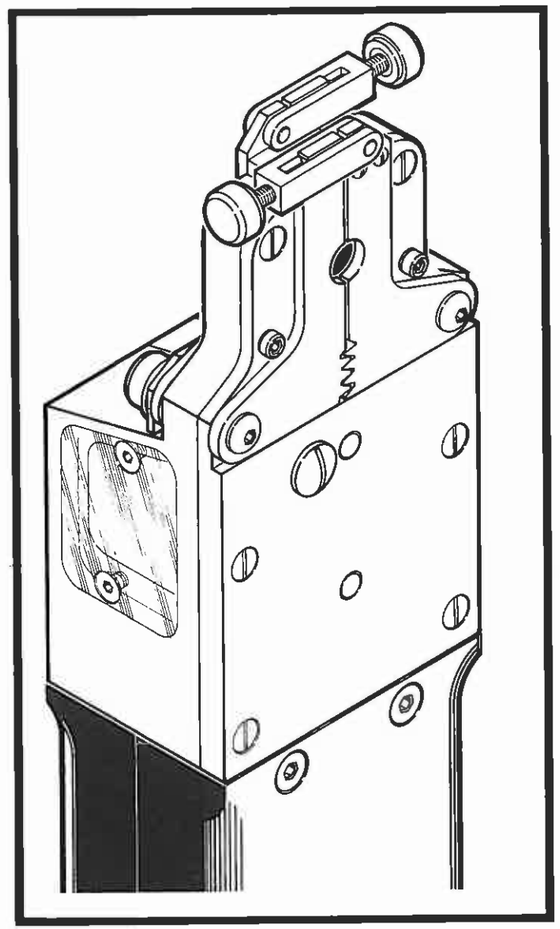
AMI
ARC MACHINES, INC.



MODEL 9-250

ILLUSTRATED PARTS BREAKDOWN

MODEL 9-250
IPB Notice and Revision History

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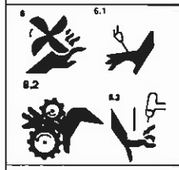
WARNING

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. The LIGHTNING FLASH SYMBOL indicates that there are potential electrical hazards. The display of these symbols makes it the OPERATOR'S RESPONSIBILITY TO ENSURE THAT THEY HAVE BEEN MADE AWARE OF and shall observe the hazardous conditions.

	WARNING: AMI factory training is essential for all Maintenance Technicians who operate AMI equipment. Do not operate or service this equipment without proper AMI approved training.
	**WARNING:** Keep hands and fingers clear from moving parts such as fans, gears, rotors, Wire Feed, Weld Head Travel, i.e. Oscillation (OSC) and Arc Voltage Control (AVC) mechanisms Weld Head AVC and Oscillator Slide Assemblies develop high forces and it is possible, by their nature of operation, to harm any object or body part that may get into these areas. ***USE EXTREME CAUTION!***
	Electrical Shock Hazard: Always disconnect weld heads when servicing internal components or opening housing covers for access.

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REV	ECO #	CHANGE DESCRIPTION	DATE	BY	APR
A	4779	Added rev D of 750015	26 May 2008	SO	BF
B	5579	Added rev F 750015 and wiring diagram	18 Jan 2010	CB	DC

ARC MACHINES, INC.

TABLE OF CONTENTS

DATE EFFECTIVE: 19 Aug 1993

PRODUCT MODEL: 9-250
MANUAL NUMBER: 730077

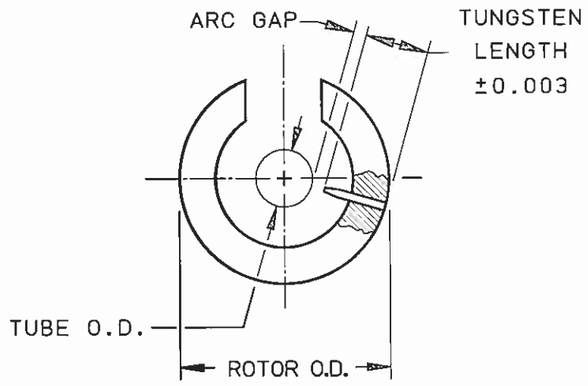
IPB NUMBER	DESCRIPTION
750015	MODEL 9 ELECTRODE DIMENSIONS
090005	WELD HEAD ASSEMBLY
0901110	WELD HEAD BASIC ASSEMBLY
0905192	STANDARD CLAMP ASSEMBLY
090816	CABLE ASSEMBLY
175144-06	MODEL 9-250 WELD HEAD WIRING DIAGRAM

ELECTRODE DIMENSIONS

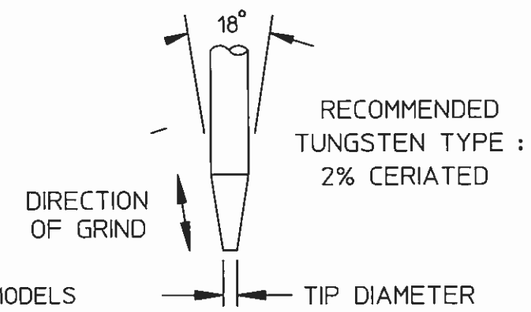
ROTOR DIAMETER	
MODEL NO.	ROTOR O.D
9-250	0.802
9-500/4-500	1.388
9-675	1.715
9M-750	1.312
9-750	2.000
9-1500	3.187
9AF-1500	2.252
9E-1500	2.687
8-2000	3.450
9-2500	4.380
9AF-2500	3.156
9E-2500	4.280
* 9-3500	5.380
9E-3500	5.310
8-4000	5.310
* 9-4500	6.875
9ER-4500	5.776
8-6625	8.094
* 9-7500	10.440
9E-7500	9.375

* FOR HEADS USING OPTIONAL TUNGSTEN EXTENDER, SEE PAGE 2.

$$\frac{\text{ROTOR O.D.} - \text{TUBE O.D.}}{2} - \text{ARC GAP} = \text{TUNGSTEN LENGTH}$$



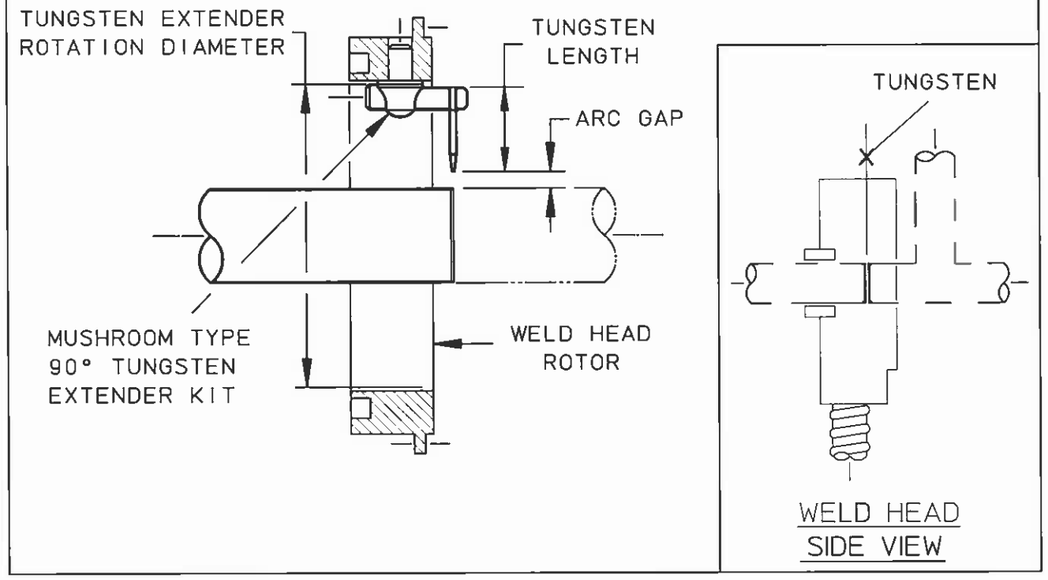
TUBE/PIPE WALL THICKNESS	RECOMMENDED ARC GAP	RECOMMENDED TIP DIA.
0.020/0.035	0.030	0.020
0.049/0.085	0.050	0.030
0.091/0.154	0.070	0.040



NOTES:
1. RECOMMENDED ARC GAP FOR MODELS 4-500, 9-250 & 9-500 IS 0.045 MAXIMUM.
2. IN INSTANCES WHERE OUT-OF-ROUNDNESS ON THIN-WALLED TUBING OCCURS (NORMALLY 2.500 O.D. OR LARGER), A 0.070 ARC GAP IS RECOMMENDED.
3. DIMENSIONS ARE IN INCHES.

TUNGSTEN LENGTH CALCULATION
FOR TUNGSTEN EXTENDERS

$$\frac{\text{EXT. ROTATION DIA} - \text{TUBE O.D.}}{2} - \text{ARC GAP} = \text{TUNGSTEN LENGTH} \pm 0.003$$



WELD HEAD MODEL NO.	KIT WITH 1/16 TUNGSTEN HOLDER PART NO.	KIT WITH 3/32 TUNGSTEN HOLDER PART NO.	TUNGSTEN EXTENDER ROTATION DIA.
9-1500	13090796-01	13090796-02	2.031
9-2500	13090796-05	13090796-06	3.156
9-3500	13090796-05	13090796-06	4.031
9-4500	13090796-03	13090796-04	4.920
9-7500	13090796-05	13090796-06	8.280

NOTES:

1. PART NUMBERS SHOWN ARE FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE.
2. CONTACT AMI SALES OR SERVICES FOR SPECIFIC PART NUMBER.

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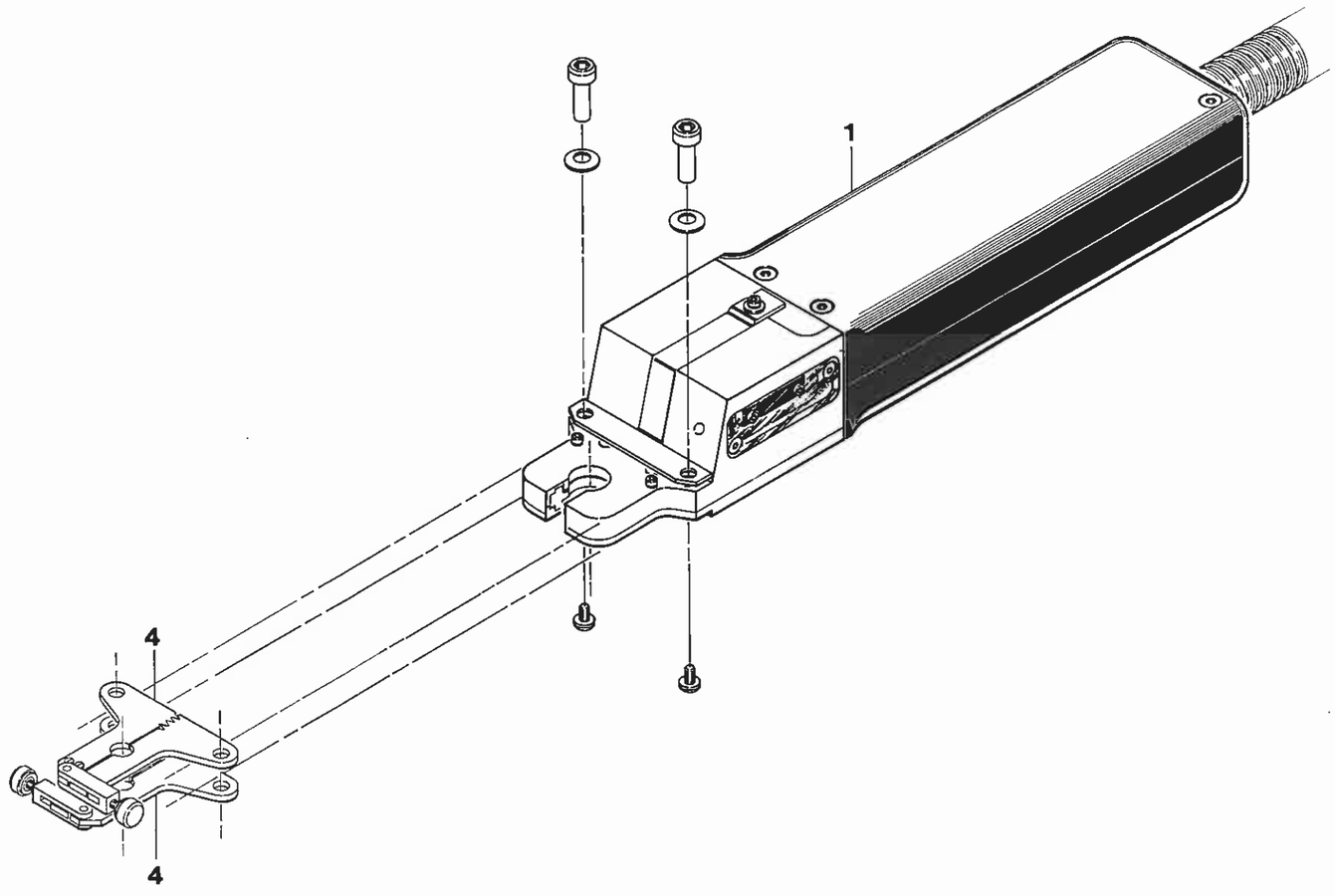
AMI
Arc Machines Inc

ISSUED: 19 AUGUST 1993
REVISED: 18 OCTOBER 1993



MODEL 9-250
IPB 090005
WELD HEAD ASSEMBLY

IPB NUMBER: 090005

DATE EFFECTIVE: 19 Aug 1993
DATE REVISED: 27 Mar 1996

TO ORDER
USE PART NUMBER
DO NOT USE IPB
ITEM NUMBER

ARC MACHINES, INC.

PRODUCT MODEL: 9-250
DESCRIPTION: WELD HEAD ASSEMBLY
MANUAL NUMBER: 730077
NOTES:

IPB ITEM NUMBER	QTY	U/M	PART NUMBER	DESCRIPTION
1	1	EA	130901110-01	WELD HEAD ASSY BASIC M9-250
2	0	-	-	---------
3	0	-	-	---------
4	2	EA	130905187-01	PLATE CLAMP .125 OD M9-250
4A	2	EA	130905187-02	PLATE CLAMP .250 OD M9-250

PRICE, PART NUMBER AND
DESCRIPTION SUBJECT TO
CHANGE WITHOUT NOTICE

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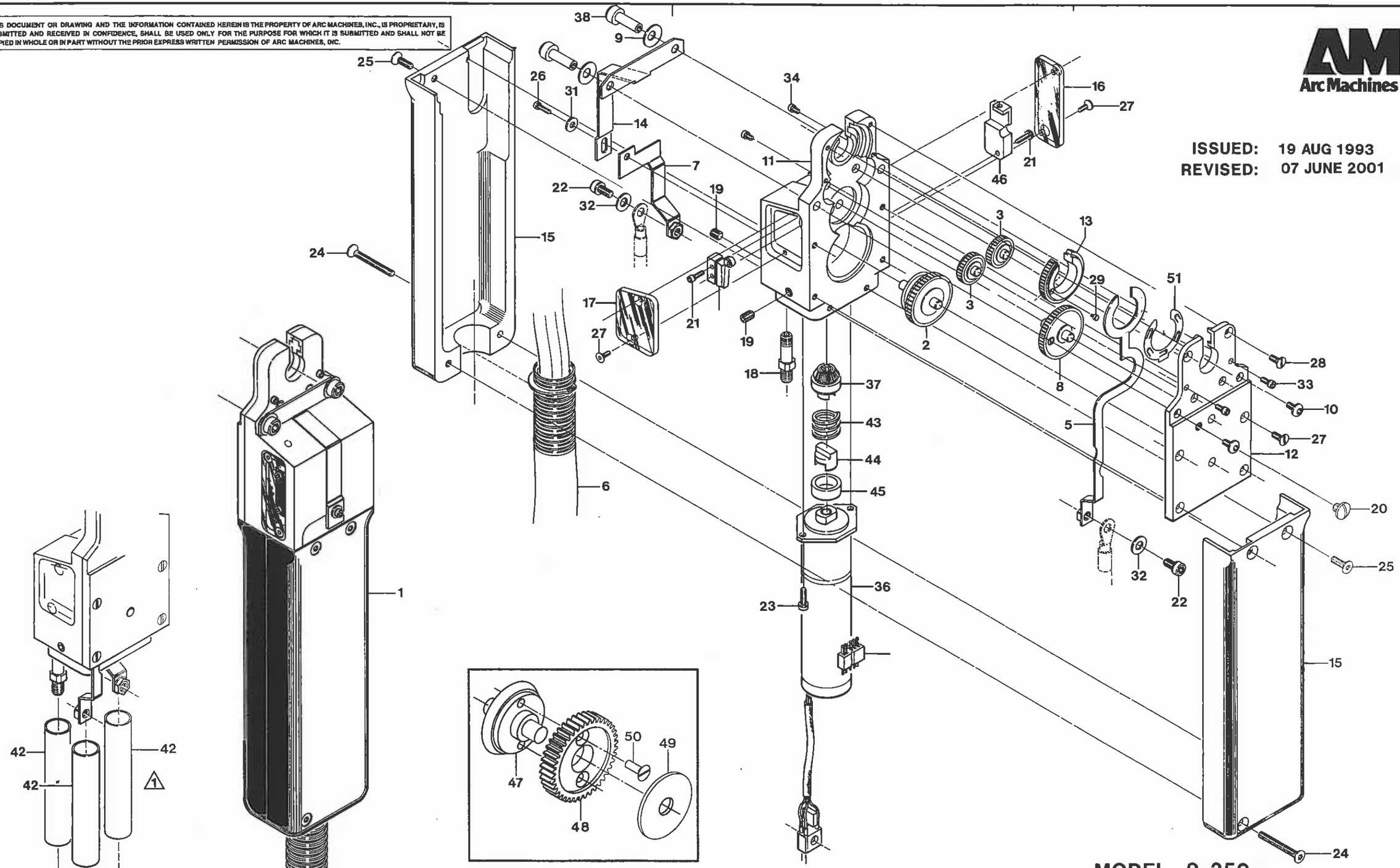
Arc Machines Inc

ISSUED: 19 AUG 1993
REVISED: 07 JUNE 2001



ITEM 2 COMPONENTS

MODEL 9-250
IPB 0901110
WELD HEAD BASIC ASSEMBLY

NOTE: ⚠1 INSULATE CABLE CONNECTIONS WITH SHRINK TUBING (ITEM 42, 3 PL.)

IPB NUMBER: 0901110

DATE EFFECTIVE: 26 Jun 1995
DATE REVISED: 10 Oct 2002

TO ORDER
USE PART NUMBER
DO NOT USE IPB
ITEM NUMBER

ARC MACHINES, INC.

PRODUCT MODEL: 9-250
DESCRIPTION: WELD HEAD BASIC ASSEMBLY
MANUAL NUMBER: 730077
NOTES:

IPB ITEM NUMBER	QTY	U/M	PART NUMBER	DESCRIPTION	
1	1	EA	130901110-01	WELD HEAD ASSY BASIC M9-250	
2	1	EA	13090656-01	GEAR DRIVE ASSY M9-250	REPAIRABLE
3	2	EA	42090659-01	GEAR IDLER M9-250	
4	0	EA			
5	1	EA	130907104-02	CONDUCTOR SHOE BRZD ASSY 9-250	
6	1	EA	13090816-01	CABLE M9-500 CONTROL	
7	1	EA	130905136-01	GROUND STRAP CONN-BRZD 9-500	
8	1	EA	13090649-02	GEAR ASSY MAIN IDLER M9-250	
9	2	EA	420905314-03	WASHER WAVE SPRING (5806-53-1)	
10	2	EA	SBS06-32-0.18NP	SCREW BTH SKT 6-32 3/16 L	
11	1	EA	420901122-01	HOUSING MAIN M9-250	
12	1	EA	420901123-01	COVER HOUSING M9-250	
13	1	EA	42090651-01	GEAR ROTOR M9-250 (DG5T44)	
14	1	EA	420907196-01	GROUND STRAP UPPER M9-250	
15	2	EA	420901101-01	HANDLE M9-500	
16	1	EA	420901124-01	COVER TRIM POT M9-250	
17	1	EA	420901124-02	COVER LIMIT SW M9-250	
18	1	EA	420901102-01	NIPPLE GAS	
19	2	EA	SSS10-32-18NPCU	SCREW SET SKT 10-32 3/16L CUPT	
20	1	EA	SIL08-32-0.12NY	SCREW BDH SLT 8-32 1/8 L NYL	
21	3	EA	SCS02-56-0.31NP	SCREW CAP SKT 2-56 5/16 L	
22	2	EA	SCS08-32-0.25SS	SCREW CAP SKT 8-32 1/4 L SST	
23	2	EA	SCS04-40-0.31NP	SCREW CAP SKT 4-40 5/16 L	
24	2	EA	SFS04-40-1.00NP	SCREW FLH SKT 4-40 1.00 L	
25	4	EA	SFS04-40-0.37NP	SCREW FLH SKT 4-40 3/8 L	
26	1	EA	SPL02-56-0.25NP	SCREW PNH SLT 2-56 1/4 L	
27	8	EA	SFL02-56-0.25NP	SCREW FLH SLT 2-56 1/4 L	
28	2	EA	SFL02-56-0.25NY	SCREW FLH SLT 2-56 1/4 L NYL	
29	3	EA	SFIL-00-80-0,12NP	SCREW BDH SLT 0-80 1/8 L	
30	1	EA	7051	CONN 5 PIN MALE	
31	2	EA	W02SS-FL	WASHER FL #2 SST	
32	2	EA	W08SS-FL	WASHER FL .18/.37/.030 T SST	
33	2	EA	SCS02-56-0.18NP	SCREW CAP SKT 2-56 3/16 L	
34	2	EA	SCS02-56-0.12NP	SCREW CAP SKT 2-56 1/8 L	
35	1	EA	MMW35	SWITCH NYLON ROLLER	
36	1	EA	13090651-01	MOTOR DRIVE 9-500 20 RPM ASSY	
37	1	EA	13090652-01	GEAR PINION ASSY COUPLING TYPE	

IPB NUMBER: 0901110

DATE EFFECTIVE: 26 Jun 1995
DATE REVISED: 10 Oct 2002

TO ORDER
USE PART NUMBER
DO NOT USE IPB
ITEM NUMBER

ARC MACHINES, INC.

PRODUCT MODEL: 9-250
DESCRIPTION: WELD HEAD BASIC ASSEMBLY
MANUAL NUMBER: 730077
NOTES:

IPB ITEM NUMBER	QTY	U/M	PART NUMBER	DESCRIPTION
38	2	EA	420905314-01	SCREW HINGE (44D21)
39			-	---------
40			-	---------
41			-	---------
42	12	IN	FB-301-0.37	TBG SHRINK 3/8 ID BLK
43	1	EA	OO-86	SPRING CPRSN .48D .37L .035W
44	1	EA	42090654-02	COUPLING INSULATING M9-500
45	1	EA	42090654-03	SPACER SPRING .39ID .49D .20LG
46	1	EA	130901121-02	TRIM POT ASSY M9-250
47	1	EA	13090655-01	GEAR & SHAFT ASSY
48	1	EA	42090662-01	GEAR DRIVE M9-250
49	1	EA	5610-103-40	WSHER NY .75 OD .199 ID .040TH
50	2	EA	SFL02-56-0.25SS	SCREW FLH SLT 2-56 1/4 L
51	1	EA	420907195-02	SPRING LEAF

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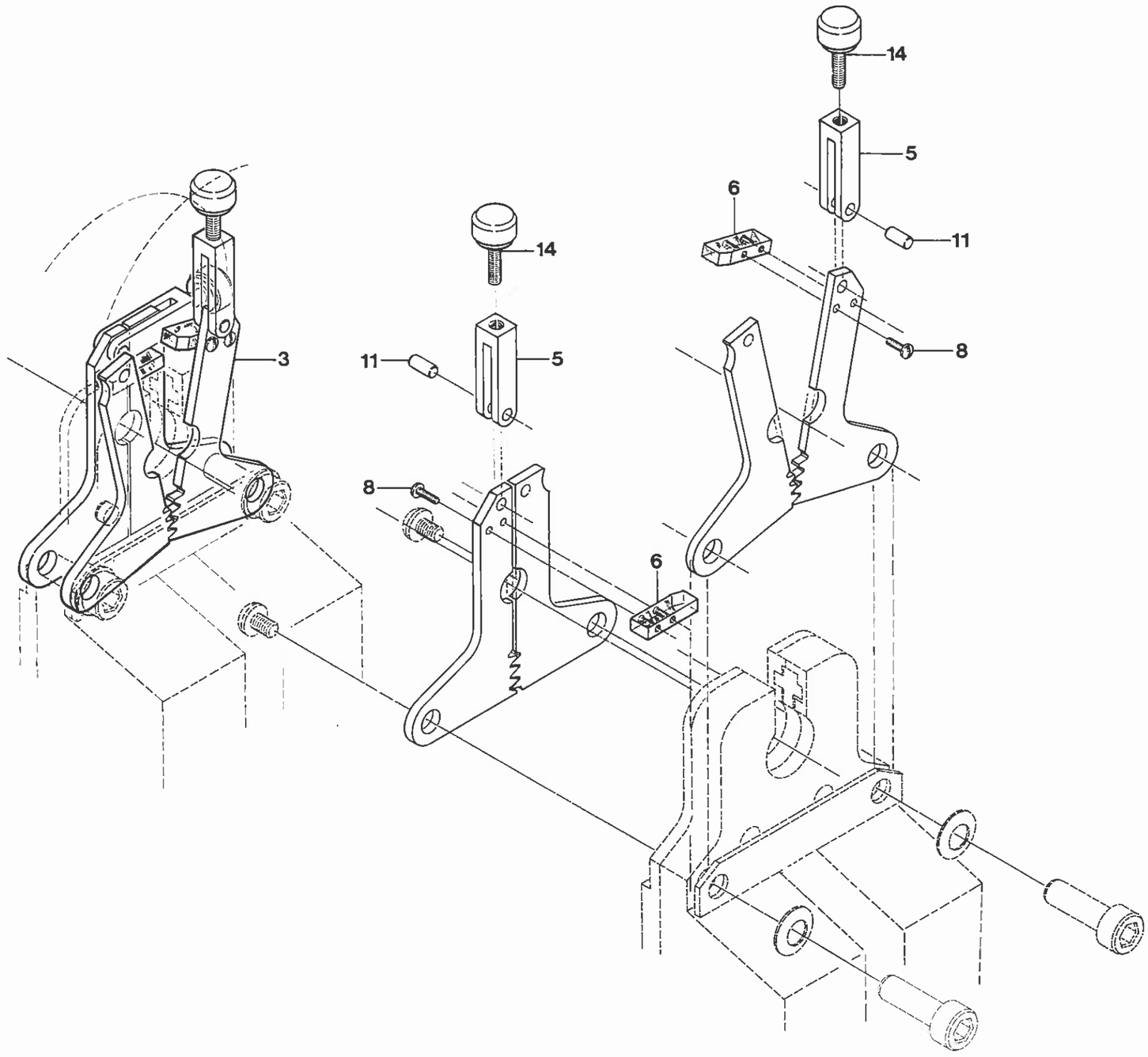
AMI
Arc Machines Inc

ISSUED: 19 AUGUST 1993
REVISED: 14 AUGUST 2000



MODEL 9-250
IPB 0905192
STANDARD CLAMP ASSEMBLY

IPB NUMBER: 0905192

DATE EFFECTIVE: 19 Aug 1993
DATE REVISED: 14 Aug 2000

TO ORDER
USE PART NUMBER
DO NOT USE IPB
ITEM NUMBER

ARC MACHINES, INC.

PRODUCT MODEL: 9-250
DESCRIPTION: STANDARD CLAMP ASSEMBLY
MANUAL NUMBER: 730077
NOTES:

IPB ITEM NUMBER	QTY	U/M	PART NUMBER	DESCRIPTION
1	0	-	-	---------
2	0	-	-	---------
3	2	EA	130905187-01	PLATE CLAMP .125 OD M9-250
3A	2	EA	130905187-02	PLATE CLAMP .250 OD M9-250
4	0	-	-	---------
5	1	EA	420905315-01	CLEVIS LATCH
6	1	EA	420905315-02	WINDOW CLOSURE
7	0	-	-	---------
8	2	EA	SBL00-80-0.18NP	SCREW BTH SLT 0-80 3/16 L
9	0	-	-	---------
10	0	-	-	---------
11	1	EA	PR09-0.18NP	PIN ROLL 3/32D 3/16L
12			-	---------
13			-	---------
14	1	EA	130905188-01	SCREW THUMB

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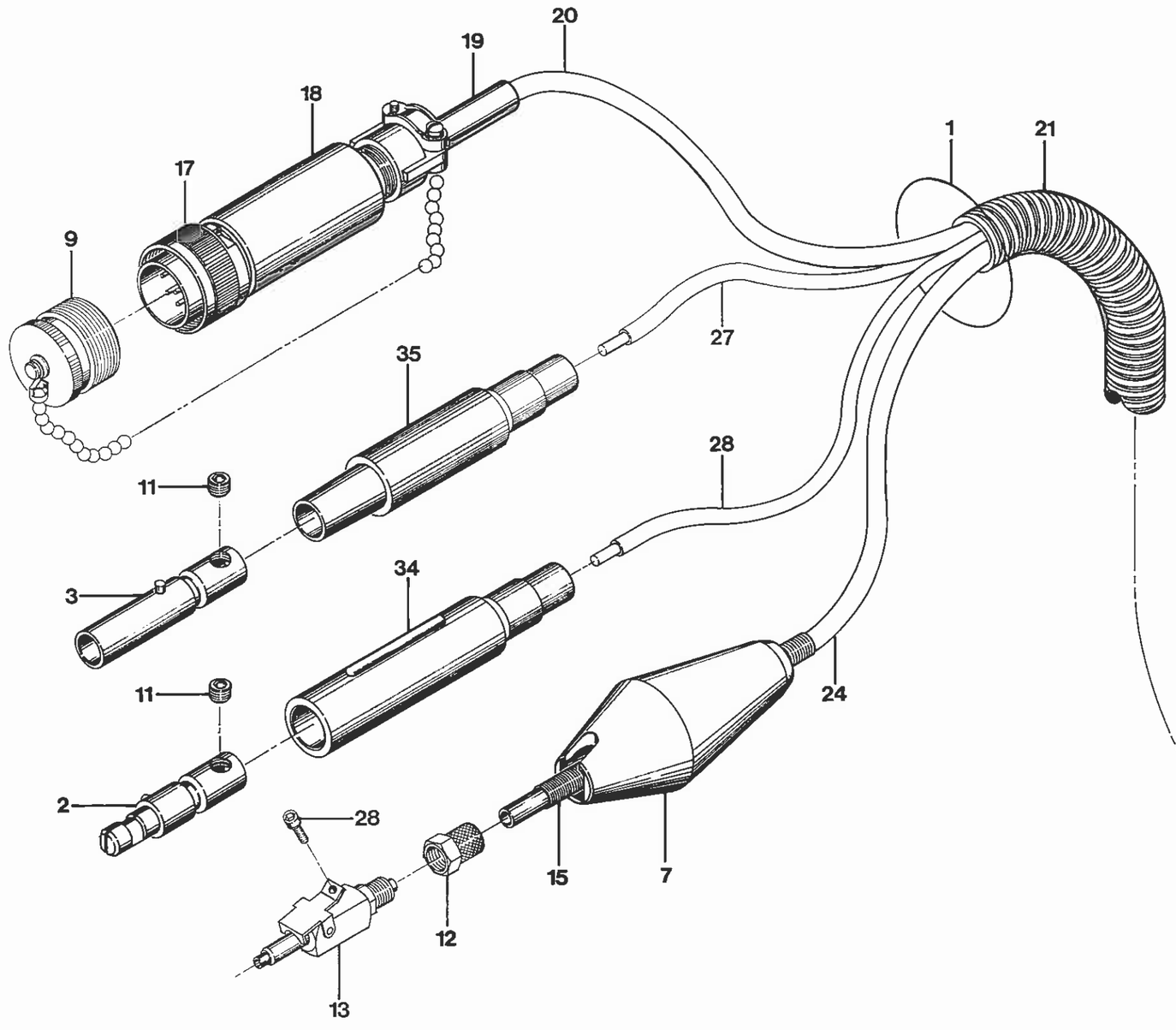
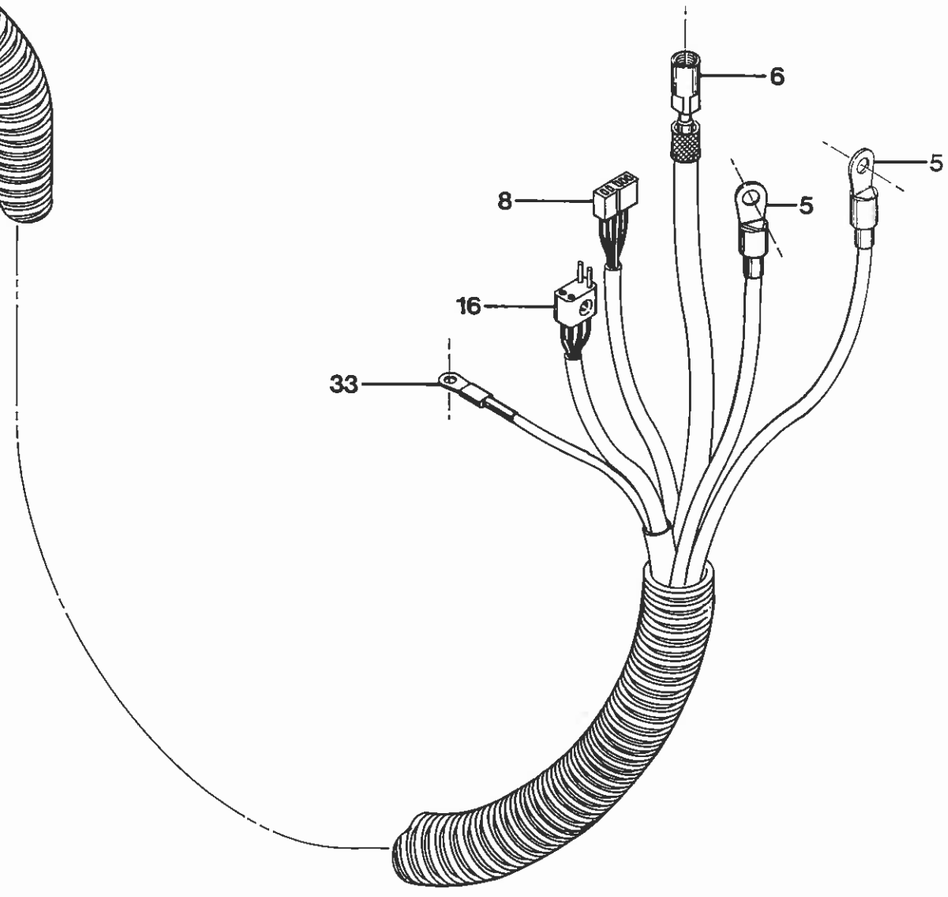
AMI
ARC MACHINES, INC.

ISSUED: 19 AUGUST 1993
REVISED: 12 FEB 1998





MODEL 9-250
IPB 090816
CABLE ASSEMBLY

IPB NUMBER: 090816

DATE EFFECTIVE: 19 Aug 1993
DATE REVISED: 10 Mar 1998

TO ORDER
USE PART NUMBER
DO NOT USE IPB
ITEM NUMBER

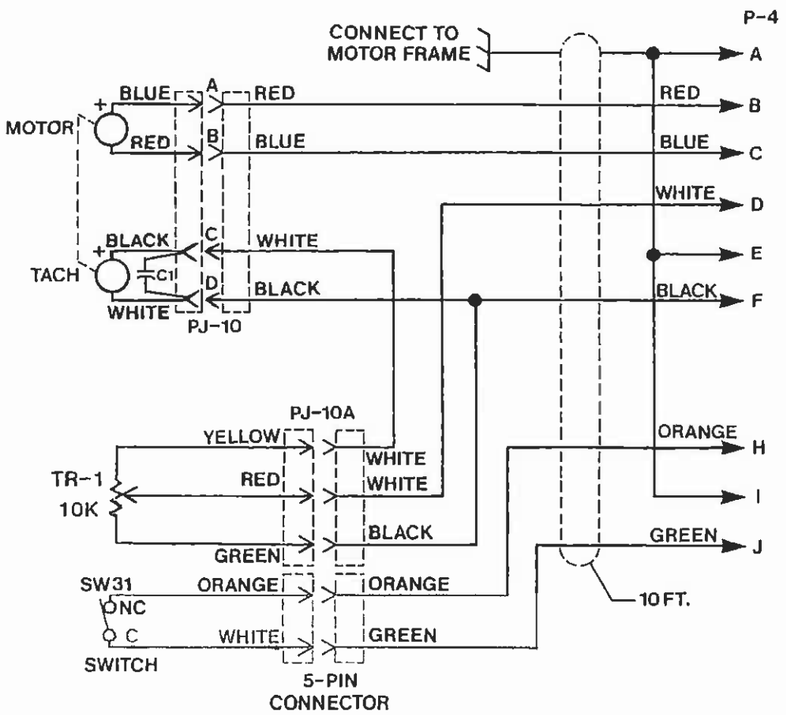
ARC MACHINES, INC.

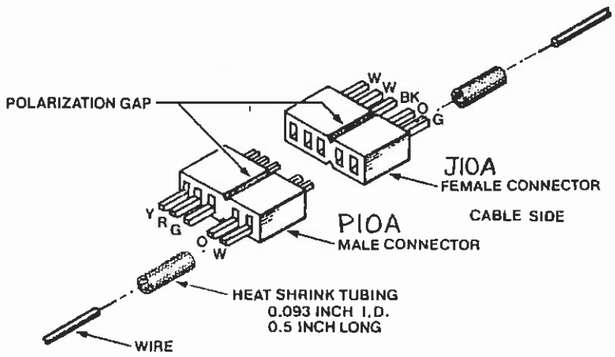
PRODUCT MODEL: 9-250
DESCRIPTION: CABLE ASSEMBLY
MANUAL NUMBER: 730077
NOTES:

IPB ITEM NUMBER	QTY	U/M	PART NUMBER	DESCRIPTION
1	1	EA	13090816-01	CABLE M9-500 CONTROL
2	1	EA	A100864-1	CONN CAM-LOK MALE BRASS 100A
3	1	EA	A100865-1	CONN CAM-LOK FEMALE BRASS 100A
4	0	-	-	---------
5	2	EA	B3407H	TERM RING #10 16-12AWG
6	1	EA	2PF1	FTG 1/4-28 FEMALE
7	1	EA	42060805-04	BOOT MALE GAS
8	1	EA	5PF	CONN 5 PIN FEMALE
9	1	EA	1350110-04	DUST CAP ASSY W/CHAIN(MALE18D)
11	2	EA	SSS31-18-25NPCU	SCREW SET SKT 5/16-18 1/4 L
12	1	EA	261-PG-04	FTG NUT/SLEEVE SPRING 1/4 TUBE
13	1	EA	294-PMD-04	FTG CPLG Q/D MALE 1/4 TUBE
14	0	-	-	---------
15	1	EA	AS200718	SPRING GUARD .34 OD 18.00 LG
16	1	EA	JF2P2SCD	CONN 4 PIN PLUG MINIATURE
17	1	EA	MS3106E18-1P	CONN 10 PIN PLUG
18	1	EA	G1501N186A3A	CONN BACKSHELL
19	1	EA	MS39056-3	CONN TELESCOPIC BUSHING
20	21	FT	CWT11943	CABLE 9 COND 22 AWG SHLD WHT
21	19	FT	RC-150-2-BLK	CONDUIT FLEX .60 ID .79 OD BLK
22	0	-	-	---------
24	21	FT	44-P-YELLOW	TBG POLTHN 1/4 OD
25	0	-	-	---------
26	0	-	-	---------
27	20	FT	AS105-4-BLK	CABLE WELD 10AWG SILICONE GND
28	20	FT	AS105-4-RED	CABLE WELD 10AWG SILICONE ELEC
33	1	EA	R61002GSB	TERM 16-14 AWG #6
34	1	EA	100869-7	INSULATOR CONNECTOR MALE
35	1	EA	100868-7	INSULATOR CONNECTOR FEMALE

PRICE, PART NUMBER AND
DESCRIPTION SUBJECT TO
CHANGE WITHOUT NOTICE

LTR	DCO	REVISIONS	DATE	BY	APPR
A	1438	REMOVE OLD MOTOR DIAGRAM	5-10-91	JRM	GPE
B	1716	C & D ON PJ-10 REVISED	11-24-92	MH	
C		ADD M9-250 TO USED ON LIST	10-5-93	LEC	GPE
D	2947	ADDED P10A & J10A. REMOVED PN'S FOR P10A, J10A, P4	12-4-97	MC	GPE





ITEM	QTY	IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MFR	PART NO

PARTS LIST

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	9-250
	9-500
	9RB-1250
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES
TOLERANCES ARE: FRACTIONS ± 1/16, DECIMALS .X ± .010, .XX ± .010, .XXX ± .005, ANGLES ±
ALL MACHINED SURFACES TO BE ✓
MATERIAL

THIRD ANGLE PROJECTION

FOR MILLED STANDARDS SET DOD-STD-100

APPROVALS	DATE
R. BILEK	10-16-85
[illegible]	10-10-[illegible]
J. McDonald	6-18-87
GPE	6-18-87

QUOTATION

ARC MACHINES INC.

DESCRIPTION
MODEL 9 WELD HEAD WIRING DIAGRAM

SIZE	MODEL NO	DRWG NO	REV
A		175144-06	D

SCALE | DO NOT SCALE DRAWING | SHEET 1 OF 1