

MODEL 4

ILLUSTRATED PARTS BREAKDOWN MANUAL

To be used for reference only

MODEL 4 IPB Notice and Revision History


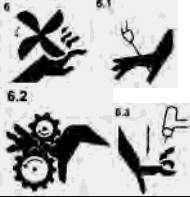

This document and the information contained herein is the property of Arc Machines, Inc. It is proprietary and submitted and received in confidence. It shall be used only for the purpose for which it is submitted and shall not be copied in whole or in part without the prior express written permission of Arc Machines, Inc. The information in this document has been carefully reviewed and is believed to be accurate. However, no responsibility is assumed for inaccuracies. Information and part numbers in this document are subject to change and Arc Machines, Inc. reserves the right to change required data without notice.



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.

All rights reserved.
Publication date: First Edition – June 5, 2007
Copyright 2007 by Arc Machines, Inc.

REV	DCO #	CHANGE DESCRIPTION	DATE	BY	APR
A	4645	Edited IPB 040103. ADDED NEW COVER	25 JAN 2008	SO	LEC
B	4779	Added 750015 rev D	28 May 2008	SO	BF
C	4896	Edited IPB 040102, Changed Item 18 qty to 3 was 4. Added Item 36 qty. 1 and Item 37 quantity of 2	18 June 2008	SO	BF
D	5033	Added IPB 0907130	10 Jul 2008	SO	BF

To be used for reference only

Property of Arc Machines, Inc.

TABLE OF CONTENTS

DATE EFFECTIVE: 2 SEP 2004

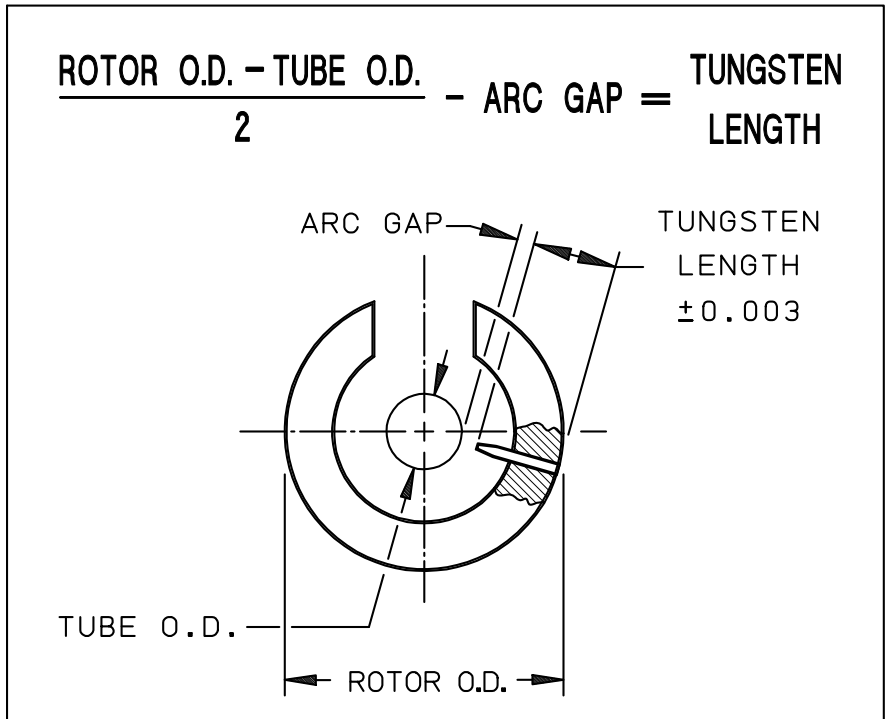
PRODUCT MODEL: 4
MANUAL NUMBER: 730119

IPB NUMBER	DESCRIPTION
750015	ELECTRODE DIMENSIONS
040101	TUBE BENCH WELD HEAD ASSEMBLY
040102	DRIVE BASIC ASSEMBLY
040103_OLD	1/2 INCH ROTOR MODULE ASSEMBLY
040103	1/2 INCH ROTOR MODULE ASSEMBLY
040109	END CUP ASSEMBLY
040800	CABLE ASSEMBLY
040503	PLATE TOOLING BASE ASSEMBLY (OPTION)
040500	V-BLOCK TOOL POST ASSEMBLY
040501	V-BLOCK TOOL POST SWIVEL ASSEMBLY
0907130	ROTOR ASSEMBLY M4-500

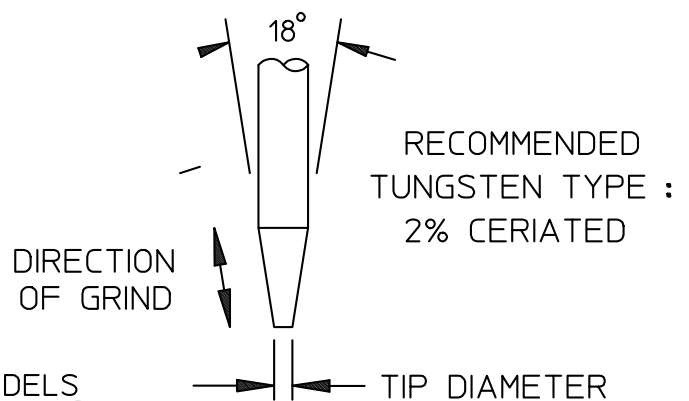
To be used for reference only

ELECTRODE DIMENSIONS

ROTOR DIAMETER	
MODEL NO.	ROTOR O.D
9-250	0.802
9-500/4-500	1.388
9AF-750	2.000
9AFM-750	1.312
9-900 INACTIVE	2.000
9/AF-900	1.875
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
9E-4500	6.280
8-6625	8.094
* 9-7500	10.440
9E-7500	9.375
* FOR AF HEADS USING OPTIONAL TUNGSTEN EXTENDER, SEE PAGE 2.	

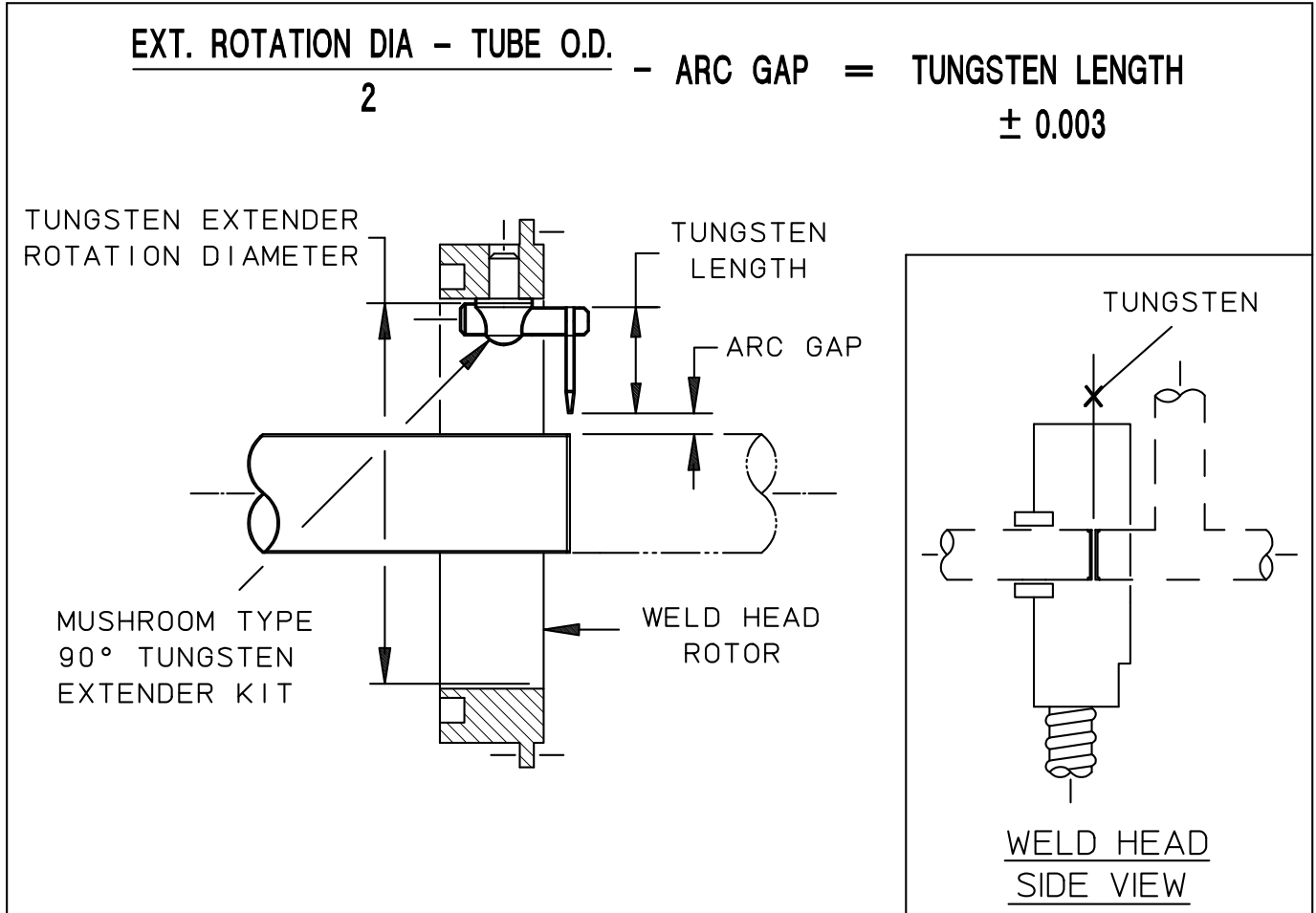


TUBE/PIPE WALL THICKNESS	RECOMMENDED ARC GAP	RECOMMENDED TIP DIA.
0.020/0.035	0.030	0.020
0.049/0.085	0.050	0.030
0.091/0.154	0.070	0.040



- 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



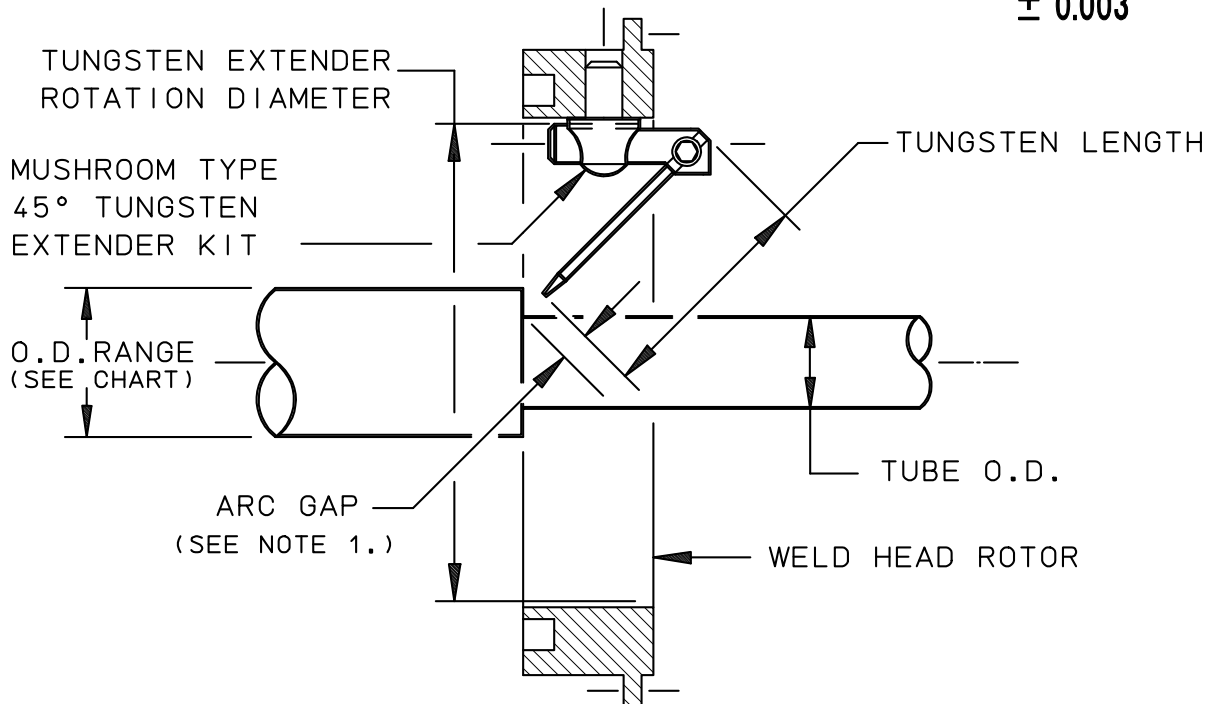
WELD HEAD MODEL NO.	KIT WITH 1/16 TUNGSTEN HOLDER PART NO.	KIT WITH 3/32 TUNGSTEN HOLDER PART NO.	TUNGSTEN EXTENDER ROTATION DIA.
9-1500	13090796-01	13090796-02	2.031
9-2500	13090796-05	13090796-06	3.156
9-3500	13090796-05	13090796-06	4.031
9-4500	13090796-03	13090796-04	4.920
9-7500	13090796-05	13090796-06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

TUNGSTEN LENGTH CALCULATION FOR 45° SOCKET WELD EXTENDERS

$$\frac{\text{EXT. ROTATION DIA} - \text{TUBE O.D.}}{2} \times 1.414 - \text{ARC GAP} = \text{TUNGSTEN LENGTH} \pm 0.003$$



MODEL NO.	TUNGSTEN EXTENDER ROTATION DIAMETER	O. D. RANGE	
		MIN	MAX
MODEL 9-1500 45° EXTENDER P/N 13090796-10	1.932	0.250	0.750
MODEL 9-2500 45° EXTENDER P/N 13090796-11	3.057	0.750	1.870
MODEL 9-3500 45° EXTENDER P/N 13090796-11	4.000	1.000	2.790
MODEL 9-4500 45° EXTENDER P/N 13090796-11	5.000	1.500	3.790
MODEL 9-7500 45° EXTENDER P/N 13090796-11	8.250	4.615	7.040
MODEL 9-7500 45° EXTENDER P/N 13090796-13	6.510	2.875	5.300

NOTES:

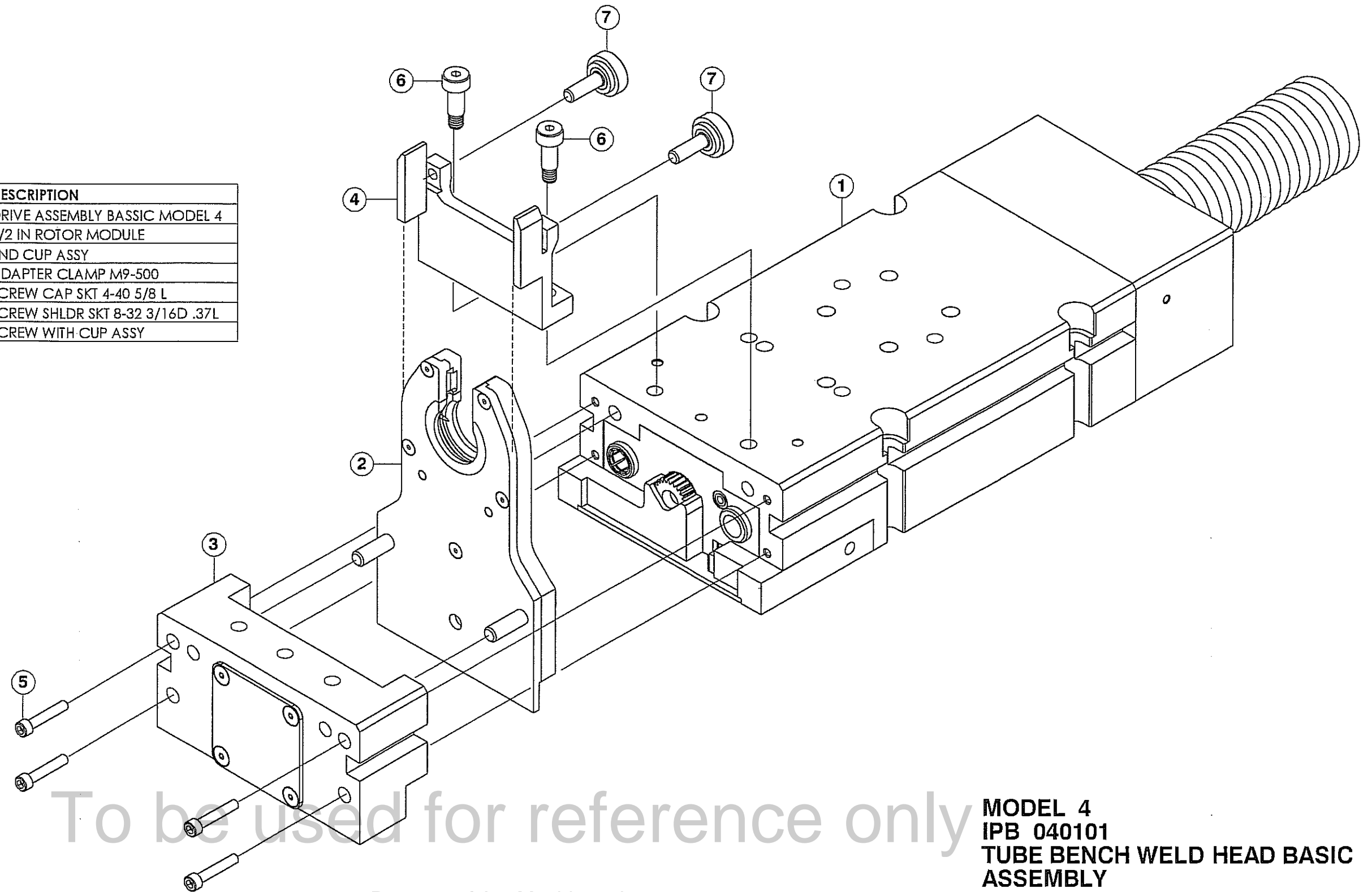
Property of Arc Machines, Inc.

1. ALIGNMENT TOOLING WILL BE REQUIRED FOR SPECIFIC APPLICATIONS.
2. PART NUMBERS SHOWN ARE FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE.
3. CONTACT AMI SALES OR SERVICES FOR SPECIFIC PART NUMBER.

THIS DOCUMENT OR DRAWING AND THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF ARC MACHINES, INC., IS PROPRIETARY, IS SUBMITTED AND RECEIVED IN CONFIDENCE, SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT IS SUBMITTED AND SHALL NOT BE COPIED IN WHOLE OR IN PART WITHOUT THE PRIOR EXPRESS WRITTEN PERMISSION OF ARC MACHINES, INC.



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	13040102-01	DRIVE ASSEMBLY BASSIC MODEL 4
2	1	13040103-01	1/2 IN ROTOR MODULE
3	1	13040109-01	END CUP ASSY
4	1	22040500-01	ADAPTER CLAMP M9-500
5	4	SCS04-40-0,62NP	SCREW CAP SKT 4-40 5/8 L
6	2	44D19	SCREW SHLDR SKT 8-32 3/16D .37L
7	2	130905211-01	SCREW WITH CUP ASSY



To be used for reference only

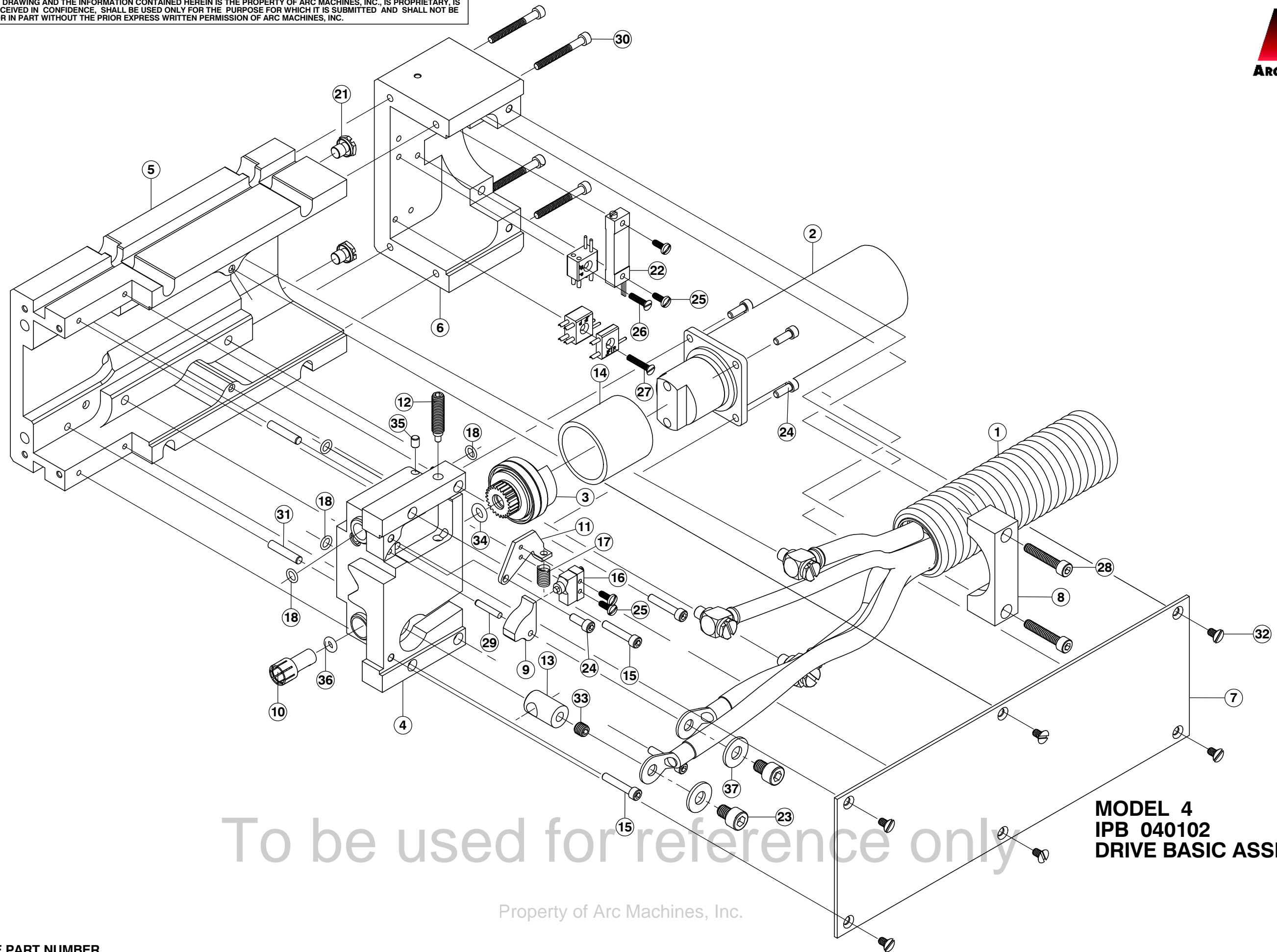
Property of Arc Machines, Inc.

**MODEL 4
IPB 040101
TUBE BENCH WELD HEAD BASIC
ASSEMBLY**

ISSUED: 31 AUG 2004
REVISED:

TO ORDER USE PART NUMBER.
PRICE, PART NUMBER AND DESCRIPTION
SUBJECT TO CHANGE WITHOUT NOTICE.

THIS DOCUMENT OR DRAWING AND THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF ARC MACHINES, INC., IS PROPRIETARY, IS SUBMITTED AND RECEIVED IN CONFIDENCE, SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT IS SUBMITTED AND SHALL NOT BE COPIED IN WHOLE OR IN PART WITHOUT THE PRIOR EXPRESS WRITTEN PERMISSION OF ARC MACHINES, INC.

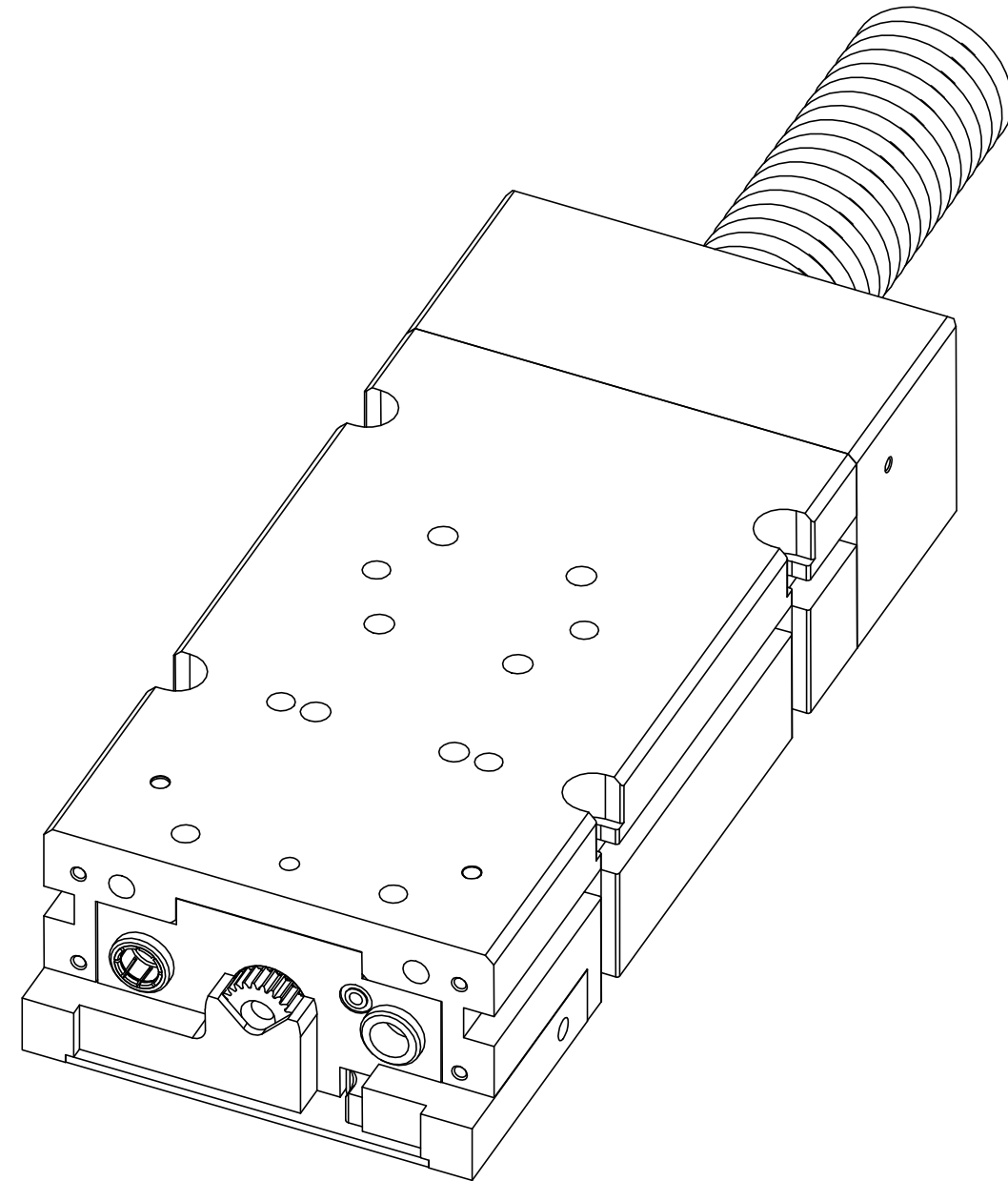


**MODEL 4
IPB 040102
DRIVE BASIC ASSEMBLY**

Property of Arc Machines, Inc.

TO ORDER USE PART NUMBER.
PRICE, PART NUMBER AND DESCRIPTION
SUBJECT TO CHANGE WITHOUT NOTICE.

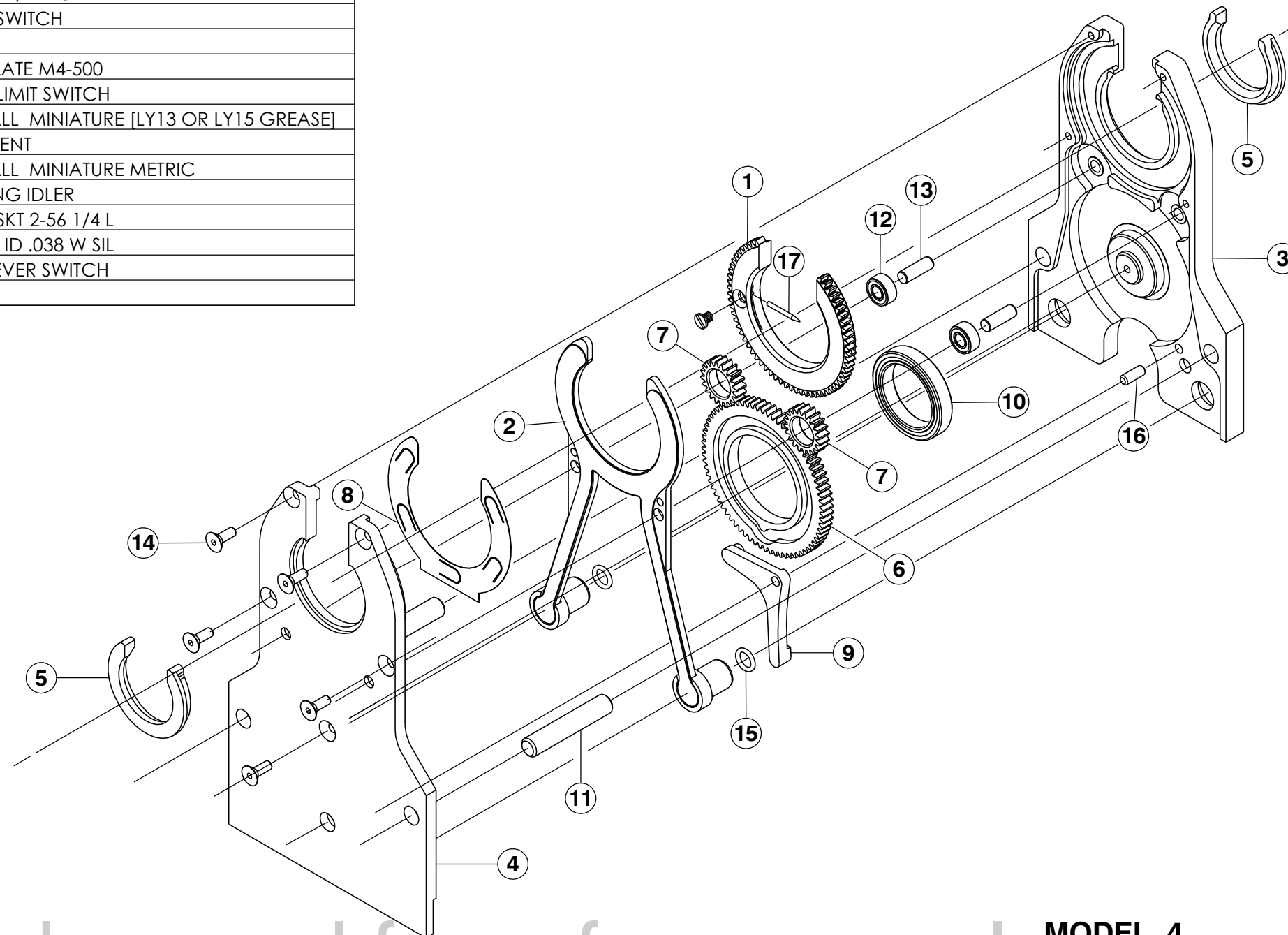
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	13040800-01	CABLE ASSY MODEL 4
2	1	13090660-01	MOTOR DRIVE ASSY M4
3	1	13090661-01	GEAR PINION ASSY M9BT
4	1	42090671-01	BASE
5	1	42090668-01	HOUSING MAIN DRIVE
6	1	22090670-01	HOUSING REAR
7	1	22090669-01	COVER
8	1	22090675-01	CLAMP CABLE
9	1	22091116-01	LEVER LIMIT SWITCH
10	1	22090681-01	SOCKET CONTACT
11	1	22091117-01	BASE LIMIT SWITCH
12	1	22091118-01	SCREW ADJ LIMIT SWITCH
13	1	22090680-01	FEEDTHRU
14	1	22090683-01	SPACER PINION DRIVE
15	4	SCS04-40-0,62NP	SCREW CAP SKT 4-40 5/8 L
16	1	MMGGD1DOC	SWITCH LIMIT PLUNGER
17	1	J-80	SPRING CPRSN .14 D .27 .64 .019
18	4	5-148-S604-70	O RING .154 ID .038 W SIL
19	2	JF2S2PCD	CONN 4 PIN JACK MINIATURE (GRY)
20	1	JF1P1SB1	CONN 2 PIN JACK MINIATURE (GRY)
21	2	MSP-1000-316	SCREW PLUG, 10-32 THD
22	1	3057L-1-103	POT TRIM 10K 1-1/4IN
23	2	SCS10-32-0,25NP	SCREW CAP SKT 10-32 1/4 L
24	5	SCS04-40-0,31NP	SCREW CAP SKT 4-40 5/16 L
25	4	SIL02-56-0,25NP	SCREW BDH SLT 2-56 1/4 L
26	1	SFL02-56-0,37NP	SCREW FLH SLT 2-56 3/8 L
27	2	SFL02-56-0,50NP	SCREW FLH SLT 2-56 5/8 L
28	2	SCS06-32-0,75NP	SCREW CAP SKT 6-32 3/4 L
29	1	PD09-0,50SS	PIN DOWEL 3/32D 1/2L SST
30	4	SCS04-40-1,00NP	SCREW CAP SKT 4-40 1.00L
31	2	PD12-0,62SS	PIN DOWEL 1/8D 5/8L SST
32	6	SFL04-40-0,18NP	SCREW FLH SLT 4-40 X 3/16
33	1	SSS10-32-18NPCU	SCREW SET SKT 10-32 3/16L CUPT
34	1	2-010-S604-70	O RING .238 ID .070 W SIL
35	1	22090686-01	PLUG GAS PASSAGE
36	1	2-006-S604-70	O RING .114 ID .070 W SILICONE
37	2	W10BR-FL	WASHER FL BRS #10



**MODEL 4
IPB 040102
DRIVE BASIC ASSEMBLY**

Property of Arc Machines, Inc.

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	130907130-01	ROTOR ASSY 9-500BT
2	1	130907129-01	CONDUCTOR RING BRAZED
3	1	420901138-01	HOUSING
4	1	420901139-01	COVER, HOUSING 1/2 IN MODULE
5	2	220907252-01	HEAT SHIELD 1/2 INCH
6	1	22090666-01	GEAR LIMIT SWITCH
7	2	22090667-01	GEAR IDLER
8	1	22040700-01	BACKING PLATE M4-500
9	1	22091115-01	ACTUATOR LIMIT SWITCH
10	1	SSRI-1458ZZRA3P25[BEARING BALL MINIATURE [LY13 OR LY15 GREASE]
11	2	220901142-01	PIN ALIGNMENT
12	2	SSL-730ZZHA3P25LY13	BEARING BALL MINIATURE METRIC
13	2	22090684-01	POST BEARING IDLER
14	5	SFS02-56-0,25NP	SCREW FLH SKT 2-56 1/4 L
15	2	5-148-S604-70	O RING .154 ID .038 W SIL
16	1	22040513-01	PIN PIVOT LEVER SWITCH
17	1	TC04-0396-01	TUNGSTEN



To be used for reference only

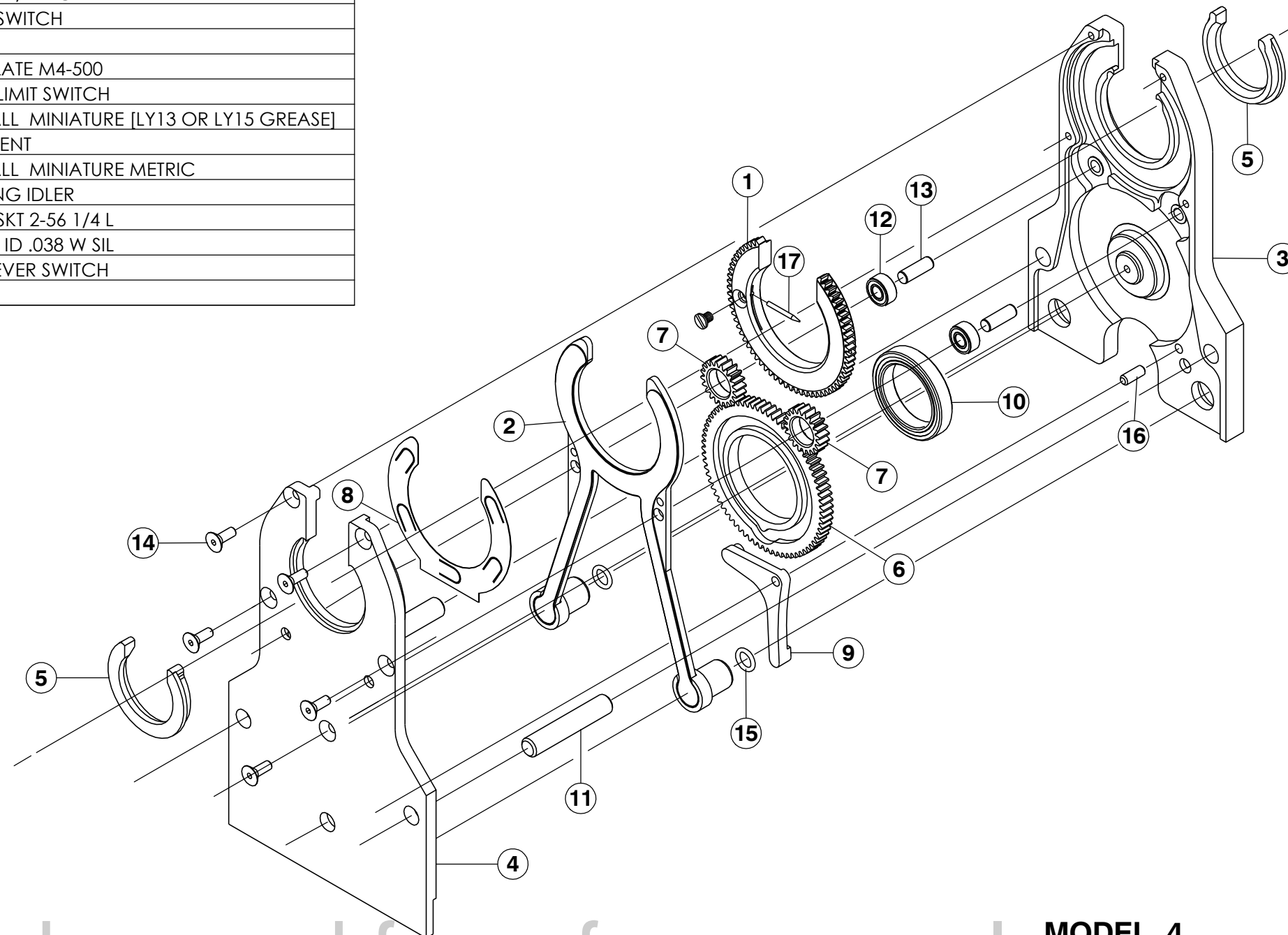
**MODEL 4
IPB 040103 OLD
1/2 INCH RÖTOR MODULE ASSEMBLY**

Property of Arc Machines, Inc.

TO ORDER USE PART NUMBER.
PRICE, PART NUMBER AND DESCRIPTION
SUBJECT TO CHANGE WITHOUT NOTICE.

ISSUED: 31 AUG 2004
REVISED: 25 JAN 2008

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	130907130-01	ROTOR ASSY 9-500BT
2	1	130907129-01	CONDUCTOR RING BRAZED
3	1	420901138-01	HOUSING
4	1	42040102-01	COVER, HOUSING 1/2 IN MODULE
5	2	220907252-01	HEAT SHIELD 1/2 INCH
6	1	22090666-01	GEAR LIMIT SWITCH
7	2	22090667-01	GEAR IDLER
8	1	22040700-01	BACKING PLATE M4-500
9	1	22091115-01	ACTUATOR LIMIT SWITCH
10	1	SSRI-1458ZZRA3P25[BEARING BALL MINIATURE [LY13 OR LY15 GREASE]
11	2	220901142-01	PIN ALIGNMENT
12	2	SSL-730ZZHA3P25LY13	BEARING BALL MINIATURE METRIC
13	2	22090684-01	POST BEARING IDLER
14	5	SFS02-56-0,25NP	SCREW FLH SKT 2-56 1/4 L
15	2	5-148-S604-70	O RING .154 ID .038 W SIL
16	1	22040513-01	PIN PIVOT LEVER SWITCH
17	1	TC04-0396-01	TUNGSTEN



To be used for reference only

MODEL 4
IPB 040103
1/2 INCH ROTOR MODULE ASSEMBLY

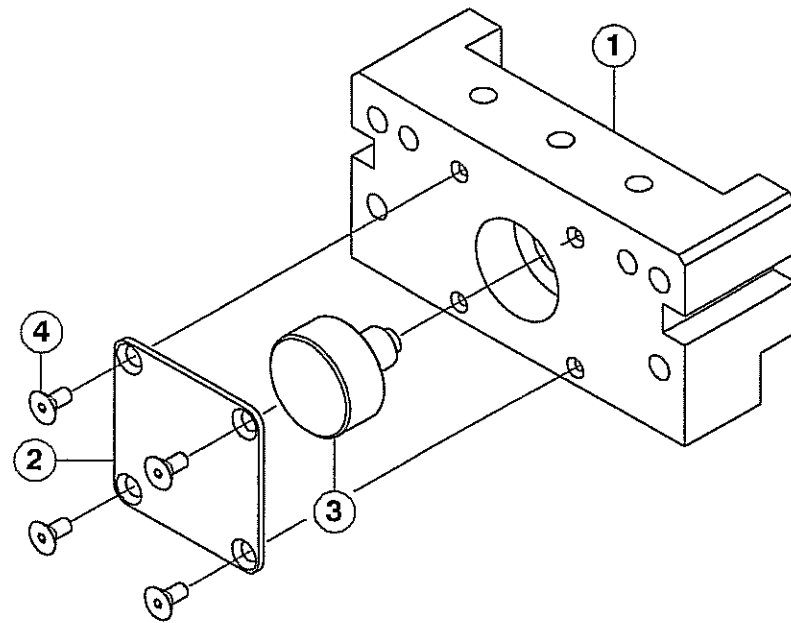
Property of Arc Machines, Inc.

TO ORDER USE PART NUMBER.
PRICE, PART NUMBER AND DESCRIPTION
SUBJECT TO CHANGE WITHOUT NOTICE.

ISSUED: 31 AUG 2004
REVISED: 25 JAN 2008

PAGE 1 OF 1

THIS DOCUMENT OR DRAWING AND THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF ARC MACHINES, INC., IS PROPRIETARY, IS SUBMITTED AND RECEIVED IN CONFIDENCE, SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT IS SUBMITTED AND SHALL NOT BE COPIED IN WHOLE OR IN PART WITHOUT THE PRIOR EXPRESS WRITTEN PERMISSION OF ARC MACHINES, INC.



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	220901140-01	FRAME
2	1	220901141-01	COVER ACCESS
3	1	220901143-01	PLUG ENCODER BLANK
4	4	SFS04-40-0,25NF	SCREW FLH SKT 4-40 1/4 L

To be used for reference only

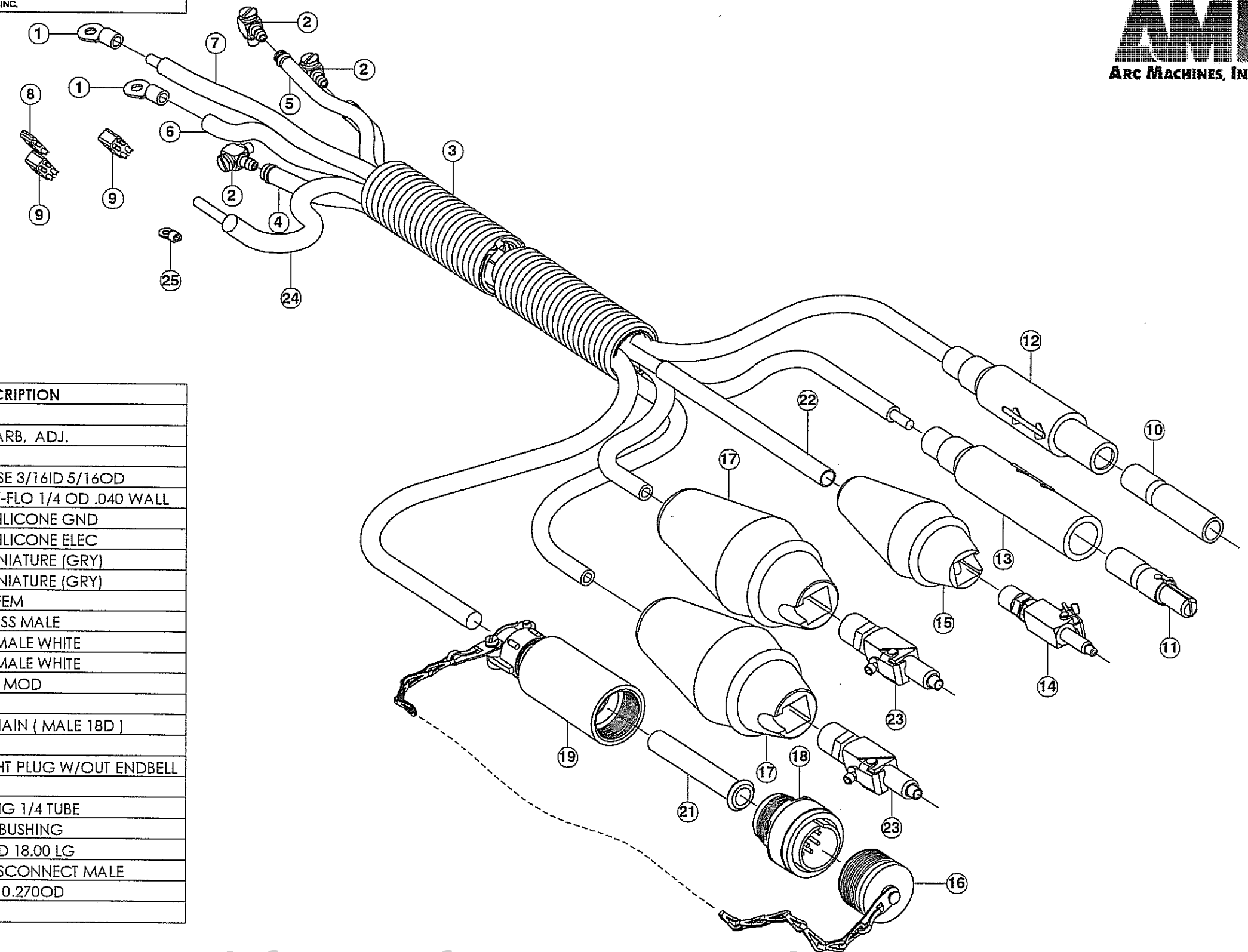
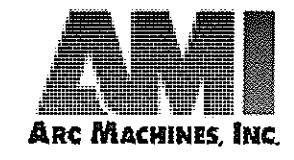
MODEL 4
IPB 040109
END CUP ASSEMBLY

Property of Arc Machines, Inc.

ISSUED: 31 AUG 2004
REVISED:

TO ORDER USE PART NUMBER.
PRICE, PART NUMBER AND DESCRIPTION
SUBJECT TO CHANGE WITHOUT NOTICE.

THIS DOCUMENT OR DRAWING AND THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF ARC MACHINES, INC., IS PROPRIETARY, IS SUBMITTED AND RECEIVED IN CONFIDENCE. SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT IS SUBMITTED AND SHALL NOT BE COPIED IN WHOLE OR IN PART WITHOUT THE PRIOR EXPRESS WRITTEN PERMISSION OF ARC MACHINES, INC.



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	33460	LUG AWG#10
2	3	MLS-1008-2-316	ELBOW L FITTING W BARB, ADJ.
3	2	DUCT-0,87-50-W	CONDUIT WHT 0.87 ID
4	1	42060814-02	TBG POLYU/ETHER BASE 3/16ID 5/16OD
5	1	44-P-YELLOW	TBG POLYETHYLEPOLY-FLO 1/4 OD .040 WALL
6	1	AS105-8-BLK	CABLE WELD 7AWG SILICONE GND
7	1	AS105-8-RED	CABLE WELD 7AWG SILICONE ELEC
8	1	JF1P1SB	CONN 2 PIN JACK MINIATURE (GRY)
9	2	JF2P2SCD	CONN 4 PIN PLUG MINIATURE (GRY)
10	1	A100865-1	CONN CONTACT BR FEM
11	1	A100864-1	CONN CONTACT BRASS MALE
12	1	A100868-12	CONN INSULATOR FEMALE WHITE
13	1	A100869-12	CONN INSULATOR FEMALE WHITE
14	1	1351109-01	COUPLING QID MALE MOD
15	1	42060805-04	BOOT MALE GAS
16	1	1350110-04	DUST CAP ASSY W/CHAIN (MALE 18D)
17	2	42060804-03	BOOT MALE WATER
18	1	MS3106E18-1PF42	CONN 10 PIN STRAIGHT PLUG W/OUT ENDBELL
19	1	G1501N186A3A	CONN BACKSHELL
20	1	261-PG-04	FTG NUT/SLEEVE SPRING 1/4 TUBE
21	1	MS39056-3	CONN TELESCOPING BUSHING
22	1	AS200718	SPRING GUARD .34 OD 18.00 LG
23	2	1351110-01	ASSY-MOD, QUICK DISCONNECT MALE
24	1	CWT11943	CABLE 09/22GA SHLD 0.270OD
25	1	R61002GSB	TERM 16-14 AWG #6

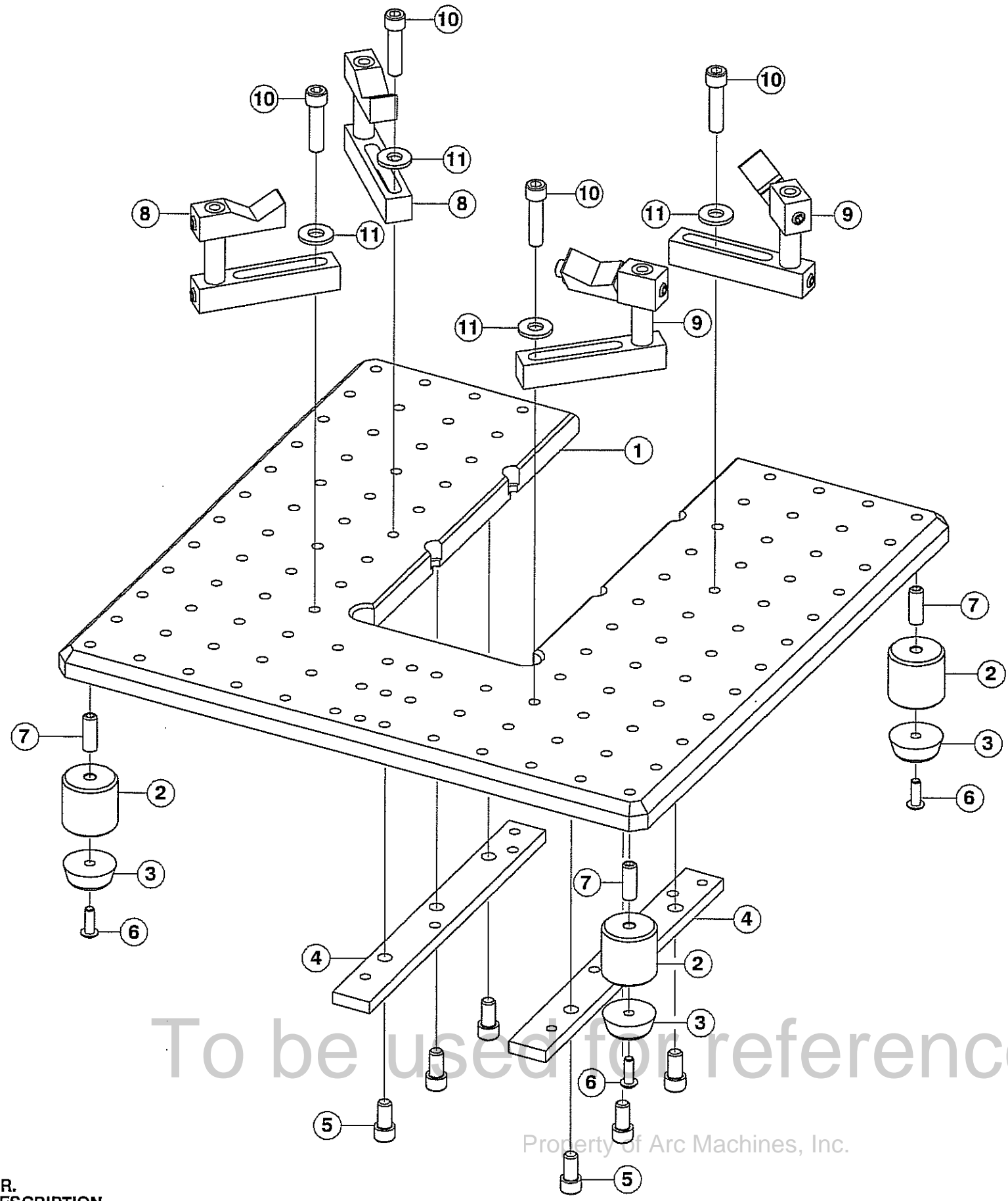
To be used for reference only **MODEL 4
IPB 040800
CABLE ASSEMBLY**

Property of Arc Machines, Inc.

ISSUED: 1 SEP 2004
REVISED:

TO ORDER USE PART NUMBER.
PRICE, PART NUMBER AND DESCRIPTION
SUBJECT TO CHANGE WITHOUT NOTICE.

THIS DOCUMENT OR DRAWING AND THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF ARC MACHINES, INC., IS PROPRIETARY, IS SUBMITTED AND RECEIVED IN CONFIDENCE. SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT IS SUBMITTED AND SHALL NOT BE COPIED IN WHOLE OR IN PART WITHOUT THE PRIOR EXPRESS WRITTEN PERMISSION OF ARC MACHINES, INC.



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	42040506-01	PLATE BASE TOOLING
2	4	22040508-01	SPACER FOOT FOR M4 BASE PLATE
3	4	2460	BUMPER
4	2	22040507-01	BKT CLAMP MOUNTING M4 WH UNIT
5	6	SCS25-20-0,50NP	SCREW CAP SKT 1/4-20 1/2 L
6	4	SBS08-32-0,50NP	SCREW BTH SKT 8-32 1/2 L
7	4	SSS25-20-75NPOV	SCREW SET SKT 1/4-20 3/4L OVPT
8	2	13040500-01	V-BLOCK TOOL POST ASSY
9	2	13040501-01	V-BLOCK TOOL POST SWIVEL ASSY
10	4	SCS25-20-1,00NP	SCREW CAP SKT 1/4-20 1/2 L
11	4	W25BR-FL	WASHER 1/4-20 BRASS

To be used for reference only

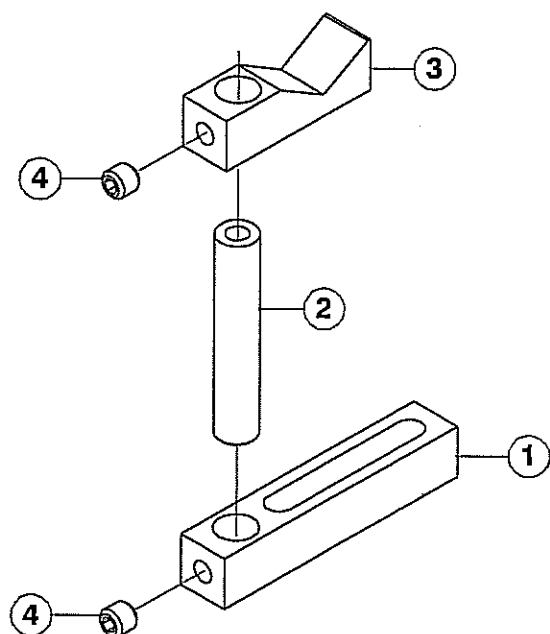
Property of Arc Machines, Inc.

TO ORDER USE PART NUMBER.
PRICE, PART NUMBER AND DESCRIPTION
SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL 4
IPB 040503
PLATE TOOLING BASE ASSEMBLY
(OPTION)

ISSUED: 3 OCT 2004
REVISED:

THIS DOCUMENT OR DRAWING AND THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF ARC MACHINES, INC., IS PROPRIETARY, IS SUBMITTED AND RECEIVED IN CONFIDENCE, SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT IS SUBMITTED AND SHALL NOT BE COPIED IN WHOLE OR IN PART WITHOUT THE PRIOR EXPRESS WRITTEN PERMISSION OF ARC MACHINES, INC.



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	22040501-01	BASE POST
2	1	22040503-01	TOOLING POST
3	1	22040502-01	TOOLING V-BLOCK
4	2	SSS25-20-25NPCU	SCREW SET SKT 1/4-20 1/4L CUPT

To be used for reference only

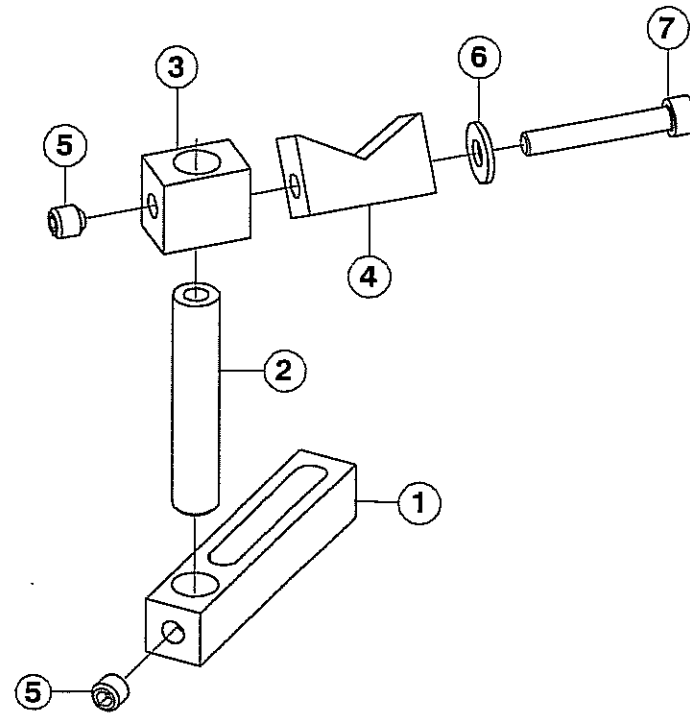
MODEL 4
IPB 040500
V-BLOCK TOOL POST ASSEMBLY

Property of Arc Machines, Inc.

TO ORDER USE PART NUMBER,
PRICE, PART NUMBER AND DESCRIPTION
SUBJECT TO CHANGE WITHOUT NOTICE.

ISSUED: 3 OCT 2004
REVISED:

THIS DOCUMENT OR DRAWING AND THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF ARC MACHINES, INC., IS PROPRIETARY, IS SUBMITTED AND RECEIVED IN CONFIDENCE, SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT IS SUBMITTED AND SHALL NOT BE COPIED IN WHOLE OR IN PART WITHOUT THE PRIOR EXPRESS WRITTEN PERMISSION OF ARC MACHINES, INC.



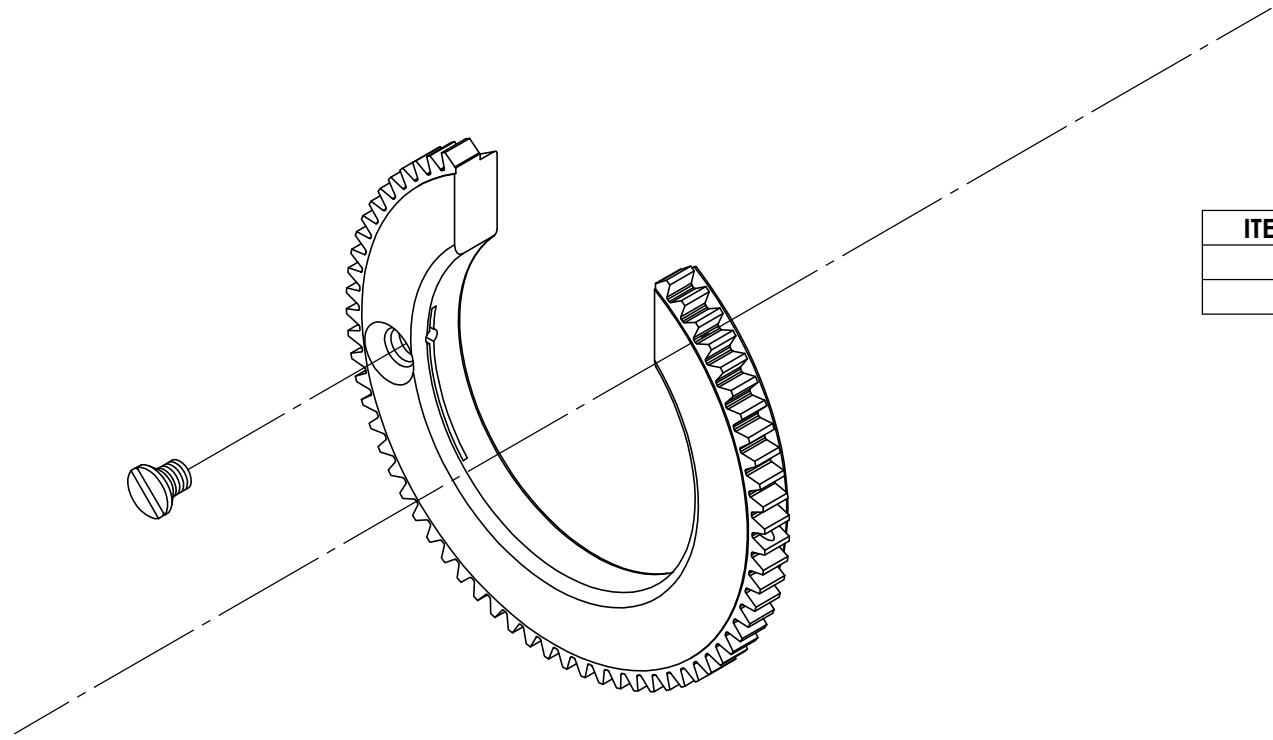
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	22040501-01	BASE POST
2	1	22040503-01	TOOLING POST
3	1	22040504-01	MOUNT V-BLOCK
4	1	22040505-01	V-BLOCK SWIVEL TOOLING
5	2	SSS25-20-25NPCU	SCREW SET SKT 1/4-20 1/4L CUPT
6	1	W10SS-FL	WASHER FL #10 SST
7	1	SCS10-32-1,25NP	SCREW CAP SKT 10-32 1-14/L

To be used for reference only **MODEL 4**
IPB 040501
V-BLOCK TOOL POST SWIVEL ASSY

Property of Arc Machines, Inc.

ISSUED: 3 OCT 2004
 REVISED:

TO ORDER USE PART NUMBER,
 PRICE, PART NUMBER AND DESCRIPTION
 SUBJECT TO CHANGE WITHOUT NOTICE.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	220907251-01	ROTOR	1
2	SFL02-56-0,12NP	SCREW FLH SLT 2-56 1/8 L NP	1

To be used for reference only

MODEL 4
IPB 0907130
ROTOR ASSEMBLY M4-500

Property of Arc Machines, Inc.