

MODEL 8-2000
ILLUSTRATED PARTS BREAKDOWN MANUAL

IPB Notice and Revision History

IPB 730103 M8-2000

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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.

| | |
|--|---|
| | <p>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.</p> |
| | <p>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</p> <p>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!</p> |
| | <p>Electrical Shock Hazard: Always disconnect weld heads when servicing internal components or opening housing covers for access.</p> |

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| REV | ECO # | CHANGE DESCRIPTION | DATE | BY | APR |
|-----|-------|--|-------------|----|-----|
| A | 4693 | IPB 080601. Added Item 2 bubble | 21 MAY 2008 | SO | BF |
| B | 4779 | Added 750015 rev D | 28 May 2008 | SO | BF |
| C | 5011 | In IPB 080803, changed Item 3 to SCS02-56-0,25NP was SBS02-56-0,25NP. In IPB 080110, changed Item 15 to SCS02-56-0,25NP was SBS02-56-0,25NP. | 6 Jun 2008 | SO | BF |
| D | 5467 | In IPB 080110 changed Item 11 to 13080733-03 was 22080729-01 | 9 DEC 2009 | LK | WO |
| E | 5579 | Added rev F of 750015 and Wiring Diagram | 18 Jan 2010 | CB | DC |
| F | 6461 | UPDATED IPB 080111 AND IPB 080108, CLARIFIED WH TOP AND BASIC ASSY BOMS AND DWGS TO REFLECT LATEST REV. ASSY. | 01/18/2013 | LK | DC |

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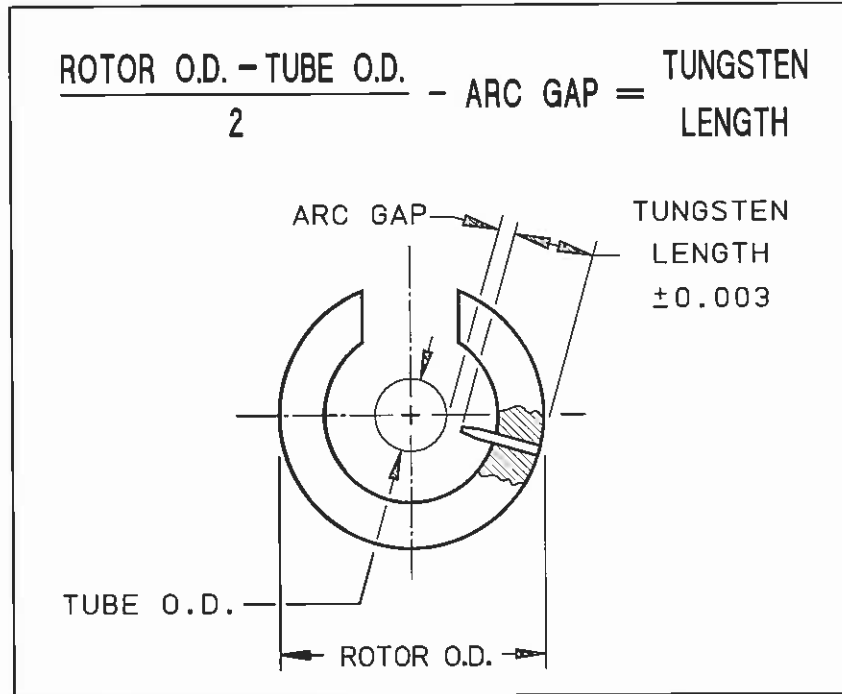
DATE EFFECTIVE: 14 APR 1998

PRODUCT MODEL: 8-2000
MANUAL NUMBER: 730103

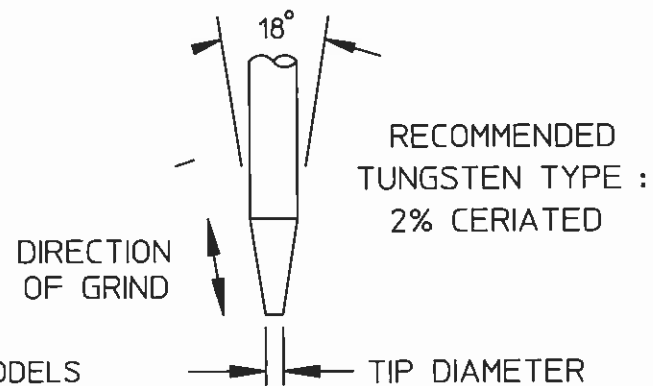
| IPB NUMBER | DESCRIPTION |
|-------------------|---------------------------------------|
| 750015 | ELECTRODE DIMENSIONS |
| 080108 | WELD HEAD TOP ASSEMBLY |
| 080111 | WELD HEAD BASIC ASSEMBLY |
| 080110 | HOUSING HSG SIDE BASIC ASSEMBLY |
| 080110-01 | HOUSING COVER SIDE BASIC ASSEMBLY |
| 080803 | LIMIT SWITCH-TRIM POT ASSEMBLY |
| 080601 | MOTOR DRIVE ASSEMBLY |
| 080710 | ROTOR ASSEMBLY |
| 080802 | CABLE ASSEMBLY |
| 47081703 | MODEL 8-2000 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. | |

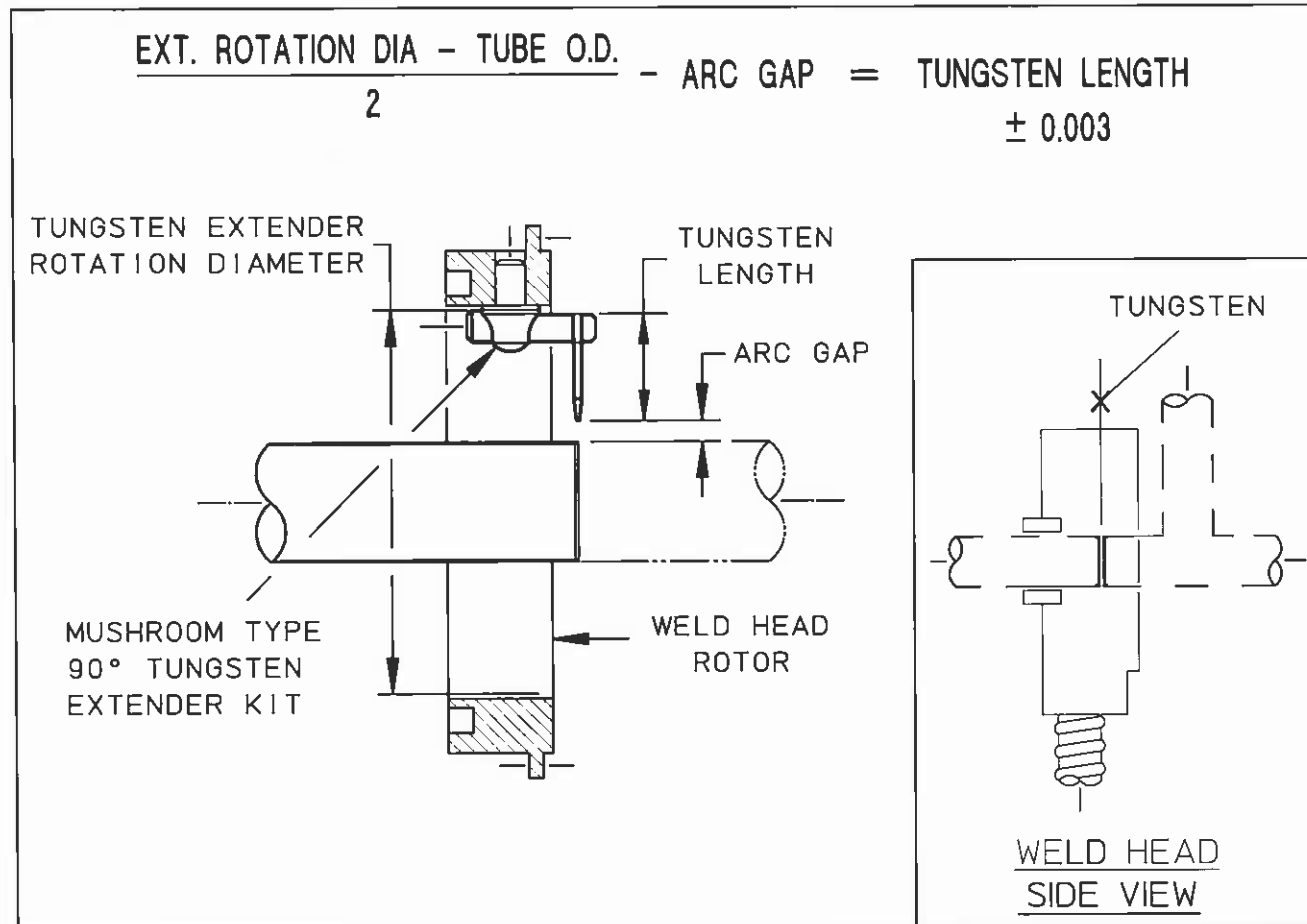


| TUBE/PIPE WALL THICKNESS | RECOMMENDED ARC GAP | RECOMMENDED TIP DIA. |
|--------------------------|---------------------|----------------------|
| 0.020/0.035 | 0.030 | 0.020 |
| 0.049/0.085 | 0.050 | 0.030 |
| 0.091/0.154 | 0.070 | 0.040 |



- 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

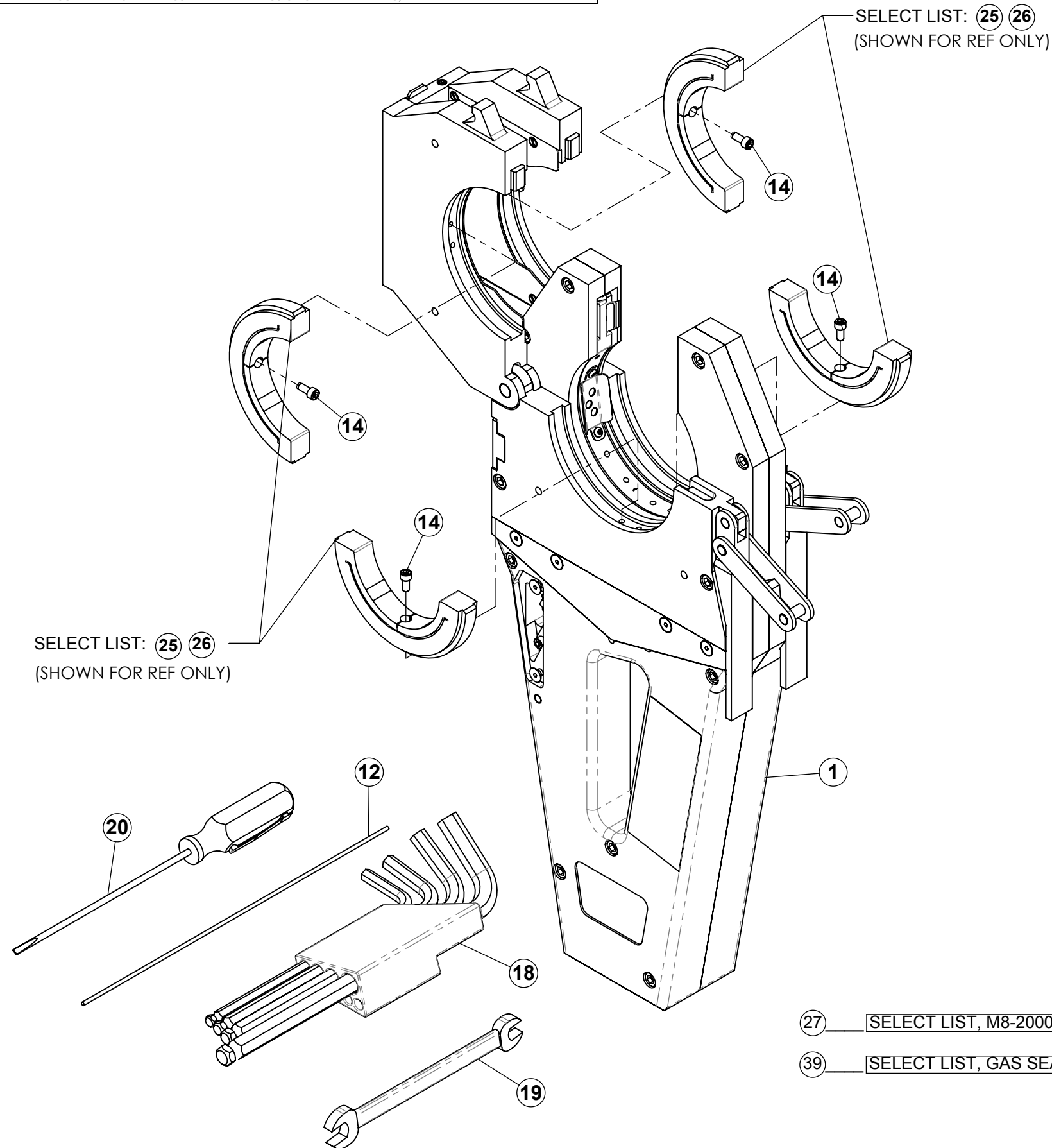


| WELD HEAD MODEL NO. | KIT WITH 1/16 TUNGSTEN HOLDER PART NO. | KIT WITH 3/32 TUNGSTEN HOLDER PART NO. | TUNGSTEN EXTENDER ROTATION DIA. |
|---------------------|--|--|---------------------------------|
| 9-1500 | 13090796-01 | 13090796-02 | 2.031 |
| 9-2500 | 13090796-05 | 13090796-06 | 3.156 |
| 9-3500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

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| BOM Table | | | |
|-----------|------------------|--------------------------------------|------|
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
| 1 | 13080111-01 | WELD HEAD ASSY | 1 |
| 12 | TC06 | TUNG 2% CERIA .062 DIA 7.00L | 1 |
| 14 | SCS04-40-0,25 NP | SCREW CAP SKT 4-40 1/4 L | 4 |
| 18 | BLX-12 | WRENCH L HEX BALL DRIVE SET 12 PIECE | 1 |
| 19 | 21004 | WRENCH OPEN-END 1/4 X 5/16 | 1 |
| 20 | R3324 | SCREWDRIVER SLOTTED 3/32 X 4IN LONG | 1 |
| 25 | 14080535-01 | SELECT LIST, BCU TCI M8-2000 | 0 |
| 26 | 14080580-01 | SELECT LIST, TCI-A M8-2000 | 0 |
| 27 | 14080113-01 | SELECT LIST, M8-2000 OPTIONS | 0 |
| 39 | 140905145-01 | SELECT LIST, GAS SEAL | 0 |

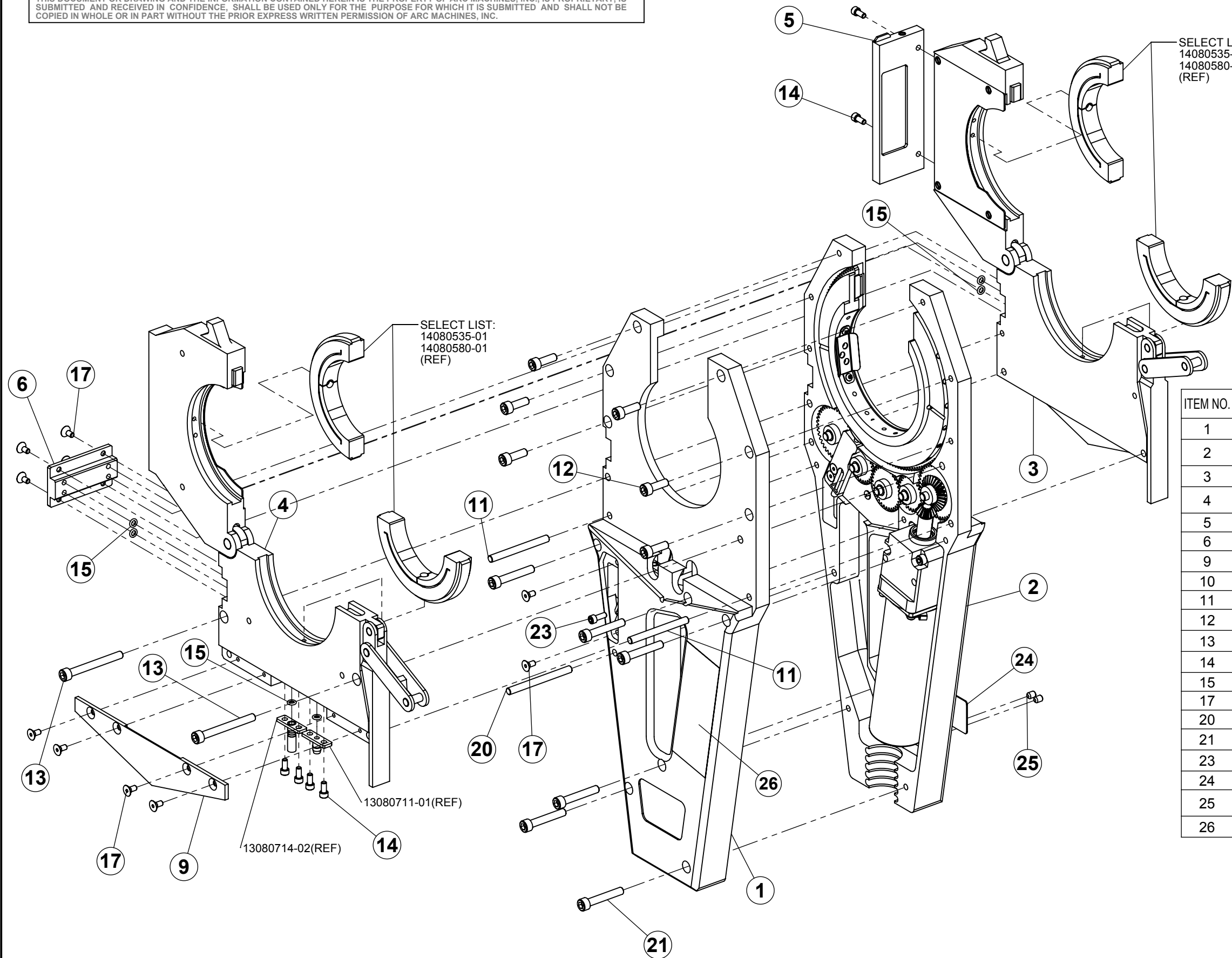
27 SELECT LIST, M8-2000 OPTIONS

39 SELECT LIST, GAS SEAL

**MODEL 8-2000
IPB 080108
WELD HEAD TOP ASSY**

ISSUED: 14 APR 1998
REVISED: 01/30/2013

TO ORDER USE PART NUMBER.
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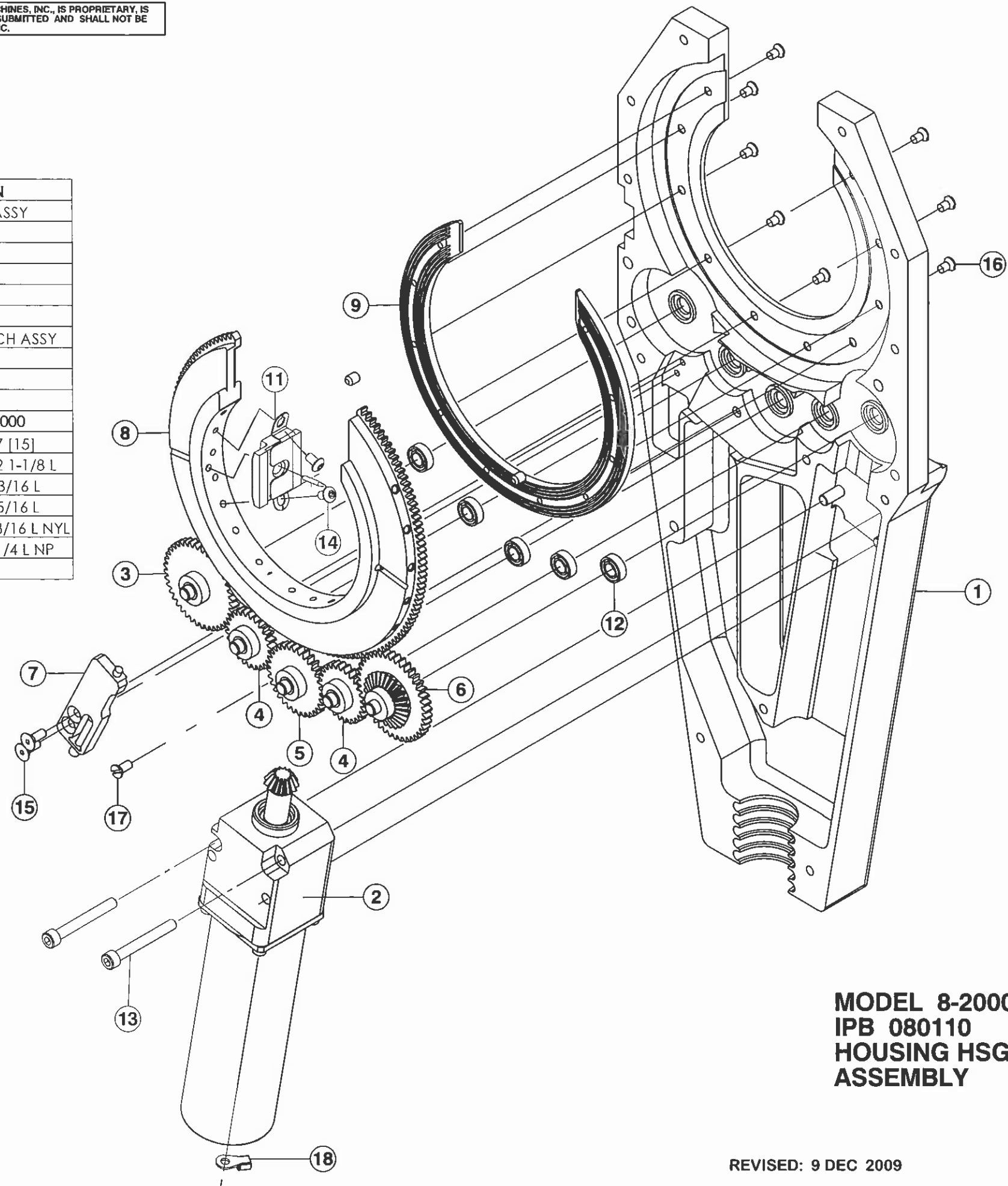
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------------|--------------------------------|------|
| 1 | 13080110-01 | HOUSING COVER SIDE ASSY | 1 |
| 2 | 13080110-02 | HOUSING ASSY HSG SIDE BASIC | 1 |
| 3 | 13080556-01 | CLAMP HSG HSG SIDE ASSY | 1 |
| 4 | 13080557-01 | CLAMP HSG ASSY (COVER SIDE) | 1 |
| 5 | 13080527-01 | WINDOW ASSY | 1 |
| 6 | 13080526-01 | BRACKET COOLING ASSY | 1 |
| 9 | 42080557-02 | PLATE COVER CLAMP HSG | 1 |
| 10 | 42080532-03 | COVER LIMIT SWITCH | 1 |
| 11 | 42090164-12 | PIN .156D 1.62L | 2 |
| 12 | SCS08-32-0,50NY | SCREW CAP SKT 8-32 1/2L NYL | 6 |
| 13 | SCS08-32-1,50NP | SCREW CAP SKT 8-32 1-1/2L | 2 |
| 14 | SCS04-40-0,25 NP | SCREW CAP SKT 4-40 1/4 L | 6 |
| 15 | R00109-040-40SL | O RING | 6 |
| 17 | SFS04-40-0,25NP | SCREW FLH SKT 4-40 1/4 L | 10 |
| 20 | 42090164-09 | PIN .156D 1.75L | 1 |
| 21 | SCS08-32-1,00NP | SCREW CAP SKT 8-32 1.0L | 6 |
| 23 | SCS04-40-0,31NP | SCREW CAP SKT 4-40 5/16L | 1 |
| 24 | 420901111-60 | NAMEPLATE | 1 |
| 25 | SSS06-32-0,18NPCU | SCREW SET SKT 6-32 3/16 L CUPT | 2 |
| 26 | L-743 | LABEL AMI RECOMMENDS 2% | 1 |

**MODEL 8-2000
IPB 080111
WELD HEAD BASIC ASSEMBLY**

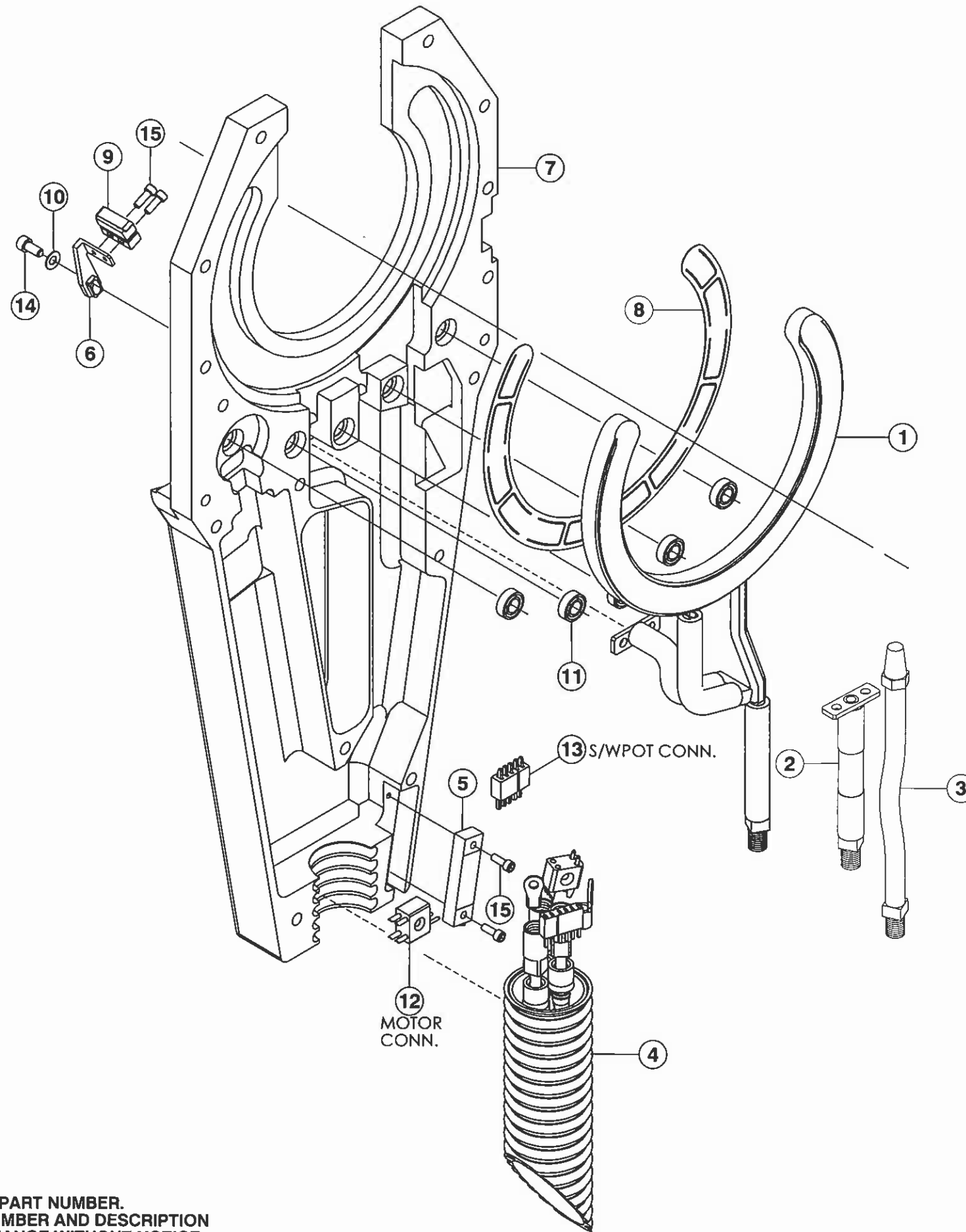
ISSUED: 14 APR 1998
REVISED: 01/29/2013

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| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|--------------------|-------------------------------|
| 1 | 1 | 13080112-01 | HOUSING HSG SIDE ASSY |
| 2 | 1 | 13080601-01 | MOTOR DRIVE ASSY |
| 3 | 1 | 13080603-03 | GEAR DRIVE ASSY |
| 4 | 2 | 13080603-02 | GEARDRIVE ASSY |
| 5 | 1 | 13080600-04 | GEAR DRIVE ASSY |
| 6 | 1 | 13080603-04 | GEAR SPUR BEVEL |
| 7 | 1 | 13081102-01 | HOUSING LIMIT SWITCH ASSY |
| 8 | 1 | 13080710-01 | ROTOR |
| 9 | 1 | 42080713-01 | GUIDE RING |
| 10 | 1 | 42080603-01 | COVER GEAR |
| 11 | 1 | 13080733-03 | KIT HEAT SHIELD M8-2000 |
| 12 | 5 | SSRI6632LLRA3P25LY | BEARING BALL .18 .37 [15] |
| 13 | 2 | SCS06-32-1,12NP | ACREW CAP SKT 6-32 1-1/8 L |
| 14 | 2 | SBS04-40-0,18NP | SCREW BTH SKT 4-40 3/16 L |
| 15 | 2 | SFS04-40-0,31NP | SCREW FLH SKT 4-40 5/16 L |
| 16 | 10 | SFL04-40-0,18N | SCREW FLH SLT 4-40 3/16 L NYL |
| 17 | 1 | SFL04-40-0,25NP | SCREW FLH SLT 4-40 1/4 L NP |
| 18 | 1 | 34119 | TERM RING 16-14 #4 |



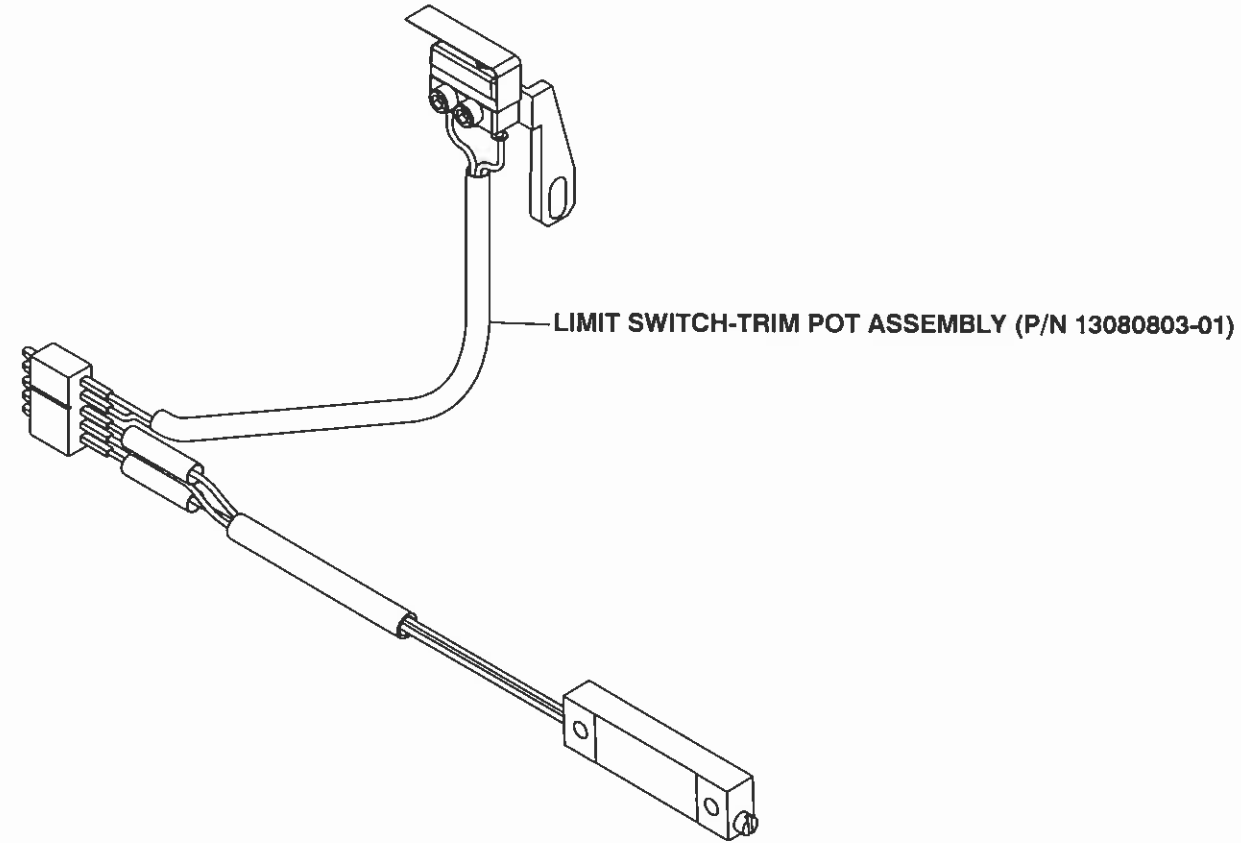
**MODEL 8-2000
IPB 080110
HOUSING HSG SIDE BASIC
ASSEMBLY**



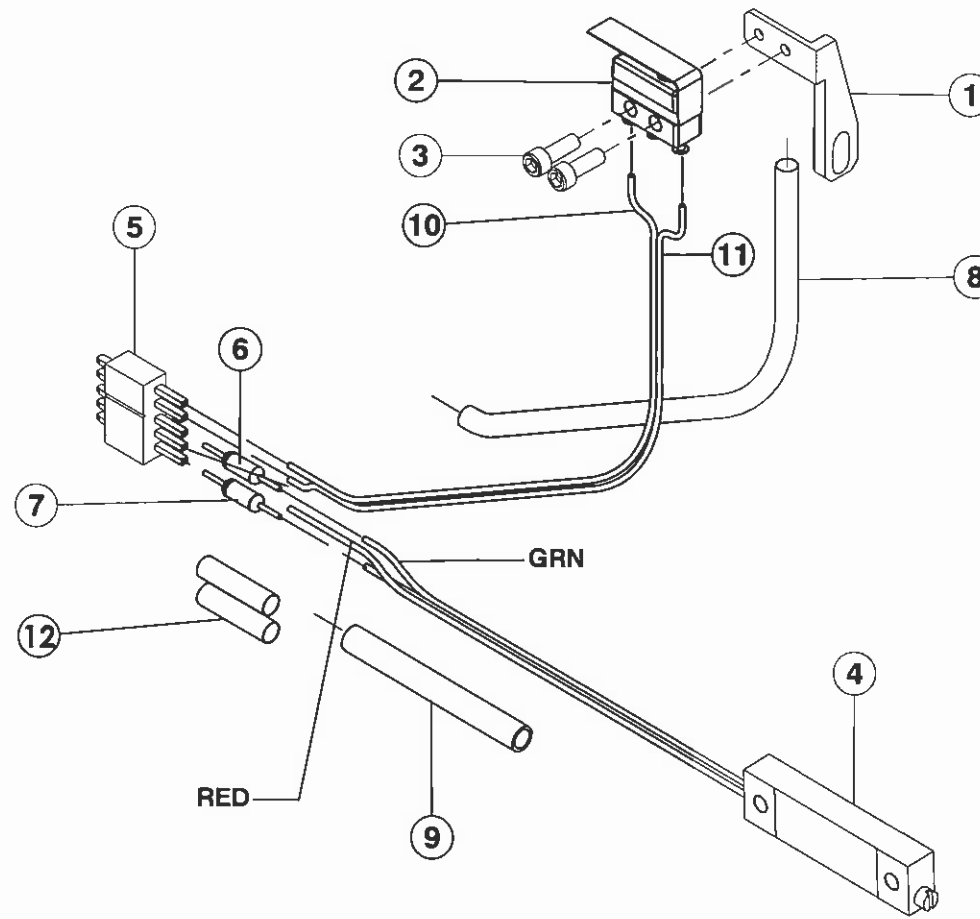
| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|--------------------|-----------------------------------|
| 1 | 1 | 13080711-01 | CONDUCTOR RING ASSY |
| 2 | 1 | 13080714-02 | GROUND LINE ASSY |
| 3 | 1 | 13080709-01 | FTG GAS LINE ASSY |
| 4 | 1 | 13080802-01 | CABLE ASSY |
| 5 | 1 | 3057L-1-202 | POT TRIM 2K 1-1/4 MULTI TURN |
| 6 | 1 | 42081102-01 | BRACKET LIMIT SWITCH |
| 7 | 1 | 42080103-01 | HOUSING COVER SIDE |
| 8 | 1 | 42080714-01 | SPRING LEAF BACK |
| 9 | 1 | MMGGD1L2C | SWITCH LIMIT LEAF LOW MOTION |
| 10 | 1 | DD621 | WASHER BELLEVILLE .125 ID .25 D |
| 11 | 5 | SSRI6632LLRA3P25LY | BEARING BALL .18 .37 [15] |
| 12 | 1 | JF2S2PCD | CONN 4 PIN JACK MINIATURE (GRY) |
| 13 | 1 | 7051 | CONN 5 PIN MALE SUB-MINIATURE BLK |
| 14 | 1 | SCS04-40-0.25NP | SCREW CAP SKT 4-40 1/4 L |
| 15 | 4 | SCS02-56-0.25NP | SCREW CAP SKT 2-56 1/4 L |

NOTE: ITEMS 5, 6, 9, 13 & 15 ARE AVAILABLE AS A COMPLETE ASSEMBLY, PART NUMBER 13080803-01 (IPB # 080803).

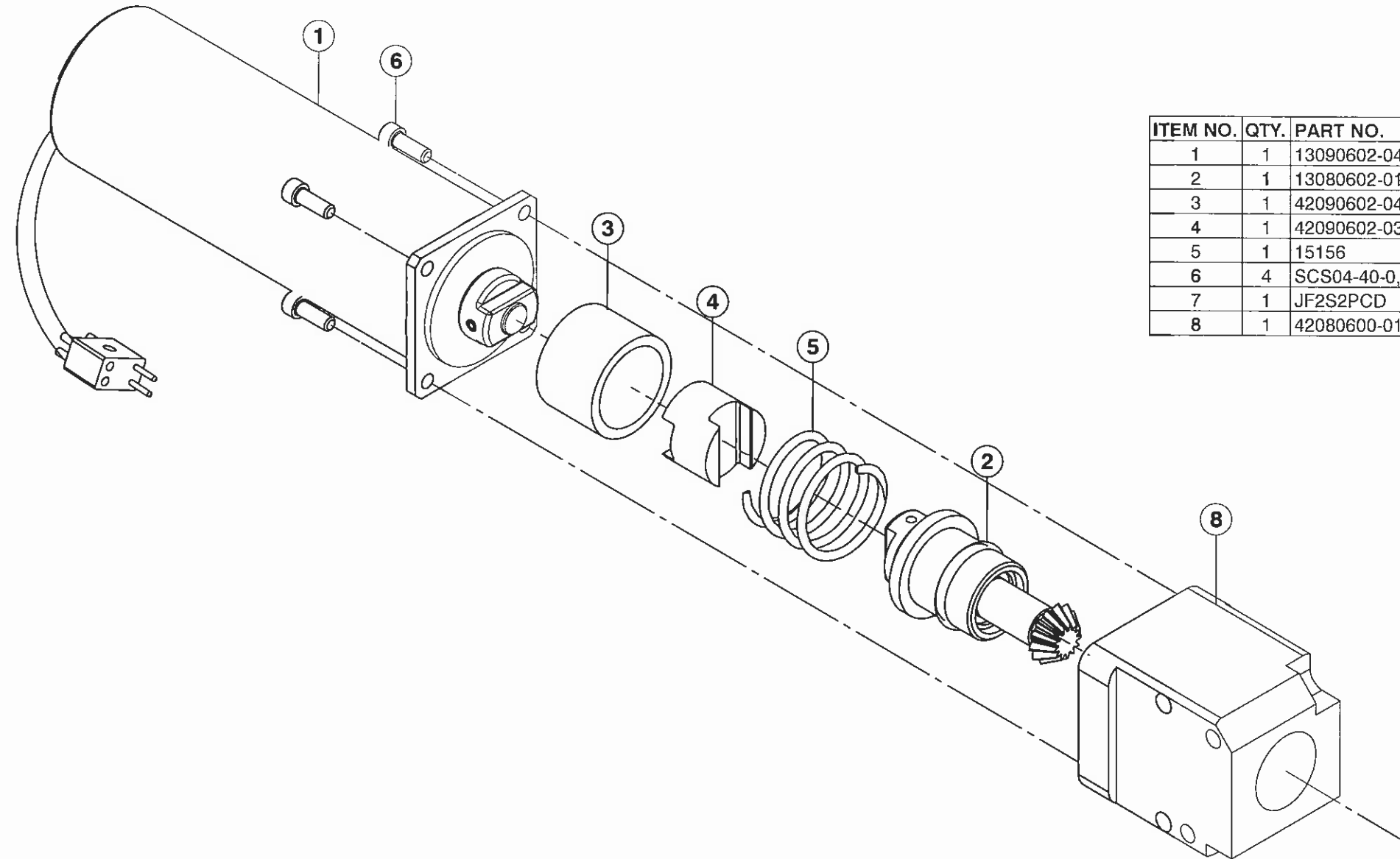
**MODEL 8-2000
IPB 080110-01
HOUSING COVER SIDE BASIC
ASSEMBLY**



| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|-----------------|---|
| 1 | 1 | 42081102-01 | BRACKET LIMIT SWITCH |
| 2 | 1 | MMGGD1L2C | LIMIT SWITCH LEAF |
| 3 | 2 | SCS02-56-0,25NP | SCREW CAP SKT 2-56 1/4 L |
| 4 | 1 | 3057L-1-202 | POT TRIM 2K 1-1/4 MULTI TURN |
| 5 | 1 | 7051 | CONN 5 PIN MALE |
| 6 | 1 | RN55D7871F | RES 7.87K |
| 7 | 1 | RN55D1300F | RES 130 OHMS 1/4W |
| 8 | 1 | M23053-5-102-0 | TBG SHRINK 1/16 ID BLK |
| 9 | 1 | M23053-5-102-0 | TBG SHRINK 1/16 ID BLK |
| 10 | 1 | EXE-24-19-36-9 | WIRE 24 AWG 19 STRD WHITE TEFLON INSUL |
| 11 | 1 | EXE-24-19-36-3 | WIRE 24 AWG 19 STRD ORANGE TEFLON INSUL |
| 12 | 2 | M23053_5-104-0 | TBG SHRINK 1/8 ID BLK |

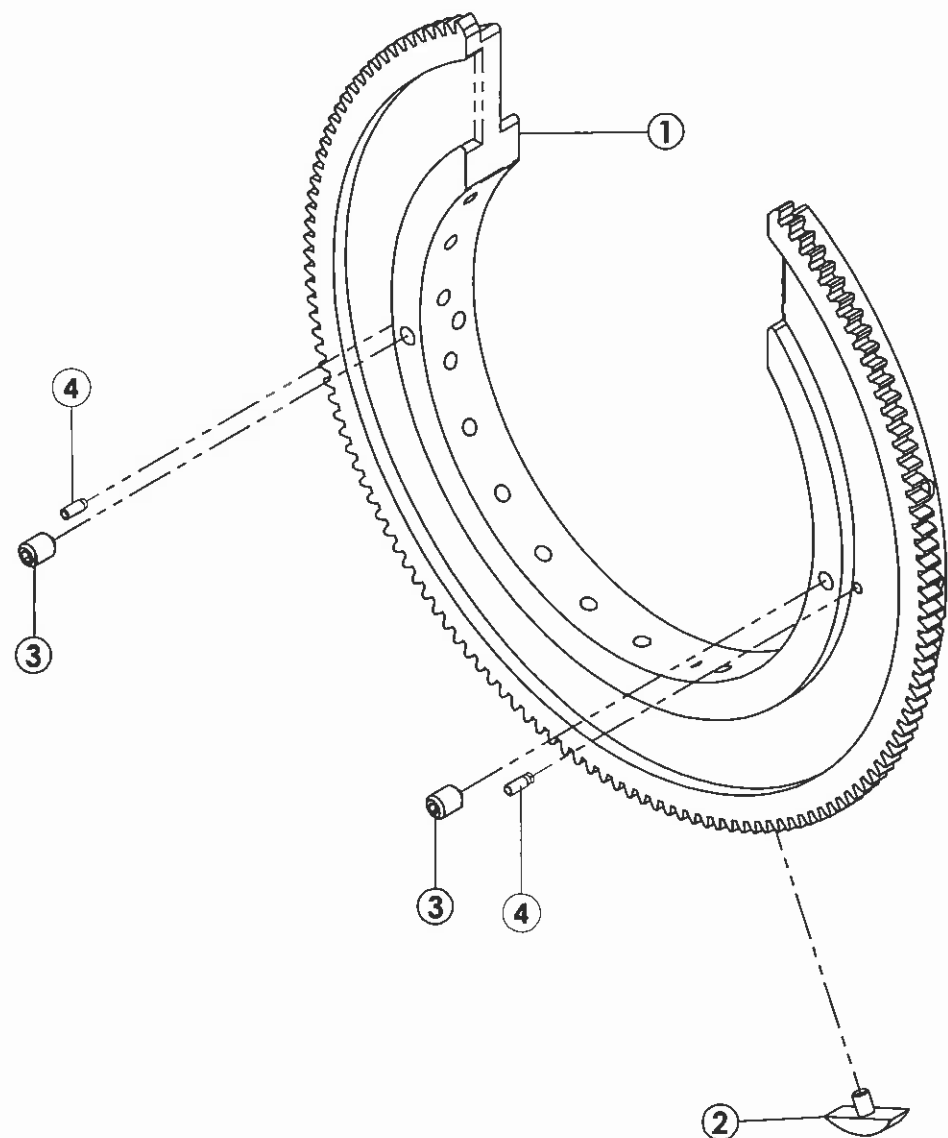


MODEL 8
IPB 080803
LIMIT SWITCH-TRIM POT ASSEMBLY
(M8-2000, M8-4000 AND M8-6625)



| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|-----------------|---------------------------------|
| 1 | 1 | 13090602-04 | MOTOR DRIVE ASSY |
| 2 | 1 | 13080602-01 | DRIVE PINION ASSY |
| 3 | 1 | 42090602-04 | SPACER SPRING |
| 4 | 1 | 42090602-03 | COUPLING INSULATING DELRIN |
| 5 | 1 | 15156 | SPRING CPRSN .81D .70L .067W |
| 6 | 4 | SCS04-40-0,31NP | SCREW CAP SKT 4-40 5/16 L |
| 7 | 1 | JF2S2PCD | CONN 4 PIN JACK MINIATURE (GRY) |
| 8 | 1 | 42080600-01 | BLOCK MOTOR (NEW) |

MODEL 8-4000
IPB 080601
MOTOR DRIVE ASSEMBLY



| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|-----------------|--------------------------------|
| 1 | 1 | 42080709-01 | ROTOR |
| 2 | 1 | 42080532-04 | CAM, LIMIT SWITCH |
| 3 | 2 | SSS06-32-18NPCU | SCREW SET SKT 6-32 3/16 L CUPT |
| 4 | 2 | 22080733-01 | PIN, ROLL MODIFIED |

MODEL 8-2000
IPB 080710
ROTOR ASSEMBLY

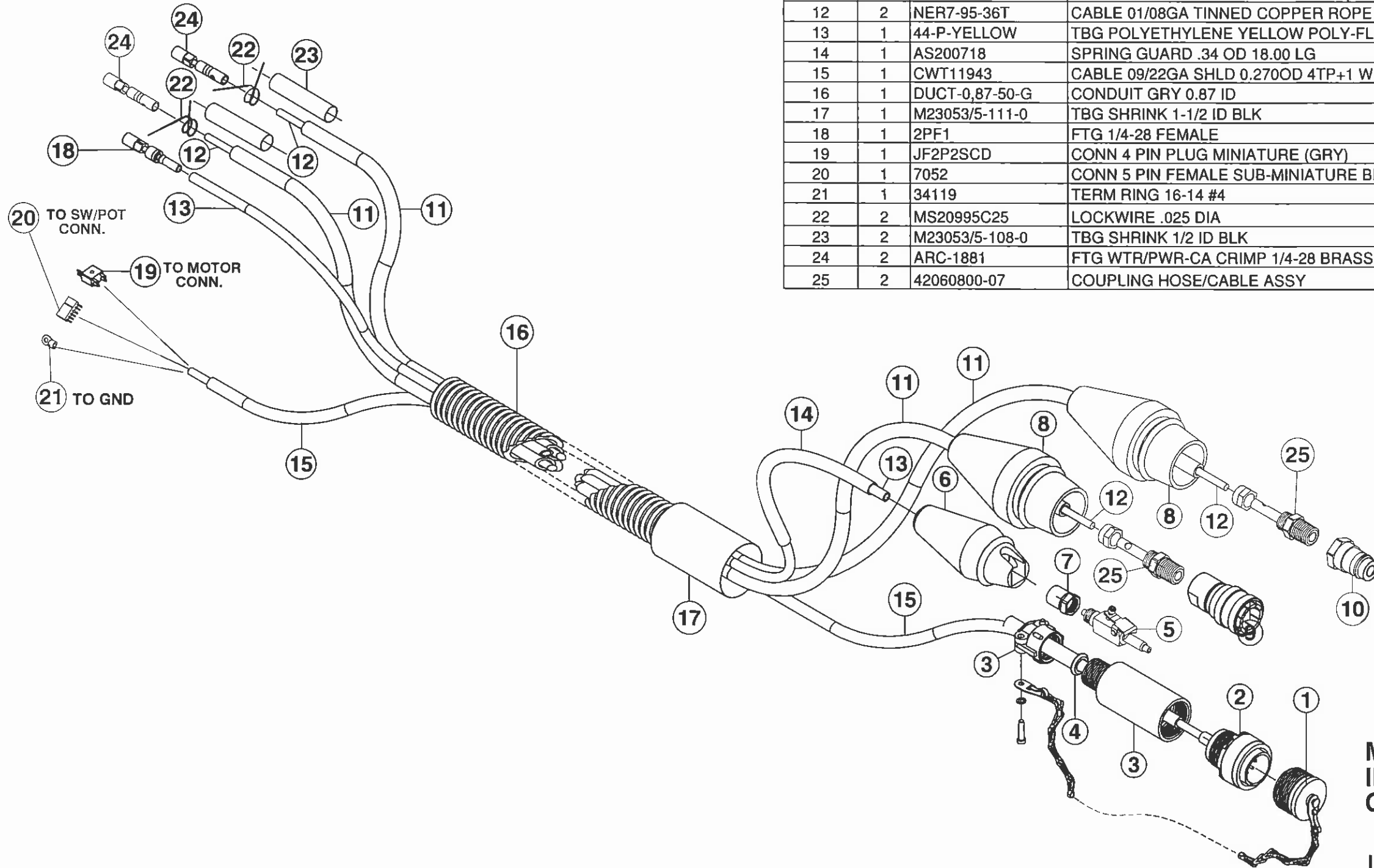
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| ITEM NO. | QTY. | PART NO. | DESCRIPTION |
|----------|------|-----------------|--|
| 1 | 1 | 13500110-04 | DUST CAP ASSY |
| 2 | 1 | MS3106E18-1PF42 | CONN 10 PIN STRAIGHT PLUG W/OUT ENDBELL |
| 3 | 1 | G1501N186A3A | CONN BACKSHELL |
| 4 | 1 | MS39056-3 | CONN TELESCOPIC BUSHING |
| 5 | 1 | 1351109-01 | COUPLING Q/D ASSY MALE GAS FOR 1/4 TUBING |
| 6 | 1 | 42060805-04 | BOOT MALE GAS CLIP TYP Q/D |
| 7 | 1 | 261-PG-05 | NUT/SLEEVE SPRING 5/16 TBG |
| 8 | 2 | 42060804-01 | BOOT MALE POWER/GROUND |
| 9 | 1 | 42060800-02 | COUPLING Q/D 1/4 WATER FEMALE MOD (SM-251B) |
| 10 | 1 | SM-252B | COUPLING Q/D 1/4PT MALE BRASS WATER/POWER |
| 11 | 2 | 42090806-01 | TBG POLYU BRAIDED ETHER BASE (WATER USE) 1/4 ID 3/8 OD |
| 12 | 2 | NER7-95-36T | CABLE 01/08GA TINNED COPPER ROPE |
| 13 | 1 | 44-P-YELLOW | TBG POLYETHYLENE YELLOW POLY-FLO 1/4 OD .040 WALL |
| 14 | 1 | AS200718 | SPRING GUARD .34 OD 18.00 LG |
| 15 | 1 | CWT11943 | CABLE 09/22GA SHLD 0.270OD 4TP+1 WHT |
| 16 | 1 | DUCT-0,87-50-G | CONDUIT GRY 0.87 ID |
| 17 | 1 | M23053/5-111-0 | TBG SHRINK 1-1/2 ID BLK |
| 18 | 1 | 2PF1 | FTG 1/4-28 FEMALE |
| 19 | 1 | JF2P2SCD | CONN 4 PIN PLUG MINIATURE (GRY) |
| 20 | 1 | 7052 | CONN 5 PIN FEMALE SUB-MINIATURE BLK W/GOLD PINS |
| 21 | 1 | 34119 | TERM RING 16-14 #4 |
| 22 | 2 | MS20995C25 | LOCKWIRE .025 DIA |
| 23 | 2 | M23053/5-108-0 | TBG SHRINK 1/2 ID BLK |
| 24 | 2 | ARC-1881 | FTG WTR/PWR-CA CRIMP 1/4-28 BRASS SWIVEL NUT (FEM) |
| 25 | 2 | 42060800-07 | COUPLING HOSE/CABLE ASSY |



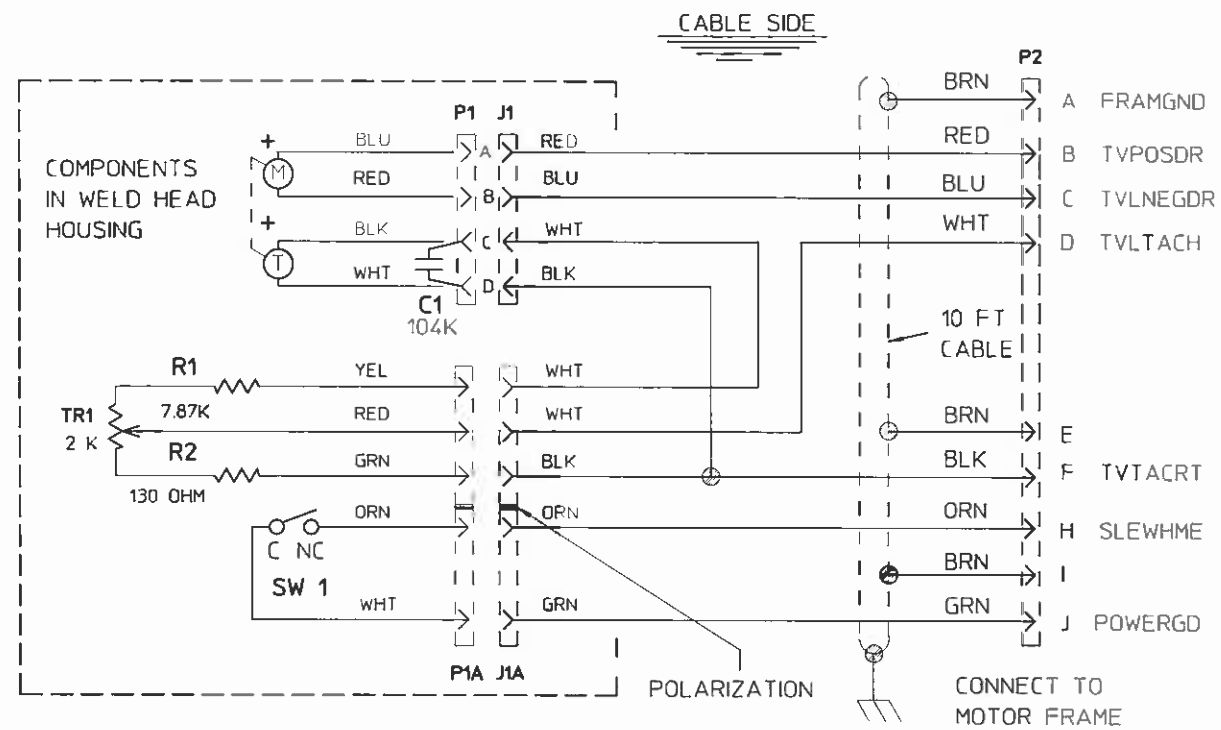
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**MODEL 8-2000
IPB 080802
CABLE ASSEMBLY**

ISSUED: 7 JUL 2003
REVISED: 25 JULY 2006

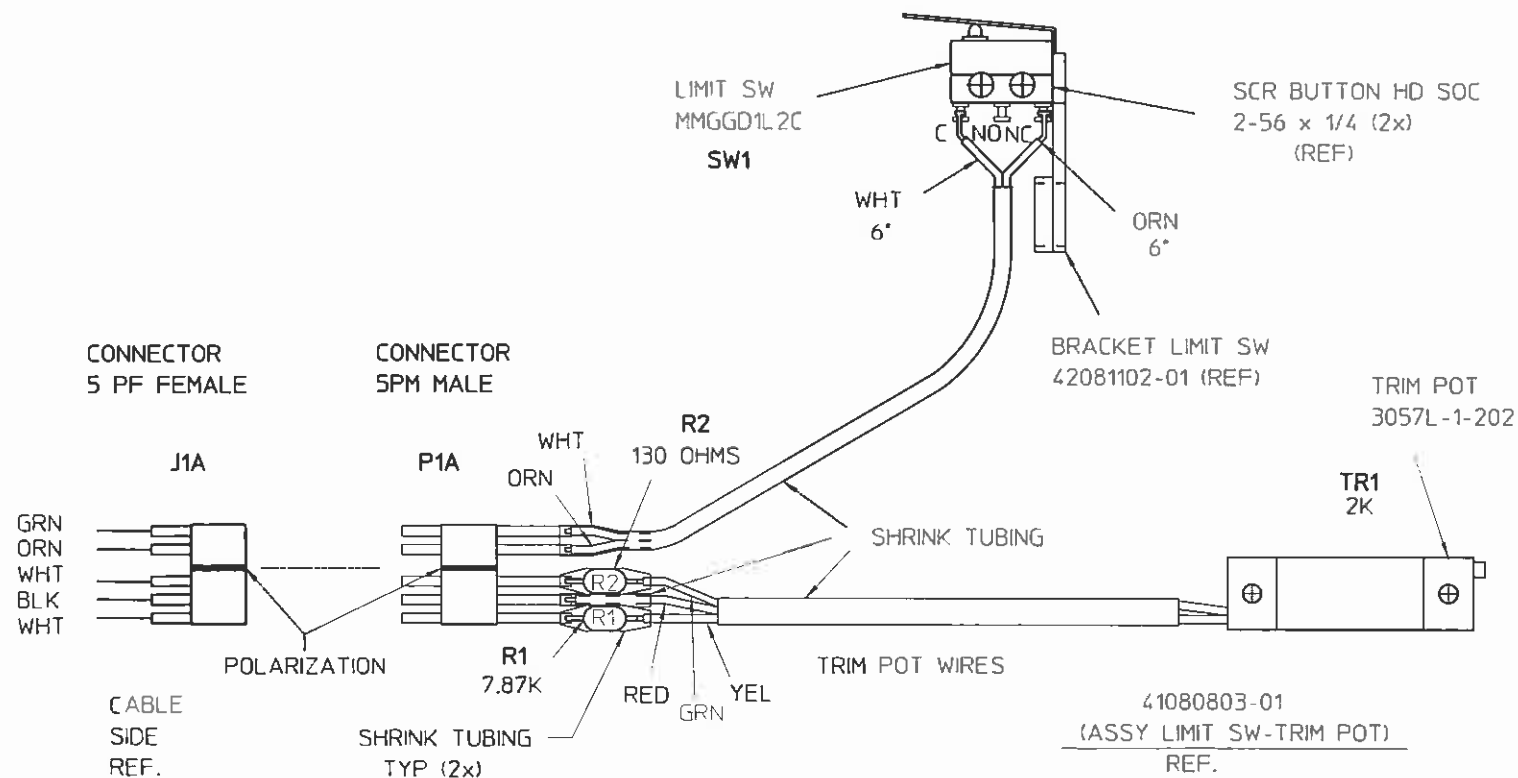
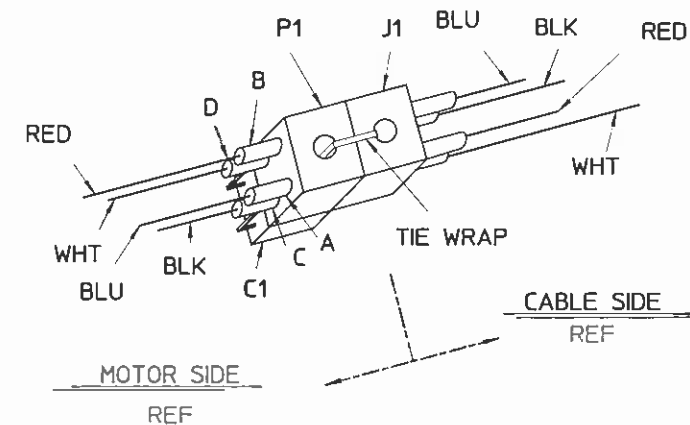
| ZONE | LTR | DCO | REVISIONS | DATE | BY | APPR |
|------|-----|------|------------------------------|--------|-----|------|
| | A | 3806 | ADDED TRIM POT/LIMIT SW ASSY | 2MAR01 | JKV | |

NOTES:



-01

CONNECTORS



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| | | |
|---|------------------------|-------------------------------------|
| UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES ARE: | THIRD ANGLE PROJECTION | FOR FILED STANDARDS SEE DDD-STD-100 |
| FRACTIONS DECIMALS ANGLES 1/16 .030 ° .XX .010 .XXX .005 | | |
| ALL MACHINED SURFACES TO BE | APPROVALS | DATE |
| <input checked="" type="checkbox"/> | DRAWN: JONAS VYNIS | 11JAN2001 |
| MATERIAL | CHECKED: | |
| NEXT ASSY USED ON | APPR: | |
| APPLICATION | QUOTATION | |

ARC MACHINES, INC.

DESCRIPTION: MODEL 8-2000 WELDIAGRAM HEAD WIRING DIAGRAM

| | | | |
|-------|----------------------|----------|--------------|
| SIZE | MODEL NO | DRWG NO | REV. |
| D | M-8 | 47081703 | A |
| SCALE | DO NOT SCALE DRAWING | | SHEET 1 of 1 |