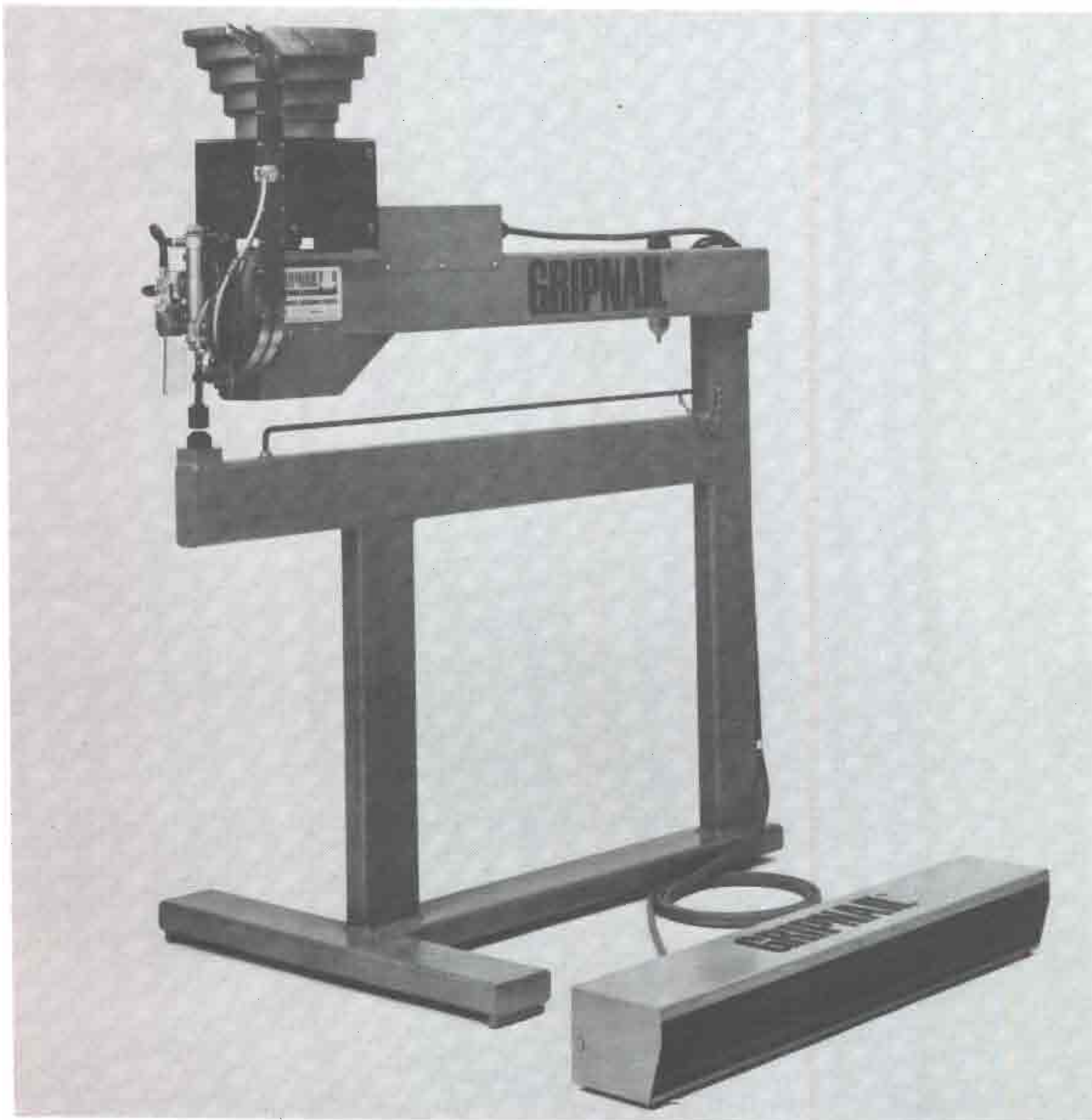


# OPERATING INSTRUCTIONS

## AUTOMATIC FASTENING CENTERS

Models #448 and #460  
(Also applicable to #450 and #454)



**GRIPNAIL**  
FASTENING SYSTEMS

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# INSTALLATION

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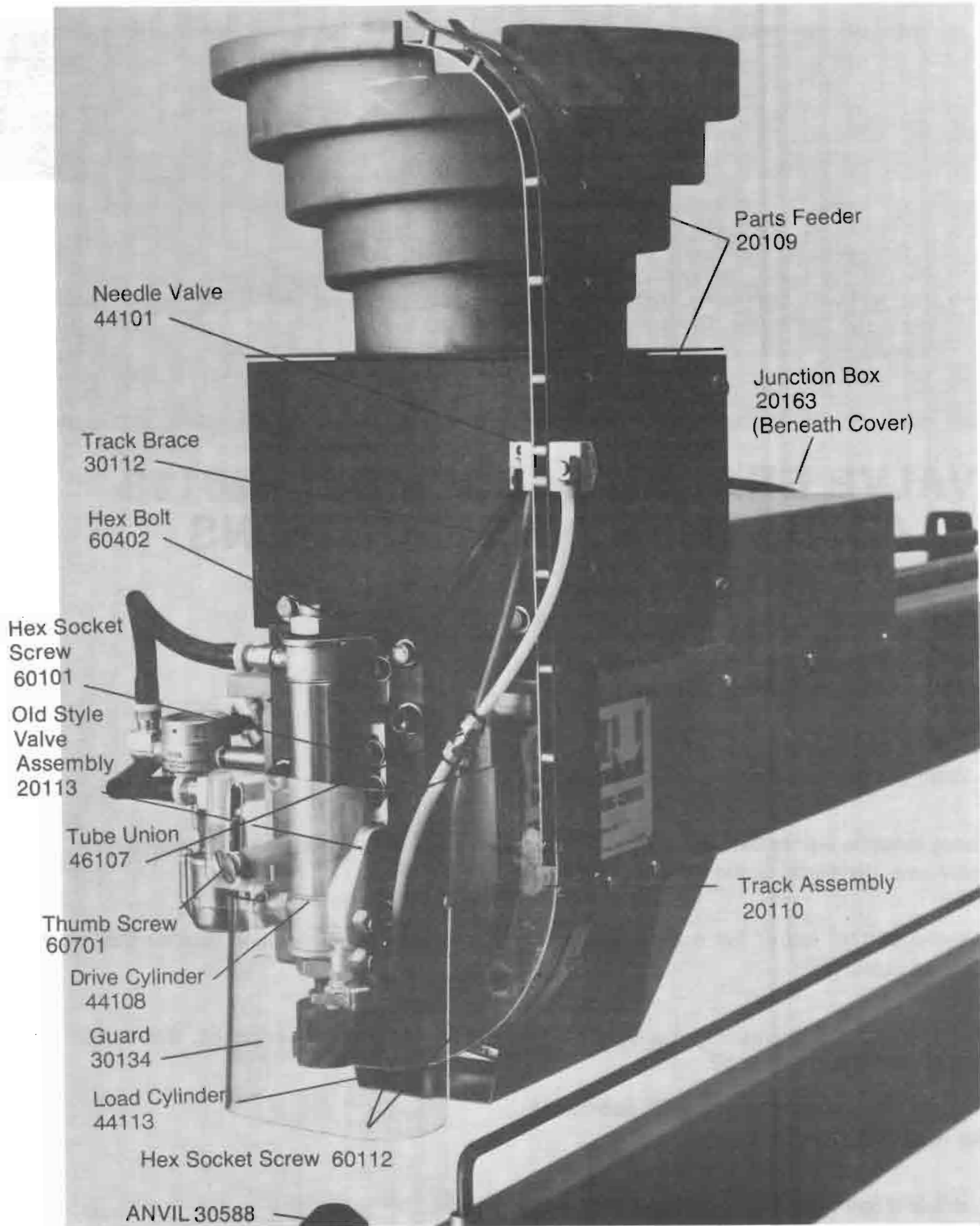
**DO NOT ACTIVATE AIR OR ELECTRICITY UNTIL INSTRUCTED BELOW**

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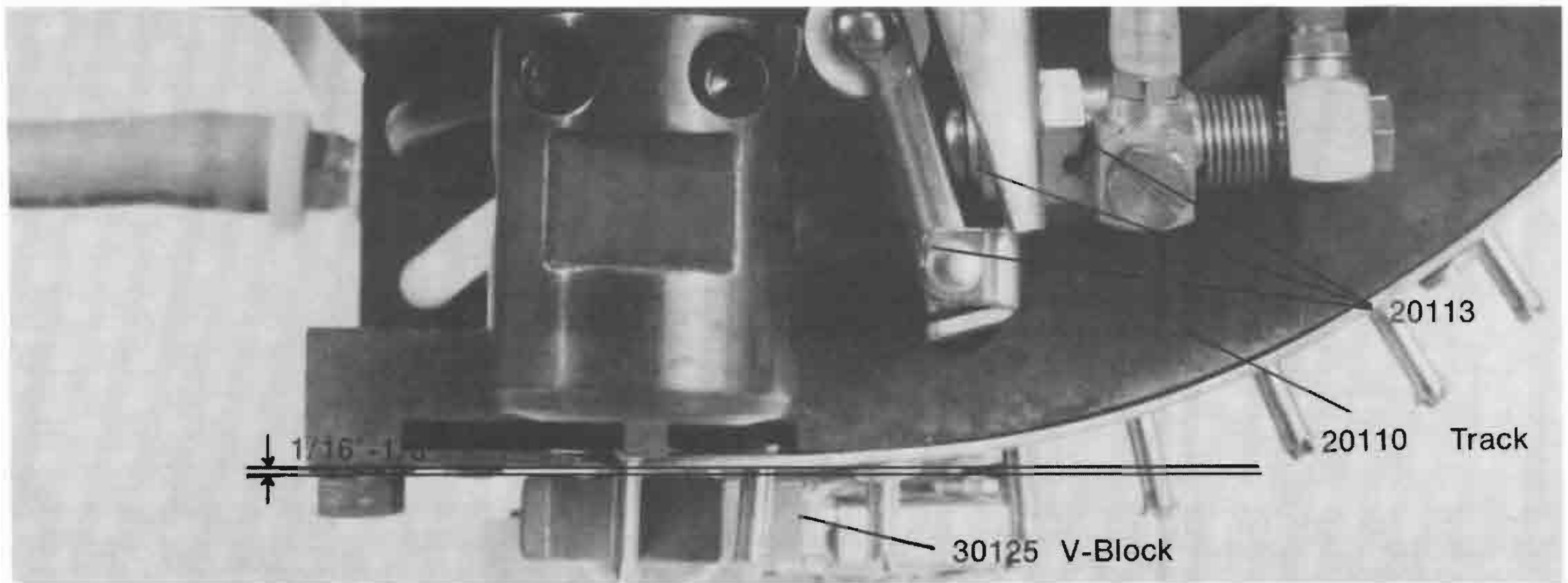
- 1 \_\_\_ INSTALL BALL CASTER/SHOP TABLES TO SIDES AND LEVEL UNTIL ANVIL #30588 IS FLUSH WITH TOP OF TABLES.
- 2 \_\_\_ Place PARTS FEEDER #20109 on machine and plug cord into receptacle at rear of top cover.
- 3 \_\_\_ Remove SCREWS #60112 from lower right of drive bracket.
- 4 \_\_\_ Remove HEX BOLT #60402 from upper right of bracket.
- 5 \_\_\_ Remove two SCREWS #60101 from VALVE ASSEMBLY #20113.
- 6 \_\_\_ Install TRACK ASSEMBLY #20110 and fasten with screws #60112. DO NOT TIGHTEN SCREWS AT THIS TIME.
- 7 \_\_\_ Align TRACK BRACE #30112 and fasten with bolt #60402. DO NOT TIGHTEN AT THIS TIME.
- 8 \_\_\_ STOP! IMPORTANT — Refer to page 4. Check clearance between underside of track and V-block #30125.
- 9 \_\_\_ Tighten screws #60112.
- 10 \_\_\_ Adjust bowl-to-track clearance about 1/8" and tighten hex bolt #60402.
- 11 \_\_\_ Install and adjust valve bracket assembly #20113 as outlined on page 4.
- 12 \_\_\_ Connect red & yellow tubing to matching ones on track.
- 13 \_\_\_ Attach plastic guard #30134 with thumb screws #60701.
- 14 \_\_\_ Connect shop air supply to main regulator. Refer to page 34, for adjustment chart.
- 15 \_\_\_ Plug cord into 110 VAC outlet.
- 16 \_\_\_ Fill bowl about 3/4 full of Gripnails. DO NOT OVERFILL.  
NOTE — Bowl REQUIRES air and electricity to operate. If bowl does not operate, open needle valve #44101 on track slowly until it starts.
- 17 \_\_\_ Place a Gripnail on magnetic driver before operating.

**DO NOT "DRY FIRE" OR OPERATE DRIVE CYLINDER  
WITHOUT FASTENER ON MAGNETIC DRIVER.**

# INSTALLATION, CONT.



# INSTALLATION, CONT. TRACK CLEARANCE



## VALVE BRACKET ASSEMBLY #20113 ADJUSTMENT INSTRUCTIONS

CAUTION: AIR MUST BE DISCONNECTED BEFORE PROCEEDING

This assembly operates with drivers #30119 and #30295.

Fig. 1 A—Initial contact of driver and roller/lever #44107.  
A1—Valve #44106 released (button extended)

Fig. 2 B—Driver/cylinder fully retracted  
B1—Valve #44106 activated (button depressed)

1 \_\_\_ Clearance **must** be visible between button & roller/lever when roller/lever is fully released.  
With new lever installations, set initial clearance.

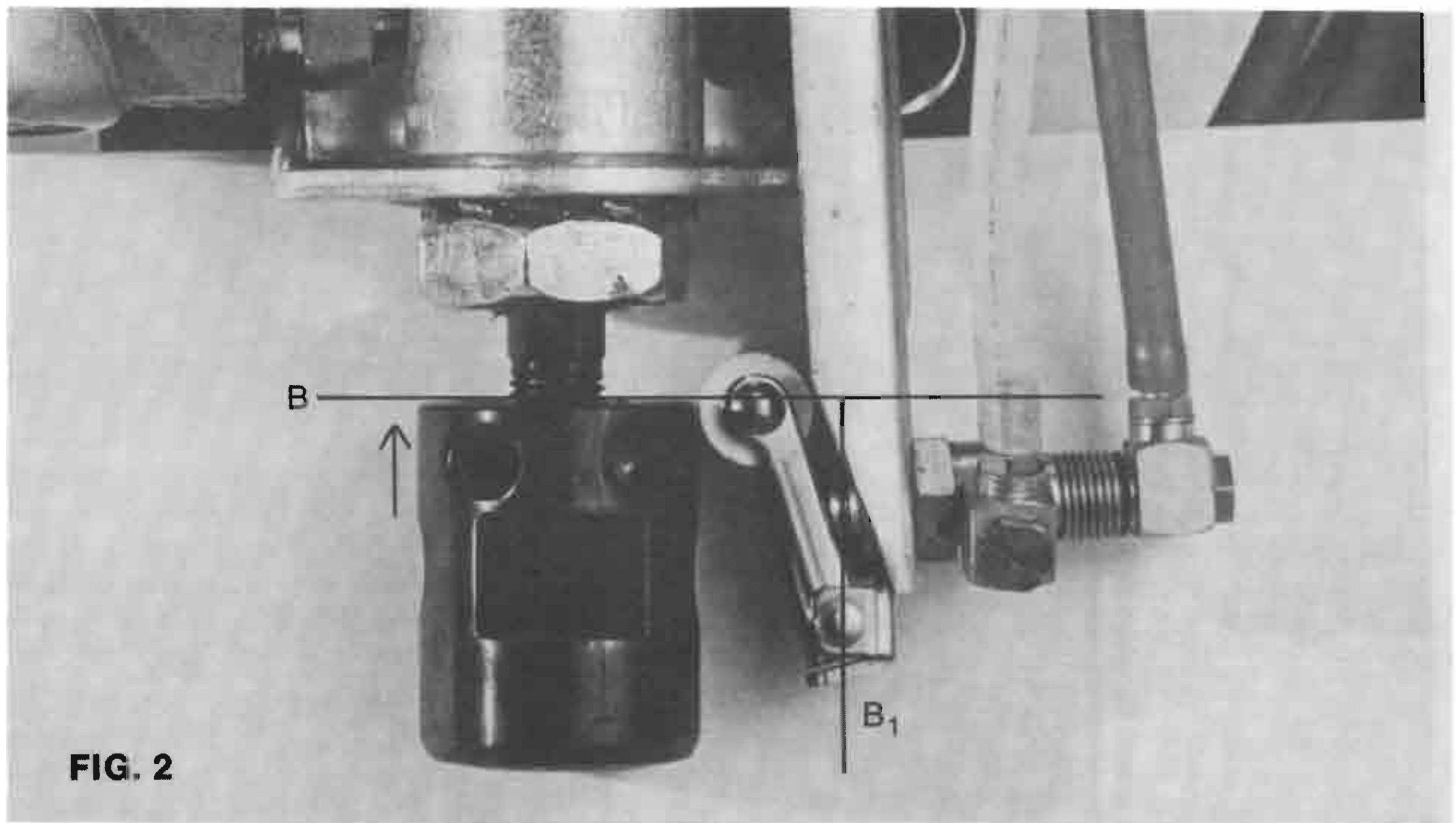
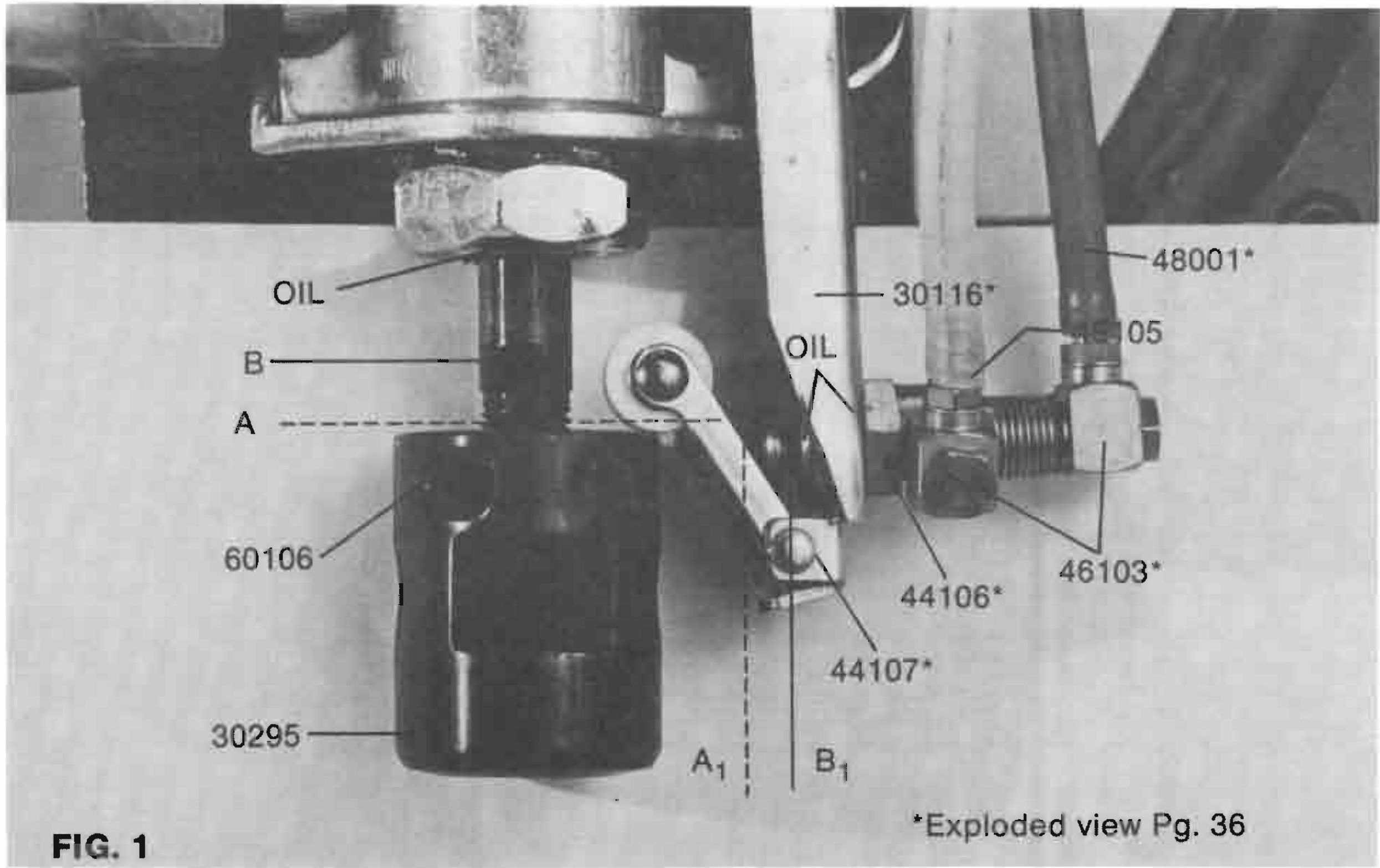
A. Force lever 1/4" left of full open position Fig. 1 and release. This action bends adjustment tab to provide clearance.

**IMPORTANT** Before proceeding, be sure magnetic driver is properly adjusted. See MAGNETIC DRIVER ADJUSTMENT page 12.

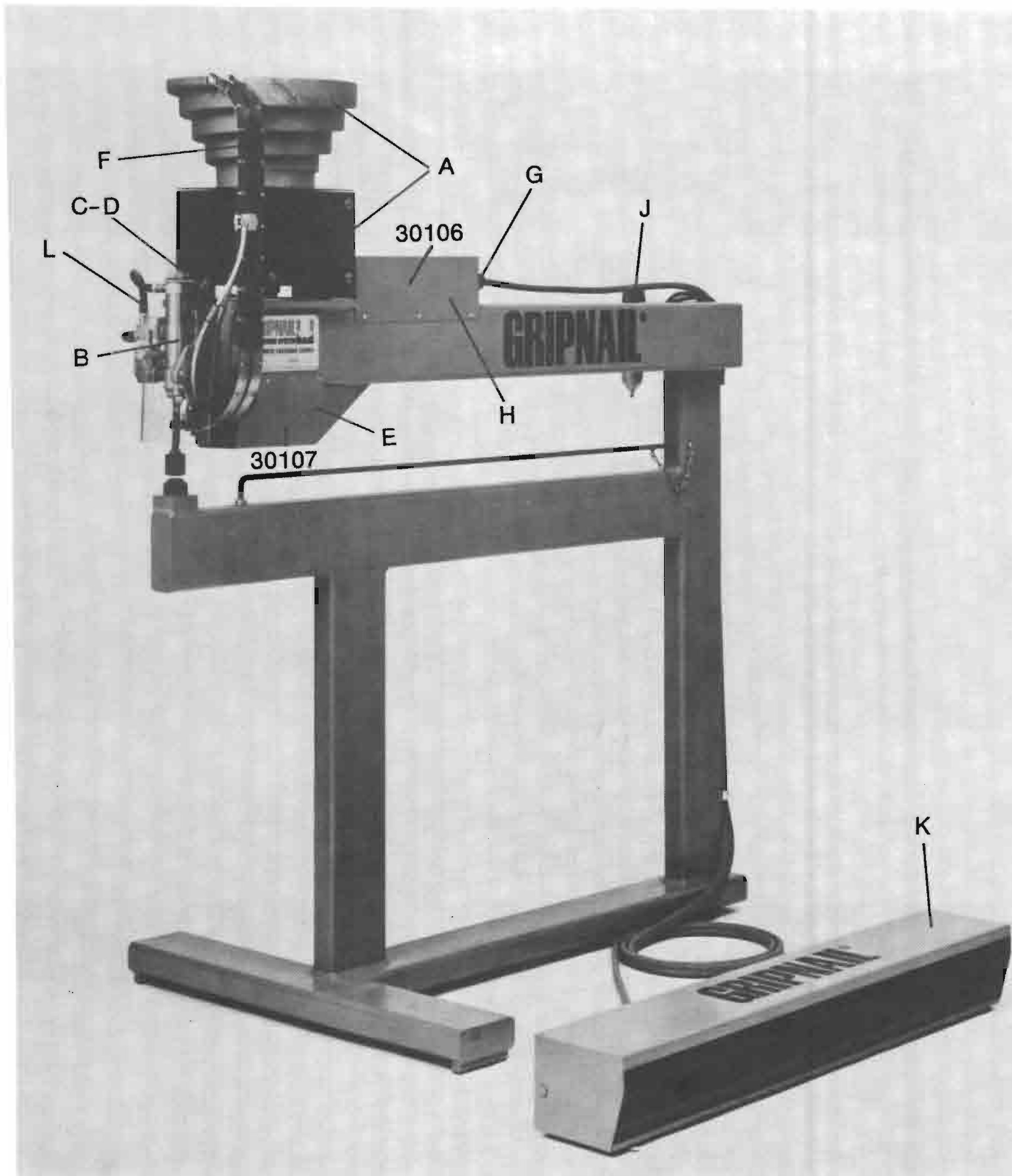
2 \_\_\_ Fig. 1, driver rim contacts roller at 6:00 position (A).  
Note valve button remains extended (A1).

3 \_\_\_ Fig. 2, driver stops at end of upward cylinder stroke (B).  
Note valve button is activated (B1).

4 \_\_\_ Only driver **rim** contacts roller at 9:00 position (B).  
Tighten mounting bolts and recheck.



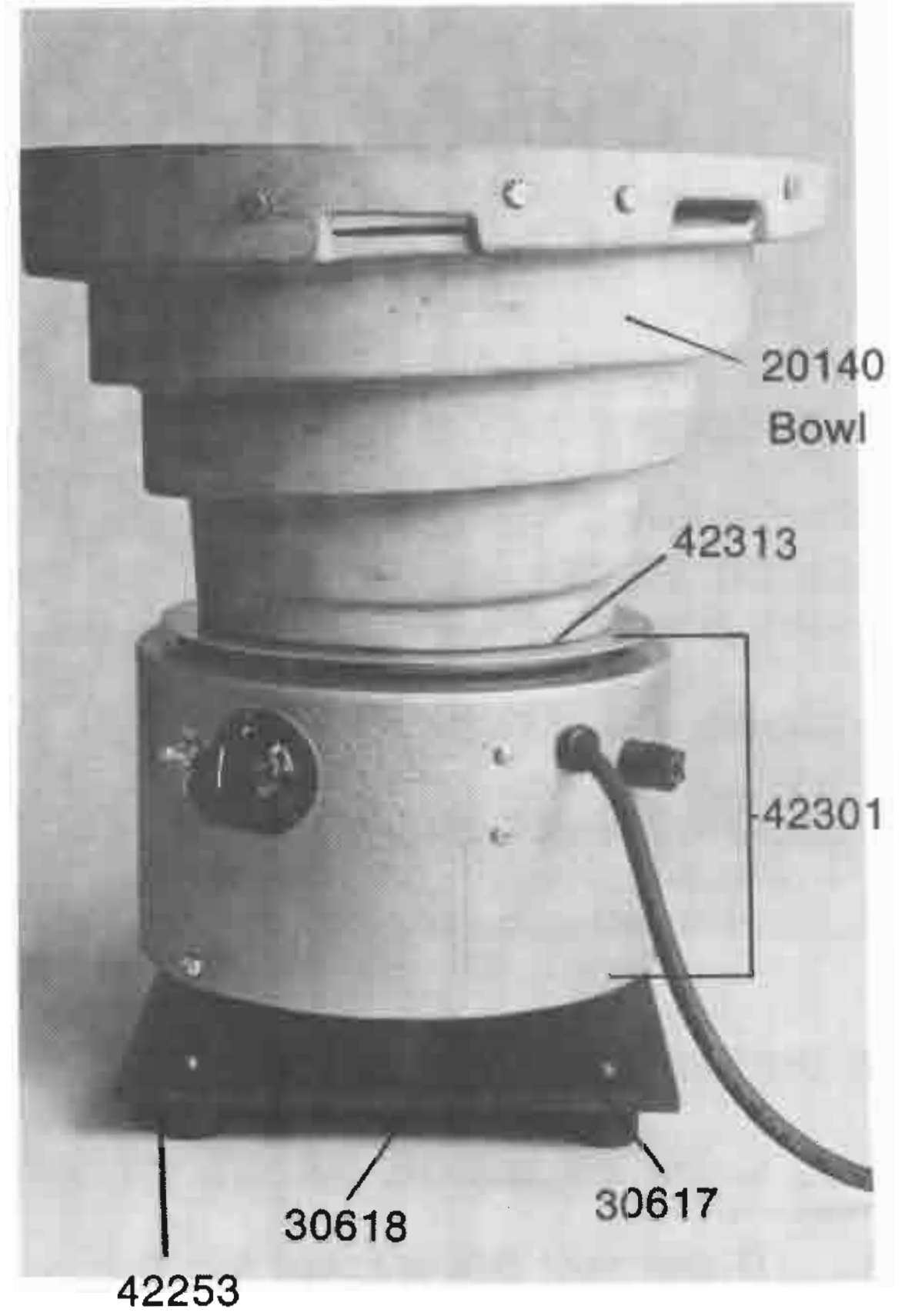
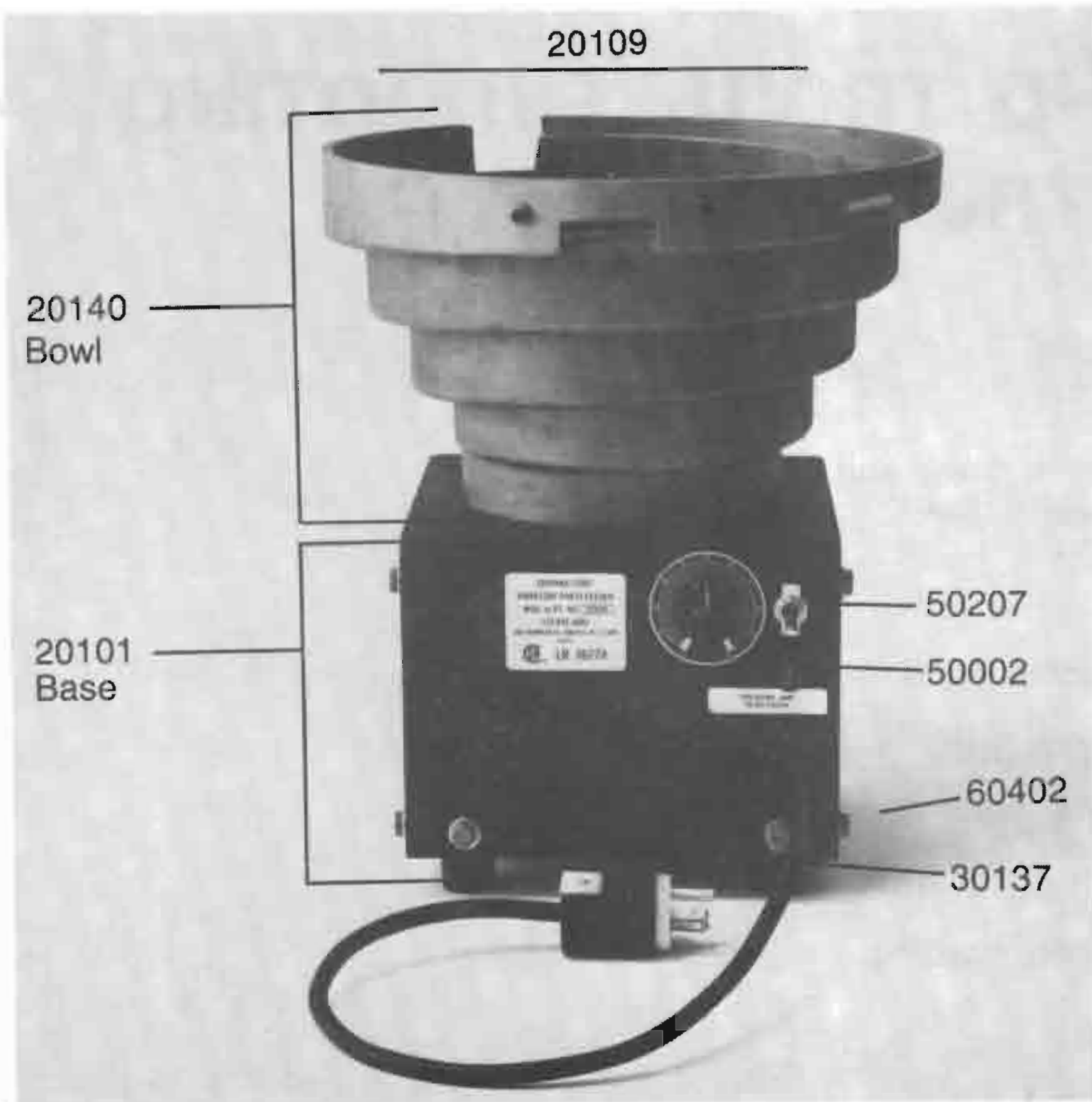
# MACHINE ASSEMBLIES



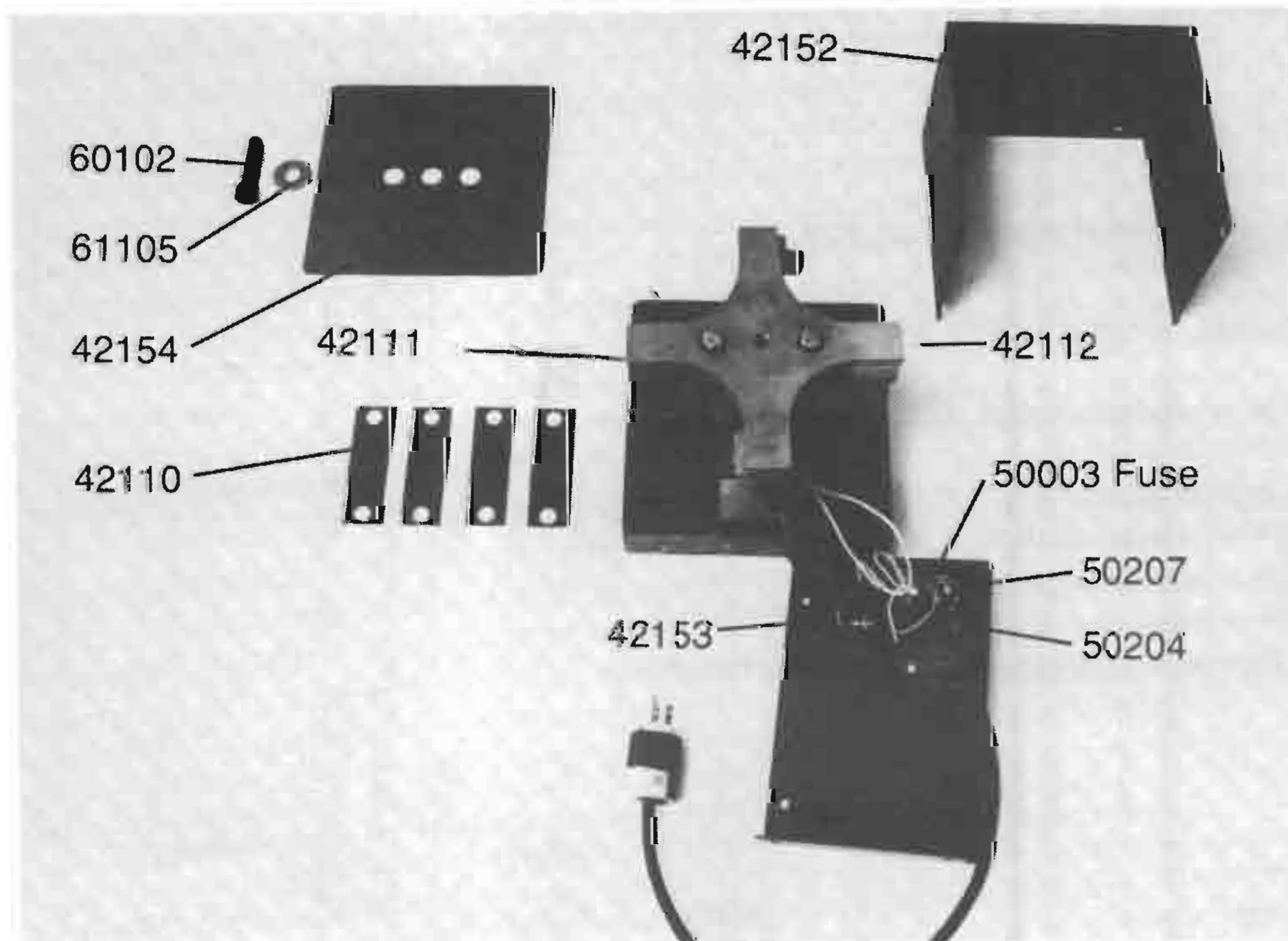
A—PARTS FEEDER .....	pg 7
B—DRIVE .....	pg 14, 31
C—POWER PACK .....	pg 16, 17
D—DRIVE VALVE .....	pg 16, 17
E—LOAD CYLINDER .....	pg 18, 33
F—TRACK .....	pg 20

G—JUNCTION BOX .....	pg 21
H—PNEUMATIC .....	pg 28
J—MAIN REGULATOR .....	pg 34
K—FOOT PEDAL .....	pg 34
L—ALUMINUM OPTION .....	pg 35

# A. PARTS FEEDER ASSEMBLY



## Base Unit #20101





# VIBRATORY FEEDER BOWL

## OPERATING AND TROUBLESHOOTING INSTRUCTIONS

### I. FEEDER BOWL INOPERATIVE

#### IMPORTANT — BEFORE PROCEEDING:

- \* DISCONNECT feeder base power cord from machine and
- \* RECONNECT directly to a **good** extension cord, then;

#### IF BOWL VIBRATES OK:

- 1 \_\_\_ Disconnect from extension cord and reconnect to machine.
- 2 \_\_\_ Proceed to page 21, CLEANING AIR SENSORS.

#### IF UNIT DOES NOT VIBRATE:

- 1 \_\_\_ Check cords, fuse, switch and speed control setting.
- 2 \_\_\_ Disconnect power cord.
- 3 \_\_\_ Loosen center bolt, remove bowl and spacer plate.
- 4 \_\_\_ Remove housing and examine internal wiring connections on switch, fuse holder, speed control and coil.
- 5 \_\_\_ Reassemble entire unit **before** testing.

### II. FEEDER BOWL OPERATES SLOWLY

- 1 \_\_\_ Check setting of rotary speed control switch.
- 2 \_\_\_ Center bolt in feeder bowl must be tight.
- 3 \_\_\_ Slow operation generally indicates:
  - a. spring mounting bolt has loosened.
  - b. spring(s) have fatigued or broken.
  - c. gap clearance is incorrect.Refer to following sections for specific models.

# GRIPNAIL FEEDER BASE #20101

## FEEDER BASE SPRING (42110) REPLACEMENT

Refer to page 7.

- 1 \_\_\_ Disconnect power cord and remove base from machine.
- 2 \_\_\_ Remove center bolt, bowl and spacer plate.
- 3 \_\_\_ Remove housing and control panel leaving both wires connected to transformer coil.
- 4 \_\_\_ Check transformer coil mounting bolts for tightness.
- 5 \_\_\_ An air gap of about .030"-.035" gap should exist between transformer coil and armature bar directly above.  
NOTE: A strip of 22 ga. galvanized stock can be used to check the air gap. See ADJUSTMENT below.
- 6 \_\_\_ IMPORTANT—When replacing springs, replace **one at a time** to avoid losing gap adjustment. Two aluminum spacer washers should "sandwich" the spring at each mounting location. Tighten bolts securely.
- 7 \_\_\_ Install panels, plate, bowl, and leave center bolt snug.
- 8 \_\_\_ Return unit to machine, position rubber feet in locator plate and rotate bowl to set bowl-to-track clearance of about 1/8". TIGHTEN CENTER BOLT SECURELY.

### AIR GAP ADJUSTMENT

- 1 \_\_\_ Loosen all (8) spring mounting bolts.
- 2 \_\_\_ Insert thickness gauge (feeler or strip of 22 ga.) of **about** .030" between ends of coil and armature bar.
- 3 \_\_\_ Finger tighten each bolt.
- 4 \_\_\_ Alternately, wrench tighten bolts in small increments.
- 5 \_\_\_ Repeat the sequence as required until all are **TIGHT!**

# VIBRATORY BASE

## OPERATING INSTRUCTIONS

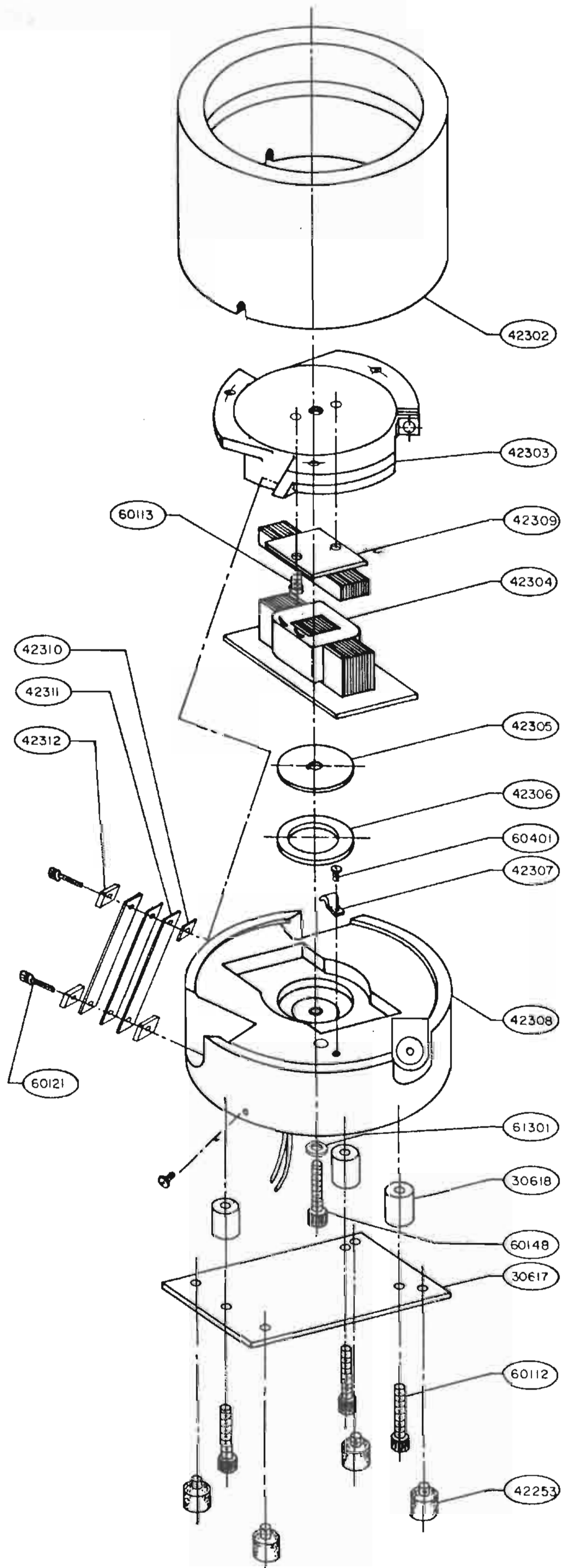
### MFR.-AUTOMATION DEVICES CO., MODEL 8

#### GAP CLEARANCE ADJUSTMENT

- 1 \_\_\_ With power OFF, a .020" gap should exist between coil frame and armature plate, when measured on all sides.
- 2 \_\_\_ Insert a thin strip of paper (about .003") between coil frame and armature plate.
- 3 \_\_\_ Turn power ON and adjust speed control knob to maximum. Paper should **barely** clear gap under these conditions.
  - A—If contact is felt or a change in the unit's sound is heard, gap is TOO NARROW. Damage and erratic feed can result due to hammering of these parts.
  - B—If feeder will not produce sufficient power to feed fasteners, gap is TOO WIDE or a spring is defective. Refer to SPRING REPLACEMENT.
- 4 \_\_\_ While operating at maximum, adjust bolt in bottom center of base until armature **barely** contacts coil.
- 5 \_\_\_ Turn power OFF and tighten bolt an additional 1/4 turn.

#### SPRING REPLACEMENT

- 1 \_\_\_ Disconnect power cord and remove base unit from machine.
- 2 \_\_\_ Remove bowl and spacer plate.
- 3 \_\_\_ Mark housing & base for reassembly, then remove housing.
- 4 \_\_\_ After replacing a defective spring(s), it is advisable to release all springs, examine and evenly re-tighten.
- 5 \_\_\_ Readjust the coil gap clearance as outlined above.
- 6 \_\_\_ With unit on machine, adjust bowl-to-track gap of 1/8".



# MAGNETIC DRIVER #30295

## INSTALLATION INSTRUCTIONS (REPLACING DRIVER #30119)

### CAUTION: DISCONNECT AIR AND ELECTRICITY

1 \_\_\_ Remove magnetic driver #30119 and jam nut #62201.

2 \_\_\_ Remove valve assembly #20113.

NOTE: Units with old assembly shown on pg. 3, must order new style on pg. 31, 36, when driver #30295 is used.

3 \_\_\_ Loosen screws #60106 on new driver. NOTE: New driver #30295 does NOT require jam nut.

4 \_\_\_ Install on rod and see ADJUSTMENT INSTRUCTIONS below.

## MAGNETIC DRIVERS #30295 AND #30119 ADJUSTMENT INSTRUCTIONS

### CAUTION: DISCONNECT AIR AND ELECTRICITY

1 \_\_\_ Rotate driver on rod until face of driver aligns with line "A".

2 \_\_\_ Driver should never be adjusted below solid line or above line "A".

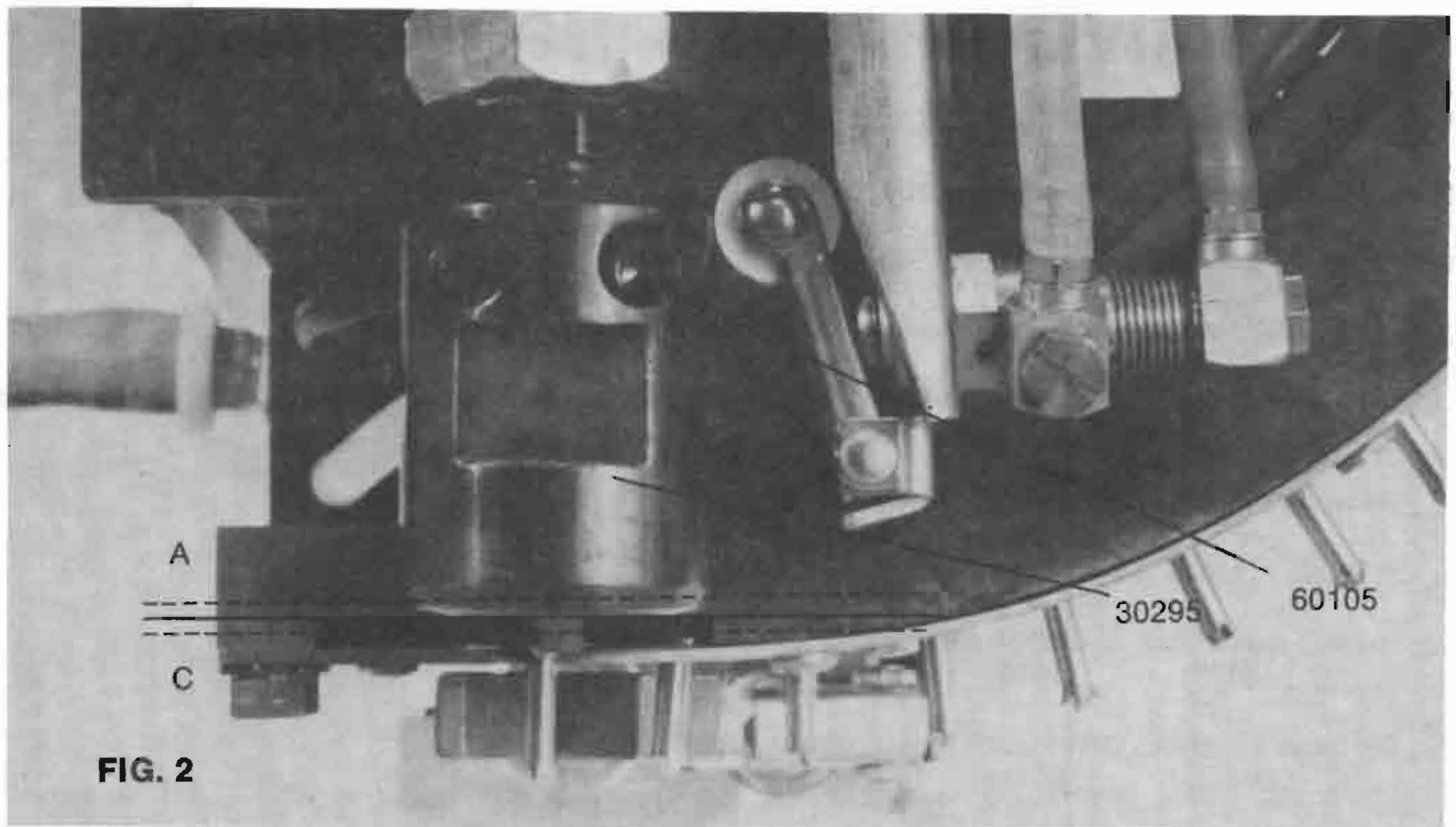
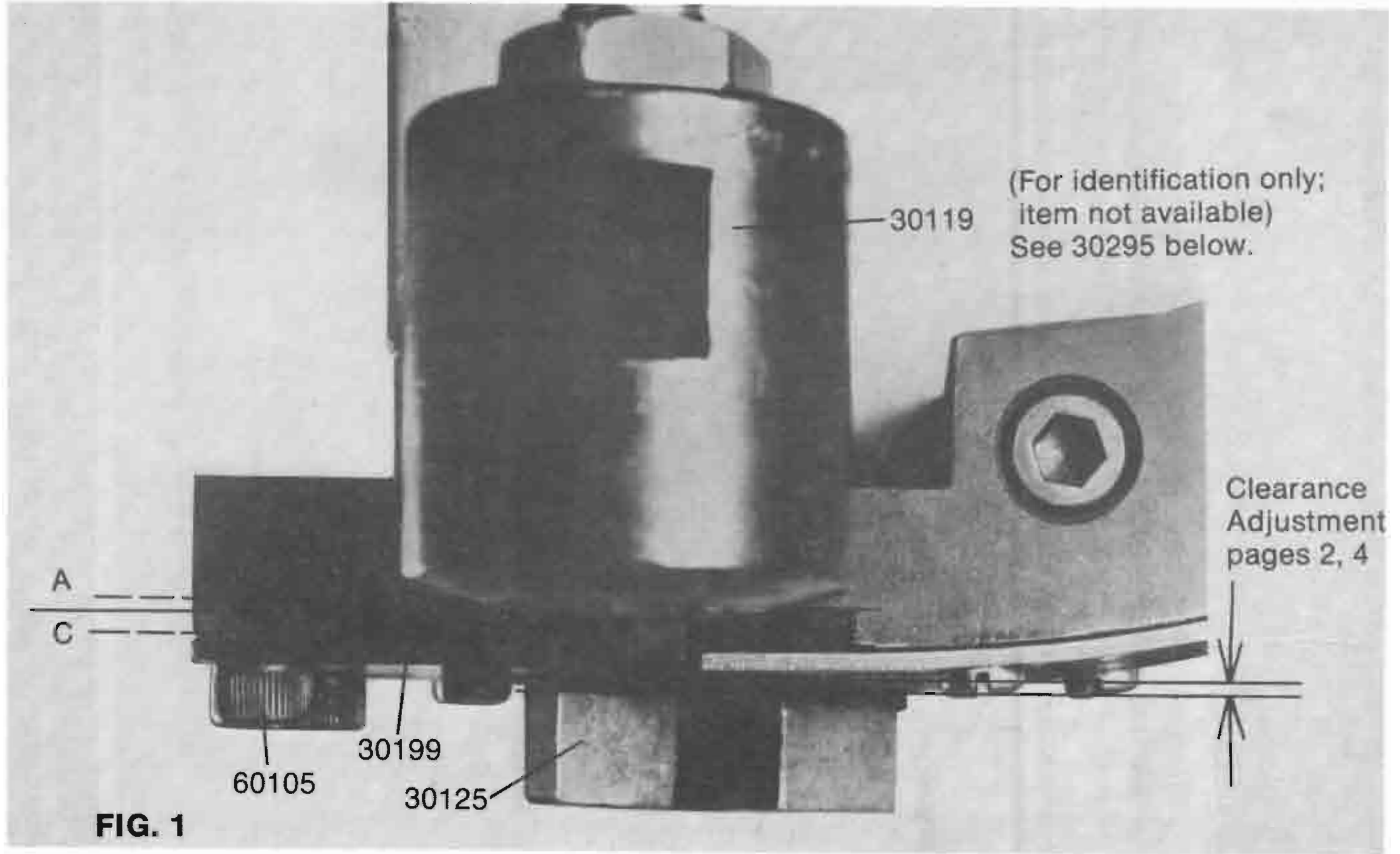
IMPORTANT: Adjustment near line "C" will cause *jamming*; above line "A" will cause *off center* loading.

3 \_\_\_ Driver #30295—Alternately draw up socket screws in small increments until tight.

4 \_\_\_ Driver #30119—Tighten jam nut securely.

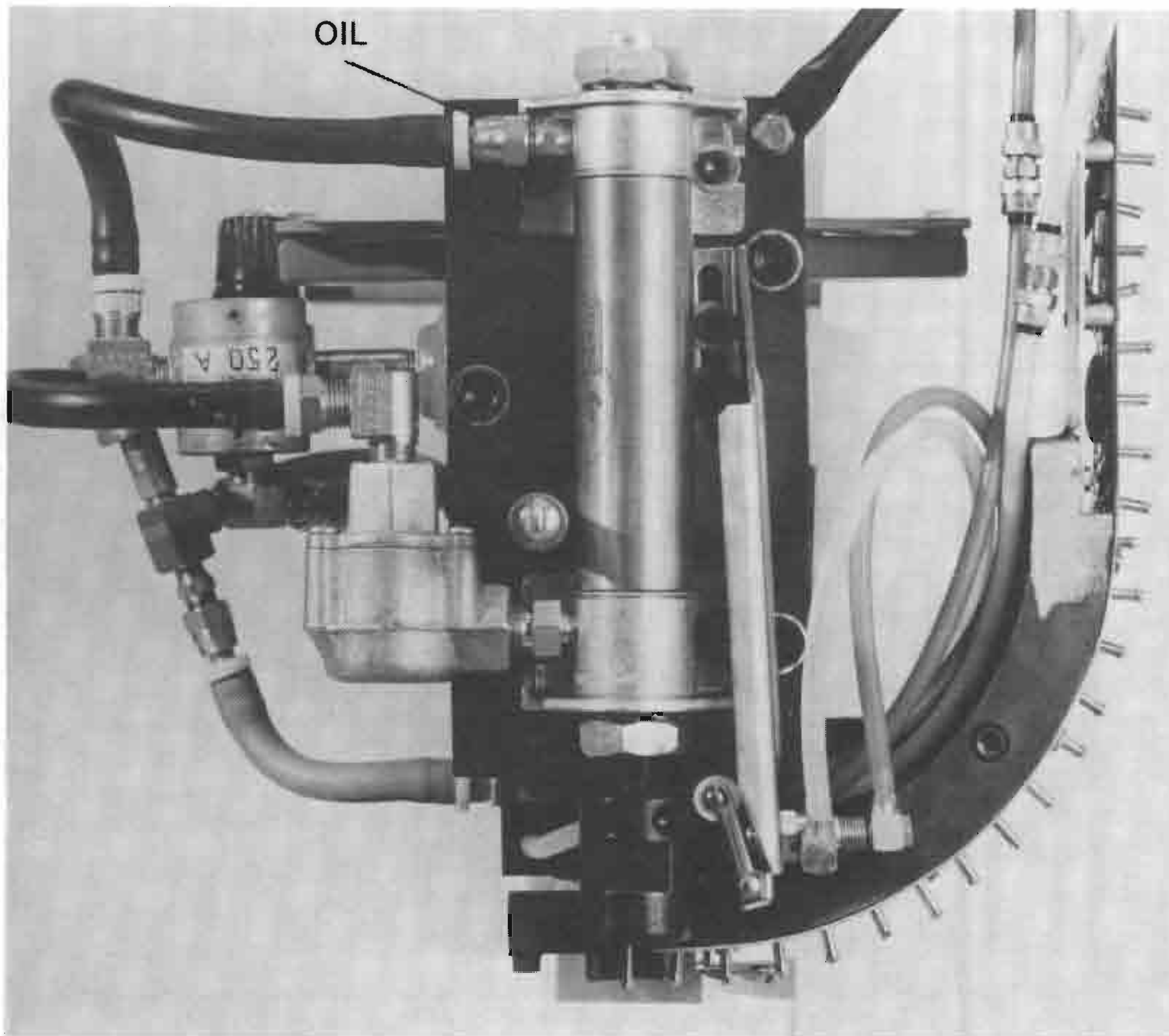
5 \_\_\_ IMPORTANT: Readjust valve assembly #20113 on page 4.

# MAGNETIC DRIVER ADJUSTMENT



## B. DRIVE ASSEMBLY

see Pg. 31



## DRIVE CYLINDER INOPERATIVE

**CAUTION: DISCONNECT AIR AND ELECTRICITY**

**STOPPED ABRUPTLY DURING PRODUCTION!**

Refer to pg. 26 and SIGNAL LINE PRESSURE TEST.

- 1 \_\_\_ Ensure foot valve fully depresses & hose is not pinched.
- 2 \_\_\_ V-block #30125 and load cylinder #44113 must be fully retracted and jammed items cleared from track exit slot.
- 3 \_\_\_ Remove bottom cover #30107. See page 18.
- 4 \_\_\_ In fig. 2, actuator #44107 is closed by V-block #30125.
- 5 \_\_\_ In fig. 1 & 2, check condition of tubing/connections on:  
\_\_\_ 46103    \_\_\_ 46105    \_\_\_ 48005    \_\_\_ 48008.
- 6 \_\_\_ On page 16, check condition of tubing/connections on:  
\_\_\_ 46102    \_\_\_ 46119    \_\_\_ 48005.

NOTE: Serial #1734 & up, page 17, check, \_\_\_ 46006, \_\_\_ 48011, \_\_\_ 46114.

# DRIVE CYLINDER INOPERATIVE, CONT.

## **DOES NOT OPERATE AFTER REMAINING IDLE:**

- 1 \_\_\_ With air OFF, drain water from regulator bowl and frame.
- 2 \_\_\_ With air ON, note pressure on main regulator.
- 3 \_\_\_ Complete steps 1-2 above, then increase main regulator pressure to 125 psi.
- 4 \_\_\_ Spray lightweight oil into side exhaust ports (2) of 4-way valve #44103. See Page 28, 29.
- 5 \_\_\_ Depress pedal until machine operates.
- 6 \_\_\_ Once operating, reduce pressure to original setting.
- 7 \_\_\_ IF MACHINE FAILS TO OPERATE, reduce main pressure to original setting and refer to "RESET VALVE (44102) TEST".

# DRIVE CYLINDER—LOW IMPACT

## **CAUTION: DISCONNECT AIR AND ELECTRICITY**

- 1 \_\_\_ The shaft of drive cylinder #44191 should drop freely when air drains from machine.
- 2 \_\_\_ If cylinder is stiff, oil at upper port (46114 facing page) and at swivel end of lower hose (20122). See page 17.
- 3 \_\_\_ Remove bottom cover #30107. See page 18.
- 4 \_\_\_ As shown in fig. 1 & 2, check condition of tubing/connections on: \_\_\_ 46103, \_\_\_ 46105, \_\_\_ 48005, \_\_\_ 48008.
- 5 \_\_\_ On page 16, check condition of tubing/connections on: \_\_\_ 46102, \_\_\_ 46119, \_\_\_ 48005. Replace damaged tubing.

NOTE: Serial #1734 & up, page 17, check, \_\_\_ 46006, \_\_\_ 48011, \_\_\_ 46114.

- 6 \_\_\_ If a leak is suspected in areas of steps 4 & 5, perform SIGNAL LINE PRESSURE TEST on page 26.



# DOUBLE OR PARTIAL CYCLE

**CAUTION: DISCONNECT AIR BEFORE PROCEEDING**

**MOST COMMON CAUSE—LOOSE FITTINGS, DAMAGED SIGNAL LINE**

1 \_\_\_ Refer to LOW IMPACT, steps 3, 4, 5, 6.

**OTHER CAUSES—WATER, DEFECTIVE VALVE(S), IMPROPER TIMING**

**WATER REMOVAL**

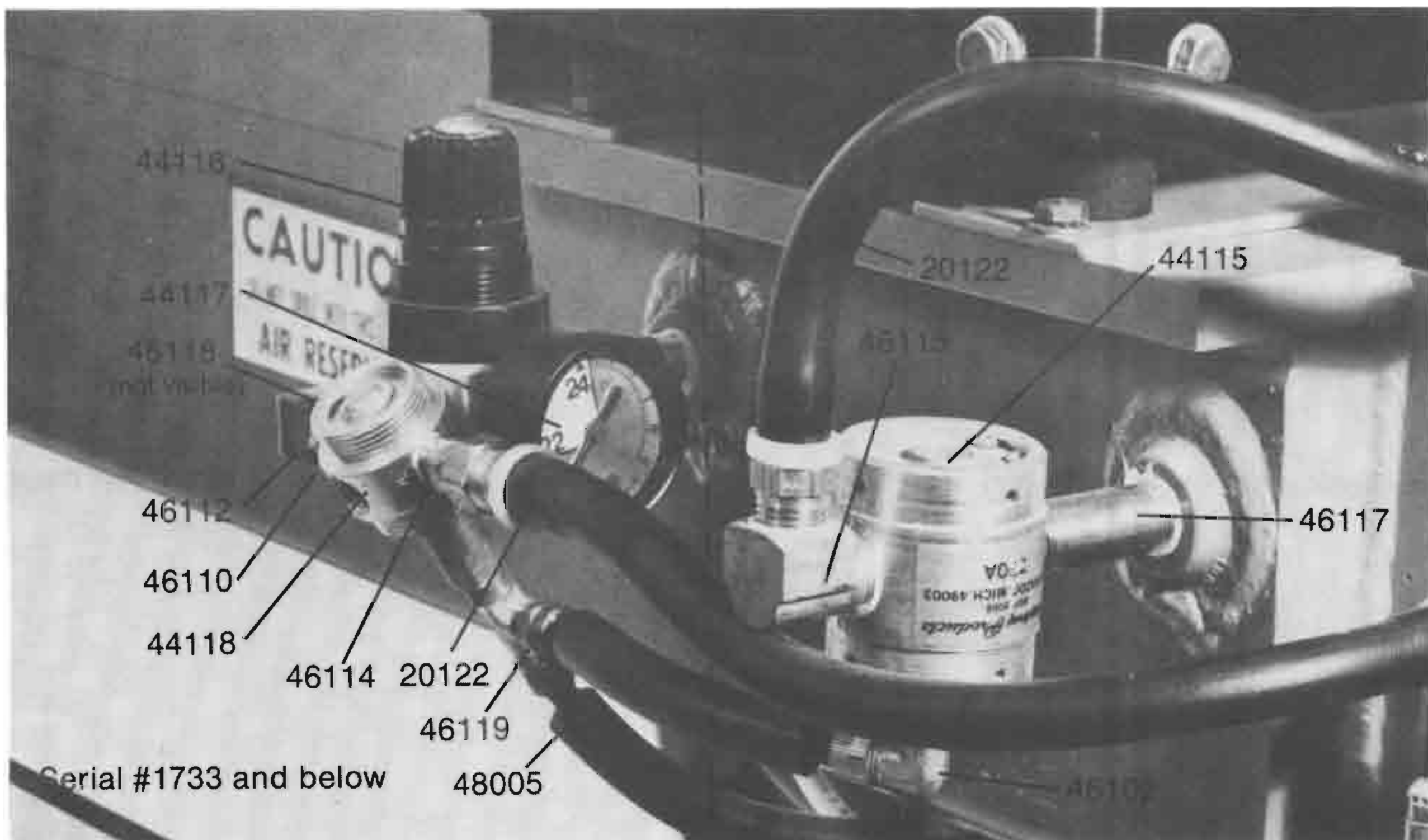
- 1 \_\_\_ Disconnect air, then open draincock #46101 on underside of frame and fitting on bottom of filter/regulator bowl.
- 2 \_\_\_ Disconnect green foot pedal hose from pneumatic assembly beneath top cover.
- 3 \_\_\_ Reconnect air, point green hose in a safe direction and depress foot pedal to clear moisture from lines.
- 4 \_\_\_ Reattach green foot pedal hose to pneumatic assembly.

**DEFECTIVE VALVE(S)**

Water, age, operating conditions or poor maintenance can adversely affect valves #44118 and #44115. Since they cycle simultaneously, it is recommended that they be replaced as a set.

## C. POWER PACK ASSEMBLY #20117

## D. DRIVE VALVE ASSEMBLY #20116



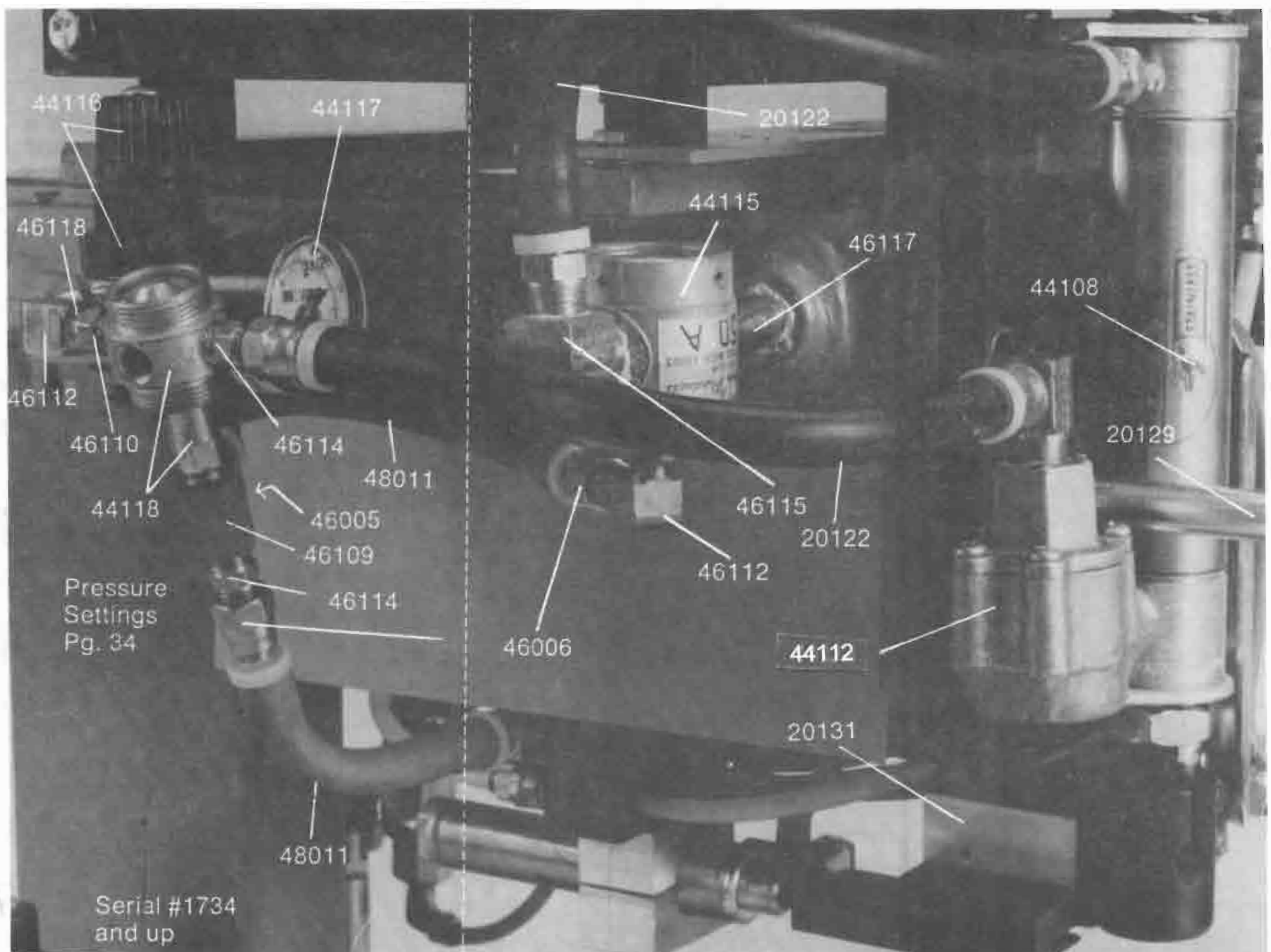
# DOUBLE/PARTIAL CYCLE, CONT.

## IMPROPER TIMING

- 1 \_\_\_ A double cycle may occur when operating the power pack regulator in 24 gauge position, besides occurring in the 22 gauge setting. This indicates the timing cycle is operating too fast and not allowing a full drive to occur.
- 2 \_\_\_ Units operating this way often prevent the load cylinder from properly placing a new fastener on the magnetic driver.
- 3 \_\_\_ **Successive partial cycles appear as double loads and can damage the track guides in exit slot area!**  
Pg. 20 & 25.
- 4 \_\_\_ The SIGNAL LINE TEST on page 26, MUST be completed before proceeding to TIMING ADJUSTMENT section.

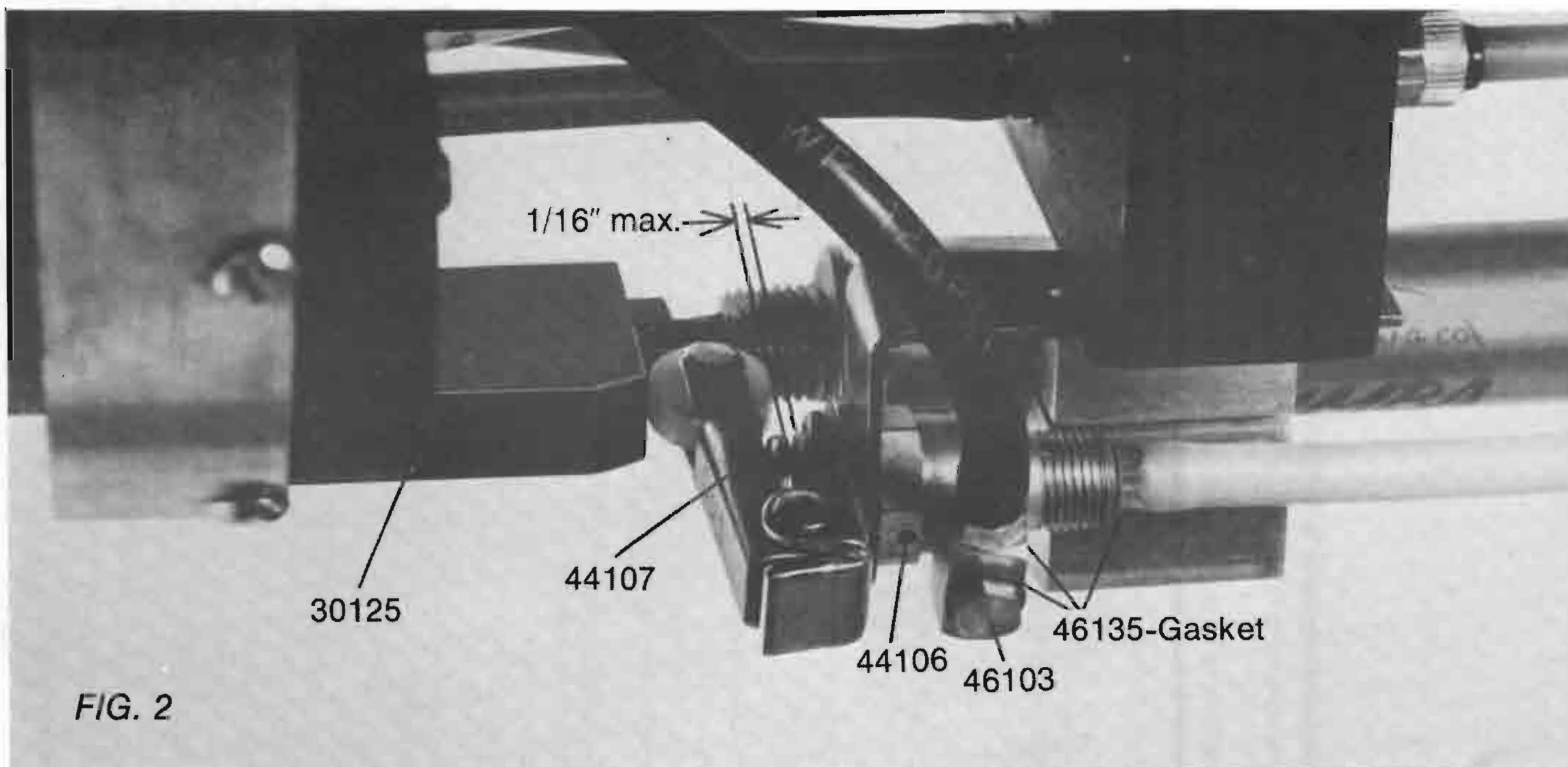
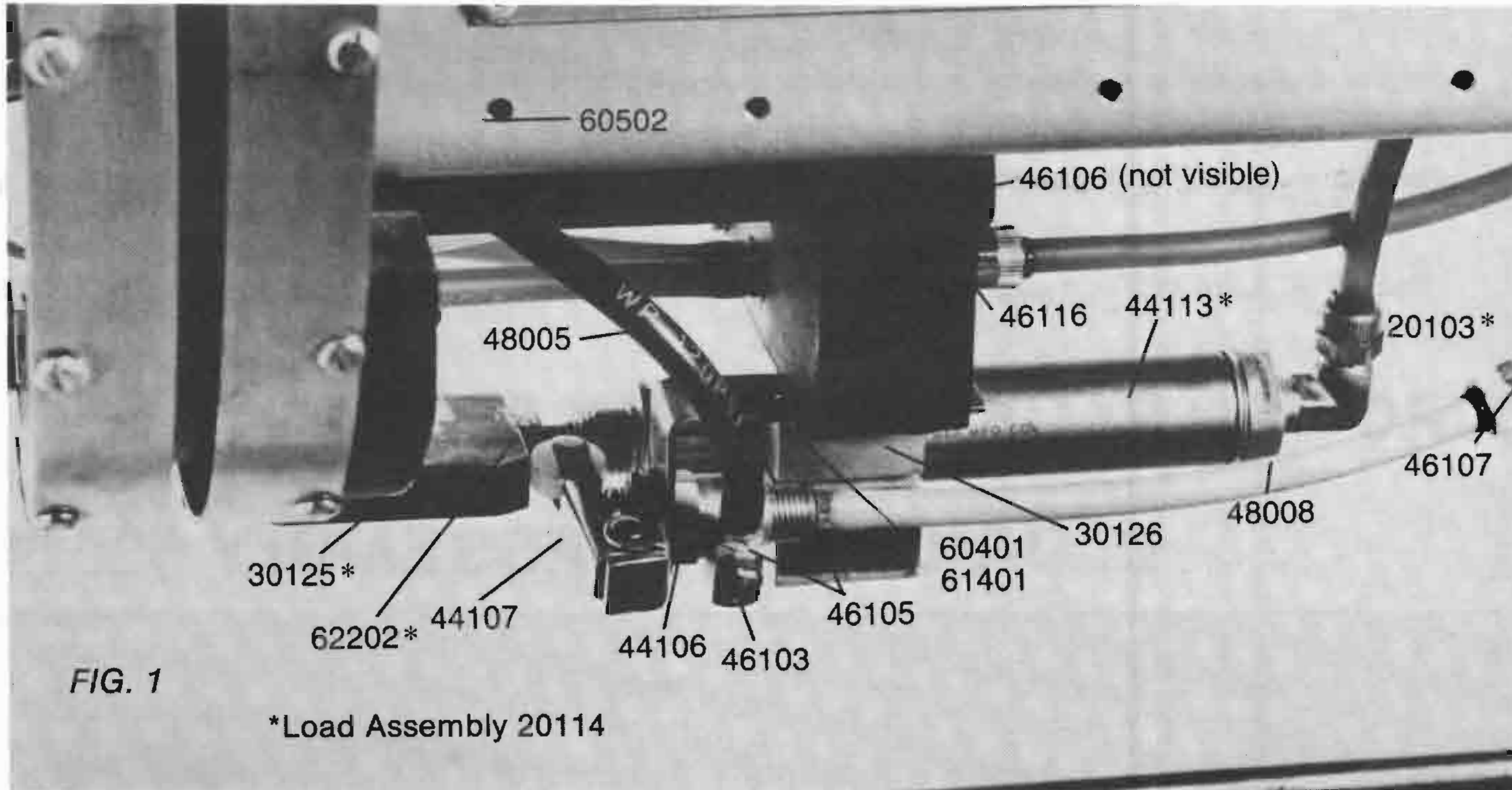
## C. POWER PACK ASSEMBLY #20117

## D. DRIVE VALVE ASSEMBLY #20116



# E. LOAD ASSEMBLY #20114

(Bottom cover #30107 removed)



# LOAD CYLINDER INOPERATIVE

## CAUTION: DISCONNECT AIR AND ELECTRICITY

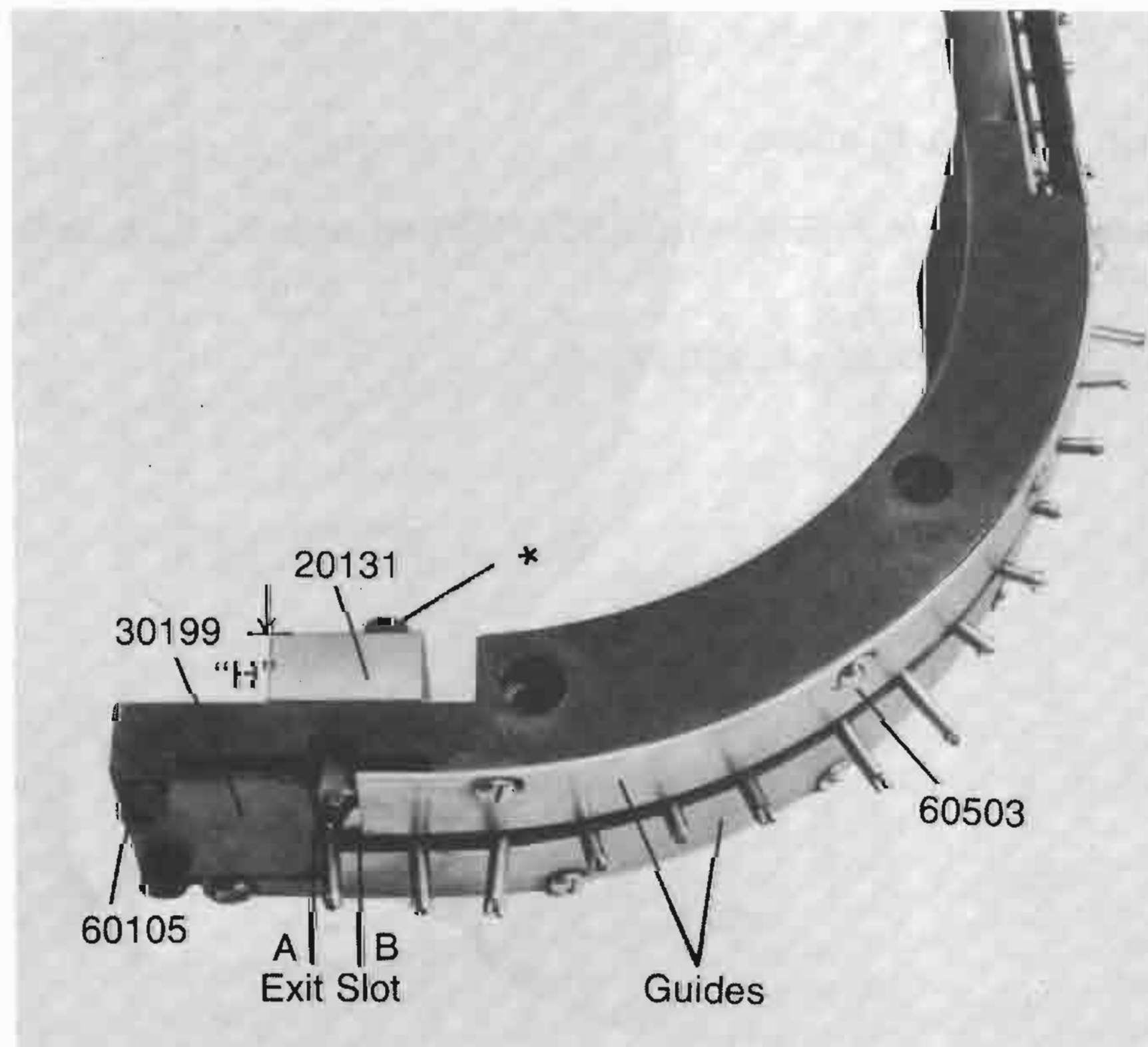
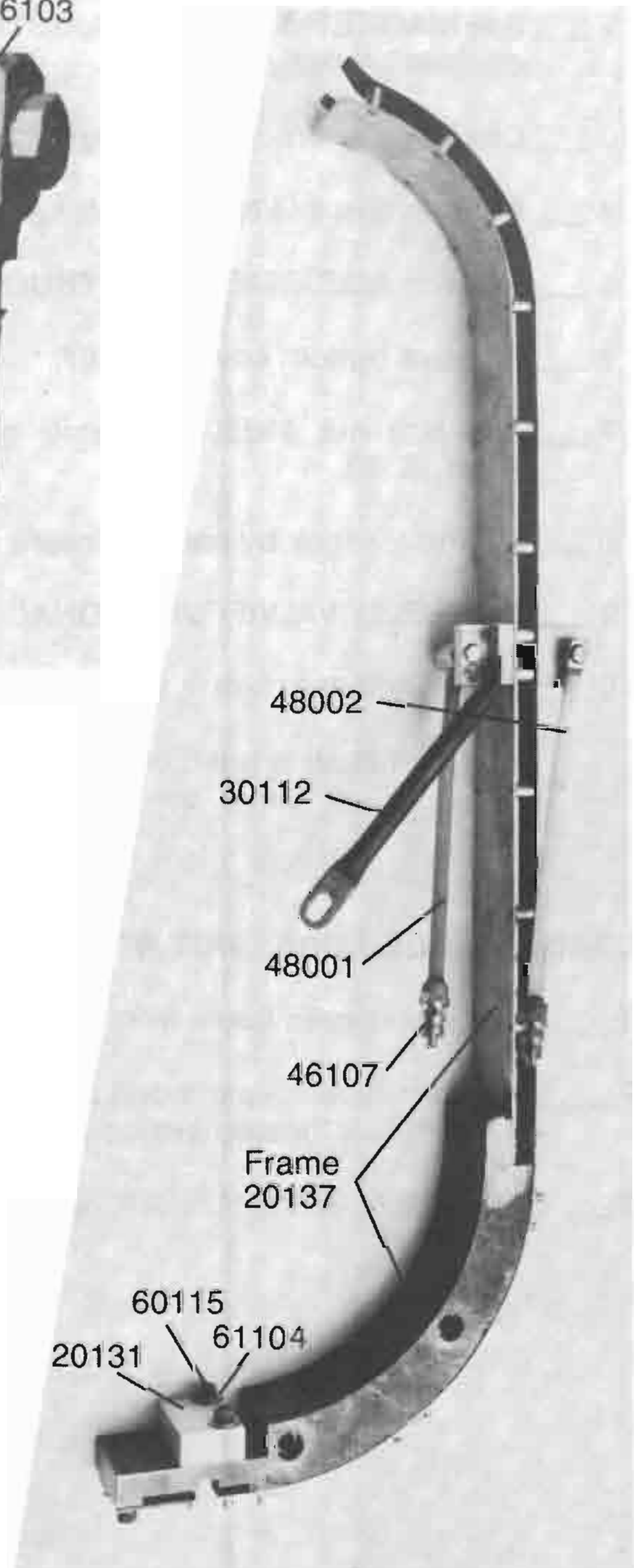
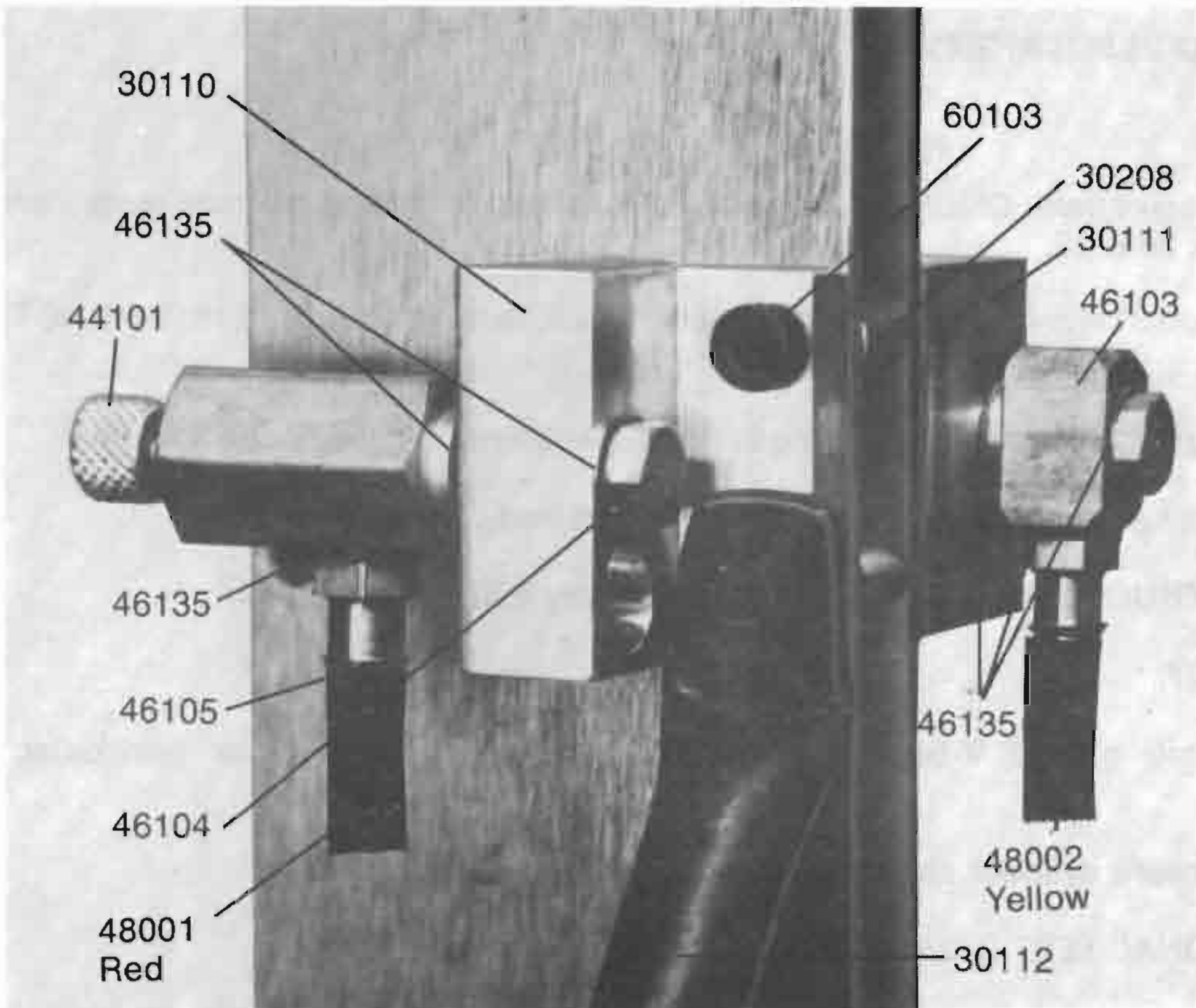
- 1 \_\_\_ Remove jammed items out top of track ONLY. Forced removal at exit slot will damage track guides and components. Refer to pages 20 & 25.
- 2 \_\_\_ See MAGNETIC DRIVER ADJUSTMENT on page 12. If driver is loose, valve assembly #20113 will NOT operate properly.
- 3 \_\_\_ Check valve bracket assembly #20113 for loose fittings and damaged tubing. See page 31.
- 4 \_\_\_ Button valve #44106 and valve actuator #44107 must be well oiled and operate freely.
- 5 \_\_\_ Refer to ADJUSTMENT INSTRUCTIONS for valve bracket assembly #20113 on page 4.
- 6 \_\_\_ Remove bottom cover #30107.
- 7 \_\_\_ The jam nut #62202, located behind V-block #30125, must be tight and V-block horizontal. Page 18, 33.
- 8 \_\_\_ Extend V-block by hand to insure cylinder shaft operates smoothly. Oil if necessary.
- 9 \_\_\_ See RESET VALVE FUNCTIONAL TEST (LOAD CYCLE) on page 27.
- 10 \_\_\_ If load cylinder shaft is bent, badly worn or otherwise damaged, cylinder must be replaced.

NOTE: If shaft is bent, check button valve #44106 beside load cylinder #44113, fig. 1 & 2. Clean & oil valve as required to insure proper operation, otherwise install a replacement.

## LOAD CYLINDER DOES NOT RETURN

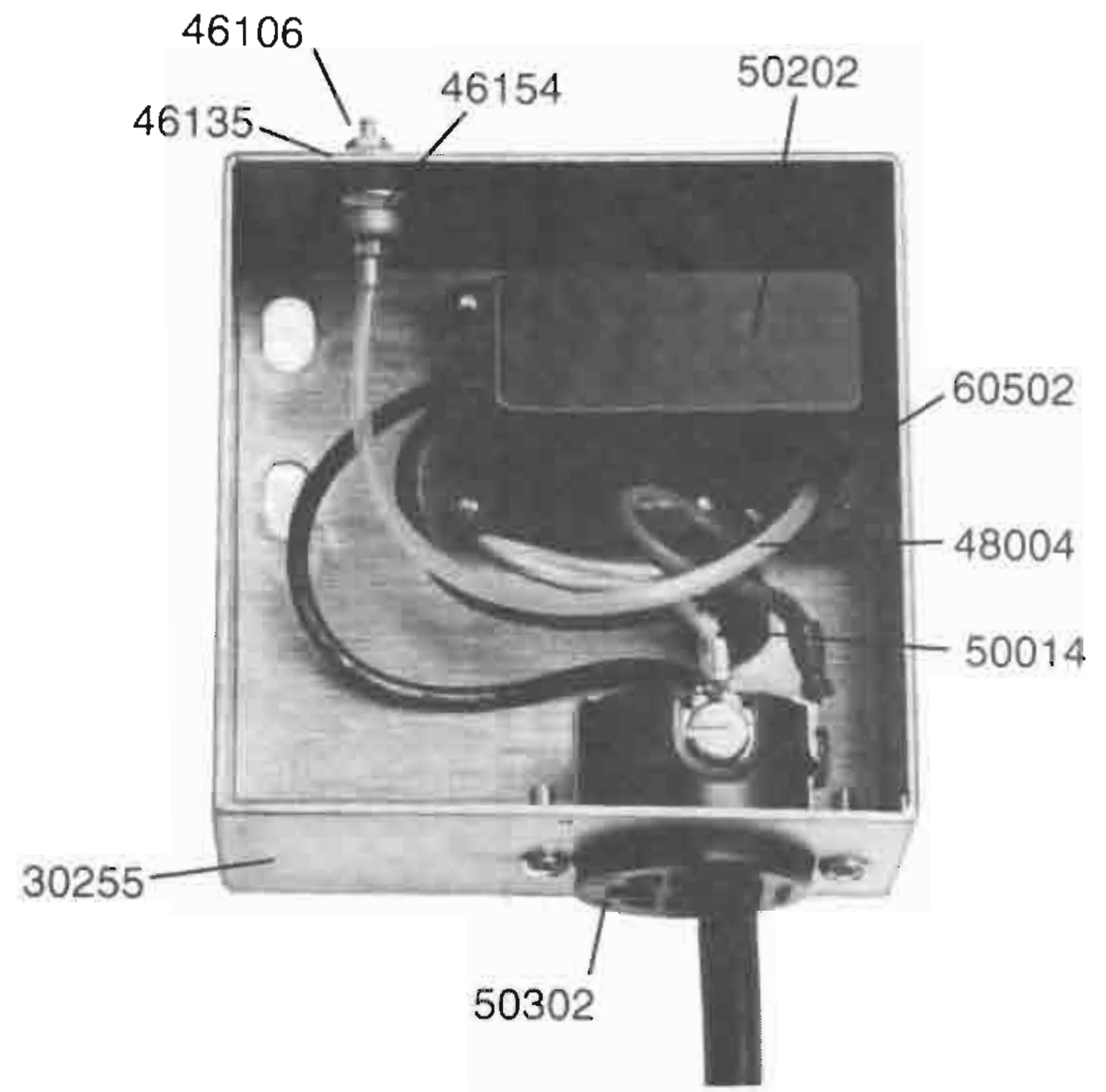
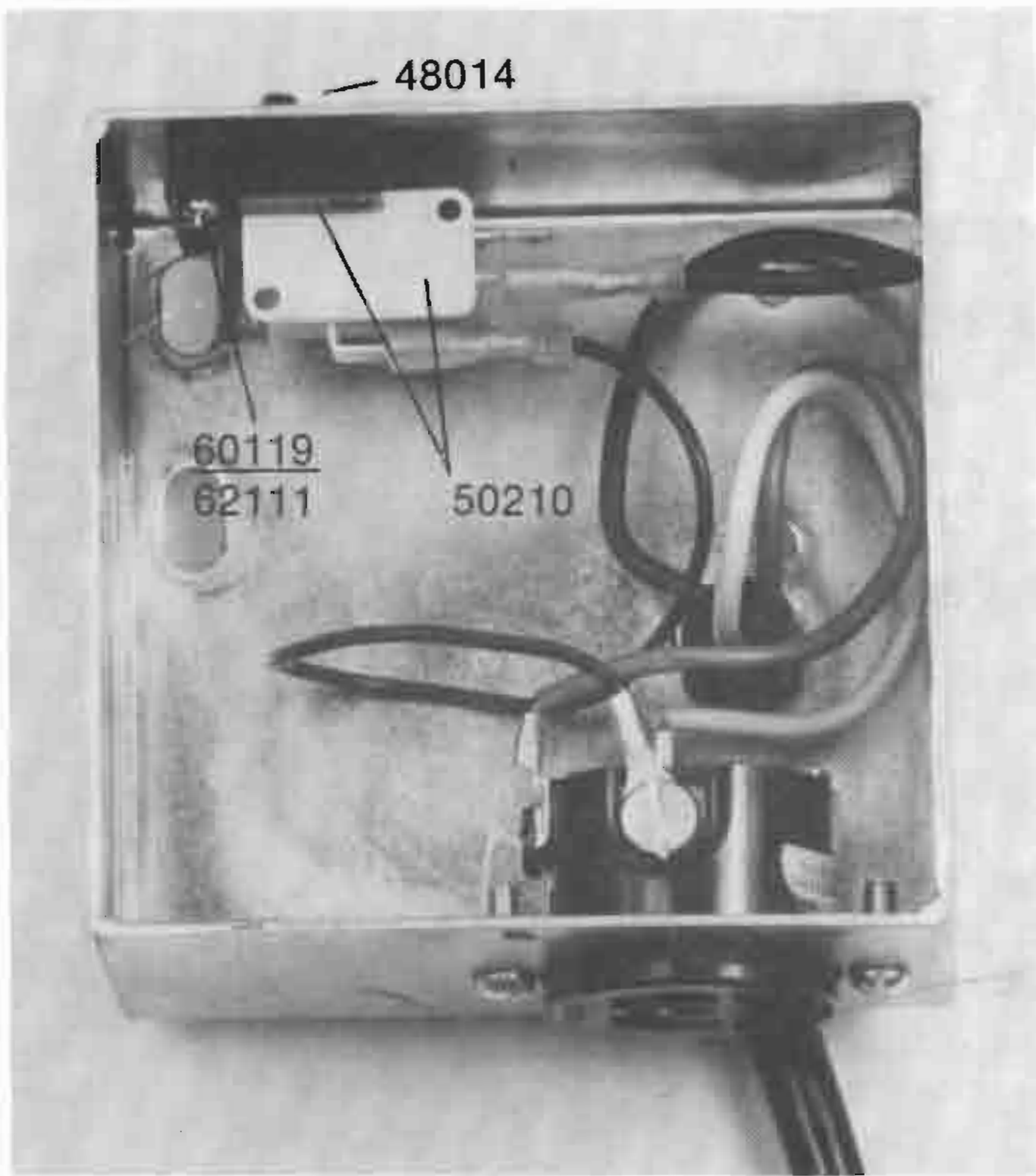
- 1 \_\_\_ Remove jammed items from lower track. See #1 & 10 above.
- 2 \_\_\_ If cylinder remains extended **under pressure**, refer to PNEUMATIC ASSEMBLY on page 29. Oil button valve #44106, located beside reset valve (L) #44102.
- 3 \_\_\_ See RESET VALVE FUNCTIONAL TEST (LOAD CYCLE) on page 27.

# F. TRACK ASSEMBLY #20110



\* If "H" is 1/2" use #60115.  
 If "H" is 3/4" use #60116.

## G. JUNCTION BOX ASSEMBLY #20163



## CLEANING AIR SENSORS

- 1 \_\_\_ Needle valve #44101, must be open to pass air to output sensor #30111. Also see page 3.
- 2 \_\_\_ Closely examine tubing/fittings for cracks or leaks from sensor to pressure switch in junction box #20163 above.
- 3 \_\_\_ Disconnect main air supply.
- 4 \_\_\_ To reverse air flow to a clogged output sensor, remove fitting #46103 and tubing.
- 5 \_\_\_ Remove tubing from valve #44101 and **connect** to output sensor.
- 6 \_\_\_ Temporarily connect air supply until sensor is cleared.
- 7 \_\_\_ Reconnect tubing/fittings to their original locations.
- 8 \_\_\_ If bowl fails to vibrate, replace pressure switch.

# MISFEEDING

## **MOST COMMON CAUSES:**

- 1 \_\_\_ Magnetic driver loose or misadjusted. Pg. 12.
- 2 \_\_\_ Valve assembly #20113 loose or misadjusted. Pg. 4 & 31.
- 3 \_\_\_ Button valve #44106 requires oil or valve actuator #44107 loose or damaged. Pg. 4 & 29.

## **OTHER CAUSES:**

- 1 \_\_\_ Track guides bent. See #3 above; 2, 3, & 7 below. Pg. 20 & 25.
- 2 \_\_\_ Signal line damaged. See PRESSURE TEST, Pg. 26.
- 3 \_\_\_ Timing cycle too fast. See ADJUSTMENT, Pg. 23.
- 4 \_\_\_ Load cylinder needs oil or out of adjustment. Pg. 24.
- 5 \_\_\_ Escapement #20131 damaged or requires oil. Pg. 20.
- 6 \_\_\_ Nail stop blade #30199 worn or damaged. Pg. 20.
- 7 \_\_\_ Back pressure valve #44118 faulty. Pg. 16.

# OFF CENTER LOADING

- 1 \_\_\_ Burrs or hardened adhesive on magnetic driver.
- 2 \_\_\_ Excessive adhesive/insulation build-up in track.
- 3 \_\_\_ Load cylinder out of adjustment. Pg. 24.
- 4 \_\_\_ Load cylinder speed control valve misadjusted. Pg. 33.
- 5 \_\_\_ Escapement assembly #20131 sticking or jammed. Pg. 20.

# TIMING CONTROL VALVES

## INSTALLATION AND ADJUSTMENT INSTRUCTIONS

**REPLACING VALVE #44104 with #44157. See Page 29, Fig. 2.**

**IMPORTANT**—Before proceeding, check timing coil #48171. If tubing sections were cut from coil, entire coil **MUST** be replaced for proper machine performance.

### INSTALLATION

NOTE: IF THE STEPS BELOW ARE PROPERLY FOLLOWED, REMOVAL OF THE OLD VALVE IS **NOT** REQUIRED.

- 1 \_\_\_ Remove top cover #30106.
- 2 \_\_\_ Referring to views on pages 28, and 29, locate old valve #44104 and elbow #46102.
- 3 \_\_\_ If old valve remains, open it fully counterclockwise.
- 4 \_\_\_ Cut orange tubing about 1 1/2" below elbow.
- 5 \_\_\_ Install barb fittings #46105 with gaskets #46135, to each port of new timing control valve #44157.
- 6 \_\_\_ Install valve with arrow pointing **towards** timing coil #48171.

### TIMING ADJUSTMENT—CONTROL VALVES #44104 and #44157

**CAUTION: THIS PROCEDURE REQUIRES THE AIR PRESSURE "ON".**

- 1 \_\_\_ Turn adjustment knob on valve fully clockwise.
- 2 \_\_\_ Set regulator #44116 to 24 gauge (12:00). See page 16, 17.
- 3 \_\_\_ REMAIN CLEAR OF MAGNETIC DRIVER and depress foot pedal.  
**\*\* Cylinder will delay on down stroke. This is normal. \*\***
- 4 \_\_\_ Open knob on valve about 1/4 turn counterclockwise and drive cylinder will return.
- 5 \_\_\_ Depress pedal and repeat procedure, opening knob in smaller increments until the cycle is acceptable.

**DO NOT OPEN KNOB MORE THAN NECESSARY ONCE SATISFACTORY CYCLE SPEED IS OBTAINED!**



# LOAD CYLINDER #44113

## ADJUSTMENT AND FASTER CENTERING

### CAUTION: DISCONNECT AIR AND ELECTRICITY

IMPORTANT—Before proceeding, adjust magnetic driver.

1 \_\_\_ Loosen cap screws #60110, leaving cylinder snug but moveable in bracket #30126.

2 \_\_\_ Position cylinder forward or back as required for proper fastener placement on driver.

NOTE: Proper placement, when loaded *manually*, will be slightly short of center on driver.

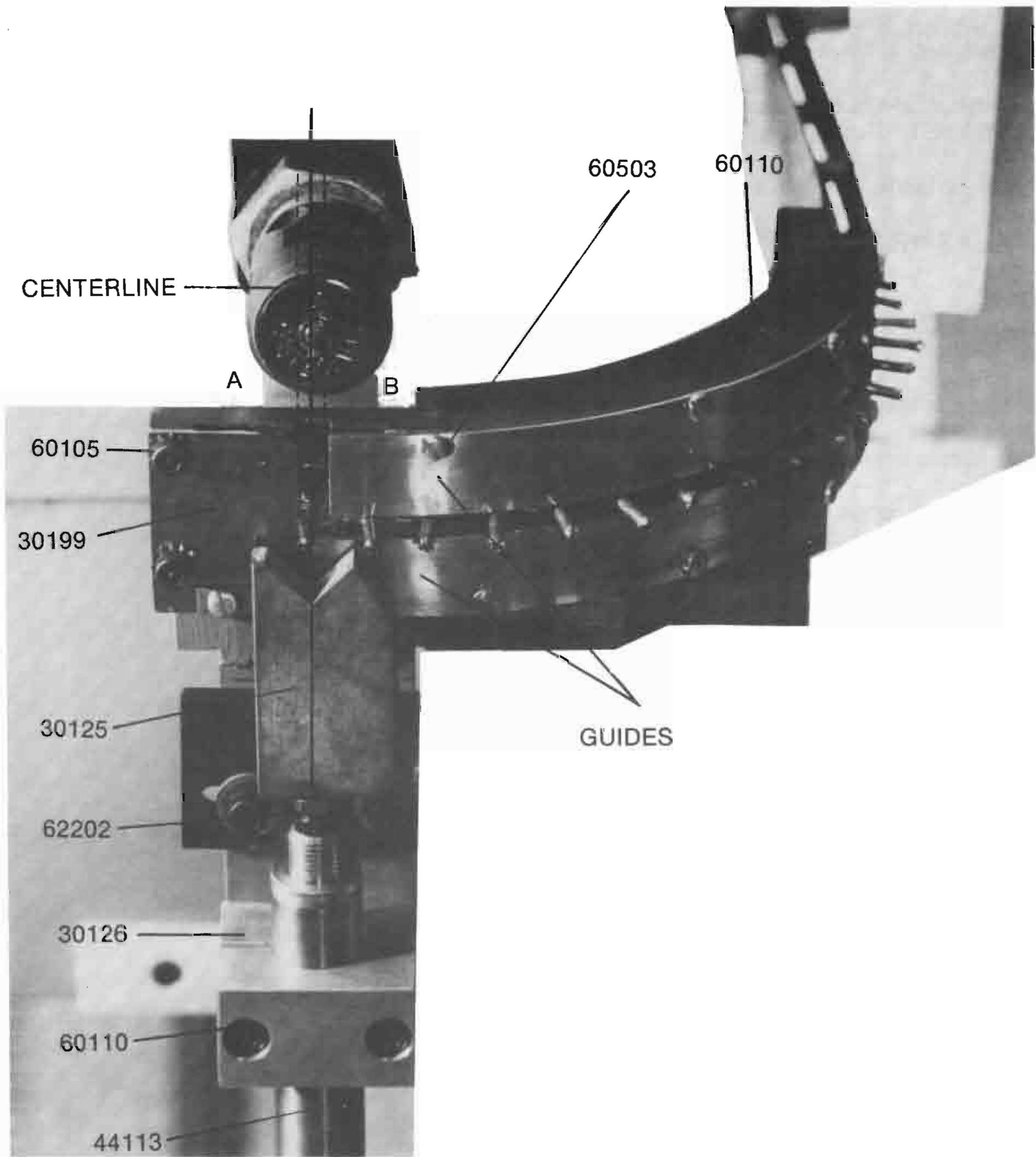
3 \_\_\_ While extending V-block manually, check that fastener travels along centerline and does not rub on either edge of exit slot "A B". Also see page 20.

4 \_\_\_ Adjust valve assembly #20112 beside load cylinder. See page 18. FAILURE TO DO SO MAY RENDER DRIVE INOPERATIVE.

5 \_\_\_ Refer to pages 28 & 29.

Serial **#1485 thru #1829**, with needle valve #44101 installed (figs. 2) AND

serial **#1830 and up**, with flow control valve #44157 installed (figs. 1), refer to steps 4-7 on page 33.



# SIGNAL LINE PRESSURE TEST

**CAUTION: REMAIN CLEAR OF MAGNETIC DRIVER AND ANVIL AREAS!**

**\*\*\* AIR PRESSURE WILL BE ON DURING THESE TESTS! \*\*\***

- 1 \_\_\_ Remove top cover #30106 and see pages 28 and 29.
- 2 \_\_\_ Remove valve #44105, without disconnecting coil, to expose chrome button on 4-way valve #44103.
- 3 \_\_\_ Depress pedal. Drive will be down under full pressure.

If machine fails to operate, remove #44102 "D" and press button on *rear* of 4-way valve. See RESET VALVE TEST.

- 4 \_\_\_ Check tubing for leaks/loose fittings listed below.

## **THESE AREAS WILL BE PRESSURIZED!**

Pg. 18	___ 46103	___ 46105	___ 48005	___ 48008
Pg. 16 & 17	___ 46119	___ 48005	___ 46006	
Pg. 28	___ 48171	Timing Coil		

NOTE: Replace entire timing coil, if tubing removal to repair damage exceeds 2" or 3" total.

- 5 \_\_\_ Push button on front of 4-way valve to return cylinder.
- 6 \_\_\_ Remove air, repair tubing, then retest beginning with step 3.
- 7 \_\_\_ Reinstall valve #44105, then replace top cover #30106.

# DELAYED OR NO RETURN

- 1 \_\_\_ Refer to page 28, 29 and locate #44105 and coil #48171.
- 2 \_\_\_ Examine ends of coil and connections for leaks/damage, then remove valve #44105 without disconnecting coil.
- 3 \_\_\_ Depress pedal and while driver remains down, pin in open end of valve should extend about 3/8". If pin fails to extend, replace valve #44105.
- 4 \_\_\_ If 4-way valve #44103 is stiff, oil, then install #44105.
- 5 \_\_\_ See TIMING and SIGNAL LINE PRESSURE TEST.
- 6 \_\_\_ See pages 16 & 17 and replace valve #44118.

# RESET VALVE (#44102) FUNCTIONAL TEST

## CAUTION: DISCONNECT AIR AND ELECTRICITY

NOTE: Since two (2) *identical* reset valves operate in the pneumatic assembly (20111), shown on page 29, determine which machine cycle is to be tested.

Drive cycle—valve “D” located on 4-way valve #44103.

Load cycle—valve “L” located on button valve #44106.

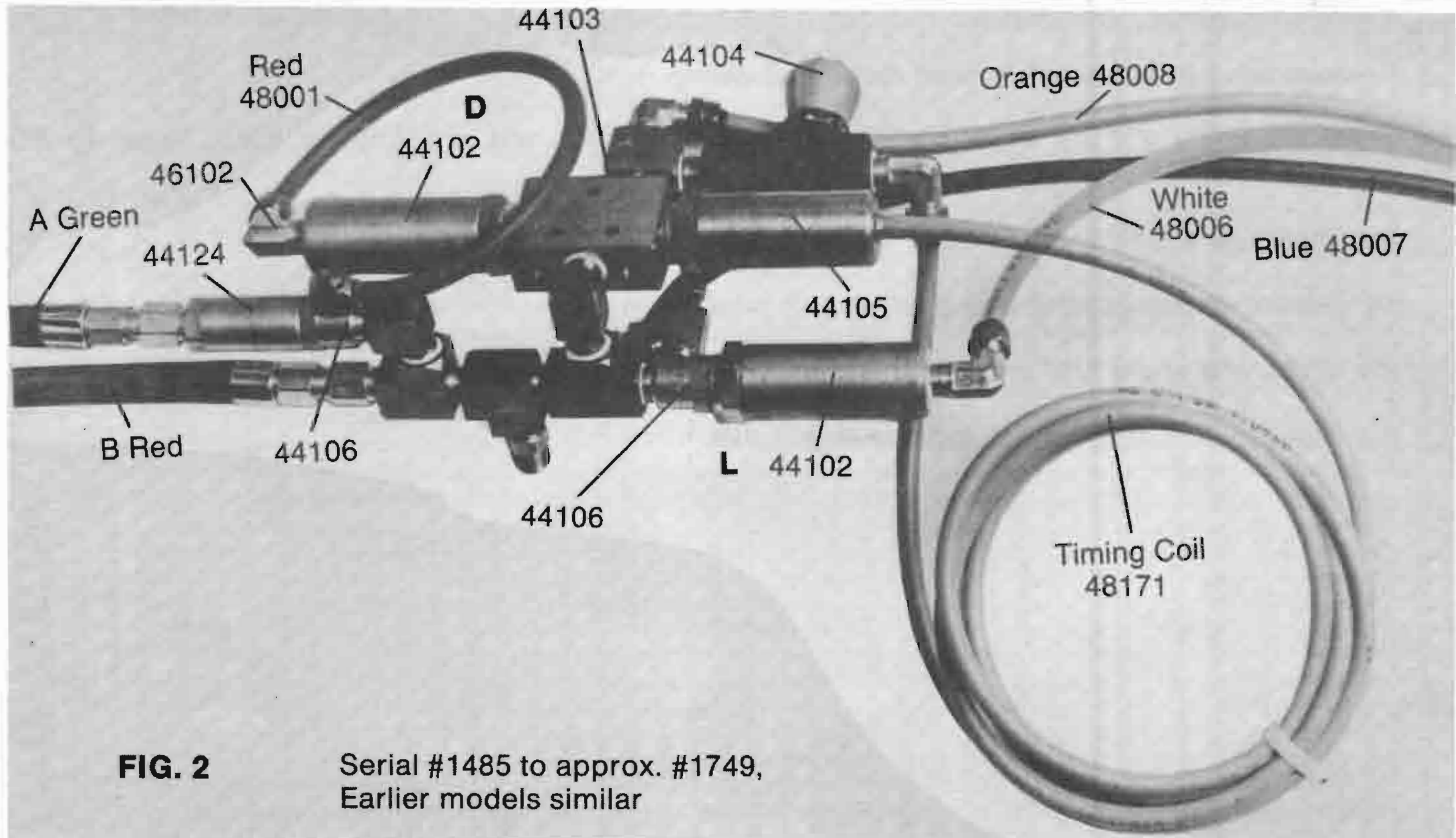
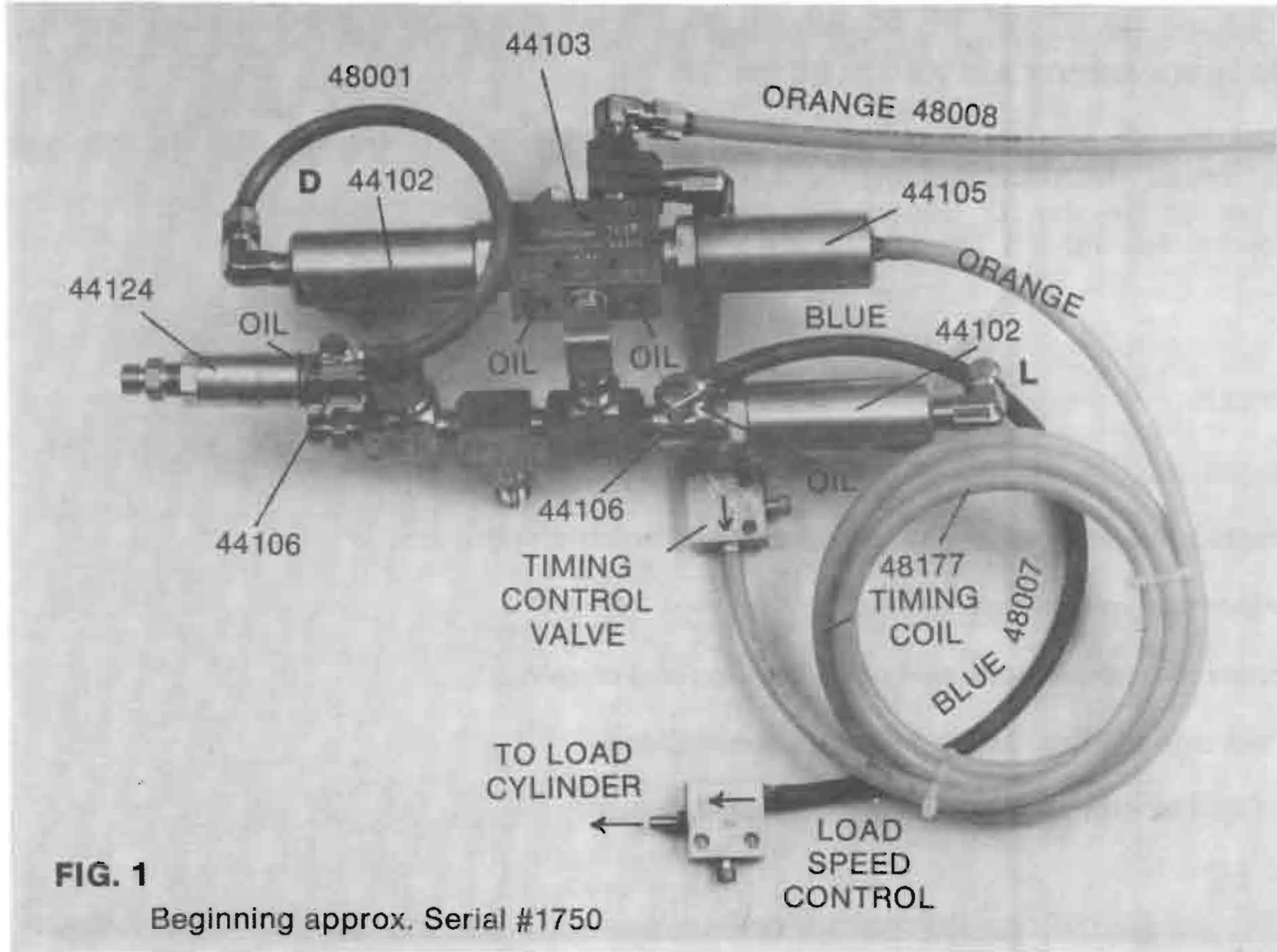
## DRIVE CYCLE

- 1 \_\_\_ Depending on model, disconnect green hose or red plastic tubing from valve.
- 2 \_\_\_ Remove valve from assembly, then reconnect hose/tubing.
- 3 \_\_\_ Reconnect air supply to machine.
- 4 \_\_\_ Depress foot pedal, hold, and observe open end of valve.
- 5 \_\_\_ Pin will extend about 3/8” and retract automatically.
- 6 \_\_\_ If pin fails to extend **or** retract, replace reset valve.

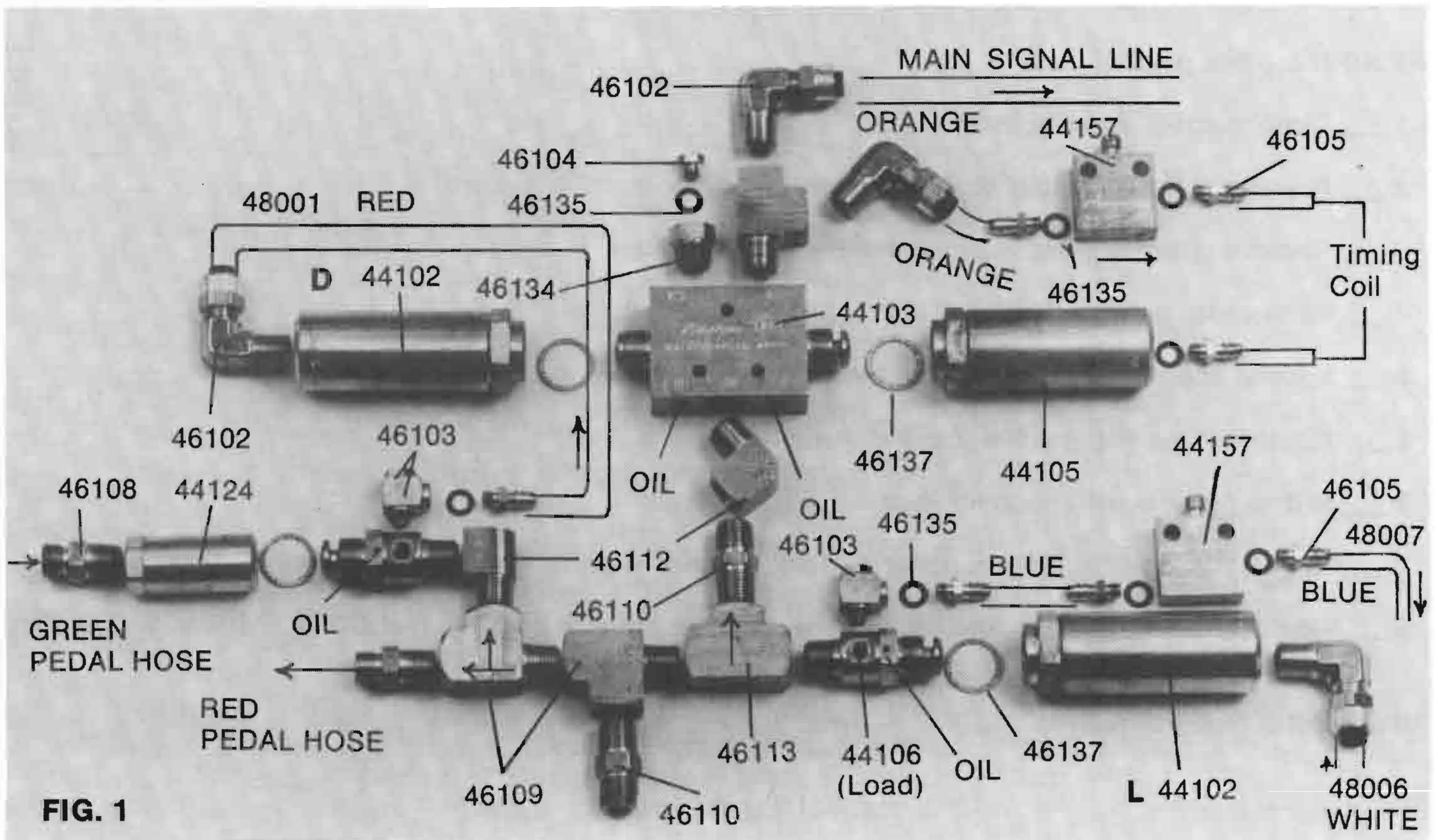
## LOAD CYCLE

- 1 \_\_\_ Disconnect tubing from valve.
- 2 \_\_\_ Remove valve from assembly, then reconnect tubing.
- 3 \_\_\_ Valve assembly #20113 must be in good working order and properly adjusted. Refer to ADJUSTMENT INSTRUCTIONS.
- 4 \_\_\_ Reconnect air supply to machine.
- 5 \_\_\_ Observe open end of valve and depress foot pedal.
- 6 \_\_\_ Pin will extend about 3/8” and retract automatically, after magnetic driver returns.
- 7 \_\_\_ If pin fails to extend **or** retract, replace reset valve.

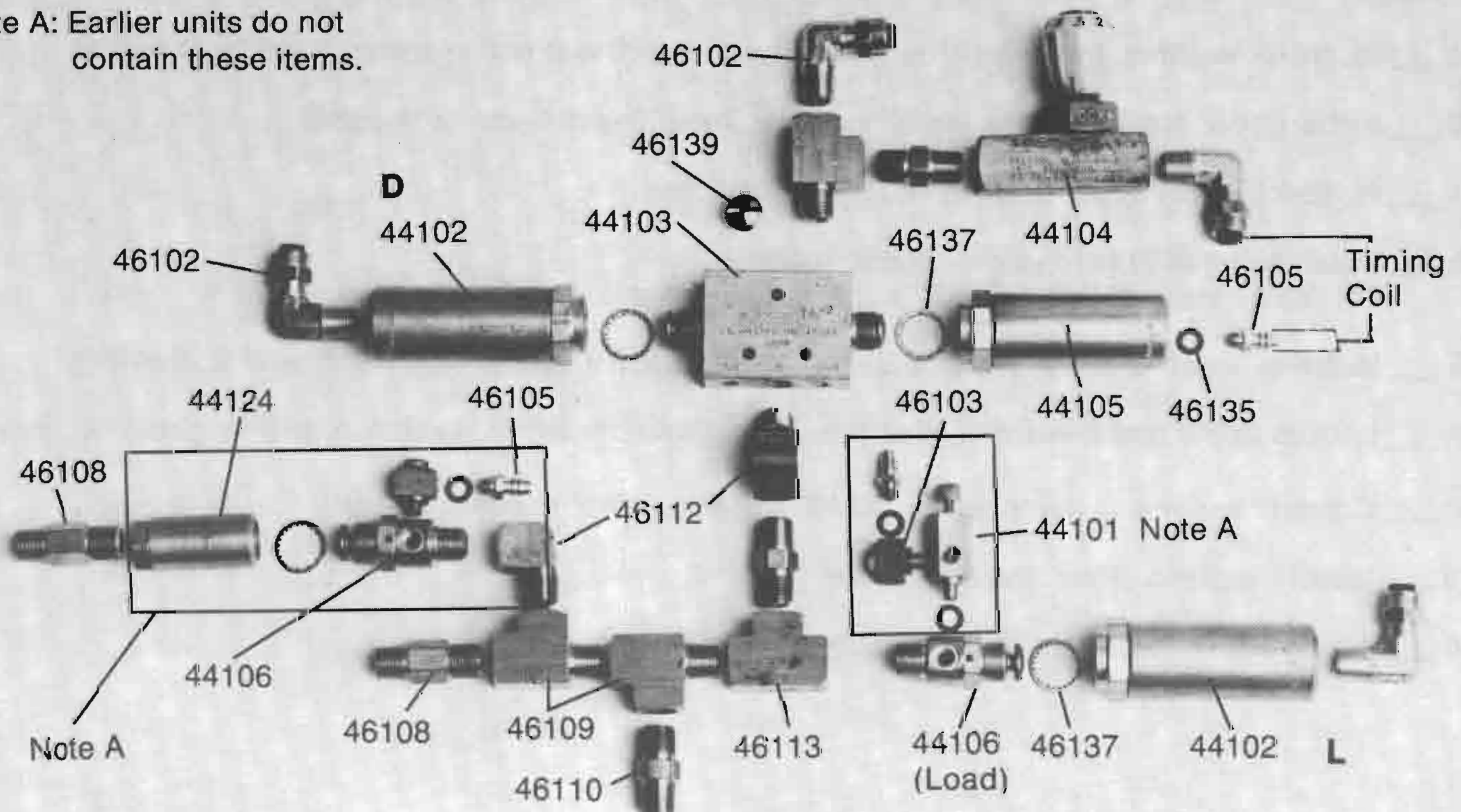
# H. PNEUMATIC ASSEMBLY #20111



# EXPLODED VIEW OF PNEUMATIC ASSEMBLY #20111



Note A: Earlier units do not contain these items.



# DRIVE CYLINDER #44108 REPLACEMENT

**CAUTION: DISCONNECT AIR AND ELECTRICITY**

**REMOVAL—See page 17.**

- 1 \_\_\_ Disconnect air and electricity.
- 2 \_\_\_ Remove valve assembly #20113 from side of cylinder.
- 3 \_\_\_ Remove upper hose #20122 at swivel on drive cylinder.
- 4 \_\_\_ Remove lower hose #20122 at swivel on valve #44118.
- 5 \_\_\_ Loosen and remove magnetic driver (30119 or 30295).
- 6 \_\_\_ Remove large upper & lower cylinder mounting nuts.
- 7 \_\_\_ Rotate cylinder with ports forward.
- 8 \_\_\_ Remove fitting #46114 from upper port and exhaust valve #44112 with fitting #40101 from lower port.
- 9 \_\_\_ Remove mounting bolts and **upper** drive cylinder bracket #44111 only! DO NOT REMOVE LOWER BRACKET!
- 10 \_\_\_ Lift out old cylinder.

## INSTALLATION

- 1 \_\_\_ Remove mounting nuts and place new cylinder in lower mounting bracket.
- 2 \_\_\_ Install lockwasher and large mounting nut, rotate cylinder ports forward, then hand tighten.
- 3 \_\_\_ Install upper mounting bracket, lockwasher, mounting nut and hand tighten.
- 4 \_\_\_ Place 2 bolts in upper bracket and tighten securely.
- 5 \_\_\_ Install fitting #46114 to upper cylinder port.  
NOTE: If using sealant, DO NOT apply to hose connection side of fitting.
- 6 \_\_\_ Install exhaust valve #44112 and fitting #40101 to lower cylinder port and hand tighten only!
- 7 \_\_\_ Loosen upper and lower mounting nuts, rotate cylinder to left, as shown, and retighten securely.
- 8 \_\_\_ Connect upper and lower hoses. DO NOT apply sealant to hose swivels!
- 9 \_\_\_ Install magnetic driver and adjust. See page 12.
- 10 \_\_\_ Attach valve assembly #20113 and adjust. See page 4.





# LOADING CYLINDER #44113 REPLACEMENT

## CAUTION: DISCONNECT AIR AND ELECTRICITY

### REMOVAL—Refer to page 33.

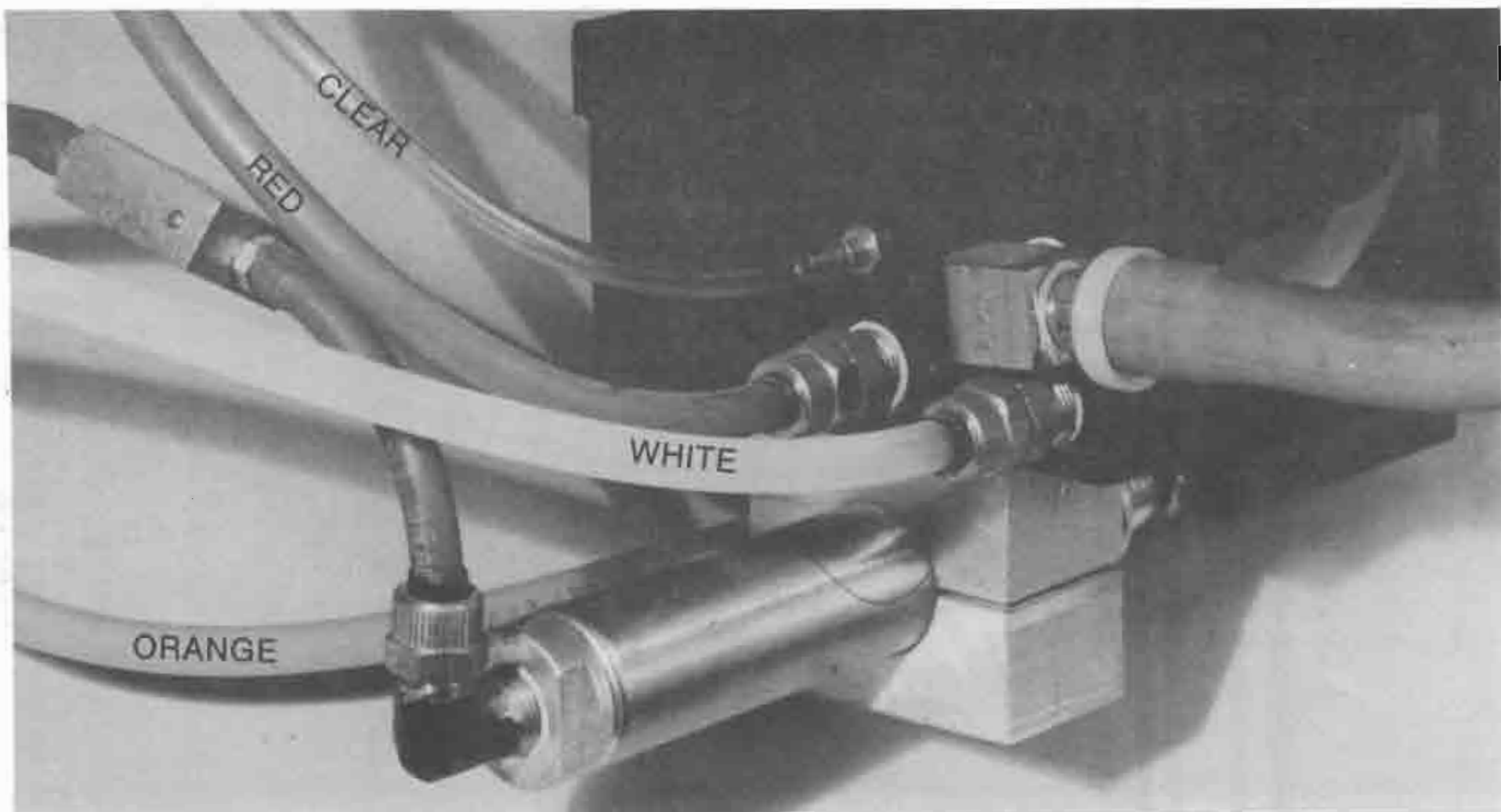
- 1 \_\_\_ Disconnect tubing from fitting at rear of cylinder.
- 2 \_\_\_ Scribe bracket #30126, to aid alignment at installation. DO NOT REVERSE halves or damage to cylinder may result.
- 3 \_\_\_ Remove 2 screws #60110 from bracket and remove cylinder.
- 4 \_\_\_ With V-block #30125 in vise, remove nut & old cylinder.

### INSTALLATION

- 1 \_\_\_ Discard large mounting nut (1) from new cylinder.
- 2 \_\_\_ Turn nut #62202, by hand, to end of cylinder rod, then install into V-block.
- 3 \_\_\_ While V-block remains in vise, tighten nut.

**IMPORTANT—DO NOT HOLD CYLINDER BODY WHEN TIGHTENING NUT!**

- 4 \_\_\_ If edge of nut is above top of V-block, grind nut flush.
- 5 \_\_\_ Install bracket, bolts, cylinder, fitting, attach tubing and see FASTENER CENTERING for adjustment instructions.

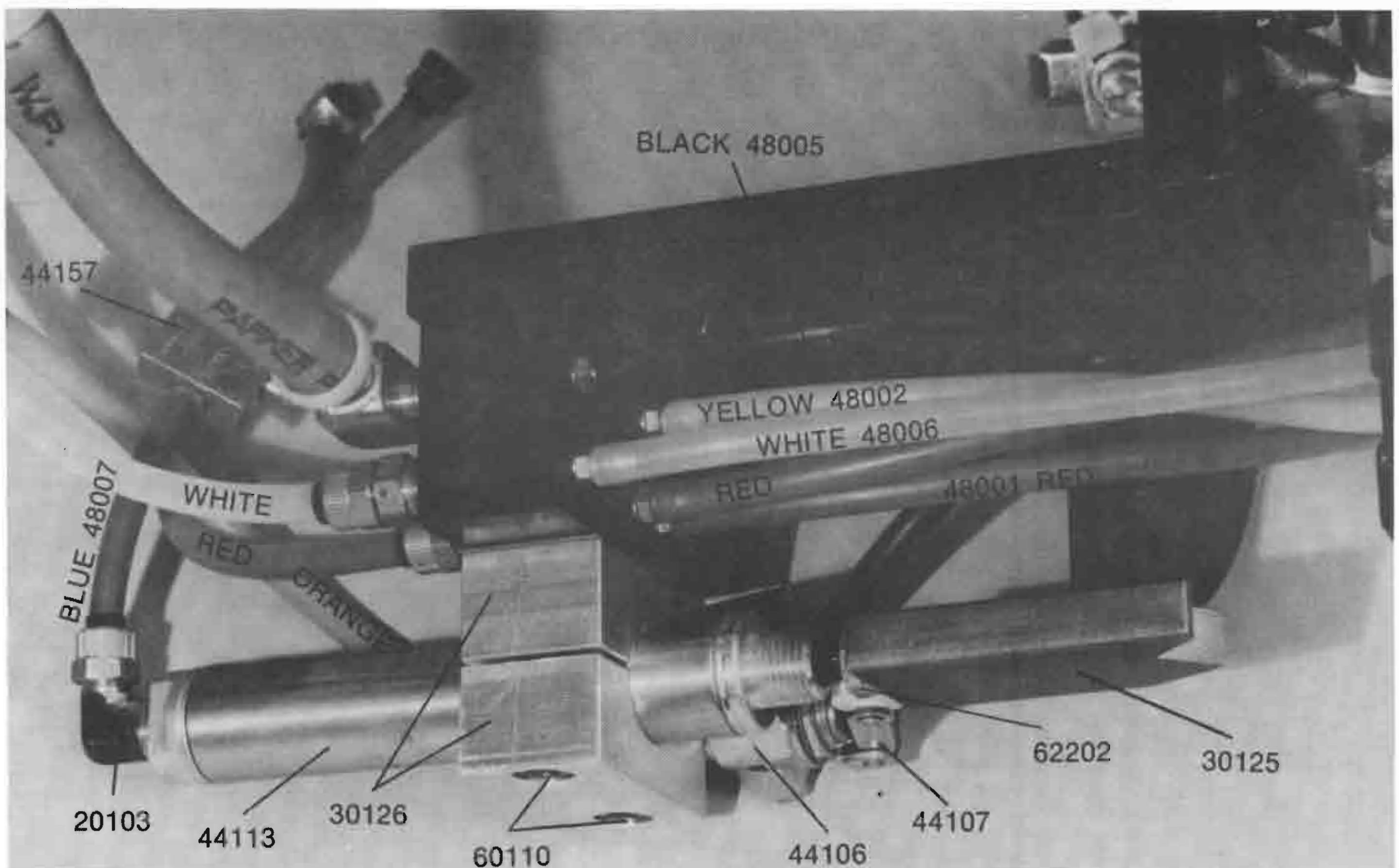


# LOAD SPEED CONTROL #44157

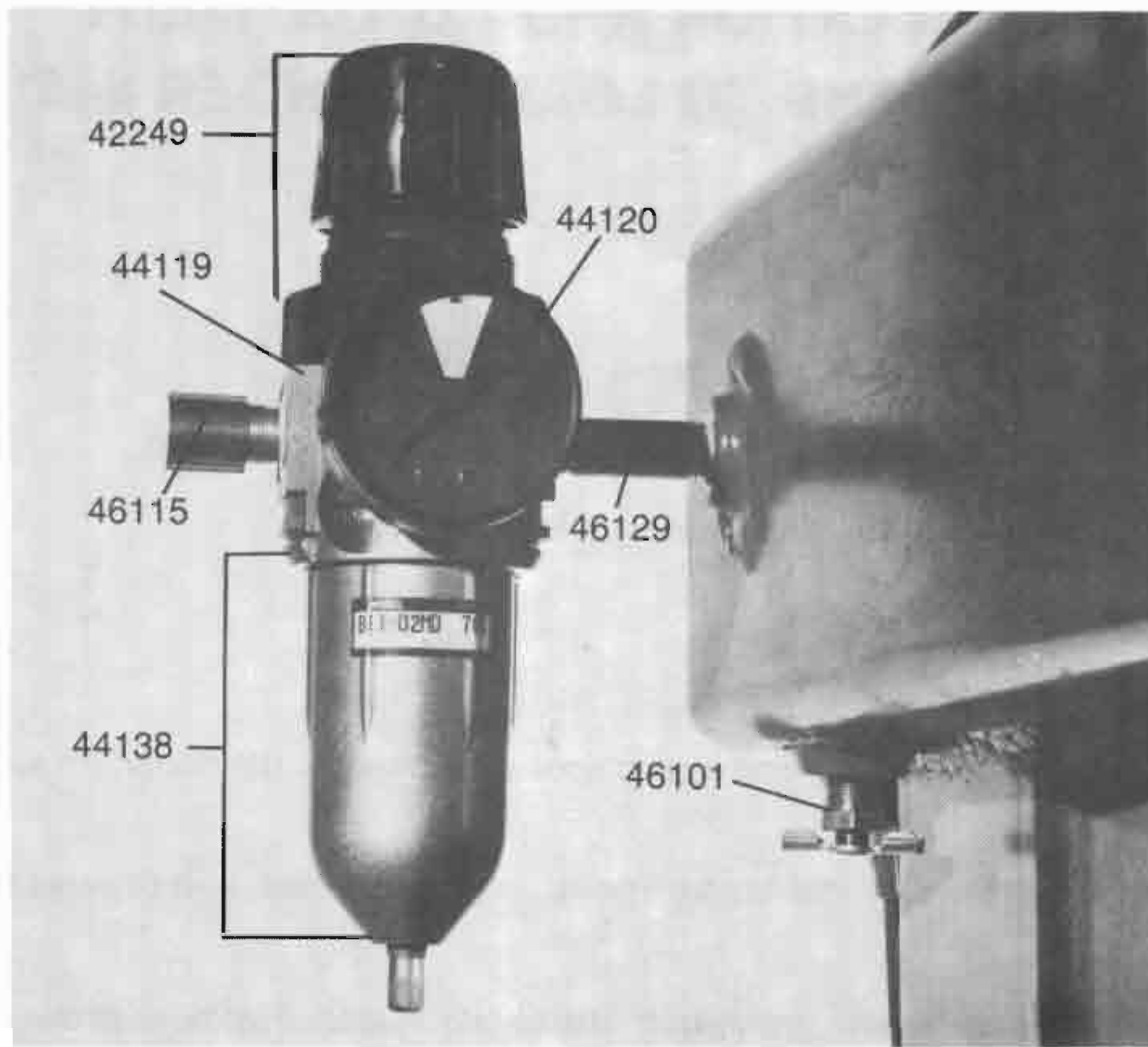
## INSTALLATION AND ADJUSTMENT INSTRUCTIONS TO LOAD CYLINDER #44113

- 1 \_\_\_ Cut blue tubing about 2" from load cylinder.
- 2 \_\_\_ Install barb fittings #46105, with gaskets #46135, to each port of new valve.
- 3 \_\_\_ Insert valve into tubing, arrow TOWARDS load cylinder.
- 4 \_\_\_ Turn adjustment knob fully clockwise.
- 5 \_\_\_ Open knob 1/4 turn and cycle machine.
- 6 \_\_\_ If cylinder makes a full stroke AND correctly places a Gripnail on the driver, no further adjustment is needed.
- 7 \_\_\_ If required, open knob an additional 1/8 turn or less, cycle machine, and observe load cylinder.

**IMPORTANT—DO NOT** open valve more than required to obtain a full load cylinder stroke, otherwise the valve will be ineffective!



# J. MAIN REGULATOR ASSEMBLY #20118



## PRESSURE SETTINGS

	MAIN REGULATOR	POWER PACK (pg. 16 & 17)
18 GA	100 PSI	9:00 POSITION
20-22 GA	80 PSI*	9:00 POSITION
24-26 GA	80 PSI*	12:00 POSITION
26 GA	65-70 PSI**	12:00 POSITION

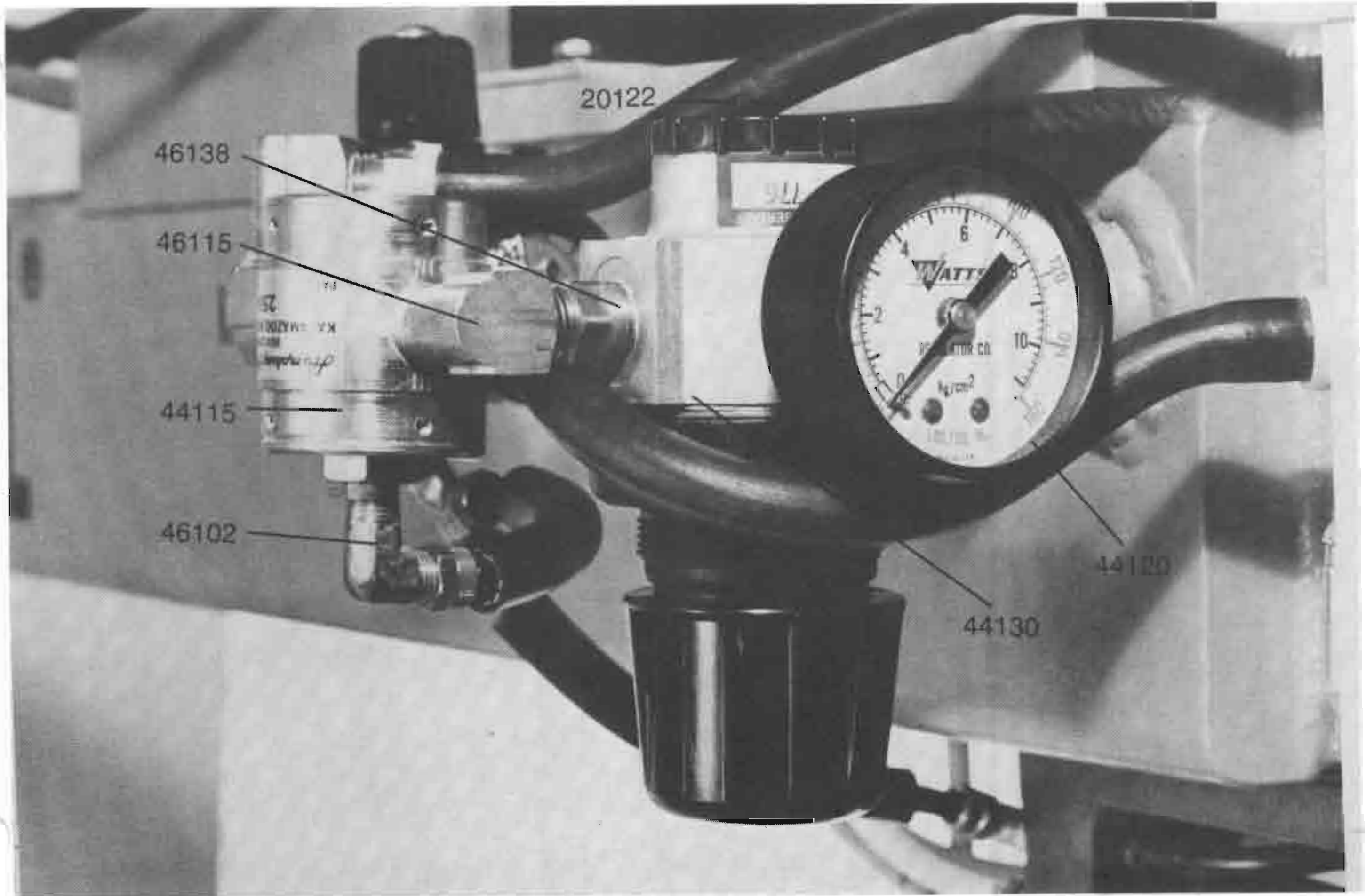
\*For 130 & 150 GRIPNAILS (1.5" & 2" liner), raise pressure.

\*\*Used for more ductile (softer) 26 ga. material.

# K. FOOT PEDAL ASSEMBLY #20105



# L. ALUMINUM OPTION ASSEMBLY #20130



## OPERATING INSTRUCTIONS

Refer to pages 17 & 34.

- 1 \_\_\_ Adjust main regulator assembly #20118 to 100 PSI.
- 2 \_\_\_ Adjust power pack assembly #20117 (regulator #44118) to 20/22 gauge (30 psi or 9:00 position) and tighten adjustment lock screw.  
IMPORTANT: FURTHER ADJUSTMENT IS NO LONGER REQUIRED.
- 3 \_\_\_ Set regulator #44130 to desired pressure listed below.

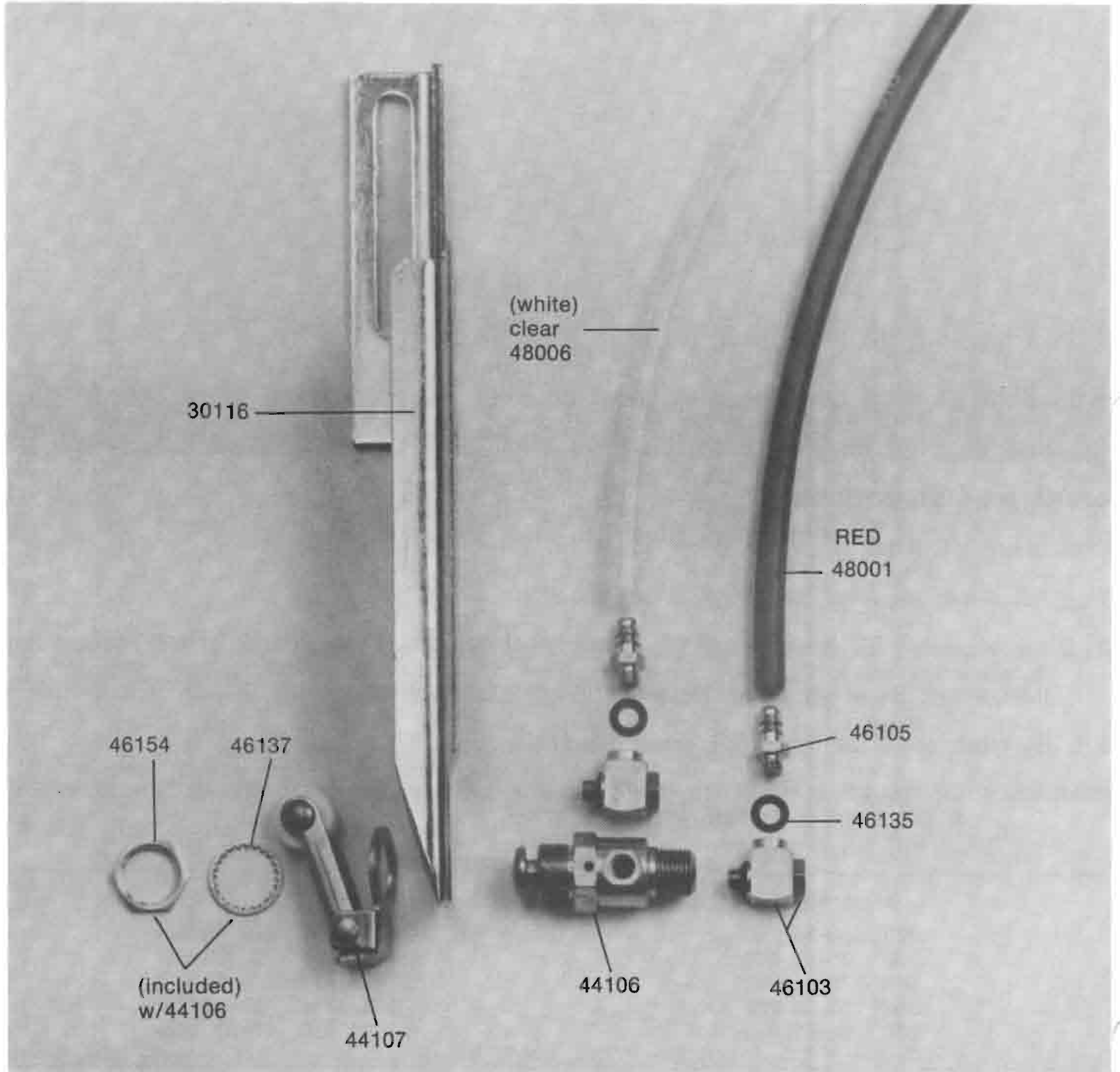
REMEMBER: GRIPNAILS MANUFACTURED FOR USE WITH ALUMINUM ARE REQUIRED WHEN FASTENING TO ALUMINUM!

### REGULATOR #44130 SETTINGS

ALUMINUM		STEEL	
.025"	30-35 PSI	26 GAUGE	60- 70 PSI
.032"	35-40 PSI	24 GAUGE	70- 80 PSI
.040"	45-50 PSI	22 GAUGE	80- 85 PSI
.050"	55-60 PSI	20 GAUGE	85- 90 PSI
.060"	60-65 PSI	18 GAUGE	90-100 PSI

# VALVE BRACKET ASSEMBLY #20113

## — EXPLODED VIEW —



# PARTS LIST

Part #	Description	Part #	Description
20101	FEEDER BASE	42152	HOUSING PANEL
20103	RESTRICTOR ELBOW	42153	CONTROL PANEL
20105	FOOT PEDAL ASSEMBLY	42154	SPACER PANEL
20109	PARTS FEEDER ASSEMBLY	42249	REPLACEMENT KNOB KIT
20110	TRACK ASSEMBLY, COMPLETE	42253	FOOT MOUNT 3/4"
20111	PNEUMATIC ASSEMBLY	42301	AUTO, DEVICES FEEDER BASE
20112	SAFETY VALVE ASSEMBLY	42302	HOUSING
20113	VALVE BRACKET ASSEMBLY	42303	UPPER FRAME
20114	LOAD CYLINDER ASSEMBLY	42304	ARMATURE COIL
20115	DRIVE HEAD ASSEMBLY	42305	COIL SPACER
20116	DRIVE VALVE ASSEMBLY	42306	COIL ADJUSTMENT WASHER
20117	POWER PACK ASSEMBLY	42307	CABLE CLAMP
20118	MAIN REGULATOR ASSEMBLY	42308	BASE
20120	"REPLACED BY 20141"	42309	ARMATURE BAR
20122	HOSE ASSEMBLY	42310	SPRING SPACER
20123	PEDAL VALVE ASSEMBLY	42311	SPRING
20128	CENTER SUPPORT ROD 448	42312	SPRING COVER
20129	POST ASSEMBLY	42313	SPACER PANEL
20130	ALUMINUM OPTION ASSEMBLY	44101	NEEDLE VALVE
20131	ESCAPEMENT ASSEMBLY	44102	RESET VALVE
20137	TRACK FRAME	44103	4-WAY VALVE
20140	FEEDER BOWL	44104	REPLACED BY 44157
20141	PEDAL HOSE 18' MOD 460	44105	SNAP ACTION VALVE
20142	CENTER SUPPORT ROD 460	44106	BUTTON VALVE
20163	JUNCTION BOX ASSEMBLY	44107	VALVE ACTUATOR
20164	BOOSTER VALVE ASSEMBLY	44191	DRIVE CYLINDER
30105	"REPLACED BY 30588"	44111	CYLINDER BRACKET
30106	TOP COVER	44112	EXHAUST VALVE
30107	BOTTOM COVER	44113	LOAD CYLINDER
30110	INPUT SENSOR	44115	DRIVE VALVE
30111	OUTPUT SENSOR	44116	POWER PACK REGULATOR
30112	TRACK BRACE	44117	POWER PACK GAUGE
30116	VALVE BRACKET	44118	BACK PRESSURE VALVE
30117	DRIVE HEAD BRACKET	44119	MAIN REGULATOR
30119	REPLACED BY 30295	44120	MAIN REGULATOR GAUGE
30125	V-BLOCK	44122	PEDAL VALVE
30126	LOAD CYLINDER BRACKET	44124	ACTUATOR VALVE
30128	VALVE BRACKET	44130	ALUMINUM OPTION REGULATOR
30129	PEDAL HOUSING	44134	BOOSTER VALVE
30134	PLASTIC GUARD	44138	BOWL KIT
30137	FOOT MOUNT, 1"	44152	PEDAL VALVE BRACKET
30138	RUBBER MOUNT, FOOT PEDAL	44157	FLOW CONTROL VALVE
30197	BLADE ADAPTER	46005	MALE PIPE 1/8 X HOSE 1/4
30199	BLADE	46006	SWIVEL 1/8 X HOSE 1/4
30208	SPACER	46101	DRAINCOCK
30295	MAGNETIC DRIVER	46102	TUBE ELBOW
30588	ANVIL	46103	UNIVERSAL ELBOW
30612	SPECIAL ANVIL (2 INCH)	46104	HEX PLUG #10-32
30617	ADAPTER PLATE	46105	BARB FITTING 1/4 TUBE
30618	ADAPTER PLATE SPACER	46106	BARB FITTING 1/8 TUBE
40101	SPECIAL NIPPLE	46107	TUBE UNION
42101	COLLAR	46108	HEX BUSHING
42110	FEEDER BASE SPRING	46109	STREET TEE 1/8
42111	SPRING SPACER	46110	HEX NIPPLE 1/8
42112	SPRING CLAMP	46111	CLOSE NIPPLE 1/8

# PARTS LIST

Part #	Description
46112	STREET ELBOW 1/8
46113	TEE 1/8
46114	MALE HOSE CONNECTOR
46115	STREET ELBOW 1/4
46116	MALE TUBE CONNECTOR
46117	LONG NIPPLE 1/4
46118	REDUCER BUSHING 1/4 X 1/8
46119	MALE RUN TEE
46120	COUPLING 1/8
46121	LONG NIPPLE 1/8
46125	REPLACEMENT NUT
46126	PLASTIC FERRULE
46129	HEX NIPPLE 1/4 STEEL
46133	PLUG, 1/4 NPT
46134	REDUCER BUSHING 1/8 X 10-32
46135	GASKET #10
46137	LOCK WASHER, VALVE
46138	HEX NIPPLE 1/4 BRASS
46139	PLUG 1/8
46154	LOCK NUT, VALVE
46160	BARB FITTING 1/8 (USE TUBING #48014)
48001	TUBING, 1/4 RED
48002	TUBING, 1/4 YELLOW
48004	TUBING, 1/8 (AIR SWITCH #50202)
48005	TUBING, 1/4 BLACK
48006	TUBING, 1/4 WHITE
48007	TUBING, 1/4 BLUE
48008	TUBING, 1/4 ORANGE
48011	HOSE, 1/4 GRAY
48014	TUBING, (AIR SWITCH #50210)
48171	TIMING COIL
50001	KNOB
50002	FUSE HOLDER
50003	FUSE, 3 AMP
50014	STRAIN RELIEF
50036	COIL, VIBRATORY FEEDER
50202	AIR SWITCH (USE TUBING #48004)
50204	RHEOSTAT
50207	TOGGLE SWITCH
50210	AIR SWITCH (USE TUBING #48014)
50302	RECEPTACLE
60101	SOCKET SCREW 1/4-20 X 5/8"
60102	SOCKET SCREW 1/2-20 X 2 1/4"
60103	SOCKET SCREW 6-32 X 1"
60105	SOCKET SCREW 10-32 X 1/2"
60106	SOCKET SCREW, MAGNETIC DRIVER
60107	SOCKET SCREW 1/4-20 X 3/4"
60109	SOCKET SCREW 3/8-16 X 1"
60110	SOCKET SCREW 1/4-20 X 1 1/2"
60112	SOCKET SCREW 1/4-20 X 2"
60113	SOCKET SCREW 10-32 X 3/8"
60115	SOCKET SCREW 10-32 X 7/8"
60116	SOCKET SCREW 10-32 X 1"

Part #	Description
60119	SCREW, AIR SWITCH #50210
60120	SOCKET SCREW 1/4 X 1"
60121	SOCKET SCREW 1/4-20 x 7/8"
60148	SOCKET SCREW 3/8-24 x 1 3/4"
60201	SOCKET SET SCREW 1/4-20 X 1/2"
60401	HEX MACHINE SCREW 10-32 X 3/8"
60402	HEX MACHINE SCREW 1/4-20 X 1/2"
60502	PAN HEAD SCREW 8-32 X 1/2"
60503	PAN HEAD SCREW 6-32 X 3/8"
60508	PAN HEAD SCREW 6-32 X 1/4"
60701	THUMB SCREW 1/4-20
61102	FLAT WASHER 1/4"
61104	FLAT WASHER #10
61105	FLAT WASHER 1/2"
61301	LOCK WASHER 3/8"
61302	LOCK WASHER 7/16"
61401	LOCK WASHER #10
61402	LOCK WASHER 1/4"
61405	LOCK WASHER 3/4"
62008	ELASTIC STOP NUT 1/4-20
62101	HEX NUT 1/4-20
62102	HEX NUT 10-32
62111	NUT, AIR SWITCH #50210
62201	JAM NUT 7/16-20
62202	JAM NUT 1/4-28
64417	FOOT PEDAL SPRING
46171	HOSE ADAPTOR 1/4" NPT

## ORDERING PROCEDURE

1. Contact your local distributor for prices and availability and issue him a purchase order.
2. Be sure to give part number and description as listed on Parts List.
3. IMPORTANT: Give model and serial number of machine.
4. If you are not sure the part is defective, call Gripnail Customer Service Department at 800-474-7624 for assistance.

FAX 401-438-8520

# GENERAL MAINTENANCE

## DAILY MAINTENANCE:

1. Keep air and electric supply disconnected when Fastening Center is not in use.
2. Drain water from air tanks and air filter-regulator.
3. Lubricate all cylinder shafts with light machine oil.
4. Keep anvils and magnetic drivers clean from adhesive build-up.
5. Check magnetic drivers and all bolts and other fittings to see that they are tightly fastened.
6. Keep all machine guards in place.

## WEEKLY MAINTENANCE:

1. Lubricate drive and load cylinders—
  - a. Disconnect upper and lower drive cylinder hoses and apply several drops of light machine oil to cylinder.
  - b. Disconnect load cylinder air hose and apply oil through fitting, directly into cylinder.
2. Clean Air Sensors - Needle valve (44101) controls air stream passing from input sensor (30110) through track to output sensor (30111). Plastic tubing attaches here and connects to air pressure switch located in junction box, page 21.
  - a. Disconnect air supply.
  - b. Disconnect plastic tubing from both sensors.
  - c. Loosen two mounting screws (60103) and remove sensor. Be careful not to misplace spacers (30208). See track assembly, page 20.
  - d. Wash sensor in solvent to remove any glue spray or insulation dust.
  - e. Refasten mounting screws, spacers and plastic tubing.

