

MODEL	STOCK NO.
<b>MILLERMATIC 30E CONTROL/FEEDER</b>	
.030 Wire V-Groove	058 300
.035 Wire V-Groove	058 301
.045 Wire V-Groove	058 302
1/16 Wire V-Groove	058 303
.045 Wire U-Groove	058 304
1/16 Wire U-Groove	058 305
5/64 Wire U-Groove	058 306
3/32 Wire U-Groove	058 307
7/64 Wire U-Groove	058 308
1/8 Wire U-Groove	058 309
1/16 Wire V-Knurled	058 310
5/64 Wire V-Knurled	058 311
3/32 Wire V-Knurled	058 312
7/64 Wire V-Knurled	058 313
1/8 Wire V-Knurled	058 314

MODEL/STOCK NO.	SERIAL/STYLE NO.	DATE PURCHASED
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# OWNER'S MANUAL



**MILLER ELECTRIC MFG. CO.**  
**APPLETON, WISCONSIN, USA 54911**

# WARRANTY

MILLER Electric Mfg. Co., Appleton, Wisconsin, warrants all new equipment to be free from defects in material and factory workmanship for the periods indicated below, provided the equipment is installed and operated according to manufacturer's instructions.

MILLER Electric Mfg. Co.'s obligation, under this warranty, is limited to replacing or repairing any defective part or correcting any manufacturing defect without charge during the warranty period if MILLER'S inspection confirms the existence of such defects. MILLER'S option of repair or replacement will be f.o.b. factory at Appleton, Wisconsin or f.o.b. a MILLER authorized service facility, and therefore no compensation for transportation costs of any kind will be allowed.

The warranty period, beginning on the date of sale to the original purchaser-user of the equipment, will be as follows:

- |    |   |   |                           |
|----|---|---|---------------------------|
| 1. | Arc welders, power sources, and components                      | — | 1 year                    |
| 2. | Original main power rectifiers                                  | — | 3 years (unconditionally) |
| 3. | MHFC-L1 Feeder, MHG-35C1, 20E, 20K,<br>and all guns and torches | — | 90 days                   |
| 4. | All other Milleromatic Feeders                                  | — | 1 year                    |
| 5. | Mag-Diesel engine on DEL-200                                    | — | 6 months                  |
| 6. | All other engines   | — | 1 year                    |

Engine Warranties are covered by the engine manufacturers, subject to their procedures and to be handled through their authorized local Service Stations or agencies. No warranty will be made in respect to trade accessories, such being subject to the warranties of their respective manufacturers.

MILLER Electric Mfg. Co. will not be liable for any loss or consequential damage or expense accruing directly or indirectly from the use of equipment covered in this warranty.

This warranty supersedes all previous MILLER warranties and is exclusive with no other guarantees or warranties expressed or implied.

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## OPTIONAL ACCESSORIES

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### **Turntable Assembly (Stock No. 056 349)**

Rotates as the operator changes work positions. Eliminates cable strain and reduces wire feed friction.

### **Carrying Cart (Stock No. 056 301)**

Height: 34" Lower tray height: 9" Shipped disassembled.

### **Reel (Stock No. 056 416)**

Holds 60 pound reel of wire.

### **Hanging Bail (Stock No. 056 716)**

Provides two position balance adjustment when suspending control/feeder over work area.

### **Cover For Wire Spool (Stock No. 057 607)**

Protective Cyclocac cover shields wire from dust and moisture. Will accommodate up to 12" spool.

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## SECTION 1 - INTRODUCTION

Electrode Wire Dia. Capability	Electrode Wire Feed Speed	Control Circuit Voltage At Gun	Overall Dimensions (Inches)	Weight (Pounds)	
				Net	Ship
Fraction .030" - 1/8" Decimal .031 - .126 Metric .8MM - 3.2MM	60 to 600 ipm.	24 volts	Height - 16-1/2 Width - 14 Depth - 24-1/4	58	63

Figure 1-1. Specifications

### 1 - 1. GENERAL

This manual has been prepared especially for use in familiarizing personnel with the design, installation, operation, maintenance, and troubleshooting of this equipment. All information presented herein should be given careful consideration to assure optimum performance of this equipment.

### 1 - 2. RECEIVING-HANDLING

Prior to installing this equipment, clean all packing material from around the unit and carefully inspect for any damage that may have occurred during shipment. Any claims for loss or damage that may have occurred in transit must be filed by the purchaser with the carrier. A copy of the bill of lading and freight bill will be furnished by the carrier on request if occasion to file claim arises.

When requesting information concerning this equipment, it is essential that Model Description and/or Stock Number and Serial (or Style) Numbers of the equipment be supplied.

### 1 - 3. DESCRIPTION

This control/feeder is of the constant wire feed speed type and is designed to be used in conjunction with a constant potential welding power source.

The control/feeder is a heavy duty wire feeding unit combining both the wire feeder and the control in a compact assembly. It contains all the controls and equipment needed to supply welding wire and shielding gas to the welding gun.

### 1 - 4. SAFETY

The following definitions apply to CAUTION, IMPORTANT, and NOTE blocks found throughout this manual:

#### CAUTION

Under this heading, installation, operating, and maintenance procedures or practices will be found that if not carefully followed may create a safety hazard to personnel.

#### IMPORTANT

Under this heading, installation, operating, and maintenance procedures or practices will be found that if not carefully followed may result in damage to equipment.

#### NOTE

Under this heading, explanatory statements will be found that need special emphasis to obtain the most efficient operation of the equipment.

## SECTION 2 - INSTALLATION

### 2 - 1. LOCATION

Refer to Figure 2-1 for dimensional information on the control/feeder. Lead lengths must be considered when installing the control/feeder. If the welding power source can be located near the work area, the control/feeder can usually be installed on top of the welding power source. Suitable space should be allowed for making necessary connections.

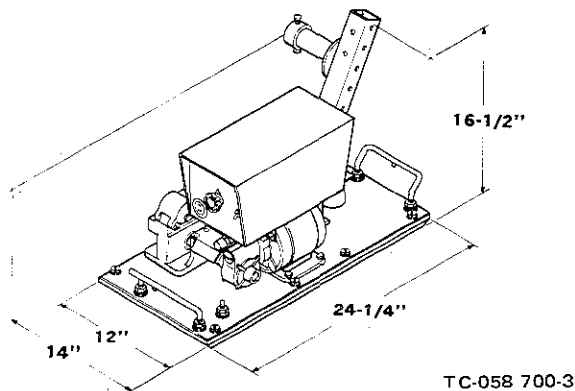


Figure 2-1. Control/Feeder Dimensions

### 2 - 2. DRIVE MOTOR (Figure 2-2)

The red stop, which is inserted into the hole in the vented oil fill plug, must be removed prior to operation of the control/feeder. See Figure 2-2 for the location of the red stop.

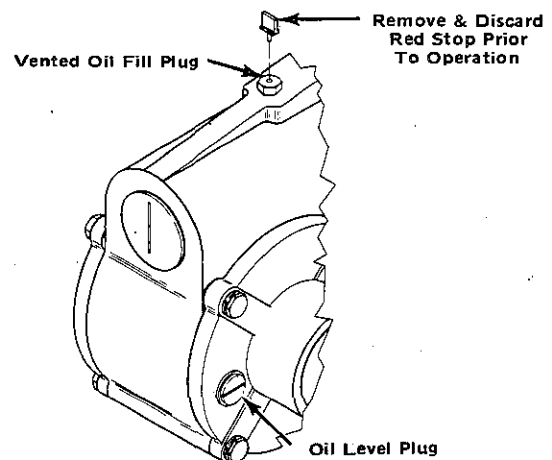


Figure 2-2. Vented Oil Plug And Oil Level Plug

The oil level should be checked before the unit is put into operation and periodically thereafter. To check oil level in the gear housing, remove the oil level plug in the gear housing. Add SAE No. 90 oil, if necessary, until oil runs out the oil level hole.

### 2 - 3. SHIELDING GAS CONNECTIONS (Figure 2-3)

Determine the distance the control/feeder is to be located from the shielding gas supply and then connect a hose from the gas regulator-flowmeter on the shielding gas supply to the

shielding gas input fitting on the rear of the control/feeder. This connection has a right hand thread.

The shielding gas hose which comes from the gun is to be attached to the shielding gas output fitting on the front panel of the control/feeder. This connector has left-hand threading.

## 2 - 4. 115 VOLTS AC CONNECTIONS (Figure 2-3)

The 16/3 conductor cable coming out of the lower left corner of the rear panel is to be connected to a 115 volts 60 Hertz power supply. The plug which is to be connected to this cable is not supplied with the control/feeder. The black and white leads in this cable are the ac leads and the green lead is for a ground connection.

## 2 - 5. CONTACTOR CONTROL CONNECTIONS (Figure 2-3)

The 16/2 conductor cable coming out of the lower right corner of the rear panel is to be connected to the contactor control receptacle on the welding power source. The plug which is to be connected to this cable is not supplied with the control/feeder.

### IMPORTANT

The contactor control circuitry that is to be used in conjunction with this control/feeder must be of the type that operates on 115 volts 60 Hertz power. This is necessary because the control/feeder will supply 115 volts ac through the contactor control cable whenever the gun switch is closed.

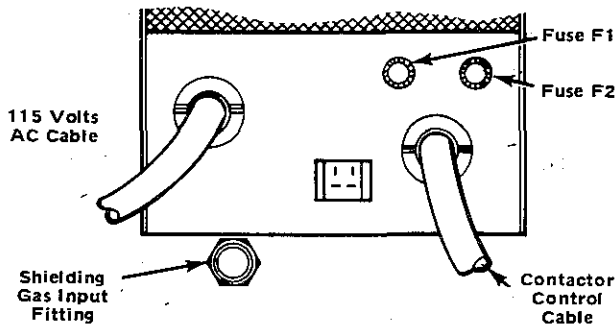


Figure 2-3. Rear Panel View

## 2 - 6. SWITCH CONTROL CONNECTIONS (Figure 3-1)

A two-pole, twistlock receptacle is provided on the front panel of the control/feeder for making switch control connections. When the switch connected across this receptacle is closed, the contactor in the welding power source will energize, shielding gas will flow, and the wire will begin to feed.

## 2 - 7. WELD CABLE TERMINAL (Figure 3-1)

A terminal is provided on the base of the control/feeder to serve as a junction point for joining together the weld cables from the welding power source and the gun.

### IMPORTANT

Ensure that the weld cable terminal is kept clean at all times. Also ensure that the nut on this terminal is secure. If either one of the above conditions is not met, erratic weld current could result.

## 2 - 8. WIRE GUIDE & DRIVE ROLL INSTALLATION (Figure 2-4 & 2-5)

Upon initial installation, or as a result of wire size changes, it is necessary to install the required drive rolls and wire guides

to accommodate the particular wire size. Having selected the desired wire size and related parts, proceed to the following installation instructions:

### A. One-Piece Drive Roll (Figure 2-4)

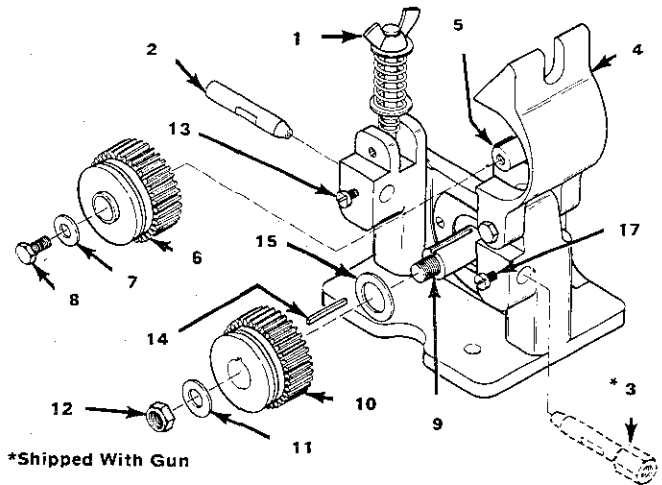


Figure 2-4. One-Piece Drive Roll Assembly

1. Loosen the pressure adjustment wing nut (item 1, Figure 2-4) and pivot downward.

### NOTE

Prior to initial installation of the lower drive roll gear, it will be necessary to slide spacer (15) onto the lower drive roll shaft (9) until it seats against the side of the drive roll gear body. Also, the key (14) will have to be inserted into the slot in the lower drive roll shaft (9).

2. Remove nut (12), bolt (8), and washers (7 & 11) from the drive roll assembly.
3. Lift the gear cover (4) upward and slide drive roll gears (6 & 10) off of drive roll gear shafts (5 & 9).
4. Slide the key slotted drive roll gear (10) onto the lower drive roll gear shaft (9).
5. Slide washer (11) onto drive roll gear shaft (9) and rotate nut (12) onto shaft (9) until it is tight.
6. Slide the drive roll gear without key slot (6) onto the upper drive roll gear shaft (5).
7. Slide washer (7) onto drive roll gear shaft (5) and rotate bolt (8) into shaft (5) until it is tight.
8. Lower the gear cover (4) downward until the upper and lower drive roll gears (6 & 10) mesh together.
9. Pivot the pressure adjustment wing nut (1) upward as far as it will rotate.

### NOTE

The pressure adjustment wing nut (1) will have to be adjusted for proper tension prior to operation of the control/feeder. The amount of pressure will vary from one given set of welding conditions to another and will most likely have to be made by trial and error process.

## B. Split Drive Roll (Figure 2-5)

1. Loosen the pressure adjustment wing nut (item 1, Figure 2-5) and pivot it downward.

### NOTE

Prior to initial installation of the lower drive roll gear, it will be necessary to slide spacer (15) onto the lower drive roll shaft (9) until it seats against the side of the drive roll gear body. Also, the key (14) will have to be inserted into the slot in the lower drive roll shaft (9).

2. Remove nut (12), bolt (8), and washers (7 & 11) from the drive roll assembly.
3. Lift the gear cover (4) upward and slide drive roll gears (6 & 10) off of drive roll gear shafts (5 & 9).
4. Assemble the gears (6 & 10) and split drive rolls (16) by placing two halves of the split drive rolls (16) on the gears (6 & 10) and inserting three securing screws (18) into each of the two now combined split drive rolls (16) and gears (6 & 10).

### NOTE

When the knurled groove of the drive rolls (16) becomes worn, the split drive roll halves may be reversed so that the outside edges will now provide a new knurled groove.

5. Slide the notched drive roll gear (10) onto the lower drive roll gear shaft (9).
6. Slide washer (11) onto drive roll gear shaft (9) and rotate nut (12) onto shaft (9) until it is tight.
7. Slide the un-notched drive roll gear (6) onto the upper drive roll gear shaft (5).
8. Slide washer (7) onto drive roll gear shaft (5) and rotate bolt (8) into shaft (5) until it is tight.

## C. Wire Guide Installation (Figure 2-4 & 2-5)

1. Loosen the wire guide securing screws (13 & 17) and remove the inlet guide (2) and outlet guide (3) from the drive roll assembly.

### NOTE

To prevent the wire guides (1 & 3) from slipping, ensure that the flat side of the wire guide is facing the securing screw.

2. Insert the inlet wire guide (2) into the hole in the drive roll assembly immediately below pressure adjustment wing nut (1) and secure the inlet guide in place by tightening securing screw (13).
3. Insert the outlet guide (3) into the hole in the drive roll assembly which is opposite the inlet guide (2) and secure the outlet guide (3) in place by tightening securing screw (17).

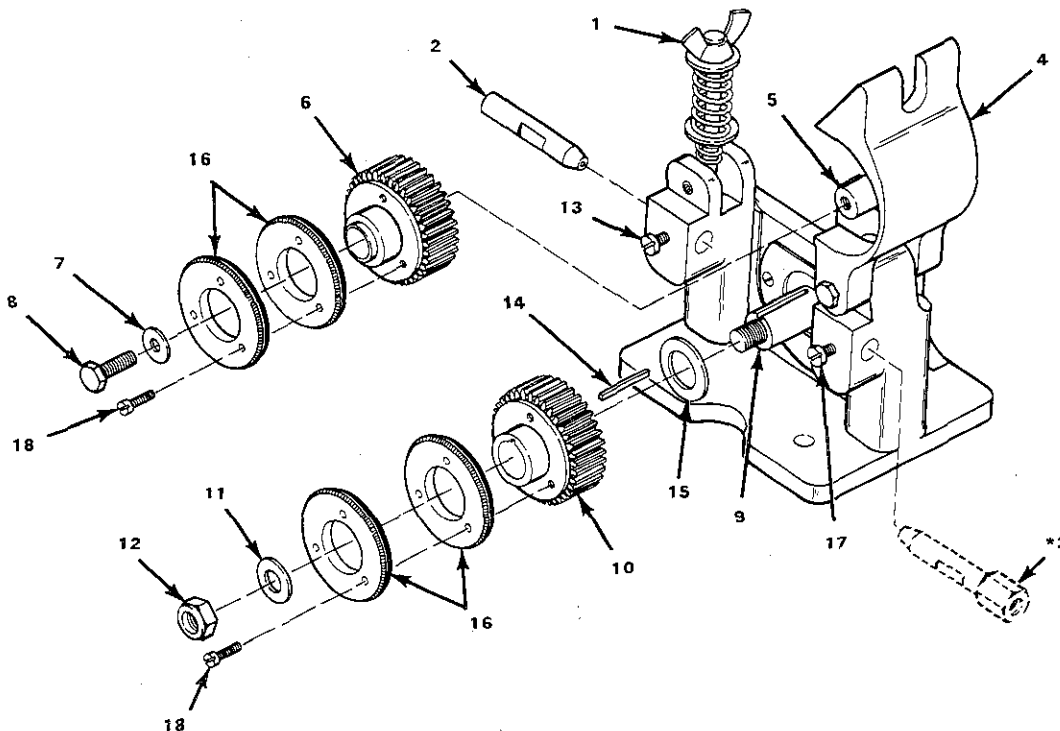
### NOTE

The wire guides (2 & 3) should be installed so that the ends of the wire guides are approximately 1/8" from the drive roll gears.

9. Lower the gear cover (4) downward until the upper and lower drive roll gears (6 & 10) mesh together.
10. Pivot the pressure adjustment wing nut (1) upward as far as it will rotate.

### NOTE

The pressure adjustment wing nut (1) will have to be adjusted for proper tension prior to operation of the control/feeder. The amount of pressure will vary from one given set of welding conditions to another and will most likely have to be made by trial and error process.



\*Shipped With Gun

Figure 2-5. Split Drive Roll Assembly

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## 2-9. SPINDLE ASSEMBLY INSTALLATION (Figure 2-6)

1. Insert spindle support shaft (item 12, Figure 2-6) into the desired hole in spindle support (13). The hole to be utilized in the spindle support (13) will depend on the size of the wire spool being used.
2. Slide washer (14) onto spindle support shaft (12) and secure with cotter pin (15).
3. Slide the following items onto the spindle support shaft (12) in order given:
  - A. Flat Washer (11)
  - B. Flat Washer (10)
  - C. Spindle (9)
  - D. Flat Washer (8)
  - E. Fiber Washer (7)
  - F. Keyed Washer (6)
  - G. Spring (5)
  - H. Flat Washer (4)
4. Rotate hex - nut (3) onto support shaft (12). Hex - nut (3) should be rotated only until a slight drag is felt while turning spindle (9).

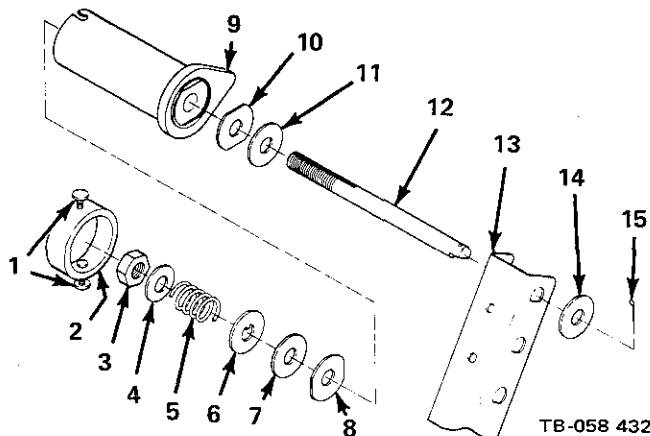


Figure 2-6. Installation of Spindle Assembly

## 2-10. INSTALLATION OF WELDING WIRE SPOOL (Figure 2-5)

1. Slide the spool of wire onto the spindle assembly so that the wire will pay off from the bottom of the spool in a counterclockwise direction.
2. Rotate the spool until the hole in the spool aligns with the pin in the spindle assembly. Slide the spool onto the spindle assembly until it seats against the back flange of the spindle.
3. Depress the two spring loaded stops (item 1, Figure 2-6) on the retaining ring (2) and slide the retaining ring onto the spindle (9). When retaining ring is in position, release the two stops.

## 2-11. STRAIN RELIEF INSTALLATION (Figure 2-7)

1. Loosen the two screws on the strain relief cable clamp which does not have the hose clamp inserted through it.
2. Pull out the short end of the cable from the clamp and loop it around the control/feeder carrying handle. Ensure that it is inserted through the eyelet on the center of the carrying handle.
3. Insert the cable end back into the cable clamp and secure the two screws.
4. Fully open the hose clamp, keeping it inserted through the loop of the strain relief cable.

5. Ensure that all cables (except the conduit cable) are inserted underneath the carrying handle.
6. Group all the cables together (except the conduit cable) and install them through the hose clamp. Leaving a small amount of slack in the cables, stretch the strain relief cable tight and secure the hose clamp around the cables.

### IMPORTANT

Do not tighten the hose clamp too securely as this may cut off shielding gas flow.

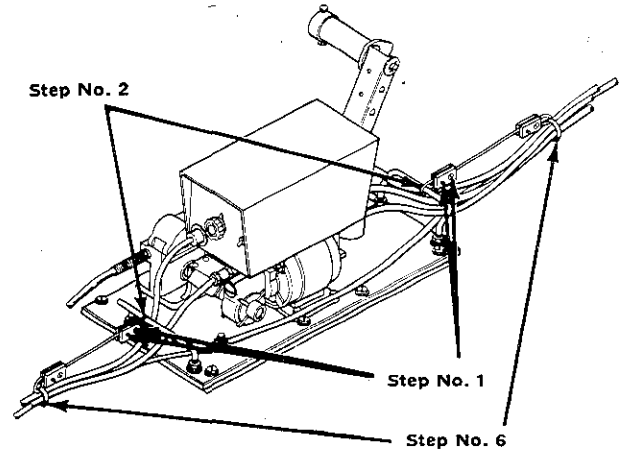


Figure 2-7. Strain Relief Installation

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## 2-12. WELDING WIRE THREADING

### CAUTION

Prior to threading the welding wire through the gun, ensure that the weld cable from the welding power source is not connected to the control/feeder.

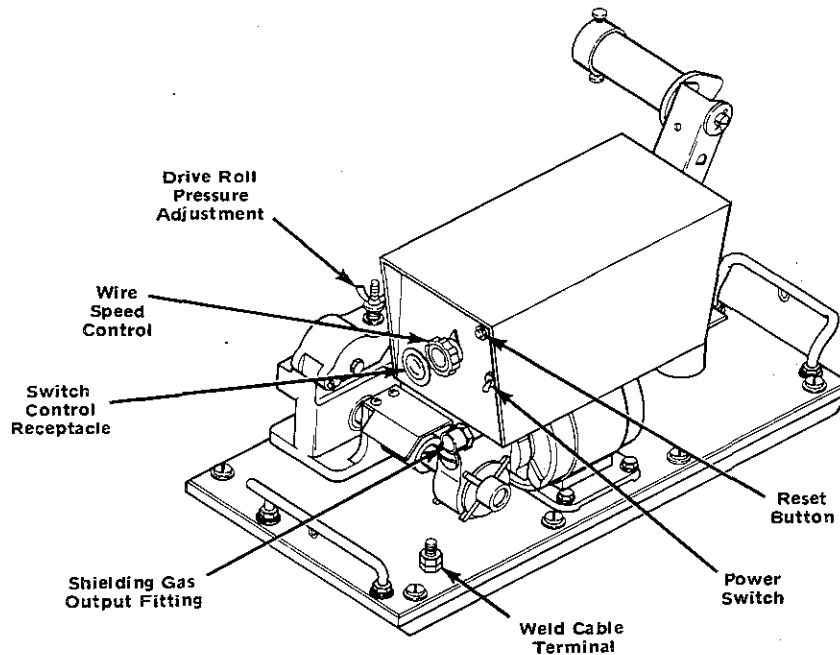
1. Loosen the wing nut on the drive roll pressure adjustment, pivot the drive roll pressure adjustment downward, and lift the pressure gear assembly upward until it is in an upright position.
2. Cut off any portion of the free end of the welding wire which is not straight. Feed the welding wire through the inlet wire guide in the drive roll assembly.
3. Continue to feed the welding wire through the outlet wire guide.
4. Pivot the pressure gear assembly downward making sure the teeth on the upper gear mesh with the teeth on the lower drive gear. The welding wire must also be in the grooves of the upper and lower drive rolls.
5. Pivot the drive roll pressure adjustment upward into the slot on the pressure gear assembly making sure the lower flat washer is above the pressure gear casing.
6. Turn the wing nut on the drive roll pressure adjustment in a clockwise direction until the drive rolls are tight against the welding wire. Do not overtighten. Further adjustment can be made after the welding power source and control/feeder are put into operation.
7. Connect the gun to the control/feeder according to the instructions in the Gun Instruction Manual.
8. Energize the welding power source.
9. Place the control/feeder POWER Switch in the ON position.



10. Depress the gun switch. See CAUTION block under item 2-12. This will run the welding wire through the gun without placing weld current on the welding

wire. Release the gun switch after the end of the welding wire extends approximately one inch from the end of the gun tip.

## SECTION 3 - FUNCTION OF CONTROLS



TB-058 300-7A

Figure 3-1. Control Location

### 3 - 1. POWER SWITCH (Figure 3-1)

Placing the POWER Switch on the control/feeder in the ON position will apply 115 volts ac to the unit and thereby place it in an operational condition, ready to feed wire and permit shielding gas to flow. Placing the POWER Switch in the OFF position will shut the control/feeder down.

#### CAUTION

Even though the POWER Switch is in the OFF position and the unit is apparently shutdown, 115 volts will still be present at the input terminals of the POWER Switch for as long as the 115 volts cable is connected to its activated source.

### 3 - 2. WIRE SPEED CONTROL (Figure 3-1)

The WIRE SPEED Control provides a means of determining the rate at which welding wire will be fed into the weld. Rotating the WIRE SPEED Control in a clockwise direction will increase the rate of the wire feed. When the WIRE SPEED Control is set at 0, wire will feed at a rate of 60 IPM; when set at 100, the wire will feed at a rate of 600 IPM.

### 3 - 3. RESET CIRCUIT BREAKER (Figure 3-1)

A circuit breaker, located on the upper portion of the control/feeder front panel, provides protection to the control/feeder motor. In the event the motor should be placed in an overload condition, the breaker would trip and suspend all output. Should this breaker trip, the RESET Button would have to be manually depressed in order to reset the circuit breaker.

## SECTION 4 - SEQUENCE OF OPERATION

### 4 - 1. GAS METAL-ARC WELDING (GMAW)

1. Energize the welding power source.
2. Place the POWER Switch on the control/feeder in the ON position.

#### NOTE

When installing new equipment, or after prolonged shutdown, allow shielding gas to flow continuously for at least one minute prior to welding in order to purge the shielding gas line. Place the WIRE SPEED Control to the minimum setting to avoid wasting the welding wire while purging.

3. Set the WIRE SPEED Control to the desired position.

#### CAUTION

Prior to welding, it is imperative that proper protective clothing (welding coat and gloves) and eye protection (glasses and/or welding helmet) be put on. Failure to comply may result in serious or permanent bodily damage.

4. Hold the tip of the gun approximately 1/2 inch from the workpiece.
5. Depress the trigger on the gun. Shielding gas will start to flow and wire will start to feed if drive roll pressure is properly adjusted to prevent slippage. If wire slippage is noticed, tighten the drive roll pressure adjustment wing nut 1/2 turn clockwise. Repeat until slippage stops. Do not tighten wing nut too much.

6. After all the controls on the equipment are adjusted for normal operating conditions, the control/feeder and welding power source will perform automatically.
7. Release the gun switch after the weld is completed.

**CAUTION**

The welding wire and all metal parts in contact with it are energized while welding. Do not touch the welding wire or any metal part making contact with it.

mine the extent of equipment shutdown between operation. Shutdown equipment as follows:

1. Turn off the shielding gas at the source.
2. Place the POWER Switch on the control/feeder in the OFF position and remove the 115 Volts AC plug from the source.
3. Turn off all associated equipment.

**CAUTION**

If welding is performed in a confined area, failure to turn off the shielding gas supply could result in a build-up of gas fumes, thereby endangering personnel re-entering the welding area.

**4 - 2. SHUTDOWN PROCEDURES**

Environmental conditions and safety requirements will deter-

**SECTION 5 - MAINTENANCE**

**5 - 1. INSPECTION AND UPKEEP**

Usage and shop conditions will determine the frequency and type of maintenance. Inspect equipment as follows:

1. Make sure welding power source is shutdown.
2. Inspect gun for broken areas, cracks and loose parts: tighten, repair, and replace as required.
3. Carefully remove any weld spatter or foreign matter which may accumulate around the nozzle orifice. Use a hardwood stock, never a metal tool.
4. Repair or replace, as required, all hose and cable; give particular attention to frayed and cracked insulation and areas where it enters equipment.
5. Remove grease and grime from components; moisture from electrical parts and cable.

6. Blow out the gun wire guide liner with clean, dry compressed air when changing wire. This will remove any metal chips and dirt that may have accumulated.

**5 - 2. CLEANING OF DRIVE ROLL BEARING**

Occasionally it will become necessary to clean and lubricate the oilite bearing which is pressed into the upper drive roll. This cleaning operation should be performed whenever the visual appearance of the oilite bearing becomes dirty and grimy.

To clean and lubricate this bearing it will be necessary to first remove the upper drive roll. (See paragraph 2-8 for removal and installation instructions). Once removed, use a clean rag to wipe the bearing clean. After this is done, apply a light coat of oil to the bearing and install the drive roll back onto the drive roll shaft.

**SECTION 6 - TROUBLESHOOTING**

The data collected here, discusses some of the common problems which may occur in this control/feeder.

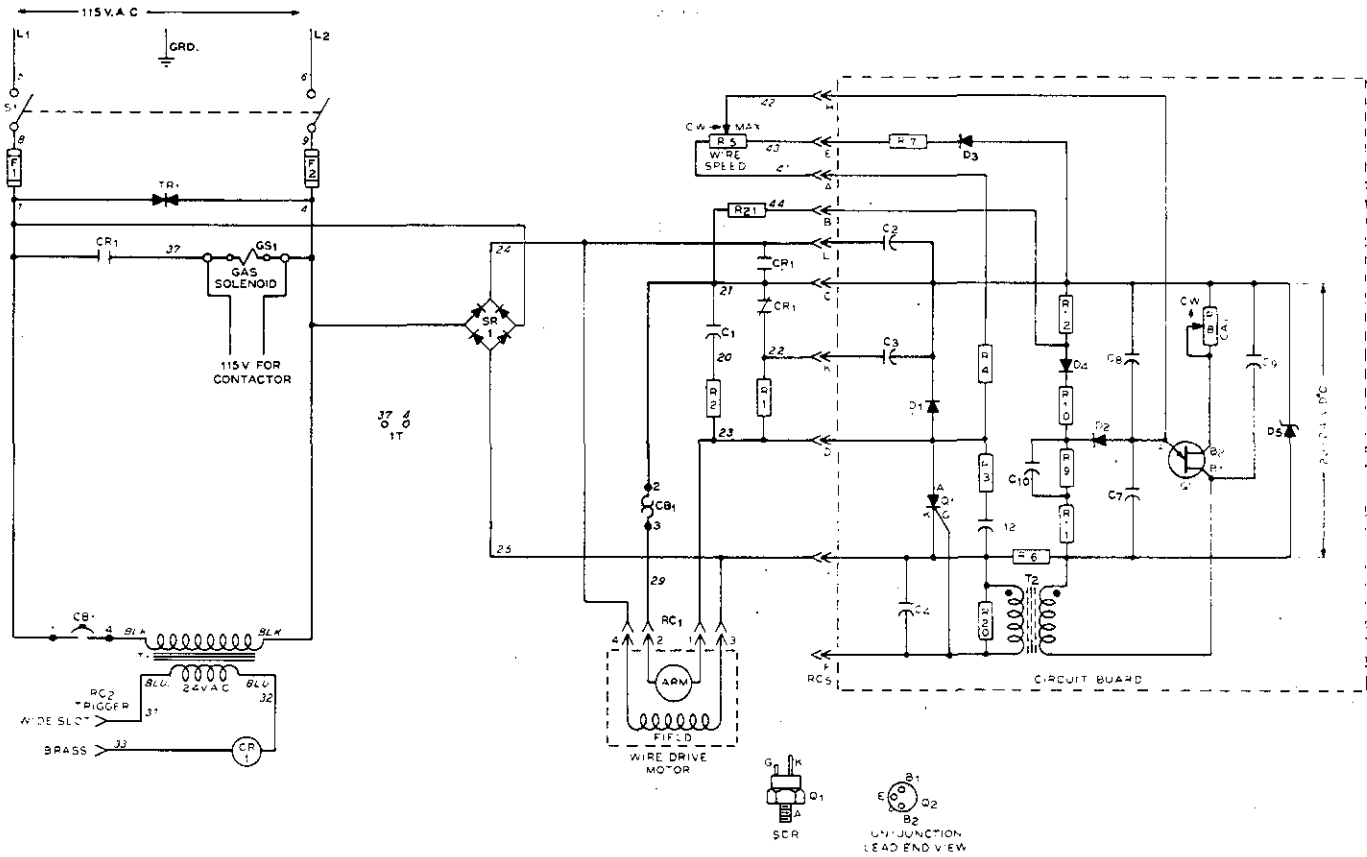
The assumption of this data is that a proper welding condition has been achieved and has been used until trouble developed. In all cases of equipment malfunction, the manufacturer's recommendations should be strictly adhered to and followed.

If after performing the following procedures the trouble is still not remedied, it is recommended that a serviceman be called.

It is recommended that the circuit diagram be used for reference during the troubleshooting.

Depressing gun switch will not energize control/feeder. Electrode wire is not energized and shielding gas does not flow.	ON-OFF POWER Switch in wrong position or defective.	Place switch in the ON position. Replace defective POWER Switch.
	Circuit breaker CB1 tripped	Manually reset circuit breaker by depressing the red button on the front panel of the control/feeder labeled RESET.
	Plug from gun switch is not secure in SWITCH CONTROL Receptacle on control/feeder.	Insert plug fully into SWITCH CONTROL Receptacle and rotate plug 1/2 turn clockwise.
	115 volts ac input plug is not secure in receptacle.	Insert plug fully into 115 vac receptacle and rotate plug 1/2 turn clockwise.
	115 volts input fuse(s) F1 or F2 open.	Replace fuse(s).
	Lead(s) 31 or 32 on the rear of the SWITCH CONTROL Receptacle is loose.	Remove control/feeder cover and check lead 31 & 32 connections on the rear of the receptacle.
	Coil of plug-in relay CR1 defective.	Replace relay CR1.

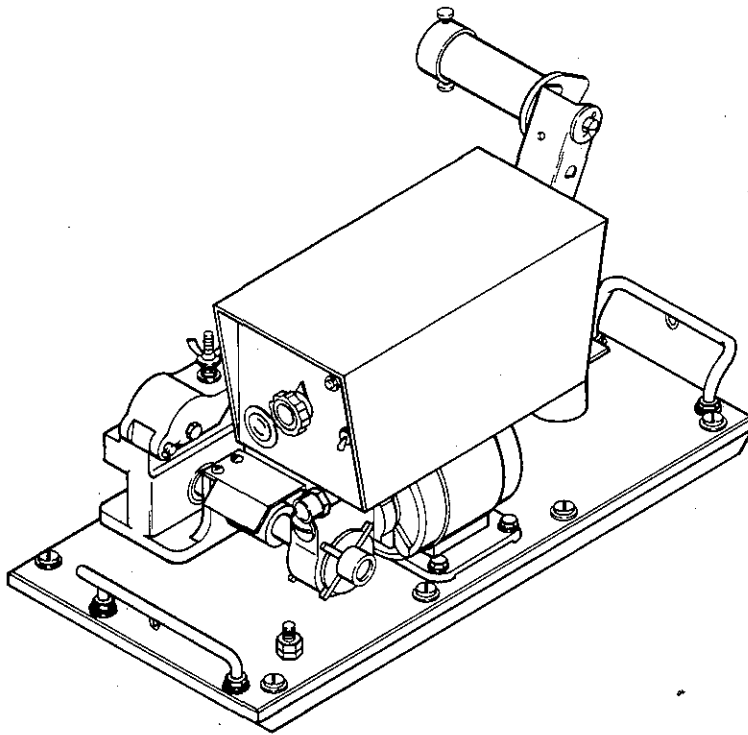
Wire feeds, shielding gas flows, but electrode wire is not energized.	115 vac Contactor Control plug is not secure in contactor receptacle on welding power source.	Insert plug fully into receptacle and rotate plug 1/2 turn clockwise.
	Contactor Control cable leads not secure on contactor plug terminals.	Secure leads to plug terminals.
	Defect in welding power source.	See troubleshooting section in welding power source instruction manual.
Wire feeds erratically.	Pressure on drive rolls is insufficient.	Rotate pressure adjustment wing nut clockwise in 1/4 turn increments until wire slippage stops.
	Drive roll is too large for wire size being used.	Change to proper size drive roll. See item 2-8.
	Worn drive roll.	Replace drive roll. See item 2-8.
	Dirt in drive roll.	Clean drive roll as instructed in item 5-2.



Circuit Diagram No. CB-058 300-1A

Figure 6-1. Circuit Diagram





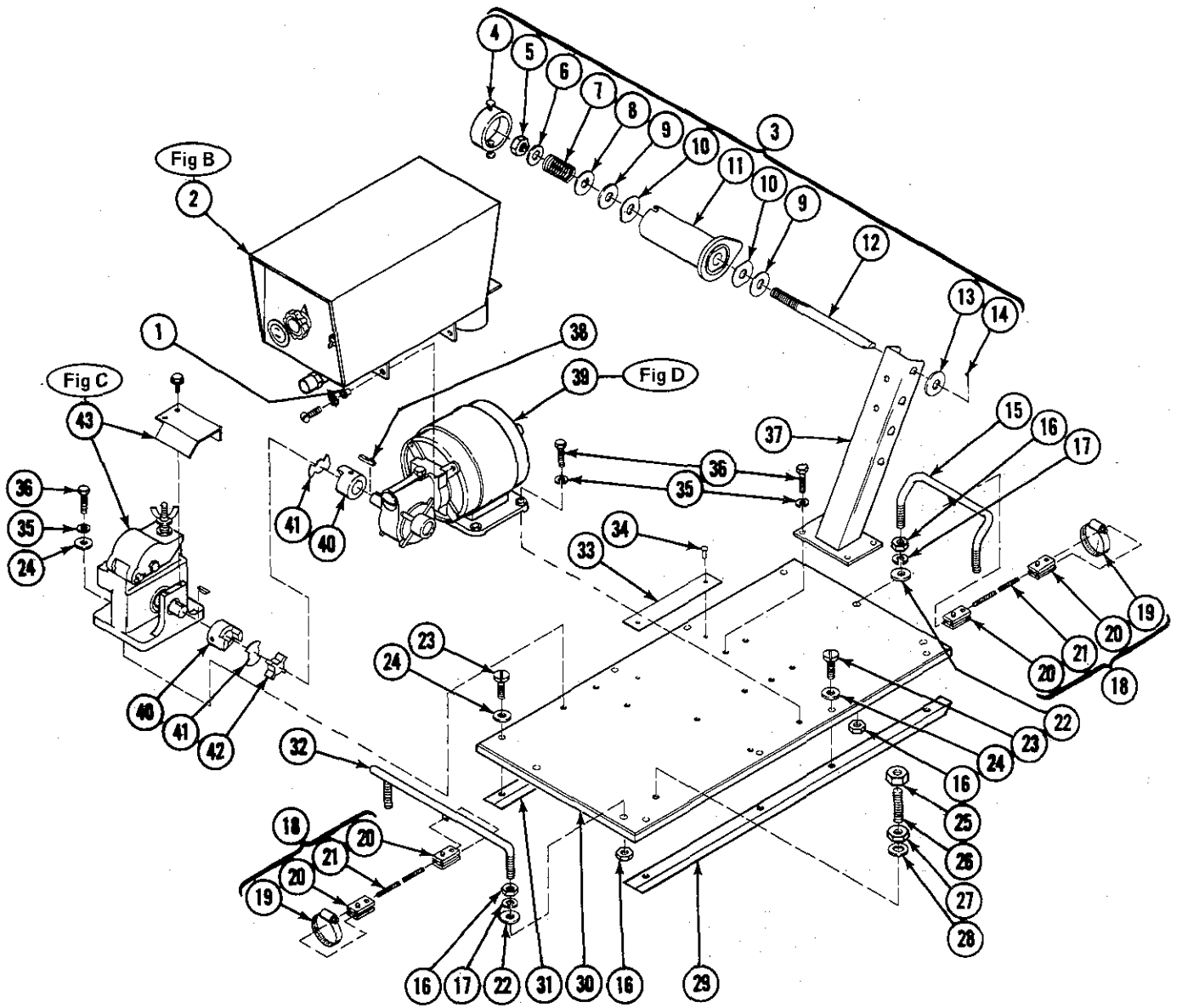
MODEL	STOCK NO.
MILLERMATIC 30E	
CONTROL/FEEDER	
.030 Wire V-Groove	058 300
.035 Wire V-Groove	058 301
.045 Wire V-Groove	058 302
1/16 Wire V-Groove	058 303
.045 Wire U-Groove	058 304
1/16 Wire U-Groove	058 305
5/64 Wire U-Groove	058 306
3/32 Wire U-Groove	058 307
7/64 Wire U-Groove	058 308
1/8 Wire U-Groove	058 309
1/16 Wire V-Knurled	058 310
5/64 Wire V-Knurled	058 311
3/32 Wire V-Knurled	058 312
7/64 Wire V-Knurled	058 313
1/8 Wire V-Knurled	058 314

MODEL/STOCK NO.	SERIAL/STYLE NO.	DATE PURCHASED

## PARTS LIST



**MILLER ELECTRIC MFG. CO.**  
**APPLETON, WISCONSIN, USA 54911**

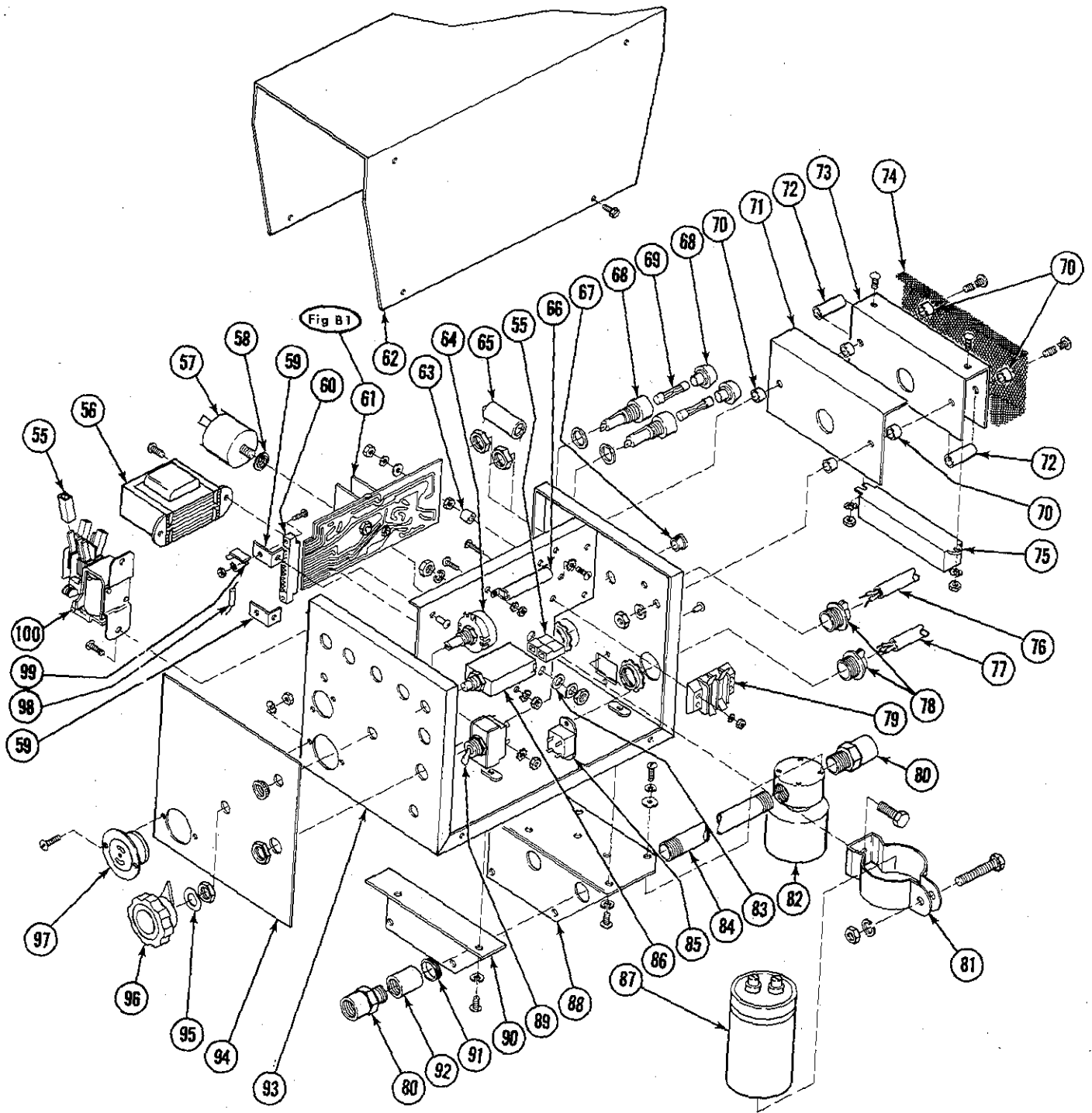


TC-058 300-A

Figure A - Main Assembly

Item No.	Factory Part No.	Description	Quantity
Figure A	Main Assembly		
1	034 098	EYELET, brass	4
2	058 340	CONTROL BOX ASSEMBLY (See Fig. B Page 4)	1
3	058 432	HUB & SPINDLE ASSEMBLY (consisting of)	1
4	058 427	. RING, retaining - spool	1
5	601 884	. NUT, steel - hex jam 5/8-11	1
6	605 941	. WASHER, flat - steel 41/64 ID x 1 OD	1
7	010 233	. SPRING, compression	1
8	057 971	. WASHER, flat - steel keyed 1-1/2	1
9	010 191	. WASHER, fiber 5/8 ID x 1-1/2 OD x 1/8	2
10	058 628	. WASHER, steel - brake	2
11	058 428	. HUB, spool - plastic	1
12	058 434	. SPINDLE, support - hub	1
13	602 249	. WASHER, flat - steel SAE 5/8	1
14	605 946	. PIN, cotter 1/8 x 1	1
15	057 319	HANDLE, carrying	1
16	601 871	NUT, steel - hex jam 3/8-16	8
17	602 213	WASHER, lock - steel split 3/8	8
18	057 331	RELIEF, strain (consisting of)	2
19	010 860	. CLAMP, hose 13/16 to 1-3/4 clamp dia	1
20	057 318	. CLAMP, tiller line 1/8 to 1/4 cable	2
21	057 327	. CABLE	1
22	010 910	WASHER, flat - steel SAE 3/8	4
23	604 475	SCREW, self tapping - pan hd 1/4-20 x 1-1/4	8
24	602 241	WASHER, flat - steel SAE 1/4	8
25	601 839	NUT, brass - hex full 1/2-13	1
26	038 825	STUD, brass 1/2-13 x 2	1
27	601 840	NUT, brass - hex jam 1/2-13	1
28	602 247	WASHER, flat - steel SAE 1/2	1
29	056 330	SKID, base	1
30	030 247	BASE	1
31	030 250	SKID, base	1
32	028 944	HANDLE, carrying	1
33		NAMEPLATE (order by stock, model & serial numbers)	1
34	602 024	SCREW, drive U type 2 x 3/16	2
35	602 207	WASHER, lock - steel split 1/4	12
36	604 631	SCREW, cap - steel hex hd 1/4-20 x 1	12
37	058 429	SUPPORT, spindle	1
38	030 251	KEY, steel - gib hd 3/16 x 15/16	1
39	056 103	MOTOR, gear (See Fig. D Page 8)	1
40	030 254	JAW, coupling	2
41	030 234	INSULATOR, coupling - flexible	2
42	030 253	INSERT, flexible - coupling	1
43	058 342	DRIVE ASSEMBLY, wire (See Fig. C Page 6)	1

BE SURE TO PROVIDE STOCK, MODEL, AND SERIAL NUMBERS WHEN ORDERING REPLACEMENT PARTS.



TD-058 340

Figure B - Control Box Assembly

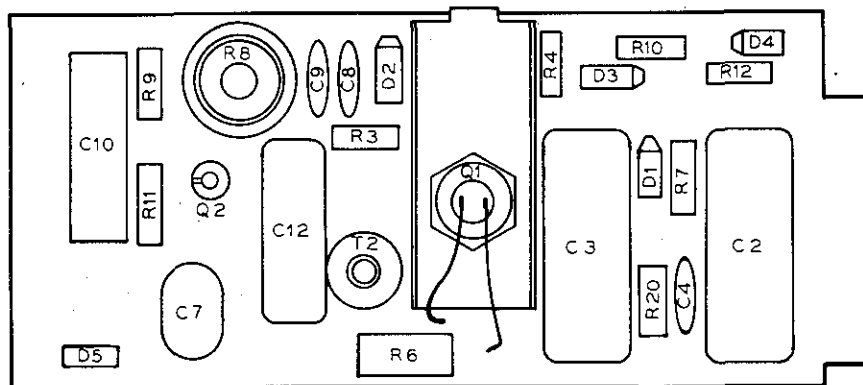


Item No.	Dia. Mkgs.	Factory Part No.	Description	Quantity
Figure B		058 340	Control Box Assembly (See Fig. A Page 2 Item 2)	
55		026 837	INSULATOR, terminal - nylon	5
56	T1	*036 135	TRANSFORMER, 115/24 volts ac	1
57	SR1	*037 167	RECTIFIER, integrated 3 amp 400 volts	1
58		604 415	WASHER, fiber - shoulder 1/4	1
59		031 251	BRACKET, mounting - connector	2
60	RC5	039 756	CONNECTOR, amphenol 10 pin	1
61		057 314	CIRCUIT CARD ASSEMBLY (See Fig. B1 Page 5)	1
62		056 328	WRAPPER	1
63		010 301	BUSHING, brass .106 ID x 1/4 OD x 5/16	1
64	R5	*030 943	POTENTIOMETER, carbon 1 turn 2 watt 15K ohm	1
65	TR1	*037 551	THYRECTOR, suppressor	1
66	R1	*030 942	RESISTOR, WW fixed 12 watt 10 ohm	1
67		057 084	BUSHING, snap 1/4 ID 3/8 mounting hole	2
68		012 617	HOLDER, fuse - miniature	2
69	F1,2	*012 655	FUSE, miniature - glass 10 amp	2
70		010 193	TUBING, steel 3/8 OD x 18 ga x 1/4	6
71		056 169	BRACKET, mounting - heat sink	1
72		010 199	TUBING, steel .275 ID x .048 wall x 1 inch lg	2
73		030 949	SINK - HEAT	1
74		056 170	SHIELD	1
75	R2	*030 941	RESISTOR, WW fixed 100 watt 5 ohm	1
76		600 340	CORD, portable No. 16 2 conductor (order by foot)	11 ft.
77		600 341	CORD, portable No. 16 3 conductor (order by foot)	11 ft.
78		010 610	CONNECTOR, clamp - cable 1/2	2
79	1T	605 929	BLOCK, terminal 20 amp 2 pole	1
80		010 604	ADAPTER, brass - gas 1/4-18 NPT male 5/8-18 female	2
81		010 926	HANGER, minerallic No. 2	1
82	GS1	035 601	VALVE, 115 volts ac 2 way 1/4 IPS port 1/8 orifice (consisting of)	1
		033 050	. COIL	1
83		602 193	WASHER, fiber 1/4 ID x 1/2 OD x 1/16	1
84		010 190	NIPPLE, galvanized 1/4 MPT x 10 inches lg	1
85	RC1	054 116	CONNECTOR, female 4 contact	1
86	CB1	*011 991	CIRCUIT BREAKER, 1.5 amp 250 volts	1
87	C1	*031 692	CAPACITOR, electrolytic 750 uf 200 volts dc	1
88		056 165	BRACKET, mounting - rear control box	1
89	S1	011 611	SWITCH, toggle DPDT 15 amp 125 volts	1
90		056 166	BRACKET, mounting - front control box	1
91		010 378	GROMMET, rubber 9/16 ID x 3/4 hole 1/16 groove	1
92		602 934	COUPLING, galvanized 1/4 FPT	1
93		030 246	CHASSIS	1
94			NAMEPLATE (order by stock, model, & style numbers)	1
95		010 929	WASHER, flat - steel spring 3/8	1
96		019 609	KNOB, pointer	1
97	RC2	039 759	RECEPTACLE, female - flange midget twistlock 2P2W	1
98	R21	030 940	RESISTOR, carbon 0.5 watt 2000 ohm	1
99		038 784	STRIP, terminal 1 pole	1
100	CR1	*034 841	RELAY, 24 volts ac DPDT	1

\*Recommended Spare Parts.

BE SURE TO PROVIDE STOCK, MODEL, AND STYLE NUMBERS WHEN ORDERING REPLACEMENT PARTS.

Dia. Mkgs.	Factory Part No.	Description	Quantity
Figure B1	057 314	Circuit Card Assembly (See Fig. B Page 4 Item 61)	
C2,3	031 694	CAPACITOR, mylar 0.47 uf 200 volts dc	2
C4,8,9	031 643	CAPACITOR, ceramic 0.01 uf 500 volts dc	3
C7	031 693	CAPACITOR, mylar 0.33 uf 75 volts dc	1
C10	031 633	CAPACITOR, electrolytic 80 uf 25 volts dc	1
C12	031 721	CAPACITOR, mylar 0.2 uf 200 volts dc	1
D1-4	026 202	DIODE, 1 amp 400 volts straight polarity	4
D5	037 250	DIODE, zener 24 volts 1 watt	1
Q1	037 824	THYRISTOR, 7.4 amp 200 volts	1
	010 915	WASHER, flat - brass 1/4 (mounting Q1)	1
	602 208	WASHER, lock - steel external tooth 1/4 (mounting Q1)	1
	601 867	NUT, steel - hex jam 1/4-20 (mounting Q1)	1
	037 261	HEAT SINK	1
Q2	037 289	TRANSISTOR, unijunction 50MA 35 volts	1
R3	030 937	RESISTOR, carbon 0.5 watt 10 ohm	1
R4	030 854	RESISTOR, carbon 0.5 watt 18K ohm	1
R6	030 945	RESISTOR, carbon 2 watt 4700 ohm	1
R7	030 940	RESISTOR, carbon 0.5 watt 2000 ohm	1
R8	030 944	POTENTIOMETER, WW 1 turn 2 watt 5000 ohm	1
R9	030 936	RESISTOR, carbon 0.5 watt 33K ohm	1
R10	030 853	RESISTOR, carbon 0.5 watt 2200 ohm	1
R11	030 938	RESISTOR, carbon 0.5 watt 1200 ohm	1
R12	030 934	RESISTOR, carbon 0.5 watt 6800 ohm	1
R20	030 090	RESISTOR, carbon 0.5 watt 47 ohm	1
T2	036 143	TRANSFORMER, pulse	1
	602 196	WASHER, lock - steel internal tooth No. 4 (mounting T2)	1
	601 858	NUT, steel - hex 4-40 (mounting T2)	1
	057 332	PRINTED WIRING BOARD	1
	026 750	MOUNTING PAD, semi conductor	1



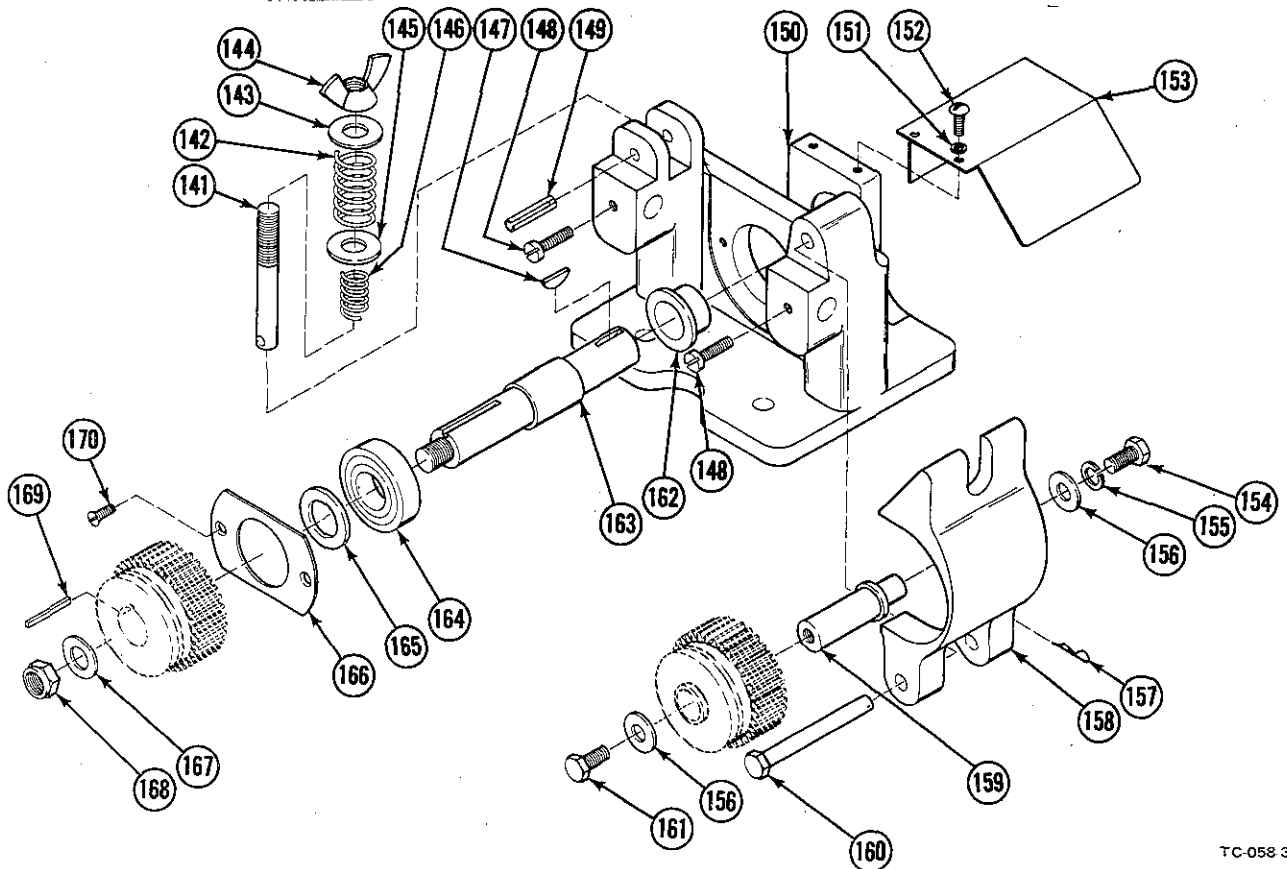
TA-057 314

Figure B1 - Circuit Card Assembly

**COMPONENTS TO BE  
REPLACED BY QUALIFIED  
PERSONNEL ONLY**

BE SURE TO PROVIDE STOCK, MODEL, AND STYLE NUMBERS WHEN ORDERING REPLACEMENT PARTS:

Item No.	Factory Part No.	Description	Quantity
Figure C	058 342	Drive Assembly, Wire (See Fig. A Page 2 Item 43)	
141	056 306	FASTENER, pinned	1
142	010 231	SPRING, compression	1
143	010 910	WASHER, flat - steel SAE 3/8	1
144	604 590	NUT, steel - wing 3/8-16	1
145	602 243	WASHER, flat - steel standard 3/8	1
146	010 232	SPRING, compression	1
147	028 996	KEY, woodruff 3/16 x 5/8	1
148	604 624	SCREW, machine - steel fillister hd 1/4-20 x 1/2	2
149	010 224	PIN, spring 3/16 x 1	1
150	058 330	HOUSING, drive - wire	1
151	602 200	WASHER, lock - steel split No. 8	2
152	602 080	SCREW, machine - steel round hd 8-32 x 3/8	2
153	030 249	GUARD, coupling	1
154	601 927	SCREW, cap - steel hex hd 1/4-20 x 3/4	1
155	602 207	WASHER, lock - steel split 1/4	1
156	602 241	WASHER, flat - steel SAE 1/4	2
157	604 741	PIN, cotter - hair .042 x 15/16	1
158	057 963	COVER, gear	1
159	056 308	SHAFT, drive	1
160	057 452	PIN, straight - hex hd	1
161	601 925	SCREW, cap - steel hex hd 1/4-20 x 1/2	1
162	028 339	BEARING, flange - oil impregnate 5/8 ID x 3/4 OD x 1/2	1
163	058 331	SHAFT, drive - wire	1
164	028 342	BEARING, ball	1
165	028 341	BEARING, thrust oil impregnate 5/8 x 1 x 1/8	1
166	057 961	RETAINER, bearing	1
167	602 242	WASHER, flat - steel standard 5/16	1
168	601 850	NUT, steel - self locking hex 3/8-24	1
169	605 304	KEY, 1/8 x 1/8 x 15/16	1
170	605 151	SCREW, machine - steel flat hd 8-32 x 3/8	2



TC-058 342

Figure C — Drive Assembly, Wire

BE SURE TO PROVIDE STOCK, MODEL, AND SERIAL NUMBERS WHEN ORDERING REPLACEMENT PARTS.

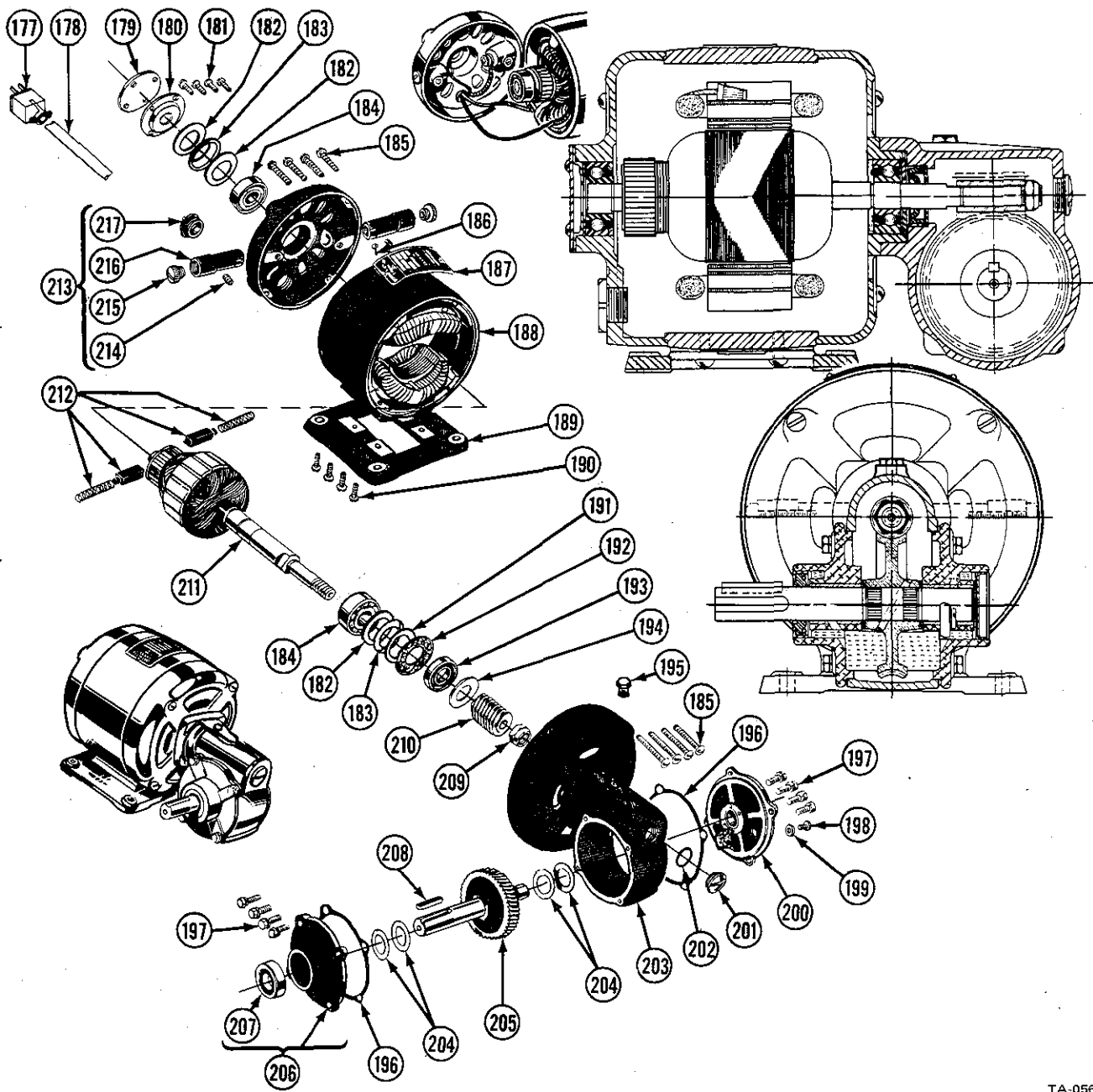


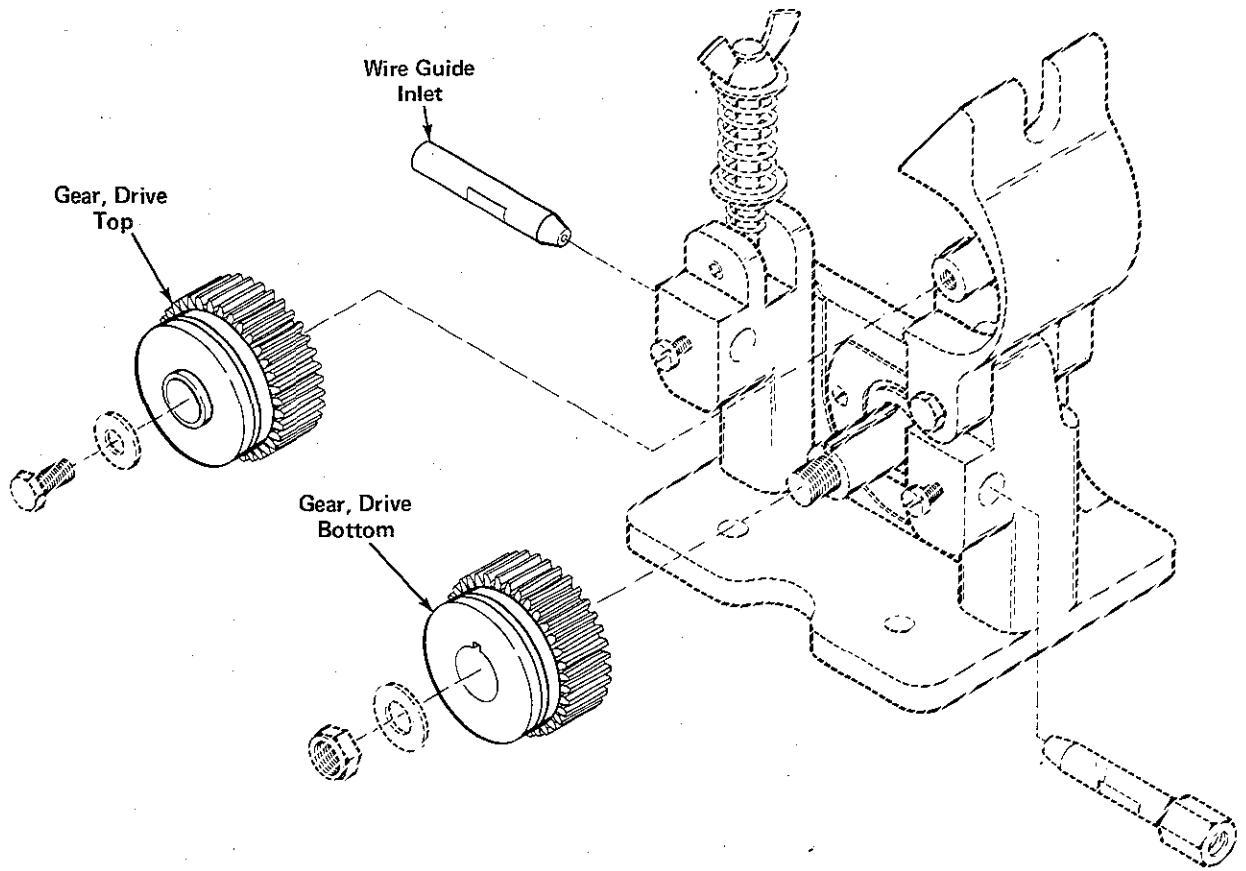
Figure D – Motor, Gear

TA-056 103

Item No.	Dia. Mkgs.	Factory Part No.	Description	Quantity
Figure D	056 103	Motor, Gear (See Fig. A Page 2 Item 39)		
177	056 264	CONNECTOR, male 4 contact		1
178	604 571	CORD, portable No. 18/4 conductor (order by foot)		2 ft.
179	054 393	PLATE, ball bearing (closed)		1
180	054 394	WASHER, felt retainer		1
181	054 395	SCREW, ball bearing plate		4
182	054 396	WASHER, spacer		As Req'd
183	054 434	WASHER, spring		2
184	054 397	BEARING, ball		2
185	054 403	SCREW, shield		8
186	056 373	PIN, nameplate		2
187	054 404	NAMEPLATE		1
188	054 406	RING & FIELD ASSEMBLY		1
189	054 407	BASE		1
190	054 408	SCREW, base		4
191	054 413	WASHER, spacing		As Req'd
192	054 414	GASKET, grease		1
193	054 415	SEAL, oil		1
194	054 416	WASHER, steel		1
195	054 433	PLUG, oil fill and air vent		1
196	054 424	GASKET, gear housing end shield		2
197	054 423	SCREW, gear housing end shield		8
198	054 432	SCREW, oil level		1
199	054 431	GASKET, oil screw		1
200	054 430	END SHIELD ASSEMBLY, gear housing		1
201	056 374	PLUG, gear housing		1
202	056 375	GASKET, gear housing plug		1
203	056 376	GEAR & HOUSING		1
204	054 425	WASHER, spacing		As Req'd
205	056 377	GEAR & DRIVE SHAFT		1
206	054 420	END SHIELD ASSEMBLY, gear housing		1
207	054 422	SEAL		1
208	054 426	KEY		1
209	054 418	NUT, lock worm		1
210	054 417	GEAR, worm		1
211	054 411	ARMATURE		1
212	*056 378	BRUSH & SPRING		2
213	054 399	FRONT SHIELD ASSEMBLY (enclosed)		1
214	054 401	SCREW, set - brushholder		2
215	054 398	SCREW, brushholder cap		2
216	054 400	HOLDER, brush		2
217	054 402	BUSHING, terminal		1

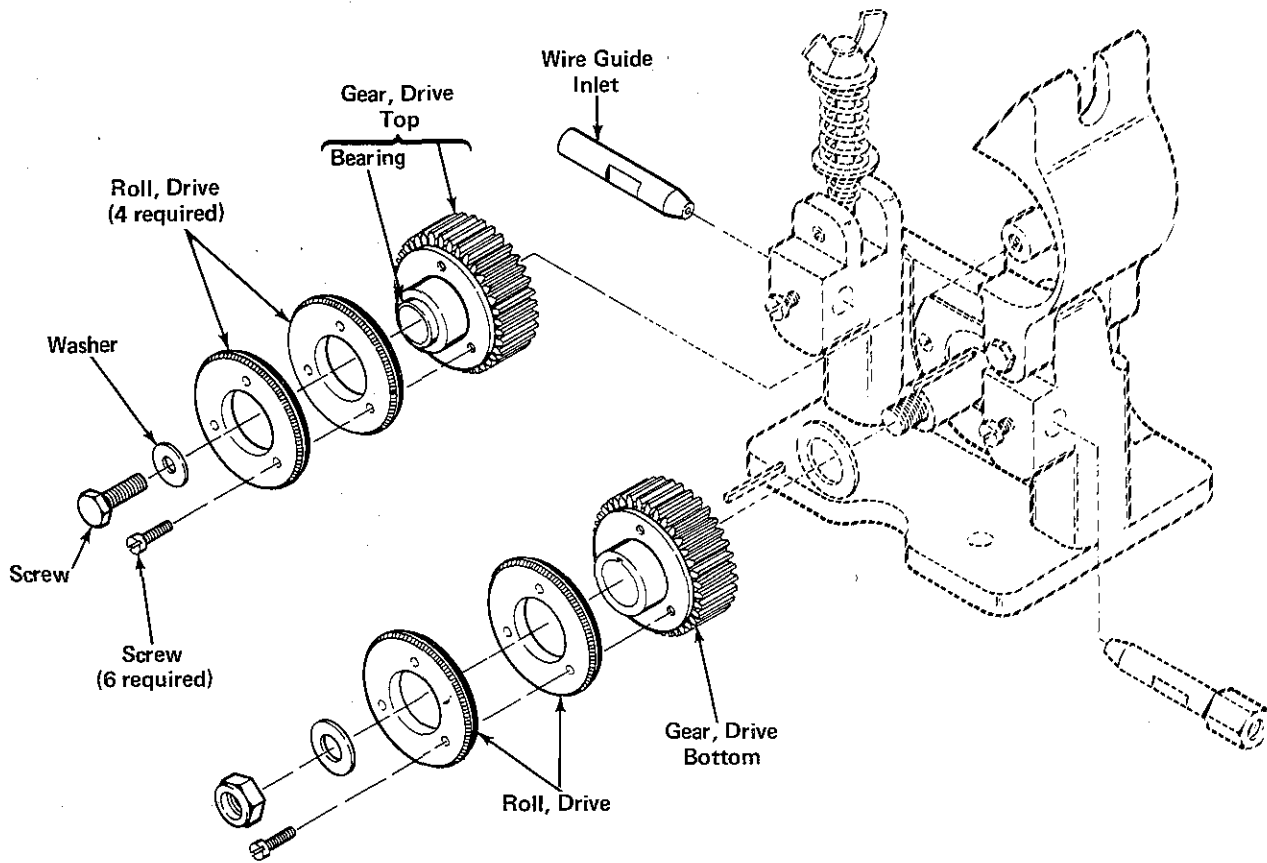
\*Recommended Spare Parts.

BE SURE TO PROVIDE STOCK, MODEL, AND SERIAL NUMBERS WHEN ORDERING REPLACEMENT PARTS.



TC-058 315

Figure E – Kit, Drive Gear & Guide Tube For Single Piece V & U Groove Gear/Drive Rolls.



TB-058 795

Figure F – Drive Gear & Guide Tube For Split V-Knurled Drive Rolls & Gear.

Wire Diameter & Type			Kit, Guide Tube & Drive Gear				
			Kit No.	Drive Gear			Guide
Fraction	Decimal	Metric		Type	Top	Bottom	Inlet
.030" hard	.030	.8MM	058 315	V-Groove	057 685	057 884	056 192
.035" hard	.035	.9MM	058 316	V-Groove	057 686	057 638	056 192
.045" hard	.045	1.2MM	058 317	V-Groove	057 688	057 639	056 193
1/16" hard	.062	1.6MM	058 318	V-Groove	057 690	057 885	056 195
.045" hard & cored	.045	1.2MM	058 319	U-Groove	057 696	057 886	056 193
1/16" hard & cored	.062	1.6MM	058 320	U-Groove	057 697	057 887	056 195
5/64" hard & cored	.078	2.0MM	058 321	U-Groove	057 698	057 888	056 195
3/32" hard & cored	.093	2.4MM	058 322	U-Groove	057 699	057 889	056 196
7/64" hard & cored	.109	2.8MM	058 323	U-Groove	057 700	057 890	056 196
1/8" hard & cored	.125	3.2MM	058 324	U-Groove	057 701	057 891	056 197

Figure E – Kits, Drive Gear & Guide Tube To Change From One Wire Size To Another For Use With Single-Piece V Or U Groove Gear/Drive Roll.

Wire Diameter & Type			Kit, Gear - Drive Roll & Guide Tube								
			Kit No.	*Roll, Drive		**Gear			Screw 10-32 x 3/4	Washer SAE 3/8	Guide Inlet
Fraction	Decimal	Metric		Type	Part No.	Top	Bottom	Bearing			
1/16" cored	.062	1.6MM	058 795	V-Knurled	056 771	056 305	057 645	056 050	604 607	010 910	056 195
5/64" cored	.078	2.0MM	058 796	V-Knurled	056 773	056 305	057 645	056 050	604 607	010 910	056 195
3/32" cored	.093	2.4MM	058 797	V-Knurled	056 774	056 305	057 645	056 050	604 607	010 910	056 196
7/64" cored	.109	2.8MM	058 798	V-Knurled	056 775	056 305	057 645	056 050	604 607	010 910	056 196
1/8" cored	.125	3.2MM	058 799	V-Knurled	056 776	056 305	057 645	056 050	604 607	010 910	056 197

\* Four (4) drive rolls required.

\*\*The part number for the top gear includes the bearing.

Figure F – Kits, Drive Gear & Guide Tube To Change From Single Piece V Or U Groove Gear/Drive Rolls To Split V-Knurled Drive Rolls & Gear.

Wire Diameter & Type			Kit, Drive Roll & Guide Tube			
			Kit No.	*Roll, Drive		Guide
Fraction	Decimal	Metric		Type	Part No.	Inlet
1/16" cored	.062	1.6MM	058 754	V-Knurled	056 771	056 195
5/64" cored	.078	2.0MM	058 753	V-Knurled	056 773	056 195
3/32" cored	.093	2.4MM	058 740	V-Knurled	056 774	056 196
7/64" cored	.109	2.8MM	058 752	V-Knurled	056 775	056 196
1/8" cored	.125	3.2MM	058 751	V-Knurled	056 776	056 197

\*Four (4) drive rolls required.

Kits, Drive Roll & Guide Tube To Change From One Wire Size To Another For Use With Split V-Knurled Drive Rolls.

