



KOOL RUN[®]

Driven by Performance



Air-Cooled MIG Torch for
External Arm Robots
(Replacement for Tregaskiss[™] G1 Series)

Operating Manual and Parts List

**DO NOT INSTALL, OPERATE, OR REPAIR THIS EQUIPMENT
WITHOUT READING THIS OPERATING MANUAL**

MADE IN USA

CM INDUSTRIES
INC.

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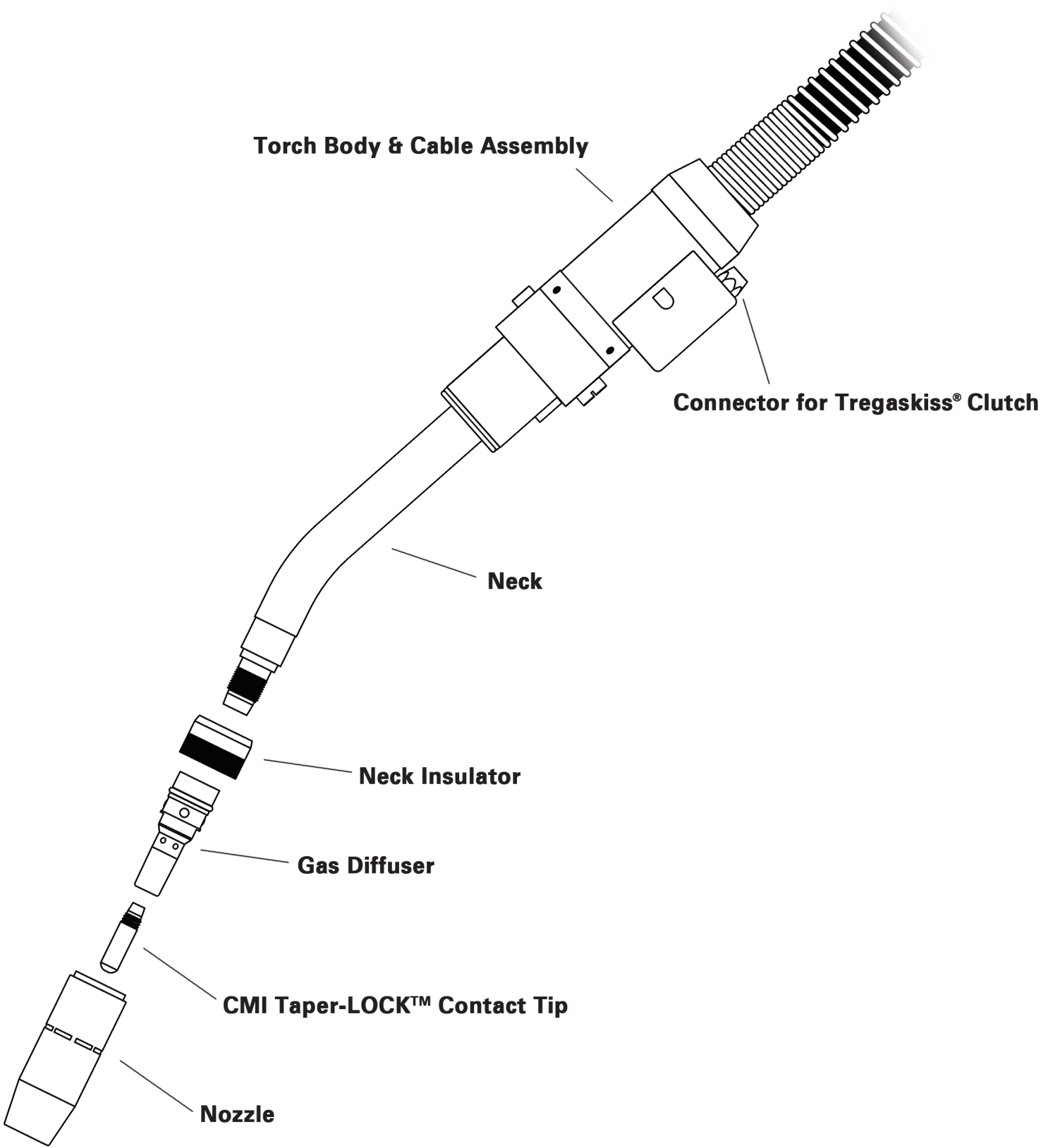
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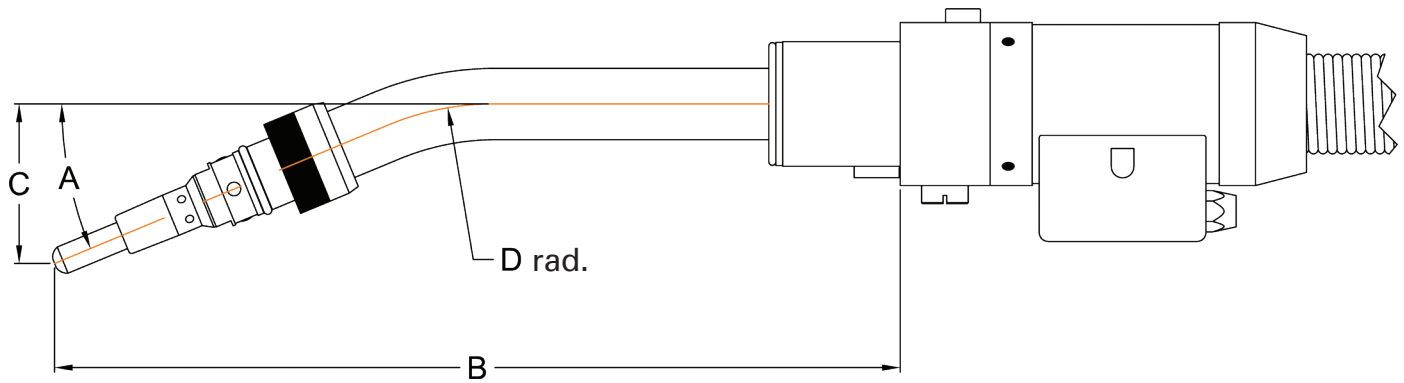
General Safety 9

Front-End Assembly Overview



Technical Data

-Neck Dimensions-



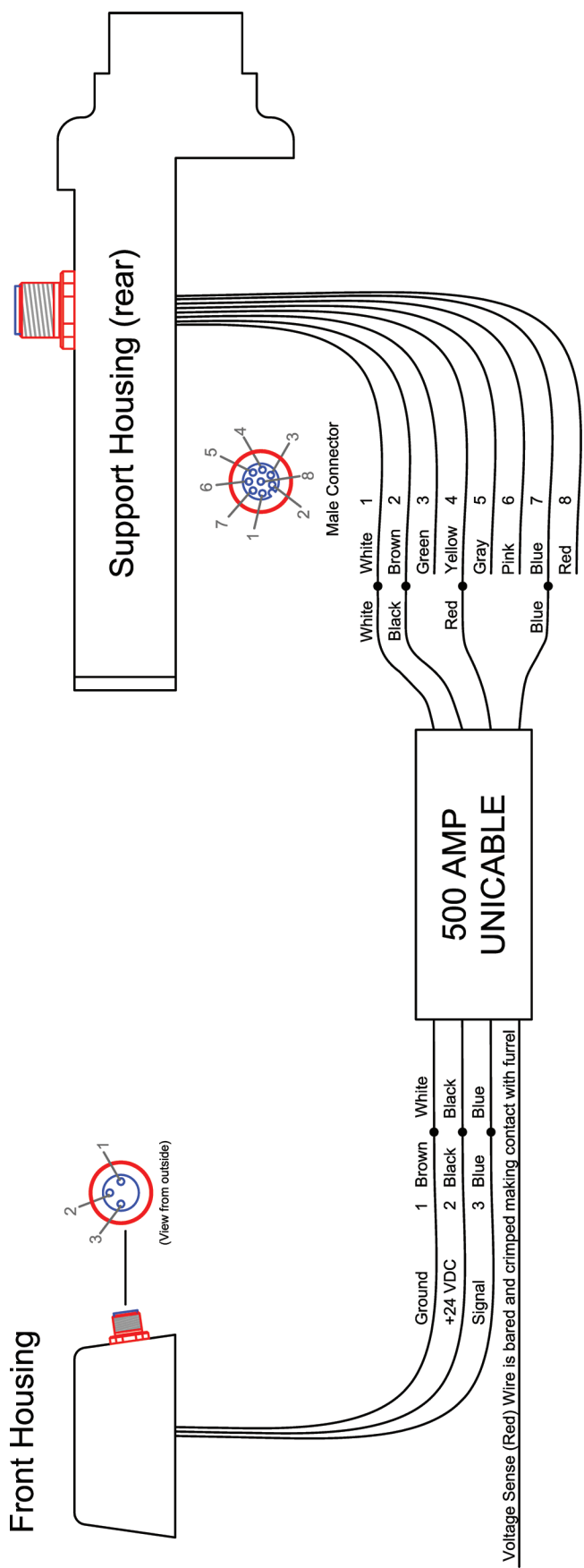
Neck	A	B	C	D
405-22QC	22°	9.355" (237.6mm)	1.623" (41.2mm)	3.00" (76.2mm)
405-45QC	45°	7.607" (193.6mm)	3.530" (89.7mm)	3.00" (76.2mm)
405-180QC	180°	8.816" (223.9mm)	-	-

-Gun Amperage Ratings-

Kool Run Torch Model	100% Duty Cycle		60% Duty Cycle	
	CO2	Mixed Gas	CO2	Mixed Gas
KR502	500 AMP	350 AMP	600 AMP	500 AMP

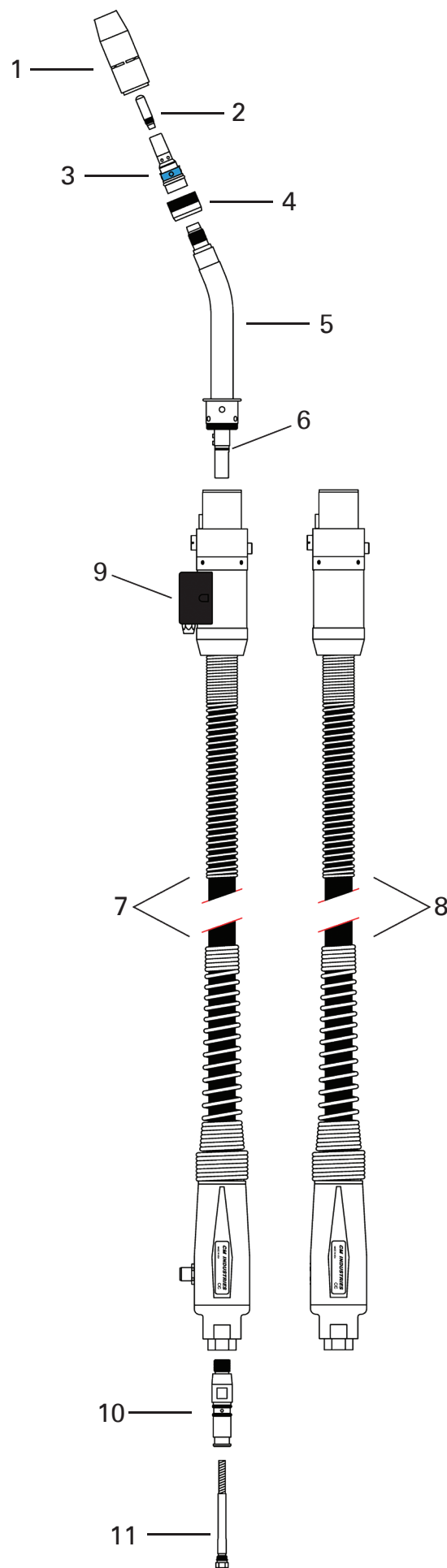
NOTE: Ratings are based on tests that comply with NEMA ARC Welding Section Standard 11-6-1975 for Duty Cycle. The time period of one complete cycle shall be 10 minutes (60%=6 minutes) National Electrical Manufacturers Association 2101 L Street N.W. Washington D.C. 20037.

Wiring Diagram for Clutch Assembly



Exploded View & Parts List

ITEM	PART #	DESCRIPTION
1.	152-xx-xxC	See Page 6 "Nozzle Selection"
2.		CMI Taper-LOCK™ Contact Tip
	155-1-030	Heavy Duty, .030" (0.8mm)
	155-1-035	Heavy Duty, .035" (0.9mm)
	155-1-040	Heavy Duty, .040" (1.0mm)
	155-1-045	Heavy Duty, .045" (1.2mm)
	155-1-364	Heavy Duty, 3/64" (1.3mm)
	155-1-052	Heavy Duty, .052" (1.4mm)
	155-1-062	Heavy Duty, .062" (1.6mm)
	155-1-564	Heavy Duty, 5/64" (2.0mm)
	155-1-332	Heavy Duty, 3/32" (2.4mm)
	155-2-xxx	Heavy Duty Tapered Contact Tip
	155-3-xxx	Extra Heavy Duty Tapered Contact Tip
	155-7-xxx	Heavy Duty CrZr Contact Tip
3.	154-R505	Gas Diffuser, H.D. for Slip-On Nozzles
	154-R506	Gas Diffuser, S.D. for Slip-On Nozzles
	154-R507	Gas Diffuser, H.D. for Thread-On Nozzles
	154-R508	Gas Diffuser, S.D. for Thread-On Nozzles
4.	KR50-2	Neck Insulator
5.	405-22QC	Neck, 22°
	405-45QC	Neck, 45°
	405-180QC	Neck, 180°
6.	405-1QC	O-Ring
7.		Unicable Assembly - Complete
	513-203	500A Unicable for Clutch Mount, 3'
	513-203.5	500A Unicable for Clutch Mount, 3.5'
	513-204	500A Unicable for Clutch Mount, 4'
	513-204.5	500A Unicable for Clutch Mount, 4.5'
	513-205	500A Unicable for Clutch Mount, 5'
	513-2xx	500A Unicable for Clutch Mount, up to 15'
8.	513-203S	500A Unicable for Solid Mount, 3'
	513-203.5S	500A Unicable for Solid Mount, 3.5'
	513-204S	500A Unicable for Solid Mount, 4'
	513-204.5S	500A Unicable for Solid Mount, 4.5'
	513-205S	500A Unicable for Solid Mount, 5'
	513-2xxS	500A Unicable for Solid Mount, up to 15'
9.	510-200-2	Housing
10.	214	Power Pin, Tweco® #4
	214-1	Power Pin, Miller®
	214-2	Power Pin, Lincoln® "LN"
	214-7	Power Pin, Lincoln® "LN" (short)
	214-30	Power Pin, Panasonic®
	214-39	Power Pin, OTC Daihen®
	214-40	Power Pin, Lincoln® "4R"
	214-41	Power Pin, Fronius®
11.	415-30-6	Liner Assembly, .030", 6'
	415-30-15	Liner Assembly, .030", 15'
	415-35-6	Liner Assembly .035"-.045", 6'
	415-35-10	Liner Assembly .035"-.045", 10'
	415-35-15	Liner Assembly .035"-.045", 15'
	415-116-6	Liner Assembly .045"-1/16", 6'
	415-116-10	Liner Assembly .045"-1/16", 10'
	415-116-15	Liner Assembly .045"-1/16", 15'
	415-332-6	Liner Assembly, 5/64-3/32", 6'
	415-332-15	Liner Assembly, 5/64-3/32", 15'
	415-35-2	Liner Assembly .035"-3/64", 15' Aluminum
	415-116-2	Liner Assembly 3/64"-1/16", 15' Aluminum



Nozzle Selection

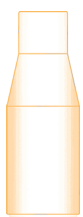
Description	Part # Slip-On Nozzle	Part # Thread-On Nozzle
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Light Duty Conical Nozzles



1/2" Bore, 1/8" Tip Recess	152-10-50*	152-60-50*
5/8" Bore, 1/8" Tip Recess	152-10-62*	152-60-62*
1/2" Bore, 1/4" Tip Recess	152-11-50*	152-61-50*
1/2" Bore, Flush Tip	152-12-50*	152-62-50*
1/2" Bore, 1/8" Tip Stickout	152-13-50*	152-63-50*
5/8" Bore, 1/8" Tip Stickout	152-13-62*	152-63-62*
1/2" Bore, 1/4" Tip Stickout	152-14-50*	152-64-50*

Light Duty Bottleneck Nozzles



1/2" Bore, 1/8" Tip Recess	152-15-50*	152-65-50*
1/2" Bore, Flush Tip	152-16-50*	152-66-50*
1/2" Bore, 1/8" Tip Stickout	152-17-50*	152-67-50*
1/2" Bore, 1/4" Tip Stickout	152-18-50*	152-68-50*

These nozzles are available in brass upon request

Heavy Duty Conical Nozzles



1/2" Bore, 1/8" Tip Recess	152-30-50*	152-70-50*
5/8" Bore, 1/8" Tip Recess	152-30-62*	152-70-62*
5/8" Bore, 1/4" Tip Recess	152-31-62*	152-71-62*
5/8" Bore, Flush Tip	152-32-62*	152-72-62*
5/8" Bore, 1/8" Tip Stickout	152-33-62*	152-73-62*
5/8" Bore, 1/4" Tip Stickout	152-34-62*	152-74-62*

Heavy Duty Bottleneck Nozzles



5/8" Bore, 1/8" Tip Recess	152-35-62*	152-75-62*
5/8" Bore, Flush Tip	152-36-62*	152-76-62*
5/8" Bore, 1/8" Tip Stickout	152-37-62*	152-77-62*

Custom Nozzle - Call for availability on special requested bore and tip recess

*All nozzles available in non-plated material upon request

Gas Diffuser Selection

154-R505
Heavy Duty
for Slip-On Nozzles



154-R506
Standard Duty
for Slip-On Nozzles



154-R507
Heavy Duty
for Thread-On Nozzles



154-R508
Standard Duty
for Thread-On Nozzles



Ordering Information

Custom Part#

M5406-45-5-445-S

Power Pin

(blank) - Tweco #4
M - Miller
LN - Lincoln "LN"
PA - Panasonic
TW - Tweco #5
OX - OXO
D - OTC / Daihen
F - Fronius
E - Euro

Torch Model

Standard Torch Model
500 Amp Robotic A/C

Length

03 - 3 ft
03.5 - 3.5 ft
04 - 4 ft
04.5 - 4.5 ft
up to
15 - 15 ft

Wiring

(blank) - Wired for Clutch
S - No Wiring

Neck

(blank) - 180° Straight
422 - 22° Bend
445 - 45° Bend

Nozzle

(blank) - 401-6-62
3 - 401-6-50
5 - 401-5-62
7 - 401-42-50

Wire Size

30 - .030"
35 - .035"
1.0 - .040"
45 - .045"
364 - 3/64"
52 - .052"
116 - 1/16"
1.8 - 1.8mm
564 - 5/64"
332 - 3/32"

Example of Standard Part#

5404-45

Wire Size

500 Amp Robotic Torch, 4'

Standard Torch Components

Standard Models are shipped with the following parts:

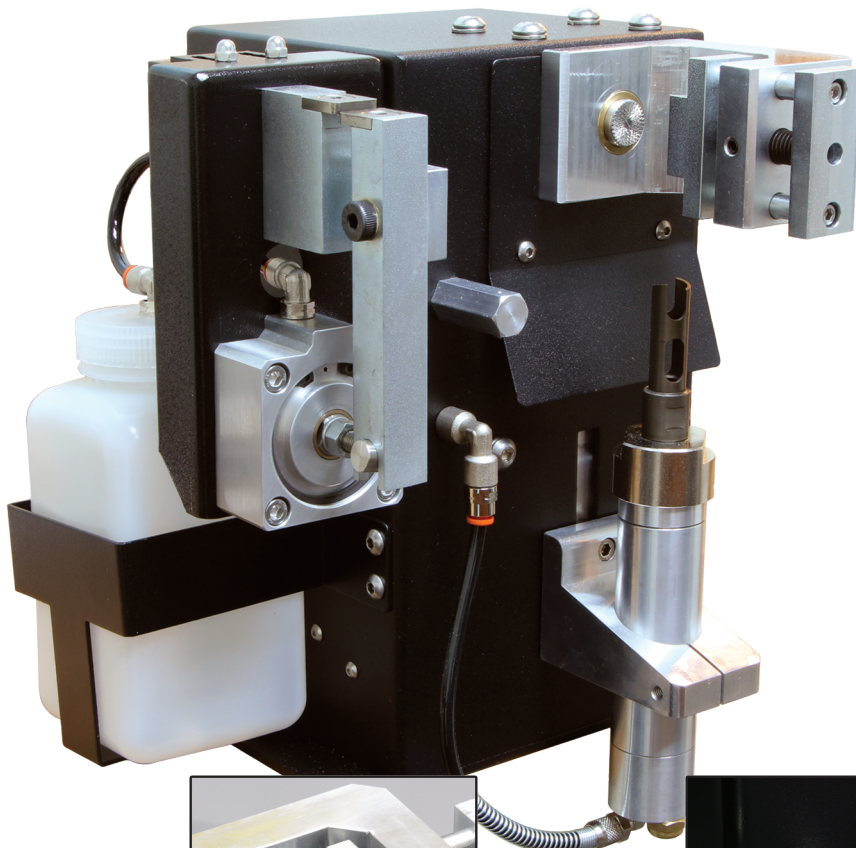
MODEL	NECK	NOZZLE	DIFFUSER	CONTACT TIP
500 Amp	405-180QC	401-6-62	154-R506	155-1-XXX

Nozzle Cleaning Station

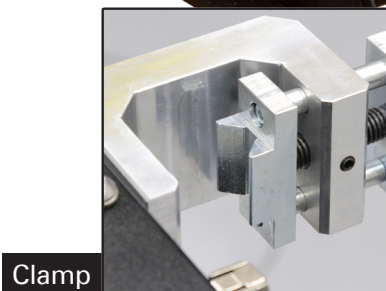
CM Industries Nozzle Cleaning Stations clean the nozzle and sprays anti-spatter. Increase your productivity by providing better gas flow, extending consumable life, and decreasing down-time. An optional Wire Cutter ensures a precise cut for optimum arc-start and an exact TCP.

Key Features

- Easy to set up.
- External momentary switches for testing cycle and spray.
- Adjustable V-block designed to hold just about any nozzle.
- All pneumatic and electronic valves are located internally.
- Optional Wire Cutter can be attached to the unit.



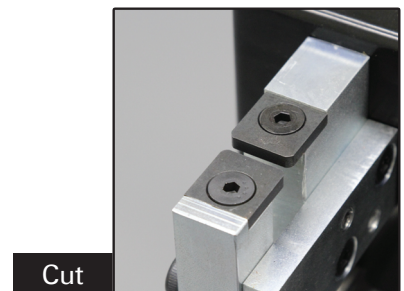
Nozzle Cleaning Stations	Part #
Model 2100E2	650-25-580
Model 2100E2 w/ WC-95E	650-25-584



Clamp



Spray



Cut

Specifications

AIR REQUIREMENT:

80-120 PSI @ 8 S.C.F.M. (MIN) CLEAN SHOP AIR

REAMER STROKE: 2"

DIMENSIONS: 6-1/2" X 6" X 12"

WEIGHT: 27 LBS. 2100E2
31 LBS. 2100E2 w/ WC-95E

ELECTRICAL REQUIREMENTS:

(4) ROBOT OUTPUTS AND (1) ROBOT INPUT

OUTPUT: 0V DC SWITCHABLE GROUND

OUTPUT: 24V DC CONTINUOUS SUPPLY

INPUT: 24V DC SIGNAL RETURN

NOTE: WIRED FOR STANDARD "SINKING" LOGIC



WARNING

Read and follow the manufacturer's instructions, employer's safety practices, and Material Safety Data Sheets (MSDSs).

Only qualified personnel should install, use, or service this material and/or equipment.



WELDING SPARKS can cause fire or explosion

- Do not weld near flammable material
- Do not weld on closed containers.
- Remove combustibles from the work area and/or provide a fire watch.
- Avoid oily or greasy clothing as a spark may ignite them.



ARC RAYS can injure eyes and burn skin

- Always wear correct eye, ear, and body protection
- Always wear a welding helmet with the proper grade filter lens. Protect yourself and others from spatter arc flash rays by using protective screens, barriers and welding curtains.
- Always wear protective gloves and clothing to cover exposed skin. This will aid in the prevention of arc and spatter burns.



ELECTRIC SHOCK can kill.

- Always wear dry installing gloves
- Do not touch live electrical parts.
- Always disconnect power source before hooking up or changing electrodes, nozzles and other parts.



FUMES AND GASES can be hazardous to your health.

- Keep your head out of the fumes
- Use enough ventilation or exhaust at the arc to keep fumes and gases from your breathing zone, and general area.
- Fumes from cutting and welding can deplete air quality, causing injury or death. Always wear an air supplied respirator in confined areas, or if breathing air is not safe.



LOUD NOISE can damage hearing.

- Always wear protective hearing devices to ensure protection when noise levels exceed OSHA standards

CALIFORNIA PROPOSITION 65 WARNING

This product contains chemicals, including lead, known to the State of California to cause cancer, birth defects, or other reproductive harm. *Wash hands after use.*

(California Health & Safety Code Section 25249.5)