



**INSTRUCTIONS FOR OPERATION AND
MAINTENANCE OF MACHINE**

**16-48
Press Brake**

VERSON ALLSTEEL PRESS COMPANY

1355 EAST 93RD STREET

CHICAGO 19, ILLINOIS

VERSION ALLSTEEL PRESS COMPANY
9300 South Kenwood Ave.
Chicago 19, Illinois

LUBRICATION INSTRUCTIONS
FOR
VERSION
PRESSES & PRESS BRAKES

FOREWORD

The lubrication of mechanical presses and press brakes presents the owner with an unusual opportunity to save on maintenance, power, and manufacturing costs. Because of the fluctuating and impact nature of the loads the supply of lubricants must be plentiful at all times. Failure to lubricate adequately, at all times, results in metallic friction and the likelihood of excessive wear.

It may be reasoned by some that because of the rugged nature and ample dimensions of press construction, wear is of no consequence and can be disregarded. Actually nothing is further from the truth. While dimensions are necessarily large to withstand the tremendous loads developed, wear is the upsetting factor in every count. It acts to intensify friction and thus create more wear. It causes looseness and vibration which magnify the effect of suddenly applied loads.

A well lubricated press, is, therefore, the one that will show the lowest maintenance and production costs. Good lubrication will add years to the useful life of your equipment. Haphazard lubrication programs, coupled with carelessness or neglect, can only result in high operating costs and a short life span for the equipment. The overall cost of good lubrication is minor in relation to total operating expense. However, the resultant savings, over a long period, are sure to justify the need for a well balanced lubrication program.

INSTALLATION

During shipment your machine will have accumulated a good coating of road dust, grit and contamination in spite of the protective coatings and wrappings provided before shipment.

"BE SURE YOUR MACHINE IS CLEAN BEFORE OPERATING."

- (1) Wash off all protective coatings from machined surfaces with suitable solvents.
- (2) Remove all gear guards and gear compartment covers and wash the gears and their compartments thoroughly.
- (3) Clean all exposed bearing surfaces.
- (4) Give the whole machine a general cleaning to remove accumulated dirt, etc.
- (5) Fill all reservoirs with the recommended lubricant and to the proper level.
- (6) Coat all open gearing and exposed bearing surfaces with their proper lubricant.
- (7) Check all lubricant tubing, flexible hose and fittings from origin to bearing for looseness, or damage during shipment or erection.
- (8) If the machine is equipped with a centralized or floor level manual system, prime all grease lines with a portable gun.
- (9) Thoroughly lubricate the whole machine making certain each bearing is lubricated.

LUBRICATION PROGRAM

To do anything well requires both knowledge and training. This truth holds good with particular emphasis in the case of a good lubrication program. The personnel responsible for lubrication of the equipment should be thoroughly informed as to the operating needs and properly trained to assure introduction of the correct lubricant at the proper time, place, and interval.

A further step towards a well organized lubrication program is regularity of attention. When setting up a schedule always arrange to perform the necessary work at regular intervals and at the same time of day. The suggested frequency of lubrication can be obtained from the chart attached to these instructions. These can, to the best of our experience and knowledge, be considered as average recommendations. Due to factors such as speed, temperature, continuity of operation, and the type of lubrication system, it is not feasible to specify exact periods of lubrication for all types of equipment. This must necessarily be left to the observation and good judgment of the oiler. Generally speaking, it is preferable to lubricate frequently in small quantity rather than large

amounts at long intervals. In the latter case, much of the lubricant will be wasted without performing any useful function, and bearing surfaces may run dry before the next application of lubricant.

OPERATION AND MAINTENANCE

Lubrication should be plentiful during the run-in period to help the bearing surfaces obtain a smooth, polished condition. To assist this running-in process, it is recommended that the intervals between lubrication be one third to one quarter the recommended intervals. Instruct your personnel to be on the alert for overheated bearings, or signs of excessive friction. If this occurs, increase the amount of lubrication until the condition improves. In certain cases where continued difficulty is experienced special run-in lubricants can be used with beneficial results.

- (1) Make sure your personnel is familiar with all of the requirements of the machine.
 - (a) Location of all lube points
 - (b) Correct lubricant
 - (c) Frequency of lubrication
- (2) If your machine is equipped with some form of centralized system be certain your personnel is familiar with the operation and function of the system. Make sure they know the meaning of the various types of indicating and/or warning devices sometimes incorporated into lubrication systems.
- (3) Transfer lubricants in clean containers. Many a lubricant has become contaminated before it ever reached a bearing.
- (4) Store your lubricants in a clean place. Provide covers for the containers and keep them in place when the containers are not in use.
- (5) Clean all grease and oil fittings and oil cups before introducing lubricant.
- (6) Grease guns sometimes become air bound after recharging with lubricant. Make sure all air has been eliminated before greasing bearings.
- (7) If your machine has been shut down for some time, make certain it is well lubricated before it is put into operation again.
- (8) After machine is run-in, check each bearing, visually, once each month to be sure it has been getting sufficient lubricant.
- (9) Check all lubrication lines for signs of damaged tubing or fittings frequently. This is especially true of flexible hose connections to moving bearings.
- (10) On machines with enclosed reservoirs or circulating type systems, it is advisable to drain and flush these compartments and recharge with fresh or well filtered oil after the first month of operation.

- (11) In connection with item 10, some lubricant suppliers maintain a special oil inspection service which may be valuable to large consumers. Periodic samples are examined for viscosity, water content, contamination, etc. Analysis of their findings often leads to premature discovery of contaminated lubricant due to the failure of a filter or bearing. In addition to this it often saves large quantities of good oil, intended to be replaced, only because it has been in use for some time.
- (12) Through the cooperation with lubrication system suppliers, such as Farval, Manzel, Lincoln, or Trabon, we have arranged that their local representative contact you, if your machine is equipped with one of their systems. They will check the installation and instruct your personnel on the operation and care of their system.
- (13) The following chart and list of recommendations has been prepared as a guide toward proper lubrication. We have long recognized the need for a simplified, yet effective, program of lubrication. The following recommendations have, therefore, been prepared with a view towards full and adequate lubrication with a minimum number of lubricants.

LUBRICATION RECOMMENDATIONS
FOR
VERSON
MECHANICAL PRESSES
CUSHIONS
PRESS BRAKES
GANG PUNCHES

DRIVING MECHANISM

All mechanical presses not equipped with a Verson oil flow system.
This includes all floor level manual, centralized manual, or centralized automatic systems using grease or oil as the lubricant.

	METHOD OF APPLICATION	FREQUENCY OF LUBRICATION	RECOMMENDED LUBRICANT
DRIVE GEARS (Enclosed)	1A Splash or dip	Check Reservoir Level Weekly	Lubricant A
	1B Oil Bath	See items 7-D and 7-E	
DRIVE GEARS (Open)	2-A Hand	Once Each Month	Lubricant E
	2-B Spray Application through centralized system or through remote floor level header block	Every Four Operating Hours	Lubricant D
	2-C Oil Bath	See Items 7-D and 7-E	
DRIVE SHAFT BEARINGS, INTERMEDIATE SHAFT BEARINGS, CRANK SHAFT BEARINGS, ECCENTRIC STRAP OR PITMAN BEARINGS	3-A Force Feed Oil	Check Reservoir Daily	Lubricant A
	3-B Centralized System or Individual Pressure Gun Fittings	Every Four Operating Hours	Lubricant D
	3-C Oil Bath	See Items 7-A, 7-B, 7-C and 7-F	
SADDLE BEARINGS (Barrel or Ball & Socket Type)	4-A Reservoir	Check Level Weekly	Lubricant A
	4-B Oil Bath	See Item 7-G	
	4-C Oil Pressure Cascade	See Item 6	
WRIST PIN BEARINGS	5-A Pressure Gun Fittings	Every Four Operating Hours	Lubricant D
	5-B Oil Bath	See Item 7-G	
	5-C Knuckle Joint Cascade	See Item 7-A	

This group (6) applies to Knuckle Joint Presses only equipped with pressure type oil lubrication of parts listed below.

	METHOD OF APPLICATION	FREQUENCY OF LUBRICATION	RECOMMENDED LUBRICANT
SADDLE BEARINGS AND WRIST PIN BEARINGS	6 Oil Pressure	Continuous Check Reservoir Level Daily. Check Pressure Gauge Every Four Operating Hours. Clean Filter Element As Required.	Lubricant F

This group (7) applies only to presses equipped with the VERNON, OIL FLOW, bath type, system of lubrication.

Bearings Served In Standard System	(a) DRIVE SHAFT BEARINGS (b) INT. SHAFT BEARINGS (c) MAIN SHAFT BEARINGS (d) INTERMEDIATE GEARS (e) MAIN GEARS (f) ECCENTRIC STRAP OR PITMAN BEARINGS (g) SADDLE BEARINGS & WRIST PIN BEARINGS	7 Oil	Continuous Check Reservoir Level Daily. Clean Reservoir Screen Weekly. Check Pump and Line Pressure Gauges Every Four Operating Hours. Clean Filter Element As Required.	Lubricant B
Bearings Included In Special System	(h) FLYWHEEL BEARINGS (j) GIBS			

FLYWHEELS

FLYWHEEL BEARINGS	8-A Pressure Gun Fitting	Every Two Months	Lubricant D
	8-B Hand Packed	Every Six Months	Lubricant D
	8-C Oil Bath	See Item 7-H	

CLUTCHES AND BRAKES

	METHOD OF APPLICATION	FREQUENCY OF LUBRICATION	RECOMMENDED LUBRICANT
AIR-OPERATED CLUTCH AND BRAKE UNITS (Piston, Packings & Air Valve)	9 Air Line Oiler	Check Reservoir Level Daily	Lubricant C
MECHANICAL FRICTION CLUTCH (Throw-Out Bearing)	10 Pressure Gun Fitting	Weekly	Lubricant D
AIR-OPERATED MECHANICAL CLUTCH & BRAKE UNITS (Operating Valve and Cylinder)	11 Air Line Oiler	Check Reservoir Level Daily	Lubricant C
TREADLE AND LINKAGE BEARINGS ON AIR CYLINDER OR MANUALLY OPERATED MECHANICAL CLUTCHES OR BRAKES	12 Oil Hole	Daily	Lubricant B or C
BLOCK AND PIN CLUTCHES	13 Pressure Gun Fitting	Once Every Four Operating Hours	Lubricant D
GIBS	14-A Force Feed Oil	Check Reservoir Level Daily	Lubricant A
	14-B Centralized System or Pressure Gun Fitting	Every Four Operating Hours	Lubricant D
	14-C Oil Bath	See Item 7-J	

COUNTERBALANCE CYLINDERS

CYLINDER AND PACKING	15 Oil Cup	Daily	Lubricant C
PISTON ROD BUSHING	16 Pressure Gun Fitting	Every Four Operating Hours	Lubricant D

SLIDE OR RAM ADJUSTMENT MECHANISM

	METHOD OF APPLICATION	FREQUENCY OF LUBRICATION	RECOMMENDED LUBRICANT
ADJUSTMENT MOTOR GEAR REDUCTION UNIT	17 Oil Bath	Check Level Monthly	Lubricant B
CHAIN DRIVE	18 Hand	Lubricate Monthly	Lubricant A
OPEN GEARS (Spur or Bevel)	19 Hand	Lubricate Monthly	Lubricant E
ENCLOSED GEARS (Bevel or Worm)	20 Pressure Gun Fitting or Hand Packed	Lubricate Monthly	Lubricant D
ELEVATING SHAFT BEARINGS	21 Pressure Gun Fitting or Oil Cup	Lubricate Monthly	Lubricant D
ADJUSTING SCREW	22 Pressure Gun Fitting	Lubricate Monthly	Lubricant D

SLIDE OR BED CUSHIONS (PNEUMATIC)

CUSHION GUIDES (External Only)	23 Centralized System or Pressure Gun Fitting	Every Four Operating Hours	Lubricant D
CUSHION PACKINGS	24 Oil Cup Or Pressure Gun Fitting	Every Four Operating Hours	Lubricant C
PISTON ROD AND CYLINDERS (All Internal Guides)	25 Pressure Gun Fitting	Every Four Operating Hours	Lubricant D

HYDRO-PNEUMATIC LOCKS FOR PNEUMATIC SLIDE OR BED CUSHIONS

	METHOD OF APPLICATION	FREQUENCY OF LUBRICATION	RECOMMENDED LUBRICANT
MAIN CYLINDER (Hydraulic Circuit)	26 Reservoir	Check Level Weekly	Lubricant C
AIR CYLINDER	27 Air Line Oiler	Check Reservoir Level Daily	Lubricant C
ROD BUSHINGS (If Any)	28 Pressure Gun Fitting	Every Four Operating Hours	Lubricant D

SLIDE OR BED CUSHIONS (HYDRO-PNEUMATIC)

CUSHION GUIDES (External Only)	29 Centralized System or Pressure Gun Fitting	Every Four Operating Hours	Lubricant D
CUSHION (Hydraulic Circuit)	30 Reservoir	Check Level Weekly	Lubricant C
RELIEF VALVE AIR CYLINDER	31 Air Line Oiler	Check Level Weekly	Lubricant C
ROD BUSHINGS (If Any)	32 Pressure Gun Fittings	Every Four Operating Hours	Lubricant D

LIMIT SWITCH

(Any switches not furnished with permanently lubricated bearings)

LIMIT SWITCH BEARINGS	33-A Oil Cup	Once Each Week	Lubricant B, or C
	33-B Pressure Gun Fitting	Once Each Month	Lubricant D

ELECTRIC MOTORS

MOTOR BEARINGS	34-A Pressure Gun Fittings	Once Each Month	Lubricant D
	34-B Oil Cup	Once Each Week	Lubricant B, or C

LUBRICANT SPECIFICATIONS AND RECOMMENDATIONS
Version Mechanical Presses, Press Brakes, and Gang Punches

LUBRICANT A

A stable gear oil approximately 1150 Saybolt Seconds Universal (plus or minus 100 S.S.U.) at 100°F. Leaded oils are preferred to provide better protection in cases of shock load. A minimum Timken rating of 30 pounds is required.

The Brooks Oil Company
Cities Service Petroleum, Inc.
Gulf Refining Company
E. F. Houghton & Company
The Pennzoil Company
The Pure Oil Company
Shell Oil Company
Sinclair Refining Company
Socony-Vacuum Oil Company, Inc.
Standard Oil Company
Sun Oil Company
Swan-Finch Oil Company
The Texas Company

Leadolene No. 70
Trojan LB Gear Oil No. 90
Multi-Purpose Gear Lubricant 90
Special M.E. Worm Gear Oil SAE No. 90
Pennzoil SCL Gear Lubricant 612
Poco Purelube EE
Macoma No. 72
Pennant E.P. Oil No. 3
Gargoyle Compound No. 3
Stanogear Leaded Lubricant No. 3X
Sunep 90
Cascade E.P. Gear Oil SAE No. 90
Texaco Meropa Lub. No. 3

LUBRICANT B

A stable lubricating oil, approximately 300 S.S.U. (plus or minus 25 S.S.U.) at 100°F. or 50 (plus or minus 5) S.S.U. at 210°F. Leaded oils as described in oil A are preferred for better shock load protection. A minimum Timken rating of 30 pounds is recommended. This oil must be relatively light for rapid return to the sump due to the recirculating type system.

The Brooks Oil Company
Cities Service Petroleum, Inc.
Gulf Refining Company
E. F. Houghton Company
The Pennzoil Company

The Pure Oil Company
Shell Oil Company
Sinclair Refining Company
Socony-Vacuum Oil Company, Inc.
Standard Oil Company
Sun Oil Company
Swan-Finch Oil Company
The Texas Company

Leadolene No. 40
Trojan LB Gear Oil No. 80
E. P. Lubricant 55
Hydro-Drive MIH-20
Leaded Pennzoil SCL Gear Lub. 610
or Pennbell Heavy Medium
Puropale Heavy Medium
Macoma No. 33
Pennant E. P. Oil No. 1
Gargoyle Compound No. 1
Stanogear Leaded Lubricant No. 1X
Sunep 50
Cascade E.P. Gear Oil SAE No. 80
Texaco Meropa Lub. No. 1

LUBRICANT C

A premium type oxidation, rust and foam inhibited hydraulic oil of approximately 150 (plus or minus 15) S.S.U. at 100°F. This oil should have a high Analine point to avoid adverse reaction with synthetic rubber packings used in air cylinders. A minimum analine point of 200 is recommended.

LUBRICANT SPECIFICATIONS AND RECOMMENDATIONS

LUBRICANT C (Cont'd)

The Brooks Oil Company	Leadolene No. 20
Cities Service Petroleum, Inc.	Pacemaker Oil No. 150-T
Gulf Refining Company	Harmony Oil A
E. F. Houghton & Company	Hydro-Drive MIH-Light
The Pennzoil Company	Pennbell Light
The Pure Oil Company	Puropale RX Light
Shell Oil Company	Tellus No. 27
Sinclair Refining Company	Rubilene Oil Extra Light
Socony-Vacuum Oil Company, Inc.	Gargoyle DTE Oil Light
Standard Oil Company	Stanoil Industrial Oil No. 15
Sun Oil Company	Sunvis 916
Swan-Finch Oil Company	Saf-Drive "A" Hydraulic Oil
The Texas Company	Texaco Regal Oil A (R&O)

LUBRICANT D

A multi-purpose grease which has high mechanical stability and resistance to oxidation (a period of 100 hours minimum for 5 pound drop in the oxidation bomb test), preferably water resistant, and American Society Testing Materials dropping point of 350° minimum. The addition of leaded compound which will contribute a mild degree of extreme pressure properties will be useful, under certain shock load conditions. This is desirable but not absolutely necessary. Greases having all these properties will be satisfactory for all grease bearing applications. These greases must also be used as a lubricant where packings made from leather, natural, or synthetic rubber are employed.

Leaded

The Brooks Oil Company	Leadolene No. 375L
The Pennzoil Company	Pennzoil 316 Lubricant
Shell Oil Company	5215 Alvania E.P. Grease No. 1
Socony-Vacuum Oil Company, Inc.	Gargoyle Grease Sovarex L-O
Standard Oil Company	Superla E.P. Grease No. 1
The Texas Company	Texaco Multex Grease No. 0

Non-Leaded

The Brooks Oil Company	Thermo D
Cities Service Petroleum, Inc.	Trojan Grease M-1
E.F. Houghton & Company	Cosmolube No. 1
Gulf Refining Company	Precision Grease No. 2
The Pennzoil Company	HMP Lubricants or N.L.G.I. No. 2
The Pure Oil Company	Poco HT Grease B
Sheel Oil Company	Alvania Grease No. 1
Sinclair Refining Company	Litholine
Socony-Vacuum Oil Company, Inc.	Gargoyle Grease Sovarex No. 1
Standard Oil Company	Stanolith Grease No. 42
Sun Oil Company	844X Grease
Swan-Finch Oil Company	Safco Anfrol 7A-41
The Texas Company	Texaco Multipak Grease No. 2

LUBRICANT SPECIFICATIONS AND RECOMMENDATIONS

LUBRICANT E

A medium black, tacky gear shield type grease suitable for hand application to heavy, open gears requiring little or no heat for use.

The Brooks Oil Company
Cities Service Petroleum, Inc.
Gulf Refining Company
E. F. Houghton & Company
The Pennzoil Company

The Pure Oil Company
Shell Oil Company
Sinclair Refining Company
Socony-Vacuum Oil Company, Inc.
Standard Oil Company
Sun Oil Company
Swan-Finch Oil Company
The Texas Company

Klingfast Special Heavy
Cisco Compound No. 3-Z
Lubcote No. 1
Sta-Put No. 591
Penn Amer. Gearshield No. 1 or
Pennzoil Gearcoat
Poco Compound No. 50
Cardium Compound C
Jet Lubricant No. 8
Gargoyle Viscolite Oil No. 20 Fluid
Calumet Viscous Lub. No. 8X
Gear Compound D
Safco C-818 Gear Compound
Texaco Crater No. 2X Fluid

LUBRICANT F

(For Knuckle Joint Press Connections only.)

A stable lubricating oil approximately 700 Saybolt seconds universal (plus or minus 100 S.S.U.) at 100°F. Leaded oils are preferred to provide better protection in cases of shock load. A minimum Timken rating of 33 pounds is required.

The Brooks Oil Company
Cities Service Petroleum, Inc.
Gulf Refining Company
E. F. Houghton & Company
The Pennzoil Company
The Pure Oil Company
Shell Oil Company
Sinclair Refining Company
Socony-Vacuum Company
Standard Oil Company
Sun Oil Company
Swan-Finch Oil Company
The Texas Company

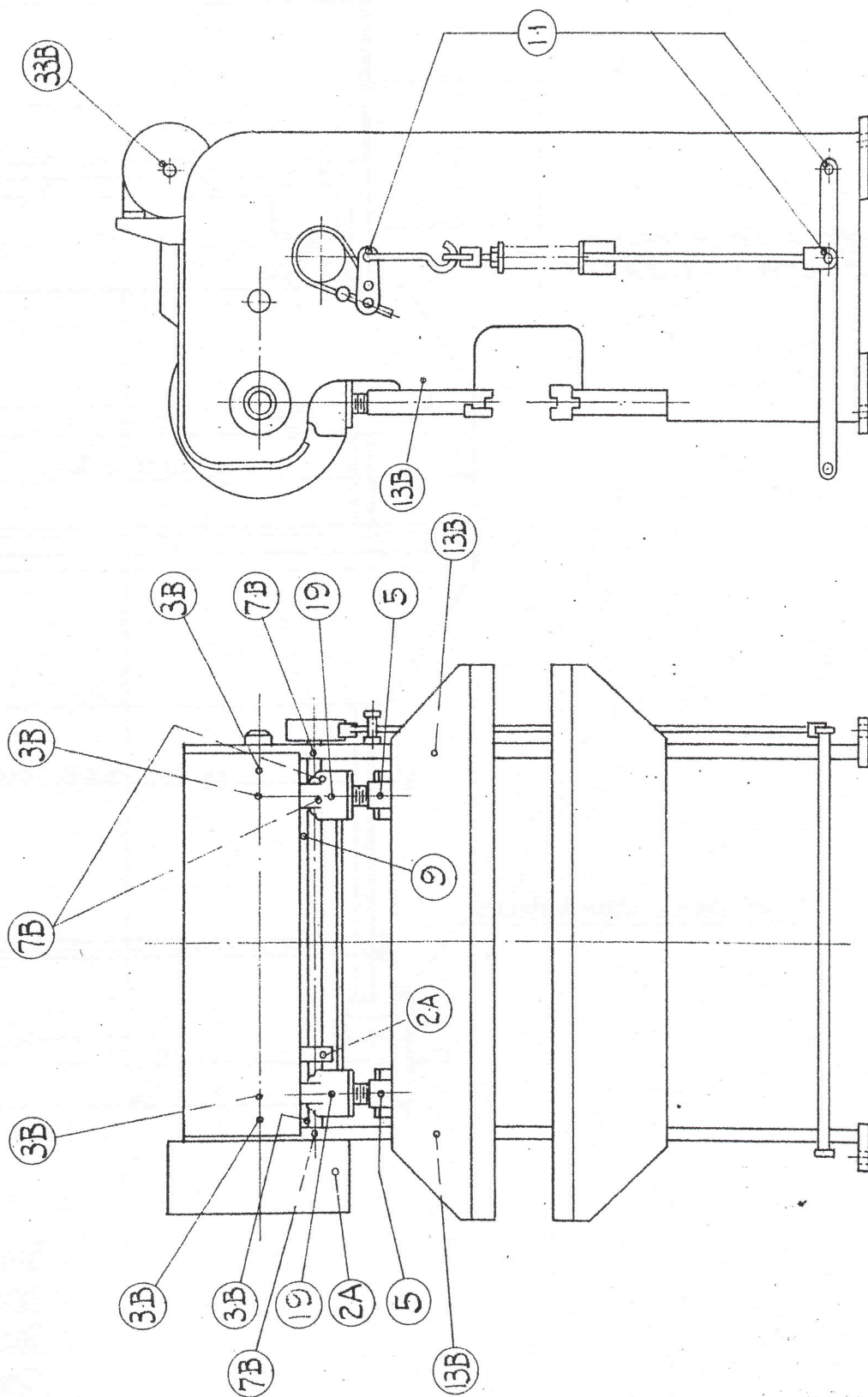
Leadolene #55
L-1 Compound
Multi-Purpose #80
Special ME Worm Gear Oil SAE #80
Penn Table ways Lubricant
Poco Purelube EE
Macoma 68
Pennant EP No. 2
Gargoyle Compound No. 2
Stanogear Leaded lube No. 2X
Sunep 70
Cascade E.P. Gear Oil SAE No. 90
Texaco Meropa No. 2

ADDRESSES

Chicago 19, Illinois (Main Office)
Dallas 15, Texas

1355 E. 93rd Street
So. Lamar at Ledbetter Drive
or P.O. Box 9128

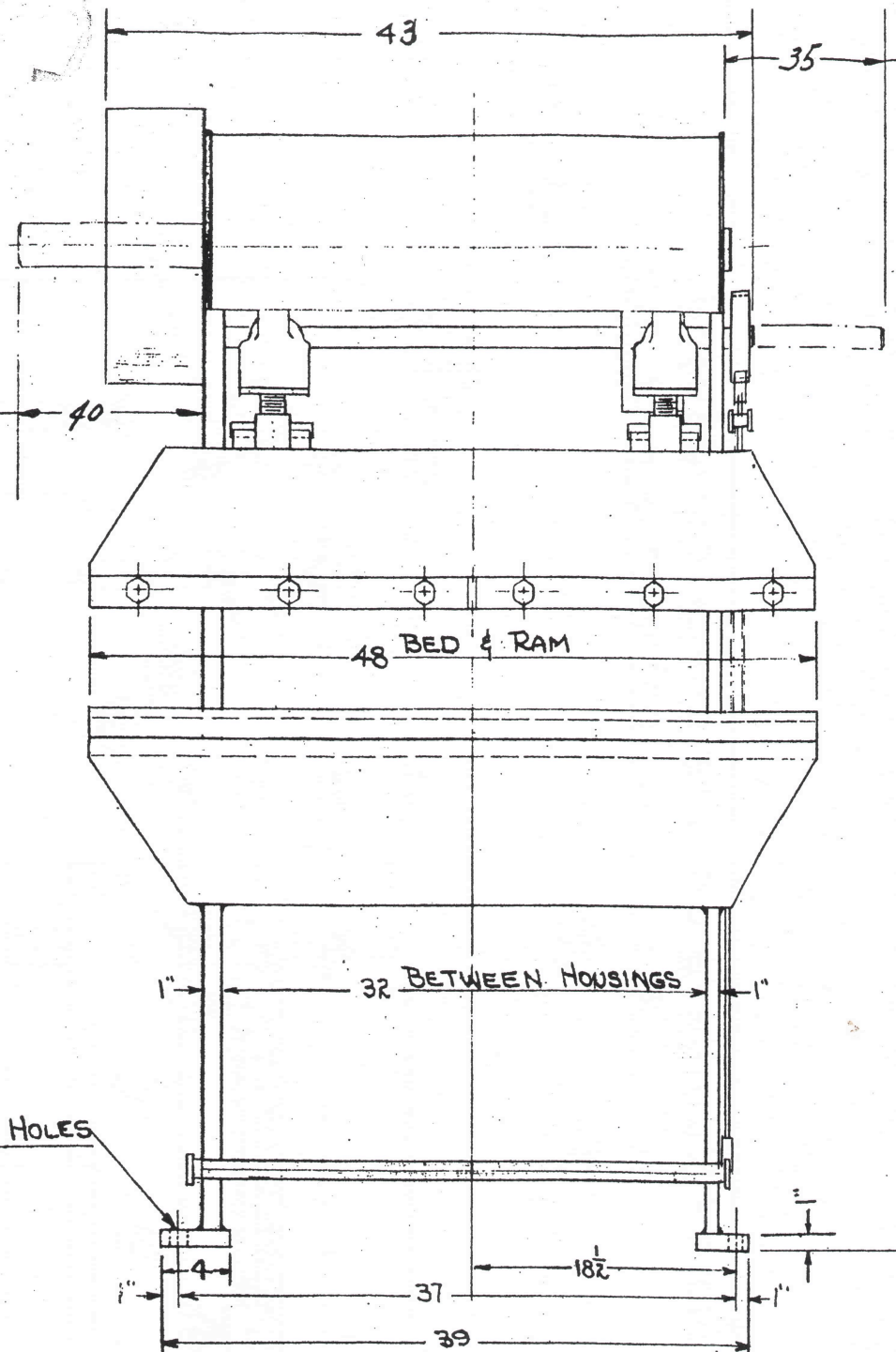
Note:- Numbers on this sheet correspond with Verson lubrication instructions.



TITLE LUBRICATION POINTS
16-48 PRESS BRAKE

14-1
9300
Drawing No.

REQ'D TO REMOVE
ECCENTRIC SHAFT



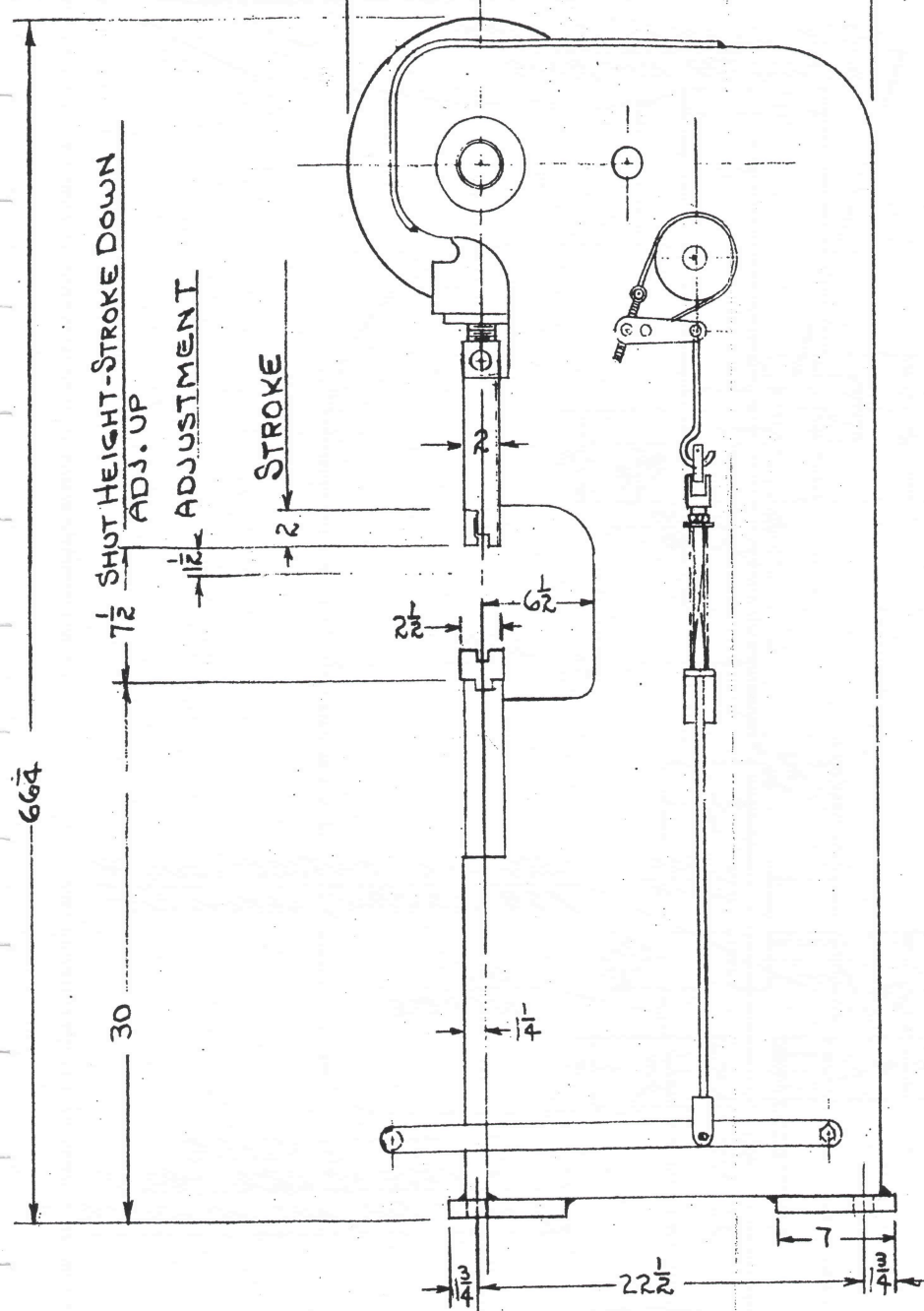
1" DIA. DRILL THRU-4 HOLES

STROKE OF RAM _____
ADJUSTMENT OF RAM _____
STROKES PER MINUTE _____
CAPACITY _____

TOLERANCE $\pm .005$ FOR ALL FINISHED MACHINE DIMENSIONS.
TOLERANCE FOR ALL ROUGH MACHINE DIMENSIONS $\pm 1/64$.
TOLERANCE FOR FABRICATED SECTIONS WITHOUT MACHINING
OVERALL DIMENSIONS $\pm 1/8$. WORK TO DIMENSIONS.
DO NOT SCALE DRAWINGS.

REQUIRED TO
REMOVE CLUTCH SHAFT

304



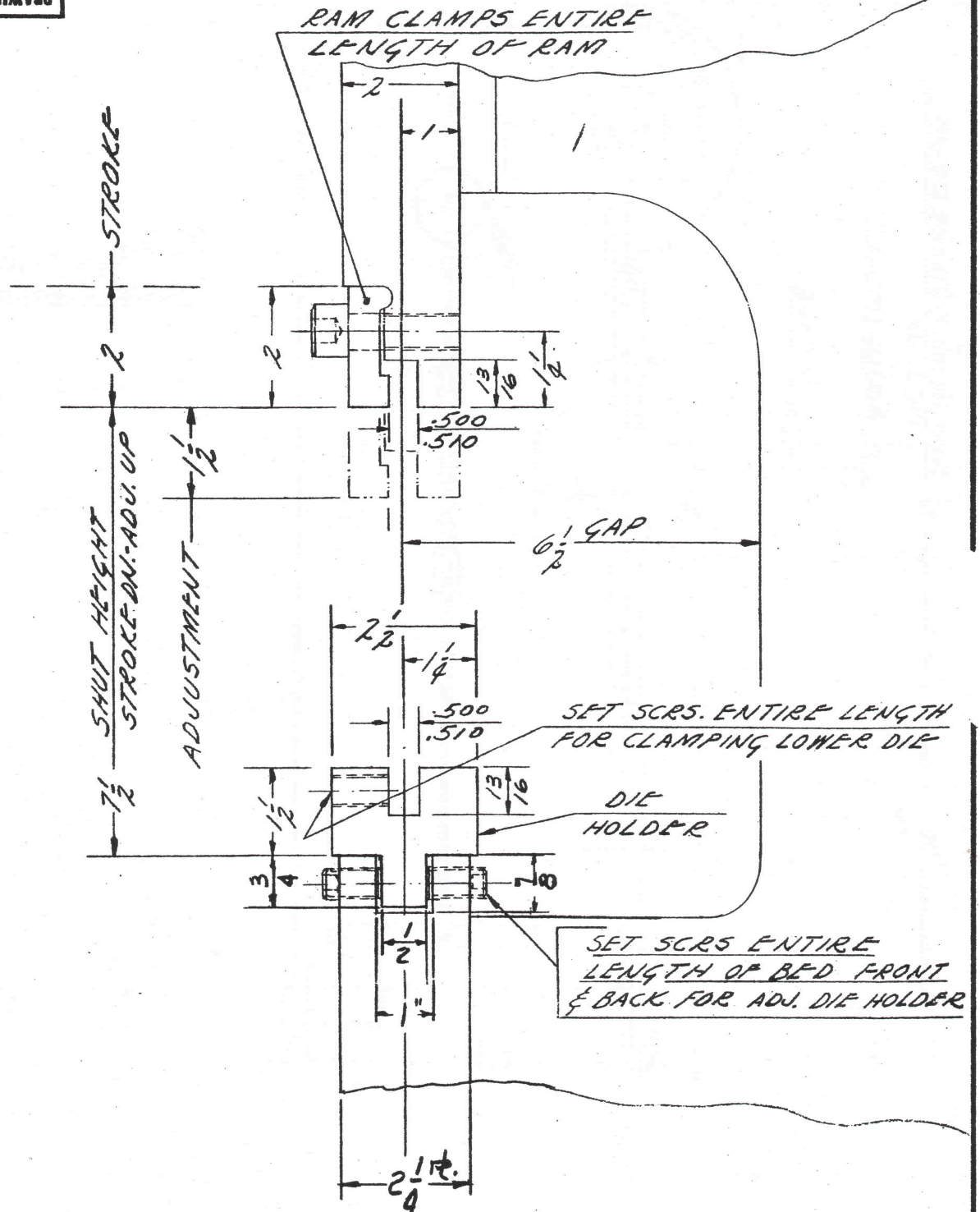
NOTE $\frac{3}{4}$ H.P. - 1800 R.P.M.
MOTOR FURNISHED

- 2 INCHES
- 1 1/2 INCHES
- 20 TO 50
- 15 TONS

Drawing No. 9300 M-1	TRADE Verson MARK	DATE 5-14-51
REVISED	VERSON ALLSTEEL PRESS CO. CHICAGO, ILL.	SCALE $\frac{3}{32} = 1"$
	MACHINE 16-48 PRESS BRAKE	DR: J.F.D.
	PART GENERAL ASSEMBLY	CH: 15

5-7
0086
ON DIMENSIONS

TOLERANCE $\pm .010"$ FOR ALL MACHINE
DIMENSIONS UNLESS OTHERWISE SPECIFIED.
WORK TO DIMENSIONS, DO NOT SCALE DRAWINGS.



DRAWING No.
9300
L-5

REVISED

TRADE **Verson** MARK

VERSON ALLSTEEL PRESS CO.,
CHICAGO, ILL.

MACHINE 16-98 PRESS BRAKE

PART DIE SPACE

DATE

5-14-51

SCALE

3/8

DR: JYD

CH:

VERSON ALLSTEEL PRESS COMPANY

OPERATING INSTRUCTIONS FOR TWIN DISC FRICTION CLUTCHES

1. ADJUSTMENT Clutches are equipped with single point adjustment which can be accomplished without the use of tools. If the clutch does not pull, heats, or operating lever jumps out, the clutch must be adjusted. To make adjustment, turn clutch until adjusting lock pin can be reached. Pull out pin and turn adjusting ring clockwise until clutch requires a distinct pressure to engage but still snaps out of engagement. Adjusting pin must be permitted to enter the closest hole after the adjustment has been made to lock the adjusting ring in the proper position. A new clutch frequently requires several adjustments until friction discs are worn into full surface contact.

2. LUBRICATION The ball bearing or plain bronze throwout collar is the only part on clutches requiring lubrication. Plain bronze collars require a small amount of lubricant once a day before starting, and as otherwise required, due to severe operating conditions. Ball bearing collars require lubrication every 25 hours of operation or more frequently if required, depending upon operating conditions.

3. NOISE Excessive wear of the clutch driving plate and excessive heating due to loose pulley bearing is usually accompanied by a noisy operating condition, and it is therefore suggested that a clutch which develops noise after a period of operation should be checked to insure proper alignment.

4. FRICTION DISC REPLACEMENT When the adjusting ring cannot be screwed up any tighter, the friction discs are worn out and must be replaced. Wherever split driving plates are used, these may be removed from clutch by unbolting the driving ring or by moving the driving spider along the shaft so that the driving plate segments may be withdrawn. With solid driving plates it is necessary to remove the clutch from the shaft, in order to replace worn friction discs, except in cases where clutch can be disassembled from the throwout collar end and driving plates removed over the end of the clutch shaft.

5. REPAIR PARTS In order to properly identify parts when ordering repairs, always refer to the unit or specification number on the name plate which is located on the clutch floating plate. Also specify serial number and type of machine clutch is mounted on. Prices and delivery on replacement parts will be furnished upon request.

VERSON ALLSTEEL PRESS COMPANY
Chicago 19, Illinois

LS-868
7-1-52

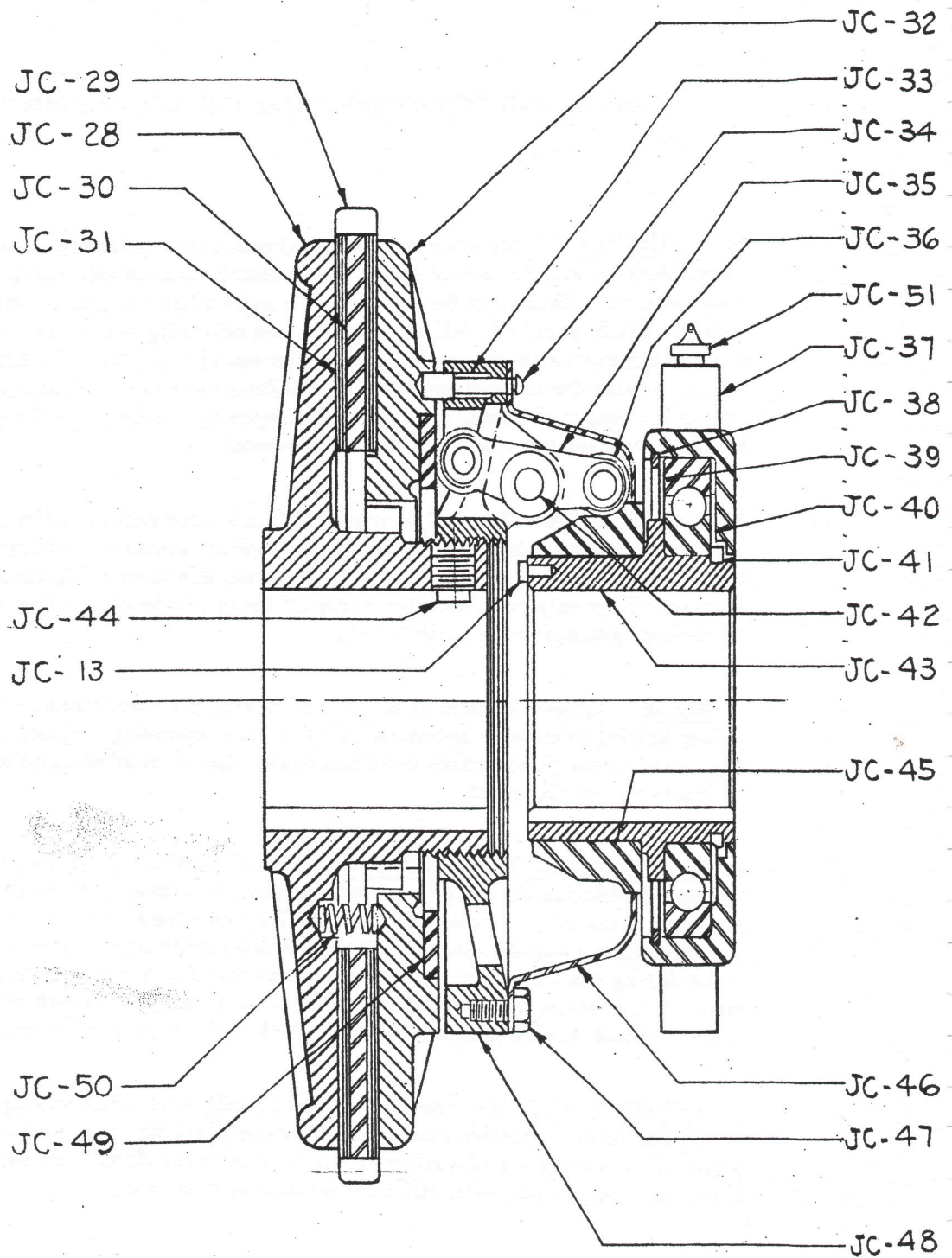
151-SW

REPAIR PARTS LIST FOR SINGLE PLATE MODEL C

Drawing No.

ROUTING

S. C.	
L. D.	
DR. LAY.	
DR.	
MILL	
SD.	
SLOT	
KEY	
GR.	
F. C.	
T. W.	
A. W.	
PLN.	
HOR. MILL	
T. C.	
LINE	
ANN'L	
HRDN.	
ROLL	
HEAT TREAT	



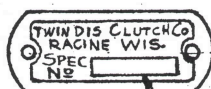
NOTE: IT IS RECOMMENDED, THAT PARTS INDICATED WITH AN ASTERISK, BE CARRIED IN THE CUSTOMERS STOCK FOR EMERGENCY REPLACEMENT PURPOSES.

UNLESS OTHERWISE SPECIFIED
TOLERANCE FOR ALL FINISHED DI
TOLERANCE FOR ALL FINISHED FR
TOLERANCE FOR UNFINISHED WEL
WORK TO DIMENSIONS, DO NOT SI

CL CLUTCH	INDEX NO	NAME OF PART	INDEX NO	NAME OF PART
	JC-13	SOC. HD. CAP SCREW	*JC-40	BALL BEARING
	JC-28	HUB & BACK PLATE	JC-41	SNAP RING
	JC-29	DRIVING PLATE	JC-42	LEVER PINS
*	JC-30	CLUTCH LINING	JC-43	CONE SLEEVE
	JC-31	LINING RIVETS	JC-44	DOG POINT SET SCREW
	JC-32	FLOATING PLATE	JC-45	CONE RING
*	JC-33	ADJ. LOCK PIN SPRING	JC-46	COVER
	JC-34	ADJ. LOCK PIN	JC-47	HEX. HD. CAP SCREWS
	JC-35	LEVERS	JC-48	ADJUSTING YOKE
	JC-36	ROLLERS	JC-49	ROLLER DISC.
	JC-37	CONE COLLAR	*JC-50	RELEASE SPRINGS
	JC-38	SNAP RING	JC-51	GREASE FITTING
	JC-39	WASHER		

TO ADJUST CLUTCH

PULL ADJUSTING PIN "A" OUT AND TURN ADJUSTING YOKE OR RING TO RIGHT OR CLOCKWISE UNTIL OPERATING LEVER REQUIRES A DISTINCT PRESSURE TO ENGAGE, CLUTCH MUST NEVER BE SO LOOSE THAT TOGGLE WILL LOCK PAST CENTER. (SMALL SCREWS ON SLIDING MEMBER "B" ARE PROVIDED TO PREVENT LOCKING OF CLUTCH AND REPEATING OF PRESS BRAKE) CLUTCH SHOULD BE ADJUSTED FAIRLY TIGHT SO THAT VERY LITTLE SLIP WILL OCCUR UNDER FULL LOAD AND WHEN IN RELEASE POSITION, CLUTCH PLATES MUST HAVE JUST ENOUGH CLEARANCE TO PREVENT DRAGGING AND HEATING.



REFER TO THIS NUMBER WHEN ORDERING PARTS

ROUTING

S. C.	
L. D.	
DR. LAY.	
DR.	
MILL	
SD.	
SLOT	
KEY	
GR.	
F. C.	
T. W.	
A. W.	
PLN.	
HOR. MILL	
T. C.	
LINE	
ANN'L	
HRDN.	
ROLL	
HEAT TREAT	

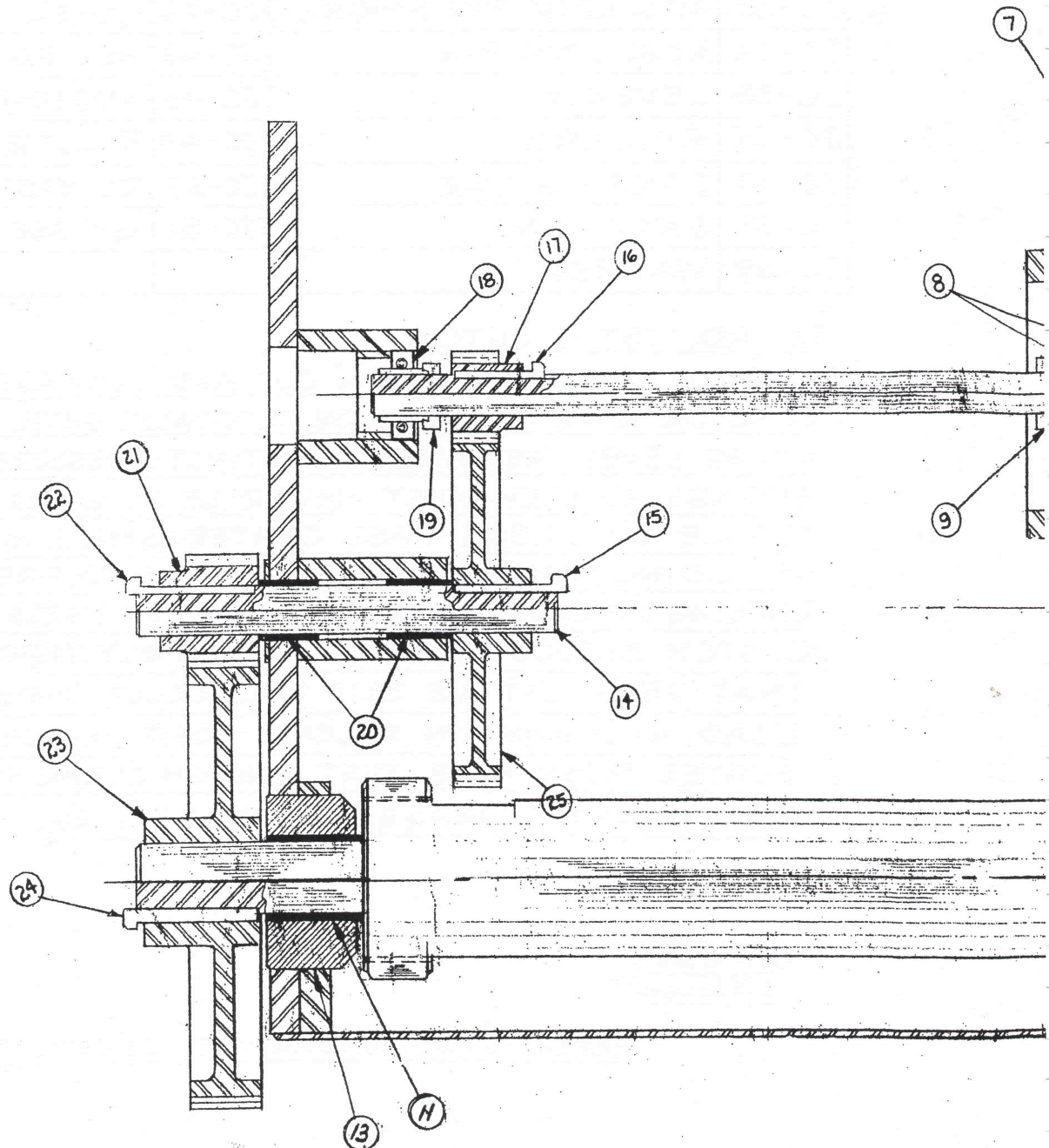
Drawing No.	TRADE Verson MARK	DATE
M-S-151	VERSON ALLSTEEL PRESS CO. CHICAGO, ILL.	12-9-42
REVISED		SCALE
	MACHINE PRESS BRAKES	DR: B.V.
	PART SINGLE P. MOD. CL CLUTCH	CH: 19

CIMAL MACHINE DIMENSIONS $\pm .005$.
 ACTIONAL MACHINE DIMENSIONS $\pm 1/64$.
 DIMENTS $\pm 1/8$.
 ALE DRAWINGS.

NOTE: IT IS
AN ASTERISK,
EMERGENCY RE

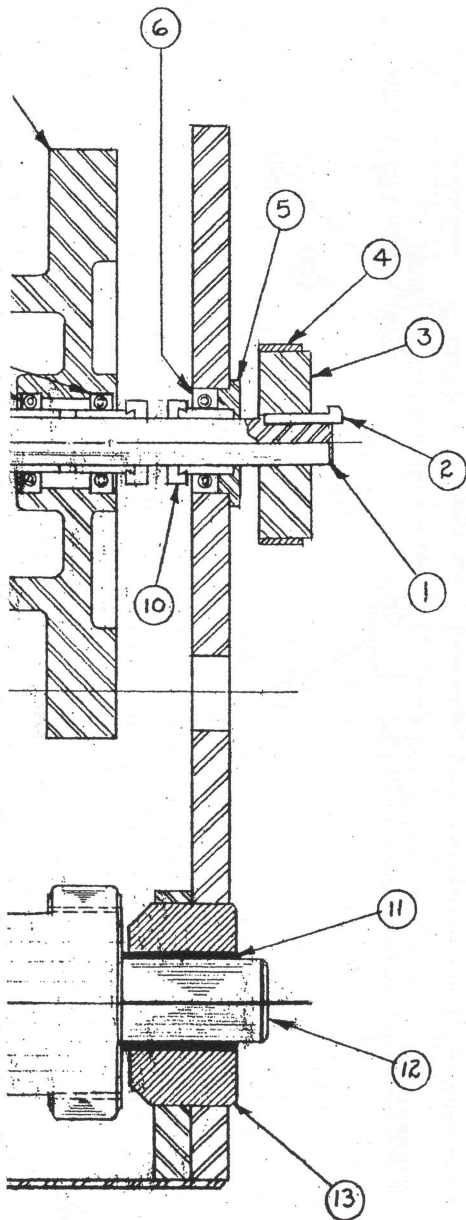
NOTE:-

BEARINGS NO. 6 8 & 18 ARE
NOT TO BE LUBRICATED.



TOLERANCE $\pm .005$ FOR ALL FINISHED MACHINE DIMENSIONS
TOLERANCE FOR ALL ROUGH MACHINE DIMENSIONS $\pm 1/64$.
TOLERANCE FOR FABRICATED SECTIONS WITHOUT MACHINING
OVERALL DIMENSIONS $\pm 1/8$. WORK TO DIMENSIONS.
DO NOT SCALE DRAWINGS.

RECOMMENDED, THAT PARTS INDICATED WITH
BE CARRIED IN THE CUSTOMERS STOCK FOR
REPLACEMENT PURPOSES.

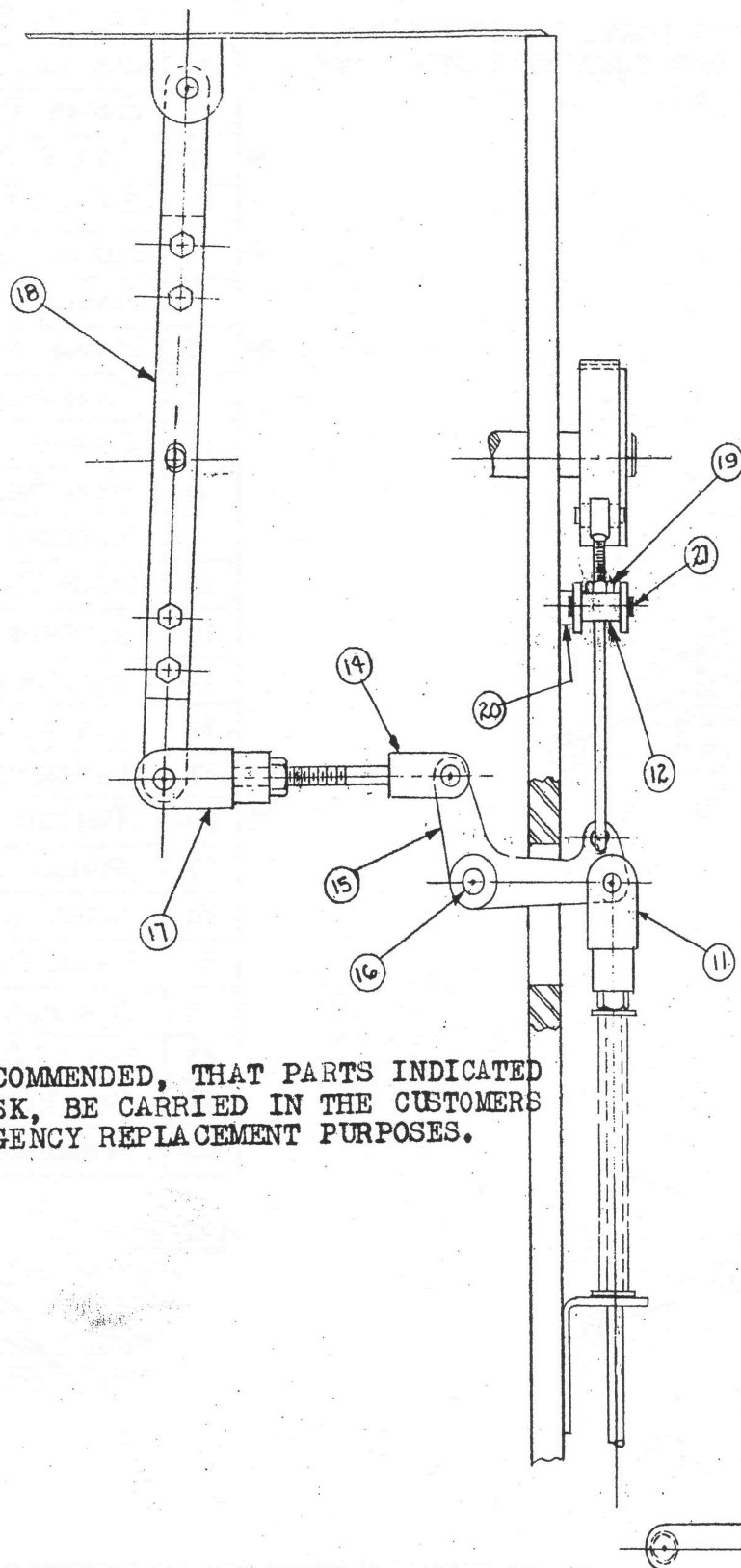


PART NO.	NAME OF PART
1	CLUTCH SHAFT
2	GIB KEY
3	BRAKE DRUM
* 4	BRAKE BAND
5	BRAKE BEARING INSERT
* 6	BRAKE BEARING
7	FLYWHEEL
* 8	FLYWHEEL BEARING
9	FLYWHEEL BEARING COLLAR
10	BRAKE BEARING COLLAR
11	MAIN BEARING BUSHINGS
12	ECCENTRIC SHAFT
13	MAIN BRG.
14	INTERMEDIATE SHAFT
15	GIB KEY (INTERMEDIATE GEAR)
16	GIB KEY (INTERM. PINION)
17	INTERMEDIATE PINION
* 18	PINION BEARING
19	PINION BEARING COLLAR
20	INTERM. SHAFT BUSHINGS
21	BULL PINION
22	GIB KEY (BULL PINION)
23	BULL GEAR
24	GIB KEY (BULL GEAR)
25	INTERMEDIATE GEAR

NOTE:-

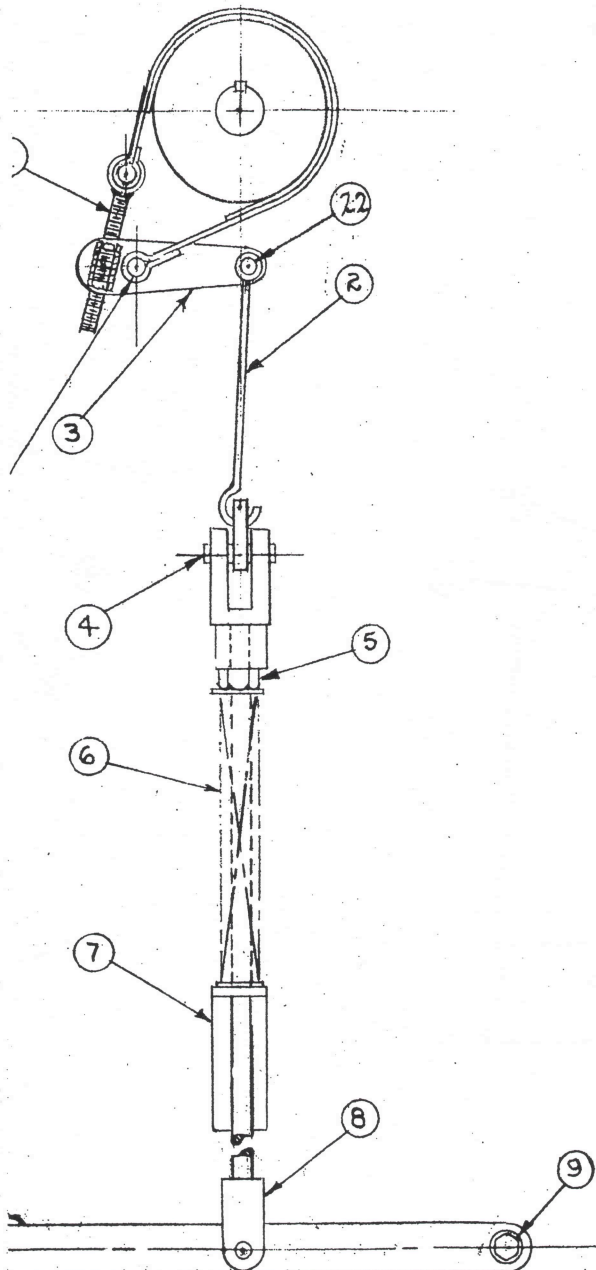
WHEN ORDERING REPAIR
PARTS GIVE SERIAL NO. OF
PRESS BRAKE, NAME & NO. OF
PART & THIS DRG. NO. 7815-M-618

Drawing No. 7815	TRADE Verson MARK VERSON ALLSTEEL PRESS CO. CHICAGO, ILL.	DATE 3-18-49
M-618-A		SCALE 3/16" = 1"
REVISED	MACHINE 16-48 PRESS BRAKE	DR: L GIRDLEY
	PART REPAIR PARTS DRIVE	CH: 21



NOTE: IT IS RECOMMENDED, THAT PARTS INDICATED WITH AN ASTERISK, BE CARRIED IN THE CUSTOMERS STOCK FOR EMERGENCY REPLACEMENT PURPOSES.

TOLERANCE $\pm .005$ FOR ALL FINISHED MACHINE DIMENSIONS.
TOLERANCE FOR ALL ROUGH MACHINE DIMENSIONS $\pm 1/64$.
TOLERANCE FOR FABRICATED SECTIONS WITHOUT MACHINING
OVERALL DIMENSIONS $\pm 1/8$. WORK TO DIMENSIONS.
DO NOT SCALE DRAWINGS.

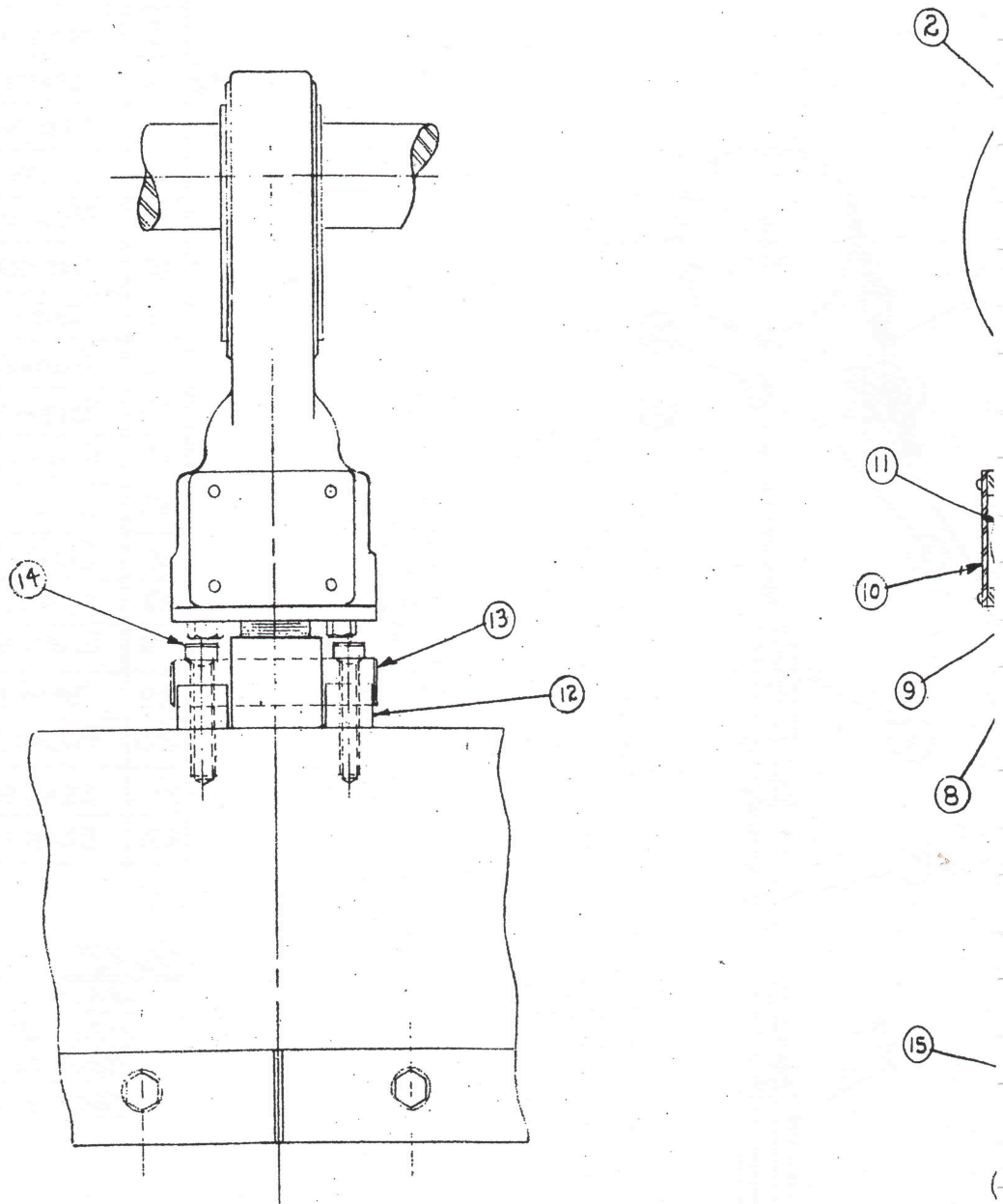


PART No	NAME OF PART
1	BRAKE BAND ROD
2	BRAKE RELEASE HOOK
3	BRAKE LEVER
4	CLEVIS PIN
5	1/2-13 STD. HEX. NUT
* 6	SPRING
7	SPRING ANCHOR
8	VERTICAL CLUTCH ROD
9	5/8-11 HEX. HD. CAP SCR.
10	TREADLE BAR
11	CLEVIS
12	SWIVEL
13	BRAKE LEVER ANCHOR PIN
14	CLUTCH CLEVIS ROD
15	CLUTCH & BRAKE LEVER
16	CLUTCH LEVER PIN
17	CLEVIS
18	CLUTCH SHIFTER YOKE
19	JAM NUT
20	BRAKE LEVER SPACER
21	BRAKE BAND PIN
22	BRAKE RELEASE HOOK PIN

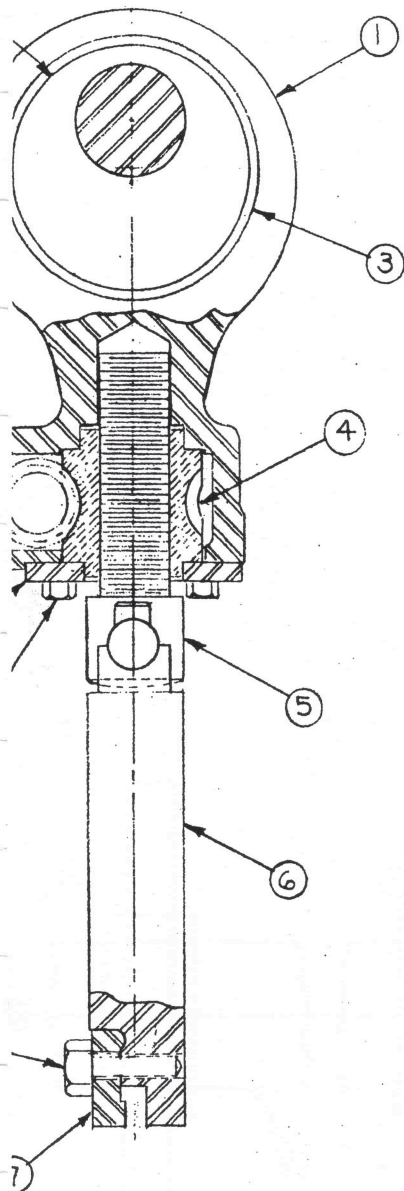
NOTE:-

WHEN ORDERING REPAIR
PARTS GIVE SERIAL NO. OF
PRESS BRAKE, NAME & NO. OF
PART & THIS DRY. NO. 7815-M620

Drawing No. 7815 M-620 REVISED	TRADE Verson MARK VERSON ALLSTEEL PRESS CO. CHICAGO, ILL.	DATE 3-23-49
	MACHINE 16-48 PRESS BRAKE	SCALE
	PART REPAIR PARTS BRAKE & TREADLE	DR. GIRDLEY
		CH. 23



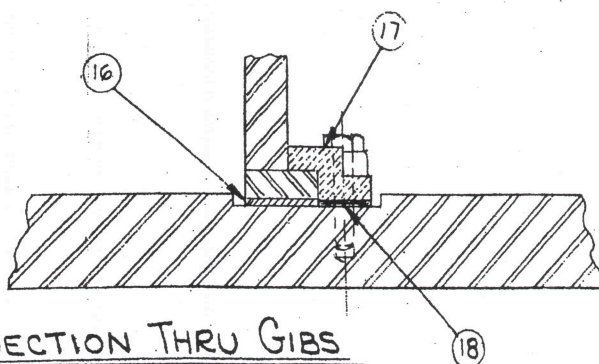
TOLERANCE $\pm .005$ FOR ALL FINISHED MACHINE DIMENSIONS
TOLERANCE FOR ALL ROUGH MACHINE DIMENSIONS $\pm 1/64$.
TOLERANCE FOR FABRICATED SECTIONS WITHOUT MACHINING
OVERALL DIMENSIONS $\pm 1/8$. WORK TO DIMENSIONS.
DO NOT SCALE DRAWINGS.



PART Nº	NAME OF PART
1	PITMAN
2	ECCENTRIC
3	PITMAN BUSHING
4	ELEVATING GEAR
5	ADJUSTING SCREW
6	RAM
7	RAM CLAMP
8	5/8x3/4 LG. SOC. HD. CAP SCREW
9	WORM GEAR RETAINING R.
10	WORM GEAR COVER R.
11	WORM
12	WRIST PIN SADDLES
13	WRIST PIN
14	SADDLE BOLTS 1/2x2" LG.
15	5/8x1 1/4 HEX. HD. CAP SCREW
16	GIB LINER
17	GIB
18	GIB SHIM

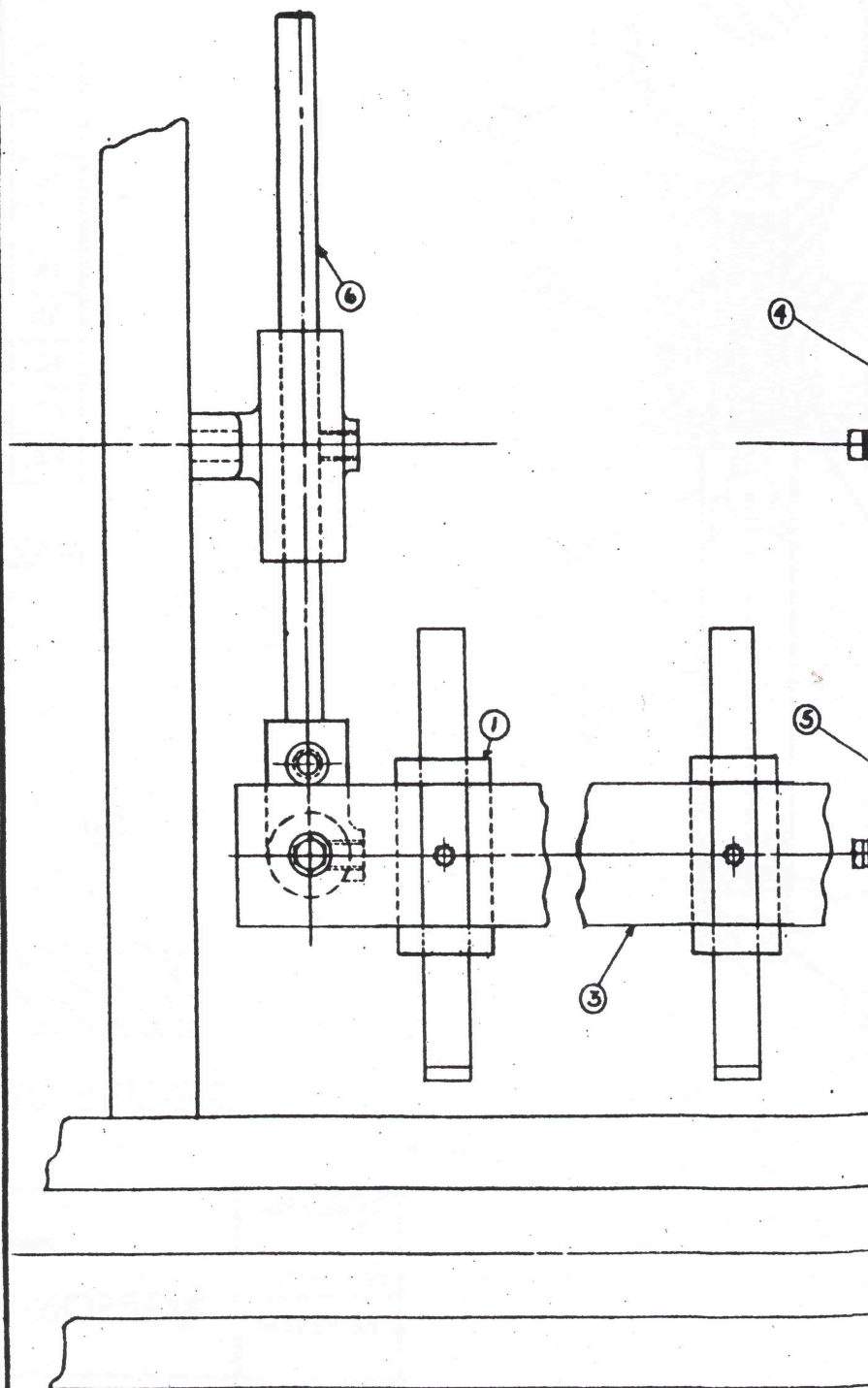
NOTE:-

WHEN ORDERING REPAIR
PARTS GIVE SERIAL NO. OF
PRESS BRAKE, NAME & NO. OF
PART & THIS DRG. NO. 7815-M 616



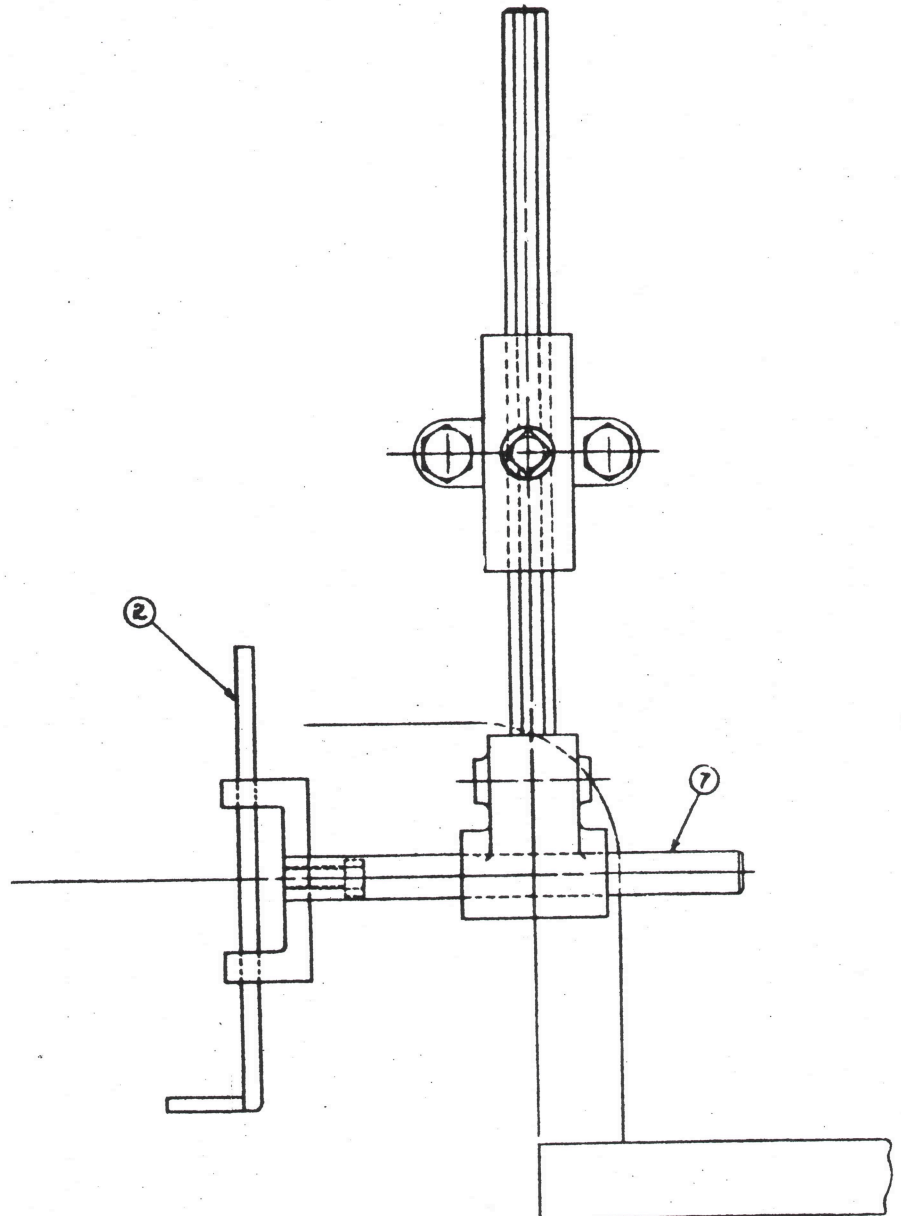
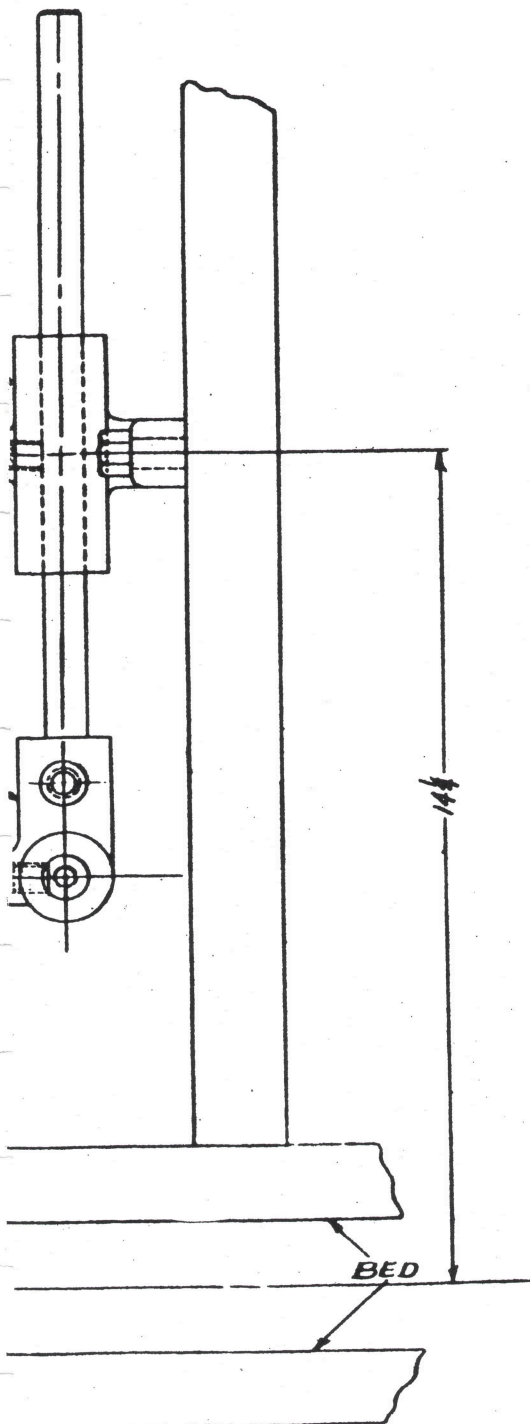
SECTION THRU GIBS

Drawing No. 7815 M-616 REVISED	TRADE Verson MARK VERSON ALLSTEEL PRESS CO. CHICAGO, ILL.	DATE 3-23-49
	MACHINE 16-48 PRESS BRAKE	SCALE 1" = 4"
	PART REPAIR PARTS (CONNECTION)	DR: L GIRDLEY
		CH: 25



TOLERANCE $\pm .010"$ FOR ALL MACHINING
DIMENSIONS UNLESS OTHERWISE SPECIFIED.
WORK TO DIMENSIONS, DO NOT SCALE DRAWINGS.

PART NO.	PART	DWG. NO.
1	GAGE HOLDER	2449-N-91 ①
2	GAGE FINGER BAR	" " " " ②
3	GAGE BAR	" " " " ③
4	GAGE HOLDER	1787-N-93 ①
5	GAGE ELBOW	1787-N-93 ②
6	HOLDER BAR	" " " " ③
7	GAGE LOCK BAR	" " " " ④



DRAWING No. 2449 N-90 REVISED 3-17-44	TRADE Verson MARK VERSON ALLSTEEL PRESS CO. CHICAGO, ILL. MACHINE C-10 & C-20 JR. PR. BRAKE PART BACK GAGE	DATE R-15-46 SCALE 1/2" = 1" DR. LPG CH. B
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