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Complete Assembly Overview for Solid Mount System

-Installation & Removal of Consumables-







Installation

-Installing Gun to Robot-

A. Installing Disc to Robot

- 1. Bring robot to service position.
- 2. Install insulating disc by lining up pin to the pin hole on the robot.
- 3. Use screws provided to fasten disc to robot arm using tightening patter (Fig. 1). IMPORTANT: Do not over tighten, as damage will occur.



B. Installing Mounting Arm to Disc

- 1. Line up pin on the clutch/solid mount to pin hole on insulating disc.
- Fasten 4 M4 SHCS provided with 3mm hex wrench. NOTE: Mounting arm should already be attached to clutch/solid mount. If not, continue to step 3.
- Slide mounting arm by hand over end of clutch/solid mount (Fig. 2).
 NOTE: Guide pin from mounting arm to pin slot of the clutch/solid mount.
- 4. Use M8 SHCS provided to secure.

C. Installing Torch Body

- 1. Slide torch body through mounting arm from robot side.
- 2. Be sure that notch of mounting arm matches slot on torch body (Fig. 2).
- 3. Tighten (2) M4 SHCS with 4mm hex wrench.



Mounting Arm

D. Installing Cable Assembly

- 1. Push front of cable assembly into torch body completely (Fig. 3).
- 2. Tighten M4 SHCS of the cable connector with 4mm hex wrench. IMPORTANT: Do not over tighten, as damage will occur.
- 3. Slide aluminum cover over torch body.
- 4. Fasten (3) set screws of aluminum cover to torch body with 2mm hex wrench.

D. Installing Neck & Liner

- Push neck into torch body (Fig. 3).
 NOTE: Make sure pins on neck line up with slot inside torch body.
- 2. Find neck clamp screw on top of mounting arm.
- 3. Once neck is inserted, tighten screw to secure neck in place.
- Install the liner through the power pin, and make sure power pin is connected to wire feeder properly.
 - NOTE: Tighten set screw if necessary.
- 5. Cut the liner to the proper length as needed (about 3/4") (Fig. 4).









Torch Body

Technical Data

-TCP-



Neck	А	ТСР	В	С
KR502-22	22°	13.572" (344.7mm)	6.010" (152.7mm)	3.00" (76.2mm)
KR502-45	45°	13.360" (339.3mm)	3.960" (100.6mm)	3.00" (76.2mm)
KR502-180	180°	13.867" (352.2mm)	4.070" (103.4mm)	-

-Gun Amperage Ratings-

Kool Run Torch Model	100% Duty Cycle		60% D	uty 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.





Exploded View & Parts List

ITEM	PART #	DESCRIPTION
1.	152-xx-xxP	See Page 8 "Plated Nozzle Selection"
2.	155-1-030 155-1-035 155-1-040 155-1-045 155-1-364 155-1-052 155-1-062 155-1-564 155-1-332	CMI Taper-LOCK [™] Contact Tip Heavy Duty, .030" (0.8mm) Heavy Duty, .035" (0.9mm) Heavy Duty, .040" (1.0mm) Heavy Duty, .045" (1.2mm) Heavy Duty, .052" (1.4mm) Heavy Duty, .052" (1.4mm) Heavy Duty, .062" (1.6mm) Heavy Duty, .5/64" (2.0mm) Heavy Duty, .3/32" (2.4mm)
	155-2-xxx 155-3-xxx 155-7-xxx	Heavy Duty Tapered Contact Tip Extra Heavy Duty Tapered Contact Tip Heavy Duty CrZr Contact Tip
3. 4. 5. 6.	154-R505 154-R506 154-R507 154-R508 KR50-1 KR502-22 KR502-45 KR502-180 KR502-3	Gas Diffuser, H.D. for Slip-On Nozzles Gas Diffuser, S.D. for Slip-On Nozzles Gas Diffuser, H.D. for Thread-On Nozzles Gas Diffuser, S.D. for Thread-On Nozzles Neck Insulator Neck, 22° Neck, 45° Neck, 180° O-Ring
7. 8. 9. 10. 11. 12. 13. 14. 15.	KAM-422 KAM-423 KAM-424 Not Sellable KR-120 KCM-400 KCM-202 KCM-205 Not Sellable Not Sellable KCM-xxx	Mounting Arm, 22° Gooseneck Mounting Arm, 45° Gooseneck Mounting Arm, 180° Gooseneck M8x1.25x12 SHCS Torch Body Solid Mount Safety Clutch Safety Clutch Cable M4x0.7x12 SHCS Varried SHCS See Page 7 "Insulating Discs"
16.	KR10-xxx KR10-xxxE KR1-xxx KR1-xxxE	500A Cable Assembly, for Clutch Mount 500A Cable Assembly, for Clutch Mount w/ Euro 500A Cable Assembly, for Solid Mount 500A Cable Assembly, for Solid Mount w/ Euro All cable assemblies are available in 1/2' increments up to 12'
17. 18. 19. 20. 21. 22.	KR1-500-10 KR1-500-7 KR1-500-8 KR1-500-11 650-25-260 650-25-363 650-25-283	Clutch Cable Housing Clutch Cable Plug O-Ring Set Screw Connector Terminal Control Cable - 6' (2 m) Control Cable - 13' (4 m)
23. 24.	KDP-001 KDP-101 KDP-103 KDP-104 KDP-105 KDP-106 KDP-107 KDP-108 KDP-110	Power Pin Adaptor Block Power Pin, Miller® Power Pin, Panasonic® Power Pin, Tweco® #4 Power Pin, Tweco® #5 Power Pin, OTC® Power Pin, Fronius® Power Pin, Lincoln "4R" Euro
25.	164-30-6 164-45-6 164-116-6 164-332-6	Liner, 6', .030" Liner, 6', .035"045" Liner, 6', 3/64" - 1/16" Liner, 6', 5/64" - 3/32"



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Wiring Diagram for Clutch Assembly

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KOO RUN

Insulating Discs

PART #	DESCRIPTION
KCM-000	Blank
KCM-603	KUKA [®] KR15, KR16, KR16 S, KR16 KS REIS [®] RV4, RV6, RV6L
KCM-604	ABB® RB6, 1400, 1500, 1600, 2000, 4000, IRB1000-3200 Fanuc® 100, 100i, 120i, s-6, M710-20L Kawasaki® JS6, JS10 KUKA® KR5 arc, KR6, KR6 arc, KR6 KS, KR16 L6, KR16 I6 arc, KR16 LS KS Miller® MRV6 Motoman® HP6, HP20, HP50-20, K6, K10, SK6, SK10, SK16 OTC® DR4000, DR-4200, DR-4400, EX-V6, EX-V6L, EX-V16, MRV-6
KCM-606	Fanuc [®] Arcmate JR / SR
KCM-608	ABB® IRB2400/10, IRB2400/16, IRB2600, IRB440L
KCM-612	Kawasaki® FA06
KCM-614	REIS® RV12 / 122 / 15
KCM-616	Panasonic [®] AW10A/6A Panasonic [®] VR6/8, TA, TW
KCM-623	Miller [®] MRV5, MRH5
KCM-629	OTC® DR3000
KCM-632	Fanuc [®] ArcMate 50iB, 50iC, 50il KUKA [®] KR5 R1400
KCM-648	Nachi® SC15
KCM-649	ABB® 4400 M94A
KCM-654	Panasonic [®] VR32





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Plated Nozzle Selection

Order		Part #	Part #
<u>Code</u>	Description	Slip-On Nozzle	Thread-On Nozzle
<u>Light D</u>	outy Conical Nozzles		
A	1/2" Bore, 1/8" Tip Recess	152-10-50*	152-60-50*
В	5/8" Bore, 1/8" Tip Recess	152-10-62*	152-60-62*
С	1/2" Bore, 1/4" Tip Recess	152-11-50*	152-61-50*
D	1/2" Bore, Flush Tip	152-12-50*	152-62-50*
E	1/2" Bore, 1/8" Tip Stickout	152-13-50*	152-63-50*
F	5/8" Bore, 1/8" Tip Stickout	152-13-62*	152-63-62*
G	1/2" Bore, 1/4" Tip Stickout	152-14-50*	152-64-50*
<u>Light D</u>	uty Bottleneck Nozzles		
I	1/2" Bore, 1/8" Tip Recess	152-15-50*	152-65-50*
J	1/2" Bore, Flush Tip	152-16-50*	152-66-50*
К	1/2" Bore, 1/8" Tip Stickout	152-17-50*	152-67-50*
L	1/2" Bore, 1/4" Tip Stickout [These nozzles are available in brass upon request]	152-18-50*	152-68-50*
Heavy	Duty Conical Nozzles		
Ν	1/2" Bore, 1/8" Tip Recess	152-30-50*	152-70-50*
0	5/8" Bore, 1/8" Tip Recess	152-30-62*	152-70-62*
Р	5/8" Bore, 1/4" Tip Recess	152-31-62*	152-71-62*
Q	5/8" Bore, Flush Tip	152-32-62*	152-72-62*
R	5/8" Bore, 1/8" Tip Stickout	152-33-62*	152-73-62*
S	5/8" Bore, 1/4" Tip Stickout	152-34-62*	152-74-62*
			·····
<u>Heavy</u>	Duty Bottleneck Nozzles		
U	5/8" Bore, 1/8" Tip Recess	152-35-62*	152-75-62*
V	5/8" Bore, Flush Tip	152-36-62*	152-76-62*
W	5/8" Bore, 1/8" Tip Stickout	152-37-62*	152-77-62*

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

*All nozzles available in non-plated material upon request

Gas Diffuser Selection





<u>CM INDUSTRIES</u>

Ordering Information

Kool Run™ KR502 Series Robotic MIG Torches







Neck Checking Fixture



-Remove consumables from neck (nozzle, diffuser, insulator, etc.)

-Insert neck into holder block and push to make sure it is all the way in. Turn knob to tighten neck in place.

-Push check pin towards neck and see if the point lines up with the small hole in the end of the gauging point.

-If the neck is not aligned, use the bending handle to make slight adjustments until alignment is correct.

-Remove gauge point and neck in reverse order as described above.





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



Specifications

Clamp

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

Spray

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







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, know 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)