WYSONG PARTS LIST
AND INSTRUCTIONS

SINGLE SPEED PRESS BRAKE - 55 SERIES

Model Number: _____

Serial Number: _____

When ordering parts, please refer to the quantity, name of part, part number, and Model and Serial Number of your machine. The Serial Number can be found stenciled on the metal nameplate on the front of the ram, and stamped into the bed on the right hand end.

WYSONG & MILES COMPANY
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June, 1986

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55 1976

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AND
INSTRUCTIONS
FOR WYSONG SINGLE SPEED PRESS BRAKES - 55 SERIES

June, 1976

WYSONG SINGLE SPEED PRESS BRAKES - SERIES 55

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WYSONG SINGLE-SPEED PRESS BRAKES- SERIES 55

INTRODUCTION

This manual is designed to provide practical installation, maintenance, and operational information for the WYSONG Power Press Brakes.

The following pages briefly describe the features of the Brake, normal precautions for installation, operation, and maintenance, trouble-shooting data, and a complete illustrated-parts section.

Information contained in this manual will be useful in making necessary adjustments to the WYSONG Power Press Brakes to provide many years of productive service.

When writing to Wysong & Miles for information, please refer to your Brake by the Model and Serial Numbers. Use the Parts List for ordering replacement parts. Wysong & Miles reserves the right to make any changes deemed necessary in basic machine design or parts list without further notification.

WYSONG SINGLE-SPEED PRESS BRAKES - SERIES 55

DESCRIPTION

The WYSONG 55 Ton, Single Speed Power Press Brake is of rigid all-steel construction with a frame structure of select steel plate, special interlocked construction, and contoured stress points. Drive gears are totally enclosed in a transmission housing on right hand end of machine, running in a constant oil bath.

The hydraulically-controlled clutch is engaged through a toggle and shift collar assembly. When the shift collar assembly is moved out, the push plate is released, and the clutch is disengaged. A positive spring loaded brake stops the ram as soon as the clutch is released. The deep bed and ram are designed with extra depth and one-piece steel plate, Non-metallic gibs provide reduced gear wear and score-proof gib ways.

Straddle pitmans and one-piece eccentrics place the entire load on the centerline of end frames for balanced direct loading. Solid bed support is provided with Wysong's unique floating suspension system.

The ram is power-raised and lowered for positive ram adjustment, and the lower die holder is adjustable to permit accurate alignment.

Standard features include a Standard Back Gauge, centralized Lubrication System, and a reduced voltage control circuit.

Optional equipment includes a Precision Front Operated Back Gauge for critical, as wellas frequent, gauging changes, a direct reading dial indicator calibrated in .001" for front operated back gauge adjustment, and an Air Counterbalance System.

SAFETY

NOTE: BEFORE OPERATING ANY MACHINE, ALWAYS REVIEW AND UNDERSTAND FULLY ALL RECOMMENDED OPERATING AND SAFETY INSTRUCTIONS. THE FOLLOWING IS A LIST OF BASIC SAFETY PRECAUTIONS THAT MUST BE OBSERVED AT ALL TIMES

REFERENCE: WYSONG & MILES PRESS BRAKE SAFETY BOOKLET

1. NEVER eliminate or bypass any part of the safety devices on the machine.

2. NEVER place any part of the body in the die area of the press brake.

3. NEVER tie down clutch actuating devices to provide continuous operation.

4. NEVER operate machine on leveling screws, which are supplied for initial leveling only. Machine must be shimmed to firm level position and bolted securely to foundation or floor.

5. NEVER leave any tools or instruments in or on machine at any time. Be especially careful when operating machine with multiple setups.

6. NEVER use any portion of the machine for hand tool or die storage.

7. NEVER reach into die area to lubricate, clean, or adjust. Use remote systems or long-handled instruments.

8. NEVER operate machine with flywheel, gear, brake, clutch, or other access covers or plates removed.

9. NEVER remove warning plates, instruction manual, or safety equipment from machine.

10. ALWAYS use safety tools, fixtures and supporting devices when changing die settings.

11. ALWAYS leave ram at bottom of stroke when machine is not in operation.

12. ALWAYS engage treadle safety lock and remove foot pedal when machine is not in operation.

13. ALWAYS turn power switches off and remove keys when machine is not in position.

14. ALWAYS disengage clutch, stop drive motor, open disconnect switch, and allow flywheel to come to a complete stop before making any adjustments or repairs, or when leaving machine.

1. INSTALLATION

A. UNLOADING AND HANDLING

1. Carefully examine your new WYSONG Press Brake shipment as soon as it arrives. If you find shipping damage, notify the Carrier and file damage notices immediately.

2. If PRESS BRAKE is to be handled by crane, use lifting holes at the top of end frames. Be sure a spreader bar is in the sling to prevent side-loading the end frames.

3. The PRESS BRAKE IS TOP HEAVY to the front and must be handled with care, to guard against tipping.

4. If PRESS BRAKE is to be rigged or rolled to the foundation site, attach towing cables to skids. DO NOT ATTACH TOWING CABLES TO PRESS BRAKE.

   DO NOT REMOVE SKIDS UNTIL PRESS BRAKE HAS BEEN POSITIONED AT FOUNDATION SITE.....

5. Remove skids by lifting PRESS BRAKE with a crane.

   CAUTION: See 2 and 3 above.

6. Temporarily bolt the PRESS BRAKE to the foundation when the skids are removed.

B. FOUNDATION (Reference Figure 1 below)

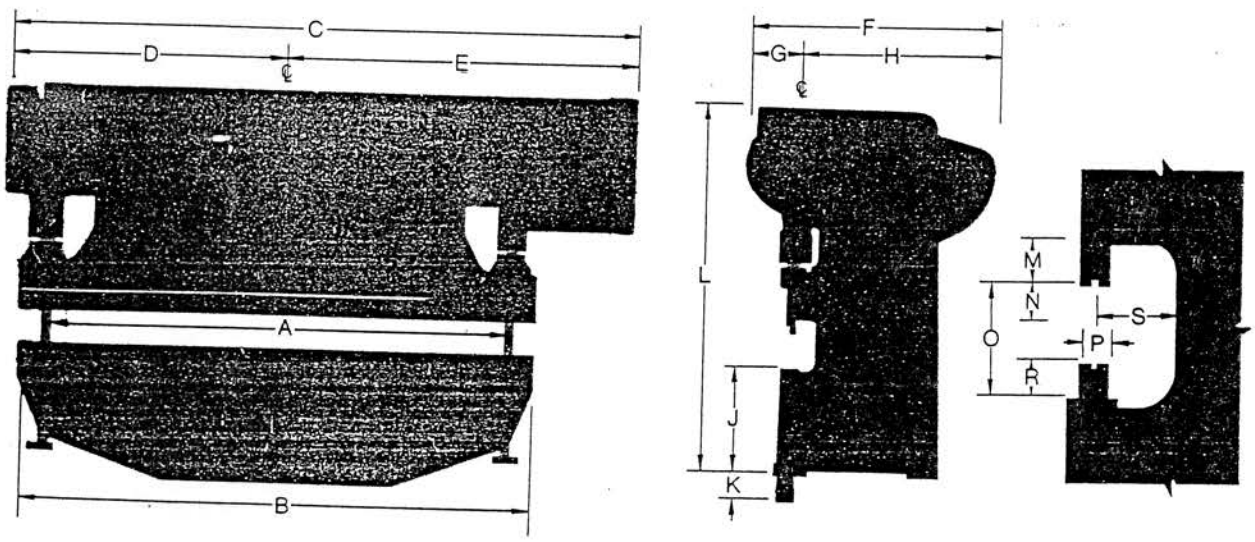
Note: Foundation Bolt hole locations are approximate. Anchor Bolts should be set in pipe to ensure proper bolt hole alignment.

dimensions

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S
55-4	54	72	88	36	52	57	11	46	34	—	88	3	3	12	2	4¼	8
55-6	78	96	112	48	64	57	11	46	34	—	88	3	3	12	2	4¼	8
55-8	102	120	136	60	76	57	11	46	34	—	88	3	3	12	2	4¼	8

FIGURE 1

MACHINE ASSEMBLY & FOUNDATION LAYOUT



NOTES: 1. Holddown bolts, boxes, nuts, and pipes are not furnished with machine. Use wooden frames to suspend holddown bolts to secure accurate location.

2. Detailed certified foundation prints are available from WYSONG upon request if further data are needed.

C. CLEANING

All exposed surfaces on WYSONG PRESS BRAKES are coated with a rust preventive for protection during shipping, which is easily removed with most ordinary cleaning solvents. BE SURE TO CLEAN RAM WAYS AND GIBS THOROUGHLY BEFORE BEGINNING PRESS BRAKE OPERATION.

D. LEVELING

Proper leveling is extremely important to the successful operation of the WYSONG PRESS BRAKE. Pads and shims should be wide enough to support both the foot pads at the corners of the end frames.

CAUTION: When using crane, use a spreader bar to prevent side loading end frames.

1. Place foot pads over anchor bolts and carefully lower machine into position.

CAUTION: PRESS BRAKES ARE TOP HEAVY AND MUST BE HANDLED WITH CARE. DO NOT BEND ANCHOR BOLTS OR FOOT PADS.

2. Level PRESS BRAKE front-to-rear, one end frame at a time.

   (a) Place a machinist level vertically against the machined surface extending through the slots in Bed Plate (forward edge of end frame) especially provided for leveling purposes.

   (b) Raise or lower front or rear of end frame until bubble is centered.

   (c) Double check readings by placing level vertically against machined leveling surface.

   (d) Shim as required.

   (e) Repeat steps above for opposite end of machine.

3. Level PRESS BRAKE end-to-end.

   (a) Place precision level along top of bed plate, centered between end frames. Allow bubble to stabilize before taking a reading.

   (b) Raise or lower PRESS BRAKE ends as necessary and shim under Foot Pads as required.

4. Check the clearance between Ram Guide Ways and Ram Brackets.

   (a) Insert a feeler gauge in the gap between the FRONT of the Ram Guide Way and the Ram Bracket, starting at one end.

(b) Take readings at both the top and bottom of the Ram Bracket. The two readings must be nearly identical.

(c) If the two readings vary more than .005", remove or add shims at the rear Foot pad on that end until the clearance is within tolerance.

5. Repeat steps a through c above at the other end of Ram.

6. Tighten Anchor Bolts solidly against Shims and Foot Pads before operating PRESS BRAKE.

7. After 3 or 4 weeks of PRESS BRAKE operation, recheck and relevel if necessary.

8. For best operation, check level periodically.

11. LUBRICATION (Reference: Fig. 8)

A. GENERAL

WYSONG PRESS BRAKES are equipped with a Bijur Lubrication System, either MANUAL (type D), or AUTOMATIC (type R). Both systems supply lubrication to the Flange Bearing, the Pitman Bearing Segments, and the Ram Guide Ways. (See figures 3 & 4 for servicing instructions).

B. LUBRICATION PROCEDURE

1. Actuate the MANUAL system (located on the R.H. End Frame) at least twice during each normal day's operation.

2. Lubricate the Ball Seats periodically through grease fittings on Ram Brackets, using a grease gun.

3. Check Transmission periodically through View Gauge on Covers. The oil level should cover 1/2 the View Gauge.

   (a) Remove Breather on top of Transmission Housing to add oil. Replace Breather.

4. Check Clutch Master Cylinder Periodically. The fluid level should reach the bottom of the Plug Hole.

   CAUTION: DO NOT REFILL HYDRAULIC MASTER CYLINDER WITH OIL.... USE HYDRAULIC FLUID ONLY.

5. Check elevation mechanism periodically.

6. Place a few drops of lubricating oil on the Toggle Pins and the Treadle Arm Pin periodically.

B. LUBRICATION PROCEDURE (Continued)

7. Lubricate Clevis Draw Bar every 10 hours of operation with a high-grade, high-temperature, Mobilplex #47 Grease or better lithium-base grease recommended by anti-friction bearing manufacturers.

8. Flush and refill Transmission Housings annually.

9. Activate the MANUAL Lubricating System more frequently during the break-in period (usually about 2 weeks of normal operation).

10. Instructions in Items 1 through 9 above are designed for PRESS BRAKE operations under normal conditions. During periods of excessive operation, the Press Brake will require more frequent lubrication.

NOTE: On MANUAL and AUTOMATIC Bijur Lubrication Systems, replace Filter Assemblies Annually... (Reference: Bijur Bulletins,

C. FIGURE 2 LUBRICATION CHART

LUBRICATION POINTS	SCHEDULE	METHOD
Elevator Screw & Ball Socket	Weekly	Apply grease to fittings on Pitman & Ram Bracket on each end of machine.
Flywheel	Twice Yearly	Remove Plug and insert grease fitting. Apply grease carefully to prevent damage to seals.
Cartridge Bearings	Monthly	Apply grease to ends of Primary Shaft.

TYPES OF LUBRICATION

TRANSMISSION HOUSINGS

Exxon	Spartan EP 680
Gulf	EP 95
Shell	Omala 81
Sacony	EP Gear Oil DD
Texaco	Meropa Lubricant #680
Mobil	#636

AUTOMATIC AND ONE SHOT LUBRICATION SYSTEM

Exxon	Teresstic 65
Gulf	Harmony 53
Shell	Tellus 69
Sacony	DTE Oil Heavy Medium
City Service	Pacemake Oil #3
Mobil	Vactra (Extra Heavy)

AIR LINE LUBRICATION (Air/Hydraulic Optional)

Gulf	Harmony 44
Shell	Tellus 25
Texaco	Regal Oil B, R & O
Amoco	American Insutrial Oil #15
Mobil	DTE-24 (Light)

GREASE

Mobil	Mobilplex #47

Service Instructions

For systems with lubricator type "D——"

FIGURE 3

BIJUR automatic lubricating system

Your machine is protected by a built-in Bijur central lubricating system — by CORRECT lubrication of all bearings served, it assures smooth operation of your machine for years, if properly maintained.

The Bijur system consists of three basic elements: (1) a **lubricator** (pump) which periodically forces a measured volume of oil into (2) a single **line of distribution tubing** branched to supply oil to the bearing surfaces through (3) **Meter-Units** which proportion the correct oil film to each bearing.

OIL: Use only non-compounded clean mineral oil of type and viscosity recommended by machine manufacturer.

OPERATION: This One-Shot lubricating system is pre-set by the machine manufacturer for best operation. Lubricator Type D is a spring discharge piston pump in a reservoir. Pushing down the handle against the stroke adjustment stop fills the cylinder with a predetermined volume of oil. Spring pressure discharges the oil into the distribution system automatically, and returns the handle to the original position. Lubricator must be operated at intervals recommended by machine manufacturer.

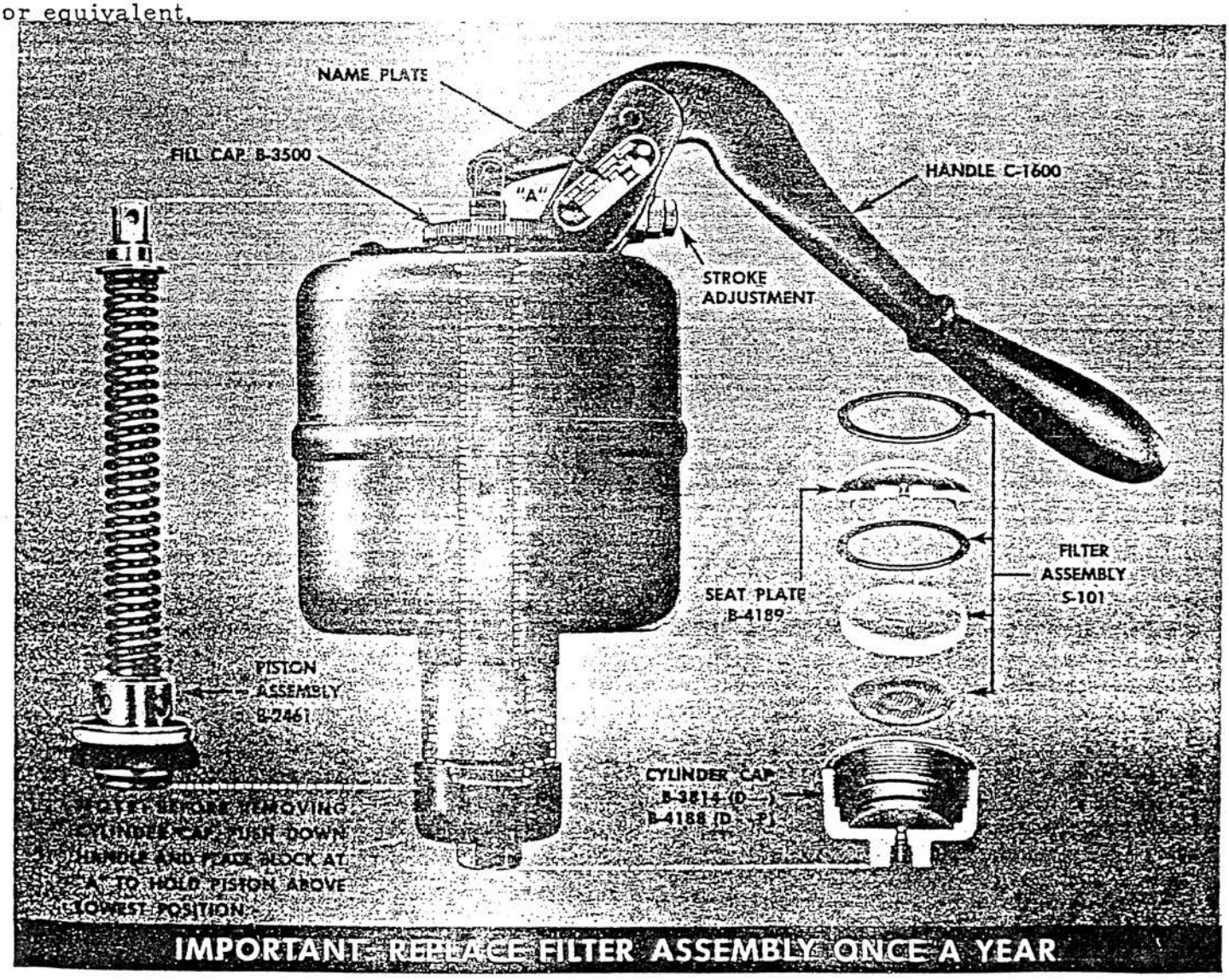
STARTING A NEW MACHINE: Fill reservoir; operate lubricator until oil shows freely at all bearings.

MAINTENANCE: Check oil level daily and refill reservoir when required. **Replace filter assembly annually.** Check system periodically for loose or broken tubing, worn hoses, loose fittings and connections.

SERVICE: Too little oil at all bearings — check for low oil level (handle snaps back if reservoir is empty), broken or cracked tubes, loose connections, flattened lubricator outlet tube, worn piston leather or clogged filter. If all are satisfactory and machine is running at operating temperature, increase oil feed. Loosen lock nut on stroke adjustment screw, turn screw in not more than two turns at one setting and reset lock nut. Run machine and check all bearing points thoroughly before further adjustment. **Too much oil at all bearings** — after full run-in period of machine, reduce oil discharge by turning out stroke adjustment screw — not more than two turns at one setting. For **too little** or **too much** oil at **one** bearing, see other side.

SERVICE PARTS: Order by **Part Number** and **Name** shown below —you **must** also specify **complete** lubricator **Type** symbol and **Serial** letters shown on Name Plate*. Example: "S-101 Filter Assembly for Lubricator Type DIB Ser. LF." If a new lubricator is required for replacement, order by **Type** symbol and **Serial** letters shown on Name Plate*. For major repairs requiring parts not designated below, return lubricator for factory rebuilding and adjustment. Prompt shipment can be made on parts and lubricators.

Be sure to use Esso Standard Oil Esstic 50 or equivalent.



Courtesy: Bijur

Service Instructions • BIJUR Automatic Lubricating System

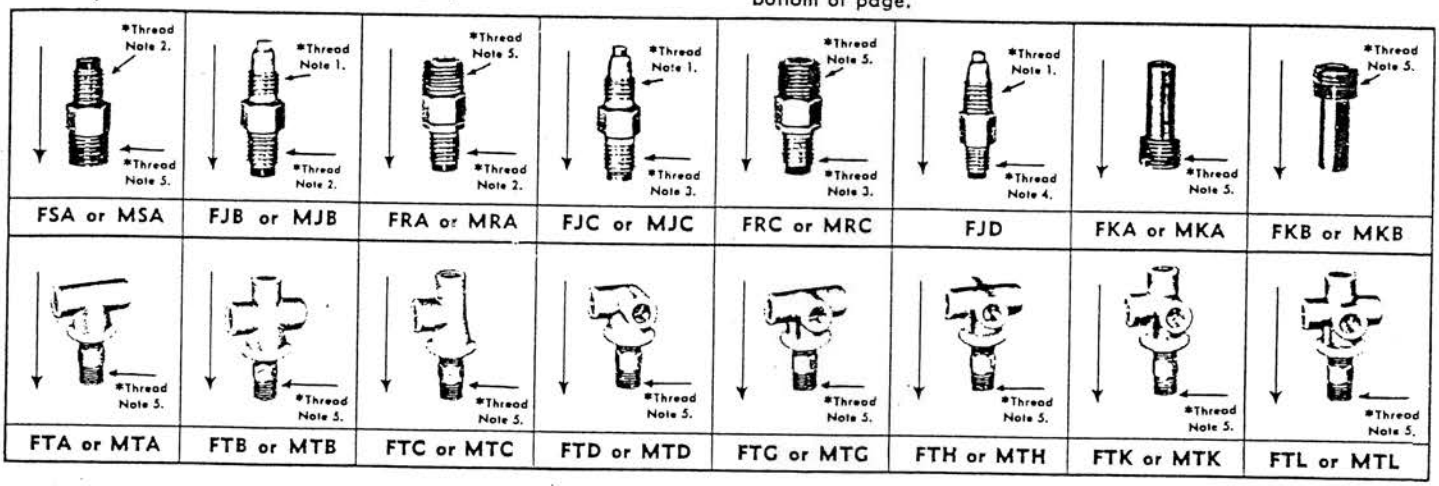
SERVICE *(Meter-Units)*

If **one bearing** receives **too much oil,** remove Meter-Unit and replace with one of same type but next **lower** Flow Rate Number. For **too little oil at one bearing,** replace Meter-Unit with one of same Type but next **higher** Flow Rate Number. Each increase in Flow Rate Number **doubles** oil feed. Don't attempt to adjust, disassemble, blow through or drill out Meter-Units.

SERVICE PARTS *(Meter-Units)*

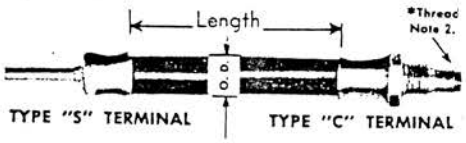
Order by **Name, Type** and **Flow Rate Number.** Example: "Meter-Unit FSA-O". Note carefully:—**F and M types are different,** even though they look alike, and they **are not interchangeable.** Type (FJD, MTK, etc.), Flow Rate Number (00, 0, 1, 2, 3, 4 or 5) and flow direction arrow are stamped on body of each Meter-Unit. All types are illustrated below (arrows show flow direction). See "*Thread Notes" at bottom of page.

FIGURE 3



SERVICE PARTS *(Distribution System)*

FLEXIBLE HOSE—Available with 5/32 tube terminals both ends (Type SS), 5/16-24 thread both ends (Type CC), or one of each (Type SC). Measure flexible length between terminals, and order from table below. Specify **Name** and **Part No.** Example: "Flexible Hose, B-4863."



LENGTH (INCHES)	Type SS		Type CC	Type SC
	5/16"O.D.	7/16"O.D.	7/16"O.D.	7/16"O.D.
4	B-4514	—	—	—
5	B-4515	B-2962	B-4873	B-4857
6	B-4516	B-3134	B-4874	B-4858
7	B-4517	B-2963	B-4875	B-4859
8	B-4518	B-3433	B-4876	B-4860
9	B-4519	B-2542	B-4877	B-4861
10	B-4520	B-3145	B-4878	B-4862
12	B-4588	B-3135	B-4879	B-4863
14	B-4589	B-3530	B-4880	B-4864
16	—	B-3531	B-4881	B-4865
18	—	B-3137	B-4882	B-4866
20	—	B-3532	B-4883	B-4867
22	—	B-3528	B-4884	B-4868
24	—	B-3508	B-4885	B-4869
27	—	B-3533	B-4886	B-4870
30	—	B-3534	B-4887	B-4871
33	—	B-3735	B-4888	B-4872

TUBING—Available in 12 foot lengths **only.** Check outside diameter, material and wall thickness. Order by **Name** and **Part No.** Example: "Tubing, 5B25."

	5/32" O.D.				3/32" O.D.	
MATERIAL	Brass	Copper	Copper	Steel	Copper	Steel
WALL	.025	.025	.055	.020	.022	.020
PART NO.	5B25	5C25	5C55	5S20	3C22	3S20

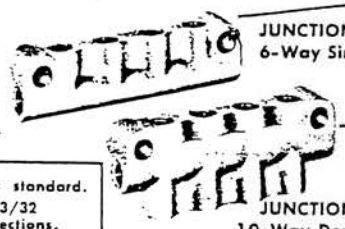
COMPRESSION FITTINGS—Check tubing O.D. and thread and hex on nuts and bushings. See "thread notes" at bottom of page. Sleeves of proper tubing size are required for all connections. Order by **Name** and **Part No.** Example: "Bushing, B-3783."

Item	Tube O.D.	Hex	See *Thread Note	Part No.
NUT	5/32	3/8	2	B-1095
	3/32	3/8	3	B-3312
	3/32	5/16	4	B-3610
BUSHING	5/32	3/8	2	B-1371
	5/32	5/16	2	B-3783
SLEEVE	5/32	—	—	B-1061
	3/32	—	—	B-3313

JUNCTIONS — Check number of tapped holes —identify in tables from illustrations and number of **mounting** holes (untapped). All "**One Mounting Hole**" types shown. Typical examples of "**Two Mounting Holes**" types — both "Single" and "Double" are shown. Order by **Name** and **Part No.** Example: "Junction, B-3264."

JUNCTION One Mounting Hole				
TYPE	2-Way	3-Way	3-Way	4-Way
PART NO.	B-3288	B-3065	B-1092	B-4231

	TYPE	SINGLE	DOUBLE
JUNCTION Two Mounting Holes	4-Way	B-3262	—
	5-Way	B-3263	—
	6-Way	B-3264	B-3109
	7-Way	B-3289	—
	8-Way	B-3265	B-3253
	9-Way	B-4508	—
	10-Way	B-3704	B-3254
	12-Way	B-3471	B-3249
	14-Way	—	B-4020
	16-Way	—	B-4025



*THREAD NOTES—All unnumbered tapped holes 5/16-24 Bijur standard.

1 5/16-24 for Bijur tapped holes only,
2 5/16-24 for 5/32 tubing connections,
3 5/16-24 for 1/32 tubing connections,
4 1/4-28 for 3/32 tubing connections,
5 1/8 pipe thread.

Service Instructions

For systems with lubricator type "R——"

FIGURE 4

BIJUR automatic lubricating system

Your machine is protected by a built-in Bijur central lubricating system — by CORRECT lubrication of all bearings served, it assures smooth operation of your machine for years, if properly maintained.

The Bijur system consists of three basic elements: (1) a **lubricator** (pump) which periodically forces a measured volume of oil into (2) a single **line of distribution tubing** branched to supply oil to the bearing surfaces through (3) **Meter-Units** which proportion the correct oil film to each bearing.

OIL: Use only non-compounded clean mineral oil of type and viscosity recommended by machine manufacturer.

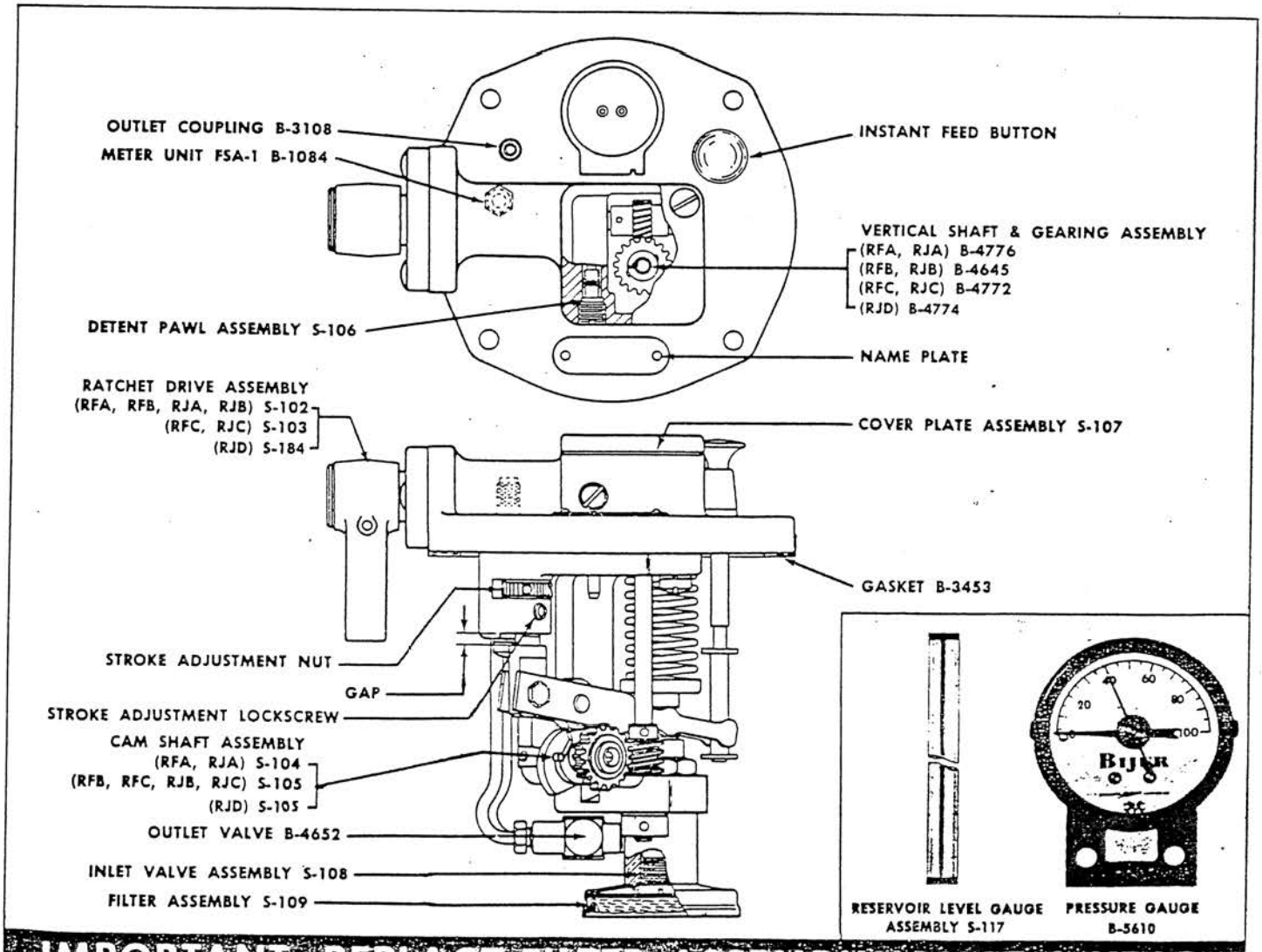
OPERATION: This fully automatic lubricating system is pre-set by the machine manufacturer for best operation. Lubricator Type R is a piston pump actuated by reciprocating motion from the machine. Oil volume is determined by the pump stroke setting; discharge frequency is determined by the ratchet and gear train which transmit the reciprocating motion to the pump-operating cam.

STARTING A NEW MACHINE: Fill reservoir before starting machine, pull and release "Instant Feed Button" several times until oil shows freely at all bearings.

MAINTENANCE: Check oil level daily and fill reservoir when required. **Replace filter assembly annually.** Check system periodically for loose or broken tubing, worn hoses, loose fittings and connections.

SERVICE: Too little oil at all bearings — check for low oil level, broken or cracked tubes, loose connections, flattened lubricator outlet tube, or clogged filter. If all are satisfactory and machine is running at operating temperature, increase oil feed. Carefully disconnect drive and discharge line, remove lubricator from reservoir, and increase stroke adjustment gap. Open gap not more than 1/32" at one setting (loosen lock screw, turn knurled stroke adjustment nut to right, tighten lock screw). If gap is found to be fully open, factory adjustment is required for further increase of oil flow. **Too much oil at all bearings** — after full run-in period of machine, reduce oil feed. Follow above procedure, turning nut to left to reduce stroke adjustment gap — not more than 1/32" at one setting. For **too little** or **too much oil** at **one bearing**, see other side.

SERVICE PARTS: Order by **Part Number** and **Name** shown below — you **must** also specify **complete** lubricator **Type** symbol and **Serial** letters shown on Name Plate*. Example: "S-109 Filter Assembly for Lubricator Type RJA Ser. LF". **Factory replacement** is recommended for parts designated**. For major repairs requiring parts not numbered below, return lubricator for factory rebuilding and adjustment. If a new lubricator is required for replacement, order by **Type** symbol and **Serial** letters shown on Name Plate*.
Prompt shipment can be made on parts and lubricators.



IMPORTANT: REPLACE FILTER ASSEMBLY ONCE A YEAR

III. ADJUSTMENTS

A. CLUTCH AND BRAKE

WYSONG PRESS BRAKES are equipped with Flex-Disc Clutch and Brake. As the clutch and brake facings glaze during the first days of operation, it may be necessary to make an adjustment.

On either the clutch or brake, unlock the toggle by depressing the lock lever. Rotating the toggle clockwise will take up the clutch or brake and counter-clockwise will loosen them. Usually one or two notches of adjustment is sufficient.

The Drive Discs can be removed with very little effort. Back off the clutch or brake toggle several full turns. Remove Drive Disc mounting bolts. Turn the Drive Disc so a lining section joint is vertical. Pull down on the L.H. half and push up on the R.H. half. The Drive Disc separate in two halves and slide out from between the push plates. To install a Drive-Disc, reverse the procedure.

When installing a brake or clutch Drive Disc, adjust the spacer nuts at the mounting bolts to give .010 to .012 feeler gauge clearance between the disc lining face and the inside push plate, when in the released position. When the toggle stops clear the push plate by 1/8" to 3/16" in the engaged position, adjust the toggle to give .010" to .012" feeler gauge clearance from the outside face of the Drive Disc.

B. RAM ADJUSTMENT

Ram adjustment motor control buttons are located on the right hand front of the ram. The adjustment mechanism is self-locking. To actuate, simply depress the UP button or DOWN button as required. Safety Limit Switches prevent overtravel. The Ram Adjustment Counter readings are in .001" to help in recording die settings for repeat jobs.

1. Disengage one end of ram adjustment with the clutch lever on the counter housing. This allows for tilting the ram to compensate for taper in dies or for fade-out work.

2. Swivel or rocker-type bearing way segments are used, no gib adjustment is necessary when tilting the ram.

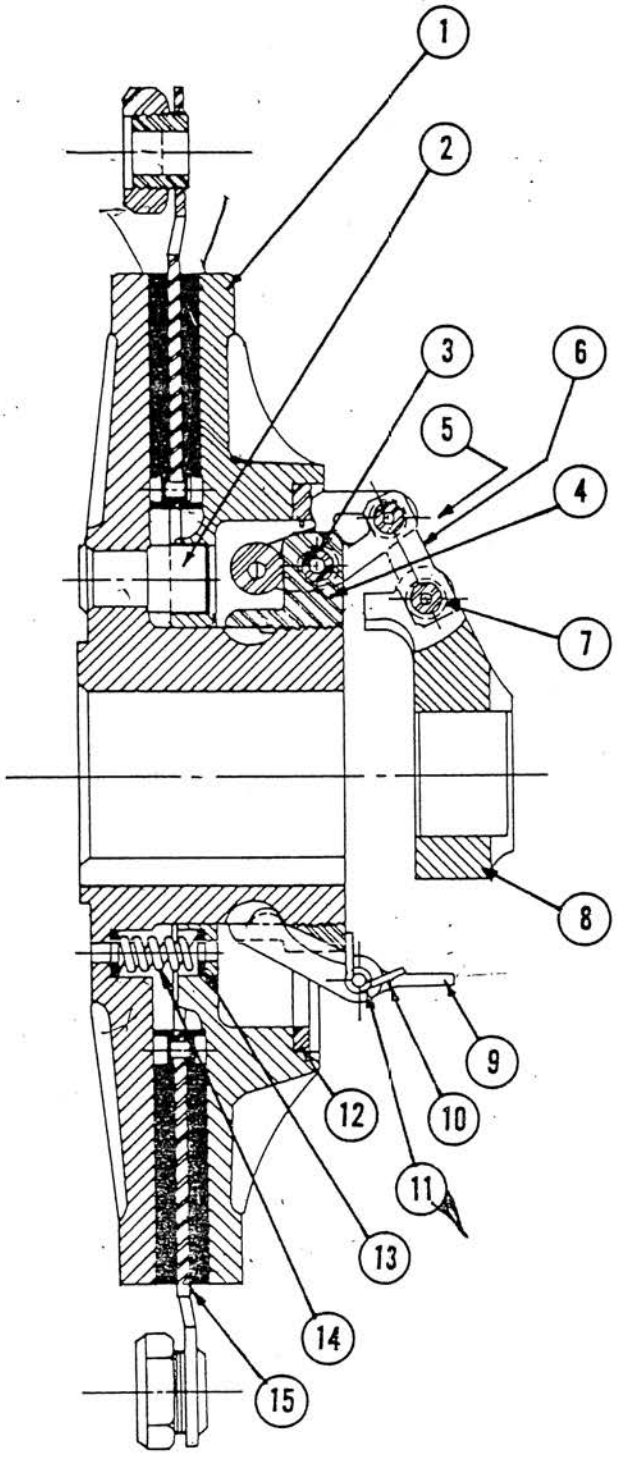


FIGURE NO. 5

DISC. CLUTCH AND/OR BRAKE

ITEM	DESCRIPTION
1	Disc Clutch or Brake
2	Push Studs
3	Toggle Strap Pin (XSC-117) Snap Ring
4	Adjust Collar
5	Shifter Assembly
6	Toggle Assembly
7	Toggle Link Pin (XSC-117) Snap Ring
8	Shift Sleeve
9	Adjust Collar Lock
10	Adjust Collar Lock Spring
11	Adjust Collar Lock Pin
12	Thrust Ring
13	Insulating Washer
14	Separating Spring
15	Drive Disc. Ass'y
	Disc Clutch or Brake

PITMAN ADJUSTMENT

The WYSONG Split-Type Pitmans are equipped with laminated brass shim stock between the the Caps and Pitman to achieve a .003" to .005" clearance. Under normal conditions, with proper lubrication, the pitman bearingsshould be checked every two years. The bearings should be checked more often under extreme conditions.

If the bearing clearance should increase over a period of time, follow these steps:

1. Place the Ram on the bottom of the stroke.
2. Use Feeler Gauge to determine bearing clearance between bronze segment and eccentric at bottom center.
3. Place blocks between Bed and Ram for support.
4. Loosen Pitman Caps enough to slide out shim stock.
5. Remove one layer of the laminations from each side, tighten the bolts, remove support blocks, and re-check clearance.
6. Repeat steps 1-5, if necessary to obtain the desired clearance.

IV. STALLING

A. STALLING ON BOTTOM CENTER

If the Press Brake becomes heavily overloaded, it is possible for all the flywheel energy to become exhausted, thereby stalling the Press Brake on bottom center.

NOTE: NEVER ATTEMPT TO RELEASE RAM WITH RAM ADJ. MOTOR.

1. Hold in reverse pushbutton until flywheel comes up to full speed and engage clutch.
2. If flywheel stalls, release clutch to allow it to regain full speed.
3. Repeatedly engage clutch until ram releases and backs off.

NOTE: IF ABOVE PROCEDURE FAILS - CONTACT FACTORY.

FOR MACHINES NOT EQUIPPED WITH REVERSING CONTROLS

NOTE: NEVER ATTEMPT TO RELEASE RAM WITH RAM ADJ. MOTOR.

WARNING: To avoid electric shock, open and lockout disconnect switch before touching wires.

1. Reverse Flywheel Rotation by switching any two of the three power leads on Starter.

2. Reclose disconnect Switch.

3. Run Flywheel up to full speed and engage clutch.

4. If Flywheel stalls, release clutch to allow it to regain full speed.

5. Repeatedly engage Clutch until Ram backs off.

NOTE: If above procedure fails - Contact Factory.

WARNING: TO AVOID ELECTRIC SHOCK, OPEN AND LOCKOUT DISCONNECT SWITCH BEFORE TOUCHING WIRES.

6. Change power leads on Starter to change Rotation back to forward.

B. CLUTCH DRIVING PLATE WEAR

When the following conditions exist, Drive Disc replacement is indicated.

1. The adjusting ring cannot be drawn tighter to compensate for Driving Disc wear.

2. In a clutch with riveted-on friction discs, the rivet heads are flush with the face of the disc.

V. OPERATION

TONNAGE TABLE

TONS PRESSURE REQUIRED PER LINEAL FOOT FOR BENDING

(Bending mild steel with "Air Bend" dies)

FIGURE 6

Metal Thickness		Width of Vee Die Opening																					
Gauge	Inches	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	10"	12"
20	0.036	3.1	2.3	1.7	1.4	1.1																		
18	0.048	5.3	4.0	3.0	2.5	2.2	1.7	1.3																
16	0.060	9.6	7.1	5.6	4.5	3.8	2.8	2.2	1.8	1.5														
14	0.075		11.9	9.2	7.6	6.3	4.7	3.5	3.0	2.5	2.1	1.8												
12	0.105				16.7	13.1	9.7	8.0	6.5	5.6	4.6	4.1	3.2											
11	0.120					19.2	14.2	11.1	9.0	7.5	6.3	5.5	4.4	2.9										
10	0.135						18.6	14.5	11.9	9.9	8.5	7.3	5.8	4.0										
3/16	0.188							27.4	23.1	19.3	16.4	14.3	11.2	7.5	5.7	4.4								
1/4	0.250									39.4	33.3	29.5	22.7	15.4	11.4	9.0	7.4	6.1						
5/16	0.313											50.4	39.8	27.0	19.7	14.3	12.7	10.5	7.7					
3/8	0.375												61.6	42.3	30.9	24.0	19.6	16.3	12.3	9.5				
7/16	0.438													61.7	45.8	35.4	28.6	24.4	17.3	14.8	11.2			
1/2	0.500													85.2	63.6	48.8	39.7	33.3	24.6	19.4	15.9	13.1		
5/8	0.625														110.0	86.2	70.0	58.3	43.1	33.3	27.4	23.3	16.9	
3/4	0.750															138.0	110.0	93.0	68.7	53.5	43.6	36.5	27.1	21.0
7/8	0.875																165.0	137.0	104.0	80.7	64.6	52.9	39.7	31.6
1	1.000																	197.0	143.0	113.0	91.2	76.2	56.3	44.2

Tonnages in the darker-color panels are for vee die openings eight times the thickness of the metal. These are generally used for average right angle bending work, giving an inside radius of the bend roughly equal to the metal thickness. When bending ordinary mild steel plates ½" and thicker, it is usually necessary to use a vee die opening greater than eight times the metal thickness to prevent fracture. Tonnages in the lighter colored panels in the above chart are for vee die openings recommended for these heavier thicknesses.

Above chart is for mild steel of 55,000 to 65,000 PSI tensil strength.

Bending pressure for other metal as compared to mild steel:

Soft Brass	50% of Pressure Listed
Soft Aluminum	50% of Pressure Listed
Aluminum Alloy (Heat Treated)	Same as Steel
Stainless Steel	50% more than Steel
Chrome Molybdenum	50% more than Steel

A. DIE SETUP

1. Most press brake operations involve single 90° bends, using male and female Vees with a width eight times material thickness. Preferably the Vee radii are no smaller than material thickness.

V. OPERATION (Continued)

2. Dies for 90° bends are generally about 88° or less to compensate for spring back of material. These dies do not have to be bottomed on the work piece, since they air-bend and require less power.

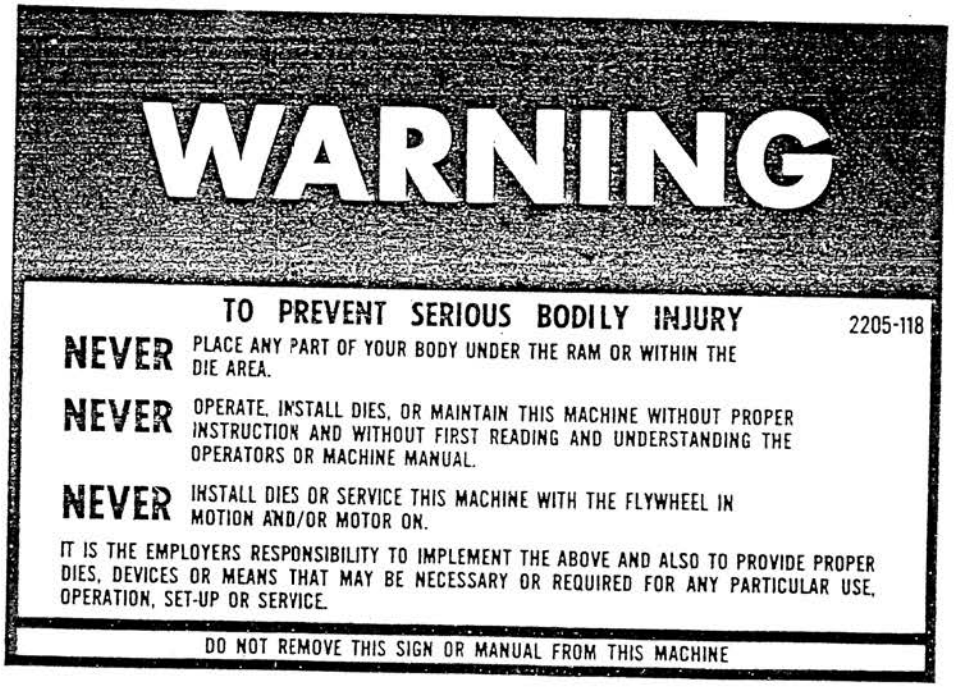
3. When air bending, the inside radius will be approximately 5/32 of the die opening, regardless of the thickness of material being formed.

4. If the punch radius is equal to or smaller than stock thickness and die opening is eight times stock thickness, the inside bend radius will be approximately equal to stock thickness.

5. Increasing of decreasing die opening will subsequently increase or decrease bend radius.

6. The larger the radius and the lighter the material, the more springback. Overbend allowance must be made in the dies to compensate. 90° dies with 90° included angle do not allow for springback.

B. PRESS BRAKE SETUP PROCEDURE



B. PRESS BRAKE SETUP PROCEDURE (Continued)

1. The initial PRESS BRAKE SETUP should begin with the Ram at the bottom of the stroke. Each Eccentric is marked with a center line that indicates extremes of the stroke, when in the vertical position.

2. When the stroke is DOWN and the adjustment is UP, there will be a 12" distance between the faces of the Bed and the Ram.

3. With the Die Holder in place but not bolted tight, place Lower Die on Die Holder (Center Dies between End Frames).

4. Tighten Die Clamping Set Screws. The Die should set firmly on its supporting shoulders.

5. Adjust Ram downward to allow just enough space for the Upper Die.

6. Slide Upper Die in place.

7. Adjust Ram downward tightly with Ram Adjusting Motor. Completely tighten Upper Die Clamp Bolts.

8. Tighten Die Holder Bolts.

9. Adjust Ram upward to metal thickness clearance at the slopes of the Die.

NOTE: Ram may require a different setting on one end from the other to compensate for total errors in Dies or machine parts wear. It may be necessary to shim Dies to correct for machine deflection.

10. When loads are heavy enough to cause Bed deflection, the angle of bend on the piece part will not be consistent.

    (a) To correct this condition, use shims at center of Dies.

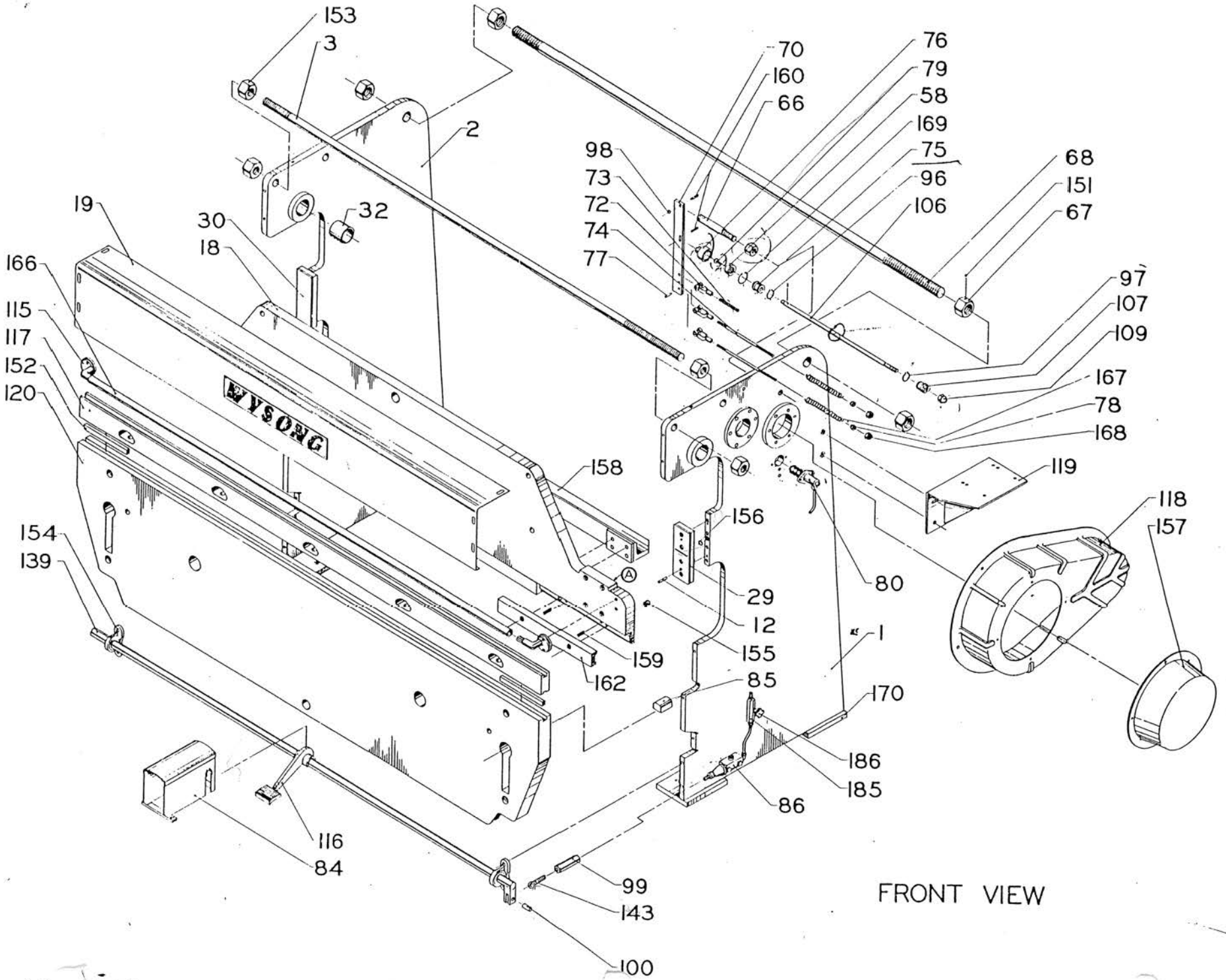
NOTE: A Ram adjustment of only a few thousandths of an inch will produce a sharp change of angle in the work piece.

55 SERIES PRESS BRAKE

PARTS LIST

FRONT VIEW

ITEM	QTY.	PART NUMBER	DESCRIPTION	4	6	8
1	1	7235-068	Frame, RH Side			
2	1	7235-069	Frame, LH Side			
3	1	7435-150	Rod, Front Support			X
	1	7435-149	Rod, Front Support		X	
	1	7435-148	Rod, Front Support	X		
12	4	3333-005	Pin, Dowel			
18	1	7435-166	Ram			X
	1	7135-202	Ram		X	
	1	7135-201	Ram	X		
19	1	7135-223	Crown			X
	1	7135-222	Crown		X	
	1	7135-221	Crown	X		
29	1	7335-007	Guideway, RH			
30	1	7335-002	Guideway, LH			
32	2	7135-226	Bushing — 3134-392			
58	1	3179-337	Bearing S. Row RAD.			
66	1	7135-266	Stud, Clutch Yoke			
67	4	7485-040	Nut, Support Rod			
68	1	7185-057	Rod, Support			X
	1	7185-056	Rod, Support		X	
	1	7185-055	Rod, Support	X		
70	1	7135-267	Yoke, Clutch			
72	3	3356-175	Yoke, Tapped			
73	1	7135-268	Rod, Clutch/Brake Adj.			
74	2	7435-238	Rod, Spring			
75	1	7185-130	Bushing, Clutch Adapter			
76	1	7185-135	Clevis, Draw Bar			
77	3	3745-060	Pin, Clevis			
78	2	7185-375	Seat, Spring			
79	1	7185-140	Screw, Clutch Draw Bar			
80	1	3743-024	Cylinder, Slave			
84	1	7235-048	Guard, Foot Treadle			
85	2	7435-107	Pillow Bea			
86	1	3743-020	Cylinder, Master 7385-041			
96	1	3351-037	Ring, External Retaining			
97	2	3351-041	Ring, External Retaining			
98	4	3351-022	Ring, External Retaining — 5100-62			
99	1	7185-134	Turnbuckle			
100	1	3745-061	Pin, Clevis			
106	1	7135-265	Drawbar, Clutch			
107	1	7135-263	Adapter, Brake			
109	1	3325-120	Nut, Acorn			
115	2	7085-001	Bracket, Handrail			
116	1	7085-037	Treadle, Foot			
117	1	7185-042	Holder, Die			X
	1	7185-041	Holder, Die		X	
	1	7185-040	Holder, Die	X		
118	1	7435-206	Guard, Flywheel			
119	1	7235-013	Base, Drive Motor			24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WYSONG
FRONT VIEW

55 SERIES PRESS BRAKE

PARTS LIST

FRONT VIEW

ITEM	QTY.	PART NUMBER	DESCRIPTION	4	6	8
120	1	7435-164	Bed			X
	1	7135-196	Bed		X	
	1	7135-195	Bed	X		
139	1	7235-047	Shaft, Treadle			X
	1	7235-046	Shaft, Treadle		X	
	1	7235-045	Shaft, Treadle	X		
143	1	7185-190	Eyebolt, LH			
151	4	7485-041	Plug			
152	2	7485-083	Key, Die Holder			
153	4	7435-147	Nut, Front Rod Support			
154	2	3136-146	Bearing, Pillow Block			
155	10	3323-510	Allen Nut			X
	8	3323-510	Allen Nut		X	
	6	3323-510	Allen Nut	X		
156	2	3255-048	O-Ring			
157	1	7485-894	Guard, Flywheel Clutch			
158	1	7285-495	Brace, Ram			X
	1	7285-494	Brace, Ram		X	
159	10	3504-071	Spring			X
	8	3504-071	Spring		X	
	6	3504-071	Spring	X		
160	2	7485-023	Pin, Yoke			
162	5	7185-426	Bar, Clamping			X
	4	7185-426	Bar, Clamping		X	
	3	7185-426	Bar, Clamping	X		
166	1	7435-018	Bar, Ram Hand			X
	1	7435-017	Bar, Ram Hand		X	
	1	7435-016	Bar, Ram Hand	X		
167	2	3504-204	Spring			
168	2	3324-012	Nut, Elastic			
169	1	3351-239	Ring, Internal Retaining			
170	4	7185-221	Plate, Foot			

55 SERIES PRESS BRAKE

PARTS LIST

PITMAN, RAM BRACKET, AND RAM ELEVATION

ITEM	QTY.	PART NUMBER	DESCRIPTION	4	6	8
5	2	7335-008	Pitman			
7	2	7435-214	Screw, Elevation			
8	2	3370-025	Nut, Elevation			
9	2	7035-107	Housing, Worm Bearing			
10	2	7035-052	Retainer, Nut			
11	2	7035-051	Retainer, Ball			
13	1	7035-045	Bracket, RH Ram			
* 14	1	7035-046	Bracket, LH Ram			
17	1	7235-067	Housing Counter			
20	4	7035-104	Cap, Pitman			
21	1	7135-410	Counter			
22	1	7135-411	Counter			
23	1	3333-004	Pin, Dowel			
24	1	7435-027	Lever, Elevation Clutch			
25	1	2203-030	Handle, Machine			
26	2	3412-039	Sprocket			
27	1	7435-144	Cover, Counter Housing			
28	ASN	3328-024	Shim, Nut Retainer			
		3328-026	Shim, Nut Retainer			
		3322-029	Shim, Nut Retainer			
		3328-031	Shim, Nut Retainer			
31	4	3134-775	Bearing, Brz. Pitman Segment			
35	CTL	3430-030	Chains, Roller			
38	1	7435-210	Shaft, RH Worm			
39	1	7435-209	Shaft, LH Worm			
41	1	7235-095	Clutch Driven			
43	1	7135-409	Clutch, Shaft			
44	1	7435-213	Shaft, Elevation			X
	1	7435-211	Shaft Elevation	X		
	1	7435-212	Shaft, Elevation		X	
45	2	7035-047	Retainer, Way Bearing			
46	2	7041-114	Bearing, Way			
54	1	7435-062	Coupling, Elevation Shaft			
55	1	4250-015	Motor, Flange Mount			
62	8	3328-600	Shim, Pitman			
63	ASN	3328-044	Shim, Ball Retainer			
		3328-046	Shim, Ball Retainer			
		3328-047	Shim, Ball Retainer			
		3328-051	Shim, Ball Retainer			
64	4	3333-015	Pin, Dowel			
65	4	7135-235	Gib, Ram Bracket			
122	6	3120-253	Bearing, Bost.			
123	1	3301-423	Key			
124	3	3301-422	Key			
125	1	3301-425	Key			
126	1	3301-426	Key			
127	1	7035-105	Housing, Bearing & Pilot			
128	1	7035-060	Box, First Reduction Gear			
129	1	3211-009	Seal, Oil			

(7135-232 233 Acme Thd)

* Not Illustrated

55 SERIES PRESS BRAKE

PARTS LIST

PITMAN, RAM BRACKET, AND RAM ELEVATION

ITEM	QTY.	PART NUMBER	DESCRIPTION	4	6	8
130	2	3178-244	Bearing, Sing. Row RAD			
131	1	7435-024	Shaft, Worm Drive			
132	1	3436-218	Worm, Bost. H1427R			
133	1	7435-026	Spacer, Worm Drive Shaft			
134	1	7435-025	Cap, Drive Worm Brg.			
135	1	7035-059	Mount, C-Face Motor			
137	1	3436-758	Gear, Elevation Worm			
138	1	7035-062	Housing, Worm Shaft Bearing			
140	1	3504-112	Spring, Compression			
141	8	7435-208	Stud, Pitman			
142	8	7435-176	Sleeve, Pitman Cap Alignment			
144	1	7435-028	Fulcrum, Elevation Clutch Lever			
145	1	7035-107	Housing, Worm Bearing			
146	1	7185-113	Shoe, Clutch			
171	1	7435-232	Sprocket, Elevation Shaft			
172	ASN	3328-825	Shim, Worm			
		3328-826	Shim, Worm			
		3328-827	Shim, Worm			
		3328-828	Shim, Worm			

55 SERIES PRESS BRAKE

PARTS LIST

EXTERNAL TRANSMISSION

ITEM	QTY.	PART NUMBER	DESCRIPTION	4	6	8
59	1	3418-009	V-Belt			
60	1	3403-012	Sheave, Taper Lock			
61	1	3401-015	Bushing, Taper Lock			
81	2	3179-343	Bearing, S. Row RAD			
82	1	7035-108	Housing, Eccentric Bearing			
83	2	3351-283	Ring, External Retaining			
87	1	3432-520	Clutch Single Flex Disc			
89	1	7435-146	Spacer, Flywheel			
92	1	7035-108	Cover, RH Transmission			
93	1	3211-052	Seal, Oil			
95	1	7085-004	Cap, RH Secondary Brg.			
102	1	7035-081	Flywheel			
136	1	4218-014	Motor, Drive			
147	1	3134-309	Bearing, Bronze			
150	1	3134-202	Bearing, Bronze			
182	1	7435-161	Spacer, Flywheel Bearing			
183	1	3344-010	Lockwasher, Bearing			
184	1	3346-010	Locknut, Bearing			

55 SERIES PRESS BRAKE

PARTS LIST

INTERNAL TRANSMISSION

ITEM	QTY.	PART NUMBER	DESCRIPTION	4	6	8
4	4	7431-231	Eccentric			
36	1	3346-012	Locknut, Bearing			
37	1	3344-012	Lockwasher, Bearing			
40	1	3211-052	Seal, Oil			
42	1	7185-080	Spacer, Primary			
47	1	7035-072	Bushing, RH Side Secondary			
48	1	3255-074	O-Ring			
49	2	3116-100	Bearing, Cup			
50	1	7435-216	Shaft, Eccentric	X		
	1	7435-217	Shaft, Eccentric		X	
	1	7435-218	Shaft, Eccentric			X
51	2	3116-610	Bearing, Cone			
52	1	7085-009	Bushing, Primary			
53	1	7185-081	Spacer, Central			
56	4	3301-510	Key			
57	2	3301-514	Key			
69	3	3302-139	Collar, 1-piece Split			
71	1	7135-237	Shaft, Primary			
88	1	7185-429	Pinion, Secondary			
90	1	7035-049	Gear, Eccentric Bull			
91	1	7085-006	Housing, RH Transmission			
94	1	7085-117	Gear, Primary Bull			
101	1	3351-062	Ring, External Retaining			
103	2	7485-172	Pointer			
104	1	3432-517	Clutch, Sing. Flex			
105	1	3301-477	Key			
108	2	3120-220	Bearing, Bost. B-1216-8			
110	1	7185-087	Spacer, Primary Pinion			
111	1	7185-084	Disc, Slinger			
112	1	7185-085	Spacer, Slinger			
113	1	3179-041	Bearing, S. Row RAD			
114	1	3255-114	O-Ring			
121	1	7435-073	Shaft, Intermediate			
148	1	3211-084	Seal, Oil			
161	1	3301-496	Key			
173	1	7435-219	Spacer, Seal			
174	1	3255-039	O-Ring			
175	1	3301-492	Key			
176	1	3351-054	Ring, External Retaining			
177	1	7135-244	Spacer, Secondary Pinion			
178	1	7435-132	Spacer, Secondary			
179	1	3351-056	Ring, External Retaining			
180	1	3351-283	Ring, Internal Retaining			
181	1	3148-050	Bearing, Double Roll Ball			

55 SERIES PRESS BRAKE

PARTS LIST

STANDARD BACK GAUGE

ITEM	QTY.	PART NUMBER	DESCRIPTION	4	6	8
1121	2 MAx.	7185-145	Bracket, Back Gauge			
1125	1	7185-148	Bar, Back Gauge Finger			X
		7185-147	Bar, Back Gauge Finger		X	
		7185-146	Bar, Back Gauge Finger	X		
1127	4	7185-152	Finger, Back Gauge			
1128	4	7185-191	Eyebolt			
1131	4	3356-020	Handle, Nut			

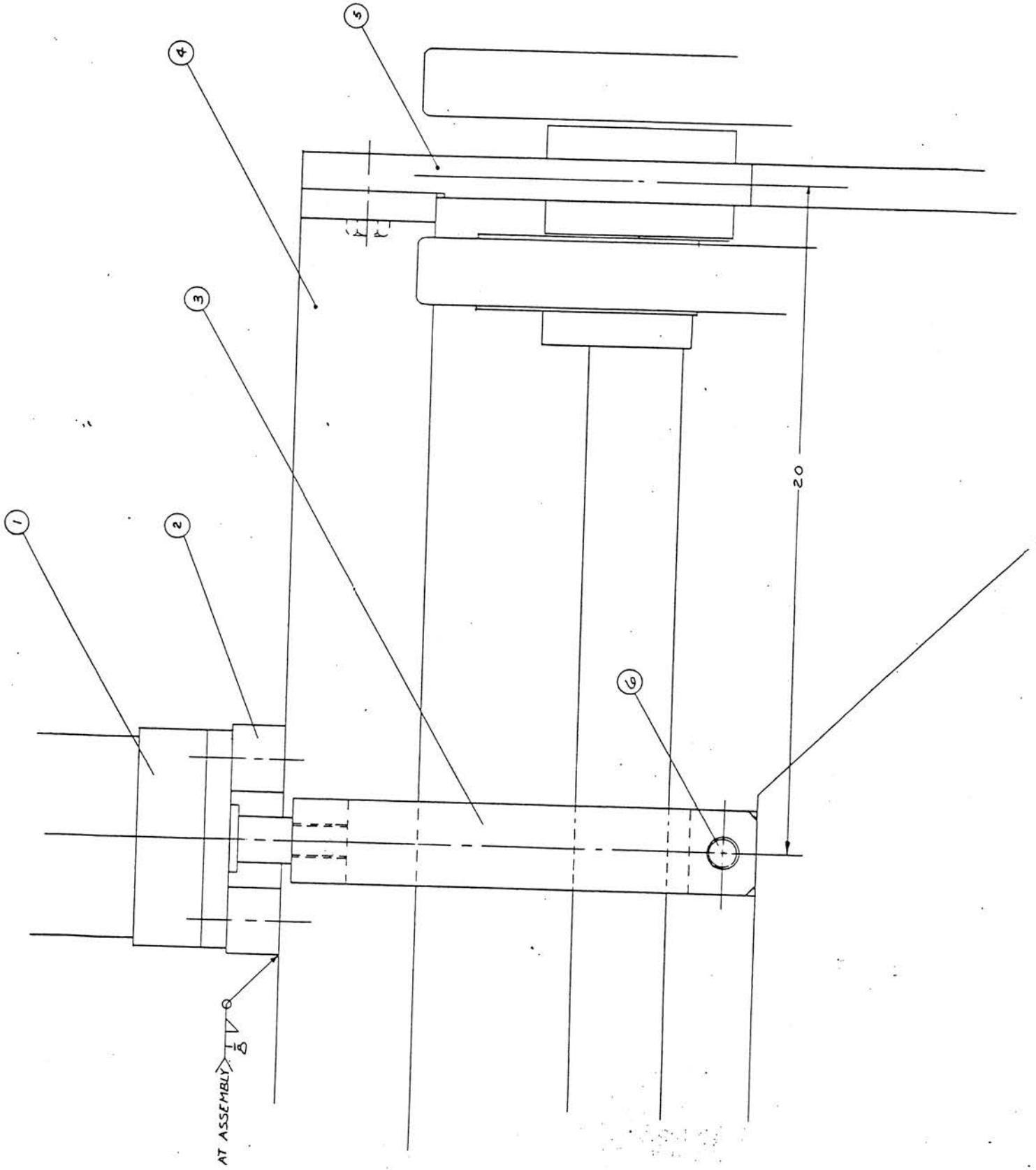
FIGURE NO. 9 - OPTIONAL PRECISION FRONT OPERATED BACK GAUGE

55 SERIES PRESS BRAKE

PARTS LIST

ITEM	QTY.	PART NUMBER	DESCRIPTION
1	4	7185-191	Eye Bolt
2	3	7185-148	Back Gauge Finger
3	3	7185-149	Back Gauge Cross Bar
4	3	-	Hex Hd. Cap Screw
5	9	-	Flat Washer
6	4	3356-020	Nut Handle
7	2	7085-068	Stop Carrier
8	1	7085-069	Mounting Plate, RH
9	1	7085-070	Mounting Plate, LH
10	2	7085-071	Bearing Plate
11	4	7185-339	Guide Rod
12	2	7185-340	Slide Block
13	4	7185-341	Collar
14	2	7185-342	Elevation Screw
15	2	7185-343	Bracket, Back Gauge
16	1	7185-344	Stub Shaft - Long
17	2	7185-351	Screw, Back Gauge
18	1	7185-352	Counter Mounting Bracket
19	1	7085-072	Counter Cover
20	1	7185-353	Stub Shaft - Short
21	2	7185-354	Counter Sprocket
22	1	3436-001	Counter Gear - Boston H2012R
23	1	3436-003	Counter Gear - Boston H2030R
24	2	3356-104	Ball Nut - Saginaw #5707508
25	2	7485-840	Standard Flange - Saginaw #5707571
26	1	2201-230	Counter - Durant 10:1 Ratio 4CS31057
27	1	2203-022	Crank Handle - Balcrank #H-63156
28	3	3132-057	ND Z299R12 Bearing
29	2	3121-067	Bronze Bushing FB-1014-6
30	8	3120-283	Bronze Bushing B-1620-6
31	2	3121-069	Bronze Bushing FB-1216-6
32	4	-	Hex Hd. Cap Screw
33	8	-	Hex Hd. Cap Screw
34	2	-	Hex Hd. Cap Screw
35	4	-	Machine Screw
36	4	-	Roll Pin
37	6	-	Roll Pin
38	2	3324-028	Nut - 5/8 Lock No. 29NE101
39	2	3105-116	Thrust Washer TB-1016
40	1	3412-300	Drive Tensioner
41	1	3412-250	Sprocket
42	1	3430-035	Chain - 3/8" Pitch No. 35
43	8	-	Socket Hd. Set Screw
44	1	-	Socket Hd. Set Screw
45	1	-	Socket Hd. Set Screw
46	4	-	Socket Head Cap Screw
47	4	-	Nut
48	2	-	Key
49	3	-	Socket Hd. Cap Screw
50	2	-	Hex Hd. Cap Screw
51	2	7435-034	Bracket - Support
52	1	7185-356	Counter Gear Collet

Air Counterbalance
Front View



55 SERIES PRESS BRAKE

OPTIONAL AIR COUNTERBALANCE

To prevent damaging the pitman bearings, the Wysong Air Counterbalance System must be installed for punching operations.

The purpose of the system is to absorb the shock load in punching operations and prevent the shock from being transmitted to the bearings.

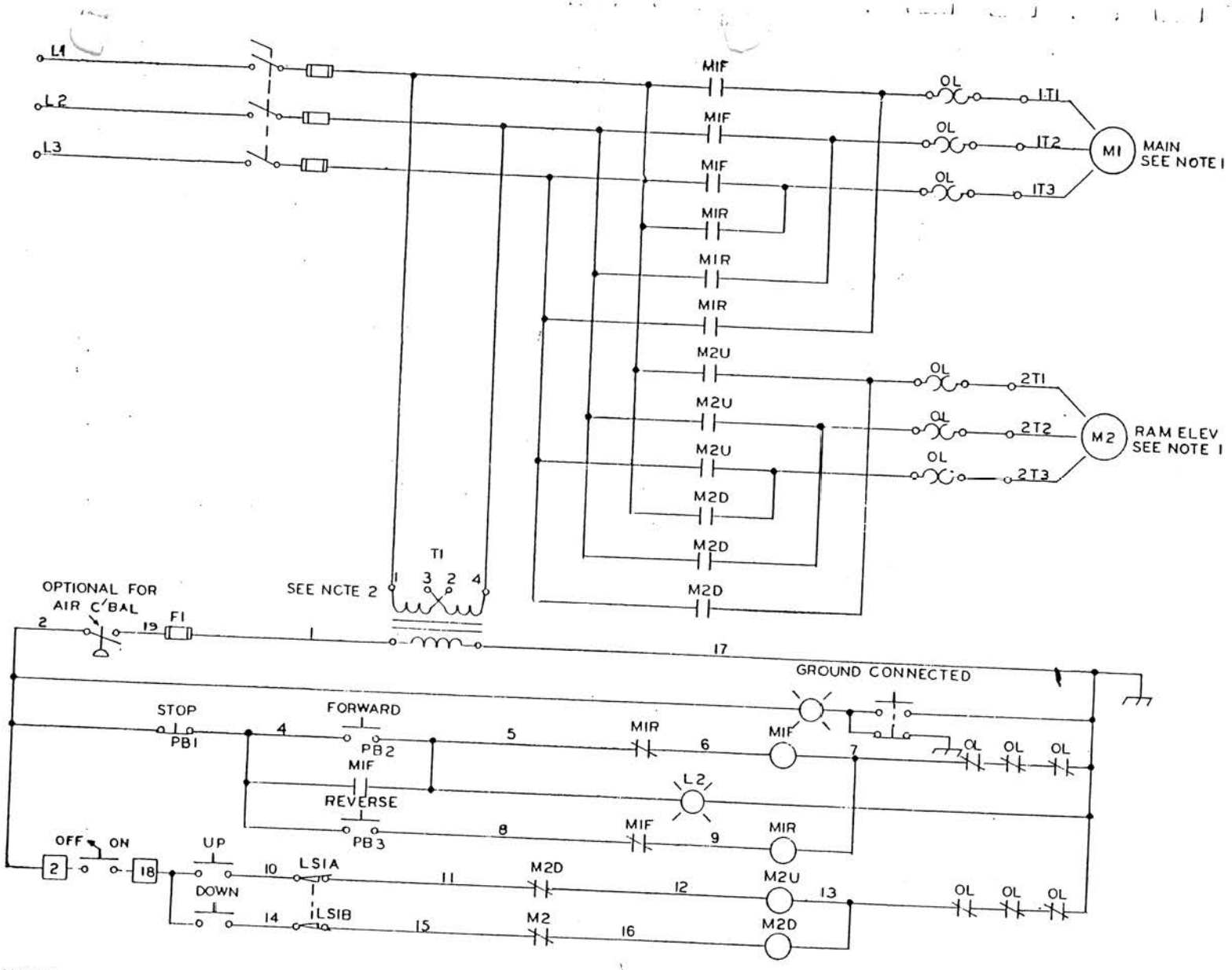
A general rule of the thumb for the pressure setting is 50 to 60 PSI plus 1 PSI per 100 Lbs. upper Tooling and Angle Brackets.

ITEM	QTY.	PART NUMBER	DESCRIPTION
1	2	3705-611	Cylinder, Air S-2 6B11S NC
2	4	7135-421	Plate, Cylinder
3	2	7235-080	Clevis, Air Counterbalance
4	1	7235-090	Bar, Spreader
5	1	7235-077	Frame - P.B., RH
6	2	7435-154	Pin, Clevis
7	1	7235-078	Frame - P.B., LH
8	2	7135-427	Spacer, Clevis
9	1	7435-036	Plate, Ram

55 SERIES PRESS BRAKE

ONE SHOT BIJUR LUBRICATION SYSTEM

ITEM	QTY.	PART NUMBER	DESCRIPTION
1	1	3231-005	Lubricator, D-2280
2	ASN	3243-004	5S-20 Tubing
3	12	3223-004	B-1371 Bushings
4	20	3223-002	B-1061 Sleeve
5	3	3227-132	Junction, 4-way
6	2	3235-035	Meter Unit, FSA-00
7	1	3227-102	Junction, 3-Way
8	4	3835-001	Nipple, 1/8 Close
9	4	3235-014	Meter Unit, FSA-1
10	4	3225-014	Hose, 14", B-3530
11	8	3223-003	Nut, Compression B-1095
12	2	3221-005	Connector, Elbow 90°
13	2	3235-035	Meter Unit, FSA-00
14	1	3221-010	Adaptor, Elbow A-3080



NOTE 1
CONSULT MOTOR NAME PLATE TO DETERMINE WINDING CONNECTION FOR 230V. OR 460V. WHEN CHANGING VOLTAGE HEATERS MUST ALSO BE CHANGED

NOTE 2
FOR 460V OPERATION CONNECT 2 TO 3
FOR 230V. OPERATION CONNECT 1 TO 3, 2 TO 4

ON UNITS WITHOUT SELECTOR SWITCH INSTALL JUMPERS BETWEEN 2 & 18

PRESS BRAKE WITH POWER RAM ADJUSTMENT & REVERSING

-71-322