

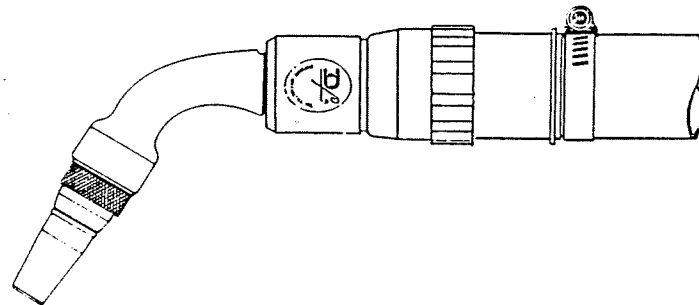
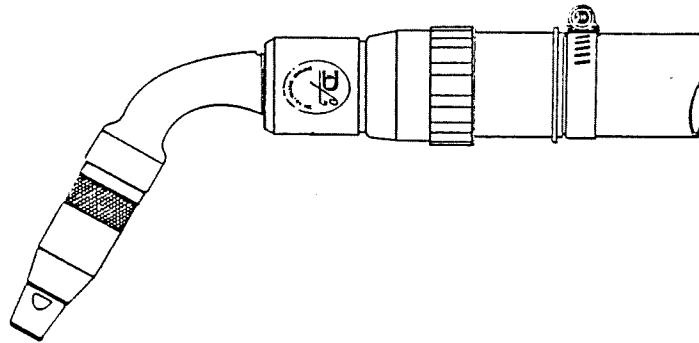


INSTRUCTION MANUAL
386 CCW/CTW - 55 Degree
Water Cooled Curved Guns
OCTOBER 1987
SUPERSEDES OCTOBER 1986
D/F PATENTS
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“MIG” WELDING PRODUCTS

REMOTE MOUNT---Docking Spool®

**WATER COOLED CURVED GUN
MODELS - CTW (Threaded Tip)
MODELS - CCW (Slip-in Tip)
55 DEGREE (SHORT GUN)**



INSTRUCTIONS and PARTS

INTRODUCTION

This manual covers Remote Mounted Water Cooled Curved Guns (dry nozzle type) for Mechanized or Robotic "MIG" and Gasless Welding. The curved guns accommodate a wire diameter range of .030"-1/16" hard wires and .035"-5/64" cored wires.

The equipment consists of four (4) basic components: a utility station, an intermediate utilities combination assembly, a Docking Spool [®] and a water cooled curved gun. The Docking Spool [®] is the principle component in this welding equipment arrangement. It accepts the utilities at the top end of the spool and provides a means of accepting the curved gun assembly at the lower end. In addition, several other features important to a welding system are provided. Incorporated in the water chamber of the Docking Spool [®] are check valves which provide a means of retaining the residual water in the lines when the curved gun is removed from the Docking Spool [®]. Also, a Posit Ring [®] is provided to allow positive location at the mounting bracket to achieve dimensional stability.

These 55 degree water cooled curved guns are illustrated herein with five (5) nozzle body configurations. The curved gun assemblies are designated by Models. Two (2) Models are illustrated in the parts breakdown list. The Model CCW Water Cooled Curved Gun has a current capability of 350 amperes in argon shielding. It accommodates a 2 1/2" current tip fastened by a collet action nut. The wire diameter with hard wire is .030"-1/16" and cored wire .035"-1/16" diameter.

The Model CTW Water Cooled Curved Gun has a current capacity range thru 600 amperes. Gun ratings of any Models are still contingent on the combination of current tip and shielding gas to be used. The Model CTW employs a threaded current tip and accommodates .030"-1/16" hard wire and .035"-5/64" cored wires.

The Model CTW-G is a Gasless Water Cooled Curved Gun with a current capacity thru 600 amperes with the use of the 7/16" threaded current tips. Model conversions may be simply made by applying the proper tip adapter.

On pages 10 to 13 are illustrated the complete equipment assemblies. There are several arrangements available that permit selection to be made to fit application requirements.

First, page 11 illustrates a standard arrangement with an optional utility station. A cable/water hose power coupling may also be desired in place of the utilities station.

Secondly, is shown a complete assembly which incorporates a D/F, patented connector (utilities station) arrangement which will accommodate the utilities brought from the source of supply.

IMPORTANT

Make certain the cooling water supply is at least the flow rate of 2 quarts per minute at 50 psi (80 psi maximum). Gun ratings are affected by shielding gases used, arc time, cooling time and inlet water temperature. Water outlet temperature should not exceed 120 °F.

To obtain maximum performance with this water cooled equipment a water circulator of the heat exchanger type with a heat displacement of 30,000 BTU's at 72 °F should be used.

SAFETY

Welding is not particularly hazardous when certain safety practices are followed. Anyone using this equipment should be thoroughly trained in safe welding practices. For more information refer to the following standards in these latest revisions and comply as applicable.

1. ANSI Standard Z49.1 Safety In Welding & Cutting
Obtainable from the American Welding Society,
2501 N.W. 7th Street
Miami, Florida 33125
2. ANSI Standard Z49.2 Fire Prevention In the Use of
Cutting & Welding Processes
Obtainable from the American National Standards
Institute
1430 Broadway
New York, NY 10018

DISASSEMBLY

To disassemble the water cooled curved gun, proceed as follows:

1. Prior to removing the curved gun from the DOCKING SPOOL[®] make certain that the power source and wire feeder are turned off. Unscrew nut 11 which will allow the gun assembly to be removed.
2. By removing flat head body screw 10 the body tube 12 may be pulled off the inner body 9. Nut 11 may also be removed from the inner body.
3. If the collet adapter 14 or threaded adapter 24 or 29 are to be replaced, proceed as follows:
 - a. Unscrew the nozzle body. If the insulator threads off with the nozzle body it may be necessary to grip the edge of the insulator 16 and turn it out. Do not apply excessive pressure to the insulator.
 - b. NOTE: Nozzle Body insulator threads can be reconditioned by rechasing with rear thread chaser tap.
4. Remove the adapter by using two (2) 5/8" wrenches - one to hold jam nut and the other to unscrew the adapter.
5. The Model CTW-Mini curved gun which utilizes a knurled nut to accommodate the gas nozzles may be disassembled by:
 - a. Removing the gas nozzle and current tip.
 - b. The adapter 16 may be removed by unscrewing with a open end wrench.
 - c. With adapter removed the centering disc 15, knurled nut 14 and washer 13 may be removed.

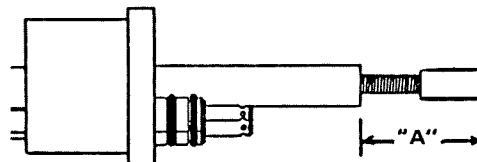
ASSEMBLY

1. To reassemble, slide nut 11 up on the inner body 9, follow this by sliding the body tube 12 on the inner body 9 and fasten with flat head screw 10.
2. To reassemble the forward end of the curved gun, reference 3, 4 and 5 as outlined in Disassembly.
3. To complete the gun assembly at this point examine the transfer "O" rings. Make replacement if necessary. Lubricate "O" rings with a silicone spray.

SPARE PARTS

It is recommended that the spare parts in TABLE I be on hand to assure minimum downtime.

ITEM	CODE NO.	Min. Quantity
Tip Adapter Nut	To Be Selected	1
Body Liner	To Be Selected	2
Current Tip	To Be Selected	10
Gas Nozzle	To Be Selected	5
Nozzle Insulator	To Be Selected	5
Insulating Washer	40080	2
Centering Washer	40082	2
Insulator	13163	2
"O" Ring	13921	6
"O" Ring	13920	12

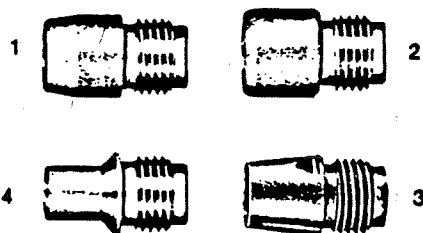


FITTING BODY LINERS (Ref. 16)

All body liners are furnished with longer than adequate length to accommodate the different length Water Cooled Nozzles. It is therefore necessary to fit the body liner for the specific tip and inner body adapter being used. The appropriate body liner should be inserted into the inner body until the liner trap bottoms out in the center tube. The tip may now be applied which will force the body liner back. After the tip is fastened a measurement of Dimension "A" plus 11/16" is the amount that the body liner shall be cut. The body liner is now at the proper length and may be reinserted into the inner body.

GAS NOZZLE - TABLE II

REF.	CODE NO.	TYPE	O.D.	I.D.
1	10362	Copper Tapered	15/16"	5/8"
2	10340	Copper Straight	1"	3/4"
3	10359	Copper Tapered	15/16"	5/8"
4	10374	Copper Straight	5/8"	7/16"



WIRE CASINGS/LINERS

Two (2) types of wire casings are available - a flexible type which accepts replaceable wire liners accommodating wire diameters from .030" thru 1/16" and a single piece type sized for various wire diameters. The single piece type is a stiffer type casing and must be used for wire diameters of 5/64" thru 1/8". The 1/8" casings will accommodate replaceable liners when a rigid casing is desired. It is recommended that the replaceable liner type wire casings be considered since the most cost savings can be realized by the replacement of the liner only.

All liners are furnished with adequate length and must be fit. Insert the liner at the feeder adapter fitting until it abuts the Machine Barrel or Gun mounted to the Docking Spool™, a measurement may now be taken of the extending end from the feeder adapter. To allow the liner trap to bottom in casing fitting cut 11/16" shorter than the measured amount. Remove the liner and cut off. Liner may now be reinserted in the casing, replace wire inlet and apply to wire feed.

TABLE III – CURRENT TIPS

CURRENT TIPS – 7/16" DIAMETER THREADED

	WIRE SIZE	WIRE TYPE	CODE NO.
(Tip provides 1/8" set back)	.035"	Hard	15116
	.045"	Hard	15117
	.052"	Hard	15121
	1/16"	Hard	15118
	5/64"	Hard	15119
	3/32"	Hard	15120
(Tip provides 3/8" set back)	.045"	Cored	15106
	1/16"	Cored	15107
	5/64"	Cored	15108
	3/32"	Cored	15109
	7/64"	Cored	15110
	1/8"	Cored	15111
(Tip provides 1/8" set back)	3/64"	Aluminum	15126
	1/16"	Aluminum	15125
	3/32"	Aluminum	15124
	1/8"	Aluminum	15123



CURRENT TIPS – 5/16" DIAMETER THREADED

	WIRE SIZE	WIRE TYPE	CODE NO.
(Tip provides 1/8" set back)	.030"	Hard	10850
	.035"	Hard	10756
	.045"	Hard	10757
	.052"	Hard	10841
	1/16"	Hard	10759
	5/64"	Hard	10761
	3/32"	Hard	10763
(Tip provides 3/8" set back)	.035"	Cored	10852
	.045"	Cored	10750
	.052"	Cored	10853
	1/16"	Cored	10751
	5/64"	Cored	10752
	3/32"	Cored	10753
	7/64"	Cored	10754



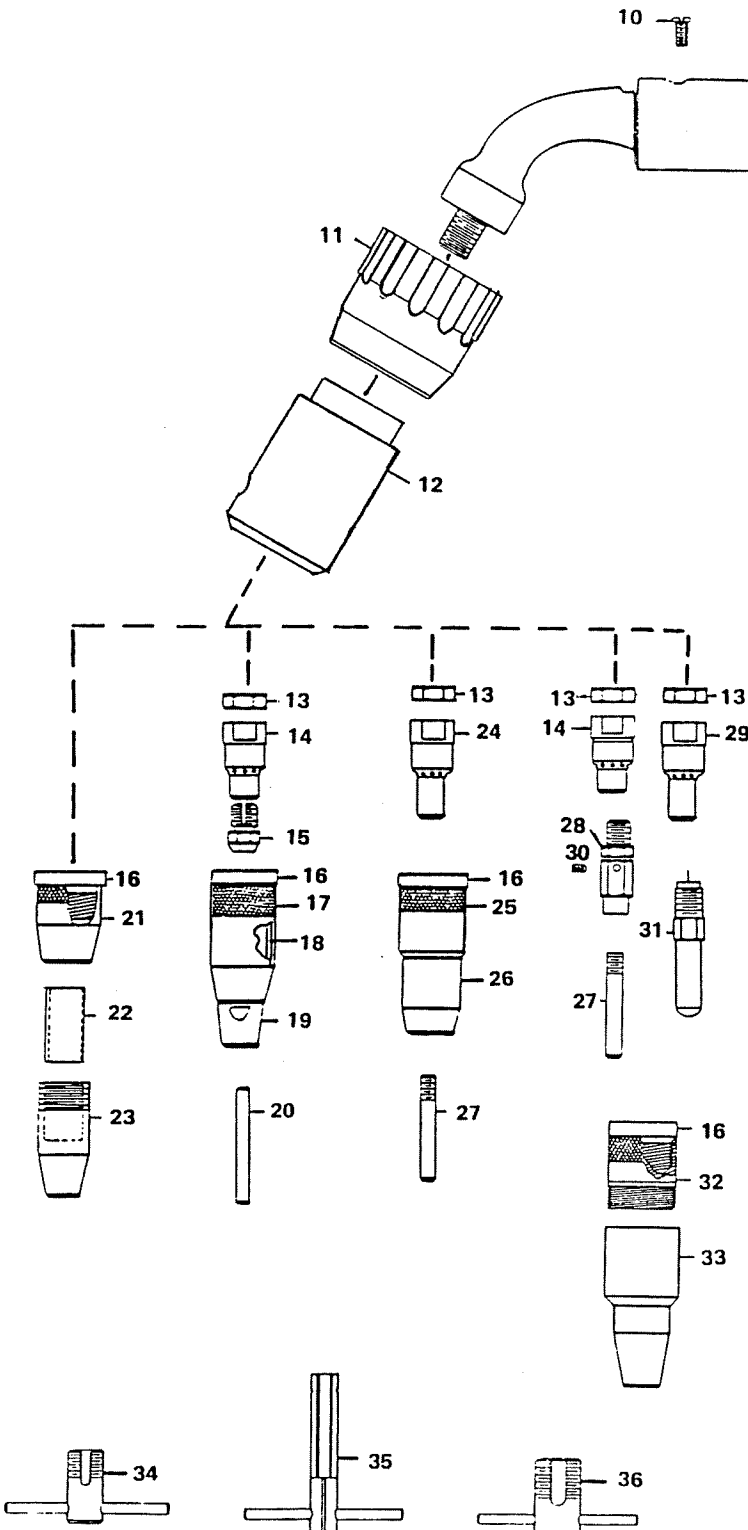
CURRENT TIP – 2 1/2" SLIP-IN

	WIRE SIZE	WIRE TYPE	CODE NO.
	.030"	Hard	10794
	.035"	Hard	10795
	.045"	Hard	10796
	.052"	Hard	10840
	1/16"	Hard	10797



REMOTE MOUNT---Docking Spool[®]

WATER COOLED CURVED GUN MODELS - CTW (Threaded Tip) MODELS - CCW (Slip-in Tip) 55 DEGREE

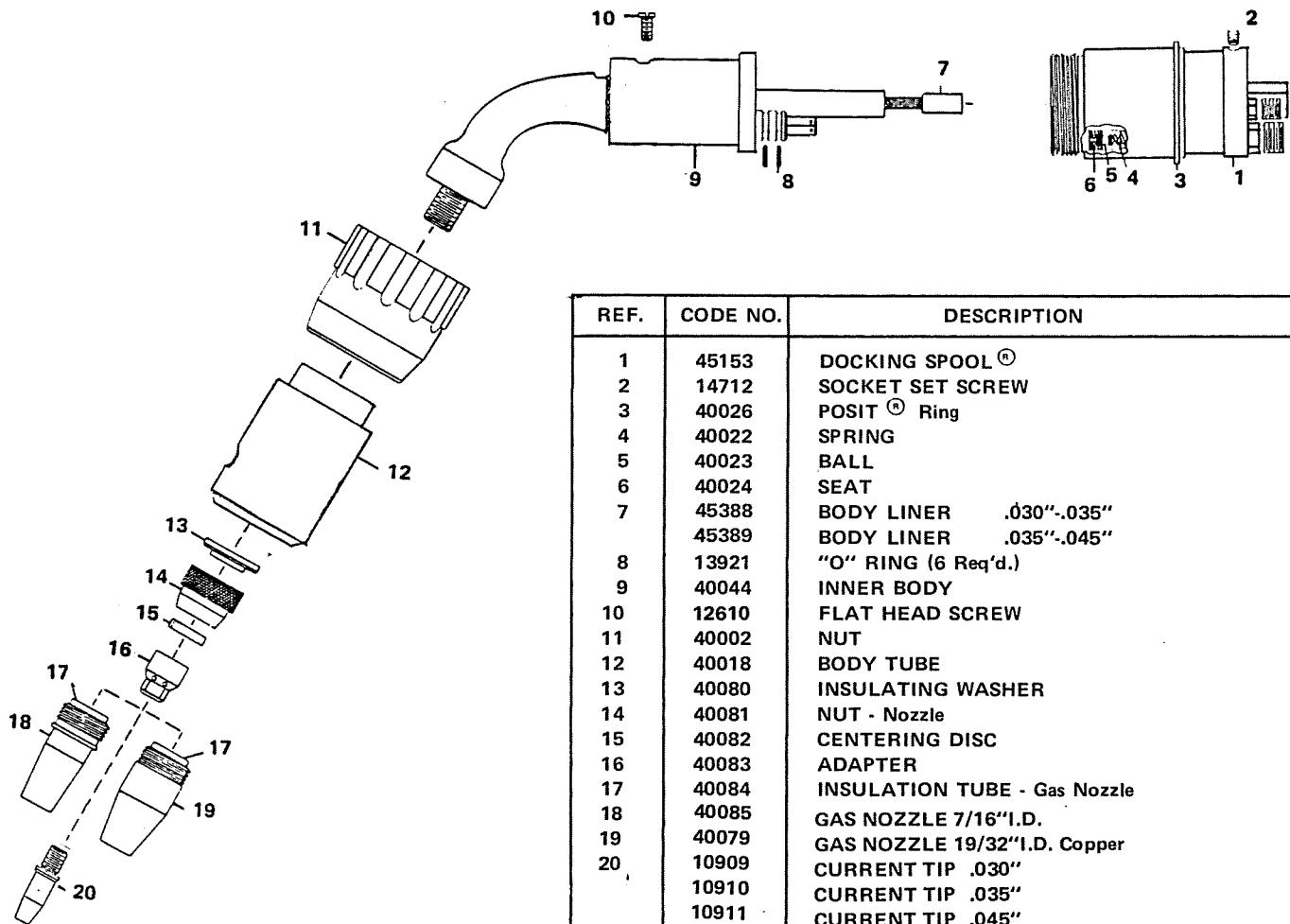


REF.	CODE NO.	DESCRIPTION
1	45153	DOCKING SPOOL [®]
2	14712	SOCKET SET SCREW
3	40026	POSIT [®] Ring
4	40022	SPRING
5	40023	BALL
6	40024	SEAT
7		BODY LINER - See Chart This Page
8	13921	"O" RING (2 Req'd.)
9	40044	INNER BODY
10	12610	FLAT HEAD SCREW
11	40002	NUT
12	40018	BODY TUBE
13	16202	JAM NUT
14	13205	ADAPTER - Collet Nut
15	11950	COLLET NUT
16	13163	INSULATOR
17	13176	NOZZLE BODY (With Insulator)
	13197	NOZZLE BODY (Less Insulator)
18	16605	INTERNAL INSULATOR
19		GAS NOZZLE - See TABLE II
20		CURRENT TIP - See TABLE III
21	16383	NOZZLE BODY (With Insulator)
	16384	NOZZLE BODY (Less Insulator)
22	16426	INSULATOR
23	16379	GAS NOZZLE .540" I.D.
	16380	GAS NOZZLE .625" I.D.
24	13207	ADAPTER - 5/16" Threaded Tip
25	13177	NOZZLE BODY (With Insulator)
	13198	NOZZLE BODY (Less Insulator)
26	10379	GAS NOZZLE
27		CURRENT TIP - 5/16" Threaded Tip - See TABLE III
28	12046	EXTENSION ADAPTER - 5/16" Th'd. Tip
29	18250	ADAPTER - 7/16" Threaded Tip
30	13881	SOCKET SET SCREW
31		CURRENT TIP - See TABLE III
32	13175	NOZZLE BODY (With Insulator)
	13196	NOZZLE BODY (Less Insulator)
33	10368	GAS NOZZLE - 3/4" I.D.
34	14610	NOZZLE THREAD CHASER TAP (Front)
35	12111	WRENCH
36	14612	NOZZLE THREAD CHASER TAP (Rear)

REF.	WIRE SIZE	CODE NO.
7	.030"-.035"	45388
	.035"-.045"	45389
	.045"-1/16"	45390
	5/64"-3/32"	45391

REMOTE MOUNT---Docking Spool[®]

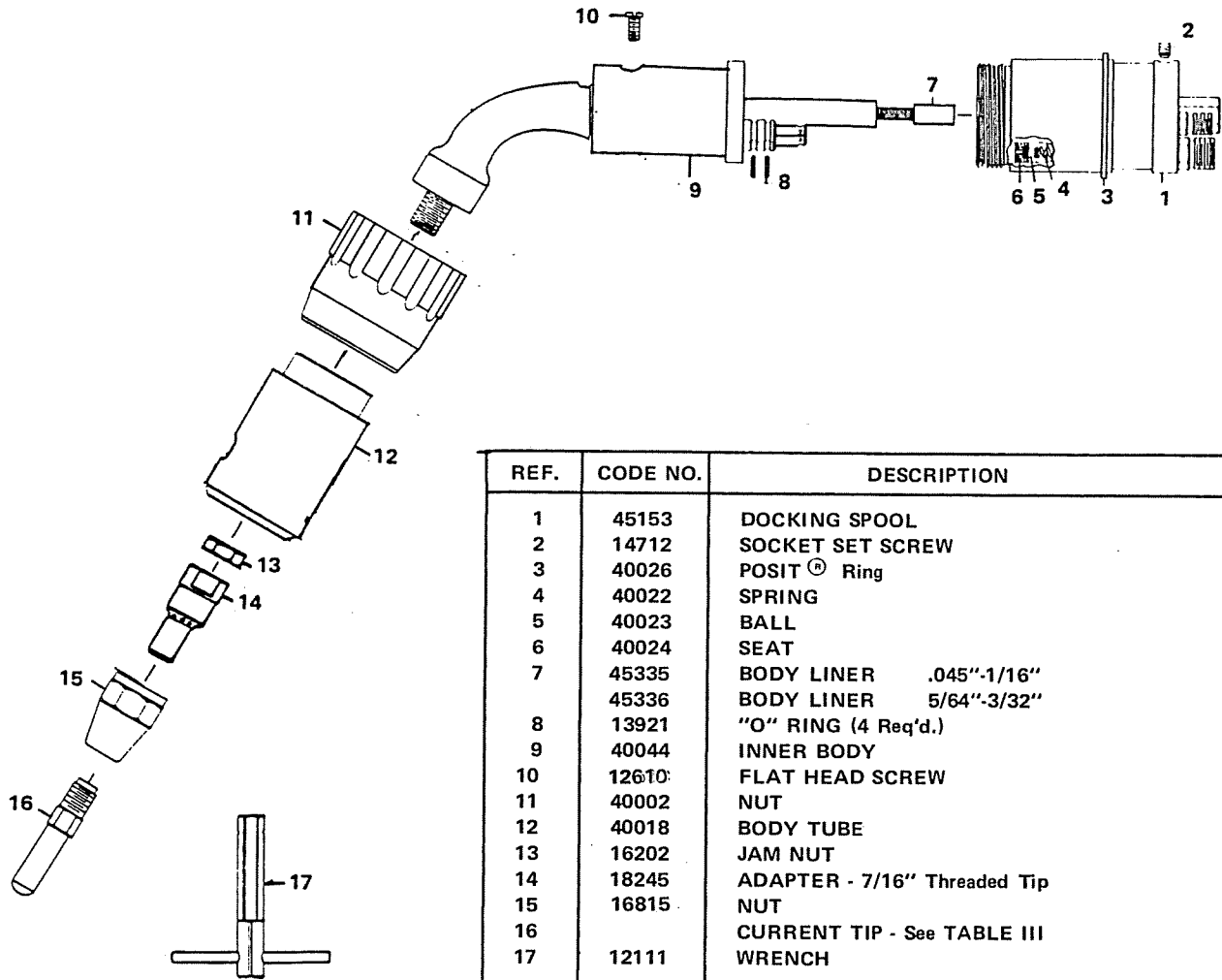
WATER COOLED CURVED GUN MODEL - CTW (Threaded Tip) 55 DEGREE - (SHORT GUN)



REF.	CODE NO.	DESCRIPTION
1	45153	DOCKING SPOOL [®]
2	14712	SOCKET SET SCREW
3	40026	POSIT [®] Ring
4	40022	SPRING
5	40023	BALL
6	40024	SEAT
7	45388	BODY LINER .030"-.035"
	45389	BODY LINER .035"-.045"
8	13921	"O" RING (6 Req'd.)
9	40044	INNER BODY
10	12610	FLAT HEAD SCREW
11	40002	NUT
12	40018	BODY TUBE
13	40080	INSULATING WASHER
14	40081	NUT - Nozzle
15	40082	CENTERING DISC
16	40083	ADAPTER
17	40084	INSULATION TUBE - Gas Nozzle
18	40085	GAS NOZZLE 7/16" I.D.
19	40079	GAS NOZZLE 19/32" I.D. Copper
20	10909	CURRENT TIP .030"
	10910	CURRENT TIP .035"
	10911	CURRENT TIP .045"
	10912	CURRENT TIP .052"

REMOTE MOUNT---Docking Spool[®]

WATER COOLED CURVED GUN MODEL - CTW (Threaded Tip) 55 DEGREE - GASLESS (SHORT GUN)



REF.	CODE NO.	DESCRIPTION
1	45153	DOCKING SPOOL
2	14712	SOCKET SET SCREW
3	40026	POSIT [®] Ring
4	40022	SPRING
5	40023	BALL
6	40024	SEAT
7	45335	BODY LINER .045"-1/16"
	45336	BODY LINER 5/64"-3/32"
8	13921	"O" RING (4 Req'd.)
9	40044	INNER BODY
10	12610	FLAT HEAD SCREW
11	40002	NUT
12	40018	BODY TUBE
13	16202	JAM NUT
14	18245	ADAPTER - 7/16" Threaded Tip
15	16815	NUT
16		CURRENT TIP - See TABLE III
17	12111	WRENCH

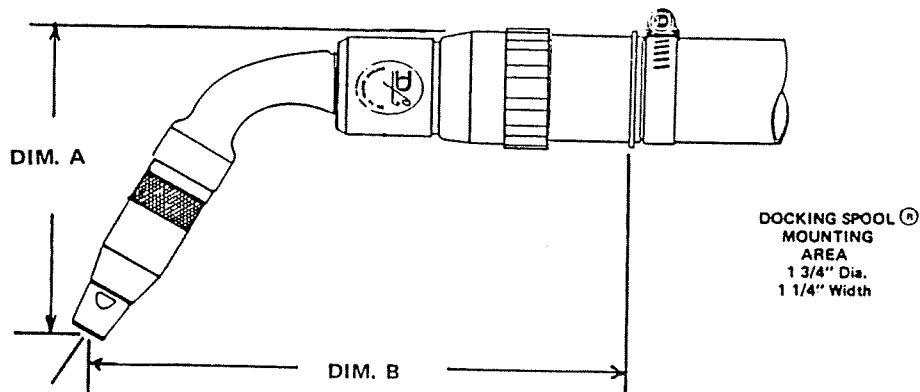
ORDERING INFORMATION: TO OBTAIN COMPLETE ASSEMBLIES - REFERENCE PAGES 10 & 11 FOR STANDARD ASSEMBLIES OR PAGES 12 & 13 FOR ASSEMBLIES WITH CONNECTOR.

NOTE: Add Footage to Code Number for Length Desired.

Example: Require Standard Model CCW - Nozzle Body 13197 with 8 Ft. Utilities —
Code No. 40626-8

Advise Wire Diameter and Feeder Manufacturer

NOZZLE ARRANGEMENT	Complete Standard Assemblies Consists of Gun Assembly, DOCKING SPOOL [®] and Utility Combination		Complete Assembly With Connector Consists of Gun Assembly, DOCKING SPOOL [®] , Utilities Combination and Connector	
	Model CCW	Model CTW	Model CCW	Model CTW
REF. 3 MINI		40620		40640
REF. 4 Nozzle Body 13197	40626	40621	40646	40641
REF. 5 Nozzle Body 13198	40627	40622	40647	40642
REF. 6 Nozzle Body 16384	40628	40623	40648	40643
REF. 7 Nozzle Body 13196	40629	40624	40649	40644
REF. 8 GASLESS		40625		40645



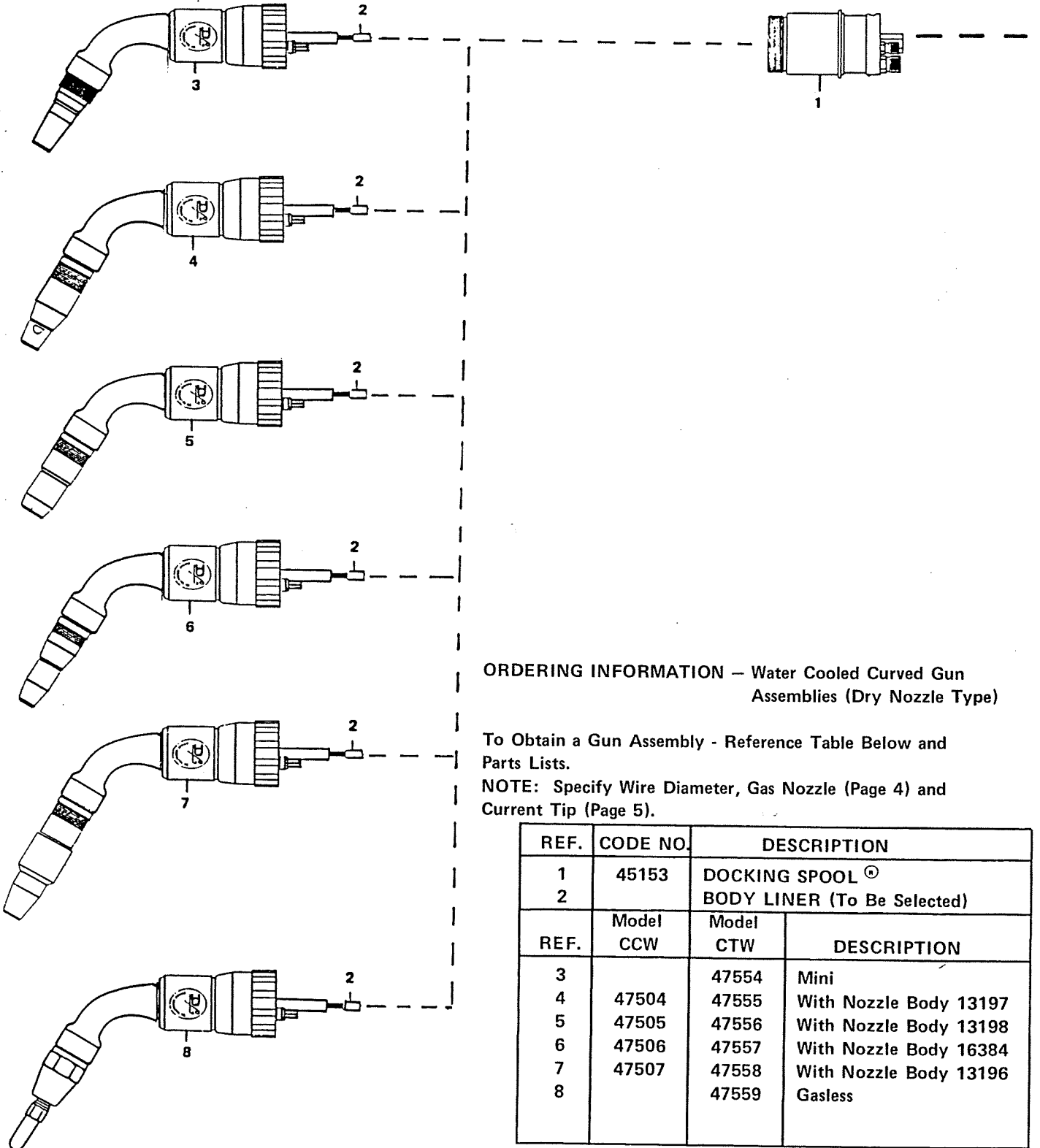
FRONT END	DIM. A	DIM. B
MINI	4.152"	8.984"
13197 NOZZLE BODY	4.890"	9.794"
13198 NOZZLE BODY	4.890"	9.794"
16383 NOZZLE BODY	4.890"	9.794"
13196 NOZZLE BODY	5.657"	10.375"
GASLESS	4.930"	9.750"

REMOTE MOUNT---Docking Spool[®]

WATER COOLED CURVED GUN MODELS - CTW (Threaded Tip)

MODELS - CCW (Slip-in Tip)

55 DEGREE (SHORT GUN)



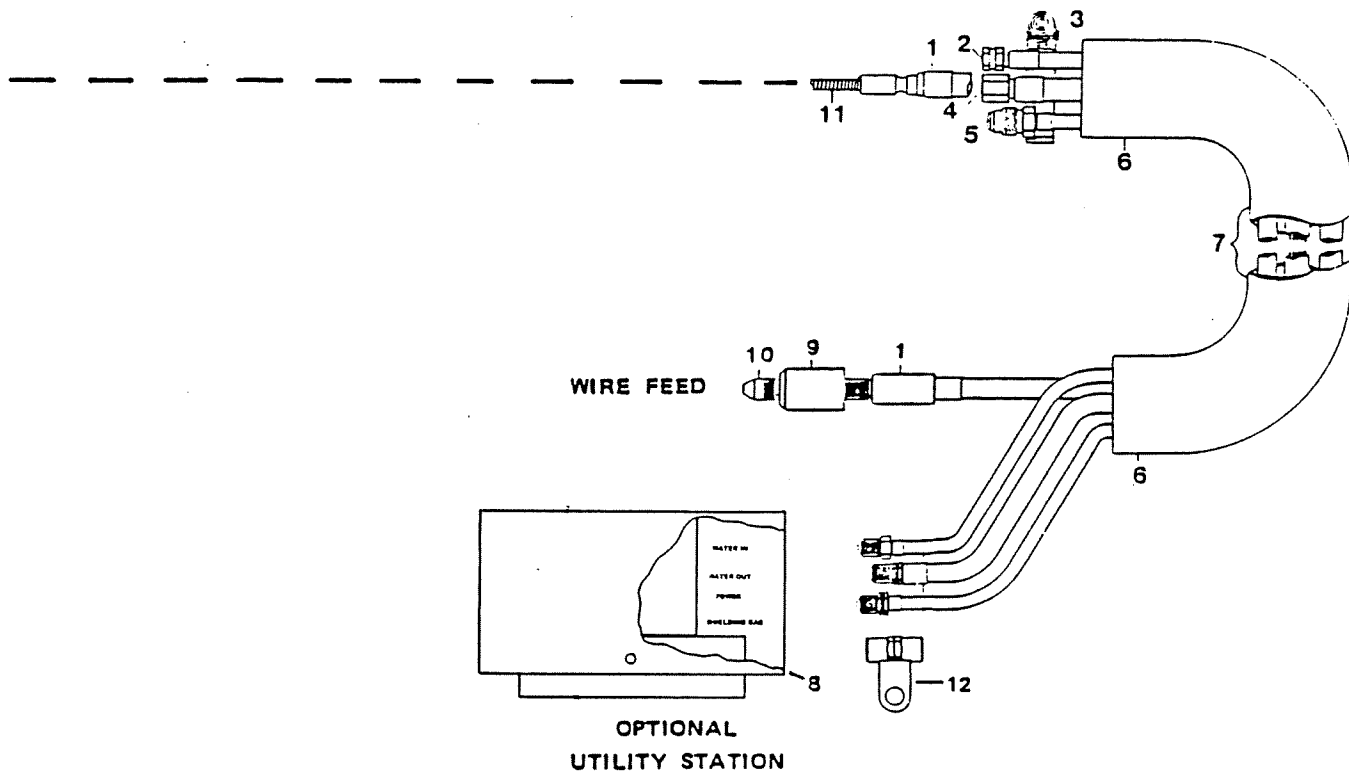
ORDERING INFORMATION — Water Cooled Curved Gun Assemblies (Dry Nozzle Type)

To Obtain a Gun Assembly - Reference Table Below and
Parts Lists.

NOTE: Specify Wire Diameter, Gas Nozzle (Page 4) and
Current Tip (Page 5).

REF.	CODE NO.	DESCRIPTION	
1	45153	DOCKING SPOOL [®]	
2		BODY LINER (To Be Selected)	
REF.	Model CCW	Model CTW	DESCRIPTION
3		47554	Mini
4	47504	47555	With Nozzle Body 13197
5	47505	47556	With Nozzle Body 13198
6	47506	47557	With Nozzle Body 16384
7	47507	47558	With Nozzle Body 13196
8		47559	Gasless

STANDARD ASSEMBLIES



REF.	CODE NO.	DESCRIPTION	REF.	CODE NO.	DESCRIPTION
1	46350	CASING .030"-.035" (REQUIRES Liner)	7	46624	5/64"-3/32"
	46370	CASING .035"-1/16" (REQUIRES Liner)		46625	7/64"-1/8"
	46420	CASING .035"-.045" SINGLE PIECE	8	45196	OPTIONAL UTILITY STATION
	46440	CASING .045"-1/16" SINGLE PIECE	9		FEEDER ADAPTER - See TABLE IV
	46460	CASING 5/64"-3/32" SINGLE PIECE	10		INLET - See TABLE V
	46480	CASING 7/64"-1/8" SINGLE PIECE	11	47020	LINER .030"-.035" Hard/Cored
	46500	CASING 1/8" AL. SINGLE PIECE		47021	LINER .035"-.045" Hard/Cored
2	46300	WATER IN HOSE ASSEMBLY		47022	LINER .045"-1/16" Hard/Cored
3	14803	CLAMP		47023	LINER 3/64" Soft
4	46320	WATER OUT HOSE & POWER CABLE ASSY.		47024	LINER 1/16" Soft
5	46260	GAS HOSE ASSEMBLY - STANDARD		47025	LINER 3/32" Soft
	46281	GAS HOSE ASSEMBLY - HIGH CAPACITY	12	14430	CABLE WATER HOSE POWER COUPLING
6	46630	CABLE/HOSE SHEATH			
7		UTILITY COMBINATION - CONSISTING OF			
		ITEMS 1, 2, 3, 4, 5, 6 & 11			
	46620	.030"-.035"			
	46621	.035"-1/16"			
	46622	.035"-.045"			
	46623	.045"-1/16"			

ORDERING INFORMATION: ADD FOOTAGE DIGIT TO ITEM CODE NUMBER FOR LENGTH REQUIRED
 EXAMPLE - REQUIRE 8 FT. WATER IN HOSE ASSEMBLY - 46300-8

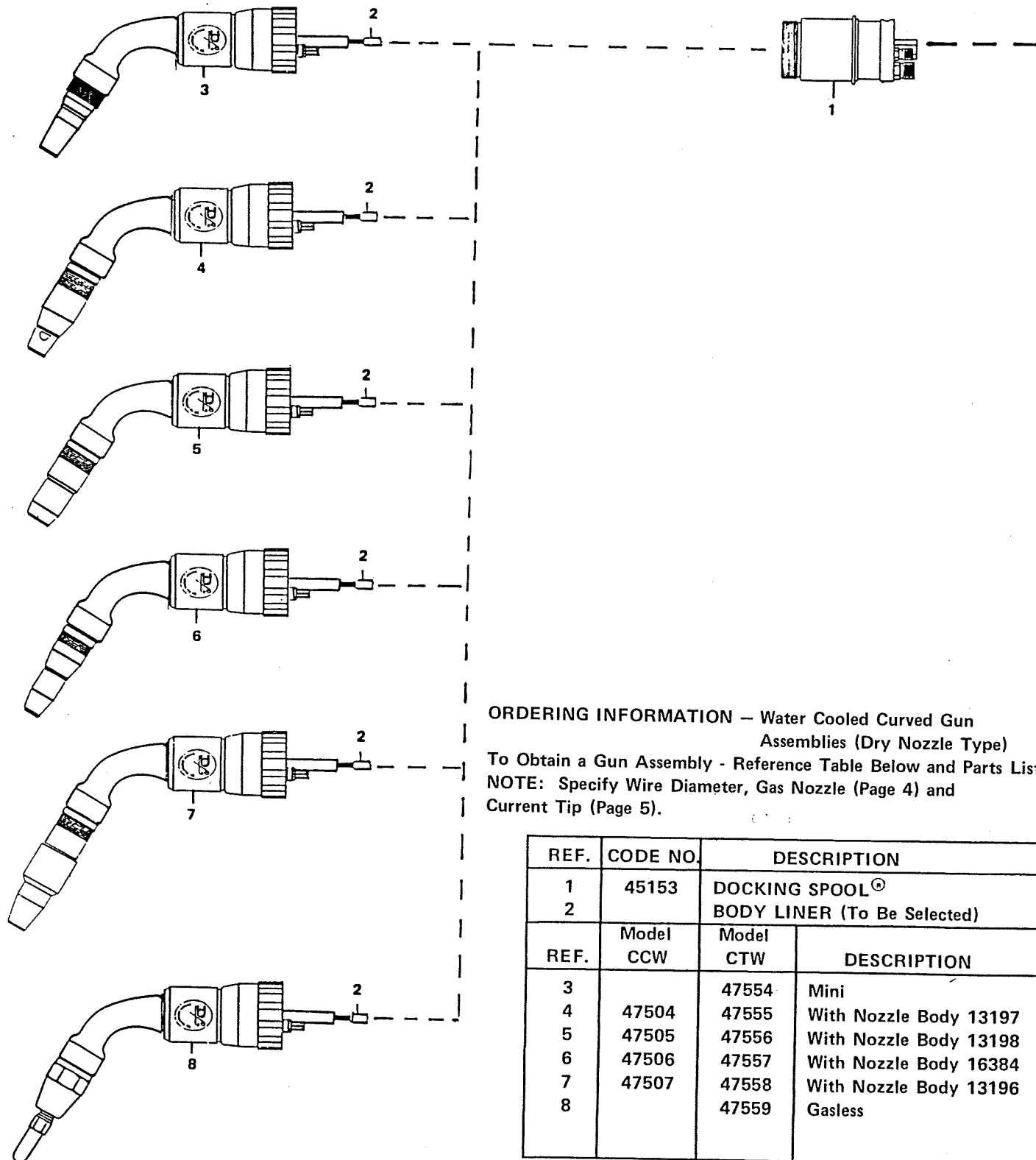
REMOTE MOUNT---Docking Spool[®]

WATER COOLED CURVED GUN

MODELS - CTW (Threaded Tip)

MODELS - CCW (Slip-in Tip)

55 DEGREE (SHORT GUN)



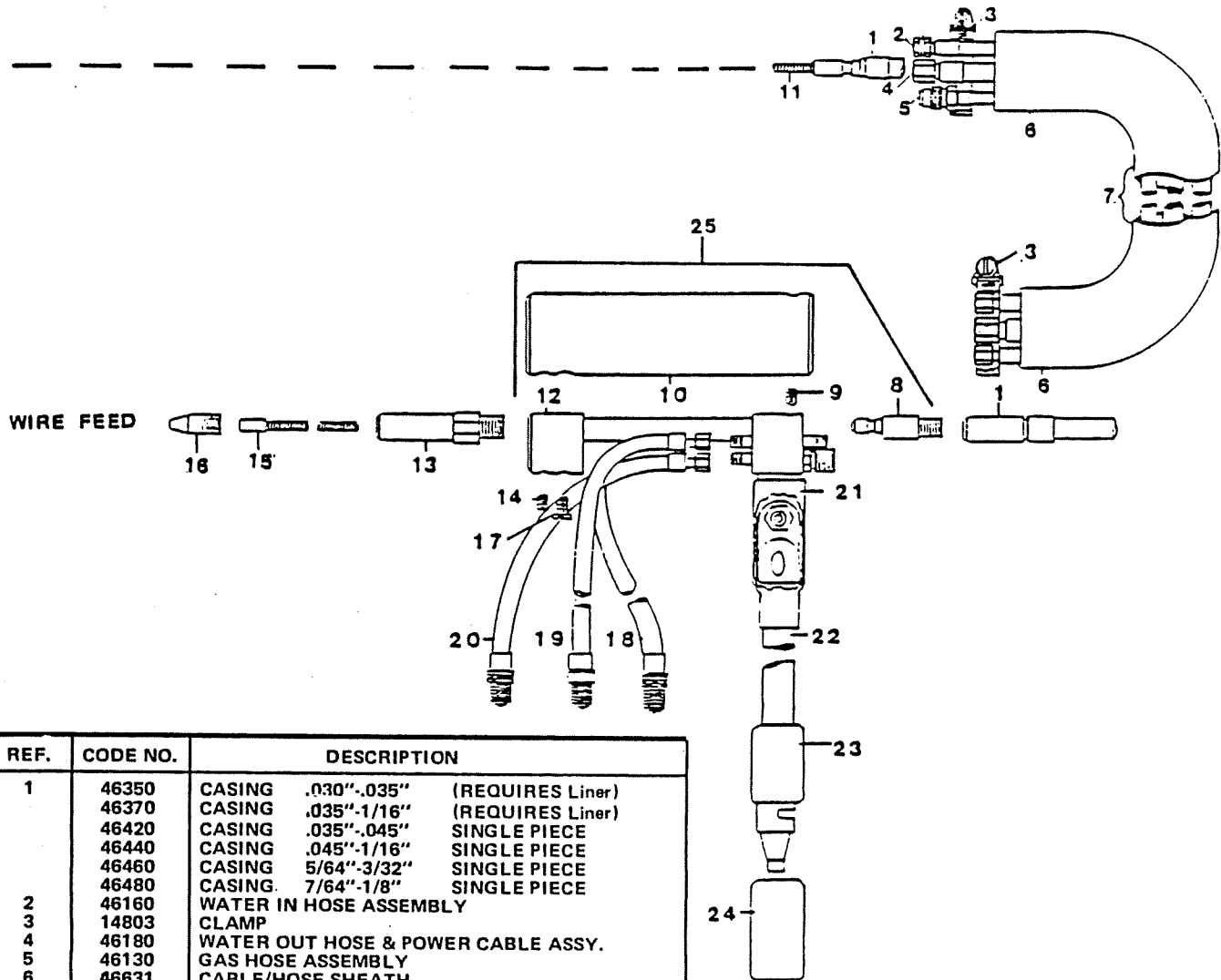
ORDERING INFORMATION - Water Cooled Curved Gun Assemblies (Dry Nozzle Type)

To Obtain a Gun Assembly - Reference Table Below and Parts Lists.

NOTE: Specify Wire Diameter, Gas Nozzle (Page 4) and Current Tip (Page 5).

REF.	CODE NO.	DESCRIPTION	
1	45153	DOCKING SPOOL [®]	
2		BODY LINER (To Be Selected)	
REF.	Model CCW	Model CTW	DESCRIPTION
3		47554	Mini
4	47504	47555	With Nozzle Body 13197
5	47505	47556	With Nozzle Body 13198
6	47506	47557	With Nozzle Body 16384
7	47507	47558	With Nozzle Body 13196
8		47559	Gasless

CONNECTOR HOSES-CASING-CABLE ASSEMBLIES



REF.	CODE NO.	DESCRIPTION
1	46350	CASING .030"-.035" (REQUIRES Liner)
	46370	CASING .035"-1/16" (REQUIRES Liner)
	46420	CASING .035"-.045" SINGLE PIECE
	46440	CASING .045"-1/16" SINGLE PIECE
	46460	CASING 5/64"-3/32" SINGLE PIECE
	46480	CASING 7/64"-1/8" SINGLE PIECE
2	46160	WATER IN HOSE ASSEMBLY
3	14803	CLAMP
4	46180	WATER OUT HOSE & POWER CABLE ASSY.
5	46130	GAS HOSE ASSEMBLY
6	46631	CABLE/HOSE SHEATH
7		UTILITY COMBINATION - CONSISTING OF
		ITEMS 1, 2, 3, 4, 5, 6 & 11
	46640	.030"-.035" (REQUIRES Liner)
	46641	.035"-1/16" (REQUIRES Liner)
	46642	.035"-.045" SINGLE PIECE
	46643	.045"-1/16" SINGLE PIECE
	46644	5/64"-3/32" SINGLE PIECE
	46645	7/64"-1/8" SINGLE PIECE
8	15953	ADAPTER - CASING .030"-1/16"
	15954	ADAPTER - CASING 5/64"-7/64"
9	14714	SOCKET SET SCREW
10	12874	CONNECTOR BODY TUBE
11	47020	LINER .030"-.035" Hard/Cored
	47021	LINER .035"-.045" Hard/Cored
	47022	LINER .045"-1/16" Hard/Cored
	47023	LINER 3/64" Aluminum
	47024	LINER 1/16" Aluminum
	47025	LINER 3/32" Aluminum
12	12983	CONNECTOR INNER BODY
13		FEEDER ADAPTER - See TABLE IV
14	14714	SOCKET SET SCREW
15		LINER REQUIRED WITH SINGLE PIECE CASING

REF.	CODE NO.	DESCRIPTION
15	18240	LINER .030"-.035"
	14225	LINER .035"-.045"
	14226	LINER .045"-1/16"
	16212	LINER 5/64"-7/64"
16		INLETS = See TABLE V
17	12610	FLAT HEAD SCREW
18	18370	CONNECTOR WATER IN HOSE ASSY. 2 Ft.
19	18377	CONNECTOR GAS HOSE ASSEMBLY 2 Ft.
20	18370	CONNECTOR WATER OUT HOSE ASSY. 2 Ft.
21	18239	HEAT SHRINK
22	18258	POWER CABLE ASSEMBLY - 4/0 2 Ft.
		(With Male Connector)
23	18256	CONNECTOR - Male
24	18257	CONNECTOR - Female
25		CONNECTOR ASSEMBLY - CONSISTING OF
		ITEMS 8, 9, 10, 12, 14, 15, 17, 18, 19, 20, 21,
		22, 23 & 24 - SPECIFY SIZE WIRE
	40060	.030"-1/16"
	40061	5/64"-7/64"

ORDERING INFORMATION: ADD FOOTAGE DIGIT TO ITEM CODE NUMBER FOR LENGTH REQUIRED
EXAMPLE - REQUIRE 8 FT. WATER IN HOSE ASSEMBLY - 46160-8

TABLE IV — FEEDER ADAPTERS

Manufacturer	Models	Wire Diameter	Remote Adapter		
			Hard or Al	Cored	*Stub Liner
Aircro	AHF-T	.030"-.035" Hard	13031		16166
	AHF-N	.045"-.1/16" Hard	13031		16167
	AHF-R1	3/64" Soft	13031		16654
	AHF-U1	1/16" Soft	13013		16655
	AHF-V1	3/32" Soft	13031		16656
	AHF-V6	5/64"-3/32" Cored		13029	16168
	AHF-NP	7/64" Cored		13029	16169
Compek-O-Matic	480, 120, 125	.035"-.045" Hard	13486		16690
		.045"-.1/16" Hard	13486		16691
		3/64" Soft	13486		16694
		1/16" Soft	13486		16695
		3/32" Soft	13486		16696
		5/64"-3/32" Cored		16612	16692
		7/64" Cored		16612	16693
	10, 25, 103-8500		13481		
	No. 75	.035" Hard	13482		
		.045" Hard	13486		
Hobart	All Models	1/16" Hard	13489		
		3/64"-1/16"-3/32" Al	13490		
		5/64"-3/32" Cored	13491		
		7/64" Cored	13492		
		.030"-.035" Hard	13067		16665
		.035"-.045" Hard	13067		16666
		.045"-.1/16" Hard	13067		16667
Lincoln	LN-7 LN-8	3/64" Soft	13067		16670
		1/16" Soft	13067		16671
		3/32" Soft	13067		16672
		(5/64"-7/64") Cored		16087	16668
	LN-9 LN-8	.035"-.045" Hard	13110		16698
		.045"-.1/16" Hard	13110		16699
		3/64" thru 3/32" Al	13111		
Water Cooled Guns	LN-9 No Lug	5/64"-3/32" Cored		13112	16700
		7/64" Cored		13112	16701
		.035"-.045" Hard	16581		16711
		.045"-.1/16" Hard	16581		16712
Air Cooled Guns	LN-9 Adapter with Lug	5/64"-3/32" Cored		16582	16713
		7/64" Cored		16582	16714
		.035"-.045" Hard	16373		16703
		.045"-.1/16" Hard	16373		16704
		5/64"-3/32" Cored		16527	16705
		7/64" Cored		16527	16705

Manufacturer	Models	Wire Diameter	Remote Adapter		
			Hard or Al	Cored	Stub Liner
Linde	SWM31	Casing to Feeder (Accepts Linde Outlet Guide)	13048		
	SWM34				
	SWM37				
	SWM38				
	EH8	D/F Insert			
		.035"-.045" Hard	13047		
		.045"-1/16" Hard	13048		
		5/64"-3/32" Cored		13049	
		3/64"-1/16" Al	13050		
	SWM11	.035"-.045" Hard	13043		16890
	SWM113	.045"-1/16" Hard	13043		16891
	SWM23	3/64" Soft	13043		16894
	SWM25	1/16" Soft	13043		16895
	EH35	3/32" Soft	13043		16896
	EH10	5/64"-3/32" Cored		13052	16892
		7/64" Cored		13052	16893
MHF	MHFC		13115		
	10A	.030"-.035" Hard	13120		
	30A	.035"-.045" Hard	13121		
		.045"-1/16" Hard	13122		
		5/64"-3/32" Cored		13123	
MHF (.50" Series)	S-52A	.030"-.035" Hard	16557		16673
	S-52E	.035"-.045" Hard	16557		16674
	S-54E	.045"-1/16" Hard	16557		16675
	S-52D	3/64" Soft	16557		16679
	S-54D	1/16" Soft	16557		16680
	D-52D	3/32" Soft	16557		16681
		5/64"-3/32" Cored		16559	16676
		7/64" Cored		16559	16677
Weatht- house	SA2/SA605	.035" Hard	13003		
	SA625	.045" Hard	13004		
	SA-505-C	1/16" Hard	13005		
	SA205/SA225	3/64"-3/32" Cored	13006		
		5/64"-3/32" Cored		13007	
		7/64" Cored		13008	

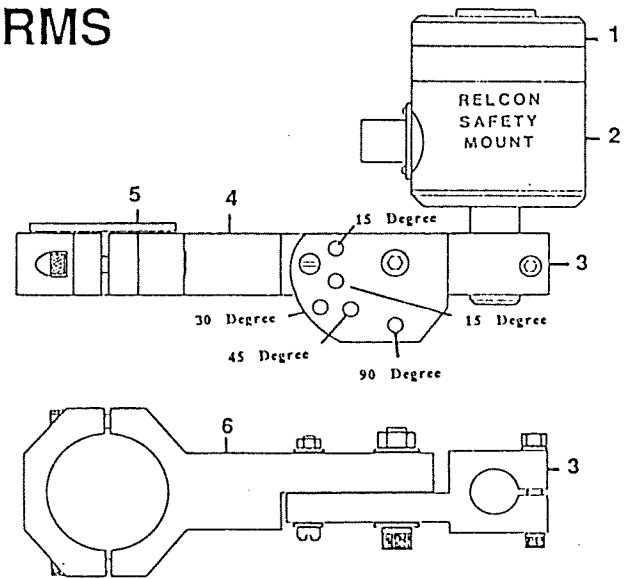
*Stub liners only required in feeder adapter when single piece casing is used.

TABLE V — INLETS

Wire Size	Steel Code No.	Brass Code No.	Nylon Code No.
.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

ROBOT SAFETY MOUNT and MOUNTING ARMS

Ref. Code No.	Description
1	Insulating Disc-Ref.Table-A
2	40519 Relcon Safety Mount-Medium Duty
	40520 Relcon Safety Mount-Heavy Duty
3	40540 Shaft Bracket
4	40562 Arm Assembly-COMplete 6"
	40563 Arm Assembly-COMplete 8"
	40564 Arm Assembly-COMplete 10"
5	40539 Bushing
6	40565 Arm-ONLY 6"
	40566 Arm-ONLY 8"
	40567 Arm ONLY 10"

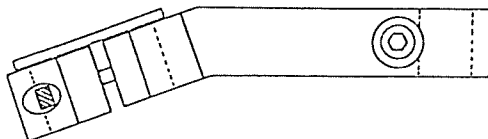


UNIVERSAL MOUNTING ARM



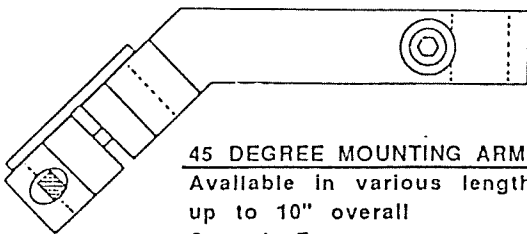
STRAIGHT MOUNTING ARMS

Available in various lengths
up to 10" overall
Consult Factory



10 DEGREE MOUNTING ARMS

Available in various lengths
up to 10" overall
Consult Factory



45 DEGREE MOUNTING ARMS

Available in various lengths
up to 10" overall
Consult Factory

EXTENSION ARMS

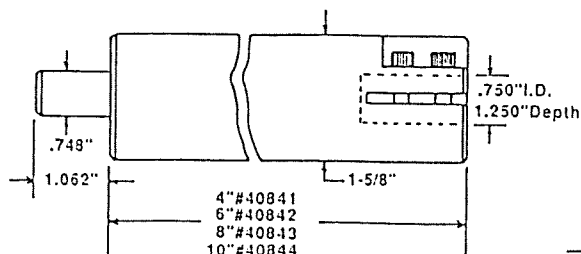
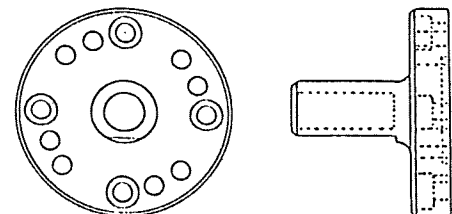


TABLE A -INSULATING DISCS

ROBOT MODEL		CODE NO.
CYBOTECH	H-80 Series	40507
	H-280 Series	40507
	WV-15	40507
	TH-8	40507
	GA-100(GANTRY)	40507
GMF	S100	40547
	S200	40547
	Arc Mate	40547
HITACHI	PW-10	40507
MILACRON	T3-726	40521
	T3-746	40522
	T3-776	40523
	T3-786	40524
	T3-566	40525
	T3-586	40526
	T3-735	40527
	T3-646	40546
MOTOMAN		40506
WESTINGHOUSE	Komatsu RWL-0005	40548
	Unimation 760	40549

FLANGED-POST MOUNT

Code No. 40589



WARRANTY

This Equipment is sold by D/F Machine Specialties, Incorporated, under the warranty set forth in the following paragraph. Such warranty is extended only to the buyer who purchases the equipment directly from D/F or its authorized distributor as new merchandise.

The gun and cable assemblies are warranted by D/F to be free from manufacturing defects for 90 days after delivery by D/F, provided that the equipment is properly operated under conditions of normal use and that the regular periodic maintenance and service is performed. Expendable parts are not warrantied for any specific time. Expendable parts referred to herein would be the nozzles, current tips, collets, spatter discs, insulators, casing liners and wire inlets. D/F's sole obligation under this warranty is limited to making replacement at its manufacturing facility for gun assemblies which are returned to it with transportation charges prepaid, and upon D/F's examination have been found to be so defective.

The foregoing warranty shall not apply if the gun assemblies have been repaired or altered by anyone other than a D/F representative or if the equipment has been subject to abuse, misuse, negligence or accident. There are no warranties which extend beyond the description of the gun assemblies in the manual.

The user of the gun assemblies shall have the sole responsibility for any malfunction which results from improper use or repair by anyone other than D/F.



D/F® MACHINE SPECIALTIES, INC.
1750 HOWARD DRIVE, NORTH MANKATO, MN 56003

"MIG" & "TIG" WELDING PRODUCTS

(507) 625-6200 FAX (507)625-6203