

MODEL 95-WF
REMOTE WIRE FEEDER
OPERATION MANUAL

MODEL 95-WF REMOTE PUSHER WIRE FEEDER ASSEMBLY OPERATION MANUAL

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WARNING




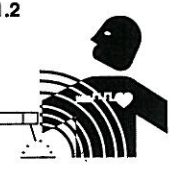













The nature of the GTAW process creates some potential hazards. In accordance with international safety regulations the “exclamation symbol” indicates that this equipment is considered “Hazardous” UNTIL an operator has been made aware of these “potentials” by READING THIS MANUAL. The lightning flash symbol indicates that there are potential electrical hazards. IT IS THE OPERATORS RESPONSIBILITY TO INSURE THAT THEY HAVE READ AND/OR BEEN MADE AWARE OF ALL OF THE SAFETY RELATED ITEMS CONTAINED IN THIS MANUAL.

First Engineering Edition July 15, 1991
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REV	DCO	CHANGE DESCRIPTION	DATE	APR
A	2283	REPLACE PGS: i, ii,iii, 1.3, 1.4, 3.1, 5.1 DWGS & DELETE SCT 6.1		
B	5424	Clarify Attachment	1/28/10	DC

#740058

MODEL 95-WF REMOTE PUSHER WIRE FEEDER ASSEMBLY
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 AMI Arc Machines, Inc.			
1 	1.1 	1.2 	1.3 
2 	2.1 	2.2 	2.3 
3 	4 	4.1 	5 
6 	6.1 	6.2 	6.3 
 WARNING 10280 Glenoaks Boulevard Pacoima, California 91331 U.S.A. Telephone: (818) 896-9556 Fax: (818) 890-3724			
L-567			

MODEL 95-WF REMOTE PUSHER WIRE FEEDER ASSEMBLY OPERATION MANUAL

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**MODEL 95-WF REMOTE PUSHER WIRE FEEDER ASSEMBLY
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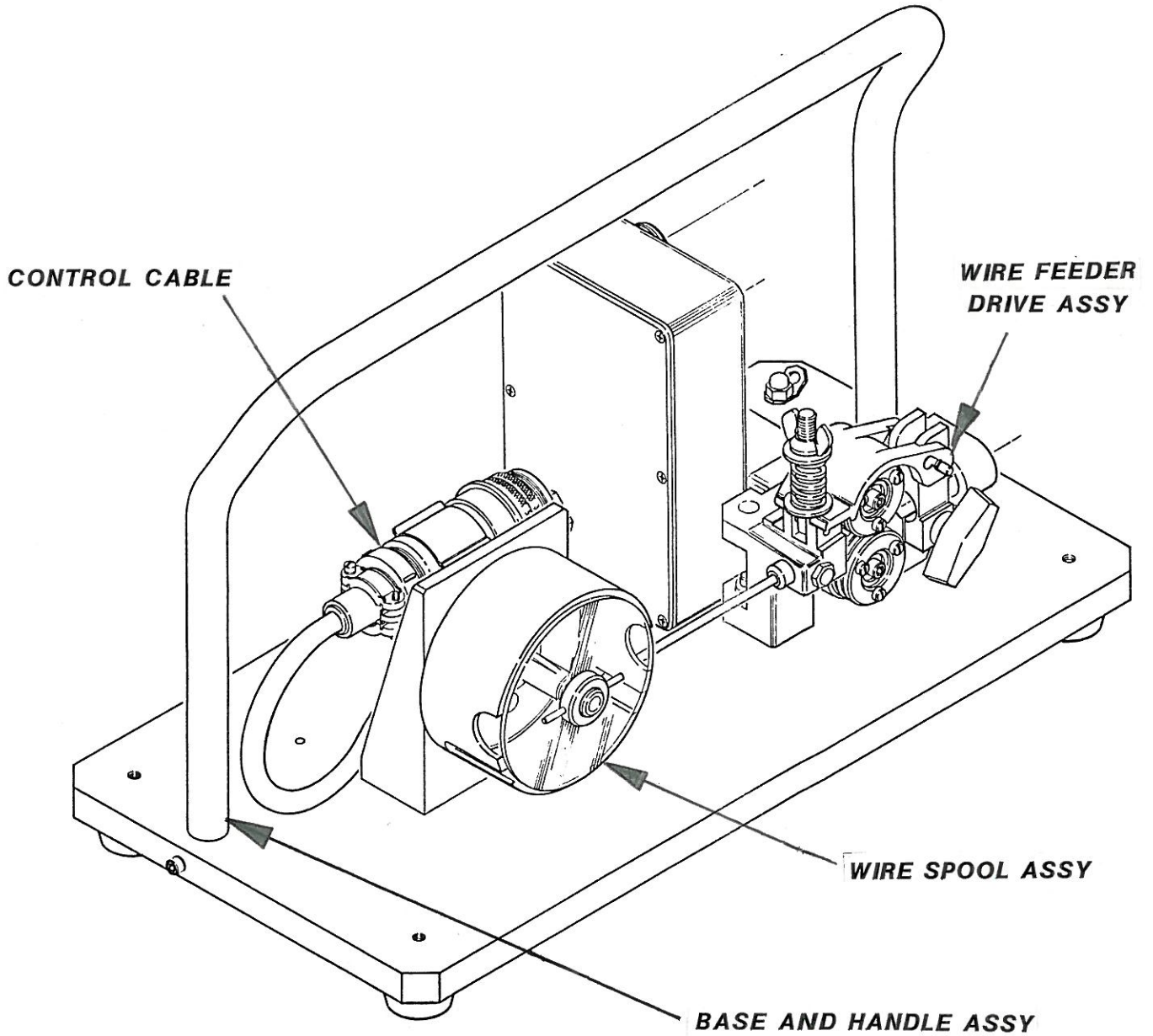


FIGURE 1

MODEL 95-WF REMOTE PUSHER WIRE FEEDER ASSEMBLY OPERATION MANUAL

1.2 SAFETY PRECAUTIONS (continued)

WARNING

High Voltage maybe present on exposed internal terminals. Only QUALIFIED service personnel should open covers and connections.

Extreme care should be taken when making any measurements with the power supply on or in operation. Any work performed on these components, other than taking measurements, should be done with the primary input power removed.

1.3 OPERATIONAL PRECAUTIONS

The following is a check list for operating personnel to follow to insure safety of operation and minimum system down-time due to improper operation and handling:

1. Before operating, check all fittings and connectors for proper seating and that all protective boots are in place. If not properly seated or protected, short circuits, or poor connections.
2. Typical GTAW welding gases are colorless and odorless and leaks can cause a serious safety condition and improper system operation. The M-95-WF is intended for typical GTAW gases ONLY. NEVER CONNECT OXYGEN OR ACETYLENE TO THE ARC GAS LINE.
3. When handling, take extreme care to avoid dropping the Wire Feeder, cables or any accessories.
4. Before operating, insure that adequate ventilation (with out disturbing the arc) is present. Whenever in doubt, an oxygen analyzer should be used to insure adequate oxygen content for operating personnel.
5. Before operating, insure that all cables are routed or protected in such a way that they will not be subject to heat, equipment and/or personnel traffic. Insure that the cables DO NOT come in contact with HOT PIPE.
6. When storing or handling cables, always keep the protective boots and dust caps on all connectors and fittings until ready to install. A major cause of downtime in any automatic welding system is improper care and use of cables; use extreme care when handling.

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1.3 OPERATIONAL PRECAUTIONS

7. Before operating, storing or handling, always make sure that the M-95-WF is not exposed to rain or standing water. SYSTEM COMPONENTS ARE NOT WEATHER-PROOF.
8. Be sure that there is no bare metal contact to feed wire or roller assembly and the pipe to be welded.
9. After storing or handling weld heads, always keep them in the protective containers they were shipped in, or optional carrying case, until ready to install.
10. When operating, storing or handling, insure that the system is protected against dirt, dust, etc. NEVER GRIND NEAR AN EXPOSED M-95-WF, WELD HEAD OR AMI POWER SUPPLY.
11. Do not use acid, corrosives, liquid "Easy Out" or any liquid substance on any AMI weld head or Power Supply. When cleaning, use only a damp, soft cloth with a mild detergent solution.
12. Do not add oil or grease to the M-95-WF unless it is specified by AMI Service personnel or documents.
13. Contact with welding wire during RF start could result in a low current shock. DO NOT TOUCH the Welding wire during RF start.

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2.0 SPECIFICATIONS

This section contains general technical details about physical and functional features of the M-95-WF that the user should be aware of before operating. More specific Specifications can be found in AMI Specification No. 95-WF.

2.1 PHYSICAL DIMENSIONS (see dwg 40950001)

1. Height = 14.05" (356.9 mm)
2. Width = 10.25" (260.4 mm)
3. Depth = 19.87" (497.1 mm)
4. Weight (without wire) = 18.0 lbs (8.2 kg)

2.2 FUNCTION PERFORMANCE DATA

1. Minimum Speed = 5 IPM (0.13 m/min)
2. Maximum Speed = 100 IPM (2.5 m/min)
3. Motor Type = 28 VDC Permanent Magnet 1-1/4"
4. Regulation Type = IPM using tachometer feedback
5. Regulation Tolerance = +/- 2% of value or 1.0 IPM (whichever is greater)
6. Wire Size, Standard = 0.030" (.76 mm)
0.035" (.89 mm)
7. Wire Capacity = 4" (2 lb) spool Standard

2.3 MISCELLANEOUS

1. The Motor is isolated from the Feed Rollers and the Feed rollers are isolated from the base plate to insure that the wire has NO ELECTRICAL POTENTIAL.
2. The Spool to Roller Liner is retained in such a way as to prevent the wire jumping out of the spool or creating a "Rats Nest".

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2.3 MISCELLANEOUS (continued)

3. A dust cover is provide for the spool to reduce possible wire contamination.
4. Holes are provide in the end of the base plate to allow chains or hooks to be attached for hanging (hooks and chains are not provided).

2.4 STANDARD OPTIONS

1. KIT, 8" SPOOL - This Kit supplies the proper spindle, Brackets and Dust Cover to be installed to accommodate an 8" (10 lb) Wire Spool.

2.5 SPECIAL ORDER OPTIONS (not designed or stocked)

1. Standard Rollers are "V" groove type in 0.030" and 0.035" Standard. Gripping serrated V roller types or smooth "U" groove type are available on special order.
2. Rollers and Liner Assemblies for 0.045" Diameter wire can also be obtained by special order. However, NO AMI WELD HEADS intended for use with this unit are designed for use with 0.045" wire and no operational guarantees are made or warranted for use with 0.045" wire.
3. M95-WF-12 VERSION - Similar to the Standard Unit but designed for use with a 12" or 8" Wire Spools. Performance is the same as the M95-WF except for dimensions and weight.

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3.0 INSTALLATION INSPECTION - Before installing the M-95 Wire Feeder, perform a general inspection of the unit as follows:

1. Check the Wire Feeder Control Cable for frays and the Connector for tightness and good thread condition.
2. Check that all major assemblies (see 2.1) are secured to the base plate and that the Handle is secure.
3. Insure that all components are dry and have not been exposed to water or vapor.

3.1 WIRE FEEDER SYSTEM CONNECTION

1. Whenever possible, locate the M-95-WF in the approximate location needed during Welding before making any connections.
2. Remove the protective dust covers from the M-95-WF Control Cable Connector and the Power Supply Control Adapter Cable.
3. Connect the M-95-WF Control Cable Connector to the Power Supply Control Adapter Cable. The connectors are keyed and should screw together easily, **DO NOT FORCE**. If it is difficult to connect, check the keyway and the condition of the threads.
4. Connect the M-95 weld head Handle Cable to the connector labeled "HANDLE" this will control TVL and GND Fault functions.
5. Connect the M-95 Torch Plate Cable (If applicable) to the connector labeled "TORCH PLATE".
6. All Weld Head and Power Supply/Controller electrical connectors are equipped with threaded Dust Covers. Insure that these are in place when connectors are not in use and that they are connected to their mating Dust Cover when the connectors are in use.

3.2 WIRE INSTALLATION (see Figure 2)

1. The standard M-95-WF requires a 4" diameter (usually 2 lbs) wire spool and is shipped standard to handle 0.035" diameter wire. If 0.030" (or other) is desired see Section 3.3 for changing Tension Roller Wire Size.
2. Remove the protective Dust Cover on the Spool Canister.

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3.2 WIRE INSTALLATION (continued)

3. Loosen the Wire Drive Tension Spring Wing Nut enough to tilt the screw shaft and lift up the UPPER Tension/Roller Arm.
4. If a Wire Feeder to Weld Head Wire Liner Assembly is installed it should be removed by loosening the liner tension screw.
5. Prepare the wire spool to be mounted and the wire installed.

CAUTION

The wire wraps on the spool are under great tension. Do not let go of the wire until the spool and the wire are completely installed.

6. Slide the Wire Spool onto the Spindle in such a manner as to allow the spool to rotate Counter Clockwise (CCW) when the wire is pulled off. At the same time feed the tip of the wire into the Wire Liner and through past the Drive Rollers and out the other side of the Drive Unit.

NOTICE

If the wire tip is sharp, it will cut the inner Liner and reduce the life of the Liner. It will also make the feeding of the wire harder. Dull the tip of the wire with a file before threading.

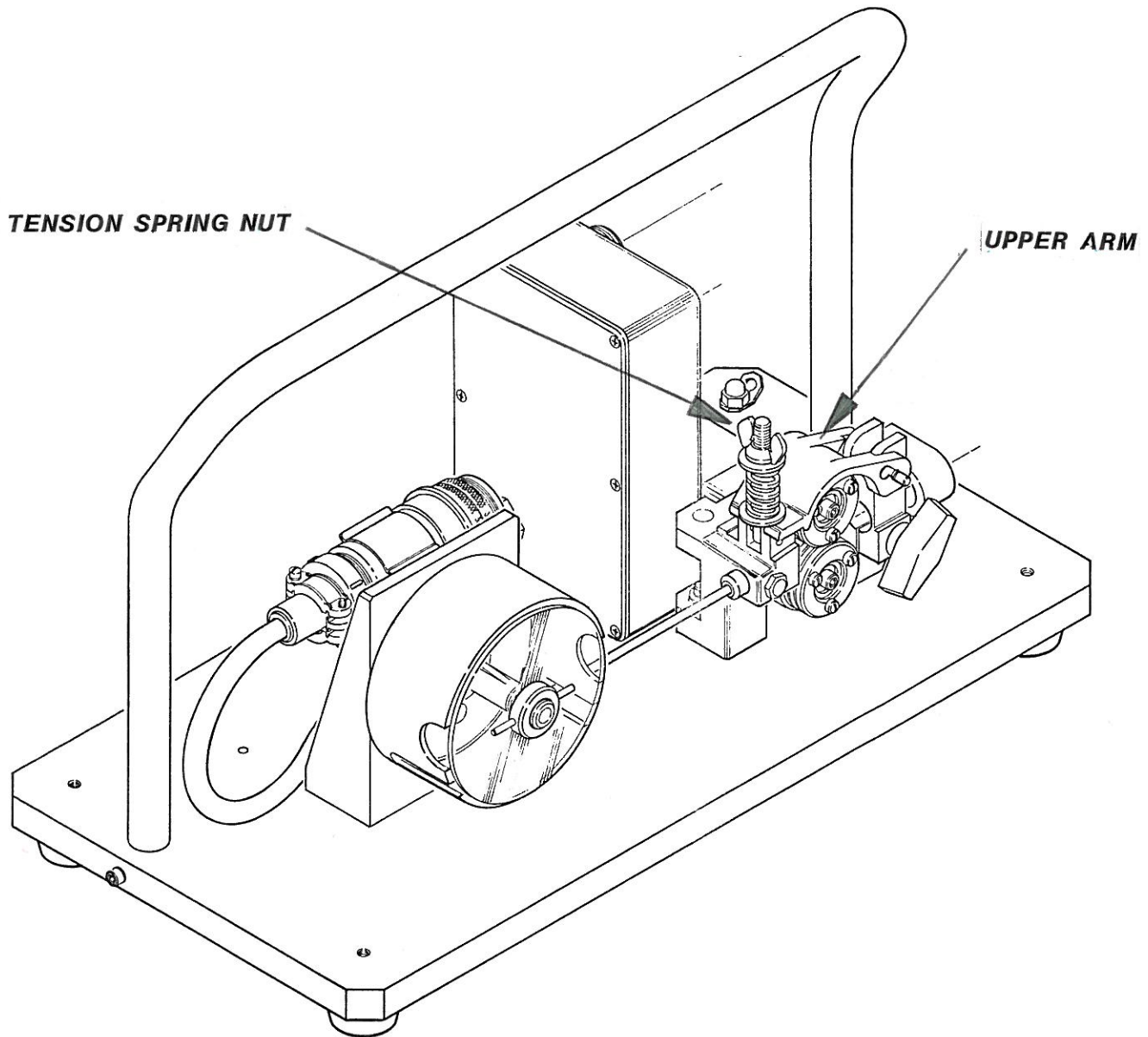
7. Line up the wire with the groove in the Lower Roller and lower the Upper Roller/Tension Arm and tighten the Tension Spring Nut. The amount of tension needed is dependent on many factors. Over tightening will cause binding and a lack of drive power. Too loose will cause slippage. Be aware that it may require tension adjustment later but for now just get it tight enough to hold the wire.
8. Follow the directions in the appropriate Power Supply Manual for Wire Feed JOG and feed out a few inches of wire to insure that everything is working properly.
9. Follow the directions in the appropriate Weld Head manual for the Wire Installation from the M95-WF to the Torch.

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3.3 WIRE ROLLER CHANGE

1. There is an Upper and Lower Wire Roller and they are a set intended for a specific size wire. Changing the wire sizes in the M-95-WF requires that these rollers be changed.
2. To change the rollers loosen the Tension Screw Wing Nut until you can raise the Upper Roller Arm. Using a Hex Wrench (provided with the M-95-WF) unscrew the upper and lower retaining screws and remove the wheels.
3. Install the new wheels and tighten the screws.

**MODEL 95-WF REMOTE PUSHER WIRE FEEDER ASSEMBLY
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FIGURE

MODEL 95-WF REMOTE PUSHER WIRE FEEDER ASSEMBLY OPERATION MANUAL

4.0 OPERATION AND CALIBRATION

When installed, the M-95-WF Wire feeder becomes an integral part of a Pipe Welding System. The M-95-WF Performance is controlled by the Power Supply. This section deals with Calibration and Initial Operation requirements for the M-95-WF only. Consult you AMI Power Supply Operation Manual for more details about functions and Welding.

As stated in the Section 1, automated welding requires a good deal of operator expertise and management expertise in how to set-up an effective use of this equipment. This expertise can only be obtained through training and practice. It cannot be obtained from this manual.

THIS MANUAL IS NOT INTENDED AS A SUBSTITUTE FOR TRAINING.

4.1 CALIBRATION

1. Most of the Calibrated functions are contained in the Power Supply/Controller Unit, however WIRE FEEDERS must be set up and calibrated (matched) to the Power Supply/Controller that it is used on. ANYTIME the M-95-WF Wire Feeder is changed from one power supply to another it must be checked again for calibration.
2. Calibration of the Wire Feed for the M-95-WF is the same as Wire Calibration for most AMI Pipe Weld Heads. Follow the procedure given in the Operational Manual for the Power Supply/Controller Unit. Just keep in mind that the M-95-WF is a maximum of 100 IPM and uses a 5 VDC Tachometer feed back. Most AMI Wire Feeders (not all) use a 1.25 VDC tachometer feedback and Power Supply manual may reflect that.
3. The Calibration Potentionmeter is located on the top of the Wire Feeder Motor Housing and a calibration screwdriver has been provided for making adjustments.

4.2 OPERATIONAL NOTES

1. Avoid RETRACT or REVERSE jogging. The M-95-WF does not have a tension/slack take up function and reversing the wire will create slack and a possible "rats nest" inside of the Spool Holder.

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4.2 OPERATIONAL NOTES (continued)

2. Avoid consistent or momentary sharp bends in the Wire Liner to the torch. A constant sharp bend will create too much cast in the wire as it comes out of the Nozzle. This may make it difficult to adjust the wire to the proper entry point. Momentary bends or kinking will cause the wire to jerk left/right or up/down in the puddle which usually results in some type of weld defect or difficulty.

3. Avoid excessive tension on the Wire Feed Rollers. If the wire is slipping you should check first that there is no binding in the Liner and the Wire Nozzle. The liner should never have more than 1 wrap in it and that wrap should not have a bend radius of less than 2.5 inches.

Too many wraps or too small a bend radius will require more power to push the wire than the M-95-WF can deliver. Under these conditions tightening the Rollers will actually make the situation worse.

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5.0 WIRING DIAGRAM AND OUTLINE DRAWING

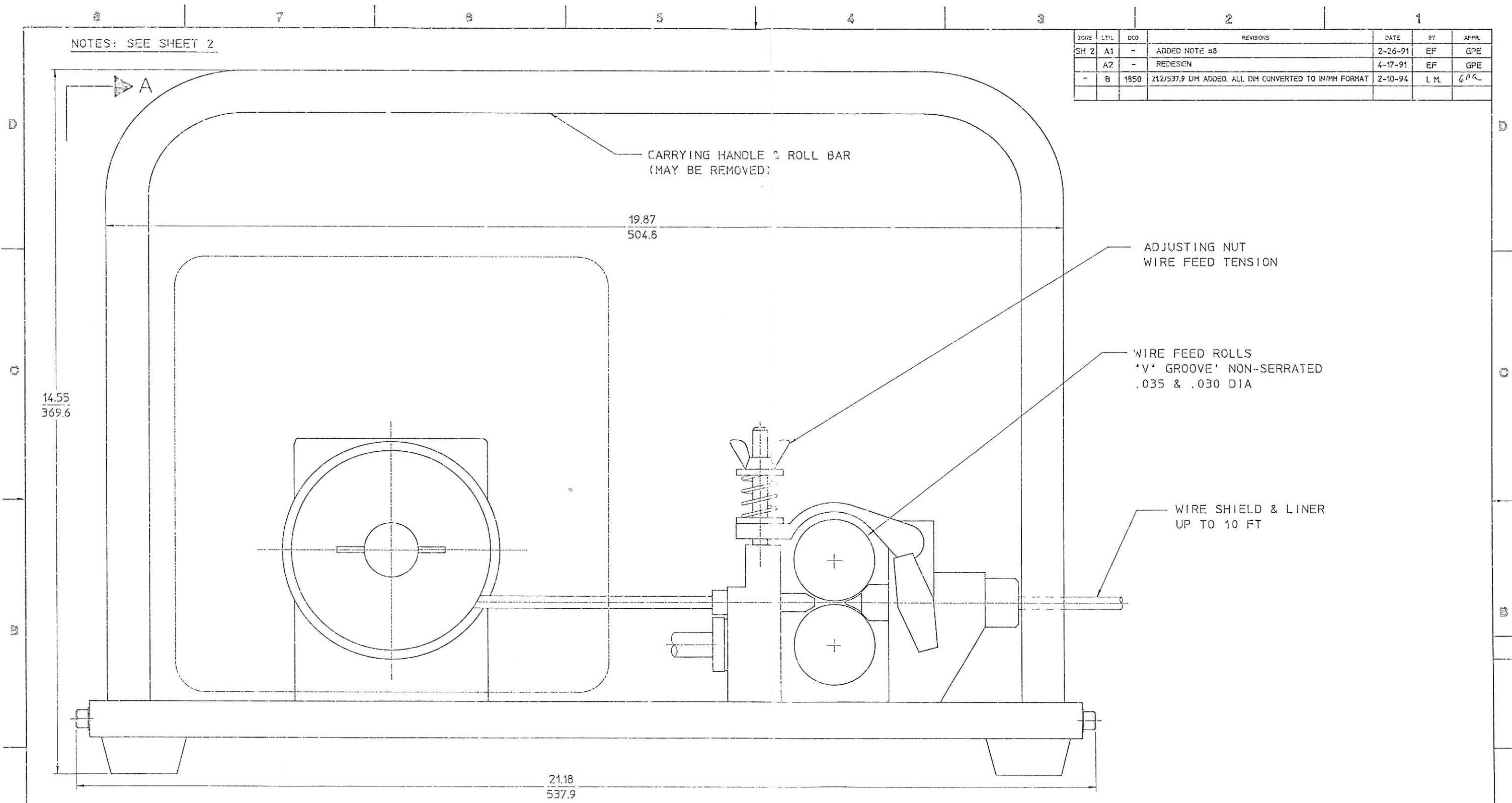
CAUTION

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ZONE	LT/L	DCO	REVISIONS	DATE	BY	APPR.
SH 2	A1	-	ADDED NOTE #8	2-26-91	EF	GPE
	A2	-	REDESIGN	4-17-91	EF	GPE
	B	1850	212/537.9 DIM ADDED. ALL DIM CONVERTED TO IN/MM FORMAT	2-10-94	L.H.	GPE

NOTES: SEE SHEET 2



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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES X .010 X .030 X .005	THIRD ANGLE PROJECTION 	FOR IMPLIED STANDARDS SEE 000-5TD-100
APPROVALS	DATE	
DRAWN: EF	1/24/91	
CHECKED: GPE	1/24/91	
APPR: GPE		
QUOTATION		

ARC MACHINES, INC.		
DESCRIPTION		
OUTLINE WIRE FEEDER REMOTE		
SIZE	MODEL NO.	DRWG. NO.
D		40950001
SCALE	1/1	DO NOT SCALE DRAWING
		SHEET 1 OF 3

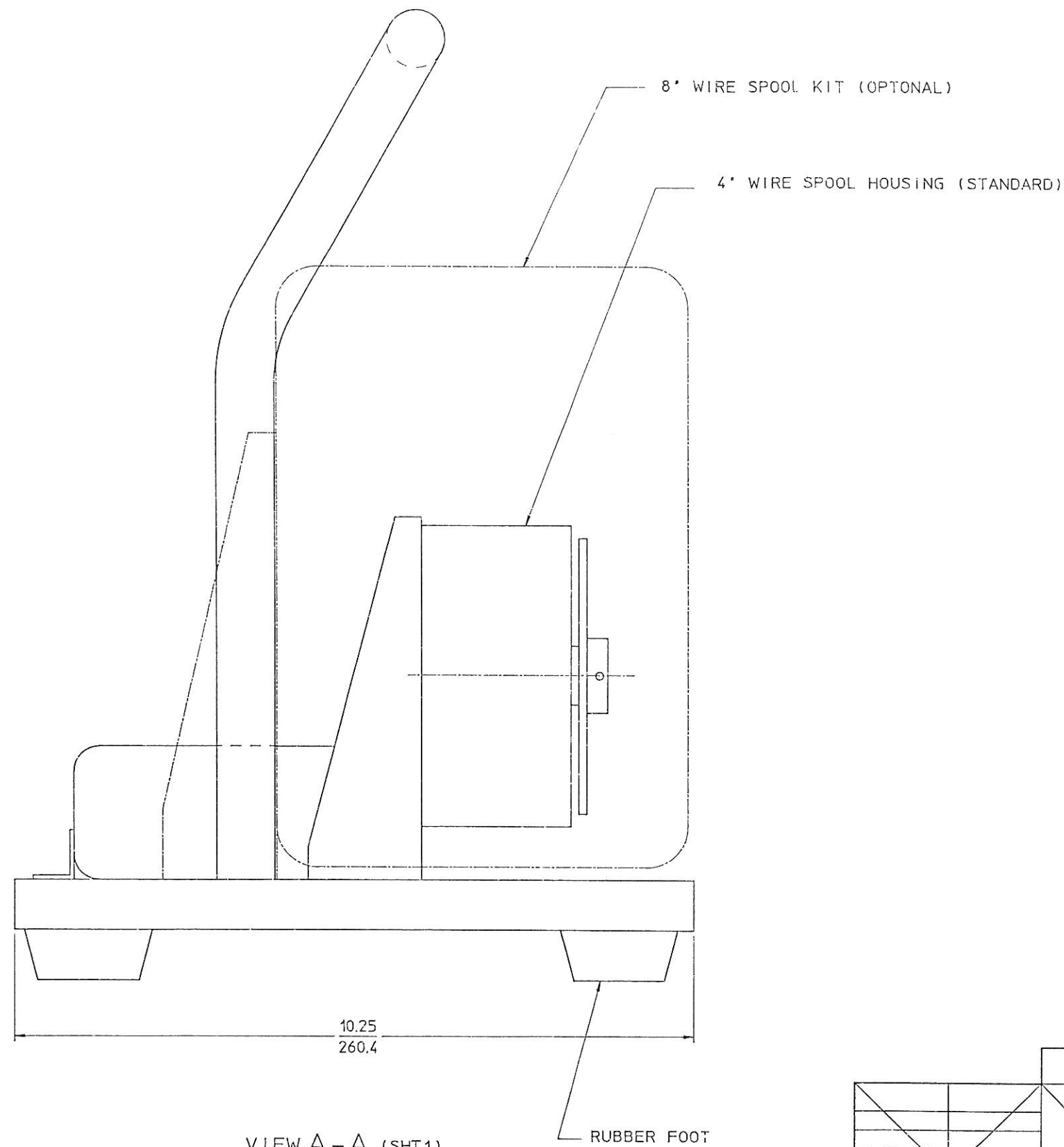
14XX0100-03	LIST SEL OUTLINE DWGS	
41950502	WIRE FEEDER TOP ASSY	
NEXT ASSY.	USED ON	
APPLICATION		

SIDE VIEW

A (SHT 2)

ZONE	LTR	DCU	REVISION#	DATE	BY	APPR

FOR REVISIONS SEE SHEET 1



VIEW A-A (SHT 1)
REAR

TECHNICAL RANGES:

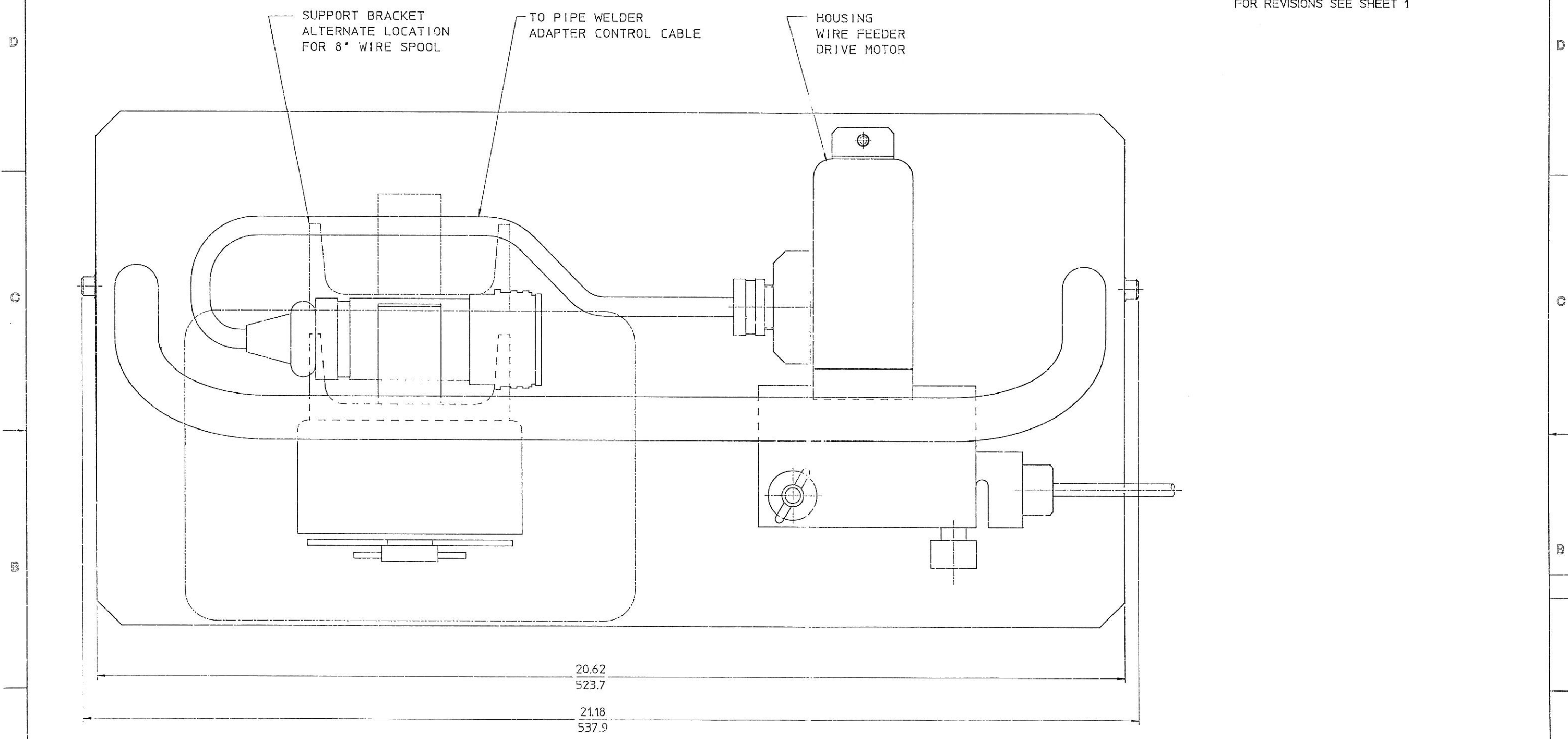
1. MINIMUM SPEED.....5 IPM (0.13M/MIN)
2. MAXIMUM SPEED.....100 IPM (2.5 M/MIN)
3. MOTOR TYPE.....28 VDC PERMANENT MAGNET 1-1/4" OD
4. REGULATION TYPE.....IPM USING TACHOMETER FEEDBACK
5. REGULATION TOLERANCE....±2% OF VALUE OR 1.0 IPM (WHICHEVER IS GREATER)
6. WIRE SIZE, STANDARD....0.030" (.76 MM)
0.035" (.89 MM)
7. WIRE CAPACITY.....4' (2 LB) SPOOL, STANDARD
8' (10 LB) SPOOL, OPTIONAL
8. WIRE FEEDER WEIGHT WITH 4 INCH WIRE SPOOL HOUSING (NO WIRE SPOOL) IS 15.1 LBS

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<p>UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:</p> <p>FRACTIONS DECIMALS ANGLES $\pm 1/16$ X $\pm .030$ $\pm .001$ XX $\pm .005$ $\pm .005$ XXX $\pm .005$</p>		<p>THIRD ANGLE PROJECTION</p>	
<p>ALL MACHINED SURFACES TO BE</p> <p>MATERIAL</p>		<p>FOR IMPLIED STANDARDS SEE COD-STD-100</p> <p>ARC MACHINES, INC.</p> <p>DESCRIPTION</p> <p>OUTLINE WIRE FEEDER REMOTE</p>	
<p>APPROVALS</p> <p>DRAWN: EF</p> <p>CHECKED: GPE</p> <p>APPR:</p>		<p>DATE</p> <p>1/24/91</p> <p>1/24/91</p>	
<p>SIZE D</p> <p>MODEL NO</p> <p>DRWG. NO. 40950001</p> <p>SCALE 1/1</p>		<p>REV. B</p> <p>DO NOT SCALE DRAWING</p> <p>SHEET 2 OF 3</p>	

8 7 6 5 4 3 2 1

ZONE	LTR	DCO	REVISIONS	DATE	BY	APPR

FOR REVISIONS SEE SHEET 1



20.62
523.7

21.18
537.9

TOP VIEW

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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS DECIMALS ANGLES + 1/16 .X .030 .XX .015 .XXX .005	<input checked="" type="checkbox"/> THIRD ANGLE PROJECTION	FOR IMPLIED STANDARDS SEE J30-STD-100	
		APPROVALS	
		DRAWN: EF	DATE: 1/24/91
		CHECKED: GPE	1/24/91
ALL MACHINED SURFACES TO BE		MATERIAL	
NEXT ASSY. USED IN		APPLICATION	

<p>ARC MACHINES, INC.</p> <p>DESCRIPTION</p> <p>OUTLINE WIRE FEEDER REMOTE</p>			
SIZE	MODEL NO.	DRWG. NO.	REV.
D		40950001	B
SCALE	DO NOT SCALE DRAWING		SHEET 3 OF 3
1/1			

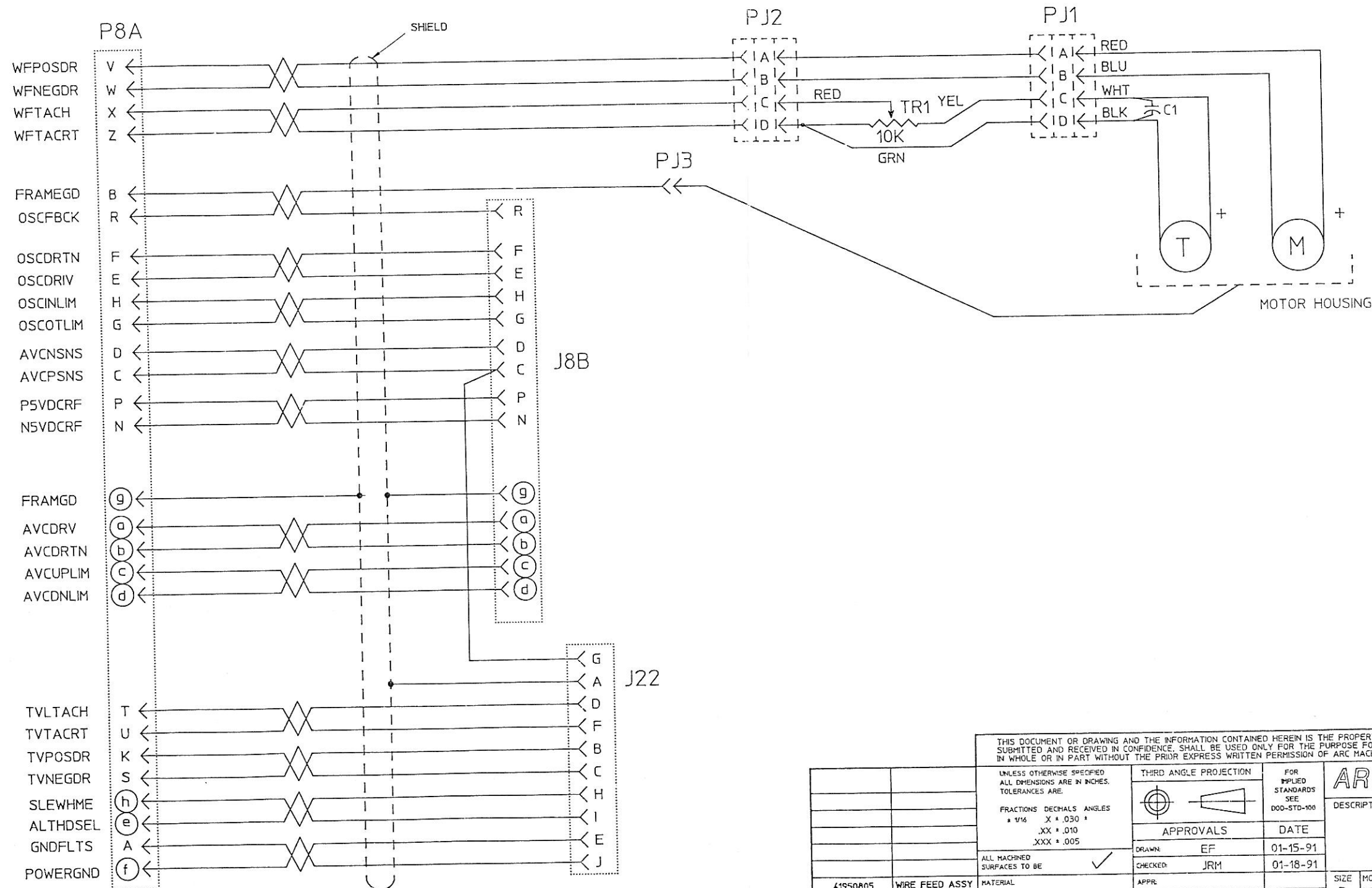
8 7 6 5 4 3 2 1

0

NOTES:

WIRING DIAGRAM

ZONE	LTR.	QCO	REVISIONS	DATE	BY	APPR.
A1			R2 WAS 274 OHMS	4-1-91	JRM	
A2			TR1 WAS 56LR500	5-3-91	JRM	
A	1502		TR1 WAS 500 OHMS	7-12-91	JRM	GPE
C6	B	1482	DELETE RES R1 AND R2, TR1 WAS 2K	02-12-92	MC	GPE
C		2201	REDRAWN ON CAD, ADDED J22 & J8B AND P8A WAS: P8	05-16-95	MC	GPE
D		2262	SWAP PINS W WITH V AND Z WITH X ON P8A.	10-24-95	LEC II	GPE



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ARC MACHINES, INC.

DESCRIPTION: REMOTE WIRE FEEDER M95 WELD HEAD

SIZE: D MODEL NO. 95-WF DRAWG NO. 47951701 REV. D

SCALE: NONE DO NOT SCALE DRAWING SHEET 1 OF 1

APPROVALS: DRAWN: EF DATE: 01-15-91 CHECKED: JRM DATE: 01-18-91

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS DECIMALS ANGLES: .1/16 X ± .030 .XX ± .010 .XXX ± .005

ALL MACHINED SURFACES TO BE: (Symbol)

THIRD ANGLE PROJECTION (Symbol)

FOR UNFILED STANDARDS SEE D00-STD-100

41950805 WIRE FEED ASSY MATERIAL

NEXT ASSY. USED ON APPLICATION