

INSTRUCTIONS

FOR

INSTALLATION-OPERATION & MAINTENANCE

300 TON

HOBGING PRESS

#758 - PA2

Designed & Built By:

Elmes Engineering Works
American Steel Foundries
Cincinnati, Ohio

Shipped To:

Brigham Young University

Customer's
Purchase Order:

#007403

Elmes Shop Order:

N-8763

PRESS SPECIFICATIONS

Type: 3 Column
Purpose: Hobbing
Capacity: 300 Tons
Platen Dia: 16"
Distance Between Columns: 17"
Opening, Platen to Tophead: 18"
Stroke: 12"
Ram Diameter: 12" Single Acting
Operating Pressure: 5300 P.S.I.
Height, Floor To Platen: 46"
Operating Speeds:
 Advance: 1" per min.
 Press: 1" per min.
 Return: By Gravity

Pumping Unit:

SECO 20 LAH #0503 Unit .5
G.P.M. Delivery Complete with
3 H.P., 1800 R.P.M., 3 Ph.,
60 Cy., 440 V. Motor and
Magnetic across-the-line type
Starter. 20 Gallon oil
Reservoir.

OPERATING INSTRUCTIONS OF PRESS

The press is of the single acting moving up type, controlled by means of a 1-1/2" plug type angle valve.

The closing (clockwise rotation of the handwheel) of the 1-1/2" angle valve, allows pressure from pump to go to cylinder, where it acts on the ram, closing the press. When the 1-1/2" angle valve is opened, (counterclockwise rotation of the handwheel) the oil from the pump is directed to the tank. Pressure in the cylinder is released and the platen is returned by gravity.

Operating pressure may be regulated by the SECO Relief Valve located on the pumping unit. Relief pressure is set by means of the adjusting screw on the valve. Pressure is increased by turning clockwise. Relief Pressure is decreased by turning counterclockwise. The adjusting screw may be locked by the locknut provided. (See Parts Dwg. #).

The Hydraulic cylinder is of the single acting type. The stuffing box is packed with "V" Leather Packings. If leakage occurs around the Ram, the Gland nuts should be tightened sufficiently until leakage ceases.

Occasional repacking of the stuffing box may be necessary. For cylinder section see Std. Sheet #103.

It is of utmost importance that the oil used as a pressure medium be kept clean at all times. Periodic draining of the oil tank and filtering the oil is necessary.

With proper care and attention, this hydraulic equipment will give many years of service with the minimum maintenance expense.

The press is equipped with a set of guards, including a sliding shutter and 1-3/16" thk. bullet proof glass window.

ordered 30 gal from Utah oil @ 93¢/gal

GENERAL INSTRUCTIONS FOR PRESS

In many instances, it may be necessary that the Pumping Unit, Oil Reservoir Valves have to be separated from the Press to facilitate shipment.

Whenever a Press is shipped partially dismantled, all pipes and fittings are plainly tagged showing their exact location, thereby making it convenient as possible to re-assemble.

The enclosed Drawings will enable you to identify and locate the various parts.

After the Press has been levelled and securely fastened to floor or foundation, it should be thoroughly cleaned to remove all dirt and grit that may have accumulated in transit. The Platen Guides should be well oiled or greased.

Make sure that the Oil Reservoir or Pump Tank is absolutely clean and free from all dirt, or other foreign material of any kind.

NEVER USE KEROSENE, GASOLINE OR WASTE. USE ONLY CLEAN DRY RAGS.

When removing coverings from pipe connections, be sure that the pipes are thoroughly clean and that no dirt or grit is lodged in them. It is advisable to blow out all pipes with air before putting them in place.

All connections should be drawn up tightly so as to prevent any possibility of leakage.

If the Oil Reservoir is equipped with a cooler, it should be piped to the cold water system of the Plant. A Throttle Valve should be installed on the exhaust side to check flow of water through the cooler sufficiently to maintain the oil at approximately 160 to 200 degrees F. (See cooler installation Drawing).

The Pump Tank has a capacity of 20 gallons and should be kept filled to center of oil sight gauge with a good grade of Hydraulic Oil having a viscosity range of 275 to 315 ^{S.S.U.} at 100 degrees F for ambient temperatures above 60 degrees F.

Hydraulic Pressure Pump and controls depend entirely upon the fluid medium for their lubrication. A good grade of Hydraulic Oil must be used to prevent undue trouble; because of water affinity, sludge or foaming.

Never operate Pumping Unit above 155 degrees F. (Maximum safe operating temperature.)

IMPORTANT:

Before starting Motor, it is important that all Stop Valves, with the exception of the drain valve, are fully opened unless otherwise specified.

Suitable Dies or Blocks should be placed in the Press so that Platen does not exceed the maximum travel for which it is designed.

Generally, when column stops are furnished with the Press, they are intended to indicate to the Operator the amount of stroke that is available. These stops will serve also to stop the Platen in an emergency, and are not designed to carry the full tonnage of the Press for continuous operation.

PUMPS:

Before running Press, it is advisable to allow the Pumps to run idly and circulate the Oil for a few minutes. Care and service of Pumps is described in the enclosed bulletin.

IMPORTANT:

Motor must rotate in direction indicated by arrows on Pumps. NEVER operate Press or run Pumps if the Motor is operating in the wrong direction. This would cause serious damage to the Pumping Unit.

MOTOR:

Care and lubrication of the Motor is to be in accordance with instructions of Motor manufacturer attached to the Motor.

RELIEF VALVE:

This unit protects the Pumping Unit from overload. The pressure setting of this valve has been checked before shipment. It is, however, advisable to recheck the pressure setting before the Press is put into operation.

To re-set Relief Valve, loosen lock-nut on pressure adjusting screw located on cover of Valve. Clockwise rotation of adjusting screw increases pressure, while counter-clockwise rotation decreases pressure.

The setting of the Relief Valve should never exceed the working pressure specified for the capacity of the Press.

PRESS:

The only attention the press will require is to keep the guides lubricated and the packing gland tightened if leakage should occur at Ram. Never tighten gland any more than is necessary to stop leakage. Column Nuts should be tightened occasionally.

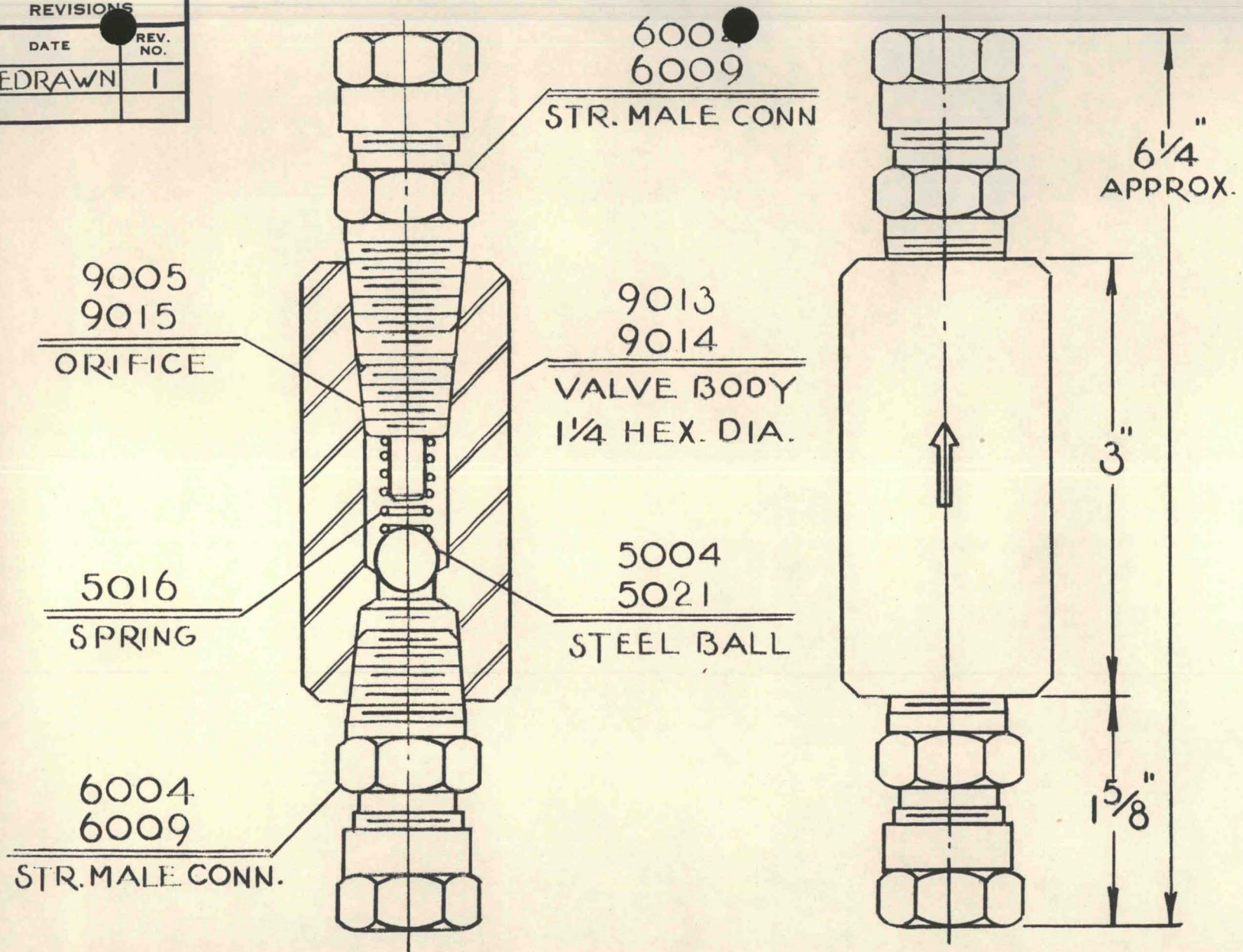
HYDRAULIC GAUGE:

This Gauge is of the Bourdon tube type. The life and accuracy of this instrument can be prolonged with proper use. The Gauge is provided with a shut-off valve. This valve should be kept closed (except when making or checking pressure adjustments) to prolong life and accuracy of the Gauge.

When pressure readings are required, Gauge shut-off Valve should be opened only about 1/8 of a turn, or just sufficiently to allow pressure gauge to operate.

REVISIONS	
DATE	REV. NO.
REDRAWN	1

22 CA



CV-2-S	
NO. REQ.	PART N°
1	5004
1	5016
2	6004
1	9005
1	9013

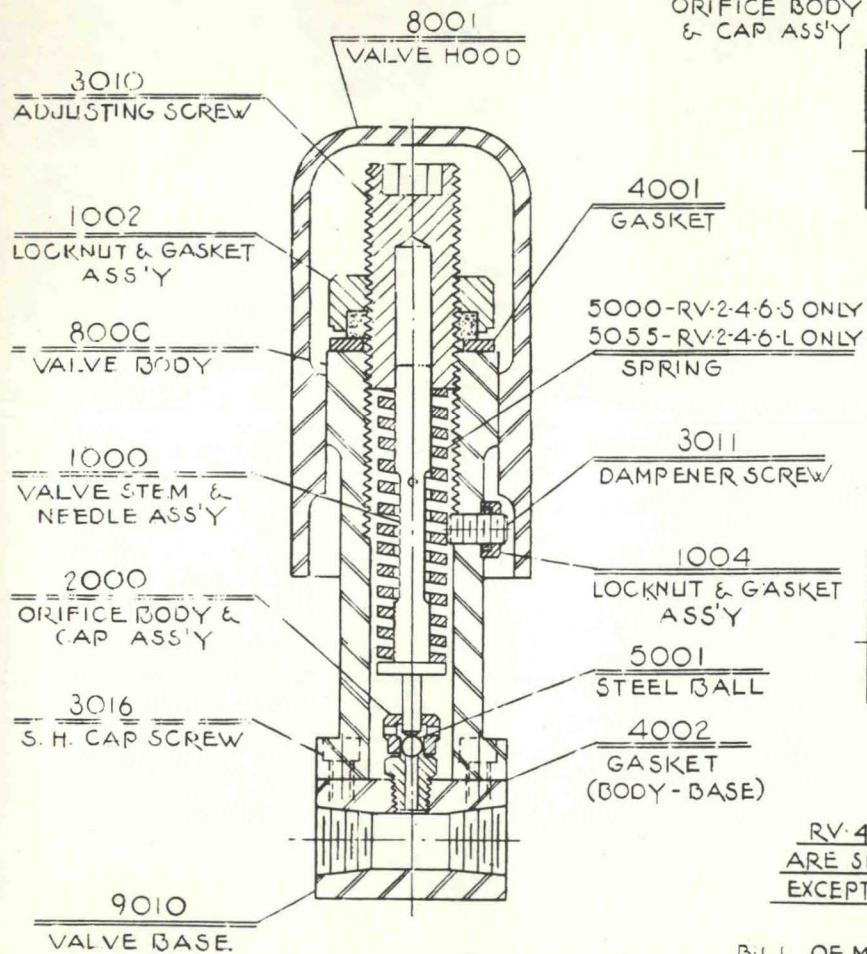
CV-6-S	
NO. REQ.	PART N°
1	5016
1	5021
2	6009
1	9014
1	9015

MODEL	PIPE TAP		MAX. G.P.M.	MAX. PRESSURE P.S.I.
	INLET	OUTLET		
CV-2-S	1/4	1/4	2	10,000
CV-6-S	3/8	3/8	6	6,000

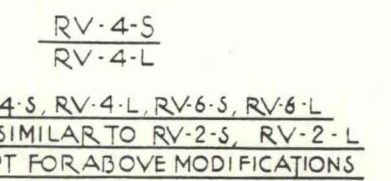
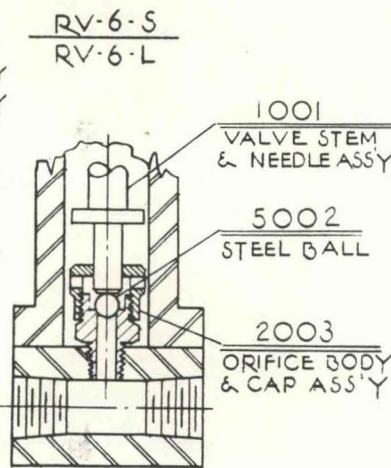
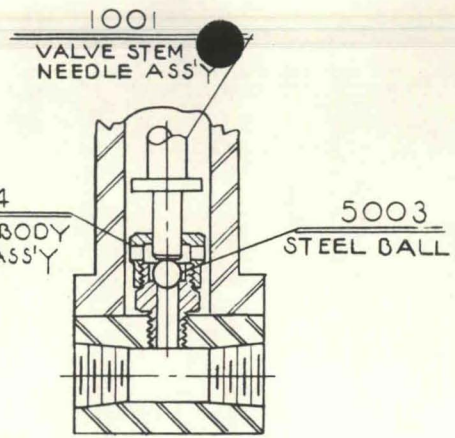
SIMPLEX ENGINEERING
ZANESVILLE, OHIO

SCALE 1=1	DATE 9-26-52	DRAWN REC	CHECKED	APPROVED
SECO HIGH PRESSURE CHECK VALVES				22 CA

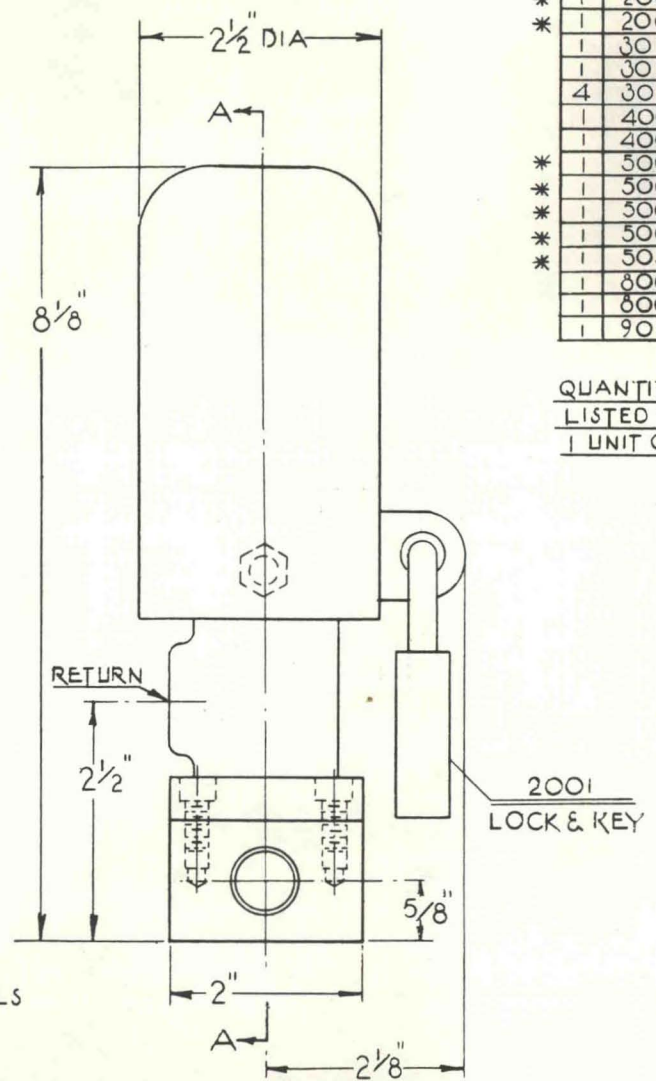
MODEL	PIPE TAP		MAX GPM	ADJUSTABLE PRESSURE RANGE P.S.I.
	INLET	RETURN		
RV-2-S	3/8	3/8	2	3000-10000
RV-4-S	3/8	3/8	4	2000-5000
RV-6-S	3/8	3/8	6	1000-3000
RV-2-L	3/8	3/8	2	500-4000
RV-4-L	3/8	3/8	4	500-3000
RV-6-L	3/8	3/8	6	500-2000



RV-2-S RV-2-L
SECTION A-A



BILL OF MATERIAL COMMON TO ALL MODELS
EXCEPT THOSE INDICATED *
ON PARTS LIST



RV-10CA	
NO. REQ.	PART NO.
1	1000
1	1001
1	1002
1	1004
*	12000
*	12001
*	12003
*	12004
1	3010
1	3011
4	3016
1	4001
1	4002
*	15000
*	15001
*	15002
*	15003
*	15055
1	8000
1	8001
1	9010

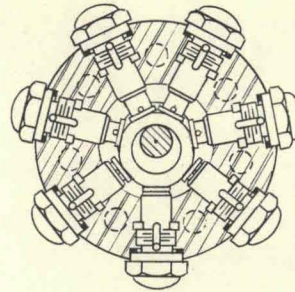
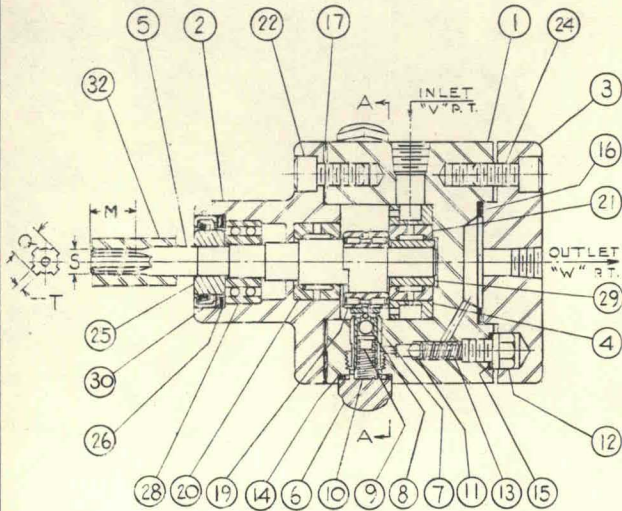
QUANTITIES LISTED FOR
1 UNIT ONLY

THE SECO RELIEF VALVE IS USED WHERE IT IS DESIRABLE TO LIMIT THE MAXIMUM OPERATING PRESSURE. THE SIX MODELS COVER THE RANGE OF 500 P.S.I. TO 10,000 P.S.I. EACH VALVE IS ADJUSTABLE WITHIN THE LIMITS SHOWN ON THE ABOVE TABLE. IT WILL OPERATE IN ANY POSITION. RELIEF PRESSURE IS SET BY MEANS OF THE ADJUSTING SCREW (PT. 3010). PRESSURE IS INCREASED BY TURNING CLOCKWISE. LOCKING IS ACCOMPLISHED BY LOCKNUT (PT. 1002) WHICH IS EQUIPPED WITH INTEGRAL PACKING FOR SEALING OFF LEAKAGE PAST THREADS.

VALVING IS BY MEANS OF AN UNRESTRICTED FLOATING BALL FREE TO FIND A PERFECT SEAT. THE SEAT (PT. 2000, 2003, OR 2004) IS RENEWABLE. A HARDENED STEEL NEEDLE RESISTS THE PRESSURE OF THE BALL. THIS NEEDLE IS CLOSELY GUIDED IN A BAFFLE TO PREVENT HIGH VELOCITY PRESSURE FROM EXERTING ITSELF ON THE SPRING ASSEMBLY. A DAMPENER SCREW (PT. 3011) PERMITS ADJUSTMENT FOR CHATTERLESS OPERATION. THE VALVE ASSEMBLY IS HOODED & PROVIDED WITH LOCK & KEY.

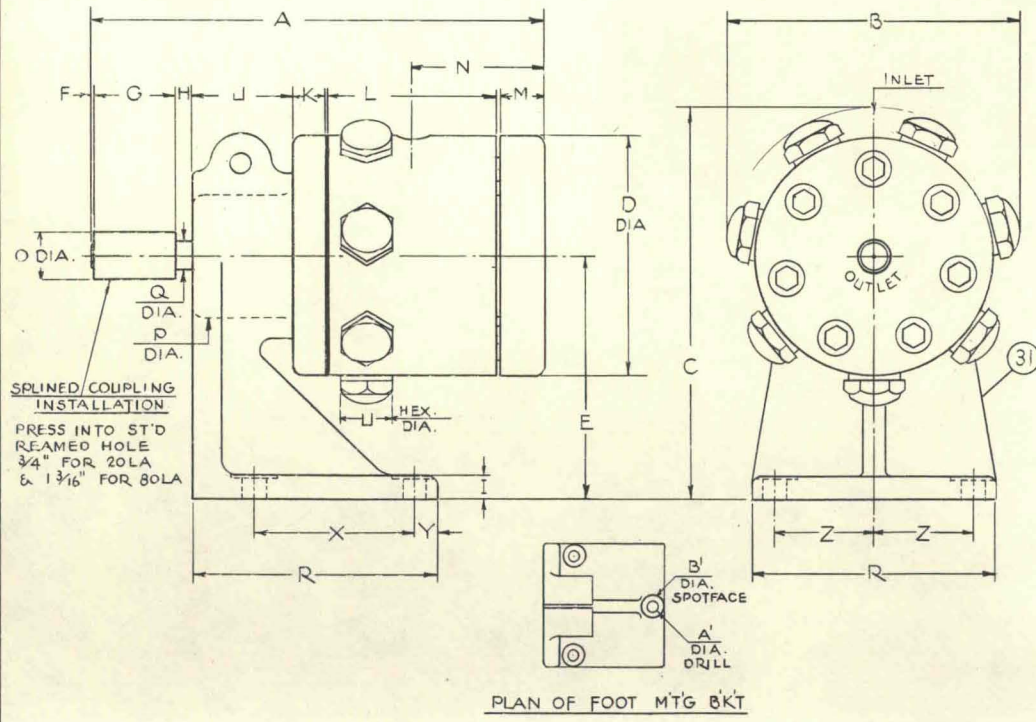
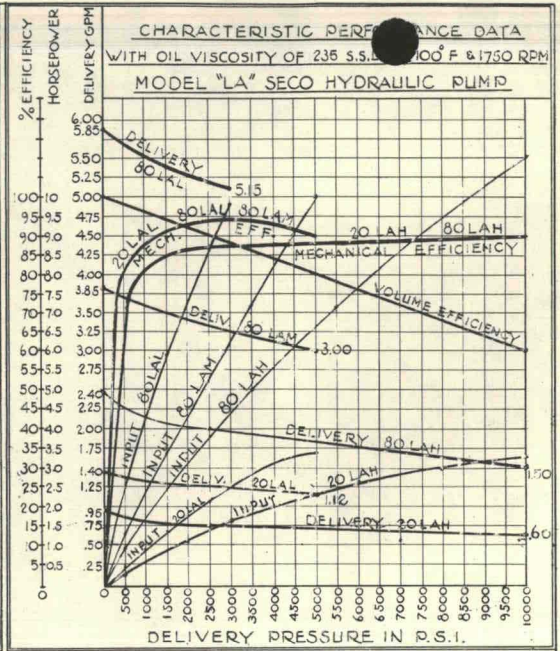
SIMPLEX ENGINEERING
ZANESVILLE, OHIO

SCALE	NONE	DATE	5-23-52	DRAWN	REC	CHECKED	TCP	APPROVED	TR
SECO RELIEF VALVE									RV-10CA



SECTION A-A

PTN#	PART NAME	QTY
1	PUMP BODY	1
2	MOTOR END COVER	1
3	HYDRO END COVER	1
4	INLET CAGE	1
5	ECCENTRIC SHAFT	1
6	CYLINDER SLEEVE	7
7	HOLLOW PISTON	7
8	INLET CHECK BALL	7
9	INLET CHECK BALL STOP	7
10	CAM FOLLOWER SPRING	7
11	OUTLET CHECK BALL	7
12	OUTLET CHECK BALL STOP	7
13	OUTLET CHECK SPRING	7
14	CYL. SLEEVE COPPER GASKET	7
15	OUTLET CHK COPPER GASKET	7
16	HYD. END COVER COPPER GASKET	1
17	MOTOR END COVER PAPER GASKET	REC
19	ECCENTRIC CTR ROLLER BEARING	1
20	MOTOR END ROLLER BEARING	1
21	HYDRO END ROLLER BEARING	1
22	S.H. CAP SCREW - MOTOR END	7
24	S.H. CAP SCREW - HYDRO END	7
25	OIL SEAL SHAFT COLLAR	1
26	RADIAL THRUST BRG RETAINER	1
28	RADIAL THRUST BALL BEARING	1
29	INNER RACE HYD. ROLLER BEARING	1
30	ECCENTRIC SHAFT OIL SEAL	1
31	FOOT MTG. BRACKET - OPTIONAL	1
32	SPLINED COUPLING	1



NOTES
SECO RADIAL PUMPS
SHOULD BE MOUNTED BELOW THE OIL RESERVOIR WHICH SUPPLIES OIL TO THE PUMP IN ORDER TO INSURE CONSTANT PRIMING BY GRAVITY.

OIL SPECIFICATION - GOOD GRADE OF HYDRAULIC OIL WITH VISCOSITY OF 235 S.S.U. AT 100° F. IS RECOMMENDED

KEEP OIL CLEAN - FILTER OIL THRU SCREEN OF NOT LESS THAN 120 MESH PLACED IN INTAKE TO PUMP PREFERABLY OF THE MECHANICAL CLEANING TYPE OF AT LEAST TWICE THE CAPACITY OF THE PUMP

THE HYDRAULIC FLUID FURNISHES COMPLETE LUBRICATION TO ALL PARTS; NO OTHER LUBRICATION IS NEEDED.

THIS PUMP WILL RUN EITHER DIRECTION AT WILL

RECOMMENDED MOTOR SPEED
MAXIMUM 1750 RPM
MINIMUM 200 RPM
PUMP PERFORMANCE DATA BASED ON 1750 RPM, LOWER SPEEDS APPROXIMATELY PROPORTIONAL.

MODEL	20LAH	30LAH	40LAH	50LAH	60LAH
MAX. PRESSURE - SPOT RATING - PSI	5000	10000	3000	10000	5000
MAX. PRESSURE CONT. RATING - PSI	3000	6000	2000	6000	3000
DELIVERY AT MAX. PRESSURE - GPM	1.12	.60	5.15	1.50	3.00
SPEED - RPM	1750	1750	1750	1750	1750
H.P. INPUT AT MAX. PRESSURE	3.4	3.3	9.75	11.00	10.00

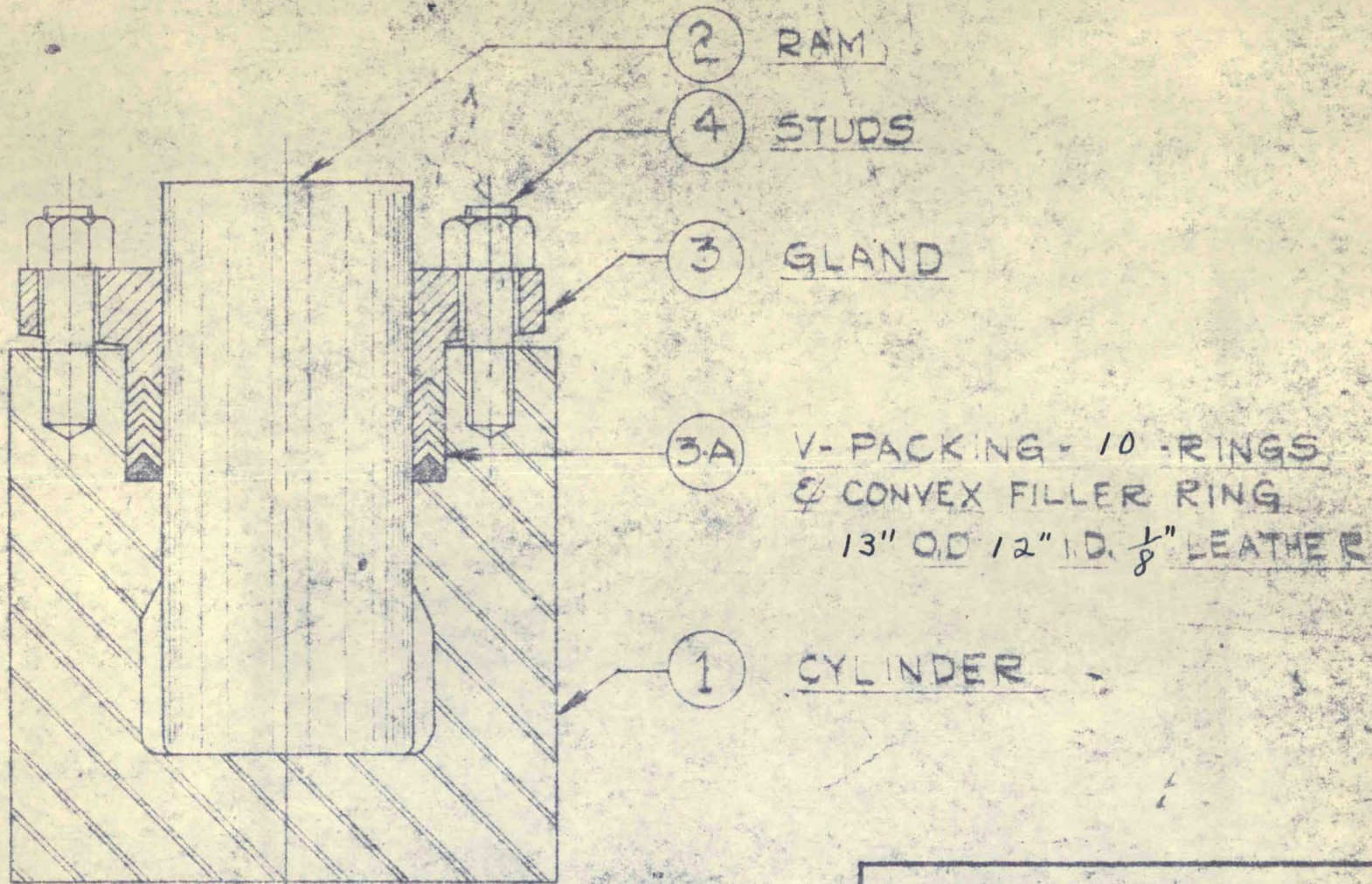
GENERAL DIMENSIONS IN INCHES	MODEL				
	20LAH	30LAH	40LAH	50LAH	60LAH
A	7 1/2	7 1/2	10	10	10
B	4 3/4	4 3/4	6 3/8	6 3/8	6 3/8
C	6 13/32	6 13/32	8 9/32	8 9/32	8 5/32
D	3 15/16	3 15/16	5 3/8	5 3/8	5 3/8
E	2	2	5	5	5
F	1/32	1/32	1/32	1/32	1/32
G	1 3/8	1 3/8	1 3/4	1 3/4	1 3/4
H	1 1/32	1 1/32	3/8	3/8	3/8
I	3/8	3/8	1/2	1/2	1/2
J	1 5/8	1 5/8	2	2	2
K	1/2	1/2	3/4	3/4	3/4
L	2 3/4	2 3/4	4	4	4
M	3/4	3/4	1	1	1
N	2 3/16	2 3/16	3 1/16	3 1/16	3 1/16
O	7 5/8	7 5/8	11 8/16	11 8/16	11 8/16
P	2	2	2 1/2	2 1/2	2 1/2
Q	4.99	4.99	7.49	7.49	7.49
R	4	4	5	5	5
S	3/8	3/8	9/16	9/16	9/16
T	1205	1205	1808	1808	1808
U	7/8	7/8	1 1/8	1 1/8	1 1/8
V	3/8	3/8	3/4	3/4	3/4
W	1/4	1/4	3/8	3/8	3/8
X	2 5/8	2 5/8	3 1/4	3 1/4	3 1/4
Y	3/8	3/8	1/2	1/2	1/2
Z	15/8	15/8	2	2	2
A1	2 5/8	2 5/8	3 1/4	3 1/4	3 1/4
B1	3/4	3/4	1	1	1

WEIGHT OF PUMP IN POUNDS					
STEEL PUMP ONLY	14	14	36	36	36
C.T. FOOT MTG BRACKET ONLY	5	5	9	9	9
PUMP WITH FOOT MTG BKT	19	19	45	45	45

PAT. NO. 2,461,835
SUPERSEDES SECO DWG. NOS. 323 AND 366

SIMPLEX ENGINEERING
ZANESVILLE, OHIO

SCALE NONE DATE 11-20-53 DRAWN REC CHECKED R.D.P. APPROV
MODEL "LA" SECO HYD. RADIAL PISTON PUMP 33-39 CA



ISSUED
ENGINEERING DEPT.

MAY 31 1936

ELMES ENGINEERING DIVISION
AMERICAN STEEL FOUNDRIES

TOLERANCE ON FRACTIONAL DIMENSIONS $\pm .010$ UNLESS OTHERWISE SPECIFIED.

AMERICAN STEEL FOUNDRIES
ELMES ENGINEERING WORKS
CHICAGO

ISSUE No.

SINGLE ACTING CYL.
WITH "V" LEA. PACKING

1

DR. BY

LO

SCALE

NONE

DRWG. NO.

STD

CHK. BY

DATE

5-29-46

SHEET

103-C