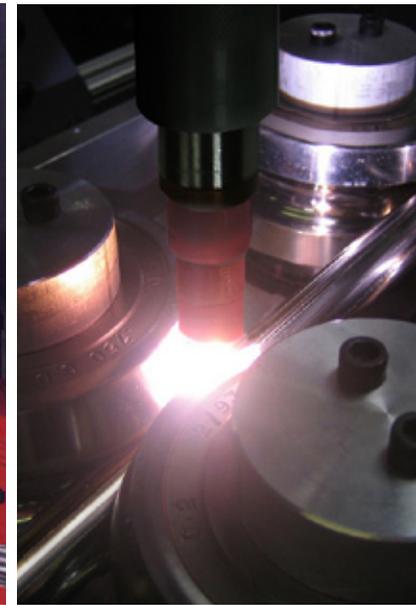
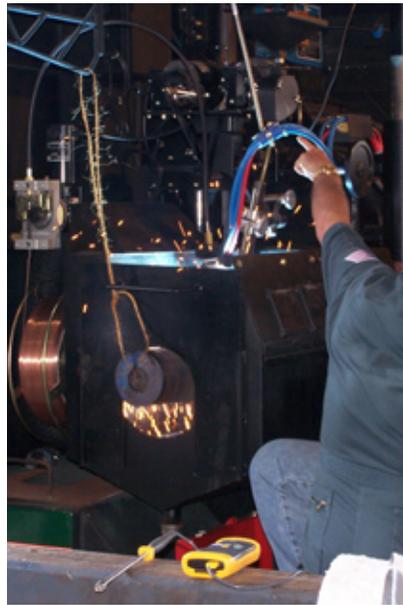


D/F MACHINE SPECIALTIES

Welding Products and Consumables

American Made, Family Owned and Operated Since 1966



PRODUCT CATALOG



www.dfmachinespecialties.com

(507) 625-6200



Introduction

D/F MACHINE SPECIALTIES
1750 Howard Drive
North Mankato, MN 56003
Phone: (507) 625-6200
Fax: (507) 625-6203

D/F MACHINE SPECIALTIES, family owned and operated since 1966, is a world leader in the design, development, and manufacture of American made MIG (GMAW) and TIG (GTAW) welding products, consumables and accessories for robotic and welding automation equipment. D/F offers several types of manual air and water-cooled MIG welding tools, and with the increased use of automated and robotic welding systems, a demand has been created for welding tools of the highest quality, durability and interchangeability. For decades, D/F welding products have been used extensively on MIG and TIG welding applications. This experience coupled with patented design features unavailable on any other competitive equipment has made D/F welding tools the most advanced MIG and TIG welding guns and barrels for semi-automatic, automatic and robotic welding applications.

Users of MIG & TIG Welding Equipment,

With an original idea covering a design for a water-cooled MIG welding gun, our company has continued for decades to progress with various types of equipment to fill the industry's needs and deal with the many diversified welding applications.

This catalog is a guide to helping you select the proper tool for a given semi-automatic, automatic or robotic welding application. The following is only a partial listing showing our most popular torches. For further information on fulfilling your MIG and TIG requirements, please consult the factory. We look forward to helping you with your welding applications.

Del Moerke, President
D/F MACHINE SPECIALTIES, INC.

Customer satisfaction and customer benefits are the center points of all strategic contents

The spirit of the D/F Machine Specialties personnel is to listen to and to integrate the customer throughout the process, to develop and design marketable products, to present prototypes, to carry out pilot tests and to prepare for and be open to new technology and tasks. We attract and carefully select talented individuals who share our values. Together we will nurture and sustain a work environment with two-way communication, training, mentoring, and rewarding career opportunities.

Innovation and quality

Innovation and quality come from being receptive and willing to learn from others. We encourage our people to be creative and take risks in the pursuit of excellence. Innovative practices are deeply rooted in every one of our employees, a philosophy that leads to continuous product development and industry firsts.

Progress

By remaining confident, focused, and persistent in challenging times, we will discover opportunity. Commitment to quality and the pursuit on innovation ensure that D/F Machine Specialties will remain an industry leader for years to come.

Commitment to excellence

At D/F Machine Specialties we commit to design, build and deliver premium products and superior customer support to quality driven welding professionals. Customers still to this day choose D/F over competitors because of our responsiveness and flexibility. Customers will continue to choose D/F tomorrow for our superior hand-made products and service. To ensure this, we need creative and competent personnel in all business divisions, an exchange of thoughts and ideas with all users, participation in working and study groups within the field of welding technology, and intensive cooperation with institutes and universities.

Teamwork

Striving for excellence is a commitment that is an integral component of the D/F Culture. Our team of skilled and dedicated employees takes pride in the excellent products they produce. Each of us willingly accepts personal responsibility for meeting our commitments and we hold each other to a high standard of accountability.

Responsibility

We will continually strive to be environmentally responsible and to support the health and safety of our employees, customers, and neighbors. We continue to support the communities in which we operate and the industries in which we participate.

Thank You for Choosing D/F MACHINE SPECIALTIES!





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 1750 Howard Drive
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Pistol Grip MIG Guns

Air-Cooled Semi-Automatic

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

AIR-COOLED MIG PISTOL GRIP GUNS

The Air-Cooled MIG Pistol Grip Gun comes completely assembled and can be fitted with various nozzle combinations to suit different welding situations. The power cable, electrical, and gas services are replaceable. Wire casings are either a single piece type primarily for cored wire, or those with flexible (2-piece) casing and liner combinations for hard and soft wire. These air-cooled pistol guns are offered in several different models. The model PAC employs a slip-in tip fastened by a collet action nut. The model PAT accommodates a threaded current tip. Various front end nozzle body arrangements are offered to cover a broad range of applications. Conversion to the use of a particular nozzle body arrangement is easily accomplished by selecting the desired nozzle body and current tip adapter.

The air-cooled pistol gun assemblies operate on a current through 400 amperes with CO₂ and 260 amperes with argon, contingent on the front end nozzle body and current tip being used. The torch can use either threaded contact tips, or slip-in contact tips that are secured with a collet nut supplied with the torch. The contact tip can be quickly and easily replaced without removing the gas nozzle by loosening the collet nut a half turn with the collet wrench and removing the tip. Gun assemblies will accommodate a wire diameter range of .030" through .062". For larger size wires, higher amperages, long welds, high duty cycles, we recommend the D/F Water-Cooled MIG Pistol Grip Gun on page 5.

Each D/F gun is fully assembled and ready to install. In order to make the installation complete, the code number, wire size and type, wire feeder make/model (Lincoln®, Miller®, TWECO®, ESAB®, EURO, etc.), and feeder adapter inlet as needed must be specified when ordering.

MODEL EXPLANATION

PAC - Pistol, Air-Cooled Collet Action (Slip-in Tip)

PAT - Pistol, Air-Cooled Threaded Tip

FEATURES

- 400 Amp CO₂, 260 Amp Argon Current Capacity - 1/0 Power Cable
- Several Nozzle Body Configurations Available
- Heavy Duty Brass Inner Body
- Chrome Plated Brass Front End - Heavy Duty Copper Nozzle
- High Temperature Insulation
- Standard and Quick-Disconnect Utilities Available

ORDERING INFORMATION (Hard & Cored Wire)

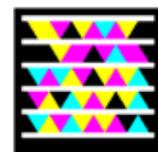
DESCRIPTION	CODE NO.		
	10 Ft. Casing	12 Ft. Casing	15 Ft. Casing
Model PAC (Slip-In Tip)			
Nozzle Body 13197 w/ 1/0 Cable	17791	17792	17793
Model PAT (Threaded Tip)			
Nozzle Body 13197 w/ 1/0 Cable	17776	17777	17778



Optional Heat Shield
 D/F #14525

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Weight (approx.)	Recommended Wire Diameter Range	Instruction Manual
PAC	400 amp CO ₂ 260 amp Argon	12.875"	2.5 lbs.	.030"-.062" Hard/Cored, 3/64"-1/16" AL	252
PAT	400 amp CO ₂ 260 amp Argon	12.875"	2.5 lbs.		252





Pistol Grip MIG Guns

Water-Cooled Semi-Automatic

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED MIG PISTOL GRIP GUNS

For decades the D/F Machine Specialties 500 amp Water-Cooled Semi Automatic MIG Pistol Grip Gun has been welding steel and aluminum trailers. This hand-held MIG torch is a rugged, all-purpose, water-cooled, manual welding torch designed to operate at welding currents up to 500 amperes continuous duty using all types of shielding gases. The torch utilizes a pistol grip design for convenient start-stop welding control and easy handling, and its in-line type construction allows all service lines to enter through the rear of the torch. The D/F pistol is intended for use with all wire feeders that have provision for water-cooling, and it will handle all types of wire from .035" diameter through 1/8" flux cored wire, and 3/64" through 3/32" aluminum wire.

To provide maximum resistance to the abuses of day to day service, the D/F pistol grip gun is of heavy duty construction with all metal parts well insulated from current carrying members. The in-line body and pistol grip handle allow the D/F pistol to be used in a variety of applications with easy maneuverability and comfortable operation. To facilitate maneuverability, all service lines are internally connected to the torch body and exit from the rear of the torch barrel. The torch can use either threaded contact tips or slip-in contact tips that are secured with a collet nut supplied with the torch. The contact tip can be quickly and easily replaced without removing the gas nozzle by loosening the collet nut a half turn with the collet wrench and removing the tip. Six water-cooled metal nozzles with different lengths and different inner and outer diameters are available for use with the D/F pistol for a wide range of applications from continuous fusion welding to spot welding. The water cooling requirements for the D/F pistol are described below.

Each D/F gun is fully assembled and ready to install. In order to make the installation complete, the code number, wire size and type, wire feeder make/model (Lincoln®, Miller®, TWECO®, ESAB®, EURO, etc.), and feeder adapter inlet as needed must be specified when ordering.

MODEL EXPLANATION

- NC-21 - Normal Duty, Water-Cooled Collet Action (Slip-In Tip)
- HT-21 - Heavy Duty, Water-Cooled Threaded Tip (CuCrZr)
- NC-21-A - Normal Duty, W/C Collet Action (Slip-In Tip) - Series A High Capacity
- HT-21-A - Heavy Duty, W/C Threaded Tip (CuCrZr) - Series A High Capacity

FEATURES

- Water-Cooled Inner Body and Nozzle
- Nozzle Length may be Extended by Either of Three (3) Different Length W/C Nozzle Assemblies
- NC-21S - Optional Directly Cooled Spot Nozzle
- Small Frontal Area for Hard-to-Reach Locations
- Standard and Quick-Disconnect Utilities Available
- Optional Curved Nozzle Kit

ORDERING INFORMATION (Hard & Cored Wire)

DESCRIPTION	CODE NO.		
	10 Ft. Casing	12 Ft. Casing	15 Ft. Casing
Model NC (Slip-In Tip)			
Short 3" Water-Cooled Nozzle	11231	11236	11251
*Inter. 4" Water-Cooled Nozzle	11233	11237	11252
Long 5" Water-Cooled Nozzle	11234	11238	11253
Model HT (Threaded Tip)			
Short 3" Water-Cooled Nozzle	11261	11266	11271
*Inter. 4" Water-Cooled Nozzle	11262	11267	11272
Long 5" Water-Cooled Nozzle	11263	11268	11273

ORDERING INFORMATION (Aluminum Wire)

DESCRIPTION	CODE NO.		
	10 Ft. Casing	12 Ft. Casing	15 Ft. Casing
Model NC (Slip-In Tip)			
*Inter. 4" Water-Cooled Nozzle	11286	11287	11288
**High Capacity Inter. A4" Water-Cooled Nozzle	11305	11306	11307

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 4" Nozzle	Weight (approx.)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
NC-21	400 amps	10.25"	2.5 lbs.	5 pints/min	.030"-1/8" Hard/Cored, 3/64"-3/32" AL	163WP
HT-21	500 amps	10.25"	2.5 lbs.	5 pints/min		163WP
NC-21-A/HT-21-A	400/500 amps	10.25"	2.5 lbs.	5 pints/min		161WP



* Standard Size 4" Water-Cooled Nozzle Assembly for Aluminum & Steel



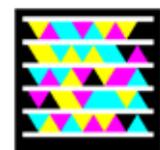
Optional Heat Shield D/F #14525



Curved Nozzle Kit D/F #13925



** Optional High Capacity A4" W/C Nozzle (1.445" O.D.) Gas Nozzle I.D. 11/16"-1"



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Water-Cooled Curved MIG Guns

Semi-Automatic 55 Degree

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED SEMI-AUTOMATIC 55 DEGREE CURVED MIG GUN

The 500 amp Water-Cooled Semi-Automatic 55 Degree Curved MIG Gun assemblies utilize the same forward nozzle/gas nozzle assemblies and features of the pistol grip gun. This allows a flexible and low inventory of replacement parts due to interchangeability of these models. The torches run .035" through 1/8" hard/cored wire, and are ideal for welding with 3/64" through 3/32" aluminum wire. The trigger switch assembly is the momentary contact type. Also available is the optional button on/off switch. Both switches are positionable where desired on the torch for comfort and balance, and to escape reflective heat. The models NCC-A & HTC-A use water-cooled nozzles that accommodate gas nozzles 11/16" through 1" inner diameter for greater gas coverage.

Each D/F gun is fully assembled and ready to install. In order to make the installation complete, the code number, wire size and type, wire feeder make/model (Lincoln®, Miller®, TWECO®, ESAB®, EURO, etc.), and feeder adapter inlet as needed must be specified when ordering.

MODEL EXPLANATION

NCC - Normal Duty, Water-Cooled Collet Action (Slip-in Tip), Curved Gun

HTC - Heavy Duty, Water-Cooled Threaded Tip (CuCrZr), Curved Gun

NCC-A - Normal Duty, Water-Cooled Collet Action (Slip-In Tip), Curved Gun - Series A High Capacity

HTC-A - Heavy Duty, Water-Cooled Threaded Tip (CuCrZr), Curved Gun - Series A High Capacity

FEATURES

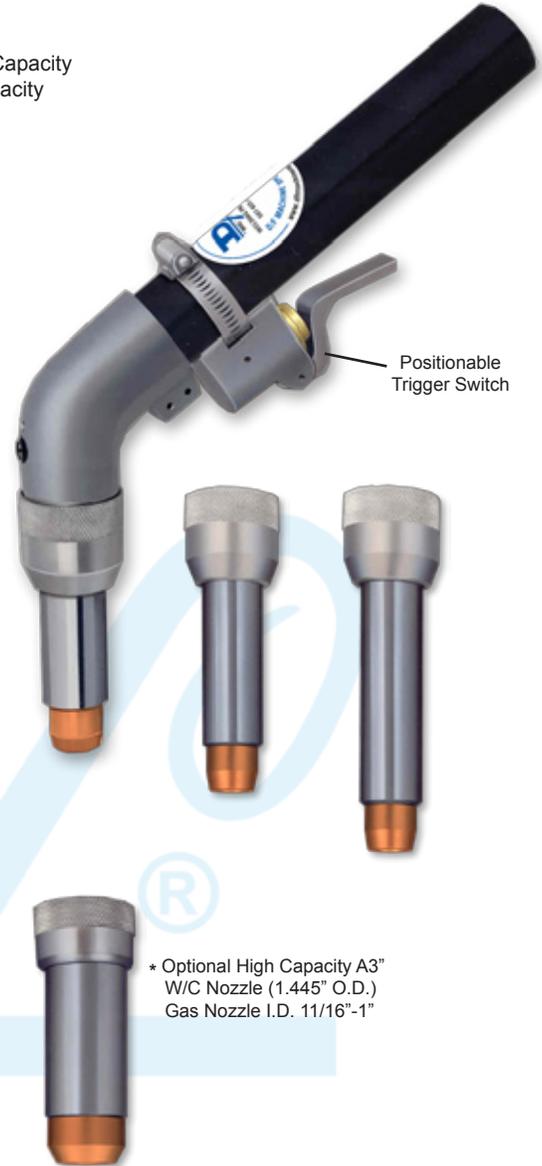
- Water-Cooled Inner Body & Nozzle
- Small Frontal Area for Hard-to-Reach Locations
- Nozzle Length may be Extended by Applying Three (3) Different-Length Water-Cooled Nozzle Assemblies
- Quick-Disconnect Available
- Standard 8" Body Tube & Positionable Trigger Switch
- Optional On/Off Switch with Round Button

ORDERING INFORMATION (Complete Standard Assemblies)

DESCRIPTION	CODE NO.		
	10 Ft. Casing	12 Ft. Casing	15 Ft. Casing
Model NCC (Slip-In Tip)			
Short 3" Water-Cooled Nozzle	11391	11396	11401
Inter. 4" Water-Cooled Nozzle	11392	11397	11402
Long 5" Water-Cooled Nozzle	11393	11398	11403
Model HTC (Threaded Tip)			
Short 3" Water-Cooled Nozzle	11411	11417	11421
Inter. 4" Water-Cooled Nozzle	11412	11418	11422
Long 5" Water-Cooled Nozzle	11413	11419	11423

ORDERING INFORMATION (Complete High Capacity Assemblies)

DESCRIPTION	CODE NO.		
	10 Ft. Casing	12 Ft. Casing	15 Ft. Casing
Model NCC-A (Slip-In Tip)			
*Series-A 3" Water-Cooled Nozzle (11142)	17403	17404	17405
Model HTC-A (Threaded Tip)			
*Series-A 3" Water-Cooled Nozzle (11142)	17400	17401	17402



* Optional High Capacity A3" W/C Nozzle (1.445" O.D.) Gas Nozzle I.D. 11/16"-1"

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 3" Nozzle	Length w/ 4" Nozzle	Length w/ 5" Nozzle	Weight (approx.)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
NCC/NCC-A	400 amps	9.25"	10.25"	11.25"	2.5 lbs.	5 pints/min	.030"-3/32" Hard/Cored,	350NCC
HTC/HTC-A	500 amps	9.25"	10.25"	11.25"	2.5 lbs.	5 pints/min	3/64"-3/32" AL	350HTC





Water-Cooled Curved MIG Guns

Semi-Automatic 55 Degree with External Casing

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED SEMI-AUTOMATIC 55 DEGREE CURVED MIG GUN WITH EXTERNAL CASING

The 500 amp Water-Cooled Semi-Automatic 55 Degree Curved (External Casing) MIG 500 amp Overlay Gun assemblies use an axial alignment of the casing to reduce wire feed pressure and improve current tip life. A gun assembly with an extended handle (20") and slide switch is available for overlay applications and steel casting repairs. These hand-held curved torches utilize the same forward nozzle/gas nozzle assemblies and features of the pistol grip gun. This allows a flexible and low inventory of replacement parts due to interchangeability of these models. The torches run .035" through 1/8" hard/cored wire, and are ideal for welding with 3/64" through 3/32" aluminum wire. The trigger switch assembly is the momentary contact type. Also available is the optional button on/off switch. Both switches are positionable where desired on the torch for comfort and balance, and to escape reflective heat. The model HTCE-A uses water-cooled nozzles that accommodate gas nozzles 11/16" through 1" inner diameter for greater gas coverage.

Each D/F gun is fully assembled and ready to install. In order to make the installation complete, the code number, wire size and type, wire feeder make/model (Lincoln®, Miller®, TWECO®, ESAB®, EURO, etc.), and feeder adapter inlet as needed must be specified when ordering.

MODEL EXPLANATION

- NCC-E** - Normal Duty, Water-Cooled Collet Action (Slip-in Tip), Curved Gun - External Casing
- HTC-E** - Heavy Duty, Water-Cooled Threaded Tip (CuCrZr), Curved Gun - External Casing
- HTCE-A** - Heavy Duty, Water-Cooled Threaded Tip (CuCrZr), Curved, External Casing - Series A High Capacity

FEATURES

- Water-Cooled Inner Body & Nozzle
- Small Frontal Area for Hard-to-Reach Locations
- Nozzle Length may be Extended - Three (3) Different-Length W/C Nozzle Assemblies
- Standard 8" Body Tube & Positionable Trigger Switch
- Optional 20" Body Tube & Positionable On/Off Switch with Round Button

ORDERING INFORMATION (Standard Assemblies, External Casing)

DESCRIPTION	CODE NO.		
	10 Ft. Casing	12 Ft. Casing	15 Ft. Casing
Model NCC-E (Slip-In Tip)			
Short 3" Water-Cooled Nozzle	15356	15359	15362
Inter. 4" Water-Cooled Nozzle	15357	15360	15363
Long 5" Water-Cooled Nozzle	15358	15361	15364
Model HTC-E (Threaded Tip)			
Short 3" Water-Cooled Nozzle	15329	15332	15335
Inter. 4" Water-Cooled Nozzle	15330	15333	15336
Long 5" Water-Cooled Nozzle	15331	15334	15337

ORDERING INFORMATION (High Capacity Assemblies, External Casing)

DESCRIPTION	CODE NO.		
	10 Ft. Casing	12 Ft. Casing	15 Ft. Casing
Model HTCE-A (Threaded Tip)			
Series-A 3" Water-Cooled Nozzle (11142)	17224	17225	17226
Series-A 4" Water-Cooled Nozzle (11138)	17227	17228	17229
Series-A 5" Water-Cooled Nozzle (45127)	17230	17231	17232

ORDERING INFORMATION

(High Capacity Assemblies, External Casing, 20" Body Tube, On/Off Switch)

DESCRIPTION	CODE NO.		
	10 Ft. Casing	12 Ft. Casing	15 Ft. Casing
Model HTCE-A (Threaded Tip)			
Series-A 3" Water-Cooled Nozzle (11142)	17217	17218	17219
Series-A 4" Water-Cooled Nozzle (11138)	17220	17221	17222
Series-A 5" Water-Cooled Nozzle (45127)	17223	17223-12	17223-15

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 3" Nozzle	Length w/ 4" Nozzle	Length w/ 5" Nozzle	Weight (approx.)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
NCC-E	400 amps	9.250"	10.250"	11.250"	2.5 lbs.	5 pints/min	.030"-1/8" Hard/Cored, 3/64"-3/32" AL	358NCC-E
HTC-E	500 amps	9.250"	10.250"	11.250"	2.5 lbs.			356HTC-E
HTCE-A	500 amps	9.250"	10.250"	11.250"	2.5 lbs.			373HTCE-A



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Air-Cooled MIG Barrels

Direct Mount & Remote Mount

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

AIR-COOLED AUTOMATIC DIRECT AND REMOTE MOUNT MIG BARRELS

These Air-Cooled Machine Barrels are readily adaptable to automatic welding and are available in two standard lengths. They are furnished completely assembled and ready for installation. Both the MAC (slip-in tip) and MAT (threaded tip) models feature replaceable service connections which add to the durability and long life of the barrel assemblies. Direct mounting is accomplished by connecting the torch to the welding head or wire drive using a feeder adapter, with shielding gas accommodated by a horizontal connection. Different length extensions are available to extend the length of the torch as needed. Remote mounting is accomplished by an insulated mounting bracket and utilizing a casing/conduit and an adapter to the wire drive, with shielding gas accommodated by a vertical connection.

MODEL EXPLANATION

MAC - Machine, Air-Cooled, Collet Action (Slip-in Tip)

MAT - Machine, Air-Cooled, Threaded Tip

FEATURES

- 400 Amp CO₂, 260 Amp Argon Current Capacity - 1/0 Power Cable
- Power Cable Lug - Accepts 1/0 and 2/0 Power Cables
- Several Nozzle Body Configurations Available
- Heavy Duty Brass Inner Body
- Chrome Plated Brass Front End
- Heavy Duty Copper Nozzle
- High Temperature Insulation

ORDERING INFORMATION (Complete Assemblies - Direct Mount)

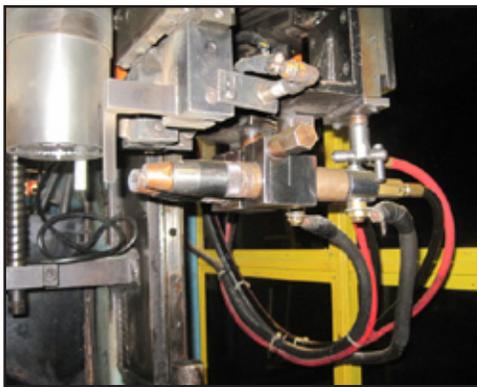
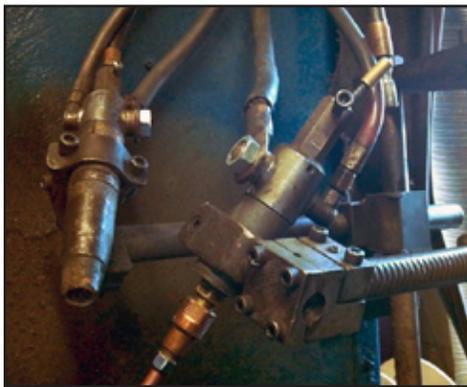
DESCRIPTION (LONG BARREL)	CODE NO.
MAC-05 Nozzle Body (13176)	12705
MAT-07 Nozzle Body (13176)	12707

DESCRIPTION (SHORT BARREL)	CODE NO.
MAC-98 Nozzle Body (13176)	12698
MAT-96 Nozzle Body (13176)	12696

ORDERING INFORMATION (Complete Assemblies - Remote Mount)

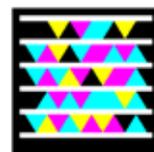
DESCRIPTION (LONG BARREL)	CODE NO.
MAC-17 Nozzle Body (13176)	12717
MAT-03 Nozzle Body (13176)	12703

DESCRIPTION (SHORT BARREL)	CODE NO.
MAC-26 Nozzle Body (13176)	12726
MAT-24 Nozzle Body (13176)	12724



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Body Dia.	Weight (approx.)	Recommended Wire Diameter Range	Instruction Manual
MAC/MAT Long, Direct Mt.	400 amp CO ₂ 260 amp Argon	8.625"	1.25"	1.12 lbs.	.030"-1/16" Hard/Cored	654AM
MAC/MAT Short, Direct Mt.	400 amp CO ₂ 260 amp Argon	6.625"	1.25"	1.1 lbs.	.030"-1/16" Hard/Cored	652AM
MAC/MAT Long, Remote Mt.	400 amp CO ₂ 260 amp Argon	8.625"	1.25"	1.12 lbs.	.030"-1/16" Hard/Cored	653AM
MAC/MAT Short, Remote Mt.	400 amp CO ₂ 260 amp Argon	6.625"	1.25"	1.1 lbs.	.030"-1/16" Hard/Cored	655AM





Air-Cooled Barrels

External Shielding & Gasless

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

AIR-COOLED AUTOMATIC/ROBOTIC MACHINE BARREL WITH EXTERNAL SHIELDING

These Air-Cooled Machine Barrels with External Shielding are readily adaptable to mechanized or robotic welding. They are furnished completely assembled and ready for installation. The externally shielded torch has the feature of individual replaceable service connections to add to the durability and long life of the barrel assembly. Direct mounting is accomplished by connecting the torch to the welding head or wire drive using a feeder adapter. Different length extensions are available to extend the length of the torch as needed. Remote mounting is accomplished by an insulated mounting bracket, and utilizing a casing/conduit connected by an adapter to the torch and by a feeder adapter to the wire drive. Shielding gas is accommodated by a quick-disconnect vertical connection.

MODEL EXPLANATION

MAC-E - Machine, Air-Cooled, Collet Action (Slip-In Tip) - External Shielding
MAT-E - Machine, Air-Cooled, Threaded Tip - External Shielding

FEATURES

- 400 Amp CO₂, 260 Amp Argon Current Capacity - 1/0 Power Cable
- Heavy Duty Brass Inner Body
- Chrome Plated Brass Front End
- Heavy Duty Copper Gas Nozzle
- High Temperature Insulation

ORDERING INFORMATION (Complete Assemblies - External Shielding)

DESCRIPTION	CODE NO.						
	Barrel Only	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
MAC-E Slip-In Tip	12735 MAC-E35	19660 MAC-E60	19661 MAC-E61	19662 MAC-E62	19663 MAC-E63	19664 MAC-E64	19665 MAC-E65
MAT-E Threaded Tip	12741 MAT-E41	19666 MAT-E66	19667 MAT-E66	19668 MAT-E69	19669 MAT-E69	19670 MAT-E70	19671 MAT-E71



External Shielding

AIR-COOLED AUTOMATIC/ROBOTIC GASLESS BARREL

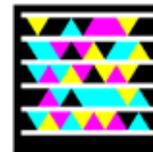
These Air-Cooled Gasless Machine Barrels are readily adaptable to mechanized or robotic welding. They are furnished completely assembled and ready for installation. The gasless torch has the feature of individual replaceable service connections to add to the durability and long life of the barrel assembly. Direct mounting is accomplished by connecting the torch to the welding head or wire drive using a feeder adapter. Different length extensions are available to extend the length of the torch as needed. Remote mounting is accomplished by an insulated mounting bracket, and utilizing a casing/conduit connected by an adapter to the torch and by a feeder adapter to the wire drive.

MODEL EXPLANATION

MAC-G - Machine, Air-Cooled, Collet Action (Slip-In Tip) - Gasless
MAT-G - Machine, Air-Cooled, Threaded Tip - Gasless

FEATURES

- Up to 400 amps
- Heavy Duty Brass Inner Body
- Chrome Plated Brass Front End
- High Temperature Insulation



ORDERING INFORMATION (Complete Assemblies - Gasless)

DESCRIPTION	CODE NO.						
	Barrel Only	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
MAC-G Slip-In Tip	12743 MAC-G43	19680 MAC-G80	19681 MAC-G81	19682 MAC-G82	19683 MAC-G83	19684 MAC-G84	19685 MAC-G85
MAT-G Threaded Tip	12742 MAT-G42	19674 MAT-G74	19675 MAT-G75	19676 MAT-G76	19677 MAT-G77	19678 MAT-G78	19679 MAT-G79



Gasless Torch

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Body Diameter	Weight (approx.)	Recommended Wire Diameter Range	Instruction Manual
MAC-E/MAT-E	400 amp CO ₂ 260 amp Argon	8.625"	1.25"	2.3 lbs.	.030"-1/16" Hard/Cored	656MAC-E/MAT-E
MAC-G/MAT-G	400 amp	6.625"	1.25"	1.8 lbs.	.030"-1/16" Hard/Cored	657 Gasless

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Water-Cooled MIG Barrels

Automatic Machine Barrels

D/F MACHINE SPECIALTIES
1750 Howard Drive
North Mankato, MN 56003
Phone: (507) 625-6200
Fax: (507) 625-6203

WATER-COOLED DIRECT MOUNT MIG BARRELS

The 500 amp Water-Cooled Direct Mount Machine Barrel is designed to be mounted directly to the wire feed drive. It may also be remotely mounted for automatic welding applications with optional accessories. The NCM-A/HTM-A (Series A) high capacity direct mount barrels are for nonferrous and ferrous welding applications where a higher capacity nozzle is required.

The model NCM has a current capacity 400 amps in argon shielding. This accommodates slip-in current tips fastened by a collet action nut. The wire diameter range is .030" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire.

The barrel model HTM has a current capacity range of up to 500 amperes. Ratings will be contingent on the combination of current tip and shielding gas to be used. The model HTM employs threaded CuCrZr (copper chromium zirconium) current tips and will accommodate .030" through 1/16" hard wire, .035" through 1/8" cored wire, and 3/64" through 3/32" aluminum wire.

The barrel models NCM-A (slip-in contact tip) and HTM-A (threaded contact tip) have the larger diameter water-cooled nozzle front end (1.445" outside diameter). These models have a current capacity range of up to 500 amperes. They are recommended for higher speeds, longer duty cycles, and larger diameter wire where more gas coverage is needed. The larger front end utilizes gas cups with an inner diameter from 11/16" to 1".

MODEL EXPLANATION

NCM - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel

HTM - Heavy Duty, Threaded Current Tip, Machine Barrel

NCM-A - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel, Series A High Capacity

HTM-A - Heavy Duty, Threaded Tip, Machine Barrel, Series A High Capacity

FEATURES

- Water-Cooled Inner Body & Nozzle
- Small Frontal Area for Hard-to-Reach Locations (NCM & HTM)
- Large Frontal Area for Increased Gas Coverage (NCM-A & HTM-A)
- Nozzle Length may be Extended by One of Three (3) Different Lengths W/C Nozzle Assemblies

ORDERING INFORMATION (Complete Assemblies - Standard Nozzle)

DESCRIPTION	CODE NO.			
Model NCM (Slip-In Tip)	3 Ft.	4 Ft.	5 Ft.	6 Ft.
Water-Cooled Nozzle Option				
Short 3" Water-Cooled Nozzle	17100	17103	17106	17109
Inter. 4" Water-Cooled Nozzle	17101	17104	17107	17110
Long 5" Water-Cooled Nozzle	17102	17105	17108	17111
Model HTM (Threaded Tip)	3 Ft.	4 Ft.	5 Ft.	6 Ft.
Water-Cooled Nozzle Option				
Short 3" Water-Cooled Nozzle	17118	17121	17124	17127
Inter. 4" Water-Cooled Nozzle	17119	17122	17125	17128
Long 5" Water-Cooled Nozzle	17120	17123	17126	17129

ORDERING INFORMATION (Complete Assemblies - High Capacity Series-A Nozzle)

DESCRIPTION	CODE NO.			
Model NCM-A (Slip-In Tip)	3 Ft.	4 Ft.	5 Ft.	6 Ft.
Water-Cooled Nozzle Option				
Series-A Short 3" Water-Cooled Nozzle	17471	17472	17473	17474
Series-A Inter. 4" Water-Cooled Nozzle	17492	17493	17494	17495
Model HTM-A (Threaded Tip)	3 Ft.	4 Ft.	5 Ft.	6 Ft.
Water-Cooled Nozzle Option				
Series-A Short 3" Water-Cooled Nozzle	17482	17483	17484	17485
Series-A Inter. 4" Water-Cooled Nozzle	17503	17504	17505	17506



ESAB/Linde
Feeder Adapter
D/F #13080



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 3" Nozzle	Length w/ 4" Nozzle	Length w/ 5" Nozzle	Weight (approx.)	Cooling Required	Body Diameter	Recommended Wire Diameter Range	Instruction Manual
NCM/ NCM-A	400 amps	10.25"	11.25"	12.25"	2.5 lbs.	3 quarts/ min	1.625"	.030"-3/32" Hard/Cored, 3/64"-3/32" AL	550WM (NCM) 589WM (NCM-A)
HTM/ HTM-A	500 amps	10.25"	11.25"	12.25"	2.5 lbs.	3 quarts/ min	1.625"		550WM (HTM) 589WM (HTM-A)



Water-Cooled MIG Barrels

Automatic Docking Spool®/Weld Body Combination

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED AUTOMATIC DOCKING SPOOL®/WELD BODY COMBINATION MACHINE BARRELS

The 500 amp Direct Mount Docking Spool®/Weld Body Combination accommodates two (2) different sizes and five (5) different lengths of water-cooled nozzle assemblies. Whether you are running steel, metal cored, or aluminum wire, the correct torch can be chosen for a neat and clean installation, and for optimum performance for your application. This arrangement is readily adaptable to dedicated or automatic welding applications. The equipment consists of four (4) basic components: a Utility Station, an intermediate Utilities Combination assembly, a High Deposition Docking Spool®/Weld Body Combination, and a Water-Cooled Nozzle Assembly. The Docking Spool®/Weld Body Combination is the principal component in this welding equipment arrangement. It accepts the utilities at the top end of the Docking Spool® and provides a means of accepting the water-cooled nozzle assembly at the lower end. Several features important to a welding system are provided. Incorporated within the water channels of the Docking Spool® are check valves which provide a means of retaining residual water in the lines when the water-cooled nozzle assembly is removed from the Docking Spool®/Weld Body Combination. In addition a Posit® Ring is provided at the upper end of the Docking Spool® which allows positive location in a mounting bracket to maintain dimensional stability.

These welding assemblies are designated by models. The model NCM has a current capacity 400 amperes in argon shielding. These accommodate slip-in current tips fastened by a collet action nut. The wire diameter range is .030" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire. The model HTM has a current capacity range of 500 amperes. Rating will be contingent on the combination of current tip and shielding gas used. The model HTM employs threaded CuCrZr current tips. The wire diameter range is .030" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire.

MODEL EXPLANATION

- NCM** - Normal Duty, Collet Action (Slip-in Tip), Machine Barrel
- NCM-A** - Normal Duty, Collet Action (Slip-in Tip), Machine Barrel - Series A High Capacity
- HTM** - Heavy Duty, Threaded Tip, Machine Barrel
- HTM-A** - Heavy Duty, Threaded Tip, Machine Barrel - Series A High Capacity

FEATURES

- Water-Cooled Docking Spool® Body & Nozzle
- Small Frontal Area for Hard-to-Reach Locations
- Two (2) Different-Size W/C Nozzle Assemblies for Numerous Gas Cup IDs (7/16"-1")
- Nozzle Length may be Extended by Five (5) Different-Length W/C Nozzle Assemblies
- Withstands Preheat Upwards of 900 Degrees

ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE NO.	CODE NO.
Standard W/C Nozzle	NCM	HTM
Short 3"	40120	40140
Intermediate 4"	40121	40141
Long 5"	40122	40142
Long 8"	40131	40151
Long Reach 11"	40123	40143

Add Footage Digit to Code Number for Utility Length Required.
 Example: Require 40120 with 4 Ft. Utilities - 40120-4

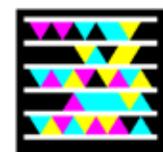
ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE NO.	CODE NO.
Series A W/C Nozzle	NCM	HTM
Short A3"	40125	40145
Intermediate A4"	40126	40146
Long A5"	40132	40152
Long A8"	40133	40153
Long Reach A11"	40127	40147

Add Footage Digit to Code Number for Utility Length Required.
 Example: Require 40125 with 4 Ft. Utilities - 40125-4

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 3" Nozzle	Body Diameter	Weight (w/out Utilities)	Recommended Wire Diameter Range	Cooling Required	Instruction Manual
NCM, NCM-A	400 amp	7.25"	1.125"/1.445"	2.5-4.5 lbs.	.030"-1/8" Hard/Cored, 3/64"-3/32" AL	2.5 quarts/min	510
HTM, HTM-A	500 amp	7.25"	1.125"/1.445"	2.5-4.5 lbs.		2.5 quarts/min	510



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Water-Cooled MIG Barrels

Automatic Water-Cooled-to-the-Tip®

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED-TO-THE-TIP® AUTOMATIC DOCKING SPOOL® MACHINE BARRELS

The 650 amp Direct Mount Docking Spool®/Water-Cooled-to-the-Tip® Barrels accommodate two (2) different sizes and two (2) different lengths of water-cooled nozzle assemblies. Whether you are running steel, metal cored, or aluminum wire, the correct torch can be chosen for a neat and clean installation. The Water-Cooled-to-the-Tip Barrels are an ideal choice for hardbanding applications. These barrels are fully water cooled internally and externally. The internal body of the barrel is water cooled, thus putting the water cooling on the tip. This has increased tip life up to 14 times longer. Also, because the water cooling is on the tip, this enables customers to use our less expensive 122 slip-in copper tips for many high-current, single-arc welding applications. These barrels are available in 5-inch and 8-inch lengths. Each length is available with our standard size nozzles (1.125"). The wire diameter range is .030" through 5/32" with hard/cored wire, and 3/64" through 1/8" with aluminum wire.

The models NCM-W/C-T-A and HTM-W/C-T-A are similar to the models above but differ in gas flow capacity. These models feature our high capacity (Series A) nozzles (1.445") that provide more gas coverage for larger diameter wire. You can switch between the standard nozzles and high capacity nozzles if you have the correct inner parts for each. The W/C-Tip Barrels can run the complete line of D/F C122 DHP contact tips and the complete line of D/F CuCrZr (copper chromium zirconium) contact tips, as well as any custom tip configuration you may need.

The D/F Water-Cooled-to-the-Tip Barrels are standard equipped with a single Water Out & Power Cable, rated at 650 amps (continuous duty cycle). However, these ratings dictated by the contact tip. The NCM (slip-in) series of contact tips is rated up to 450 amps (continuous duty cycle). If your welding application requires amperages above 450, you must change to the heavy duty threaded CuCrZr series of contact tips rated up to 650 amps (continuous duty cycle).

In some instances C122 DHP is adequate, but for stainless steel and stiff, high column strength or abrasive wire such as flux cored and metal cored, CuCrZr is the correct choice. D/F Machine Specialties can increase several key characteristics creating a higher-quality consumable with increased conductivity, higher softening temperature and improved hardness. This means a reduction in arc start failures, increased tip life, and an increase in productivity.

These Water-Cooled-to-the-Tip Barrels can also be retrofit to have two Water Out & Power Cables, increasing the continuous duty cycle rating to 850 amps. These amperages require the use of the threaded CuCrZr current tips.

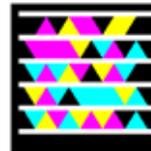


MODEL EXPLANATION

- NCM-W/C-T** - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel, Water-Cooled to the Tip
- HTM-W/C-T** - Heavy Duty, Threaded Tip, Machine Barrel, Water-Cooled to the Tip
- NCM-W/C-T-A** - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel, Water-Cooled to the Tip, Series A High Capacity
- HTM-W/C-T-A** - Heavy Duty, Threaded Tip, Machine Barrel, Water-Cooled to the Tip, Series A High Capacity

FEATURES

- Water-Cooled Internally - Tip Recessed in Water Cooling
- Water-Cooled Externally - Gas Cup Recessed in Water Cooling
- 650 Amps Continuous Duty Cycle
- Up to 850 Amps Continuous with Dual Power Cables
- Adaptable to Any Wire Feeder or Power Source
- Withstands Preheat Upwards of 900 Degrees



ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE NO.	
	NCM-W/C-T	HTM-W/C-T
5" Long Nozzle	40134	40246
8" Long Nozzle	40135	40247
Series-A 5" Nozzle	40136	40248
Series-A 8" Nozzle	40137	40249

Add Footage Digit to Code Number for Utility Length Required.
 Example: Require 40136 with 4 Ft. Utilities - 40136-4



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 5" Nozzle	Length w/ 8" Nozzle	Weight w/ 5" Nozzle	Weight w/ 8" Nozzle	Cooling Required	Diameter of W/C Nozzle	Recommended Wire Diameter Range	Instruction Manual
NCM-W/C-T	450 amps	9.25"	12.25"	2.8 lbs.	3.5 lbs.	3 quarts/min	1.125"	.030"-5/32" Hard/Cored, 3/64"-1/8" AL	599WC
NCM-W/C-T-A	450 amps	9.25"	12.25"	3 lbs.	3.8 lbs.	3 quarts/min	1.445"		599WC
HTM-W/C-T	850 amps	9.25"	12.25"	2.8 lbs.	3.5 lbs.	3 quarts/min	1.125"		599WC
HTM-W/C-T-A	850 amps	9.25"	12.25"	3 lbs.	3.8 lbs.	3 quarts/min	1.445"		599WC



Water-Cooled MIG Barrel

1000 Amp "BIG MIG" Machine Barrel

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED "BIG MIG" 1000 AMP AUTOMATIC/ROBOTIC BARREL

The "BIG MIG" 1000 Amp High Current Density Machine Barrel is recommended for mechanized welding applications where production demands the maximum durability and quality for mechanized gas metal arc welding. The model NCM15 as provided will accommodate 4" slip-in current tips fastened by a collet action nut. The model HTM15 will accommodate 7/16" threaded current tips by utilizing a tip adapter nut. The water-cooled nozzle accepts threaded gas nozzles ranging from 3/4" through 1-1/4" inner diameter. This barrel is primarily for wire diameters from 1/16" through 7/32" (1.6mm through 5.6mm). The suggested current level for the models NCM15/HTM15 would be approximately 1000 amperes. Direct mounting is accomplished by connecting the torch to the welding head or wire drive using a feeder adapter. Remote mounting is accomplished by an insulated mounting bracket and utilizing a casing/conduit connected by an adapter to the torch and a feeder adapter to the wire drive.

The 1000 Amp "BIG MIG" models NCM15 & HTM15 machine torches are for high current density, single arc welding. If you are using the Linde ST-12 or Binzel AUT 750 and feel the need to have a larger, more robust torch that can carry more amperes with more water-cooling, the 1000 Amp "BIG MIG" is the torch for you. The "BIG MIG" can plug remotely into the Lincoln Electric, ESAB, and Miller wire feeders.

The "BIG MIG" has two Water Out & Power Cables, increasing the continuous duty cycle rating to 1000 amps. These ratings are, however, dictated by the contact tip. If your welding application requires 1/16"-1/8" wires, the "BIG MIG" HTM (threaded) heavy duty CuCrZr series of contact tips rated up to 1000 amps (continuous duty cycle) are adequate. When using wire sizes larger than 1/8" the "BIG MIG" NCM (slip-in) series of 7/16" contact tips, rated up to 1000 amps (continuous duty cycle), is required.

MODEL EXPLANATION

NCM15 - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel

HTM15 - Heavy Duty, Threaded Tip, Machine Barrel

FEATURES

- Water-Cooled Inner Body and Nozzle
- Small Frontal Area for Hard-to-Reach Locations
- Heavy Duty Construction for Long Lasting Durability
- Withstands Extreme Conditions - 900° Preheat, 1000 Amps
- Torch Longevity - Years vs. Months

ORDERING INFORMATION (Complete Barrel Only)

DESCRIPTION	CODE NO.
Model NCM15/HTM15 "BIG MIG" W/C Machine Barrel	11620

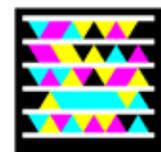
ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE NO.								
	2 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	10 Ft.	12 Ft.
Model NCM15/HTM15	11622	11623	11624	11625	11626	11627	11628	11629	11630



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 6" Nozzle	Body Diameter	Weight (approx.)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
NCM15	1000 amp	16"	2.375"	11.8 lbs.	1 gallon/min	1/16"-5/32" Hard/Cored 3/64"-7/32" AL	750
HTM15	1000 amp	16"	2.375"	11.8 lbs.	1 gallon/min		750





Water-Cooled Machine Barrel

Automatic/Robotic Open Arc Gasless

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED AUTOMATIC/ROBOTIC GASLESS OVERLAY MACHINE BARREL

D/F is a leading provider of hard automation torches for impact and abrasion challenges and heavy steel fabrication in a wide range of industries. The D/F 850 amp model MWC-G-D Overlay Torch is an engineered solution for hardfacing, metal spray applications, and open arc cladding applications for high deposition multi-surfacing and rebuilding. It is used with single-head and multiple-head machines pushing large-diameter flux cored and metal cored wire that requires preheat and high amperages.

The gasless barrel features dual replaceable 650 Amp Water Out & Power Cables to add to the durability and long life of the barrel assembly. The MWC-G-D is primarily for hard/cored, metal cored, and flux cored wire diameters 7/64", 1/8", and 5/32" (2.8mm, 3.2mm, & 4mm). The open-arc machine barrel offers a design that accommodates threaded current tips with a tip adapter nut. The suggested current level would be approximately 850 amperes (depending on the application). Remote mounting is accomplished with an insulated mounting bracket and by utilizing a casing/conduit with an adapter to the wire drive.

MODEL EXPLANATION

MWC-G-D - Machine Water-Cooled - Gasless - Dual Water-Cooled Power Cables

FEATURES

- Heavy Duty Construction for Long Lasting Durability - Years vs. Months
- Withstands Extreme Conditions - 1000° Preheat, 850 Amps
- Water-Cooled Inner Body
- Increases Tip Life up to 7-to-1
- Optional #40597 Mounting Bracket (page 32) with Insulated Bushing for Remote Mounting

ORDERING INFORMATION (Complete Barrel Only)

DESCRIPTION	CODE NO.
Model MWC-G-D Overlay Machine Barrel	30390D

ORDERING INFORMATION (Complete Assembly)

DESCRIPTION										
Model MWC-G-D Overlay Machine Barrel Complete with Utilities										
2 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	9 Ft.	10 Ft.	12 Ft.	15 Ft.
30390D-2	30390D-3	30390D-4	-5	-6	-7	-8	-9	-10	-12	-15



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Diameter of Body	Weight (approx.)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
MWC-G-D	850 amp Continuous Duty	14.5"	1.125"	3.4 lbs.	1 gallon/min	.045"-5/32"	MWC-G-D Gasless Overlay





Water-Cooled Bore Torches

Small ID MIG Bore Torches

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED AUTOMATIC/ROBOTIC ID BORE TORCHES

The versatile MIG Water-Cooled Small ID Bore Torches can be used for a wide range of applications. These small inner diameter bore torches may be connected to all manufactures' wire feeders and power sources. With the various torch sizes, angles and lengths available, an ID torch selection may be made to suit individual requirements. These models are rugged, field-proven weld heads for use in small diameter pipe and other limited radial clearance applications. They are heavy duty in design and can withstand upwards of 600 degree preheat. These bore torches are designed to extend into as small as a 3" ID bore and weld by the GMAW process.

By welding the bore with a D/F small ID bore torch you can achieve a very even and consistent weld bead that can easily be machined out to fit the new pins or bushings, in contrast to welding by hand were you might have high and low spots that need extra machining or extra welding which takes time and money. Because of our superior water-cooling, the torches are design to withstand the extreme conditions and duty cycles. The D/F automated bore torches are superior to hand-welding. They are faster, provide smoother welds, and allow you to access hard-to-reach or small ID bores.

MODEL EXPLANATION

CTW - Curved, Threaded Current Tip, Water-Cooled

HTC-E - Heavy Duty, Threaded Current Tip, Curved, External Casing - Series-A High Capacity

FEATURES

- IDs From 3"-10", Diameters from .035"-1/8" Wire
- GMAW Process With Short Arc, Spray Transfer, Pulse Modes
- Weld in All Positions – Horizontal, Vertical, or Inverted
- Weld with All Base and Filler Metals
- 75% Time Reduction vs. Hand Welding
- More Consistent Weld Build-up
- Reduce Machining Time by Up to 50%
- Extend the Life of Consumables

ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE NO.
Model CTW59 70°	15759
Model CTW67 70°	15767
Model CTW68 55°	15768
Model HTC-E 55°	15383

Add Footage Digit to Code Number for Utility Length Required.
 Example: Require 15759 with 10 Ft. Utilities - 15759-10



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Body Length	Body Diameter	Weight (approx.)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
CTW59 70°	450 amps	8"-32"	1.45"	2 lbs.	2 quarts/min	.035"	372
CTW67 70°	450 amps	8"-32"	1.45"	2 lbs.	2 quarts/min	.035"-.045"	370
CTW68 55°	450 amps	8"-32"	1.45"	2 lbs.	2 quarts/min	.035"-1/16"	389
HTC-E 55°	600 amps	8"-32"	1.5"	2.5 lbs.	5 pints/min	Up to 1/8"	371HTC-E

CTW59 70° for Small 3" ID Bore



8" - 32" Body Tube

CTW67 70° for Small 4" ID Bore



8" - 32" Body Tube

Mounting Bracket
 D/F #14085
 (see page 32)

CTW68 55° for 5" ID Bore



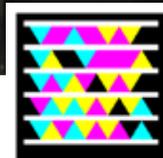
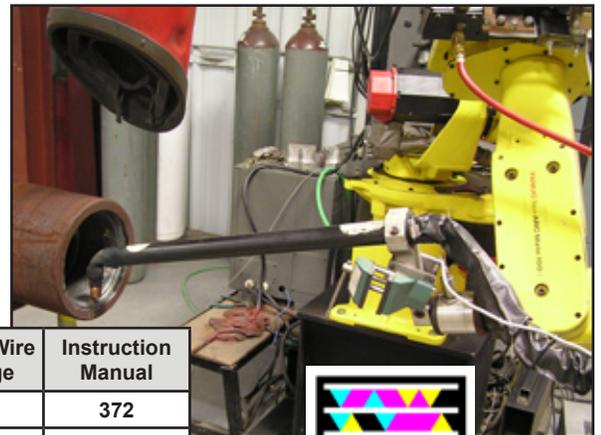
8" - 32" Body Tube

Casing/Conduit
 D/F #46480
 (see page 28)

HTC-E 55° for 10" ID Bore



8" - 32" Body Tube



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Air-Cooled MIG Barrels

Robotic Straight

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

AIR-COOLED ROBOTIC MIG BARRELS

The Air-Cooled Series 400 Machine Barrels are readily adaptable to mechanized or robotic welding and are available in two standard lengths, long (12-5/8") and short (9-29/32"). The models MAC and MAT are furnished completely assembled and ready for installation. Both models have the feature of individual replaceable service connections with a removable cable/hose sheath to add to the durability and long life of the barrel assemblies. Remote mounting is accomplished by an insulated mounting bracket and utilizing a casing/conduit and an adapter to the wire drive. Throughout the years, Lincoln Electric® used D/F Machine Specialties MIG and TIG torches exclusively on FANUC® robots. The typical robotic cell included the Fanuc ArcMate® 100 robot models and the Lincoln Power Wave® 450 power supply.

MODEL EXPLANATION

MAC - Machine, Air-Cooled, Collet Action (Slip-In Tip)

MAT - Machine, Air-Cooled, Threaded Tip

FEATURES

- 400 Amp CO₂, 260 Amp Argon Current Capacity - 1/0 Power Cable
- Several Nozzle Body Configurations - Chrome Plated Brass Front End, Heavy Duty Copper Nozzle
- Heavy Duty Brass Inner Body - High Temperature Insulation

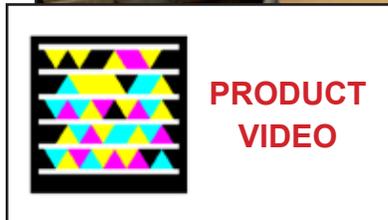
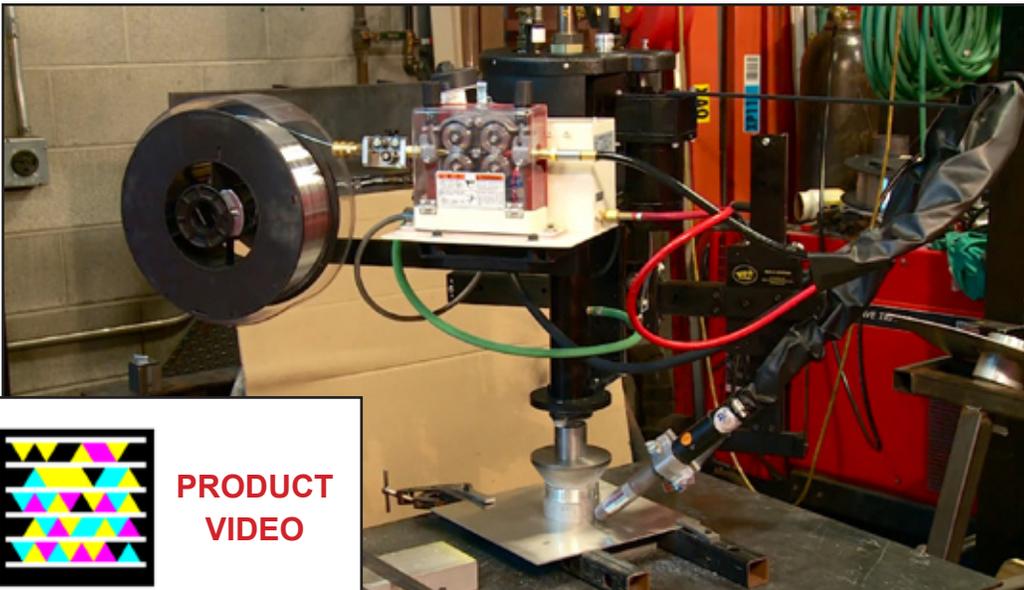
ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION (LONG BARREL)	CODE NO.							
	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	10 Ft.	12 Ft.	15 Ft.
MAC Slip-In Tip	17810 MAC-4	17811 MAC-5	17812 MAC-6	17813 MAC-7	17814 MAC-8	17815 MAC-10	17816 MAC-12	17817 MAC-15
MAT Threaded Tip	17800 MAT-4	17801 MAT-5	17802 MAT-6	17803 MAT-7	17804 MAT-8	17805 MAT-10	17806 MAT-12	17807 MAT-15



D/F MAC-5, BUG-O® SYSTEMS CWE-5, & OTC® CMRE-741 WELDING 3/64" ALUMINUM

Check out the D/F Machine Specialties MAC-5 17811 Air-Cooled Barrel welding 3/64" Aluminum on the BUG-O® Systems CWE-5. The CWE-5 Circle Welder with Remote Control is designed for single or multipass welding of couplings or nozzles on pipe and vessels utilizing MIG or Flux Core process, with gas shield. The machine is equipped with its own wire feeder, rotation drive motor, rise and fall cam assembly and welding gun. Horizontal and vertical racking to position the torch and a 30 lb (14 kg) spool holder. OTC Daihen® is providing the DP400 power source and CMRE-741 4-roll wire feeder.



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Upper Body Diameter	Lower Body Diameter	Weight (approx.)	Recommended Wire Diameter Range	Instruction Manual
MAC/MAT	400 amp CO ₂ 260 amp Argon	12.625"	1.625"	1.25"	2 lbs.	.030"-.062" Hard/Cored, 3/64"-1/16" AL	658AM





Air-Cooled MIG Barrels

Robotic Curved 35, 45 & 55 Degree

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

AIR-COOLED CURVED 35, 45, AND 55 DEGREE ROBOTIC MIG BARRELS

The rugged Air-Cooled Series 400 Curved Barrel configurations come pre-assembled and ready to install in 35, 45, and 55 degree models. The models CA-C/CA-T feature individual replaceable service connections with a removable cable/hose sheath to add to the durability and long life of these gun assemblies. Each D/F robotic torch is fully assembled and ready to install. In order to make the installation complete, the code number, wire size and type, wire feeder make/model (Lincoln®, Miller®, TWECO®, ESAB®, EURO, etc.), and feeder adapter inlet as needed must be specified when ordering.

MODEL EXPLANATION

CA-C - Curved, Air-Cooled, Collet Action (Slip-in Current Tip)

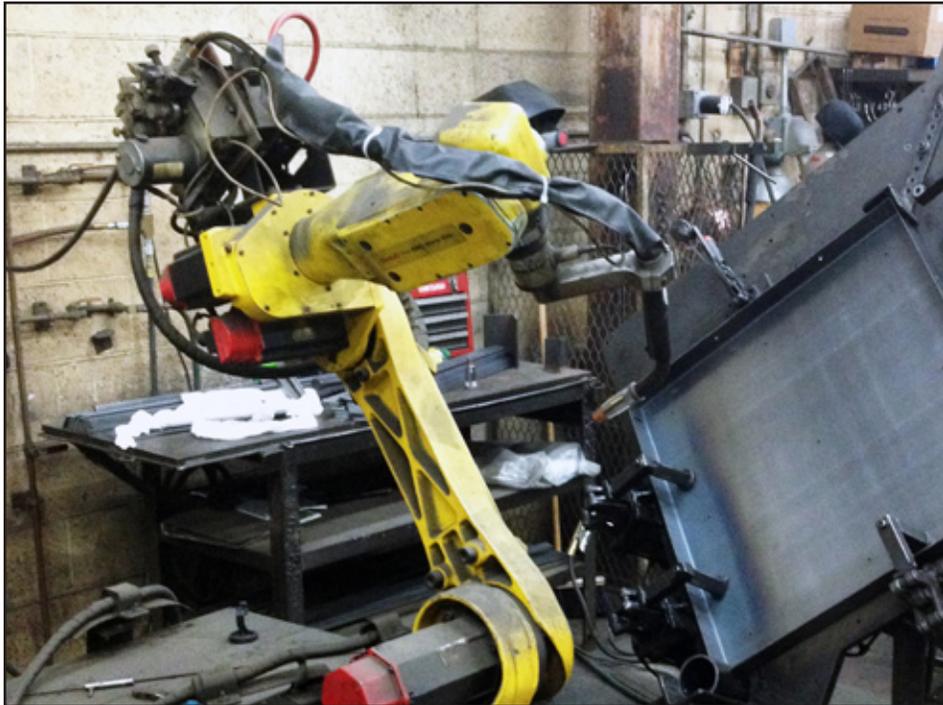
CA-T - Curved, Air-Cooled, Threaded Current Tip

FEATURES

- 400 Amp CO₂, 260 Amp Argon Current Capacity - 1/0 Power Cable
- Several Nozzle Body Configurations - Chrome Plated Brass Front End, Heavy Duty Copper Nozzle
- Heavy Duty Brass Inner Body - High Temperature Insulation

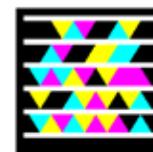
ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE NO.					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Model CA-C/CA-T 35°	17840	17841	17842	17843	17844	17845
Model CA-C/CA-T 45°	17839-3	17839-4	17839-5	17839-6	17839-7	17839-8
Model CA-C 55°	15518	15524	15530	15536	15547	15578
Model CA-T 55°	15521	15527	15533	15539	15555	15548



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Body Diameter	Weight (approx.)	Recommended Wire Diameter Range	Instruction Manual
CA-C/CA-T 35°	400 amp CO ₂ 260 amp Argon	14.375"	1.45"	1.8 lbs.	.030"-.062" Hard/Cored, 3/64"-1/16" AL	435
CA-C/CA-T 45°	400 amp CO ₂ 260 amp Argon	13.625"	1.45"	1.8 lbs.		445
CA-C/CA-T 55°	400 amp CO ₂ 260 amp Argon	13.125"	1.45"	1.8 lbs.		455



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Water-Cooled MIG Barrels

Robotic Machine Barrels

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED REMOTE MOUNT MIG BARRELS

The 500 amp Water-Cooled Remote Mount MIG Barrels have similar features designed to function efficiently on various applications and use slip-in tips or threaded tips respectively. The models NCM-A/HTM-A are remote barrels and have high capacity (Series A) gas nozzles (11/16" to 1" ID) for hard, cored and aluminum wire jobs. Throughout the years, Pandjiris has used D/F Machine Specialties MIG and TIG barrels exclusively. The typical Pandjiris® cell would include these D/F barrels mounted on manipulators, side beams, slides, and positioners.

MODEL EXPLANATION

- NCM - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel
- NCM-A - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel, Series A High Capacity
- HTM - Heavy Duty, Threaded Tip, Machine Barrel
- HTM-A - Heavy Duty, Threaded Tip, Machine Barrel, Series A High Capacity

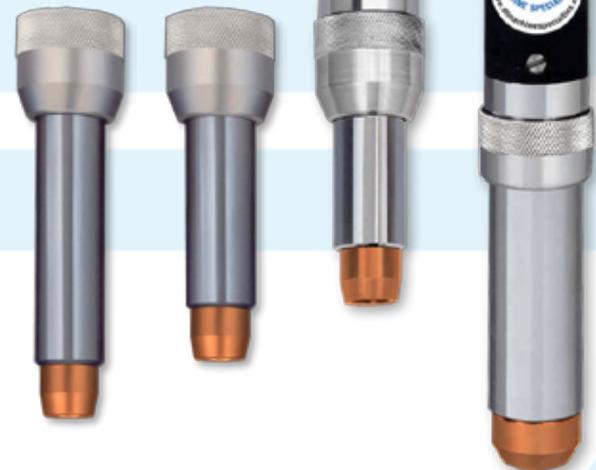
FEATURES

- Water-Cooled Inner Body & Nozzle
- Small Frontal Area for Hard-to-Reach Locations (NCM & HTM)
- Large Frontal Area for Increased Gas Coverage (NCM-A & HTM-A)
- Nozzle Length Extended by Adding One of Three (3) Different Length W/C Nozzle Assemblies



ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE NO. FOR SELECTION OF AVAILABLE LENGTHS									
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	10 Ft.	12 Ft.	15 Ft.	
Model NCM (Slip-In Tip)										
Short 3" W/C Nozzle	11731	11741	11747	11737	11774	11764	11703	11709	11715	
Inter. 4" W/C Nozzle	11732	11742	11748	11738	11775	11765	11704	11710	11716	
Long 5" W/C Nozzle	11733	11743	11749	11739	11776	11766	11705	11711	11717	
Model HTM (Threaded)										
Short 3" W/C Nozzle	11734	11744	11754	11757	11777	11767	11706	11712	11718	
Inter. 4" W/C Nozzle	11735	11745	11755	11758	11778	11768	11707	11713	11719	
Long 5" W/C Nozzle	11736	11746	11756	11759	11779	11769	11708	11714	11720	
Model NCM-A (Slip-In Tip)										
Inter. 4" Series-A W/C Nozzle	14957	14958	14959	14960	14961	14962	14963	14964	14965	
Model HTM-A (Threaded Tip)										
Inter. 4" Series-A W/C Nozzle	14977	14978	14979	14980	14981	14982	14983	14984	14985	



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Lgth. w/ 3" Noz.	Lgth. w/ 4" Noz.	Lgth. w/ 5" Noz.	Body Dia.	Weight (approx.)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
NCM, NCM-A	400 amp	9.25"	10.25"	11.25"	1.625"	2.5 lbs.	5 pints/min	.030"-3/32" Hard/Cored 3/64"-3/32" AL	551WM (NCM) 575-578WM (NCM-A)
HTM, HTM-A	500 amp	9.25"	10.25"	11.25"	1.625"	2.5 lbs.	5 pints/min		551WM (HTM) 575-578WM (HTM-A)





Water-Cooled MIG Barrels

Robotic Docking Spool®/Weld Body Combination

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED ROBOTIC MIG DOCKING SPOOL®/WELD BODY COMBINATION BARRELS

The 500 amp Remote Mount Docking Spool®/Weld Body Combination accommodates two (2) different sizes and five (5) different lengths of water-cooled nozzle assemblies. Whether you are running steel, metal cored, or aluminum wire, the correct barrel can be chosen for a neat and clean installation, and for optimum performance for your application. This arrangement is readily adaptable to dedicated or robotic welding applications. The equipment consists of four (4) basic components: a Utility Station, an intermediate Utilities Combination assembly, a High Deposition Docking Spool®/Weld Body Combination, and a Water Cooled Nozzle Assembly. The Docking Spool®/Weld Body Combination is the principal component in this welding equipment arrangement. It accepts the utilities at the top end of the Docking Spool® and provides a means of accepting the water cooled nozzle at the lower end. Several features important to a welding system are provided. Incorporated within the water channels of the Docking Spool® are check valves which provide a means of retaining residual water in the lines when the nozzle assembly is removed from the Docking Spool®/Weld Body Combination. In addition a Posit® Ring is provided at the upper end of the Docking Spool® which allows positive location in a mounting bracket to maintain dimensional stability.

MODEL EXPLANATION

- NCM - Normal Duty, Collet Action (Slip-in Tip), Machine Barrel
- NCM-A - Normal Duty, Collet Action (Slip-in Tip), Machine Barrel - Series A High Capacity
- HTM - Heavy Duty, Threaded Tip, Machine Barrel
- HTM-A - Heavy Duty, Threaded Tip, Machine Barrel - Series A High Capacity

FEATURES

- Water-Cooled Docking Spool® Body & Nozzle
- Small Frontal Area for Hard-to-Reach Locations
- Two (2) Different-Size W/C Nozzle Assemblies for Numerous Gas Cup IDs (7/16"-1")
- Nozzle Length may be Extended by Five (5) Different-Length W/C Nozzle Assemblies
- Withstands Preheat Upwards of 900 Degrees

ORDERING INFORMATION (Complete Assemblies)

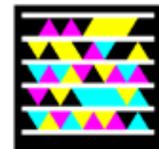
DESCRIPTION	CODE NO.	
	NCM	HTM
Standard W/C Nozzle		
Short 3"	40190	40205
Intermediate 4"	40191	40206
Long 5"	40192	40207
Long 8"	40750	40740
Long Reach 11"	40193	40208
Series A W/C Nozzle		
Short A3"	40195	40210
Intermediate A4"	40196	40211
Long A5"	40752	40742
Long A8"	40751	40741
Long Reach A11"	40197	40212

Add Footage Digit to Code Number for Utility Length Required.
 Example: Require 40750 with 4 Ft. Utilities - 40750-4



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 3" Noz.	W/C Nozzle Diameter	Weight (w/out Utilities)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
NCM, NCM-A	400 amp	7.25"	1.125"/1.445"	2.5-4.5 lbs.	2.5 quarts/min	.030"-1/8" Hard/Cored, 3/64"-3/32" AL	530
HTM, HTM-A	500 amp	7.25"	1.125"/1.445"	2.5-4.5 lbs.	2.5 quarts/min		530



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Water-Cooled MIG Barrels

Robotic Quick-Change Straight and Curved

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED ROBOTIC DOCKING SPOOL® COMPOSITE STRAIGHT AND CURVED MIG BARRELS

The versatile D/F quick change 500 amp Water-Cooled Robotic Docking Spool® Composite Barrel models can be used for a wide range of robotic applications. The composite modular design of the rugged, yet flexible, quick-disconnect model LRN (long reach 10-inch composite water-cooled nozzle) and the model N (short 5-inch composite water-cooled nozzle) torches allow the user to quickly change the gooseneck or cable assembly while maintaining tool center point, assuring accurate repeatability and continuous precision welding. These D/F robotic barrels have a compact, stainless steel, water-cooled nozzle designed specifically to withstand unusually large amounts of reflected heat build-up and prolonged duty cycles. Water circulates internally through the Docking Spool® to the nozzle, keeping the barrels running cooler, and thus the barrel and consumables last longer. Mounting is easy with the D/F Universal Robotic Mounting Arm (page 33). In the event that a component has to be adjusted or replaced, the Docking Spool® makes this torch entirely serviceable and easy to repair or replace in seconds.

The models NCM/LRN and NCM/N have a current capacity 400 amps in argon shielding. These accommodate slip-in current tips fastened by a collet action nut. The wire diameter range is .030" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire.

The barrel models HTM/LRN and HTM/N (threaded contact tip) have a current capacity range of up to 500 amperes. Rating will be contingent on the combination of current tip and shielding gas to be used. The model HTM employs threaded CuCrZr (copper chromium zirconium) current tips and has a wire diameter range of .035" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire.

MODEL EXPLANATION

- NCM/N** - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel / Standard Length Nozzle
- NCM/LRN** - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel / Long Reach Nozzle
- HTM/N** - Heavy Duty, Threaded Tip, Machine Barrel / Standard Length Nozzle
- HTM/LRN** - Heavy Duty, Threaded Tip, Machine Barrel / Long Reach Nozzle
- NCC/N** - Normal Duty, Collet Action (Slip-In Tip), Curved Barrel / Standard Length Nozzle
- NCC/LRN** - Normal Duty, Collet Action (Slip-In Tip), Curved Barrel / Long Reach Nozzle
- HTC/N** - Heavy Duty, Threaded Tip, Curved Barrel / Standard Length Nozzle
- HTC/LRN** - Heavy Duty, Threaded Tip, Curved Barrel / Long Reach Nozzle

FEATURES

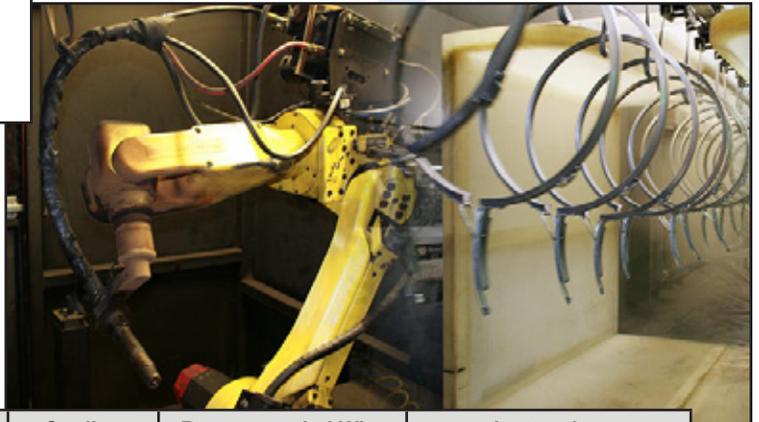
- Quick-Change - Interchange Between Short, Long, Straight or Curved Goosenecks
- Fully Water-Cooled Internally - Gas Cup Recessed in Water Cooling
- Up to 500 Amps Continuous Duty Cycle
- Adaptable to Any Wire Feeder or Power Source
- Withstands Preheat Upwards of 900 Degrees

ORDERING INFORMATION

DESCRIPTION	CODE NO.	
	Complete Assemblies	Complete Barrel Only
NCM/N, HTM/N Straight 5"	40704	48240
NCM/LRN, HTM/LRN Straight Long Reach	40786	48121
NCC/N, HTC/N Curved 22° 5"	40775	48227
NCC/LRN, HTC/LRN Curved 22° Long Reach	40785	48225
NCC/LRN, HTC/LRN Curved 35° Long Reach	40712	48242
NCC/LRN, HTC/LRN Curved 45° Long Reach	40788	48221

For Complete Assemblies, Add Footage Digit to Code Number for Utility Length Required.

Example: Require 40785 with 4 Ft. Utilities - 40785-4



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Dia. of W/C Noz.	Weight	Cooling Required	Recommended Wire Dia. Range	Instruction Manual
NCM/N, HTM/N	400/500 amp	8.375"	1.125"	3.6 lbs.	3 quarts/min	.030"-1/8" Hard/Cored, 3/64"-3/32" AL	536A
NCM/LRN, HTM/LRN	400/500 amp	12.5"	1.125"	4.2 lbs.	3 quarts/min		536A
NCC/N, HTC/N 22°	400/500 amp	8.375"	1.125"	3.6 lbs.	3 quarts/min		536
NCC/HTC LRN 22°, 35°, 45°	400/500 amp	12.5"	1.125"	4.2 lbs.	3 quarts/min		536 (22°, 45°), 542-35 (35°)



Water-Cooled MIG Barrels

Robotic Water-Cooled-to-the-Tip®

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED-TO-THE-TIP® ROBOTIC DOCKING SPOOL® MACHINE BARRELS

The 650 amp Remote Mount Docking Spool®/Water-Cooled-to-the-Tip® Barrels accommodate two (2) different sizes and two (2) different lengths of water-cooled nozzle assemblies. Whether you are running steel, metal cored, or aluminum wire, the correct barrel can be chosen for a neat and clean installation, and for optimum performance for your application. These barrels are fully water cooled internally and externally. The internal body of the barrel is water cooled, thus putting the water-cooling on the tip. This has increased tip life up to 14 times longer. Also, because the water-cooling is on the tip, this enables customers to use our less expensive C122 slip-in copper tips for many high-current, single-arc welding applications. These barrels are available in 5-inch and 8-inch lengths. Each length is available with our standard size nozzles (1.125" OD). The wire diameter range is .030" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire.

The models NCM-W/C-T-A and HTM-W/C-T-A are similar to the models above but differ in gas flow capacity. These models are our high capacity (Series A) nozzles (1.445" OD) that provide more gas coverage for larger diameter wire. You can switch between the standard nozzles and high capacity nozzles if you have the correct inner parts for each. The W/C-Tip Barrels can run the complete line of D/F standard size C122 DHP contact tips and the complete line of D/F standard size CuCrZr (copper chromium zirconium) contact tips, as well as any custom current tip configuration you may need.

The D/F Water-Cooled-to-the-Tip Barrels are standard equipped with a single Water Out & Power Cable and are rated at 650 amps (continuous duty cycle). These ratings are, however, dictated by the contact tip. The NCM (slip-in) series of contact tips is rated up to 450 amps (continuous duty cycle). If your welding application requires amperages above 450, you must change to the heavy duty threaded CuCrZr series of contact tips rated up to 650 amps (continuous duty cycle).

In some instances C122 DHP is adequate, but for stainless steel and stiff, high column strength or abrasive wire such as flux cored and metal cored, CuCrZr is the correct choice. D/F Machine Specialties can increase several key characteristics creating a higher-quality consumable with increased conductivity, even higher softening temperature and improved hardness. This means a reduction in arc start failures, increased tip life, and an increase in productivity.

The Water-Cooled-to-the-Tip Barrels can also be retrofit to have two Water Out & Power Cables, increasing the continuous duty cycle rating to 850 amps. These amperages require the use of the threaded CuCrZr current tips.

MODEL EXPLANATION

- NCM-W/C-T** - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel, Water-Cooled to the Tip
- HTM-W/C-T** - Heavy Duty, Threaded Tip, Machine Barrel, Water-Cooled to the Tip
- NCM-W/C-T-A** - Normal Duty, Collet Action (Slip-In Tip), Machine Barrel, Water-Cooled to the Tip, Series A High Capacity
- HTM-W/C-T-A** - Heavy Duty, Threaded Tip, Machine Barrel, Water-Cooled to the Tip, Series A High Capacity

FEATURES

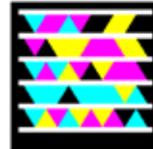
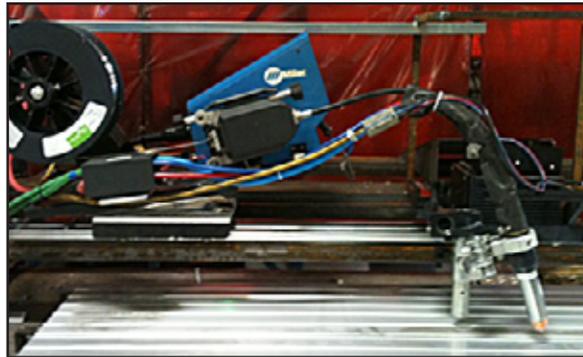
- Fully Water-Cooled Internally - Tip Recessed in Water Cooling
- Fully Water-Cooled Externally - Gas Cup Recessed in Water Cooling
- 650 Amps Continuous Duty Cycle
- Up to 850 Amps Continuous with Dual Power Cables
- Adaptable to Any Wire Feeder or Power Source
- Withstands Preheat Upwards of 900 Degrees

ORDERING INFORMATION - (Complete Assemblies)

DESCRIPTION	CODE NO. (NCM)	CODE NO. (HTM)
5" Long Nozzle	40748	40749
8" Long Nozzle	40138	40155
Series A5" Nozzle	40747	40746
Series A8" Nozzle	40139	40156

Add Footage Digit to Code Number for Utility Length Required.

Example: Require 40747 with 4 Ft. Utilities - 40747-4



MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length w/ 5" Noz.	Length w/ 8" Noz.	Dia. of W/C Noz.	Weight w/ 5" Noz.	Weight w/ 8" Noz.	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
NCM-W/C-T	450 amps	9.25"	12.25"	1.125"	2.8 lbs.	3.5 lbs.	3 quarts/min	.030"-5/32" Hard/Cored, 3/64"-1/8" AL	534 (All 5" Noz.) 600 (All 8" Noz.)
NCM-W/C-T A	450 amps	9.25"	12.25"	1.445"	2.8 lbs.	3.5 lbs.	3 quarts/min		
HTM-W/C-T	850 amps	9.25"	12.25"	1.125"	2.8 lbs.	3.5 lbs.	3 quarts/min		
HTM-W/C-T A	850 amps	9.25"	12.25"	1.445"	2.8 lbs.	3.5 lbs.	3 quarts/min		

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Water-Cooled MIG Barrel

Tandem 1200 Amp Water-Cooled-to-the-Tip®

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED TANDEM AUTOMATIC/ROBOTIC MIG BARREL

The D/F Machine Specialties patented MIG Tandem Wire Barrel has been developed for heavy-duty welding where the requirements relating to heavy-duty applications and long welding times are rigorous. The barrel is engineered with specific spacing and alignment of two adjustable contact tips to achieve proper arc control.

The D/F Tandem Wire Barrel is designed to provide excellent cooling of the nozzle, gas cup, body and the current tips. Two wire electrodes electrically insulated from one another must run through a common gas nozzle and share a common welding torch. Efficient cooling of the round shaped tandem gas cup prevents welding spatter from easily sticking to the gas cup. The separate water-cooling of the nozzle reduces spatter and prolongs gas cup life. Because a lot of heat is generated in the tandem process, it must be subsequently dissipated all the way to the front area of the contact tips. Each Water-Cooled-to-the-Tip body assembly is also separately water-cooled ensuring tip life and arc stability. The insulation of the two separate tandem barrel inner bodies of the single common torch is done according to existing D/F standards guaranteeing no electric flash-over between the two electric systems. The distance between the tandem contact tips (the wires) can vary by removing the body screws of one or both of the inner bodies. This allows rotation of each inner body increasing or decreasing the distance between the two welding wires. The D/F Tandem Wire Barrel inner bodies can be either straight or bent to desired degrees to help achieve different center-point distances between the two tandem contact tips, and are easily changeable.

To provide maximum resistance to the abuses of day to day service, the D/F Tandem Wire Barrel is of heavy duty construction with all metal parts well insulated from current-carrying members. The compact in-line body allows the tandem barrel to be used in a variety of applications with ease of maneuverability, and to access hard to reach areas of operation. To facilitate maneuverability, all service lines are internally connected to the tandem barrel bodies and exit from the rear of the torch barrel. The barrel uses threaded (HTM) contact tips with a wire diameter range of .035" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire. The barrel is configured to provide individual parameter control for each of two separate, and electrically isolated, welding arcs. This requires a pairing of all equipment; two specially designed high-speed inverter power sources, two wire drives, two separate welding wire pay-off sources and a D/F Tandem Wire Barrel.

The D/F Tandem Wire Barrel can also be used as a twin wire torch (two wires used with one power source). When used as a Twin Wire Barrel it can increase deposition rates by 20 to 30 percent versus single wire welding without significantly increasing heat input. The increase comes from the greater current density achieved by pushing a similar current over smaller, cross-sectional areas of wire.

MODEL EXPLANATION

HTM-TDP - Heavy Duty, Threaded Tip, Machine Barrel - Tandem Dual Power

FEATURES

- 1200 Amps Continuous Duty Cycle
- Two (2) Independently Electrically Insulated Inner Bodies
- Two (2) Individually Adjustable Current Tips for Space and Alignment
- Water-Cooled Inner Bodies & Nozzle
- Large Frontal Area for Increased Gas Coverage
- Small Frontal Tapered Nozzle for Single Wire Applications
- Withstands Preheat & Extreme Conditions
- Adaptable to Any Wire Feeder or Power Source

ORDERING INFORMATION (Complete Barrel Only)

DESCRIPTION	CODE NO.
Model HTM-TDP Tandem W/C Machine Barrel	41301D

ORDERING INFORMATION (Complete Assemblies)

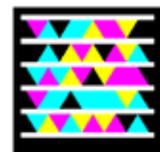
DESCRIPTION	CODE NO.										
	2 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	9 Ft.	10 Ft.	12 Ft.	15 Ft.
Model HTM-TDP	44706D-2	44706D-3	44706D-4	-5	-6	-7	-8	-9	-10	-12	-15

Add Footage Digit to Code Number for Utility Length Required.

Example: Require 44706D with 8 Ft. Utilities - 44706D-8

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Diameter of Body	Weight (approx.)	Cooling Required	Recommended Wire Diameter Range	Instruction Manual
HTM-TDP	1200 amp Continuous Duty	14.5"	2.375"	13.8 lbs.	1 gallon/min	.035"-1/8" Hard/Cored, 3/64"-3/32" AL	1019 Tandem





Water-Cooled TIG Barrels

Automatic & Robotic

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

WATER-COOLED AUTOMATIC TUBE MILL TIG BARREL

The TM500 TIG Top Load Machine Barrel is intended for semi-automatic or automatic machine applications of the tungsten inert arc process. The tungsten is loaded in the top of the barrel and is held with a tubular dual collet design providing clamping pressure at two points. This water-cooled TIG barrel has the unique feature of the nozzle assembly water passages being serially connected to the inner body water chamber by means of sliding removable connectors.

MODEL EXPLANATION

TM500 - TIG, Machine Barrel, 500 Amp

FEATURES

- Water-Cooled Inner Body & Nozzle
- 500 Amp Top Load
- Adaptable to Any Power Source
- Withstands Preheat & Extreme Conditions
- Dual Clamping Collet Provides Pressure at Two Points
- Tungsten Range .040"-5/32" (1mm-4mm)
- Gas Cup Range 1/4"-5/8" (#4-#10, 6.5mm-16mm)

ORDERING INFORMATION - COMPLETE BARREL ONLY

DESCRIPTION	CODE NO.
Model TM500 (Top Load Tungsten)	15499

TUNGSTEN COLLETS - TM500 ONLY

CODE NO.	SIZE (in.)	SIZE (mm)
15871	.040"	1mm
15872	1/16"	1.2mm
15873	3/32"	2.4mm
15874	1/8"	3.2mm
15875	5/32"	4mm

ORDERING INFORMATION - COMPLETE ASSEMBLIES

DESCRIPTION	CODE & MODEL NO. FOR AVAILABLE LENGTHS									
	TM502 2 Ft.	TM503 3 Ft.	TM504 4 Ft.	TM505 5 Ft.	TM506 6 Ft.	TM507 7 Ft.	TM508 8 Ft.	TM510 10 Ft.	TM512 12 Ft.	TM515 15 Ft.
Model TM500 (Top Load Tungsten)	15192	15193	15194	15195	15196	15197	15198	15199	15200	15201



WATER-COOLED ROBOTIC BOTTOM LOAD TIG BARREL

The TM500-B TIG Bottom Load Machine Barrel incorporates the same design as previously described (TM500) but is a bottom load type barrel for robotic applications. Tungsten electrodes are fastened by a collet action nut. A unique feature of this water-cooled TIG barrel is that the nozzle assembly water chamber and inner body water chamber are serially connected to each other, thus completely eliminating the need for gaskets or o-rings in the water passage system. Maximum current rating with thoriated tungsten electrodes is 500 amperes DC straight polarity, and 300 amperes AC. High frequency may be superimposed over standard current on a continuous or intermittent basis. There are five (5) collets available for use with this machine barrel with sizes of .040", 1/16", 3/32", 1/8", and 5/32". The singular collet design provides clamping pressure when the collet is securely fastened on the tungsten.

MODEL EXPLANATION

TM500-B - TIG, Machine Barrel, 500 Amp - Bottom Load

FEATURES

- Water-Cooled Inner Body & Nozzle
- 500 Amp Bottom Load
- Tungsten Range .040"-5/32" (1mm-4mm)
- Gas Cup Range 1/4"-5/8" (#4-#10, 6.5mm-16mm)
- Withstands Preheat & Extreme Conditions

TUNGSTEN COLLETS - TM500-B ONLY

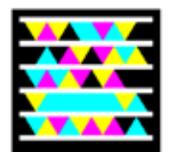
CODE NO.	SIZE (in.)	SIZE (mm)
19272	.040"	1mm
19273	1/16"	1.2mm
19274	3/32"	2.4mm
19275	1/8"	3.2mm
18158	5/32"	4mm

ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE & MODEL NO. FOR AVAILABLE LENGTHS									
	TM502-B 2 FT.	TM503-B 3 FT.	TM504-B 4 FT.	TM505-B 5 FT.	TM506-B 6 FT.	TM508-B 8 FT.	TM5010-B 10 FT.	TM5012-B 12 FT.	TM5015-B 15 FT.	
Model TM500-B (Bottom Load Tungsten)	15237	15238	15239	15240	15241	15242	15243	15244	15245	

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Diameter of Body	Weight (approx.)	Cooling Required	Recommended Tungsten Electrode Range	Instruction Manual
TM500	500 amp cont. duty	12.500"	1.625"	2.5 lbs.	5 pints/min	.040" - 5/32"	64TM
TM500-B	500 amp cont. duty	10.250"	1.625"	2.5 lbs	5 pints/min	.040" - 5/32"	66TMB



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Water-Cooled TIG Barrels

1000 Amp "BIG TIG" & High Frequency TIG Barrel

D/F MACHINE SPECIALTIES
1750 Howard Drive
North Mankato, MN 56003
Phone: (507) 625-6200
Fax: (507) 625-6203

WATER-COOLED "BIG TIG" MACHINE BARREL

The D/F 1000 amp "BIG TIG" Tube Mill 1000 (TM1000) Water-Cooled TIG Torch will help reach maximum output of the tube mill with increased weld speeds, increased arc stability for optimum weld quality and consistency, and maximized number of hours for welding electrode tip life, thus reducing mill shut downs and start ups, and also reducing the amount of scrap produced. The "BIG TIG" TM1000 is ideal for Mechanized or Robotic pipe/roll forming welding applications.

The "BIG TIG" 1000 Amp High Current Machine Barrel is recommended for mechanized welding applications where production demands the maximum durability and quality for mechanized gas tungsten arc welding. The model TM1000 as provided will accommodate tungsten sizes of 1/8" (3.2mm) through 3/8" (9.5mm). The water-cooled nozzle accepts threaded gas nozzles ranging from 11/16" through 1-1/4" inner diameter. Maximum current capacity applicable to the model TM1000 is 1000 amperes. Mounting is accomplished by using the D/F #14086 Mounting Bracket and connecting the torch to the #45188 Utility Station.

The "BIG TIG" has two Water Out & Power Cables (650 amps each), increasing the continuous duty cycle rating to 1000 amps. The required ratings are dictated by the tungsten size. If the equipment ratings are not sufficient, the torch can be configured with large water hoses instead of the two Water Out & Power Cables. There are two cable lugs on the inner body of the "BIG TIG" torch that can accept two to four 4/0 cables.

The D/F torch is famous for the fact that if it is chilled properly, the welder can grab the front of the torch with their bare hand and it will be cold to the touch seconds after welding. With the proper chiller, this can be done even after a 4 hour arc time. If you over-heat a torch, it could leak. Heat will cause premature wear of the consumables and torches, and it can also reduce weld quality. The robustness of the D/F torches will allow them to work with insufficient chillers, but it is not an ideal situation. The cooler the torch is, the longer the torch and consumables last, and the better the weld quality. Make certain the cooling water supply is at least the minimum flow rate of 1 gallon per minute (for each inner body), at 40 psi (80 psi maximum) with a 6 gallon reservoir and 30,000 BTU/hr cooling capacity. D/F Machine Specialties does not manufacture or sell chillers, we only recommend them to see that our torches are properly cooled.

MODEL EXPLANATION

TM1000 - TIG, Machine Barrel, 1000 Amp

FEATURES

- 1000 Amps Current Capacity
- Large Tungsten Diameters: 1/8"-.375"
- Extreme Conditions & Duty Cycles
- Water-Cooled Inner Body & Nozzle

ORDERING INFORMATION (Complete Barrel Only)

DESCRIPTION	CODE NO.
Model TM1000 "BIG TIG"	15505

ORDERING INFORMATION (Collet for Tungsten Electrode)

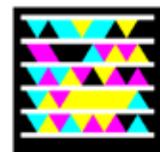
DESCRIPTION	CODE NO. FOR TUNGSTEN ELECTRODE SIZES					
	1/8" (3.2mm)	5/32" (4mm)	3/16" (4.8mm)	1/4" (6.5mm)	5/16" (8mm)	3/8" (9.5mm)
Collet for Tungsten	15804	15805	15806	15807	15808	15809

ORDERING INFORMATION (Complete Assemblies)

DESCRIPTION	CODE NO.									
	2 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	10 Ft.	12 Ft.	15 Ft.
Model TM1000 "BIG TIG"	15202	15203	15204	15205	15206	15207	15208	15210	15212	15215

MODEL SPECIFICATIONS - CONTINUOUS DUTY CYCLE

Model	Current Capacity	Length	Weight (approx.)	Cooling Required	Diameter of Body	Recommended Tungsten Electrode Range	Instruction Manual
TM1000	1000 amps	19"	11.8 lbs.	1 gallon/min	2.375"	1/8" (3.2mm)-3/8" (9.5mm)	63TM





Gas Nozzles & Cups

MIG & TIG

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

MIG GAS NOZZLES

D/F MIG Gas Nozzles and Gas Cups are precision machined to stringent standards for excellent fit and long life. We manufacture a complete line of standard size C122 DHP MIG gas nozzles and gas cups, as well as any custom nozzle configuration you may need. We can make any style of gas nozzle, in any quantity, for any type of application. Each requirement is quoted quickly and accurately to meet your needs. Our MIG gas nozzles are self insulated, standard and heavy duty in a wide variety of sizes for most every semi-automatic, automatic and robotic welding application.

ORDERING INFORMATION

GUN OR BARREL MODEL	REF.	NOZZLE TYPE	O.D.	I.D.	CODE NO.
NCM/HTM, NCC/HTC, NCM/HTM-W/C-T, MCW/MTW, CCW/CTW, CCA/CTA, CA-C/CA-T, CW-C/CW-T	1	Copper Tapered	63/64"	5/8"	10362
	2	Copper Straight	1"	3/4"	10340
	3	Copper Straight	5/8"	7/16"	10374
	4	Copper Full Taper	63/64"	5/8"	10359
	5	Copper Straight	5/8"	1/2"	10376
CTW59/67/68 (ID Bore Torch)	6	Copper Straight	1"	3/4"	40089-S
HIGH CAPACITY SERIES A NCM-A/HTM-A, NCM/HTM-W/C-T-A, NCC-A/HTC-A	7	Copper Full Taper	1-3/8"	11/16"	18030
		Copper Full Taper	1-3/8"	13/16"	18031
		Copper Full Taper	1-3/8"	15/16"	18032
	8	Copper Tapered	1-3/8"	11/16"	16749
		Copper Tapered	1-3/8"	13/16"	16750
		Copper Tapered	1-3/8"	15/16"	16751
		Copper Straight	1-3/8"	1"	16748
"BIG MIG", "BIG TIG"	9	Copper Tapered	1-5/8"	1"	10387
		Copper Straight	1-5/8"	1-1/4"	10389
HTM-TDP, NCM18, HTM18	10	Copper Straight	2-1/8"	1.570"	41668
TM500, TM500B, TM-CN	11	No. 4 Ceramic		1/4"	15895
		No. 6 Ceramic		3/8"	15896
		No. 8 Ceramic		1/2"	15897
		No. 10 Ceramic		5/8"	15898
"BIG TIG" TM1000	12	Ceramic Tapered		11/16"	15921
		Ceramic Tapered		13/16"	15922
		Ceramic Tapered		1"	15923
"BIG TIG" TM1000	13	Metallic Tube Mill		13/16"	15907
TM500, TM500B	14	Metallic Tapered		5/8"	15903
		Metallic Tapered		3/4"	15904

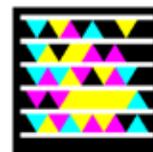
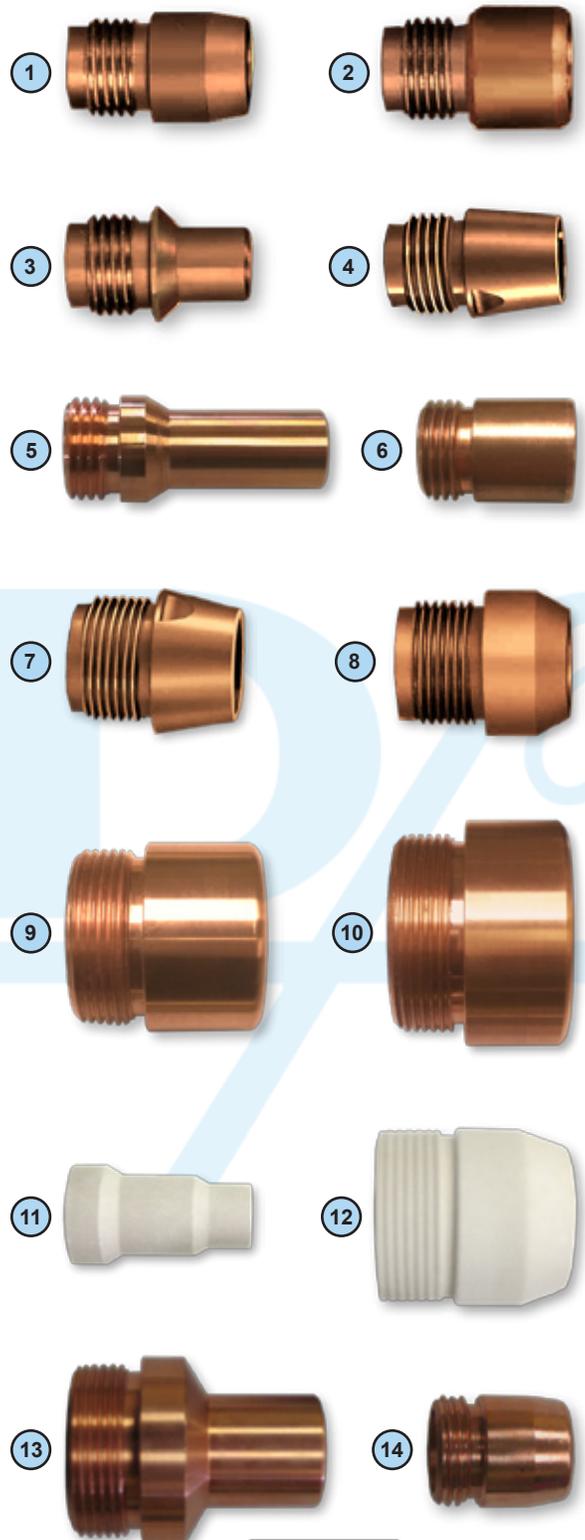
TIG GAS NOZZLES

D/F Ceramic TIG Gas Nozzles and Cups are made from high strength materials, have very good electrical insulating properties, exceptionally high impact resistance, heat resistance and thermal conductivity, and resist spatter build-up. They are recommended for most welding operations, except for use in confined areas.

The most cost effective are 90 or 95 percent alumina oxide nozzles, which work adequately for lower amperage applications. These nozzles however do not resist thermal shock on higher amperage applications very well and tend to deteriorate or crack and fall off.

Lava nozzles cost more than alumina oxide nozzles and are more resistant to cracking. These nozzles work well on medium to high amperage applications.

D/F Metallic TIG Gas Nozzles and Cups are made for long life and durability, and are ideal for tube mill applications. We manufacture a complete line of standard size copper TIG gas nozzles and cups, as well as any custom nozzle configuration you may need.





Current Tips

Slip-In & Threaded

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

SLIP-IN & THREADED CURRENT TIPS

D/F Machine Specialties delivers the performance and reliability you need to minimize your production costs while maximizing welding efficiencies! Many large manufacturers with automatic and robotic assembly lines have discovered the advantages of using D/F Machine Specialties equipment; dramatically reducing down time for tip changes, therefore increasing productivity. All D/F barrels can run the complete line of D/F standard size C122 DHP contact tips and the complete line of D/F standard size heavy duty CuCrZr contact tips, as well as any custom current tip configuration you may need.

D/F Machine Specialties barrels are standard equipped with one (1) Water Out & Power Cable and are rated up to 650 amps (continuous duty cycles). These ratings however are dictated by the contact tip. The NCM (slip-in) series of contact tips is rated up to 450 amps (continuous duty cycles). Because of our heavy duty design and superior water cooling on the tip, the less expensive C122 DHP contact tip is all you need. These slip-in tips are fastened by a collet action nut. The wire diameter range with .030" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire. However, if your welding application requires preheat, amperages above 450, or extremely long duty cycles, we recommend you change to the torch model HTM which utilizes the heavy duty threaded CuCrZr series of contact tips.

The barrel models HTM (CuCrZr chromium zirconium copper - Threaded Contact Tip) have a current capacity range up to 650 amperes with one power cable. Some HTM models can also be retrofit to have 2 Water Out & Power Cables, increasing the continuous duty cycle rating to 850 amps. Rating will be contingent on the combination of current tip and shielding gas to be used. The models HTM will accommodate wire diameter range with .035" through 1/8" with hard/cored wire, and 3/64" through 3/32" with aluminum wire.

ORDERING INFORMATION

WIRE TYPE	.030" .8 mm	.035" .9 mm	.045" 1.2 mm	3/64" 1.2 mm	.052" 1.4 mm	1/16" 1.6 mm	5/64" 2 mm	3/32" 2.4 mm	7/64" 2.8 mm	1/8" 3.2 mm	5/32" 4 mm	D/F	D/F MACHINE SPECIALTIES Genuine Current Tips
Hard	10883	10884	10885		10886	10887	10888	10889	10904	10933			
Cored		10893	10894		10895	10896	10897	10898	10899	10900			
AL				10902		10935	10888	10936					
Hard	19390	19391	19392		19393	19394	19711	19726	19396	19727			
Cored		19400	19401		19402	19403	19404	19405	19406	19720			
AL				19407		19408	19728	19409					
Hard	10787	10788	10789		10830	10790	10792						
AL				10781		10782	10823	10783					
Hard	10794	10795	10796		10840	10797							
AL				10785		10786							
Hard		15065	15062										
AL				15072		15073							
Hard		15116	15117		15121	15118	15119	15120	15122	15105	15150		
Cored		15101	15106		15112	15107	15108	15109	15110	15111	15113		
AL				15126		15125	15087	15148		15123	15151		
Hard / Cored		15157	15158		15159	15138	15160	15161	15162	15163			
AL				15165		15166		15167					
WIRE TYPE	.030" .8 mm	.035" .9 mm	.045" 1.2 mm	3/64" 1.2 mm	.052" 1.4 mm	1/16" 1.6 mm	5/64" 2 mm	3/32" 2.4 mm	7/64" 2.8 mm	1/8" 3.2 mm	5/32" 4 mm	D/F	D/F MACHINE SPECIALTIES Genuine Current Tips

1/4" Slip-in Tip Collet
D/F #11950



5/16" Slip-in Tip Collet
D/F #18262



Standard
Collet Wrench
D/F #12111



Bent Tip
Collet Wrench
D/F #12116



N/LRN Collet/
Tip Locator
Wrench
D/F #12120



"BIG MIG"/"BIG TIG"
Collet Wrench,
MWC-G-D Tip
Adapter Nut
Wrench
D/F #12114





MIG Gun & Barrel Liners

Nylon & Steel

D/F MACHINE SPECIALTIES
1750 Howard Drive
North Mankato, MN 56003
Phone: (507) 625-6200
Fax: (507) 625-6203

NYLON & STEEL MIG GUN & BARREL LINERS

D/F Machine Specialties delivers the performance and reliability you need to minimize your production costs while maximizing welding efficiencies! Many large manufacturers with robotic assembly lines have discovered the advantages of using D/F Machine Specialties welding products including dramatic reduction in down time for tip changes and increased productivity.

Our MIG steel liners are precision wound to stringent standards for excellent fit and long life. D/F liners are available in high carbon music wire for smooth wire feed and long life. D/F Machine Specialties also manufactures a complete line of soft plastic liners for aluminum and inconel wire welding. We can make any length liner in any quantity, for wires of .030" (.8mm) through 1/8" (3.2mm) and other diameters.

D/F liners are available in common lengths to 25 feet (7.6 meters) for all wire sizes and most every robotic and manual welding application. We will also do specials in any length and size needed to get your job done! Each requirement is quoted quickly and accurately to meet your needs.

ORDERING INFORMATION (Nylon Liners for Aluminum Wire)

LENGTH	.030"-.035" AL (.8mm-.9mm)	3/64" AL (1.2mm)	1/16" AL (1.6mm)	3/32" AL (2.4mm)
2 Ft.	47027-2	47023-2	47024-2	47025-2
3 Ft.	47027-3	47023-3	47024-3	47025-3
4 Ft.	47027-4	47023-4	47024-4	47025-4
5 Ft.	47027-5	47023-5	47024-5	47025-5
6 Ft.	47027-6	47023-6	47024-6	47025-6
7 Ft.	47027-7	47023-7	47024-7	47025-7
8 Ft.	47027-8	47023-8	47024-8	47025-8
9 Ft.	47027-9	47023-9	47024-9	47025-9
10 Ft.	47027-10	47023-10	47024-10	47025-10
11 Ft.	47027-11	47023-11	47024-11	47025-11
12 Ft.	47027-12	47023-12	47024-12	47025-12
13 Ft.	47027-13	47023-13	47024-13	47025-13
14 Ft.	47027-14	47023-14	47024-14	47025-14
15 Ft.	47027-15	47023-15	47024-15	47025-15
16 Ft.	47027-16	47023-16	47024-16	47025-16
18 Ft.	47027-18	47023-18	47024-18	47025-18
20 Ft.	47027-20	47023-20	47024-20	47025-20

NOTE: Add Footage to Code Number for Length Desired
Example: Require 8 Ft. Liner (3/64" AL Wire): Code No. 47023-8

ORDERING INFORMATION (Steel Liners for Hard/Cored Wire)

LENGTH	.030"-.035" (.8mm-.9mm)	.035"-.045" (.9mm-1.2mm)	.045"-1/16" (1.2mm-1.6mm)
2 Ft.	47020-2	47021-2	47022-2
3 Ft.	47020-3	47021-3	47022-3
4 Ft.	47020-4	47021-4	47022-4
5 Ft.	47020-5	47021-5	47022-5
6 Ft.	47020-6	47021-6	47022-6
7 Ft.	47020-7	47021-7	47022-7
8 Ft.	47020-8	47021-8	47022-8
9 Ft.	47020-9	47021-9	47022-9
10 Ft.	47020-10	47021-10	47022-10
11 Ft.	47020-11	47021-11	47022-11
12 Ft.	47020-12	47021-12	47022-12
13 Ft.	47020-13	47021-13	47022-13
14 Ft.	47020-14	47021-14	47022-14
15 Ft.	47020-15	47021-15	47022-15
16 Ft.	47020-16	47021-16	47022-16
18 Ft.	47020-18	47021-18	47022-18
20 Ft.	47020-20	47021-20	47022-20

NOTE: Add Footage to Code Number for Length Desired
Example: Require 8 Ft. Liner (1/16" Hard Wire): Code No. 47022-8





MIG Casings & Conduits

Soft Flexible & Rigid Steel-Reinforced

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

CASINGS & CONDUITS

D/F Machine Specialties delivers the performance and reliability you need to minimize your production costs while maximizing welding efficiencies! Many large manufacturers with robotic assembly lines have discovered the advantages of using D/F Machine Specialties welding products; dramatically reducing down time for tip changes, therefore increasing productivity.

Our MIG wire/liner casings are designed with a flexible polymer core for aluminum wire welding, or with a steel-reinforced core for hard and cored wire welding. We can make any length casing (conduit, whip) in any quantity for wires of .030", .035", .045", .052", 1/16", 3/64", 5/64", 3/32", 7/64", 1/8" and other diameters.

D/F casings are available in common lengths up to 15 feet (7.6 m) for all wire sizes and most every robotic and manual welding application. We will also do specials in any length and size needed to get your job done! Each requirement is quoted quickly and accurately to meet your needs.

Please Note: All D/F soft flexible casings (#46370) require an appropriate MIG wire liner. See page 27 for the different MIG Torch Liner options.

ORDERING INFORMATION (Soft Flexible Polymer Casing)

LENGTH	.030"-1/16" (.8mm-1.6mm) (REQUIRES LINER)
2 Ft.	46370-2
3 Ft.	46370-3
4 Ft.	46370-4
5 Ft.	46370-5
6 Ft.	46370-6
7 Ft.	46370-7
8 Ft.	46370-8
9 Ft.	46370-9
10 Ft.	46370-10
11 Ft.	46370-11
12 Ft.	46370-12
13 Ft.	46370-13
14 Ft.	46370-14
15 Ft.	46370-15
18 Ft.	46370-18



ORDERING INFORMATION (Steel-Reinforced Casing)

LENGTH	.030"-.035" (.8mm-.9mm)	.035"-.045" (.9mm-1.2mm)	.045"-1/16" (1.2mm-1.6mm)	5/64"-3/32" (2mm-2.4mm)	7/64"-1/8" (2.8mm-3.2mm)
2 Ft.	46350-2	46420-2	46440-2	46460-2	46480-2
3 Ft.	46350-3	46420-3	46440-3	46460-3	46480-3
4 Ft.	46350-4	46420-4	46440-4	46460-4	46480-4
5 Ft.	46350-5	46420-5	46440-5	46460-5	46480-5
6 Ft.	46350-6	46420-6	46440-6	46460-6	46480-6
7 Ft.	46350-7	46420-7	46440-7	46460-7	46480-7
8 Ft.	46350-8	46420-8	46440-8	46460-8	46480-8
9 Ft.	46350-9	46420-9	46440-9	46460-9	46480-9
10 Ft.	46350-10	46420-10	46440-10	46460-10	46480-10
11 Ft.	46350-11	46420-11	46440-11	46460-11	46480-11
12 Ft.	46350-12	46420-12	46440-12	46460-12	46480-12
13 Ft.	46350-13	46420-13	46440-13	46460-13	46480-13
14 Ft.	46350-14	46420-14	46440-14	46460-14	46480-14
15 Ft.	46350-15	46420-15	46440-15	46460-15	46480-15





Utility Stations

Standard, Dual Power & Air-Cooled

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

UTILITY STATIONS

D/F MIG (GMAW) and TIG (GTAW) barrels can hook up to any of the different Miller, Lincoln, Esab, Welding Alloys, Fronius, Tweco, etc., power sources and wire feeders. Every wire feeder manufacturer has different sized holes where the torch's conduit or casing plugs into the wire feeder. They call these pins 'power pins'. Typical modern torch setups utilize a unitized cable assembly with a power pin. The gas, water, power and conduit are combined into a single replaceable unit. When one cable goes bad, the whole unit is replaced. This can be expensive. Also, this approach does not allow for a large enough inner power cable needed for necessary high amperages, and it is restricted in size by small passages for water, gas and wire. Water-cooling and gas coverage are both limited by the size restrictions.

We do not refer to these pins as power pins, we call them feeder adapters. We do not put the power on the pin or the feeder adapter. We put the power (4/0 cable) into the back of our Utility Station. The power travels from the Utility Station down our 650 amp Water Out & Power Cable to the torch body where the power is put on the tip that is recessed into the front of our water-cooled inner body. The torch utilities (Water Out & Power Cable, Water In Hose, Gas Hose) are individually plugged into the utility station and to the back of the torch. The casing/conduit, liner, and feeder adapter plug directly into the wire feeder. There is no power on the feeder adapter and casing. The casing's only purpose is to support the liner. The liner not only protects the casing from the abrasive wire, but also supports the wire.

The D/F Utility Station provides a means to interface the D/F torches with the utilities of any new or existing welding cells. It has an insulated protective cover and an insulated phenolic base. The front side accepts the D/F torch's standard cable fittings. The back side allows the existing utility lines to be clamped on and a power cable to be locked in, interfacing the D/F torch with the welding cell. The D/F torch utilities include a gas hose, water-in hose and Water Out & Power Cable. The cables are all independent so that if one cable breaks, the Utility Station exists to allow that cable to be replaced individually, costing much less in the long run than replacing a unitized cable system.

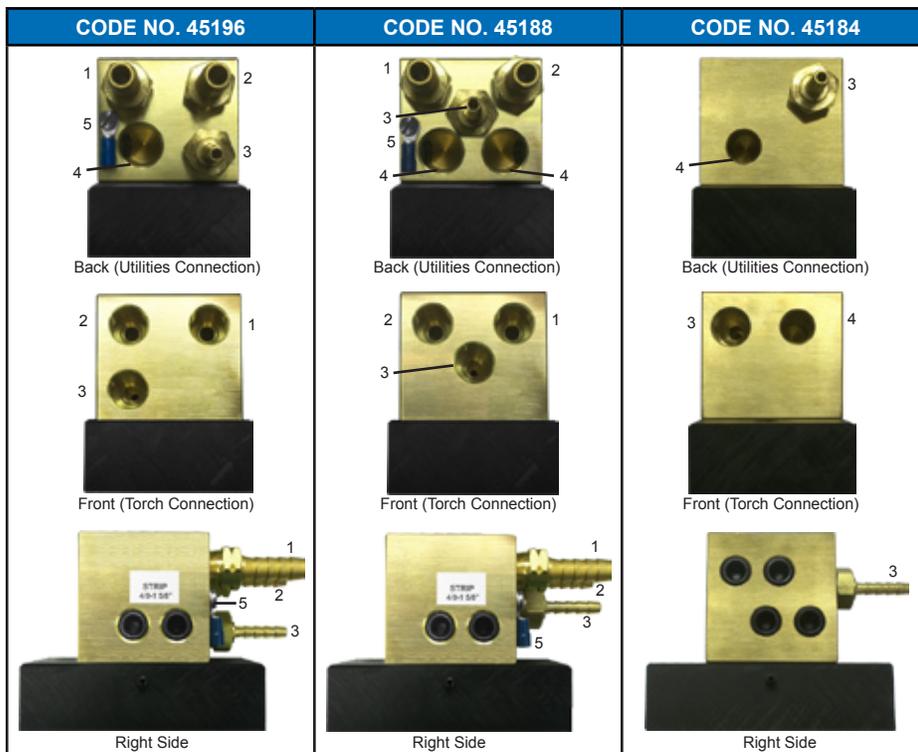
The Utility Station 45196 is the D/F Standard Utility Station. On the front it accepts a D/F gas hose, a D/F water-in hose, and one D/F Water Out & Power Cable. On the back it accepts a single water in hose, a single water out hose, a single gas hose and a single power cable held in by socket set screws. The Utility Station 45188 is the D/F Dual Power Utility Station. On the front it accepts a D/F gas hose, a D/F water-in hose, and two (2) D/F Water In/Out & Power Cables. On the back it accepts a single water in hose, a single water out hose, a single gas hose and two 4/0 power cables held in by socket set screws. The Utility Station 45184 is the D/F Utility Station for air-cooled torches. On the front it accepts a D/F gas hose and a D/F 1/0 power cable held in by socket set screws. On the back it accepts a single gas hose and a single power cable that is held in by socket set screws. Each Utility Station is also fitted with a voltage sensing lead.

ORDERING INFORMATION

DESCRIPTION	CODE NO.
Utility Station - Standard W/C	45196
Utility Station - Dual Power W/C	45188
Utility Station - A/C Barrels	45184

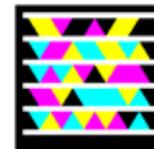
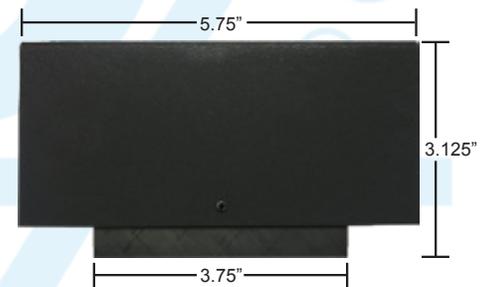
UTILITY STATION CONNECTIONS

DESCRIPTION	REFERENCE
Water Out & Power Cable	1
Water In Hose	2
Shielding Gas Hose	3
Power Cable	4
Voltage Sensing Lead	5



DIMENSION SPECIFICATIONS

Base Length	3.75"
Overall Length	5.75"
Base Width	2.25"
Overall Width	2.5"
Overall Height	3.125"
Mount Hole Center Distance	2.75"
Overall Weight	3.5 lbs.





Utilities Combinations

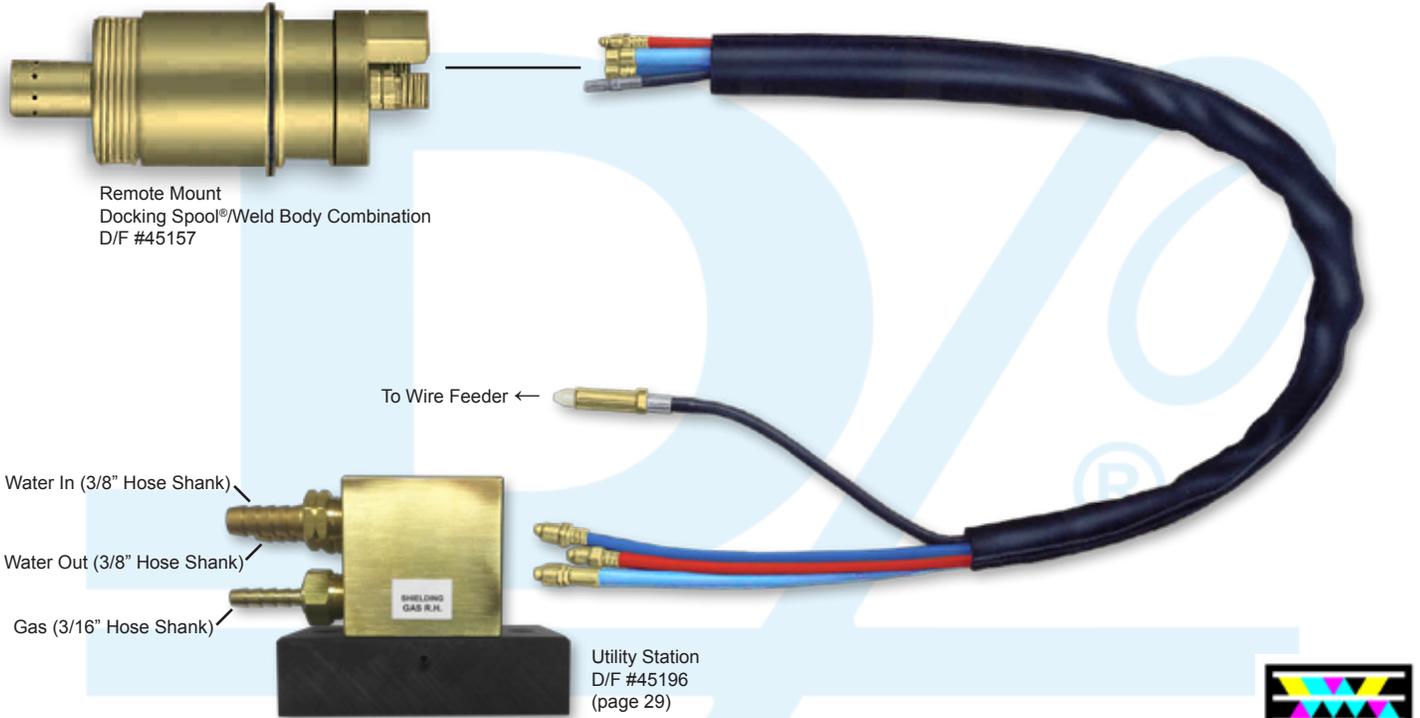
Docking Spool® Assembly

D/F MACHINE SPECIALTIES
1750 Howard Drive
North Mankato, MN 56003
Phone: (507) 625-6200
Fax: (507) 625-6203

UTILITIES COMBINATION - DOCKING SPOOL® ASSEMBLY

Typical modern torch setups utilize a unitized cable assembly with the gas, water, power and conduit combined into a single replaceable unit. When one cable goes bad the whole unit is replaced. This can be expensive. Also, this approach does not allow for a large enough inner power cable needed for necessary high amperages, and it is restricted in size by small passages for water, gas and wire. Water-cooling and gas coverage are both limited by the size restrictions.

D/F torches take an alternative approach to the setup. The torches use a separate gas hose, water in hose, Water Out & Power Cable, and casing/conduit. When one cable goes bad it is simply replaced instead of attaching an entire new unitized cable assembly; a huge cost saver! This is also where the D/F Utility Station comes into play. The gas hose, water-in hose, and Water Out & Power Cable are interfaced with the customer's existing lines via the Utility Station. The D/F torch leads plug into the front. Into the back go the customer's utilities along with a 4/0 power cable. This is how the D/F barrels are powered, NOT with a power cable to the wire feeder. The power must travel through the Utility Station and down to the torch via the Water Out & Power Cable, hence the name.



ORDERING INFORMATION (Utilities Combinations)

CODE NO.	DESCRIPTION
46620	.030"-.035" Utility Combination (46350 Casing - Requires Liner)
46621	.035"-1/16" Utility Station (46370 Casing - Requires Liner)
46621	3/64"-3/32" AL Utility Combination (46370 Casing - Requires Liner)
46622	.035"-.045" Utility Combination (46420 Casing - Single Piece)
46623	.045"-1/16" Utility Combination (46440 Casing - Single Piece)
46624	5/64"-3/32" Utility Combination (46460 Casing - Single Piece)
46625	7/64"-1/8" Utility Combination (46480 Casing - Single Piece)

NOTE: Add Footage to Code Number for Length Desired

Example: Require 8 Ft. Utilities Combination (.035"-1/16" Wire Diameter): Code No. 46621-8

ORDERING INFORMATION (Casings)

CODE NO.	DESCRIPTION
46350	.030"-.035" Requires 5/64"-3/32" Casing with .030"-.035" Liner
46370	.035"-1/16" Casing (Requires Liner)
46420	.035"-.045" Casing (Single Piece)
46440	.045"-1/16" Casing (Single Piece)
46460	5/64"-3/32" Casing (Single Piece)
46480	3/32"-1/8" Casing (Single Piece)

ORDERING INFORMATION (Liners)

CODE NO.	DESCRIPTION	WIRE TYPE
47020	.030"-.035" Liner	Hard/Cored
47021	.035"-.045" Liner	Hard/Cored
47022	.045"-1/16" Liner	Hard/Cored
47023	3/64" Liner	Aluminum
47024	1/16" Liner	Aluminum
47025	3/32" Liner	Aluminum
47026	1/8" Liner	Aluminum



Nozzle Thread Chaser Taps

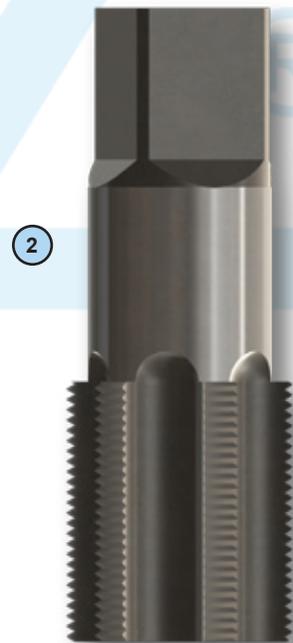
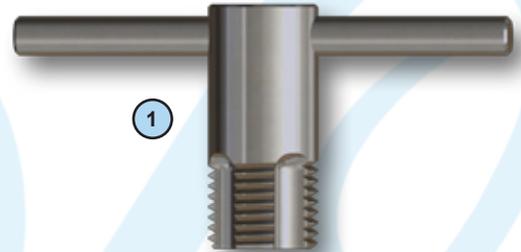
D/F MACHINE SPECIALTIES
1750 Howard Drive
North Mankato, MN 56003
Phone: (507) 625-6200
Fax: (507) 625-6203

NOZZLE THREAD CHASER TAPS

D/F Machine Specialties Nozzle Thread Chaser Taps are available for the complete line of MIG & TIG torches. These Nozzle Thread Chaser Taps will clean threads, re-tap, and repair any damaged threads for all of its different water-cooled & air-cooled, semi-automatic, automatic and robotic torch nozzles & nozzle bodies.

In general it is important to keep the weldment and welding equipment clean to produce consistent quality welds. Chasing and re-tapping the nozzle threads is an excellent way to help keep the torch clean in particular. Chasing the threads will clean out things like dirt, metal shavings, or spatter built up in and around the threads of the nozzle. In turn, there will be less chance of contaminants entering the weld pool, as well as a cleaner contact between the gas cup and the nozzle. A quick re-tapping will also straighten damaged threads.

REF.	CODE NO.	DESCRIPTION	USED WITH NOZZLE ASSEMBLY	USED FOR GAS NOZZLE
1	14610	Nozzle Thread Chaser Tap for Standard A/C & W/C Nozzle Assembly Front	13197	10340
			16384	10359
			11117, 45101	10362
			11118, 45102	10374
			11119, 45103	
			45114	
			45107	
			NCC-N/HTC-N	
			NCC-LRN, HTC-LRN	
	14611	Nozzle Thread Chaser Tap for "BIG MIG" & "BIG TIG" Nozzle Assembly Front	11123	10382
				10387
				10389
				10390
				10392
				15907
	14614	Nozzle Thread Chaser Tap for Series-A High Capacity Nozzle Assembly Front	11142, 45120	16748
			11138, 45121	16749
			45127	16750
			11132, 45129	16751
			45125	18030
				18031
				18032
	14615	Nozzle Thread Chaser Tap for Nozzle Body Assembly Front	13198	10379
2	14617	Nozzle Thread Chaser Tap for Tandem Nozzle Assembly Front	41641	41667
				41668



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For more information visit dfmachinespecialties.com/social, or scan the Tag with your mobile device:



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Mounting Brackets

MIG & TIG Brackets, Shafts, Rack & Posts

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

MIG & TIG MOUNTING BRACKETS

For hard automation, robotics, high deposition, and large wire diameters that require preheat and high amperages, a D/F heavy duty water-cooled weld automation torch is ideal. Since every application is different, we provide different ways of grabbing our torches to fit into any of these welding applications.

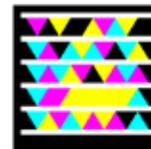
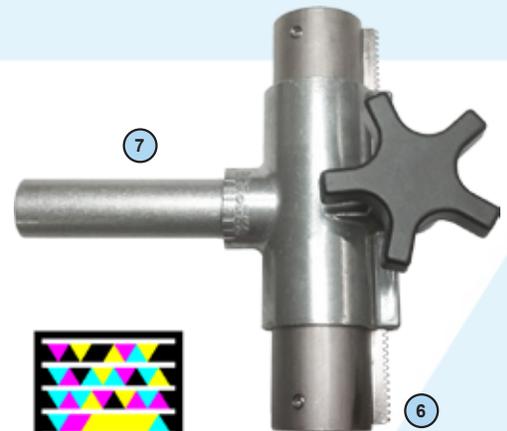
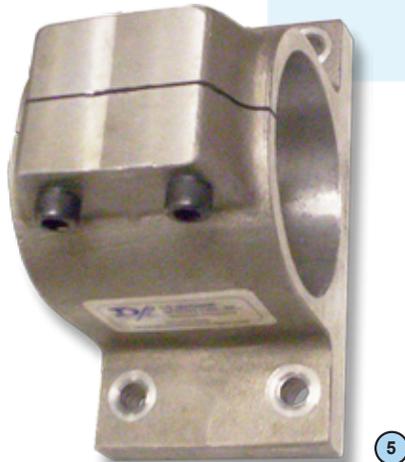
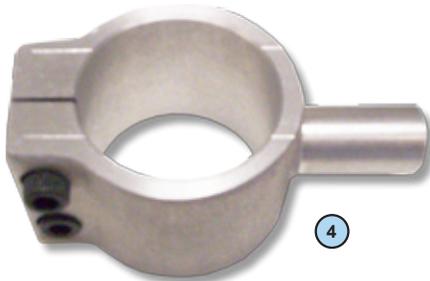
D/F Machine Specialties manufactures its own complete line of welding mounts, brackets, arms, and a rack and rack mount so that D/F barrels can be installed and connected to positioning equipment such as side beams, pipe welding positioners, tank turning rolls, welding manipulators, head and tailstocks, welding turntables, seam welders, vessel rotators and V-Blocks.

Since the inception of hard automation in welding, D/F's automatic barrels have been used on all OEM fixture manufacturers' equipment including Pandjiris, BUG-O, Welding Alloys, Red-D-Arc, Mavrix, Ogden, and handbanding equipment manufacturers. We have a full line of fixed or adjustable (universal) robotic mounting arms (see page 33) and brackets that will connect to any robot allowing you the freedom you need to achieve those hard to reach positions.

If you have any questions about how to mount a barrel in a unique way, need more freedom of movement, or have obstacle restrictions to overcome, there is already a very good chance that we have a solution for you. Please consult the factory if you have any questions about torch mounting.

ORDERING INFORMATION

REF.	CODE NO.	DESCRIPTION
1	40597	Mounting Bracket - MIG/TIG
2	40598	Torch Bracket Mounting Shaft
3	40589	Flanged Post
4	14085	Mounting Bracket - NCM/HTM
5	14086	Mounting Bracket - "BIG MIG"
6	30418	6" Rack
7	30419	Rack Mount





Mounting Arms

MIG & TIG Fixed & Adjustable Arms

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

MIG & TIG MOUNTING ARMS

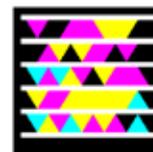
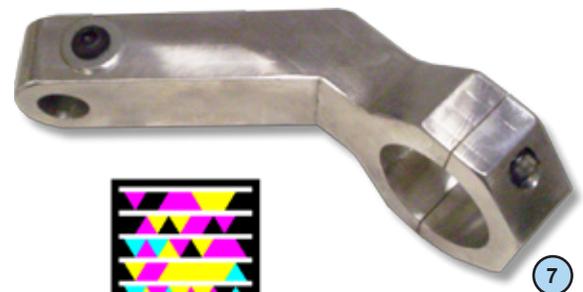
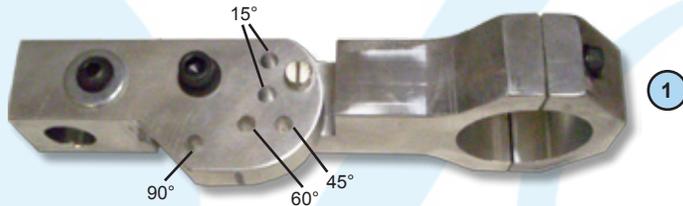
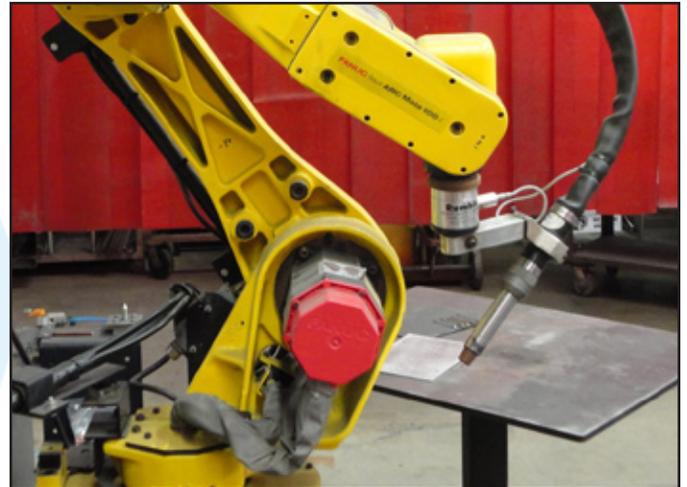
For hard automation, robotics, high deposition, and large wire diameters that require preheat and high amperages, a D/F heavy duty water-cooled weld automation torch is ideal. Since every application is different, we provide different ways of grabbing our torches to fit into any of these welding applications.

Since the inception of robots in welding, D/F's robotic barrels have been used on all robotic manufacturers' equipment including Fanuc, ABB, Motoman, Kuka and Panasonic robots. We have a full line of fixed or adjustable (universal) robotic mounting arms and brackets that will connect to any robot allowing you the freedom you need to achieve those hard to reach positions.

If you have any questions about how to mount a barrel in a unique way, need more freedom of movement, or have obstacle restrictions to overcome, there is already a very good chance that we have a solution for you. Please consult the factory if you have any questions about torch mounting.

ORDERING INFORMATION

REF.	CODE NO.	DESCRIPTION
1	40869	Universal Mounting Arm - 6"
2	40870	Universal Mounting Arm - 8"
3	40871	Universal Mounting Arm - 10"
4	41272	Mounting Arm - Straight (5.5" Centerline)
5	40820	Mounting Arm - Straight (6" Centerline)
6	40534	Mounting Arm - 10°
7	40532	Mounting Arm - 45°





Wire Feeder Adapters & Inlet Guides

D/F MACHINE SPECIALTIES
 1750 Howard Drive
 North Mankato, MN 56003
 Phone: (507) 625-6200
 Fax: (507) 625-6203

Because the D/F guns and barrels can hook up to any of the different Miller, Lincoln, Esab, Welding Alloys, Fronius, Tweco, etc., power sources and wire feeders, D/F manufactures its own complete line of feeder adapters to connect to the different wire feeders. Some refer to these as power pins. We do not put the power on the pin or the feeder adapter. We put the power (4/0 cable) into the back of our Utility Station (see page 29). The power travels from the Utility Station down our 650 amp Water Out & Power Cable to the torch body where the power is put on the tip that is recessed into the front of our water-cooled inner body. Below is a list of the more popular feeder adapters. Please consult the factory with any questions about selecting the correct feeder adapter for your wire feeder.

MANUFACTURER	MODELS	WIRE DIAMETERS	REMOTE MOUNT ADAPTER			DIRECT MOUNT ADAPTER	
			HARD OR AL	CORED	STUB* LINER	HARD OR AL	CORED
ESAB®	D20 (20mm)	.030"-3/32" H/C/AL 5/64"-1/8" H/C	13098		*	13096	
				13099	*		13097
EURO	Unitized Torches	.030"-3/32" H/C/AL 5/64"-1/8" H/C	18493	18493			
	D/F Utility Station	.030"-3/32" H/C/AL 5/64"-1/8" H/C	18542	18544		18540	18543
Hobart®	All Models	.030"-3/32" H/C/AL 5/64"-1/8" H/C	13067		*	13068	
				16087	*		16225
Lincoln®	LN-7, LN-8, NA-5R	.030"-3/32" H/C/AL 5/64"-1/8" H/C	13110	13112	*	13113	13116
	LN-9	.030"-3/32" H/C/AL 5/64"-1/8" H/C	16581	16582	*	16528	16529
	NA3, NA5	.030"-3/32" H/C/AL 5/64"-1/8" H/C	16879	16878	*	16880	16881
	Power-Feed 10, LF-72, LF-74	.030"-3/32" H/C/AL 5/64"-1/8" H/C	13479	13469	*	13480	13468
Lincoln® "BIG MIG"	NA3, NA5	.030"-3/32" H/C/AL 5/64"-1/8" H/C	16879	16878	*	16888	16888
Linde®	EH10	.035"-3/32" H/C/AL 5/64"-1/8" H/C	13043	13052	*	13080	13079
Mavrix®	PA-10	.030"-3/32" H/C/AL 5/64"-1/8" H/C	16556	16568	Requires Inlet		
Miller® (All Series)		.030"-3/32" H/C/AL 5/64"-1/8" H/C	16557	16559	*	16558	16560
					*		
OTC®	CMXL-231U, DP-400/500, Tweco #4	.030"-3/32" H/C/AL 5/64"-1/8" H/C	13479	13469	*	13480	13468
	DP-400/500, Tweco #5	.030"-3/32" H/C/AL 5/64"-1/8" H/C	16557	16559	*	16558	16560
Panasonic®	PME-12X YW50AKW1	.030"-1/16"	13090	Requires Inlet			
		.030"-1/16"	13466				
TWECO®	#4	.030"-3/32" H/C/AL 5/64"-1/8" H/C	13479	13469	*	13480	13468
	#5	.030"-3/32" H/C/AL 5/64"-1/8" H/C	16557	16559	*	16558	16560
Welding Alloys®		.030"-3/32" H/C/AL 5/64"-1/8" H/C		Requires Liner, Requires Inlet		13486	13486

ORDERING INFORMATION

Each D/F torch is fully assembled and ready to install. In order to make the installation complete, the code number, wire size and type, make/model of wire feeder, and inlet guide as needed must be specified when ordering. If special welding tools or accessories other than those listed previously are required, please consult with the factory.

FEEDER ADAPTER INLET GUIDES

WIRE SIZE	STEEL	BRASS	NYLON
.030"	13801	16417	
.035"	13803	16418	
.045"	13806	16419	
.052"	13844	16420	
1/16"	13809	16421	
5/64"	13812	16422	
3/32"	13814	16422	
7/64"	13816		
1/8"	13842		
3/64" AL			13807
1/16" AL			13810
3/32" AL			13815
1/8" AL			13843



Lincoln NA3/NA5 Feeder Adapter
D/F #16880



Miller Feeder Adapter
D/F #16557 (TWECO #5)



Linde EH10 Feeder Adapter
D/F #13043



TWECO #4, Lincoln Power Feed 10, OTC Feeder Adapter - D/F #13479





Barrel Mounting Options

Direct & Remote Barrel Connections

D/F MACHINE SPECIALTIES
1750 Howard Drive
North Mankato, MN 56003
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BARREL MOUNTING OPTIONS

Typical modern torch setups utilize a unitized cable assembly with the gas, water, power, and conduit combined into a single, replaceable unit. When one cable goes bad the whole unit is replaced. This can be expensive. Also, this approach does not allow for a large enough inner power cable needed for necessary high amperages, and it is restricted in size by small passages for water, gas and wire. Water-cooling and gas coverage are both limited by the size restrictions.

D/F torches take an alternative approach to the setup. The torches use a separate gas hose, water-in hose, Water Out & Power Cable, and casing/conduit. When one cable goes bad it is simply replaced instead of attaching an entire new unitized cable assembly; a huge cost saver! This is also where the D/F Utility Station comes into play. The gas hose, water-in hose, and Water Out & Power Cable are interfaced with the customer's existing lines via the Utility Station. The D/F torch leads plug into the front of the Utility Station, and into the back go the customer's utilities. The back includes industry standard 3/8" shanks to allow the customer to connect the water in and water out lines, and a 3/16" shank to connect the gas line. Along with these hoses, the customer must plug a 4/0 power cable directly from the power source to the back of the Utility Station. This is how the D/F torches are powered, NOT with a power cable to the wire feeder; there can be no jumper cable from the drive roll to the Utility Station. The power must travel through the Utility Station and down to the torch via the Water Out & Power Cable, hence the name. It is most important to remove the 4/0 power cable from the lug of the wire feeder drive roll stand, strip the cable back roughly 2", and insert the 4/0 power cable into the back of the D/F Utility Station. Finally, a short gas hose jumper is needed for gas control. Remove the small black 3/16" hose that connects from the solenoid to the feeder input inside the wire feeder. The jumper can be attached by removing the 3/16" hose from the solenoid and attaching the 3/16" gas jumper hose to the solenoid, and to the D/F Utility Station's 3/16" shank.

Due to the fact that every welding application is different because of size restrictions, access restrictions, positioning restrictions, etc., D/F manufactures barrels in two variations, remote mount and direct mount.

FIGURE 1 - REMOTE MOUNT/ROBOTIC BARRELS

The D/F wire casing/conduit follows a different route than the water and gas lines. On remotely mounted guns and barrels (Fig. 2), the casing/conduit comes straight out the top of the barrel as the other hoses do (180 degrees), but attaches straight to the wire feeder with a feeder adapter. D/F refers to power pins as feeder adapters, for on D/F barrel setups there is no power going to the wire feeder. The feeder adapters can hook up to any of the different Miller, Lincoln, Esab, Welding Alloys, Fronius, Tweco, etc. wire feeders. In turn the D/F casing/conduit is not powered. Its only purpose is to support the liner, which protects the casing and supports the wire.

FIGURE 2 - DIRECT MOUNT/AUTOMATIC BARRELS

A directly mounted barrel plugs directly into the wire feeder. In a direct mount barrel the Water Out & Power Cable, water-in hose, gas hose come out of the barrel at a 90 degree angle and go to the Utility Station, and there is no casing/conduit. The feeder adapter comes out the top of the barrel and connects directly to the wire feeder.

FIGURE 3 - DIRECT MOUNT BARREL - REMOTELY MOUNTED

A third optional mounting method exists that combines features of direct and remote mounting. A direct mount barrel can be remotely mounted with a mounting arm or bracket, and a casing can be attached to the top of the barrel to run to the wire feeder as a remotely mounted barrel would. This unique solution might work for jobs with very limited space.

These alternative setups utilizing the D/F Utility Station enable the D/F barrels to run cooler, work above 1000 degree pre-heat, increase the weld quality (X-ray quality welds), have increased durability, and run the full range of wire through 1/8". It also allows for many different model options, saves on consumable costs, reduces down-time, and allows for a clean installation and ease in maintenance or replacement. The Utility Station is universal throughout the D/F product line. Every D/F barrel will hook up to the same Utility Station.



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