and according to the application.

Consumables for ABIROB® W 300

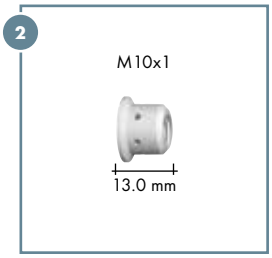


1 Contact tip holder
(10 pcs.)



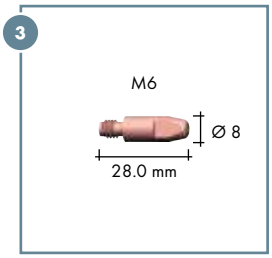
Type	Part-No.
M6 Copper	785.5052

2 Gas diffuser
(10 pcs.)



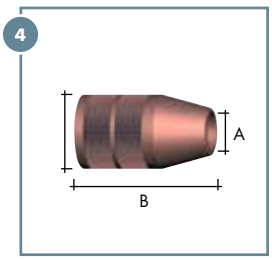
Type	Part-No.
Standard	962.0657
High temperature resistant (ceramic)	962.1341

3 Contact tip
(25 pcs.)



Type	Wire-Ø		Part-No.
CuCrZr	.030"	0.8 mm	140.0054
	.035"	0.9 mm	140.0172
	.040"	1.0 mm	140.0245
	.045"	1.2 mm	140.0382
CuCrZr Silver Plated	.030"	0.8 mm	147.0054
	.035"	0.9 mm	147.0172
	.040"	1.0 mm	147.0245
	.045"	1.2 mm	147.0382

4 Gas nozzle
(5 pcs.)



Type conical	Ø A	Length B	Part-No.
Recess (–1.0 mm)[1]	1/2" (13mm)	2.00" (48.5mm)	145.0564
Stick-out (+3.0 mm)[2]	1/2" (13mm)	1.75" (44.5mm)	145.0495
Stick-out (+3.0 mm)[2]	5/8" (16mm)	1.75" (44.5mm)	145.0494

[1] Recess: Contact tip recessed
[2] Stick-out: Contact tip protruding

ABIROB® WATER COOLED ROBOTIC MIG GUNS
Torch neck and wear parts

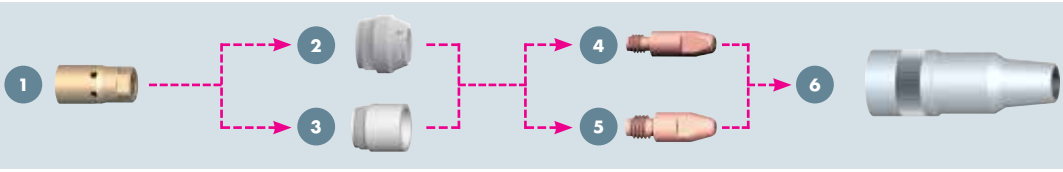
ABIROB® W 500

Torch neck

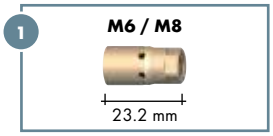
Features	Part-No. 180°	22°	45°
Standard	782.0320	782.0003	782.0005
Standard (+100 mm)	782.0088	782.0089	782.0091

Consumables are not included in the delivery. Please order these separately and according to the application.

Consumables for ABIROB® W 500



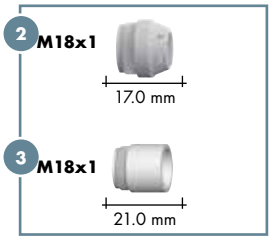
1 Contact tip holder
(10 pcs.)



Type	Part-No.
M6 Copper	142.0133
M8 Copper[1]	142.0151
M8 Brass	142.0117

[1] Recommended for high amperages and pulse welding.

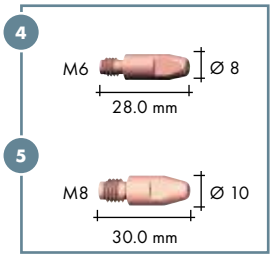
2 Gas diffuser
3 Nozzle insulator
(10 pcs.)



Type	Part-No.
Gas diffuser, standard	943.0284
Nozzle insulator, standard (white)	146.0054
Nozzle insulator, standard short (L=11.4mm)[2]	146.0064
Nozzle insulator, resistant to high temperatures (black)	146.0059

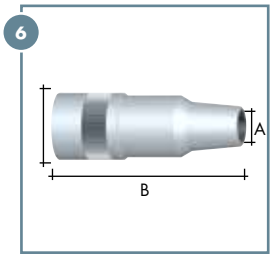
[2] Recommended for applications with galvanized materials in conjunction with gas nozzles 145.0553 or 145.0568.

4 Contact tip M6
5 Contact tip M8
(25 pcs.)



Type	Wire-Ø		Part-No. M6	M8
CuCrZr	.030"	0.8 mm	140.0054	140.0117
	.035"	0.9 mm	140.0172	140.0217
	.040"	1.0 mm	140.0245	140.0316
	.045"	1.2 mm	140.0382	140.0445
	.052"	1.4 mm	–	140.0536
	.062"	1.6 mm	–	140.0590
CuCrZr	.030"	0.8 mm	147.0054	147.0117
Silver Plated	.035"	0.9 mm	147.0172	147.0217
	.040"	1.0 mm	147.0245	147.0316
	.045"	1.2 mm	147.0382	147.0445
	.052"	1.4 mm	–	147.0536
	.062"	1.6 mm	–	147.0590

6 Gas nozzle
(5 pcs.)



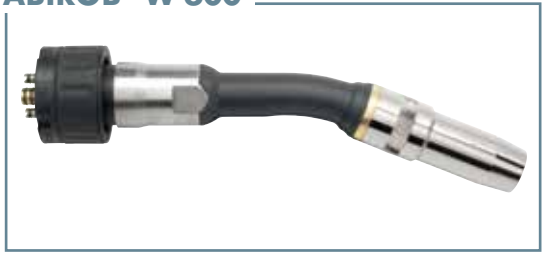
Type bottleform	Ø A	Length B	Part-No.
Recess (–2.6 mm)[3]	1/2" (13mm)	3.03" (77mm)	145.0556
Recess (–1.1 mm)[3]	1/2" (13mm)	2.95" (75.5mm)	145.0479
Recess (–2.6 mm)[3]	9/16" (15mm)	3.03" (77mm)	145.0480
Recess (–1.1 mm)[3]	9/16" (15mm)	2.95" (75.5mm)	145.0544
Stick-out (+2.4 mm)[4]	9/16" (15mm)	2.83" (72mm)	145.0466

Type conical	Ø A	Length B	Part-No.
Recess (–1.1 mm)[3]	5/8" (15.5mm)	2.95" (75.5mm)	145.0553
Stick-out (+2.4 mm)[4]	5/8" (15.5mm)	2.83" (72mm)	145.0568

[3] Recess: Contact tip recessed
[4] Stick-out: Contact tip protruding

Torch neck and wear parts

ABIROB® W 600

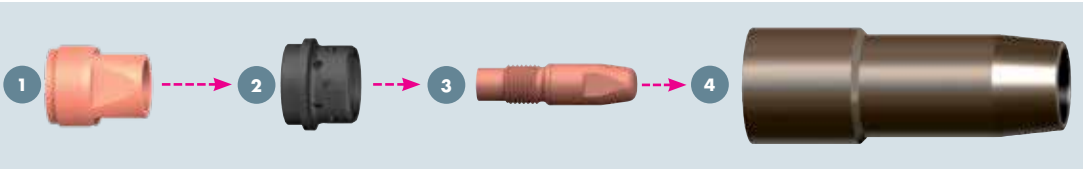


Torch neck

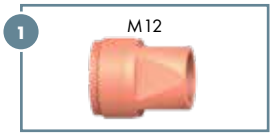
Features	Part-No. 180°	22°	45°
Standard	782.0213	782.0214	782.0216
Standard (+100 mm)	782.0233	782.0234	782.0236

Consumables are not included in the delivery. Please order these separately and according to the application.

Consumables for ABIROB® W 600



1 Contact tip holder
(10 pcs.)

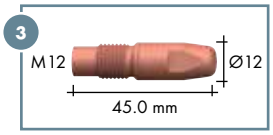


Type	Part-No.
M12	142.0214

2 Gas diffuser
(10 pcs.)

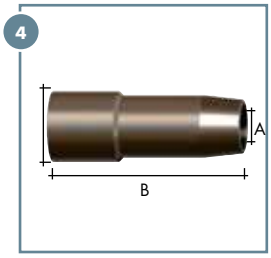
Type	Part-No.
Gas diffuser	146.0079

3 Contact tip M12
(25 pcs.)



Type	Wire-Ø	Part-No.
CuCrZr	.040″/1.0mm	140.1605
CuCrZr	.045″/1.2mm	140.1563
CuCrZr	.052″/1.4mm	140.1564
CuCrZr	.062″/1.6mm	140.1565
Silver Plated	.045″/1.2mm	147.1563
Silver Plated	.052″/1.4mm	147.1564
Silver Plated	.062″/1.6mm	147.1565
HDS Silver Plated	.045″/1.2mm	147.6563
HDS Silver Plated	.052″/1.4mm	147.6564
HDS Silver Plated	.062″/1.6mm	147.6565

4 Gas nozzle
(5 pcs.)



Type conical	Ø A	Length B	Part-No.
Flush	3/4" (18mm)	3.62" (92mm)	145.0689
Recess (-3mm)[1]	7/8" (21.5mm)	3.74" (95mm)	145.0688
Flush	7/8" (21.5mm)	3.62" (92mm)	145.0686
Stick-out (+6mm)[2]	7/8" (21.5mm)	3.38" (86mm)	145.0687

[1] Recess: Contact tip recessed
[2] Stick-out: Contact tip protruding

ABIROB® WATER COOLED ROBOTIC MIG GUNS
Cable liners and assemblies

Liners for Euro central connection

Type	Wire-Ø		Up to 5'	Up to 10'	Up to 15'
Liner steel red	Ø 0.8 – 1.2	.035" - .045"	124.0145	124.0146	–
Liner steel white	Ø 1.4 – 1.6	.052" - .062"	124.0147	124.0148	–
Liner Combi PA[1]	Ø 0.8 – 1.2	.035" - .045"	128.M008	128.M009	–
	Ø 1.4 – 1.6	.052" - .062"	128.M012	128.M013	–

Liners for direct mount connection

Type	Wire-Ø		Up to 5'	Up to 10'	Up to 15'
Liner steel red	Ø 0.8 – 1.2	.035" - .045"	SI4-3545-8PT	SI4-3545-17PT	SI4-3545-17PT
Liner steel white	Ø 1.4 – 1.6	.052" - .062"	SI4-5262-8PT	SI4-5262-17PT	SI4-5262-17PT

[1] Liner Combi PA – for aluminium or bronze wires – is a combination of PA-liner and a bronze liner pressed on in the front section to avoid thermal overload of the PA.

Neckliners - For wire-brake only

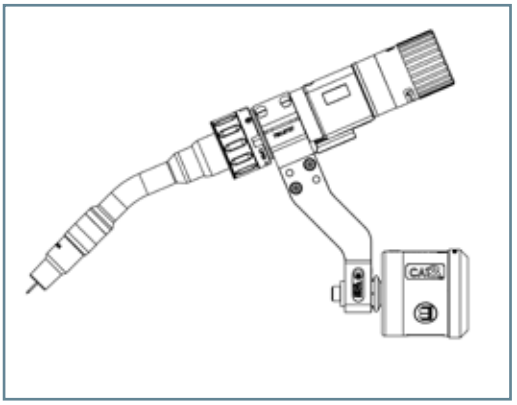
Neck	Part No.	Neckliner Length	Wire size .035-.045"	Wire size .052-.062"
W300	782.0161	255mm	149.0344	149.0349
	782.0162	255mm	149.0344	149.0349
W500	782.0320	222mm	149.0287	149.0289
	782.0003	222mm	149.0287	149.0289
	782.0005	222mm	149.0287	149.0289
	782.0177	322mm	149.0348	149.0347
	782.0178	322mm	149.0348	149.0347
	782.0180	322mm	149.0348	149.0347
W600	782.0213	248mm	149.0350	149.0333
	782.0214	248mm	149.0350	149.0333
	782.0216	248mm	149.0350	149.0333
	782.0233	348mm	Call	149.0334
	782.0234	348mm	Call	149.0334
	782.0236	348mm	Call	149.0334

Holder and TCP geometries

Mounting Arm for CAT3

Torch type	Torch geometry	X	Y	h	α	Part-No. For use with wire brake	Part-No. For use without wire brake
		(mm)					
ABIROB® W 300	22°	400	0	149	45°	780.0741	780.0444
	45°	400	0	90	50°	780.0742	780.0446
ABIROB® W 500	22°	400	0	153	45°	780.0737	780.0414
	45°	400	0	126	50°	780.0738	780.0422
	180°	400	0	182	40°	Call	Call
ABIROB® W 500 (+100 mm)	22°	500	0	192	45°	780.0739	780.0438
	45°	500	0	134	50°	780.0740	780.0442
	180°	500	0	182	30°	780.0799	Call
ABIROB® W 600	22°	400	0	170	45°	780.0763	Call
	45°	400	0	135	50°	780.0765	Call
	180°	400	0	186	35°	780.0767	Call
ABIROB® W 600 (+100 mm)	22°	500	0	209	45°	780.0775	Call
	45°	500	0	144	50°	780.0777	Call
	180°	500	0	212	30°	780.0769	Call

TCP dimensions are based on 15mm flange thickness.

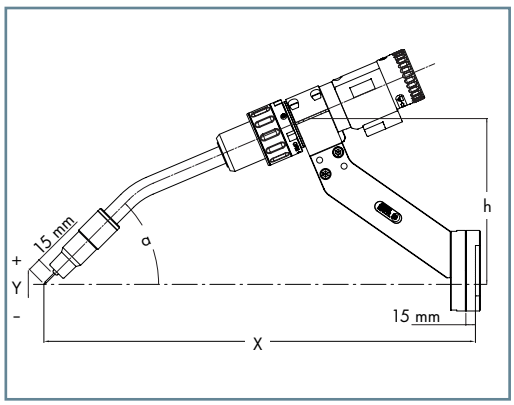


CAT-R Solid Torch Mount

for robots with collision software

Torch type	Torch geome-try	X	Y	h	α	Part-No. For use with wire brake	Part-No. For use without wire brake
		(mm)					
ABIROB® W 300	22°	400	0	149	45°	780.0749	780.0459
	45°	400	0	90	50°	780.0736	780.0461
ABIROB® W 500	22°	400	0	153	45°	780.0733	780.0449
	45°	400	0	105	50°	780.0734	780.0453
	180°	400	0	150	30°	780.0801	Call
ABIROB® W 500 (+100 mm)	22°	500	0	192	45°	780.0735	780.0455
	45°	500	0	105	45°	780.0734	780.0453
	180°	500	0	169	25°	780.0803	Call
ABIROB® W 600	22°	400	0	170	45°	780.0753	Call
	45°	400	0	150	50°	780.0755	Call
	180°	400	0	162	30°	780.0759	Call
ABIROB® W 600 (+100 mm)	22°	500	0	209	45°	780.0757	Call
	45°	500	0	144	50°	780.0779	Call
	180°	500	0	179	25°	780.0761	Call

Additional holders are available on request.
TCP dimensions are based on 15mm flange thickness.
Please note: All the trademarks named in this brochure are the property of the respective companies.



ROBO WH MIG GUNS
Quick-change Water-cooled Necks

This WH Series of torches with their interchangeable neck system are the most versatile robotic water-cooled torches on the market. Quick-change neck, quick-change consumables, quick-change welding job - less down time and more costs savings. WH torches range from 350 to 600 amperes - simply by changing the neck - no need to purchase another torch.

- Neck style must be specified
- Neck must be ordered separately
- Highly recommend spare neck for use as back-up during tip and nozzle replacement
- Alignment and Test Jig recommended for checking neck geometry and correcting alignment as necessary prior to use

OPTIONAL FEATURES
- Nozzle Sense
- Wire Sense
- Wire Brake

Superior reliability and constant repeatability

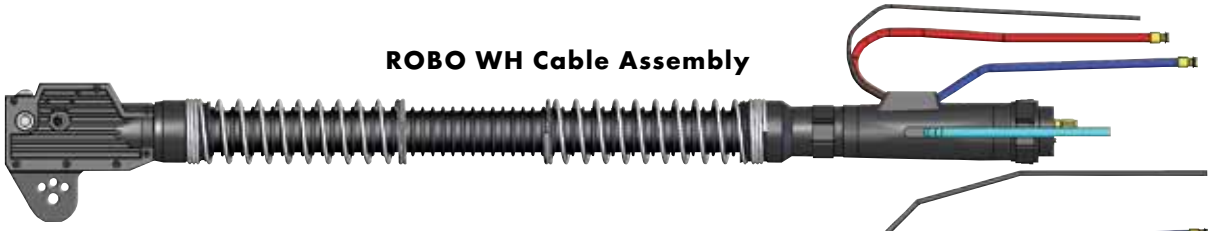
ROBO WH 242D/500T/W 600

Type / Rating	*Shielding Gas CO_2	*Shielding Gas Mixed	Duty Cycle (%)	Wire Size Inch	Wire Size mm
Robo WH 242D	320	280	100%	.030"-.045"	0.8-1.2mm
Robo WH 500T	550	500	100%	.030"-.062"	0.8-1.6mm
Robo WH W 600	600	550	100%	.035"-.062"	0.9-1.6mm

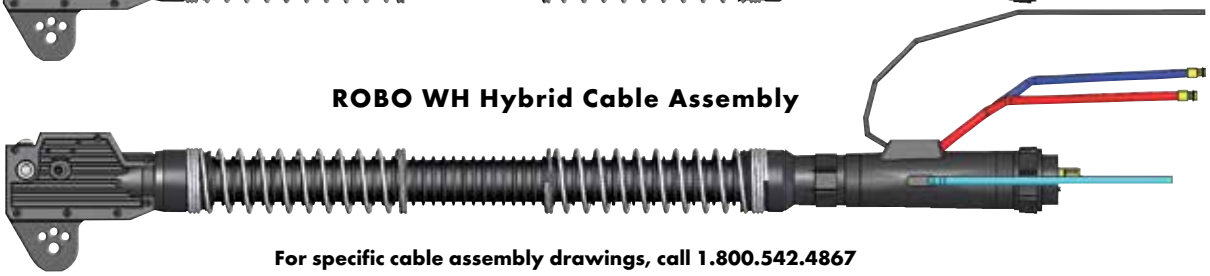
Available standard torch neck geometries: 22, 45, and 180 degrees. Special bends and lengths available.
For information on robo 652 T torch necks please visit the ROBO WH Product Page at https://binzel-abicor.com.
*Certain mixed gases and/or pulsed arc welding may reduce the ratings by as much as 35%.

Cable Assembly & Ordering

ROBO WH Cable Assembly



ROBO WH Hybrid Cable Assembly



For specific cable assembly drawings, call 1.800.542.4867

ORDERING INSTRUCTIONS
COMPLETE BODY & CABLE ASSEMBLIES

Example: 960W-40EX-C

960 **W** - **40** **E** **X** - **G**

TORCH MODEL
960 - WH

TYPE
W - Water Cool
H - Hybrid

CABLE LENGTH
30 - 3 ft
40 - 4 ft
45 - 4.5 ft
50 - 5 ft
60 - 6 ft
70 - 7 ft
80 - 8 ft
90 - 9 ft
10 - 10 ft

BACK END
C - OTC Daihen® CMRE 741 AF4001
D - OTC Daihen® CM 147,231
E - Euro
F - Fronius® VR 1500/4000
K - Lincoln® PF10, 4R90
L - Lincoln® Synergic 7, LN Series
M - Miller®
P - Panasonic®
T - Motoman®/Tweco® #5

CONTROL CONNECTOR
X - None
B - Brad Harrison® 5 Pin
C - Burndy® 12 Pin ABB® from 1996
D - Amp 4 Pin Motoman®
E - DDK 5 Pin Fanuc®
F - Amp 5 Pin ABB® before 1996
G - Amp 7 Pin Motoman® Optional
H - Denki® 2 Pin
J - Panasonic®
K - OTC Daihen® 2-Pin

OPTIONS
A - Nozzle Sense
B - Voltage Sense
E - ABB Water fittings
F - No Airblast
*G - Wire Brake 035/045
*H - Wire Brake 052/062

*Wire brake options available on 960W water-cooled models only

ORD.0005

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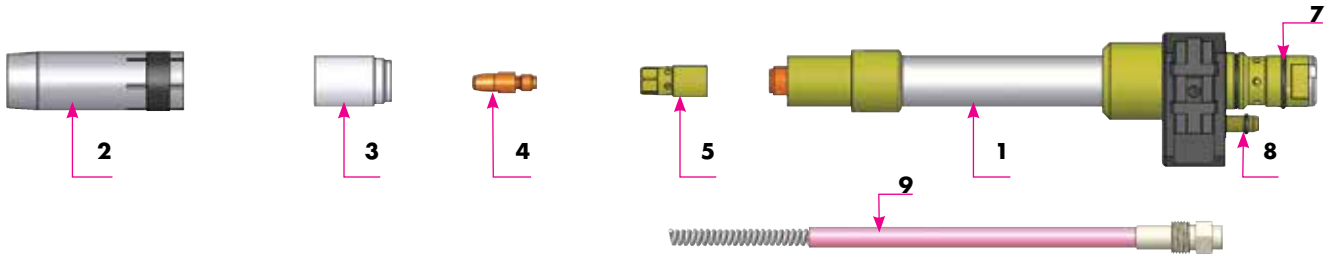
Collision Mounts
See pages 25 - 30

Mounting Arms
See Page 23

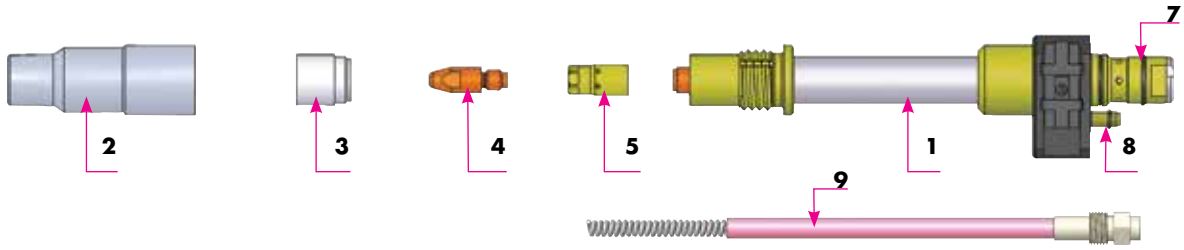
Alignment Jigs
See Page 24

ROBO WH MIG GUNS
Front End & Swanneck Assemblies

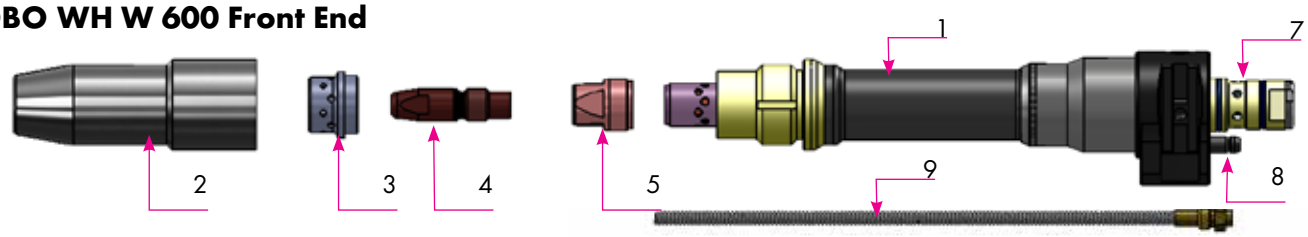
ROBO WH 242D Front End



ROBO WH 500T Front End



ROBO WH W 600 Front End

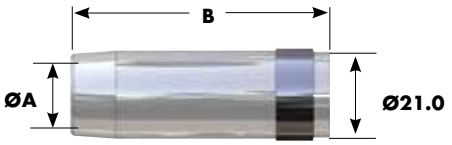


ROBO WH 242D/500T/W 600

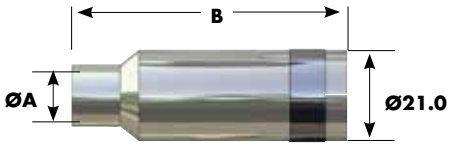
Item No.	Description	22 Degree Part No.	45 Degree Part No.	180 Degree Part No.
1	WH242D	962.1315	962.1316	962.1314
1	WH242D w/Nozzle Sense	Call	Call	Call
1	WH500T	962.1549	962.1532	962.1550
1	WH500T w/Nozzle Sense	962.9945.US	962.9948.US	962.9955.US
1	WH W 600	962.1746	962.1748	962.1745
1	WH W 600 w/Nozzle Sense	962.1770	962.1772	962.1769
2	Nozzles	Page 13	Page 13	Page 13
3	Nozzle Insulators/Diffusers	Page 15	Page 15	Page 15
4	Contact Tips	Page 14	Page 14	Page 14
5	Tip Holder/Diffusers	Page 14	Page 14	Page 14
7	O-Ring 15 x 1.5	165.0015	165.0015	165.0015
8	O-Ring 3.5 x 1.2	165.0062	165.0062	165.0062
9	Neckliners	Page 15	Page 15	Page 15
Not Shown	Alignment Jig WH242D	837.0020	837.0020	837.0020
Not Shown	Alignment Jig WH500T	837.9006	837.9006	837.9006

* Alignment Jigs see Page 24
**For ROBO WH 652 T neck information please visit the ROBO WH Product Page at https://binzel-abicor.com or contact the Product Department

Nozzles



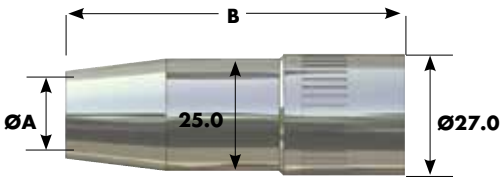
Conical Style



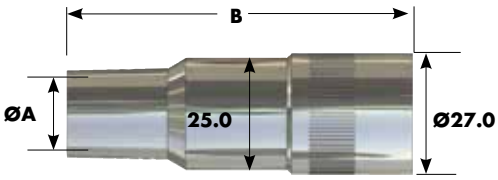
Bottleform Style

WH 242D Slip-on Nozzles

Description	Nozzle Part No.	Dimension A Inch	Dimension A mm	Dimension B Inch	Dimension B mm	Reamer M6 Tips	Clamp Set	V-Block
Conical (1.5mm recess)	145.0090	5/8″	15.5mm	2.44″	62.0mm	831.0022	831.0146	831.0314
Conical (1.5mm recess)	145.0135	1/2″	13.0mm	2.44″	62.0mm	831.0361	831.0146	831.0314
Conical (3.5mm stickout)	145.0472	5/8″	15.5mm	2.24″	57.0mm	831.0237	831.0146	831.0314
Conical (3.5mm stickout)	145.0473	1/2″	13.0mm	2.24″	57.0mm	831.0356	831.0146	831.0314
Conical (1.5mm stickout)	145.0547	1/2″	13.0mm	2.32″	59.0mm	831.0356	831.0146	831.0314
Bottleform (1.5mm recess)	145.0159	7/16″	11.0mm	2.44″	62.0mm	CALL	831.0146	831.0314



Conical Style

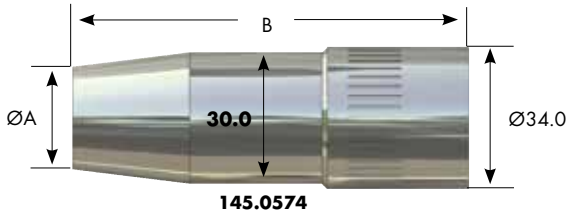


Bottleform Style

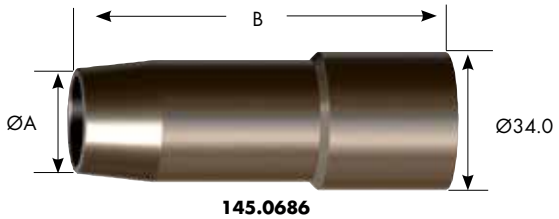
WH 500T Coarse Threaded Nozzles

Description	Nozzle Part No.	Dimension A Inch	Dimension A mm	Dimension B Inch	Dimension B mm	Reamer M8 Tips	Clamp Set	V-Block
Bottleform (3mm recess)	145.0480	5/8″	15.5mm	3.03″	77.0mm	831.0023	831.0147	831.0316
Bottleform (1.5mm recess)	145.0544	5/8″	15.5mm	2.97″	75.5mm	831.0023	831.0147	831.0316
Bottleform (2mm stickout)	145.0466	5/8″	15.5mm	2.83″	72.0mm	831.0216	831.0147	831.0316
Bottleform (1.5mm recess)	*145.0479	1/2″	13.0mm	2.97″	75.5mm	831.0413	831.0147	831.0316
Conical Small (1.5mm recess)	*145.0553	5/8″	15.5mm	2.97″	75.5mm	831.0023	831.0147	831.0316
Bottleform (1.5mm recess)	145.0554	5/8″	15.5mm	3.36″	85.5mm	831.0023	831.0147	831.0316
Cylindrical (4mm stickout)	145.0561	3/4″	20.0mm	2.75″	70.0mm	831.0369	831.0147	831.0316
Bottleform (7mm stickout)	145.0520	5/8″	15.5mm	2.63″	67.0mm	831.0577	831.0147	831.0316
Conical (1.0mm recess inside straight)	**145.0668	5/8″	15.5mm	2.97″	75.5mm	831.0023	831.0147	831.0316

* Inside taper for aluminum, and galvanized welding.
** Similar to standard Slip-On 145.0089
Reamer for M6 Tips 831.0578



145.0574



145.0686

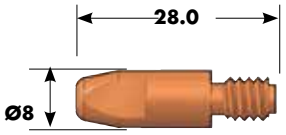
W 600 Coarse threaded nozzles (Item 2, page 3)

Model	Description	Part No.	Dimension A Inch	Dimension A Metric	Dimension B Inch	Dimension B Metric	Reamer Contact Tips*	Clamp set	V-Block
W 600	Conical (flush)	145.0686	7/8″	21.5 mm	3.62″	92.0 mm	831.0747	831.0781	831.0319
W 600	Conical (6 mm stickout)	145.0687	7/8″	21.5 mm	3.38″	86.0 mm	831.0763	831.0781	831.0319
W 600	Conical (3 mm recessed)	145.0688	7/8″	21.5 mm	3.74″	95.0mm	831.0764	831.0781	831.0319
W 600	Conical (flush)	145.0689	3/4″	18.0 mm	3.62″	92.0 mm	831.0162	831.0781	831.0319

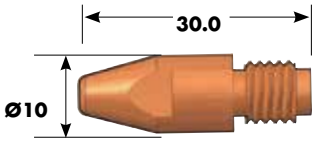
Contact Tips are size M10 for 652T and size M12 for W 600

**For ROBO WH 652 T neck nozzle information please visit the ROBO WH Product Page at https://binzel-abicor.com or contact the Product Department

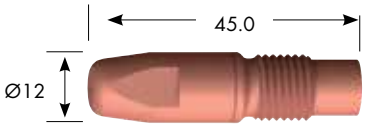
ROBO WH MIG GUNS
Contact Tips, Tip Holders/Diffusers



M6



M8

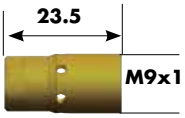


M12

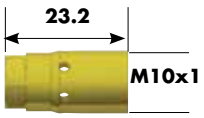
Contact Tips

	Wire Size		242D/500T * M6	500T/W 600 * M8	W 600 * M12
Style	Inch	mm	Contact Tip	Contact Tip	Contact Tip
CuCrZr	.030	0.8	140.0054	140.0117	–
CuCrZr	.035	0.9	140.0172	140.0217	–
CuCrZr	.040	1.0	140.0245	140.0316	140.1605
CuCrZr	.045	1.2	140.0382	140.0445	140.1563
CuCrZr (Tight tolerance)	.045	1.2	140.1287	140.1224	–
CuCrZr	.052	1.4	–	140.0536	140.1564
CuCrZr	.062	1.6	–	140.0590	140.1565
CuCrZr (Tight tolerance)	.052	1.4	–	140.1260	–
CZ Silver Plated	.030	0.8	147.0054	147.0117	–
CZ Silver Plated	.035	0.9	147.0172	147.0217	–
CZ Silver Plated	.045	1.2	147.0382	147.0445	147.1563
CZ Silver Plated (Tight tolerance)	.045	1.2	147.1287	147.1224	–
CZ Silver Plated	.052	1.4	–	147.0536	147.1564
CZ Silver Plated (Tight tolerance)	.052	1.4	–	147.1260	–
CZ Silver Plated	.062	1.6	–	147.0590	147.1565
E - CU	.030	0.8	140.0051	140.0114	–
E - CU	.035	0.9	140.0169	140.0214	–
E - CU	.045	1.2	140.0379	140.0442	–
E - CU (Tight tolerance)	.045	1.2	140.0379	140.1227	–
E - CU	.052	1.4	140.0516	140.0533	–
E - CU	.062	1.6	140.0555	140.0587	–
E - CU for Aluminum	.030	0.8	141.0001	141.0003	–
E - CU for Aluminum	.035	0.9	141.0004	141.0043	–
E - CU for Aluminum	.045	1.2	141.0082	141.0075	–
E - CU for Aluminum	.062	1.6	141.0020	141.0022	–

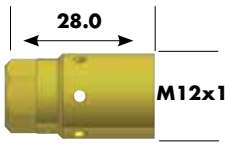
* Must be used with matching Tip Holder - see below
**For ROBO WH 652 T neck Contact Tip information please visit the ROBO WH Product Page at https://binzel-abicor.com or contact the Product Department



WH242D



WH500T



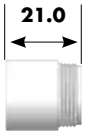
WH600

Tip Holders/Diffusers(packaged 10 per bag)

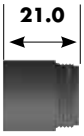
Description	WH 242D Part No.	WH 500T Part No.	WH W 600 Part No.
M6 Contact Tips	142.0149	142.0133	–
M8 Contact Tips	–	142.0117	–
M10 Contact Tips	–	–	–
M12 Contact Tips	–	–	142.0214

Diffusers/Nozzle Insulators, Liners, Neckliners

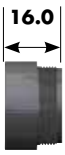
Diffuser/Insular



Cylindrical Insulator



Cylindrical Insulator Hi-Temperature

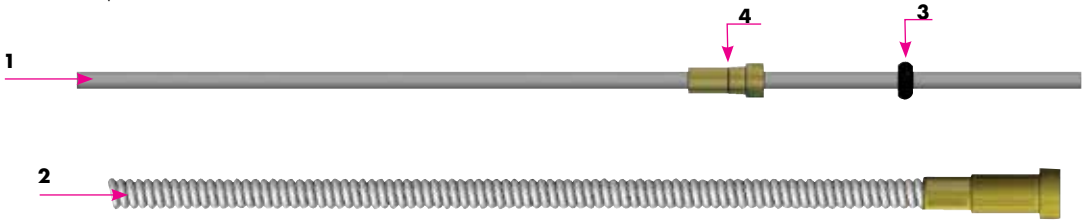


Insulator Hi-Temperature

Diffusers and Nozzle Insulators (packaged 10 per bag)

Description	WH 242D Part No.	WH 500T Part No.	WH W 600 Part No.
Cylindrical Insulator	146.0066	146.0054	–
Hi-Temperature Insulator	–	146.0059	–
Insulator Short - N/S	–	146.0064	–
Ceramic Insulator - N/S	–	146.0070	–
Diffuser/Insulator	284.0138	943.0170	–
Diffuser/Insulator Short - N/S	–	943.0284	–
Gas Diffuser	–	–	146.0079

N/S = Not Shown



Liners and Liner Parts

Item No.	Description	Wire Size Inch	Wire Size mm	Length Feet	Length Meter	Part No.
1	Liner for Aluminum wire	.035"-.045"	0.9-1.2mm	17 ft.	5.18M	128.9004
1	Liner for Aluminum wire	.052"-.062"	1.4-1.6mm	17 ft.	5.18M	128.9010
2	Liner for Steel wire	.035" -.045"	0.9-1.2mm	17 ft.	5.18M	122.9057
2	Liner for Steel wire	.052"-.062"	1.4-1.6mm	17 ft.	5.18M	122.9058
2	Liner for Steel wire	.035"-.045"	0.9-1.2mm	7 ft. 3 inch	2.23M	122.9057-7
2	Liner for Steel wire	.052"-.062"	1.4-1.6mm	7 ft. 3 inch	2.23M	122.9058-7
3	O-Ring 3.5 x 1.5 mm	–	–	–	–	165.0008
4	Collet	.035"-.045"	0.9-1.2mm	–	–	131.0001
4	Collet	.052"-.062"	1.4-1.6mm	–	–	131.0002

Neckliners

Description	WH 242D .035"-.045" 0.9-1.2mm	WH 242D .052"-.062" 1.4-1.6mm	WH 500T .035"-.045" 0.9-1.2mm	WH 500T .052"-.062" 1.4mm-1.6mm	WH W 600 .035"-.045" 0.9-1.2mm	WH W 600 .052"-.062" 1.4-1.6mm
Neckliner for Steel Wire, 180/22 degree	149.0068	–	962.9054	962.9069	149.0270	149.0271
Neckliner for Steel Wire, 45 degree	149.0003	–	962.9055	962.9070	149.0270	149.0271
Neckliner for Alum Wire, 180/22 degree	149.0007	–	962.9073	962.9075	–	149.0272
Neckliner for Alum Wire, 45 degree	149.0044	149.0017	962.9074	962.9076	–	149.0272

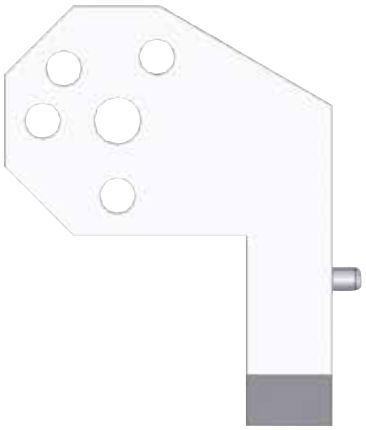
*For ROBO WH 652 T neck Insulator and Liner information please visit the ROBO WH Product Page at https://binzel-abicor.com or contact the Product Department

ROBO WH MIG GUNS

Over-arm Mounting Brackets and Tool Center Point

1. Mount Arm for CAT3

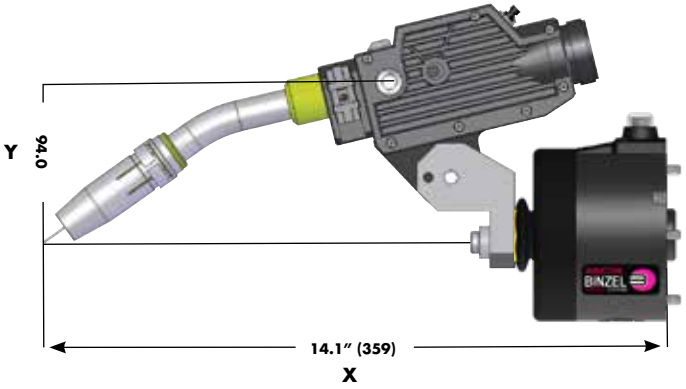
To be used on robots with Binzel CAT3 collision mount



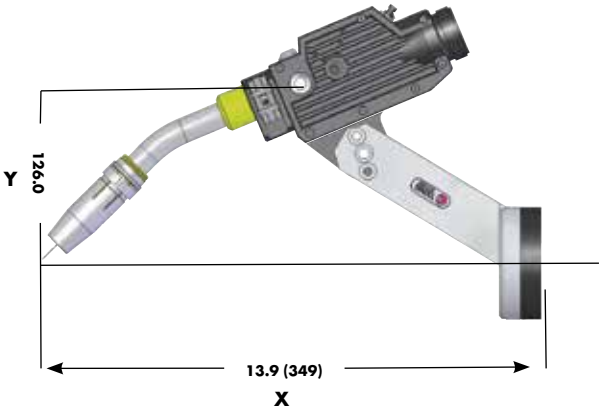
2. CAT-R Solid Torch Mount

To be used on robots with integrated collision software

1. CAT3 torch mount



2. CAT-R Solid Torch Mount



Other Brackets/TCP available

Link Arms and Solid Torch Mounts for Robo WH 242D, 500T, W 600

Item No.	Description	Swanneck	TCP/X	Y	Part No.
1	CAT3 Link Arm for WH242D	22 Degree	14.1" (359)	94.0	780.0863
1	CAT3 Link Arm for WH242D	45 Degree	13.9" (354)	100.0	780.0863
1	CAT3 Link Arm for WH500T	22 Degree	14.1" (359)	94.0	780.0863
1	CAT3 Link Arm for WH500T	45 Degree	13.9" (354)	100.0	780.0863
1	CAT3 Link Arm for WH W 600	22 Degree	16.1" (410)	135.0	780.0863
1	CAT3 Link Arm for WH W 600	45 Degree	14.9" (378)	100.0	780.0863
2	CAT-R Solid Mount for WH242D	22 Degree	13.7" (349)	126.0	780.9306
2	CAT-R Solid Mount for WH242D	45 Degree	13.6" (345)	134.0	780.9306
2	CAT-R Solid Mount for WH500T	22 Degree	13.7" (349)	126.0	780.9306
2	CAT-R Solid Mount for WH500T	45 Degree	13.8" (345)	134.0	780.9306
2	CAT-R Solid Mount for WH W 600	22 Degree	15.7" (400)	159.0	780.9328
2	CAT-R Solid Mount for WH W 600	45 Degree	14.5" (368)	137.0	780.9328

*For ROBO WH 652 T neck mounting nformation please contact the Product Department

NECK ALIGNMENT / TEST JIGS

Exact torch neck geometry - All Torch Models

The alignment jig makes it possible to check and re-adjust the geometry of ABICOR BINZEL replacement neck torches outside the welding cell. The alignment jig is fitted with a guiding body which can be mounted in position according to the torch geometry.

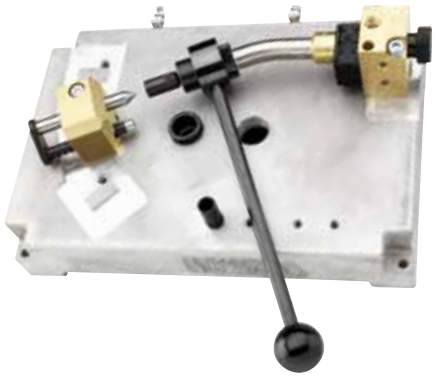
* *Using a special fitting set (P/N 837.0031), the WH necks can be tested for water flow, water leakage and gas flow. In addition the gas channels can be blown through with compressed air for cleaning purposes.*

ABIROB® Air-cooled Alignment Jig

Description	Part No.
Alignment Jig 360A/500A - Standard	837.0500.1
Alignment Jig 360A OTC TCP	837.0530
Alignment Jig 360A/500A 22°/45° Long	837.0640

***ROBO WH Alignment Jig**

Description	Part No.
Alignment Jig 241/242/455/505/505T/500T - Standard	837.0020.1
Alignment Jig WH W 600 Standard & +100mm	837.0846.1



ABIROB® Water-cooled Alignment Jig

Description	Torch geometry	Part-No.
ABIROB® W 300	22°/45°	837.0484.1
ABIROB® W 500 & +100mm	180°/22°/35°/45°	837.0950.1
ABIROB® W 600 & +100mm	180°/22°/45°	837.0860.1

*All models not shown. Please contact Product Support for additional Jigs, including for ROBO WH 652 T necks

OVER-ARM COLLISION MOUNT ‘CAT3’

Ordering Chart

CAT3 - M S C 1 1

Mount Type	Spring Size	Connector Style	Cable	-	Link Arm	Clamp

Mount Type
Collision Mount with LED

Spring Size
M - Medium
L - Large
X - Extra Large

Connector Style
S - Standard Connector 780.2062

Cable
C - Cored Safety Cable 780.0201
B - Bare 20’ Safety Cable 836.9029

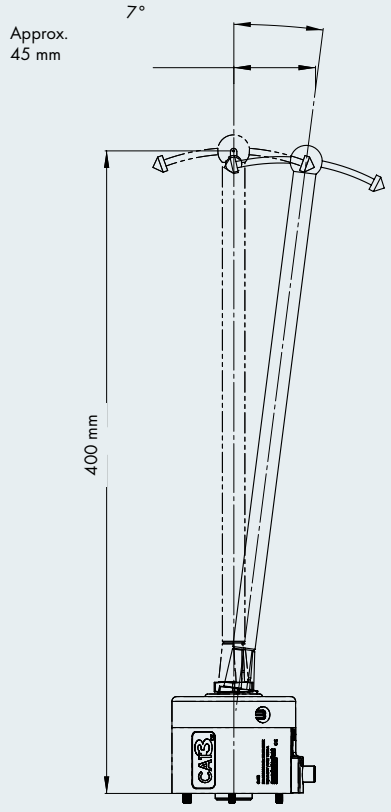
Link Arm
1 - Link Arm Std. Short ROBO/WH 780.0863
2 - Link Arm Long WH 780.0866

Clamp
1 - Standard ROBO Torch Clamp 31mm 780.9006
2 - Standard ABITIG WH Torch Clamp 45 mm 963.0007

Technical Data:
Robot Mount CAT3

Dimensions:	Ø 77 mm, height 106 mm
Weight:	960 g (without holder and flange)
Release force:	**(see figure 3)** Deflection CAT3
Switch point:	– Deflection in X- and Y-direction: 1.2 ° – 1.5 ° – Deflection in Z-direction: 1.3 – 1.6 mm
Max. deflection:	– Deflection in X- and Y-axis: ca. 7° – Deflection in Z-axis: 5 mm
Resetting accuracy:	**(see figure 4)** X-, Y- and Z-direction: ± 0,04 mm (at 400 mm distance to the robot flange)
IP Protection class:	IP 21
Load capacity safety cut-out:	max. 30 V DC / 100 mA
Ambient temperature:	– in operation: -10 °C up to +55 °C – during storage and transportation: -10 °C up to +55 °C
Relative humidity:	– in operation: up to 70 % at 20 °C – during storage and transportation: up to 70 % at 20 °C

Figure 4:
Maximum deflection in X- and Y-axis



CAT 3 Robot Mount & Accessories

Robot Mount CAT3

Description	Part-No.
Robot Mount CAT3 XL	780.2050
Robot Mount CAT3 L	780.2051
Robot Mount CAT3 M	780.2052

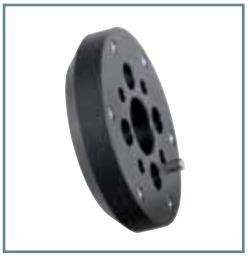
A connection cable is included in the scope of the order.
Please order the flanges and holders separately according to the robot-torch type and welding task.

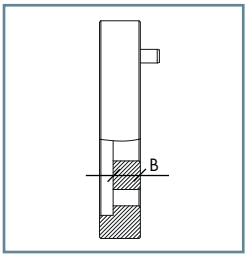
Flanges

Description		Part No. Flange
Intermediate flange[1]	ISO 9409-1-A63	780.0614
Intermediate flange[1]	ISO 9409-1-A50-d31,5	780.0608
Intermediate flange[1]	ISO 9409-1-A125	780.0630
Intermediate flange[1]	ISO 9409-1-A50/D=63	780.0694
Intermediate flange[1]	ISO 9409-1-A31,5	780.0632
Intermediate flange[1]	ISO 9409-1-A100	780.0649
Intermediate flange[1]	ISO 9409-1-A160	780.0647
Intermediate flange[1]	ISO 9409-1-A40-D50	780.0691

[1] Flange width B=15 mm (Standard version)

Intermediate flanges are available for all standard welding robots. Please see LIT.9231 for a complete list. Flange list available at binzel-abicor.com on the CAT3 Product Page.





Spares

Pos.	Description	Part-No.
1	Bellow CAT3	780.2059
2	Switch cover plate CAT3 cpl.	780.2061
3	Switch cpl. CAT3 male	780.2062
4	Screw set CAT3 M4x55	780.2076
5	Mounting arm hardware kit CAT3	780.2044
6	Connector cable CAT	780.0201

THROUGH-ARM COLLISION ROBOT MOUNT

'iCAT' – Safety and flexibility in perfect interaction

iCAT - the robot mount for the latest generation of welding robots with central service cables guided through the 6th axis - offering a high level of safety and flexibility. Precisely designed to meet robot manufacturers' exact specifications.

- Extremely torsion resistant cable assembly rotatable +/- 355° in all axis and +/- 200° in the 6th axis.
- Safety and optimal system performance due to high repeatability
- Rugged, simple design ensures high productivity and long life
- High flexibility and optimal work piece accessibility
- Reduction of maintenance costs due to easy assembly and handling
- Highest reliability offered through comprehensive protection against dust and spatters
- Additional features include optional airblast and anti-spatter injection through the cable assembly

ABIROB® A 360 Air-Cooled

*Rating:	360 A CO2 290 A Mixed Gases
Duty Cycle:	100%
Wire Size:	.030"-.045" (0.8-1.2mm)
Weight with neck:	2.65 lbs (1200g) approximate

ABIROB® A 500 Air-Cooled

*Rating:	420 A CO2 370 A Mixed Gases
Duty Cycle:	100%
Wire Size:	.030"-.062" (0.8-1.6mm)
Weight with neck:	2.65 lbs (1200g) approximate

ABIROB® W 300/500/600 Water-Cooled

*Rating:	**up to 600 A CO2 (Depending on Model) **up to 550 A Mixed Gases (Depending on Model)
Duty Cycle:	100%
Wire Size:	.030"-.062" (0.8-1.6mm)
Weight with neck:	3.31 lbs (1500g) approximate

ROBO WH 242/500T/W 600 Water-Cooled

*Rating:	** up to 600 A CO2 (Depending on Model) ** up to 550 A Mixed Gases - (Depending on Model)
Duty Cycle:	100%
Wire Size:	.030"-.062" (0.8-1.6mm)
Weight with neck:	3.31 lbs (1500g) approximate

Technical data:

Weight :	varies by model
Excursion:	approx. 11°
Repeat accuracy:	≤+/-0.05mm

Technical data standard torches ABIROB®
(air-cooled) according to EN 60 974-7

Machine End Connectors

ABICOR Binzel Euro central connector

Panasonic® wire feeder

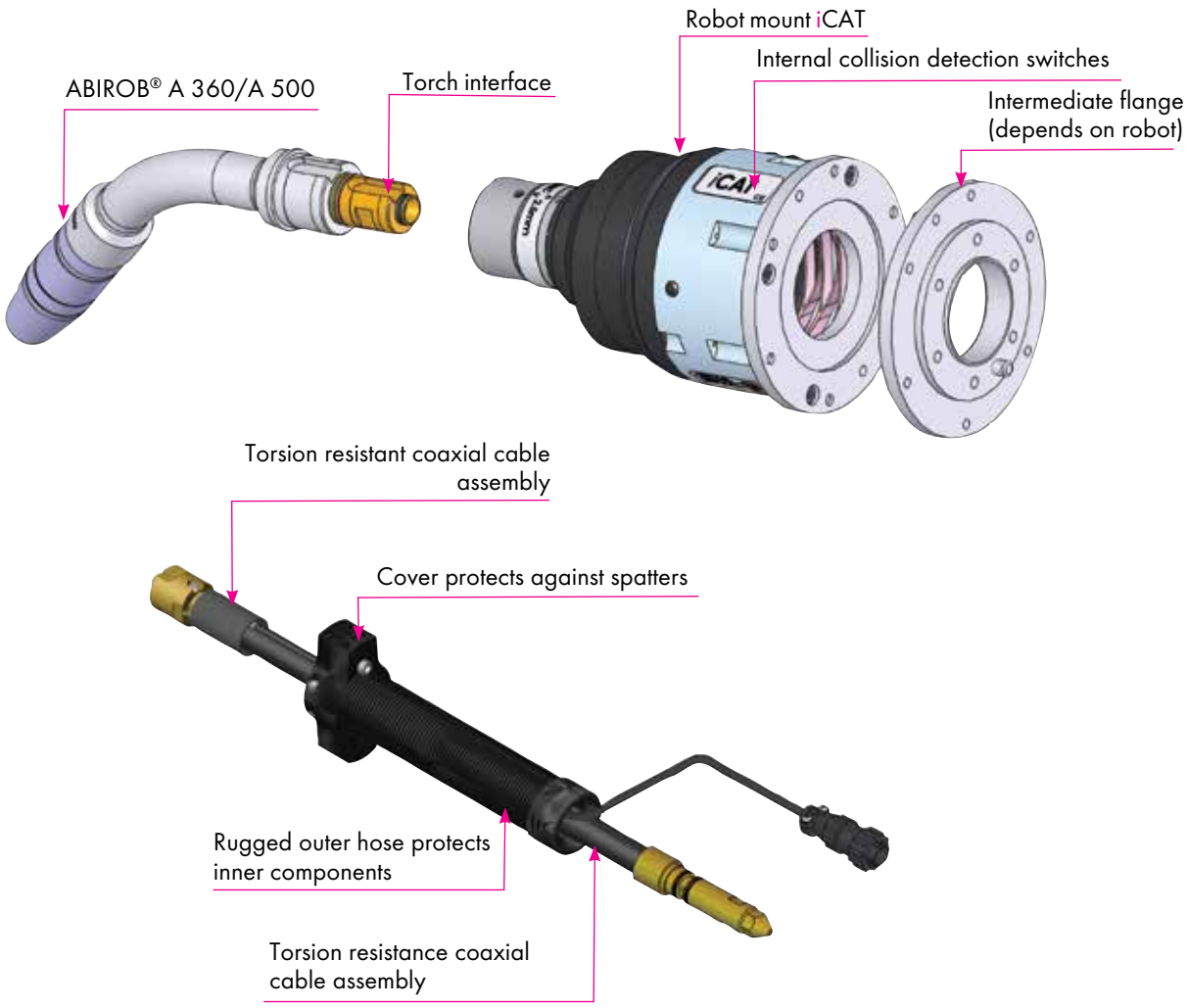
Lincoln® wire feeder

Fronius® wire feeder

Panasonic® is a registered trademark of Panasonic Corporation.
Lincoln® is a registered trademark of Lincoln Electric Company
Fronius® is a registered trademark of Fronius International GmbH

* Certain mixed gases and/or pulsed arc welding may reduce the ratings by as much as 35%.
** Applications exceeding 400 amperes mixed gas require a specialty water-cooled cable assembly. Please call ABICOR BINZEL Product Department.

iCAT ASSEMBLY OVERVIEW (Air-Cooled Shown)



ORDERING INSTRUCTIONS FOR COMPLETE TORCH MOUNT KITS

Example: iCAT-M1X

iCAT - **M** **1** **X**

MOUNT TYPE

Collision Mount

SPRING SIZE

SPRING SIZE

M - Medium

TORCH MODEL

TORCH MODEL

X - Base Torch mount
1 - ABIROB® Air-Cooled
2 - ABIROB® Water-Cooled
3 - Robo WH Water-Cooled Short TCP/Long TCP
4 - Robo WH Water-Cooled Short TCP with Quick Change Cable

ROBOT FLANGE

ROBOT FLANGE

X - None

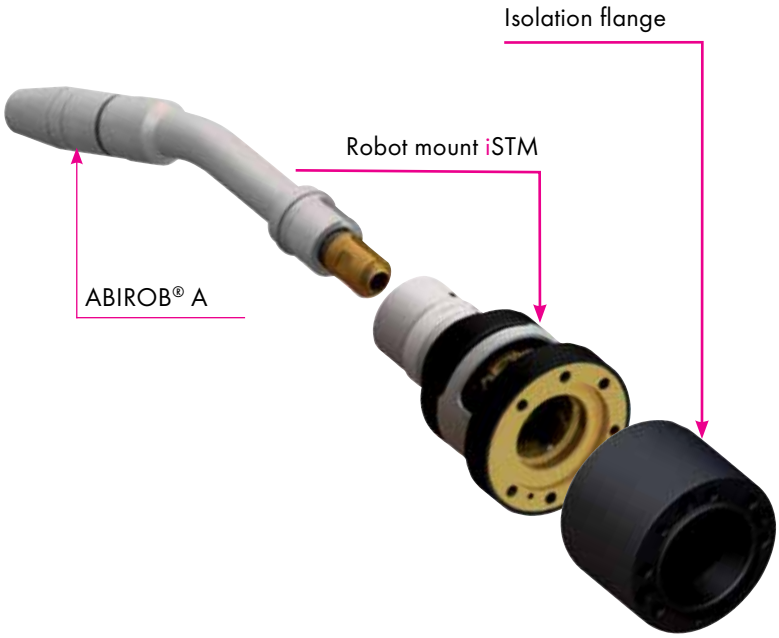
ORD.0006

THROUGH-ARM SOLID ROBOT MOUNT

'iSTM' – For the latest generation of welding robots.

iSTM - the robot mount for the latest generation of welding robots with integrated collision software. Safety and flexibility can be assured due to the centrally-guided cable assembly through the 6th axis for air- and water-cooled torches.

- Extremely torsion resistant cable assembly rotatable +/- 355° in all axis and +/- 200° in the 6th axis.
- Safety and optimal system performance due to high repeatability
- Rugged, simple design ensures high productivity and long life
- High flexibility and optimal work-piece accessibility
- Reduction of maintenance costs due to easy assembly and handling
- Highest reliability offered through comprehensive protection against dust and spatters
- Additional features include optional airblast and anti-spatter injection through the cable assembly



ABIROB® A 360 / A500 Air-Cooled

*Rating:	**up to 420 A CO2 370 A Mixed Gases
Duty Cycle:	100%
Wire Size:	.030"-.062" (0.8-1.6mm)
Weight with neck:	2.65 lbs (1200g) approximate

ABIROB® W 300/500/600 Water-Cooled

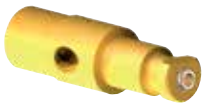
*Rating:	**up to 600 A CO2 (Depending on Model) **up to 550 A Mixed Gases (Depending on Model)
Duty Cycle:	100%
Wire Size:	.030"-.062" (0.8-1.6mm)
Weight with neck:	3.31 lbs (1500g) approximate

ROBO WH 242/500T/W 600 Water-Cooled

*Rating:	** up to 600 A CO2 (Depending on Model) ** up to 550 A Mixed Gases - (Depending on Model)
Duty Cycle:	100%
Wire Size:	.030"-.062" (0.8-1.6mm)
Weight with neck:	3.31 lbs (1500g) approximate

Machine End Connectors

ABICOR Binzel Euro central connector



Panasonic® wire feeder

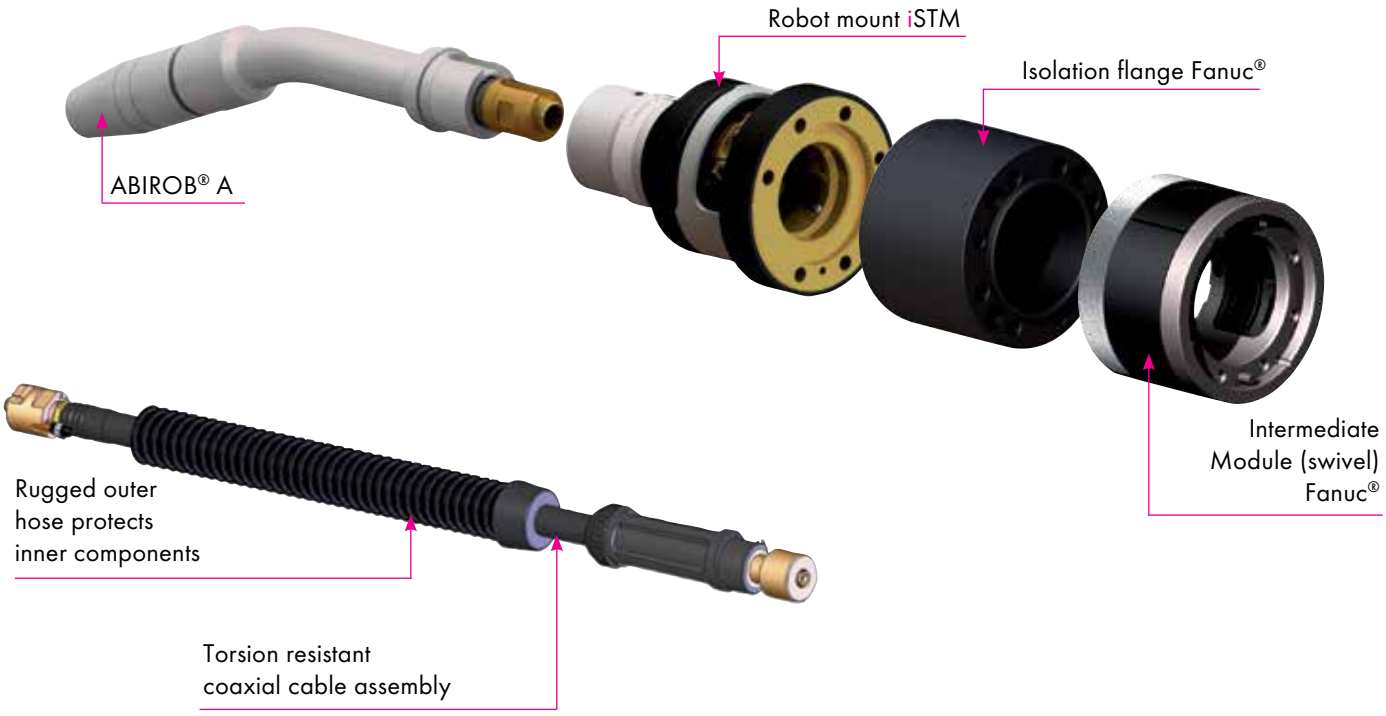
Lincoln® wire feeder

Fronius® wire feeder

Panasonic® is a registered trademark of Panasonic Corporation.
Lincoln® is a registered trademark of Lincoln Electric Company
Fronius® is a registered trademark of Fronius International GmbH

* Certain mixed gases and/or pulsed arc welding may reduce the ratings by as much as 35%.
** Applications exceeding 400 amperes mixed gas require a specialty water-cooled cable assembly. Please call Product Department.

iSTM ASSEMBLY OVERVIEW(Air-cooled Fanuc® shown)



Precisely designed to meet robot manufacturers' exact specifications.

Torch Cleaning Station TCS-FP
System overview & technical data

Figure 1:
Anti-spatter fluid injection unit TSi

Figure 2:
Torch cleaning

Anti-Spatter Fluid (1 liter bottle)

TCS-FP
The Full Package solution against spatter adhesion

The state-of-the-art torch cleaning station TCS-FP from ABICOR BINZEL is the Full Package in robotic welding torch maintenance due to integrated PCB, high quality components, as well as environmental friendliness and work shop safety by fully covered maintenance functions.

Ensure process stability in automated welding by using preventive torch cleaning, wire cutting and anti-spatter spraying with TCS-FP!

A perfected station height matches most industry-used cleaning stations, and utilizes the same reaming and clamp sets as the predecessor TCS-6 units.

Optimal and time saving cleaning of the gas nozzle for a reliable welding process and an increase in plant availability – torch maintenance at it's best ...

Figure 1:
Anti-spatter fluid injection unit TSi

- Activated just by robot movement
- High efficient spray function
- Low consumption
- Collection of remaining anti-spatter fluid
- Fully protected for clean environment

Figure 2:
Torch cleaning

- Reamers, specially designed to suit the welding torch
- clamp sets for each nozzle diameter
- Strong, high quality air motor for powerful cleaning
- Complete dirt & dust protection
- Rugged 4-point clamping of the gas nozzle
- Integrated PCB to control reaming functions
- Single point air & electrical connections

Figure 3:
Wire cutting unit

TCS-FP – uncovered to show reamer blade and mechanism

Figure 3:
Wire cutting unit

- Strong, reliable cutting device
- Clean cut for a consistent arc-start
- Hardened cutting blade for long lifetime

Technical data:

General data

Total weight:	approx. 23 kg (51 lbs)
Ambient temperature:	+ 5°C to + 50°C 41°F to + 122°F

Pneumatic motor

Air consumption:	approx. 400 l/min.
Pneumatic motor/ nominal speed with oiled air:	approx. 650 rpm at 6 bar (90 psi)

Pneumatic connection

Connection ID:	Ø 10 mm
Nominal pressure:	6 bar (90 psi)
Operating pressure:	6–8 bar (90 -120 psi)
Compressed air quality (ISO 8573-1:2010):	min. class 4

Electrical clamping block

*Input:	2 inputs for triggering the station and wire cutter valve
Control voltage:	24 V DC
Power consumption:	2.8 W
*Output:	1 output from inductive proximity switches
Operating voltage:	20 – 30 V DC
Continuous current:	max. 100 mA
Current consumption:	approx. 14 mA (24 V)
Max. wire diameter at 6 bar:	1.6 mm, solid wire

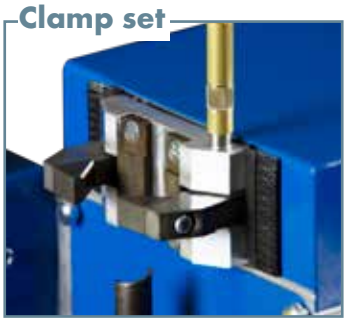
*Additional inputs and outputs possible.

Torch Cleaning Station TCS-FP

Reamer and Clamp set Parts

Reamer

Clamp set



Torch type	with gas nozzle Type	Inner-Ø [inch]	Inner-Ø [mm]	Length [inch]	Length [mm]	Clamp set Part-No.	Reamer Part-No.
ABIROB® A 360	145.0592	5/8"	16.0	2.68"	68.0	831.0166	831.0487
	145.0593	5/8"	16.0	2.75"	70.0	831.0166	831.0487
	145.0594	5/8"	16.0	2.56"	65.0	831.0166	831.0589
	145.0595	9/16"	14.0	2.68"	68.0	831.0166	831.0592
	145.0596	9/16"	14.0	2.75"	70.0	831.0166	831.0592
	145.0597	9/16"	14.0	2.56"	65.0	831.0166	831.0593
	145.0599	1/2"	13.0	2.68"	68.0	831.0166	831.0604
	145.0601	1/2"	13.0	2.56"	65.0	831.0166	831.0604
ABIROB® A 500	145.0580	5/8"	16.0	2.95"	75.0	831.0148	831.0488
	145.0581	5/8"	16.0	3.03"	77.0	831.0148	831.0487
	145.0582	5/8"	16.0	2.83"	72.0	831.0148	831.0591
	145.0589	1/2"	13.0	2.95"	75.0	831.0148	831.0180
	145.0590	1/2"	13.0	3.03"	77.0	831.0148	831.0180
	145.0591	1/2"	13.0	2.83"	72.0	831.0148	831.0169
	145.0586	9/16"	14.0	2.95"	75.0	831.0148	831.0592
	145.0587	9/16"	14.0	3.03"	77.0	831.0148	831.0592
	145.0588	9/16"	14.0	2.83"	72.0	831.0148	831.0593
	145.0583	5/8"	16.0	2.95"	75.0	831.0148	831.0488
	145.0584	5/8"	16.0	3.03"	77.0	831.0148	831.0488
	145.0585	5/8"	16.0	2.83"	72.0	831.0148	831.0591
ROBO WH 242	145.0090	5/8"	15.5	2.44"	62.0	831.0146	831.0022
	145.0135	1/2"	13.0	2.44"	62.0	831.0146	831.0361
	145.0472	5/8"	15.5	2.24"	57.0	831.0146	831.0237
	145.0473	1/2"	13.0	2.24"	57.0	831.0146	831.0356
	145.0547	1/2"	13.0	2.32"	59.0	831.0146	831.0356
	145.0159	7/16"	11.0	2.44"	62.0	831.0146	Contact
ABIROB® W 300	145.0564	5/8"	15.5	1.909"	48.5	831.0147	Contact
	145.0495	1/2"	13.0	1.75"	44.5	831.0147	831.0180
	145.0494	5/8"	15.5	1.75"	44.5	831.0147	831.0576
ABIROB® W &	145.0479	1/2"	13.0	2.97"	75.5	831.0147	831.0413
ROBO WH 500	145.0556	1/2"	13.0	3.05"	77.5	831.0147	831.0413
	145.0466	5/8"	15.5	2.83"	72.0	831.0147	831.0216
	145.0568	5/8"	15.5	2.85"	72.5	831.0147	831.0216
	145.0553	5/8"	15.5	2.97"	75.5	831.0147	831.0023
	145.0544	5/8"	15.5	2.97"	75.5	831.0147	831.0023
	145.0480	5/8"	15.5	3.03"	77.0	831.0147	831.0023
	145.0561	13/16"	20.0	2.75"	70.0	831.0147	831.0369
ABIROB® W &	145.0689	3/4"	18.0	3.62"	92.0	831.0147	831.0162
ROBO WH 600	145.0686	7/8"	21.5	3.62"	92.0	830.0781	831.0747
	145.0687	7/8"	21.5	3.38"	86.0	831.0781	831.0763
	145.0688	7/8"	21.5	3.74"	95.0	831.0781	831.0764
ROBO WH 652T	145.0574	3/4"	18.0	3.30"	84.0	831.0781	831.0587
	145.0575	7/8"	21.5	3.30"	84.0	831.0781	831.0547
	145.0606	3/4"	18.0	3.23"	82.0	830.0781	831.0587

Ordering information

TCS-FP Torch Cleaning Station

Ordering Instructions for Complete Station

Example: TCSFP-25-A

TCSFP - 25 - A

Model	Nozzle OD at Clamping position	Reamer Blade

Torch Model

Cleaning Station TCS-FP W/WCS, Injector, Short Stand (p/n 831.0885.1)

Clamp set

20 - 831.0145
21 - 831.0146
22 - 831.0166
24 - 831.0171
25 - 831.0147
26 - 831.0198
27 - 831.0152
28 - 831.0148
30 - 831.0781
31 - 831.0781

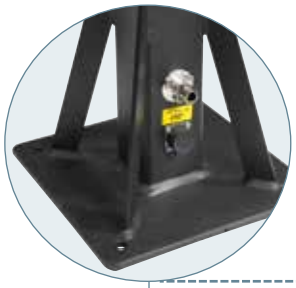
Reamer Blade

A - 831.0023
B - 831.0413
C - 831.0488
D - 831.0592
E - 831.0487
G - 831.0180
H - 831.0764
I - 831.0587
J - 831.0462
K - 831.0431
L - 831.0429
M - 831.0581
N - 831.0591
O - 831.0162
P - 831.0485
Q - 831.0604
R - 831.0487
S - 831.0747
T - 831.0547
U - 831.0593
V - 831.0376
W - 831.0368
X - 831.0165
Z - 831.0169
AA - 831.0216
AB - 831. 0369
AE - 831.0280
AF - 831.0618
AG - 831.0184
AH - 831.0589
AJ - 831.0763
AK - 831.0289
AL - 831.0022
AM - 831.0361
AN - 831.0237
AO - 831.0161
AP - 831.0389

Torch Cleaning Station TCS Compact
System overview & technical data

Figure 1:
Anti-spatter fluid injection unit TSi

Figure 2:
Torch cleaning



Single point electrical and pneumatic quick connector fors easy & fast installation

TCS Compact.
The economical solution against spatter adhesion

The state-of-the-art torch cleaning station TCS Compact from ABICOR BINZEL stands for quick and easy installation to practically all robot brands and types, top reliability and long life-time due to high quality components, as well as environmental friendliness and work shop safety by fully covered maintenance functions.

Ensure process stability in automated welding by using preventive torch cleaning, wire cutting and anti-spatter spraying with TCS Compact!

Optimal and time saving cleaning of the gas nozzle for a reliable welding process and an increase in plant availability – torch maintenance at it's best ...

Figure 1:
Anti-spatter fluid injection unit TSi

- Activated just by robot movement
- High efficient spray function
- Low consumption
- Collection of remaining anti-spatter fluid
- Fully protected for clean environment

Figure 2:
Torch cleaning

- Reamers, specially designed to suit the welding torch
- V-block for each nozzle diameter – no adjustments
- Strong, high quality air motor for powerful cleaning
- Complete dirt & dust protection
- Reliable 3-point nozzle clamping

Figure 3:
Wire cutting unit

TCS Compact – fully covered and protected for a clean & safe environment

Figure 3:
Wire cutting unit

- Strong, reliable cutting device
- Clean cut for a consistent arc-start
- Hardened cutting blade for long lifetime

Technical data:

General data

Total weight:	approx. 30 kg (66 lbs) (long stand version), approx. 22 kg (49 lbs) (short stand version)
Ambient temperature:	+ 5 °C to + 50 °C

Pneumatic motor

Air consumption:	approx. 400 l/min.
Pneumatic motor/ nominal speed with oiled air:	approx. 650 rpm at 6 bar (90 psi)

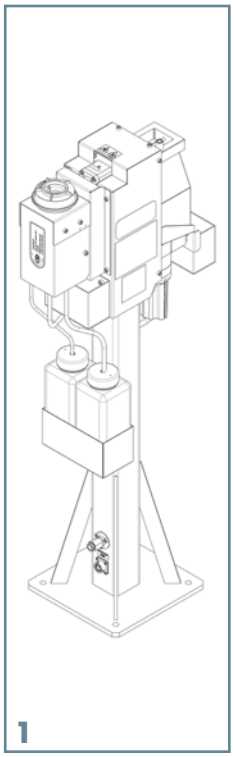
Pneumatic connection

Connection ID:	Ø 10 mm
Nominal pressure:	6 bar (90 psi)
Operating pressure:	6–8 bar (90 -120 psi)
Compressed air quality (ISO 8573-1:2010):	at least class 4

Electrical clamping block

Input:	3 inputs for triggering the 5/2 directional control valves
Control voltage:	24 V DC
Power consumption:	2.8 W
Output:	2 outputs from inductive proximity switch (normal open switch - PNP)
Operating voltage:	10 – 30 V DC
Continuous current:	max. 100 mA
Current consumption:	approx. 14 mA (24 V)
Max. wire diameter at 6 bar:	1.6 mm, solid wire

Torch Cleaning Station TCS Compact
Order information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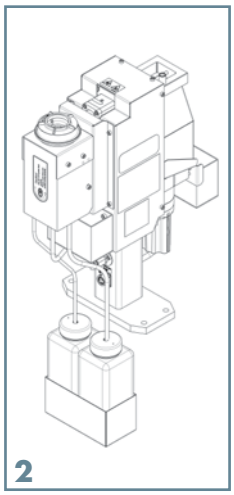

2

Please see next pages for TSi Anti-spatter Injector Parts

3

4

5

6

TCS Compact Part Numbers

No.	Type	Part-No.
1	TCS Compact LP[1]/5M[2]/PNP[3]	830.2376.1
2	TCS Compact SP[1]/5M[2]/PNP[3]	830.2366.1

[1] Stand type: LP = long stand
SP = short stand
[2] Connection cable lenght (5 meter)
[3] Proximity switch type (PNP)

Including: 1 set of sealing inserts (rubber), 5 meter signal cable and 1 litre anti-spatter fluid.
Please order the reamer and V-block separately.

Spare Parts for Cleaning Station TCS Compact

No.	Type	Description	Part-No.
3	Rubber bellows	Rubber bellows for air motor	830.2104
4	Protection cap	Protection cap for air motor	830.2103
5	Collect box	Wire collect box	830.2120
6	Signal cable	TCS control lead cpl.:	
		5 m (16')	101.0250.1
		10 m (32')	101.0251.1
		15 m (49')	101.0252.1
		20 m (65')	101.0253.1

Reamer and V-block Parts

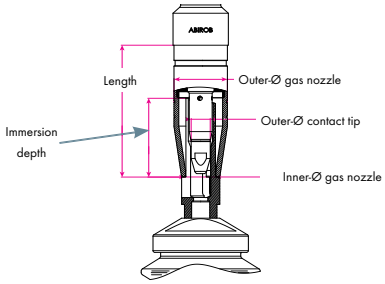
Torch type	with gas nozzle Type	Inner Ø [inch]	Inner-Ø [mm]	Length [inch]	Length [mm]	V-block Part-No.	Reamer Part-No.
ABIROB® A 360	145.0599	1/2"	13.0	2.68"	68.0	830.2358	830.2199
	145.0600	15/32"	12.0	2.75"	70.0	830.2358	830.2199
	145.0601	15/32"	12.0	2.56"	65.0	830.2358	830.2199
	145.0597	9/16"	14.0	2.56"	65.0	830.2358	830.2207
	145.0595	9/16"	14.0	2.68"	68.0	830.2358	830.2207
	145.0596	9/16"	14.0	2.75"	70.0	830.2358	830.2207
	145.0592	5/8"	16.0	2.68"	68.0	830.2358	830.2165
	145.0593	5/8"	16.0	2.75"	70.0	830.2358	830.2165
	145.0594	5/8"	16.0	2.56"	65.0	830.2358	830.2166
ABIROB® A 500	145.0589	1/2"	13.0	2.95"	75.0	830.2361	830.2187
	145.0590	1/2"	13.0	3.03"	77.0	830.2361	830.2187
	145.0588	9/16"	14.0	2.83"	72.0	830.2361	830.2207
	145.0580	5/8"	16.0	2.95"	75.0	830.2361	830.2164
	145.0581	5/8"	16.0	3.03"	77.0	830.2361	830.2164
	145.0583	5/8"	16.0	2.95"	75.0	830.2361	830.2164
	145.0584	5/8"	16.0	3.03"	77.0	830.2361	830.2164
ROBO WH 242	145.0090	5/8"	15.5	2.44"	62.0	830.2357	Contact
	145.0135	1/2"	13.0	2.44"	62.0	830.2357	830.2202
	145.0472	5/8"	15.5	2.24"	57.0	830.2357	Contact
	145.0473	1/2"	13.0	2.24"	57.0	830.2357	830.2202
	145.0547	1/2"	13.0	2.32"	59.0	830.2357	830.2202
	145.0159	7/16"	11.0	2.44"	62.0	830.2357	Contact
ABIROB® W 300	145.0564	5/8"	16.0	1.909"	48.5	830.2359	830.2187
	145.0495	1/2"	13.0	1.75"	44.5	830.2359	Contact
	145.0494	5/8"	16.0	1.75"	44.5	830.2359	Contact
ABIROB® W and	145.0479	1/2"	13.0	2.97"	75.5	830.2359	830.2190
ROBO WH 500	145.0556	1/2"	13.0	3.03	77.5	830.2359	830.2190
	145.0466	5/8"	16.0	2.83"	72.0	830.2359	830.2188
	145.0568	5/8"	16.0	2.85"	72.5	830.2359	830.2188
	145.0553	5/8"	16.0	2.97"	75.5	830.2359	830.2168
	145.0544	5/8"	16.0	2.97"	75.5	830.2359	830.2168
	145.0480	5/8"	16.0	3.03"	77.0	830.2359	830.2168
	145.0616	13/16"	20.0	2.97"	75.5	830.2359	830.2189
	145.0550	1/2"	13.0	2.97"	75.5	830.2359	830.2190
	145.0561	13/16"	20.0	2.75"	70.0	830.2359	830.2189
ABIROB® W and	145.0689	3/4"	18.0	3.62"	92.0	830.2363	830.2263
ROBO WH 600	145.0686	7/8"	21.5	3.62"	92.0	830.2363	830.2379
	145.0687	7/8"	21.5	3.38"	86.0	830.2363	830.2379
	145.0688	7/8"	21.5	3.74"	95.0	830.2363	830.2379
ROBO WH 652T	145.0574	3/4"	18.0	3.30"	84.0	830.2363	830.2198
	145.0575	7/8"	21.5	3.30"	84.0	830.2362	830.2198
	145.0606	3/4"	18.0	3.22"	82.0	830.2363	830.2198

V-block and reamer for other gas nozzles on request.

Reamer

V-block

Dimensional sketch of gas nozzle and reamer



TSi Anti-Spatter Injection Unit
For TCS-FP, TCS Compact, & as a Stand-alone Unit

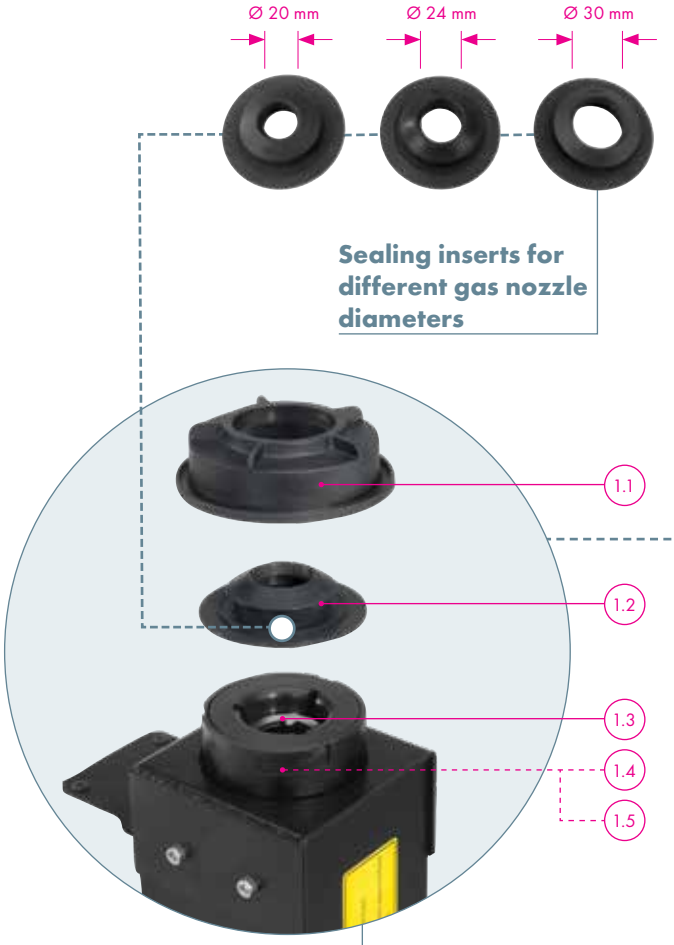


Figure 1:
Tool-free replacement of spare parts by means of bayonet fitting

Figure 2:
Sealed spraying chamber

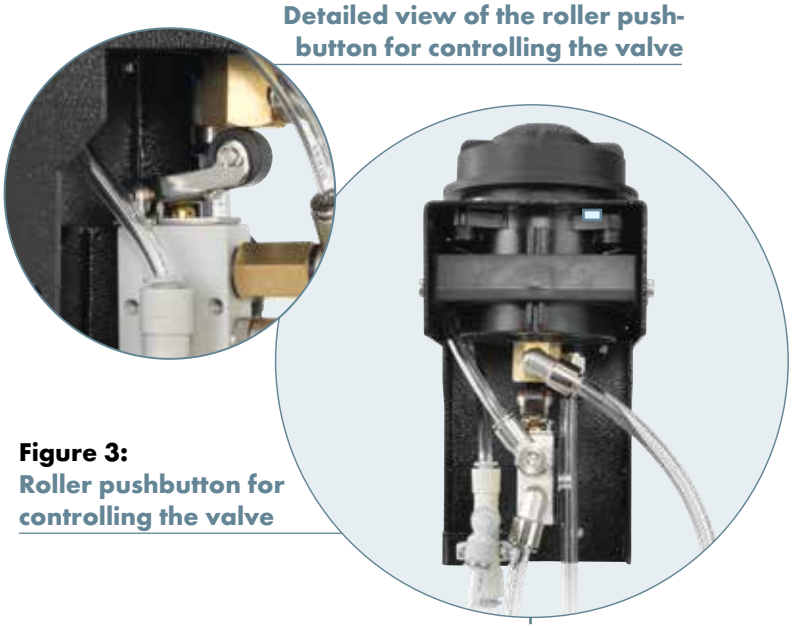
Injection unit TSi. Plug & Spray …

The TSi from ABICOR BINZEL – the stand-alone welding torch injection unit for simple integration in existing or new processes. The spray pulse is triggered by the integrated activating mechanism as soon as the welding torch is moved into the TSi vertically up to the spraying position. This makes a complicated electric actuator or integration in the robot controller unnecessary.

In addition, the TSi scores with an economical and environmentally-conscious spraying process. The sealed spraying chamber prevents the anti-spatter fluid from escaping during the spray pulse and the infinitely variable spray fluid setting ensures correct dosing. Both enable the lowest possible consumption of anti-spatter fluid and increase a safe and clean welding work environment.

Along with these features, the TSi guarantees the familiar and even coating of the cleaned welding torch inside and out – with ABICOR BINZEL's tried and tested anti-spatter fluid and in this way prevents weld spatter from sticking.

The TSi offers simple integration in the welding process, reliable welding torch maintenance and the efficient and environmentally-conscious use of anti-spatter fluid.



Detailed view of the roller push-button for controlling the valve

Figure 3:
Roller pushbutton for controlling the valve

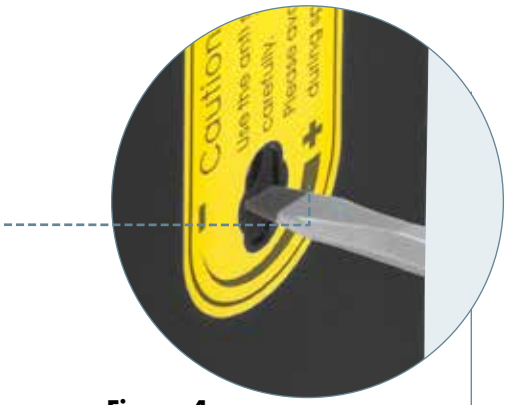


Figure 4:
Dosing the anti-spatter fluid

TSi Anti-spatter Injector Features:

- Simple activation – electric actuator not required
- Spray pulse activated by the robot movement
- No complicated integration into the robot controller
- Sealed and highly efficient spraying process – no overspray
- Clean and safe welding environment
- Low consumption of the anti-spatter fluid
- Plug & spray – no electrical programming needed

- **Figure 1:**
  Tool-free replacement of spare parts by means of bayonet fitting

  1.1 Device cover
  1.2 Seal insert
  1.3 Pressure flange
  1.4 Injection nozzle
  1.5 Collecting tank

- **Figure 2:**
  Sealed spraying chamber

  - No overspray and therefore no coating of the workpiece and the surroundings with anti-spatter fluid
  - Individual sealing inserts for different gas nozzle diameters
  - Even coating of the welding torch – inside and out
  - Highly efficient spraying process
  - Clean and safe welding environment

- **Figure 3:**
  Roller pushbutton for controlling the valve

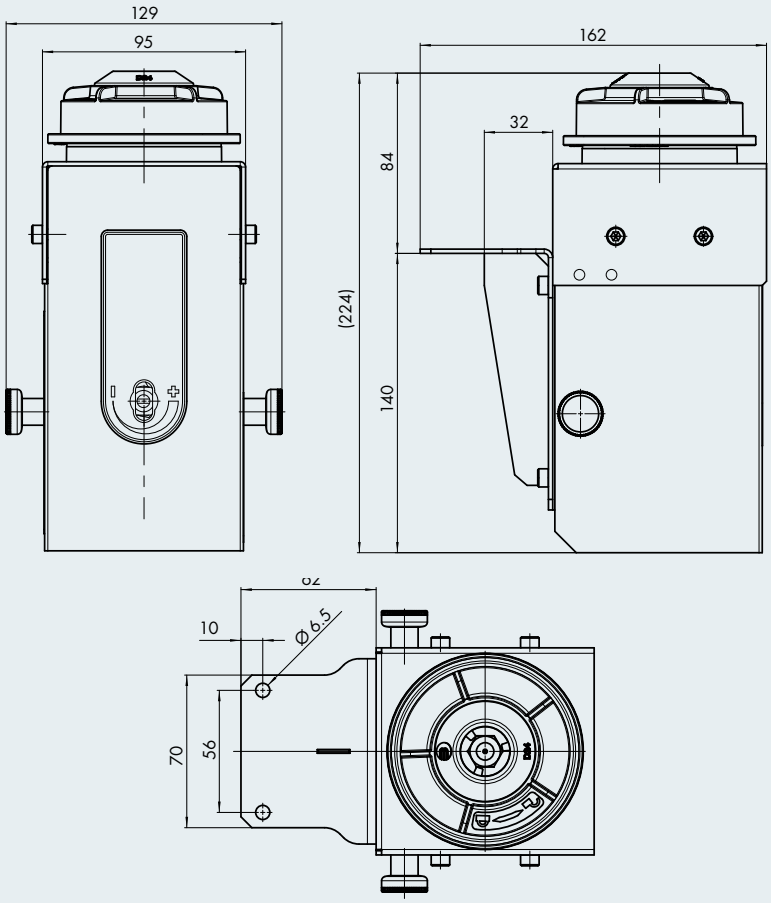
  - Integrated activation mechanism
  - Robot movement actuates the roller pushbutton and starts the spray pulse
  - Robust and maintenance-free construction

- **Figure 4:**
  Dosing the anti-spatter fluid

  - Variable dosing of the anti-spatter fluid
  - Easy to adjust using a flat-tip screwdriver
  - Highly efficient spraying process guaranteed
  - Economic and environmentally-conscious torch maintenance

TSi Anti-Spatter Injection Unit
Technical data & Dimensions

Dimensions:
Injection unit TSi



Technical Data:
Injection unit TSi

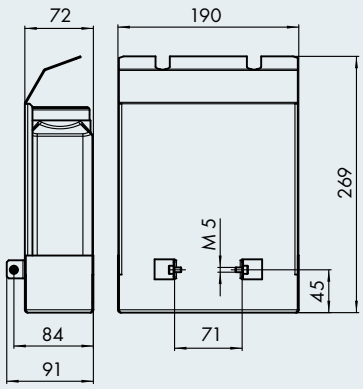
General information:

Weight:	3.3 lbs/1.5 kg (without anti-spatter fluid)
Ambient temperature in operation:	32 °F to 104 °F / 0 °C to +40 °C
Relative humidity in operation:	up to 90 % at 20 °C

Pneumatic connection:

Connection port:	Ø 8 mm
Operating pressure:	min. 72 psi up to max. 87 psi

Dimensions (in millimeters):
TSi bottle holder



Replacement Parts (for TCS-FP and TCS Compact)

Injection unit TSi

No.	Type	Description	Part-No.
1	Injection unit TSi	Injection unit TSi incl. 1 liter anti-spatter fluid and three sealing inserts (Ø 20, 24, 30 mm)	830.2285

Spare parts for the injection unit TSi

No.	Type	Description	Part-No.
2	Device cover	Device cover with bayonet fitting	830.2237
3	Sealing insert: Ø 20 mm	Seal to the gas nozzle	830.2232
	Ø 24 mm		830.2233
	Ø 30 mm		830.2234
4	Pressure flange	Contact surface of the gas nozzle for spray pulse activation	830.2265
5	Injection nozzle	Injection nozzle for the even distribution of the anti-spatter fluid	830.2133
6	Collecting tank	Collecting tank and filter for excess anti-spatter fluid	830.2240
7	Oil-based Anti-spatter	1 gallon bottle	192.9017
		5 gallon bottle	192.9012
		55 gallon container	192.9007
	Water-based Anti-spatter	1 gallon bottle	192.8009
		5 gallon bottle	192.8010
		55 gallon container	192.8011
not ill.	Fixing bracket TSi	Fixing bracket for attaching the TSi to torch cleaning stations	831.0824

GAS MANAGEMENT SYSTEM EWR 2 / EWR 2 NET

The best made better

60 %

Economical & efficient: Gas savings of 60 % or more!

The use of EWR2 devices yields on average 40 to 60% savings in protective gas.

Intelligent & precise: Permanent control and adjustment of the gas flow!

The EWR 2 devices have been equipped with a closed loop flow measuring unit for optimal gas flow control.

Simple & flexible networking: Digital data exchange and network connection with the EWR 2 Net!

CAN open and Ethernet interfaces for real-time data exchange and software access via local networks.

Environmentally friendly & sustainable: Reduction of CO_2 emissions!

CO_2 emissions are minimized for shielding gases containing CO_2 components, which helps to achieve climate protection targets and quantify CO_2 savings

Features

EWR 2 and EWR 2 Net:

More economical, more precise and perfectly suitable for the requirements of Industry 4.0!

The patented EWR 2 systems use an extremly fast solenoid valve to regulate the gas flow in real-time and in synchronization with the welding current. External factors such as changes in ambient temperatures, changing gas inlet, or counter-pressures from the connected cable assembly can be safely compensated. In this way, the EWR 2 guarantees the savings potential and controls the gas flow more precisely than traditional gas control systems.

New and Improved:

- Reduction of gas consumption, therefore reduction in operating costs
- Environmentally friendly; CO_2 emission reduced
- Calibrated gas regulation unit
- Active, closed gas control loop by constant measurement of the gas flow
- Easy handling and monitoring
- Recalibration possible with calibration certificate
- Data recording and viewing possible
- ABICOR BINZEL Service-Software for standard Windows computers incl. ROI calculator for the amortization period

Universally applicable!

The innovative EWR 2 gas management systems set new standards not only with MIG/MAG and TIG welding but also with plasma welding. They can be integrated into almost any welding process that is customary in the market.

Applications:

- Can be used in both automated and manual welding processes
- Easy installation on new and already existing equipment
- Suitable for all types of gases and mixtures

Technical Data

EWR 2 and EWR 2 Net

General

Operating voltage: max	24 V DC ±20 %, 10 W (0.42 A)
Input voltage:	24 V DC 110 V AC 20 - 50 V AC/DC
Media temperature:	14 – 122 °F (10 – 40 °C)
Ambient temperature:	50 – 104 °F (-10 – +50 °C)
Relative humidity:	20 – 90%
Flow rate range:	2 – 30 l/min (4.23 – 63.5 cfh)
Gas inlet pressure:	1 – 6 bar (14.5 – 87 psi)
Tolerance flow rate:	±1 l/min (2.1 cfh)
Shunt types:	150 A / 300 A / 500 A

Additional interfaces at EWR 2 Net

- Ethernet interface
- CAN interface

- Gas inlet pressure 1 - 6 bar (14.5 – 87 psi)
- Flow range of 2 – 30 l/min (4.23 – 63.5 cfh)

Easy handling:

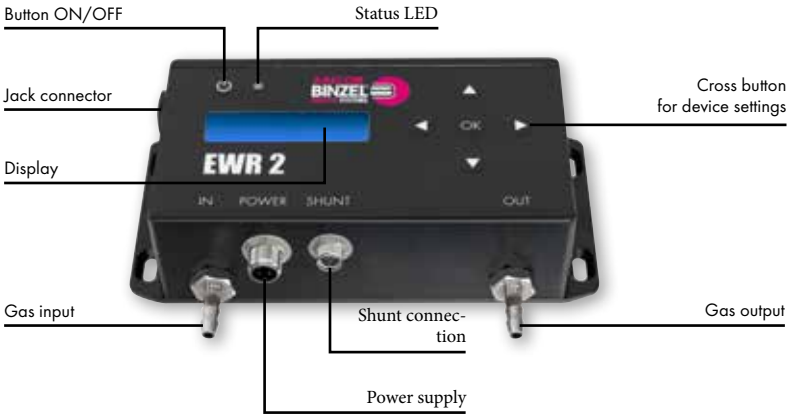
The integration of the EWR 2 system on new and existing equipment is quick and easy. Just connect the power supply and the current measurement shunt and set the basic flow rate, then set pressure and the gas conversion factor and the EWR 2 is ideally set for any application!

Recalibrations can be performed by ABICOR BINZEL service technicians. Calibration certificate provided upon completion which can be filed with company ISO documentation.

The Details:
The EWR 2 Devices at a Glance

EWR 2:
The base for gas management and savings!

All EWR 2 devices have a closed gas control loop which reduces deviation between set and actual gas volume. EWR 2 units are all equipped with an integrated LED display that allows easy overview of the current status and the system parameters. Settings can be done directly with the push button controls. Furthermore, the system is equipped with a stereo jack that can be used to connect to a computer USB with optional ABICOR BINZEL service software and connection cable.



EWR 2 Net:
Easy networking for industry 4.0!

EWR 2 Net has two additional interfaces and can be flexibly interconnected.

CAN open interface: The system can be connected by an additional gateway with any fieldbus systems and exchange data in real time[1].

Ethernet interface: Enables the EWR Net to be integrated into local networks in order to be able to access the device through these networks with the ABICOR BINZEL service software[1]

[1]Requires optional service software/cable kit.

EWR 2 Net system overview:

[1]See "EWR 2 Service kit" in chart

Digital on the Road!
The ABICOR BINZEL Service Software

The perfect addition!

The ABICOR BINZEL service software is an optional tool that facilitates and optimizes how you work with the EWR 2 devices. It can be operated with any standard Windows computer; an external welding-monitor is no longer required. The devices can be accessed directly via a jack plug or network connection.

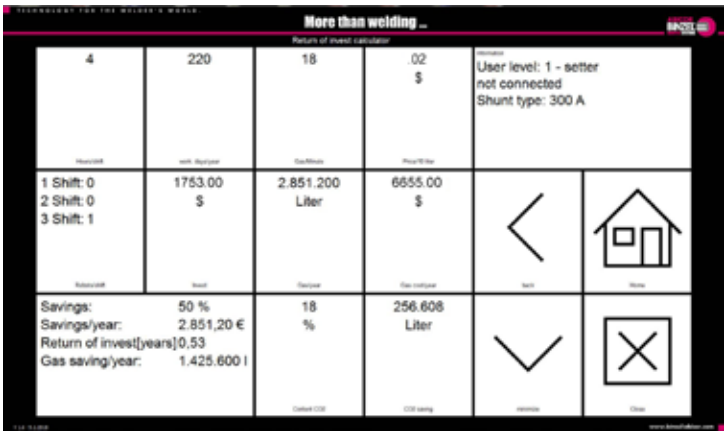
Main functions at a glance:

- **Setup and adjustment:** The user-friendly service software allows an easily configuration of the EWR 2 devices from the computer.
- **Determination of the gas saving:** All EWR 2 systems enable the recording and storage of data which can be read out and evaluated via the software in the menu item "Monitoring".
- **Monitoring errors:** The software displays the current operating status – including error message and error log.
- **Determination of the gas type:** In the menu item "Gas type", it is possible to select the shielding gas used and configure the usage.
- **Network integration with the EWR 2 Net:** The Ethernet connection on the EWR 2 Net allows access via the local network.

Amortization at a glance!

EWR 2 systems are extremely economical. The equipment typically pays off within the first year.

The individual amortization period can be calculated easily with the ROI calculator (ROI=Return on Investment) integrated in the new service software: simply enter the gas price, EWR 2 purchase price, gas requirement, hours worked identified with the software savings via the EWR 2 and read off the date from which the breakeven point is passed. An example calculation is shown in the figure on the right.



The Essentials in Brief:
Functional Principle and Technical Data

The functions of the EWR 2 devices:

The welding current is not always constant, and can vary a lot during different welding tasks. Without a gas management system, the gas flow is generally set for the highest required amperage, which often consumes more gas than is required. The EWR 2 adjust the gas flow automatically and as needed while welding.

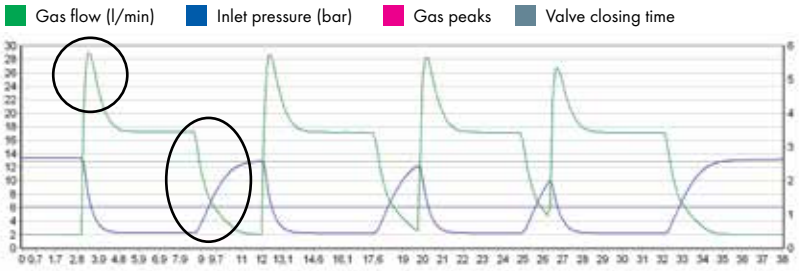
The EWR 2 systems manages the gas flow to provide high gas flow as needed while reducing flow when amperage is reduced.

Additionally, the fast acting solenoid valve stops and starts flow much quicker to provide noticeable gas use savings.

Avoiding demand gas peaks:
Constant regulation eliminates or significantly reduces gas flow peaks at any point of the process.

Quick regulation magnet valve:
The quick reacting valve is able to provide a controlled gas flow weld start to stop. Therefore, gas savings are realized at the process start, the process end and during welding breaks. This action is contrast to and compensates for the standard magnet valves integrated in the wire feed unit, which are slower and more wasteful of shielding gas.

Without EWR 2:

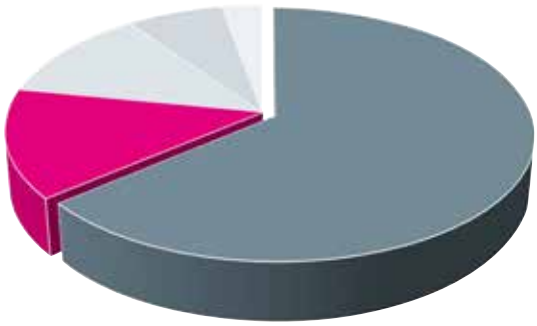


With EWR 2:

Cost composition of a welding seam:

The adjoining diagram shows the average cost composition of a welding seam.

Where can you really reduce costs?
Without sacrificing productivity, you can only reduce costs meaningfully by managing your shielding gas! This is the only cost that can be decreased without potenitally reducing the quality of the welding seam.



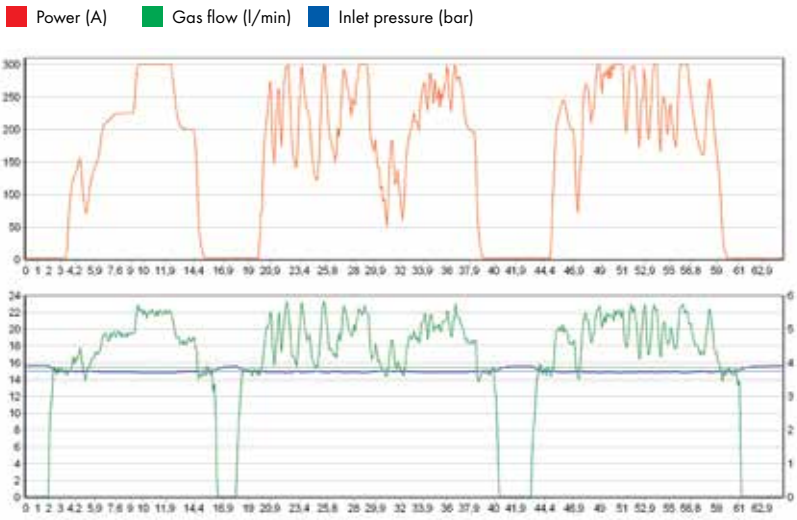
Example welding seam:

- Wages (64%)
- Shielding gas (14%)
- Machines (12%)
- Additional material (7%)
- Energy (3%)

(For each welding seam, the percentages are distributed differently.)

Gas flow regulation synchronized to the welding current: The EWR 2 adjusts the shielding gas amount to the current during the welding process and allows the saving of excess shielding gas.

With EWR 2:



Good to know:

For startup and accurate function of the EWR 2 systems the values of basic flow rate, set pressure and gas conversion factor have to be set either directly at the EWR 2 or via the service software.

- **Basic flow:** This is the base volume and flow rate, which the EWR 2 adjusts based on welding current signal out of the shunt. Within the shunt area, the EWR 2 adjusts the gas flow rate linear up to a maximum volume flow rate (basic flow +7 l/min).
- **Set pressure:** This represents the pressure the device will set between EWR 2 outlet and solenoid valve when no welding is occurring and the solenoid valve in the feed unit is closed.
- **Gas factor:** To set up the control loop, a gas flow rate measuring element is integrated in the EWR 2, which has been calibrated to air. To receive the exact measurement values during operation, a conversion factor for the gas used has to be set in the EWR 2. Standard gas types are all preconfigured and further gas mixtures can be easily added.

Technical data

EWR 2 and EWR 2 Net

General

Operating voltage:	24 V DC ±20 %, 10 W (0.42 A) max
Input voltage:	24 V DC 110 V AC 20 - 50 V AC/DC
Media temperature:	14 – 122 °F (10 – 40 °C)
Ambient temperature:	50 – 104 °F (-10 – +50 °C)
Relative humidity:	20 – 90%
Flow rate range:	2 – 30 l/min (4.23 – 63.5 cfh)
Gas inlet pressure:	1 – 6 bar (14.5 – 87 psi)
Tolerance flow rate:	±1 l/min (2.1 cfh)
Shunt types:	150 A/300 A/500 A

Additional interfaces at EWR 2 Net

- Ethernet interface
- CAN interface

EWR 2 and EWR 2 Net

System packages

1. EWR 2 devices

EWR 2

EWR 2 Net

2. Shunt types

150 A, 5 m cable length

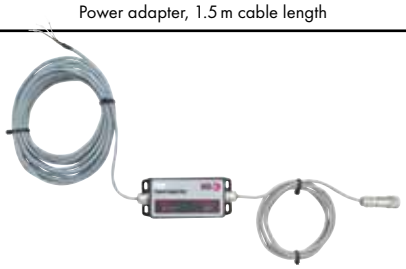
300 A, 5 m cable length

500 A, 5 m cable length

3. Power supply

Power cable with open cable end, 10 m cable length

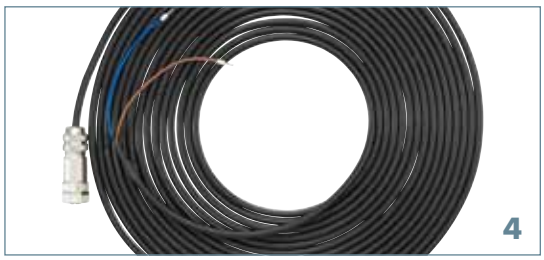
Power adapter, 1.5 m cable length

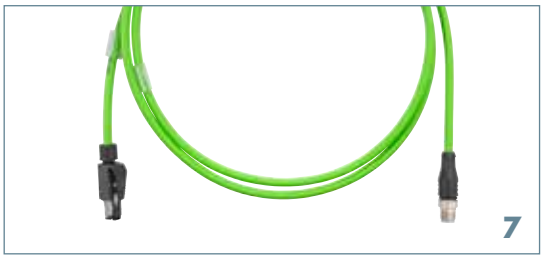


Power-Supply Unit (converter), 10 m cable length

1. Device	2. Shunt types	3. Power supply	PU	Order-No.
System packages with EWR 2 devices				
EWR 2	150 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0256.1
	150 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0259.1
	150 A, 5 m cable	20-50 V AC/DC power supply unit, 10 m cable length	1	514.0262.1
	300 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0257.1
	300 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0260.1
	300 A, 5 m cable	20-50 V AC/DC power supply unit, 10 m cable length	1	514.0263.1
	500 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0258.1
	500 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0261.1
	500 A, 5 m cable	20-50 V AC/DC power supply unit, 10 m cable length	1	514.0264.1
System packages with EWR 2 Net devices				
EWR 2 Net	150 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0269.1
	150 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0272.1
	150 A, 5 m cable	20-50 V AC/DC power supply unit, 10 m cable length	1	514.0275.1
	300 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0270.1
	300 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0273.1
	300 A, 5 m cable	20-50 V AC/DC power supply unit, 10 m cable length	1	514.0276.1
	500 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0271.1
	500 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0274.1
	500 A, 5 m cable	20-50 V AC/DC power supply unit, 10 m cable length	1	514.0277.1

Spare parts & Accessories





Pos.	Description	Details	suitable for	PU	Order-No.
1	EWR 2 Shunt	150 A, 5 m cable length	EWR 2 and EWR 2 Net	1	514.0283.1
	EWR 2 Shunt	300 A, 5 m cable length	EWR 2 and EWR 2 Net	1	514.0284.1
	EWR 2 Shunt	500 A, 5 m cable length	EWR 2 and EWR 2 Net	1	514.0285.1
2	EWR 2 Plug	Sealing plug for side port USB connection	EWR 2 and EWR 2 Net	1	514.0280.1
3	EWR 2 Power adapter for EWR 2 Unit (115V)	1.5 m cable length with various socket adapters	EWR 2 and EWR 2 Net	1	514.0286.1
4	EWR 2 DC converter (24 V DC)	Open cable end, 10 m cable length	EWR 2 and EWR 2 Net	1	514.0287.1
5	EWR 2 DC converter (20-50 V AC/DC)	Power supply unit (converter), 10 m cable length	EWR 2 and EWR 2 Net	1	514.0288.1
w/o fig.	Protective cap CAN		EWR 2 Net	1	514.0296.1
w/o fig.	Protective cap Ethernet		EWR 2 Net	1	514.0297.1
w/o fig.	Gas line filter element	Gas line filter element	Filter unit (see pos. 6)	1	514.0236.1
w/o fig.	EWR 2 Unit	EWR 2 base unit w/o accessories	EWR 2	1	514.0252.1
w/o fig.	EWR 2 Net Unit	EWR 2 Net base unit w/o accessories	EWR 2 Net	1	514.0265.1
6	Gas line filter unit	incl. bracket and 3 filter elements	EWR 2 and EWR 2 Net	1	514.0222.1
7	EWR 2 Net cable	Ethernet cable, 5 m cable length	EWR 2 Net	1	514.0281.1
8	EWR 2 USB cable	USB jack, 1.8 m cable length	EWR 2 and EWR 2 Net	1	514.0282.1
9	EWR 2 holder	Mounting bracket	EWR 2 and EWR 2 Net	1	514.0289.1
10	Shunt simulator		EWR 2 and EWR 2 Net	1	514.0291.1
w/o fig.	EWR 2 Service KIT	incl. service software, items #7 & #8	EWR 2 and EWR 2 Net	1	514.0292.1
11	Relay box complete	Contains rekay box and spare connector	EWR 2 and EWR 2 Net	1	514.0307.1
12	Relay box spare	Spare relay box	EWR 2 and EWR 2 Net	1	514.0308.1
13	T connector	For relay box	EWR 2 and EWR 2 Net	1	514.0309.1

WELDING PERFORMANCE PRODUCTS
Anti-spatter, Coolant and Accessories

ABICOR BINZEL's line of welding chemicals aids in all of your welding applications. A variety of anti-spatters and coolants including non-toxic formulas are now available. ABICOR has also added nozzle tip dip and wire lube pads to the line!

Now offering:

- ABI-Spray – Non-flamable, paintable, aerosol anti-spatter.
- ABI-Shield Ceramic Spray – Quick-drying, ceramic-based anti-spatter spray (cap optional)
- ABI-Shield – Water based anti-spatter. No dilution required, not affected by freezing.
- ABI-Mist – Water soluble, non-toxic anti-spatter specifically designed for robotic applications.
- ABI-Cool LC – Ready to use water and ethylene glycol based coolant.
- ABI-CoolECO – Non-toxic, propylene glycol based cooling fluid. Not regulated by OSHA or WHMIS.
- ABI-Gel – Nozzle tip dip anti-spatter product protects nozzles, tips, positioners and fixtures.
- Wire lube pads – Pretreated to reduce friction in wire feeding. Increases tip and liner life.

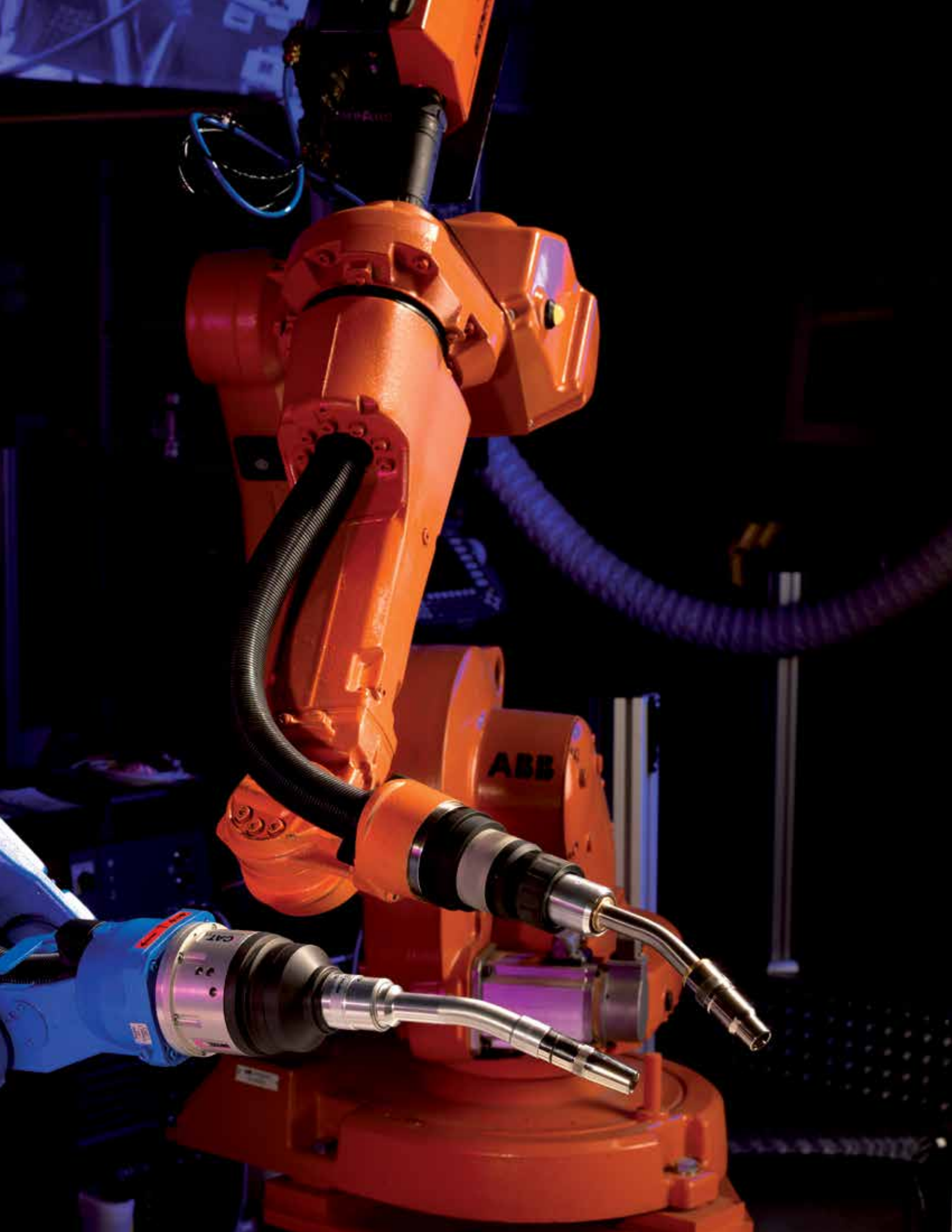
Performance and protection. Quick-fix formulas!

Coolant	Description	Volume	Pkg. Quantity	Item Number
ABI-Cool LC	Clear ethylene glycol based coolant -32°F / -35°C	1 gal	case of 4	192.9019
		5 gal	1 piece	192.9020
		55 gal	1 piece	192.9021
ABI-CoolECO	Non-toxic propylene glycol based coolant, not regulated +10°F / -12°C	1 gal	case of 4	192.9022
		5 gal	1 piece	192.9023
		55 gal	1 piece	192.9024

ABI-Shield Ceramic Spray with Coating Cap

Anti Spatter	Description	Volume	Pkg. Quantity	Item Number
ABI-Spray	Aerosol anti-spatter	16 oz	case of 12	192.8016
ABI-Shield Ceramic Spray	Quick-drying, ceramic based anti-spatter spray	13.5 oz	case of 12	192.0228.12
			1 piece	192.0228.1
ABI-Mist	Water-based robotic anti-spatter	1 gal	case of 4	192.8009
		5 gal	1 piece	192.8010
		55 gal	1 piece	192.8011
ABI-Shield	Water-based anti-spatter	16 oz	case of 6	192.8012
		1 gal	case of 4	192.8013
		5 gal	1 piece	192.8014
		55 gal	1 piece	192.8015
Organic anti-spatter	Oil-based, non-toxic, not regulated	1 gal	1 piece	192.9017
		5 gal	1 piece	192.9012
		55 gal	1 piece	192.9007

Additional products	Description	Volume	Pkg. Quantity	Item Number
ABI-Gel	Blue gel anti-spatter	16 oz	case of 12	192.8017
Welding wire lube pads	Lubricated wire pads	6/pack	case of 12	192.9025
Ceramic coating cap	Easy application cap	1/pack	1 piece	192.0256



ABB

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