

BARCO
250TM

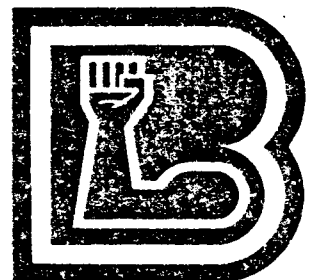
INTRODUCTION

This Parts Manual has been designed to assist you in identifying and ordering replacement parts for your Barko loader.

The manual is divided into seven sections: Nomenclature, Structural Upper, Structural Lower, Mechanical, Electrical, Hydraulic and Options and Accessories.

Your Barko loader has been designed to provide you with long, efficient service—and, in its manufacture, only the highest quality parts and components have been used.

“THE USE OF PARTS OTHER THAN GENUINE BARKO OR APPROVED PARTS MAY VOID ANY PRODUCT WARRANTY THAT MAY BE IN EFFECT AT THE TIME OF SUBSTITUTION.”



MODEL 250



WARNING

MAXIMUM HYDRAULIC PRESSURE FOR THIS MACHINE IS 2,000 psi. SETTINGS HIGHER THAN THIS MAY RESULT IN HARM TO PERSONS AND PROPERTY.

BARKO HYDRAULICS, INC.

In many instances, we have learned that the hydraulic relief valves of this equipment have been reset, increasing the maximum system pressure, and with it, the load the unit will lift before the relief valve opens. In some instances, the consequences of increasing this setting have been serious. The function of the relief valve is to provide a fuse action to protect the machine and the operator from overloading. When overloaded, different portions of the machine can become stressed to a level where parts fracture and serious physical damage to the equipment and personnel can result. **This is an extremely dangerous practice.**

Accordingly, you are advised that the setting of this valve is limited to a maximum of **2,000 psi**. Pressure settings in excess of this level render each and all Barko warranties null and void and constitute an obvious misuse and abuse of our product.

MODIFICATIONS

Slight modifications in design as dictated by field experience or desire to improve the unit, or changes of materials due to inability to procure those originally specified may become necessary. Such changes in design will be obvious and, wherever possible, parts or assemblies will be interchangeable with the original design.

ILLUSTRATIONS

The illustrations in the manual are intended to show typical construction of the various parts. In some instances the shapes or details of the parts illustrated may not exactly represent their actual appearance; however, they will serve to show the servicing methods explained or help to identify parts performing the same function.

CAUTION



1. Under no circumstances should any modifications be made to Barko loaders without factory authorization. This machine was designed to do a specific job and alterations to loader could result in injury to operator or machine.



2. If loader is not functioning properly, machine should be shut down and proper repair procedures followed.



3. Read this manual thoroughly. Get to know the operation and care of your Barko Loader.



4. Become as familiar as possible with the requirements of each loading job and the terrain you'll be working in before you start each job.



5. Go through the pre-start checklist thoroughly before you start each job — to make sure your equipment is in safe, working condition. Be sure all damage or defects are corrected first by qualified service personnel.



6. Make sure that all walking and climbing surfaces of the loader are free of dirt, debris, water, grease, oil, ice and snow . . . and don't leave loose tools and rags on the loader. One slip can be disastrous.



7. Be sure to wear shoes with some kind of non-slip soles—and always use both hands when climbing aboard the machine.



8. Do not allow anyone to ride on the outside of the cab or anywhere else on the machine while you're operating. Only the operator should be on the machine.



9. Be constantly aware of people and obstacles in your job area while operating—and never allow anyone to be under your boom or load.



10. If your machine is equipped with stabilizers, do not operate the loader until you have lowered the stabilizers and the machine is on firm, level ground or cribbing.



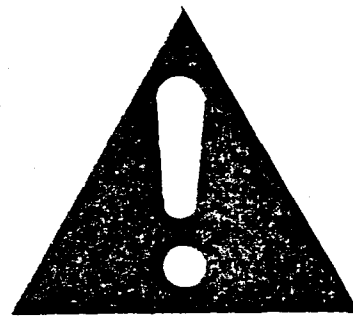
11. Try to keep your eyes on the load at all times. If you must look elsewhere, bring the loader to a stop.



12. **DO NOT OPERATE THE LOADER NEAR POWER LINES!** If you must work near them, have them disconnected first.



13. Be sure to wear safety equipment and clothing required for working with, or near heavy equipment—and keep that hard hat on.



ORDERING INSTRUCTIONS - PARTS

All parts for your BARKO HYDRAULIC LOADER may be ordered from your nearest authorized distributor or from the factory, if your area is served directly by the factory. This includes all hydraulic parts for valves, cylinders, pumps, motors, hose and fittings, in addition to the mechanical and structural parts of the loader.

When ordering parts, please specify the following information:

1. PART NUMBER - Specify Barko part number as given in your Owner's manual.. Do not take numbers from castings, etc.
2. QUANTITY - of each part ordered.
3. NAME OF PART - Use proper description or title given in the Owner's Manual.
4. RIGHT OR LEFT HAND - if applicable, right or left hand is your right or left when operating the loader from the normal operators seat position behind the boom.
5. MODEL & SERIAL NUMBERS - IMPORTANT!!! Model & Serial numbers are found on the title page of the Owner's Manual and on the identification plate attached to the loader frame.
6. SHIPPING INSTRUCTIONS - Specify definite shipping instructions such as Bus, Air Frt., Air Express, Parcel Post or Truck. When no instructions are given, parts will be shipped Best Way i. e., shipping method will be determined by shipping cost, nature of the part and urgency of the repair.
7. RETURN ADDRESS - When ordering parts, always include a return address where part should be sent.
8. RETURN PARTS - New parts returned by distributor or customer to the factory will have a 15% handling charge subtracted from the amount of the part unless parts were sent by mistake from the factory.
9. SHORTAGE - On all parts shipments & packing kits, if any parts are missing (other than parts marked Backordered) call the factory immediately.
10. WARRANTY - Warranty parts must be returned by prepaid freight or by Barko truck.

START-UP INSTRUCTIONS

Your pre-operational check should include the following:

1. Check reservoir oil level.
2. Check lubrication chart and diagram to determine if all points have been properly lubricated.
3. Check hydraulic piping against hydraulic diagram for correctness of connections.
4. Check mounting installation for completeness and security.
5. Start engine and check for proper engine speed. Compare actual swing time with rating on specification page.
6. Operate all systems to extreme limits of travel in order to raise hydraulic pressure in each line to maximum. Check for leaks in connections.
7. You are now ready to operate the BARKO HYDRAULIC LOADER.

COLD WEATHER INSTRUCTIONS

When the oil viscosity is below 4,000 SSU (SAE 10W @ 20° F, SAE 20 @ 35° F, SAE 30 @ 50° F), extreme care should be used in starting the machine operation to allow warming of the hydraulic oil to a temperature suitable for proper circulation. The following method may be used to warm the oil:

1. Jog Pump: on 5 seconds off 20 seconds (ten times) then on 20 seconds off 20 (about 5 times). Idle system a few minutes.
2. Run pump at 1/2 speed (about 800 to 1000 engine RPM) and run any ram to end and stall it, thus blowing oil thru the pressure relief valve. Relieve pressure 10 seconds of each minute.
3. Oil passing thru the relief valve does no useful work and picks up 8-1/2 degrees of warmth per 1000 pounds of pressure drop. (Approx. ten times.)

When the oil viscosity is below 20,000 SSU (SAE 10 @ -5° F, SAE 20 @ 7° F), warm tank (up about 40 degrees) before starting pump, then follow step above.

For prolonged service in sub zero temperatures, ATF Type "A" and Mil 5606 specification hydraulic oil may be used.

SERVICE AND MAINTENANCE INSTRUCTIONS

Details of parts and construction for your BARKO HYDRAULIC LOADER are shown on the individual parts list. The exploded views are arranged in proper order for assembly and dis-assembly so that, in general, parts may be removed in the order shown.

Two lifting lugs are provided on the boom, one closest to boom pivot for raising entire loader assembly and one farthest out for boom and job assembly.

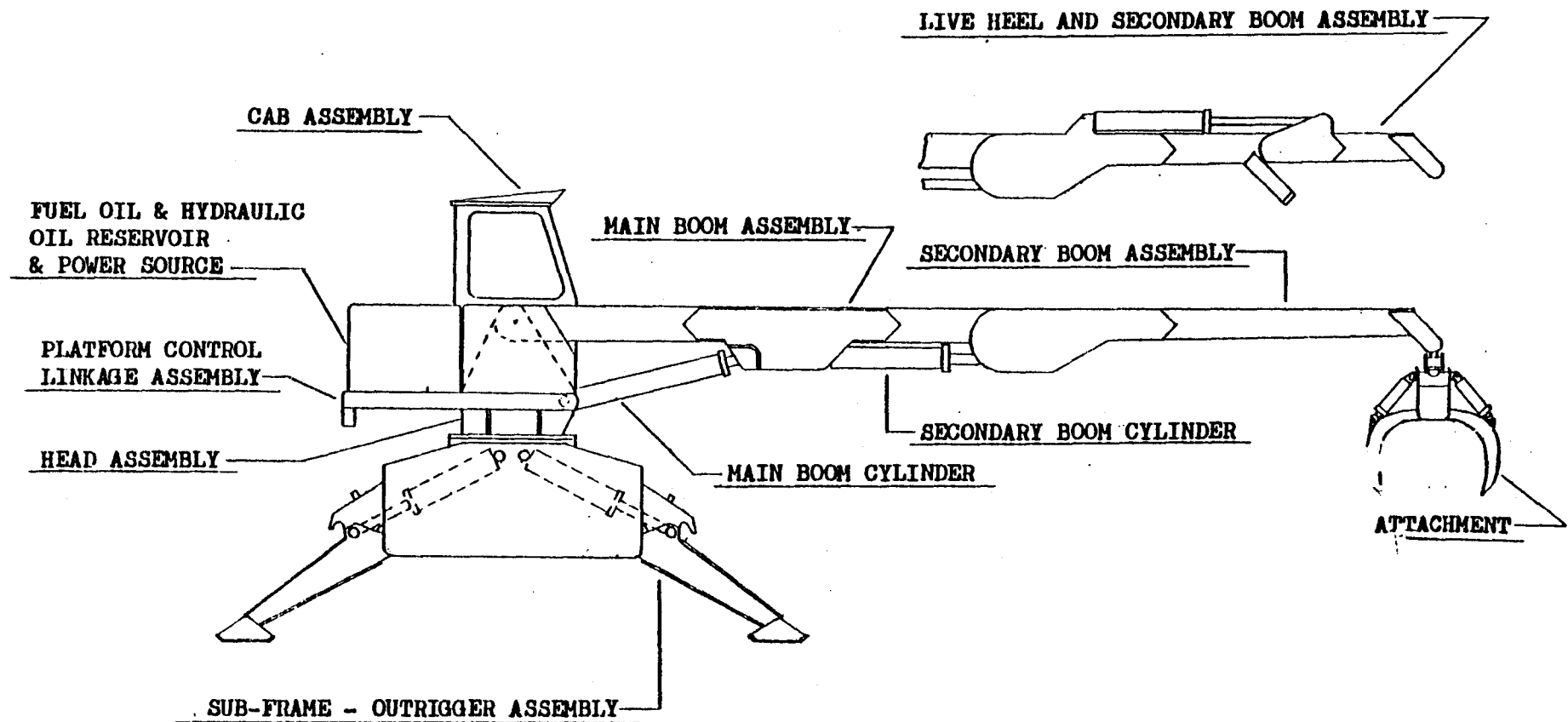
Instruction for servicing pump, motor, valves and filter are covered on separate pages.

It is of utmost importance that the entire hydraulic system be kept clean and free from dirt, grit, water, air or acids at all times. Periodic draining, cleaning and refilling with new oil is recommended to insure proper performance and service. All openings in the hydraulic circuit must be properly capped, if component units are removed. These units should also be capped or plugged to protect them from entry of foreign matter.

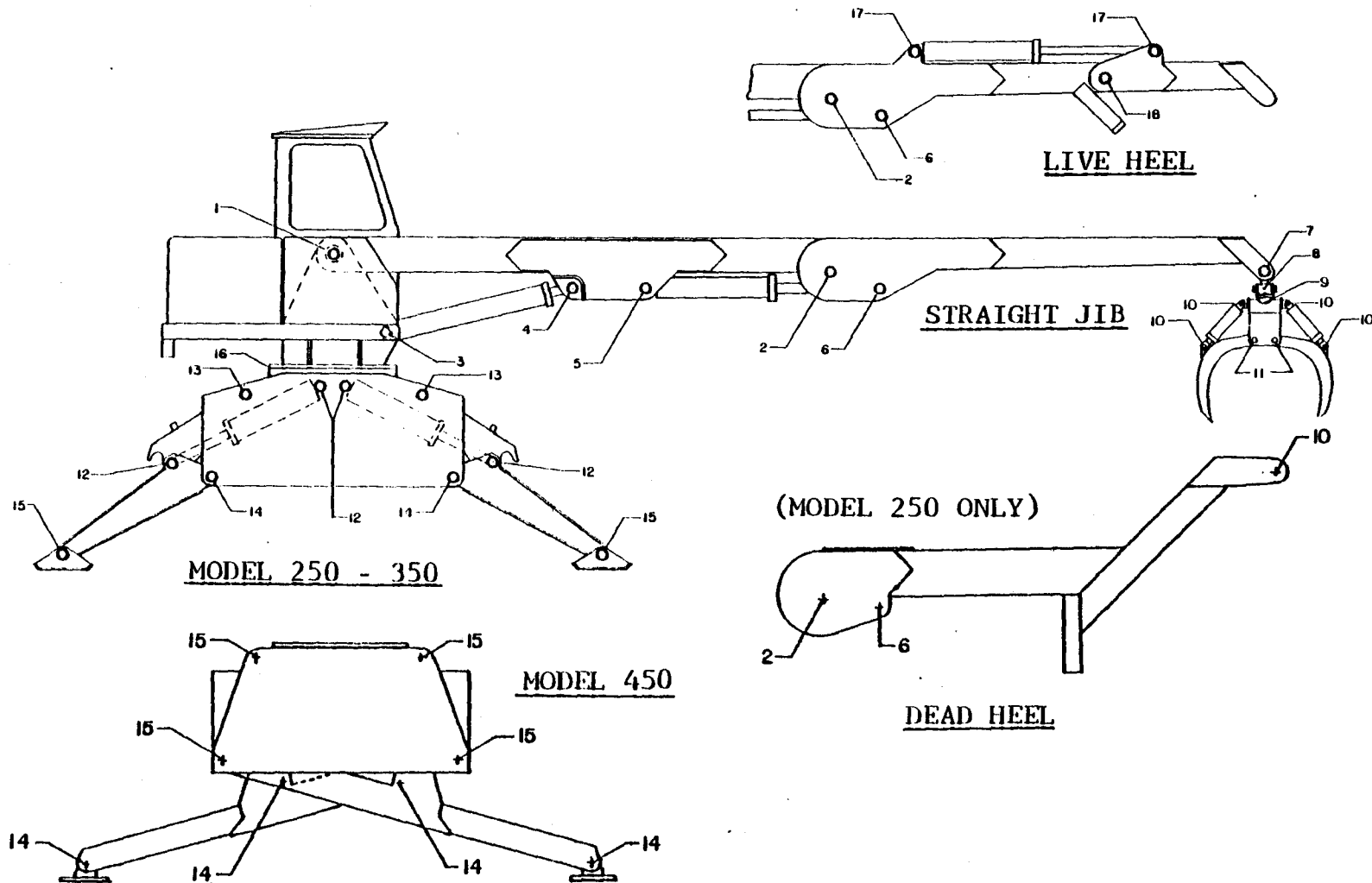
Service and clean the hydraulic system oil filters at each oil change. Quite often a new oil will have a lint like material, which when present in the oil will plug oil filters. For this reason, the filters should be checked during the first 25 hours of operation after any considerable amount of oil has been added to the hydraulic system.

Always drain hydraulic fluid system after working machine because the oil will be warm and will flow freely, which is needed to carry all the dirt and sludge with it.

GENERAL ASSEMBLY (Models 250-350)



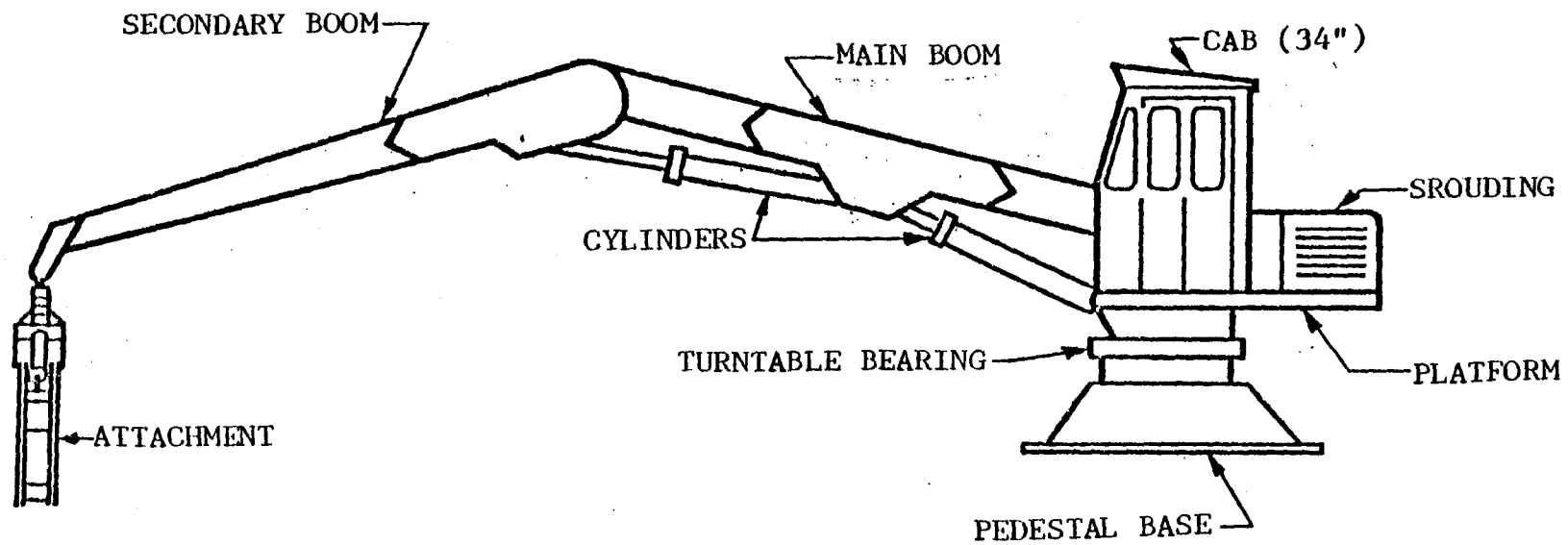
LUBRICATION DIAGRAM



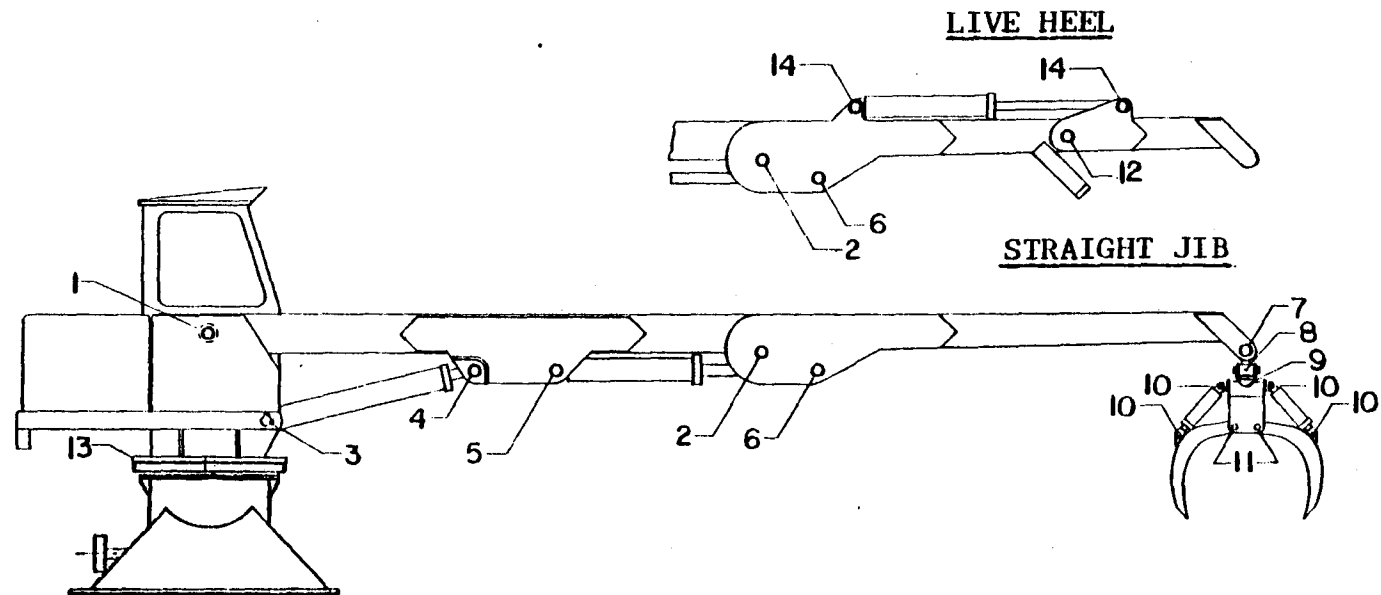
LUBRICATION CHART
MODELS 250 - 350 - 450

REF. NO.	LUBRICATION POINT	TYPE OF LUBRICATION	INTERVAL
1	Main Boom Pivot	Items 1-15 & 17, 18 Use a Multi-Purpose grease. Apply with pressure gun until grease is visable at end of bushings.	15 hours or twice weekly (minimum)
2	Jib Knuckle Pivot	"	"
3	Main Lift Cylinder	"	"
4	Main Lift Cylinder	"	"
5	Jib Cylinder	"	"
6	Jib Cylinder	"	"
7	Grapple Hanger	"	8 hours or each day
8	Grapple Hanger	"	"
9	Grapple Head	"	"
10	Grapple Cylinder	"	"
11	Grapple Arms	"	"
12	Stabilizer Arms	"	15 hours or twice weekly (minimum)
13	Manual Locks	"	"
14	Stabilizer Legs	"	"
15	Stabilizer Legs	"	"
16	Bearings	For a general lub- rication use a lith- ium base grese with E.P. additives and rust inhibitors. Above 42° F-#2 grease; below 32° F-#1 grease.	24 hours or twice weekly
17	Live Heel Cylinder	Multi purpose grease Apply w/pressure gun until grease is vis- able at ends of bushings	15 hours or twice weekly (minimum)
18	Live Heel Pivot	"	"
19	Hydraulic Pump (not shown)	See service manual in parts book	15 hours or twice weekly (minimum)
20	Control Handle Pivot Pins (Not Sown) located under floor of cab	Multi purpose grease	Weekly
21	Control Handle Linkage (not shown) located under floor of cab	S.A.E. #30 oil	24 hours or twice weekly
22	Auxiliary power supply	See service manual in parts book	

-III-



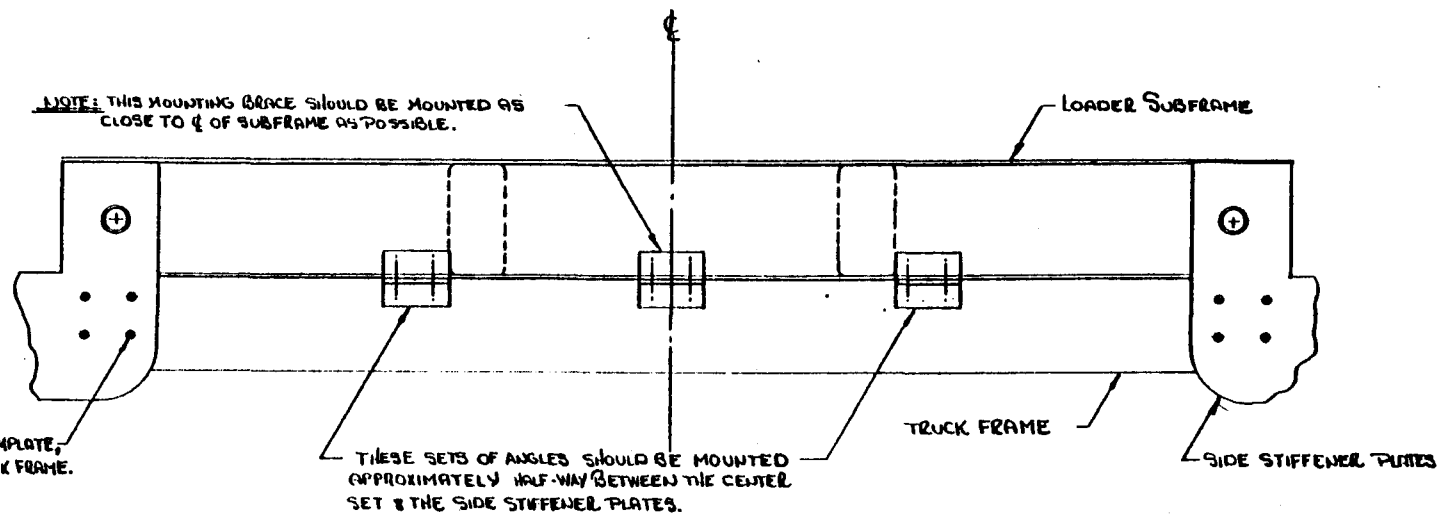
MODEL 250-350-450
GENERAL ASSEMBLY



MODEL 250-350-450
LUBRICATION DIAGRAM

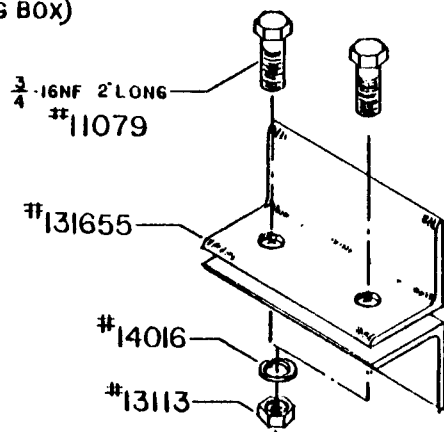
LUBRICATION CHART
MODELS 250-350-450

REF NO	LUBRICATION POINT	TYPE OF LUBRICATION	INTERVAL
1	Main Boom Pivot	Items 1-15 & 17,18 Use a Use a Milti-Purpose grease. Apply with pressure gun until grease is visable at end of bushings.	15. hrs or twice wkly (minimum)
2	Jib Knuckle Pivot	"	"
3	Main Lift Cylinder	"	"
4	Main Lift Cylinder	"	"
5	Jib Cylinder	"	"
6	Jib Cylinder	"	"
7	Grapple Hanger	"	8 hrs. or ea. day
8	Grapple Hanger	"	"
9	Grapple Head	"	"
10	Grapple Cylinder	"	"
11	Grapple Arms	"	"
12	Live Heel Pivot	Multi purpose grease Apply w/pressure gun until grease is visable at ends of bushings.	15 hrs or twice wkly (Minimum)
13	Bearings	For Gen. lubrication us a lithium base grease with E.P. additives and rust inhibitors. Above 42° F - #2 grease; below 32° F - #1 grease.	24 hrs or twice wkly
14	Live Heel Cylinder	Multi purpose grease apply w/pressure gun until grease is bisable at ends of bushings	15 hrs or twice wkly (minimum)
15	Hydraulic Pump (not shown)	See service manual in parts book	"
16	Control Handle Pivot pins (not shown) located under floor of cab	Multi purpose grease	Weekly
17	Control Handle Linkage (not shown) located under floor of cab	SAE #30 oil	24 hrs or twice wkly



USING STIFFENER PLATE AS TEMPLATE, DRILL (4) $\frac{1}{8}$ " HOLES THROUGH TRUCK FRAME.

SIX SETS OF BRACES REQ'D (INCLUDED IN PACKING BOX)



WARRANTY

Barko Hydraulic Loader

Barko Hydraulics Warranty to Dealers and/or original Buyers of hydraulic loaders and parts thereof, manufactured by Barko Hydraulics is:

- A. Hydraulic loaders and parts manufactured by Barko Hydraulics will conform to the designation or description under which they are sold.
- B. Hydraulic loaders and parts manufactured by Barko Hydraulics shall be delivered free from all security interests, liens and other encumbrances, good title shall be conveyed, and transfer rightful.
- C. Hydraulic loaders manufactured by Barko Hydraulics will be free from defects in materials and workmanship for a period of three (3) months or five hundred (500) hours of operation from first day in service, whichever occurs first, provided first day of service is not later than sixty (60) days from delivery to Dealer and/or original Buyer, unless Barko Hydraulics extends the period in which such first day of service is to occur, and Barko Hydraulics or Dealer certifies such extended period for Warranty to commence.
- D. Replacement parts manufactured by Barko Hydraulics will be free from defects in material and workmanship for a period of three (3) months or five hundred (500) hours of operation from first day in service, whichever occurs first, provided first day of service is not later than one hundred twenty (120) days from delivery to Dealer and/or original Buyer, and installation of repair parts is made by authorized Dealer.

Barko Hydraulics liability under this Warranty or otherwise shall be limited to providing a replacement part for any non-conforming part, not including freight, special charges or cost of installation, or in the alternative, at Barko Hydraulics' sole option, the cost of repairs (excluding travel) during normal working hours to that non-conforming part.

Proof of any defect in any hydraulic loader or replacement part must be submitted to designated Dealer or Barko Hydraulics' factory within ten (10) days from the date on which the defect was originally discovered.

Barko Hydraulics makes no warranty with respect to parts supplied to it by other manufacturers; these components shall be subject to the warranties of their respective manufacturers.

This Warranty does not extend to any of the following:

1. Defects, damage or deterioration due to normal use, wear and tear, exposure, storage or corrosion. Normal use ordinarily affects hoses, seals and packings, work surfaces and the like.
2. Normal maintenance service or the replacement or repair of parts required to be replaced or repaired in the course of normal maintenance service. Normal maintenance ordinarily includes replacement of filters, seals and the like.
3. Defects, damage or deterioration due to failure to properly maintain equipment or parts, including but not limited to inspections or maintenance not in accordance with manuals, schedules or good practice.
4. Damage or defects caused by abuse of the equipment or parts by overloading, misapplication, improper operation or use, installation of unapproved accessories or unauthorized alterations.
5. Damage or defects resulting from repairs of equipment or parts in an unauthorized manner or the installation of components other than Barko Hydraulics or authorized parts.

The liability of Barko Hydraulics, except as to Paragraphs A and B above, arising out of supplying hydraulic loaders or replacement parts therefore, or their use, whether premised on warranties, contract, negligence or otherwise, shall not in any case exceed the cost of correcting the defects in the hydraulic loaders or replacement parts therefore as herein provided, and upon expiration of the applicable Warranty period herein all such liability shall terminate.

Barko Hydraulics shall in no event be liable for any incidental, consequential, or special damages or for any expenses or delays caused by defective material or workmanship, and no allowance will be made for repairs, replacements or alterations without Barko Hydraulics prior written approval. The foregoing shall constitute the sole and exclusive remedy of Dealer and Buyer and the sole and exclusive liability of Barko Hydraulics.

The warranties stated herein are in lieu of all other warranties whether written or oral, statutory, express or implied, including any warranty of merchantability or fitness for purpose.

ITEM	QTY	MATL.	PART NO.	DESC.	WT
1	REF.	BN	124-00127	WLDMT-HEAD PLANET 250	2227.5
2	1		541-00564	BAS.-TURNABLE-FORMMET-1243 B7	931.0
3	1		482-00286	BOLT-BODY FIT	86.8
4	1		481-00715	NUT-HEX 2 1/2-12 UN	2.3
5	1		482-00331	BOLT-BODY FIT	27.0
6	1		481-00711	NUT-HEX 2-12 UN	2.0
7	36		511-00427	BOLT-NH 3/4-10 x 2 3/4 LG. GR 9	19.576
8	36		511-00426	BOLT-NH 3/4-10 x 2 1/2 LG. GR 9	11.576
9	72		514-00151	WASHER-FLAT 3/4	20.76
10	1		535-00540	PLANET-GEAR PROD D220-00007-1	700.0
11	9		511-00466	BOLT-NH 1-8 x 3 LG. GR 9	
12	9		514-00154	WASHER-FLAT 1" GR 9	
13	1		560-00047	MOTOR-VICKERS MFE 19-9-21	22.0
14	2		512-00616	SCREW-SET 3/8-16 x 3/8 LG	
15	2		550-00000	PLUG-TEFLON	
16	1		072-00016	PROCEDURE-OIL IN GEAR BOX	

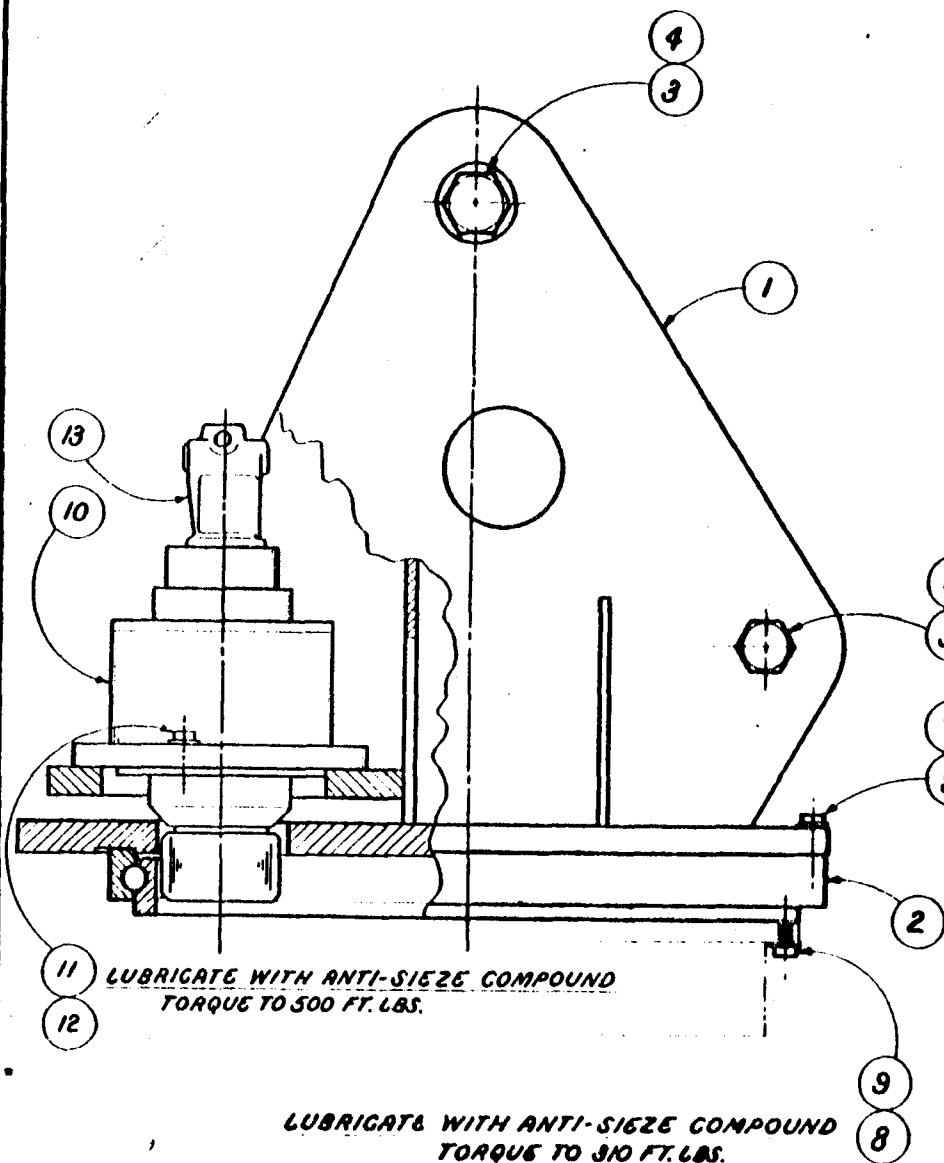
7 LUBRICATE WITH ANTI-SIEZE COMPOUND
TORQUE TO 310 FT. LBS.

11 LUBRICATE WITH ANTI-SIEZE COMPOUND
TORQUE TO 750 FT. LBS.

LUBRICATE WITH ANTI-SIEZE COMPOUND
TORQUE TO 310 FT. LBS.

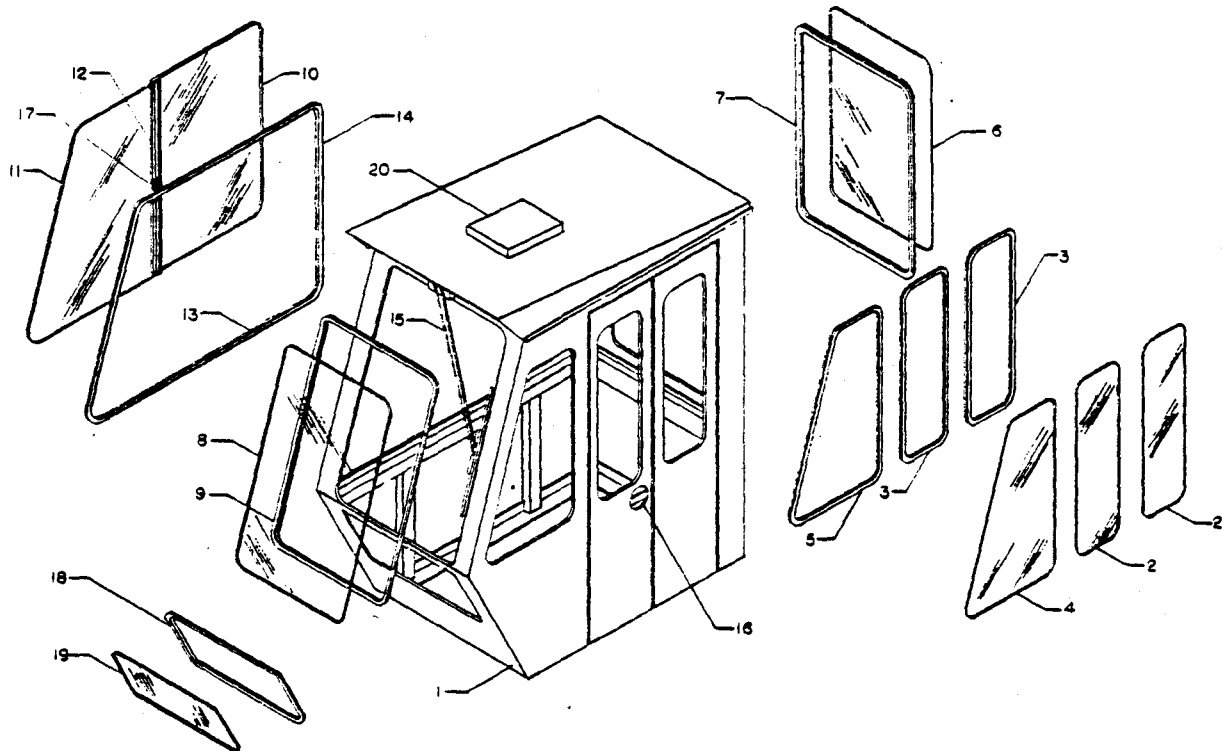
REV. 10-31-70 ECN 1970 REVISED, SEE ECN # 1567 WT 17 1/2 REVISED, SEE ECN # 1544 WT 17 1/2 REVISED, SEE ECN # 1450 WT 17 1/2 GENERAL UPDATE ECN # 1386 10-31-70 LP RELEASED ECN # 10		BARKO HYDRAULICS, INC. Office: Superior, Wisconsin Phone: (715) 382-5841 Mailing address: P.O. Box 6227 Duluth, Minnesota 55836		TITLE ASSY-HEAD PLANET		PART CODE 250
PERFORMANCE LIMITS OTHER THAN SPECIFIED FRACTIONAL 1/2 1/4 1/8 DECIMAL .00 .01 .02 ANGULAR ± 1/2° SURFACE ± .015"		DATE 2-26-79		PART NAME PLANET		
APPR 90M		DATE 3-14-79		SCALE 1		
REV. DATE 122-00131		DATE 122-00131		PART WT 3503.0		

ITEM	QTY.	MATL.	PART NO.	DESC.	WT.
1	1	BM	124129	WLDMT-HEAD	2355.1
2	1		91569	BAS. - TURNTABLE	95.12
3	1		982286	BOLT-HEX 2 1/2" DIA = 20" LG.	98.8
4	1		13949	NUT-NYLOCK 2 1/2"	2.1
5	1		982391	BOLT-HEX 2" DIA = 27 1/2" LG.	27.9
6	1		13917	NUT-NYLOCK 2"	2.0
7	36		11927	BOLT-HEX 3/4-10 UNC = 2 1/4" LG. LG	18.576
8	36		11925	BOLT-HEX 3/4-10 UNC = 2 1/4" LG. LG	11.576
9	72		19151	WASHER-FLAT 3/4	2.076
10	1		35540	GEARBOX-PLANETARY	700.0
11	10		11966	BOLT-HEX 1-8 UNC = 3" LG. LG	
12	10		19159	WASHER-FLAT 1" LG	
13	1		60047	MOTOR-DRIVE	22.0



RELEASED GEN 810 LP 4-18-79		BANKO HYDRAULICS, INC. Office: Superior, Wisconsin Phone: (715) 382-6841 Mailing address: P.O. Box 8227 Duluth, Minnesota 55808			
		TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONAL ± 1/32 DECIMAL .00 ± .010 .000 ± .005 ANGULAR ± 1/2°		TITLE ASSEMBLY-HEAD M850 PLANETARY GEARBOX (270° STOPS)	
REV.	DATE	BY	DATE	SCALE	DWG. NO.
1	4-18-79	LP	4-18-79	1/8"	122133

HIGH VISION CAB



Effective: 4/15/77

OPERATORS CAB & ACCESSORIES

34" x 51" LONG

HIGH VISION

<u>ITEM NO</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
1	-	CAB, complete.....	164021
1	1	SHELL, cab	082016
2	2	GLASS, door.....	36101
* 3	2	CASING, door glass, 69½" lg.....	-
4	1	GLASS, left front panel.....	36111
* 5	1	CASING, left front panel, 67½" lg.....	-
6	1	GLASS, rear.....	36123
* 7	1	CASING, rear glass 105" lg.....	-
8	1	GLASS, windshield.....	36113
* 9	1	CASING, windshield, 11½" lg.....	-
10	1	GLASS, right side, rear section.....	36124
11	1	GLASS, right side, sliding section.....	36125
12	1	CHANNEL EDGE, sliding glass.....	36251
* 13	1	CHANNEL, sliding 120" lg.....	-
* 14	1	CASING, right side glass, 120" lg.....	-
15	1	WIPER, assembly.....	48921
16	1	HANDLE, door	36300
17	1	GRIP, finger.....	36301
18	1	CASING, lower front 77" lg.....	-
19	1	GLASS, lower front.....	36119
20	1	VENT, dome.....	36204

*NOTE: All window casing is sold by the foot. Approximate lengths are given in parts list above. When ordering, order by part number #36200 and proper length in feet, except item #14, order by part number 36205.

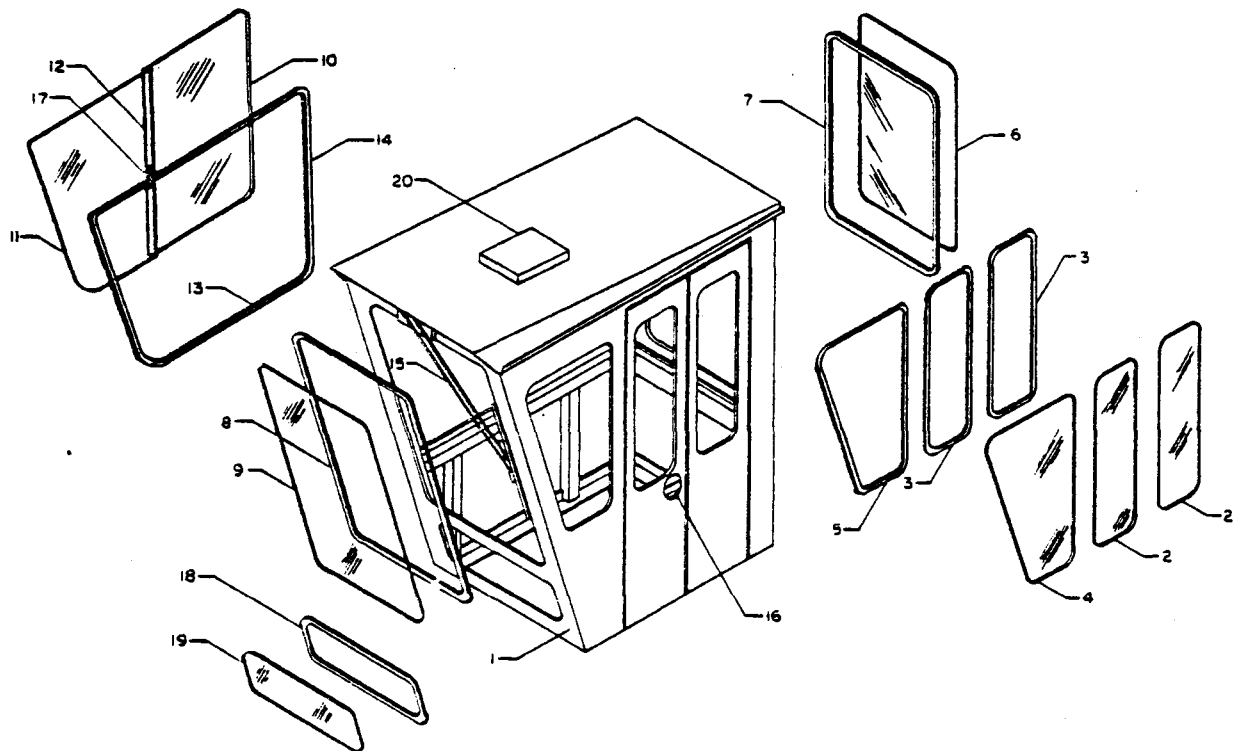
**Channel for sliding window #36250 is sold in 5-foot lengths. When ordering, order 10 feet of sliding channel for complete window.

<u>CAB ACCESSORIES</u>	
FAN, defroster.....	48909
KIT, windshield washer.....	48920
LIGHT, dome.....	48304
LIGHT, cab.....	48305
VENT, dome.....	36204
<u>HEATER OPTIONS</u>	
HOT WATER (12,500 BTU).....	48910
HOT WATER (20,000 BTU).....	48911
ELECTRIC 5 KW (480V).....	48900
ELECTRIC 3 KW (575V).....	48906
ELECTRIC 2 KW (440V).....	48912
<u>AIR CONDITIONER</u>	
12V D.C. (12,000 BTU).....	48939
110V A.C. (10,000 BTU).....	48926

NOTE: ALL GLASS ON CAB IS FOR COZY CAB

Effective: 4/15/77

FORWARD SLOPING CAB



Effective: 4/15/77

OPERATORS CAB & ACCESSORIES

34" x 51" LONG

FORWARD SLOPING

PARTS LIST

<u>ITEM NO</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
-	-	CAB, complete.....	164020
1	1	SHELL, cab.....	082017
2	2	GLASS, door.....	36101
* 3	2	CASING, door glass, 69½" lg.....	-
4	1	GLASS, left front panel.....	36114
* 5	1	CASING, left front panel, 57½" lg.....	-
6	1	GLASS, rear.....	36123
* 7	1	CASING, rear glass 105" lg.....	-
8	1	GLASS, windshield.....	36113
* 9	1	CASING, windshield, 111½" lg.....	-
10	1	GLASS, right side, rear section.....	36124
11	1	GLASS, right side, sliding section.....	36126
12	1	CHANNEL EDGE, sliding glass.....	36251
* 13	1	CHANNEL, sliding 120" lg.....	-
* 14	1	CASING, right side glass, 120" lg.....	-
15	1	WIPER, assembly.....)	48921
16	1	HANDLE, door.....	36300
17	1	GRIP, finger.....	36301
18	1	CASING, lower front 77" lg.....	-
19	1	GLASS, lower front.....	36119
20	1	VENT, dome.....	36204

NOTE: All window casing is sold by the foot. Approximate lengths are given in parts list above. When ordering, order by part number 36200 and proper length in feet, except item #14, order by part number 36205.

Ref. No. 3 above shows 69¾" long. Order 6 feet.

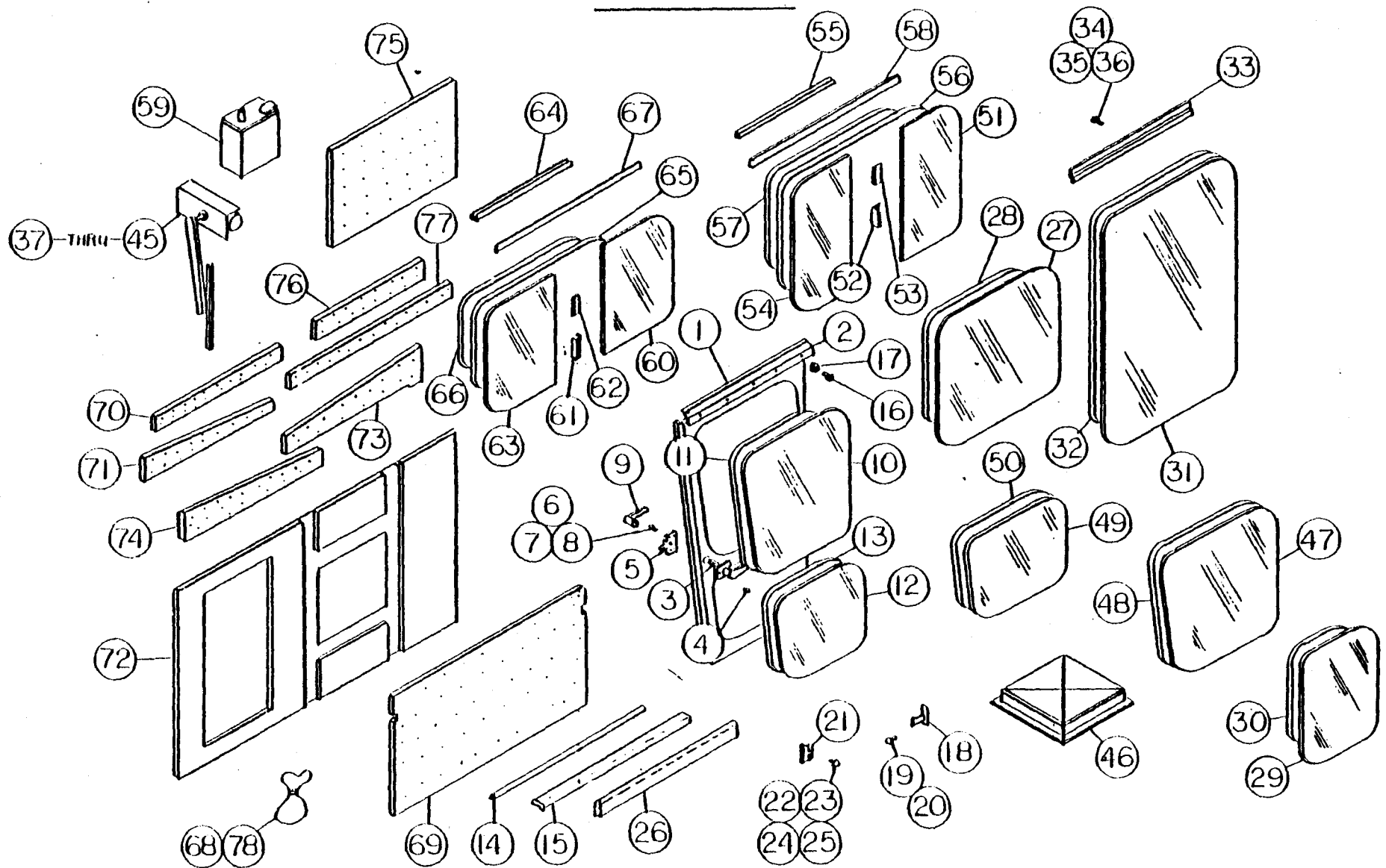
**Channel for sliding window, #36250 is sold in 5-foot lengths. When ordering, order 10 feet of sliding channel for complete window.

<u>CAB ACCESSORIES</u>	
FAN, defroster.....	48909
KIT, windshield washer.....	48920
LIGHT, dome.....	48304
LIGHT, cab.....	48305
<u>HEATER OPTIONS</u>	
HOT WATER (12,500 BTU).....	48910
HOT WATER (20,000 BTU).....	48911
ELECTRIC 5 KW (480V).....	48900
ELECTRIC 3 KW (575V).....	48906
ELECTRIC 2 KW (440V).....	48912
<u>AIR CONDITIONER</u>	
12V D.C. (12,000 BTU).....	48939
110V A.C. (10,000 BTU).....	48926

NOTE: ALL GLASS ON CAB IS FOR COZY CAB

Effective: 4/15/77

40 x 60 CAB PARTS



Effective Date; 1-8-80

Custom Products of Litchfield Inc.

Cozy Cab Division

Box 718

Telephone 612 693-3897

LITCHFIELD, MINNESOTA 55355

BARKO 40 x 60 PARTS LIST

<u>ITEM</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	1	Door Assembly	4-10512
2	1	Door Weld.	2-10438
3	1	Outside Locking Handle	1-10494
4	2	Oval hd. Mach. Screw	3-10201
5	1	Door Latch Inside	1-13009
6	4	Bolt #10 x 1/2	3-10209
7	4	Lock Washer #10	3-10225
8	4	Nut #10	3-10224
9	1	Door Handle, Chrome	1-11535
10	1	Glass, Upper Door	1-12961
11	1	Window Rubber 8 ft.	1-10151
12	1	Glass, Lower Door	1-12960
13	1	Window Rubber 7 ft.	1-10151
14	1	Small Pinch Weld 5/4 in.	1-10187
15	1	Off-Set Bubble Rubber 5/4 in.	1-10160
16	2	Bearings, Roller Track	2-10003
17	4	Nut, Hex, 7/16 14 UNC	3-10066
18	1	Rear Door Catch	2-10452
19	2	Bolt, 1/4 x 1	3-10004
20	2	Lock Washer 1/4	3-10076
21	1	Front Door Catch	1-12861
22	2	Bolt 1/4 x 1	3-10004
23	2	Flat Washer 1/4	3-10084
24	2	Lock Washer 1/4	3-10076
25	2	Nut 1/4	3-10063
26	1	Straight Bubble Rubber 5/4 in.	1-10159
27	1	Glass Upper Left Rear	1-12962
28	1	Window Rubber 9 ft.	1-10151
29	1	Glass, Lower Left Side	1-12955
30	1	Window Rubber 7 1/2 ft.	1-10151
31	1	Glass, Windshield	1-12981
32	1	Window Rubber 13 1/2 ft.	1-10151
33	1	Glass Retainer	1-12919
34	3	Bolt, 1/2-20-UNC 3/4	3-10003
35	3	Lock Washer 1/4	3-10076
36	3	Nut, Hex, 1/4-20 UNC	3-10063
37	1	Panographic Wiper Assembly 12 vit.	5-10118
38	1	Wiper Motor	1-10127
39	1	Wiper Shaft	1-10126
40	1	Wiper Arm	1-10129
41	1	Connector Link	1-10128
42	1	Wiper Blade 18"	1-10130
43	1	Wiper Mount	1-10125
44	1	Wiper Switch	1-10121
45	1	Wiper Gasket	1-13453
46	1	Roof Vent with Hardware	906003
47	1	Glass, Upper Right	1-12961

BARKO 40 x 60 PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
48	1	Window Rubber 8 ft.	1-10151
49	1	Glass, Lower Right	1-12960
50	1	Window Rubber 7 ft.	1-10151
51	1	Glass, Slider Right Side	1-12956
52	1	Handle, Push Pull	1-10184
53	1	Rubber Seal 1½" x 4"	1-12908
54	1	Glass, Stationary Right Side	1-12957
55	1	Comb. Window Felt Seal 28½ in.	1-10155
56	1	Comb. Window Rubber 9 ft.	1-10150
57	1	Sliding Window Channel 9 ft.	1-10158
58	1	Sliding Window Spacer Rubber 55"	1-12908
59	1	Windshield Washer Assembly	1-12784
60	1	Glass Slider Back	1-12959
61	1	Handle, Push-Pull	1-10184
62	1	Rubber Seal 1½ x 4	1-12908
63	1	Glass, Stationary Back	1-12958
64	1	Comb. Window Felt Seal 23½ in.	1-10155
65	1	Comb. Window Rubber 9 ft.	1-10150
66	1	Sliding Window Channel 9 ft.	1-10158
67	1	Sliding Window Spacer Rubber 50"	1-12908
68	2	Nut, Hex 5/16, (for cab with lower wiper only)	3-10064
69	1	Poly Foam, Lower Back	1-15053
70	1	Poly Foam, Upper Back	1-17218
71	2	Poly Foam, Upper Rear Side, Cut Right and Left	1-15064
72	1	Poly Foam, Roof	1-17219
73	1	Poly Foam, Left Front Upper Side	1-15063
74	1	Poly Foam, Right Front Upper Side	1-15061
75	1	Poly Foam, Right Rear Lower Side	1-15069
76	2	Poly Foam, Rear Center Back	1-17220
77	2	Poly Foam, Right and Left Rear Center	1-17221
78	1	Expandable Grommet	1-10566

WINDSHIELD WIPER AND WASHER ASSEMBLY

PARTS LIST

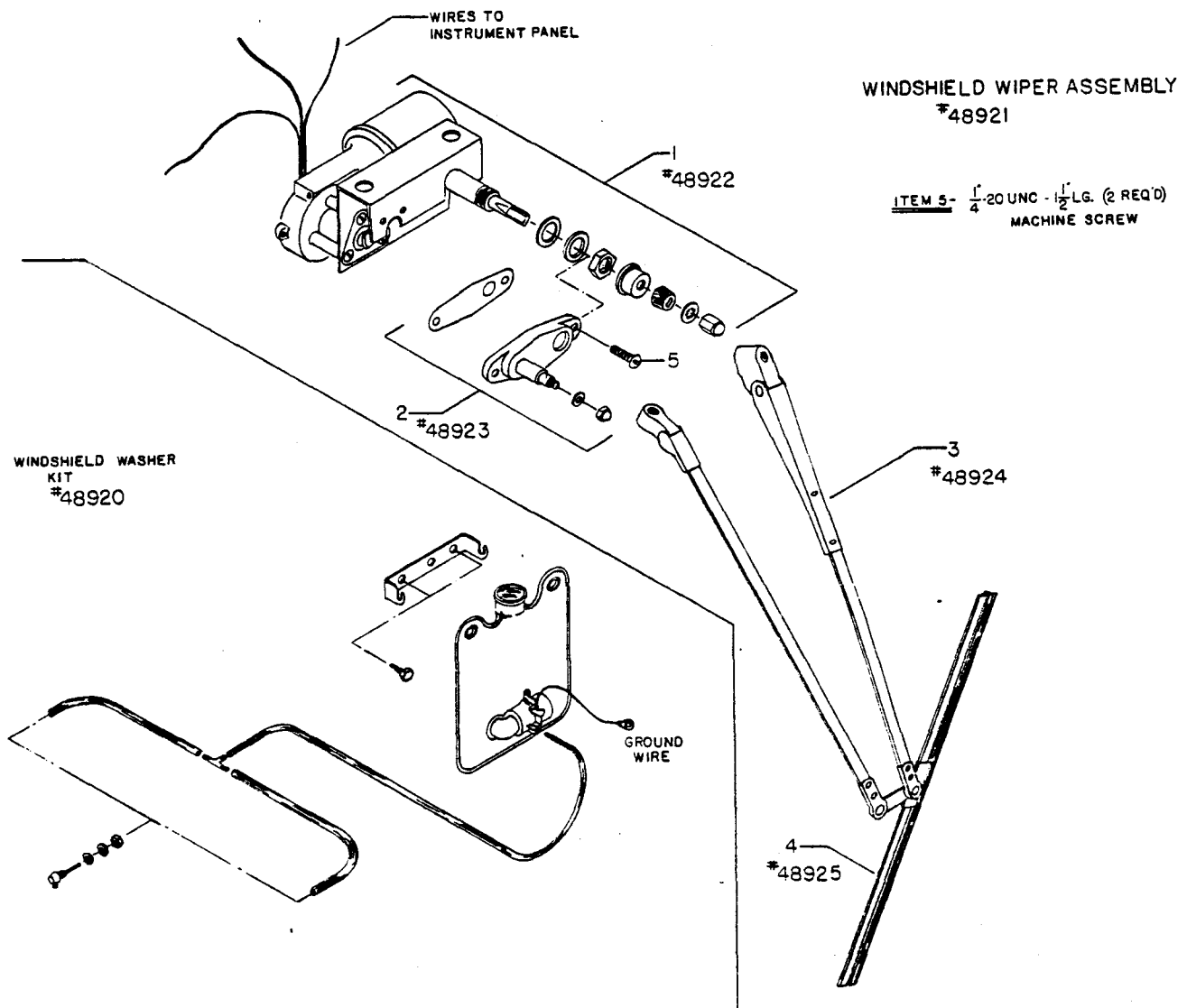
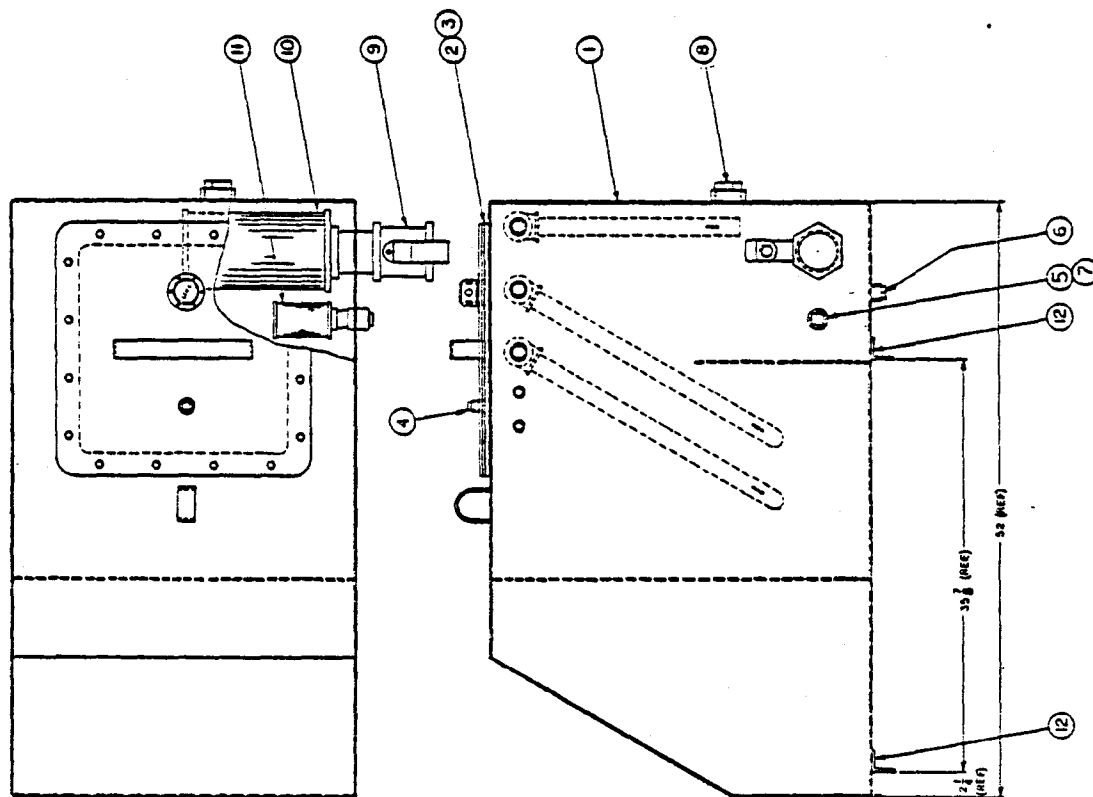


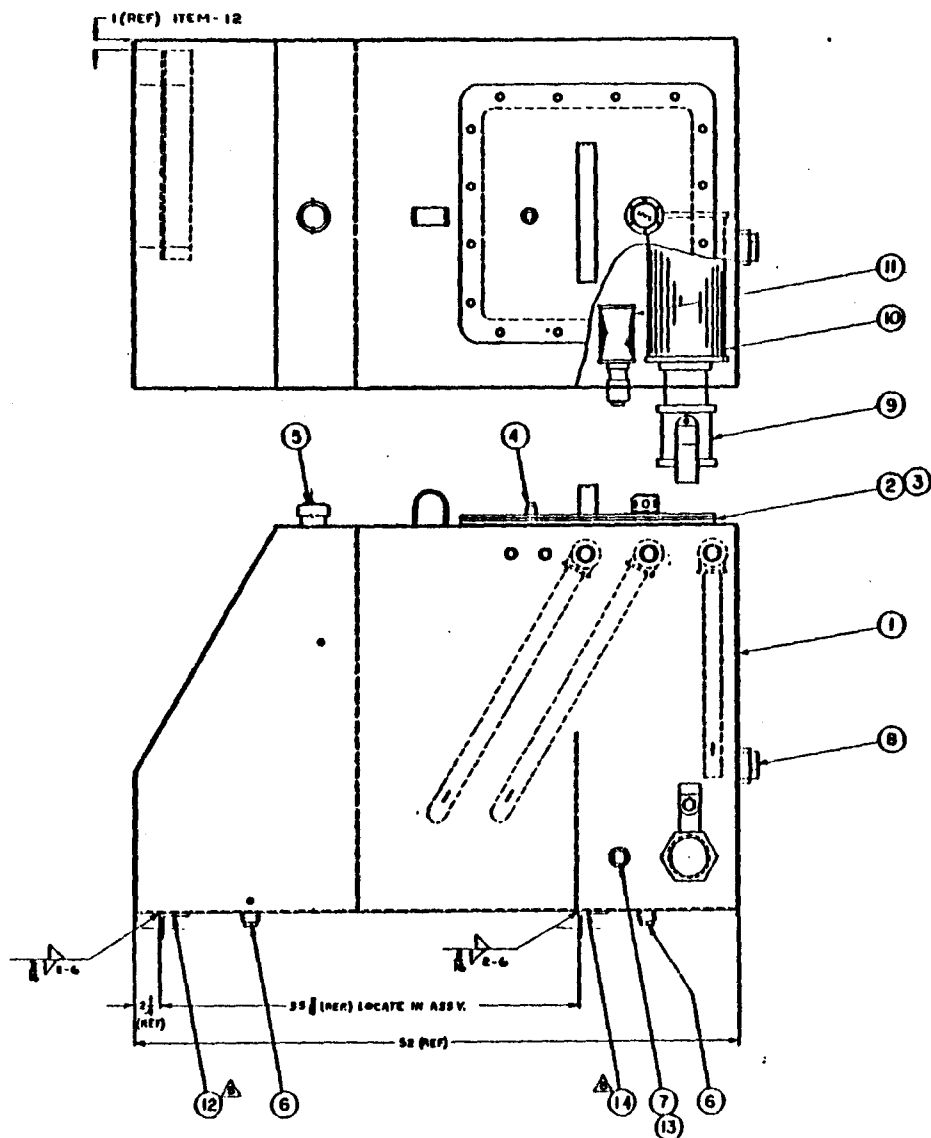
FIG. I-9

QTY	MAT'L	PART NO.	DESCRIPTION	UNIT
1	1	44-0018	HYDRAULIC TANK MOUNT	EA
1	1	44-0019	HYDRAULIC TANK MOUNT	EA
1	1	44-0020	HYDRAULIC TANK MOUNT	EA
1	1	44-0021	HYDRAULIC TANK MOUNT	EA
1	1	44-0022	HYDRAULIC TANK MOUNT	EA
1	1	44-0023	HYDRAULIC TANK MOUNT	EA
1	1	44-0024	HYDRAULIC TANK MOUNT	EA
1	1	44-0025	HYDRAULIC TANK MOUNT	EA
1	1	44-0026	HYDRAULIC TANK MOUNT	EA
1	1	44-0027	HYDRAULIC TANK MOUNT	EA
1	1	44-0028	HYDRAULIC TANK MOUNT	EA
1	1	44-0029	HYDRAULIC TANK MOUNT	EA
1	1	44-0030	HYDRAULIC TANK MOUNT	EA
1	1	44-0031	HYDRAULIC TANK MOUNT	EA
1	1	44-0032	HYDRAULIC TANK MOUNT	EA
1	1	44-0033	HYDRAULIC TANK MOUNT	EA
1	1	44-0034	HYDRAULIC TANK MOUNT	EA
1	1	44-0035	HYDRAULIC TANK MOUNT	EA
1	1	44-0036	HYDRAULIC TANK MOUNT	EA
1	1	44-0037	HYDRAULIC TANK MOUNT	EA
1	1	44-0038	HYDRAULIC TANK MOUNT	EA
1	1	44-0039	HYDRAULIC TANK MOUNT	EA
1	1	44-0040	HYDRAULIC TANK MOUNT	EA
1	1	44-0041	HYDRAULIC TANK MOUNT	EA
1	1	44-0042	HYDRAULIC TANK MOUNT	EA
1	1	44-0043	HYDRAULIC TANK MOUNT	EA
1	1	44-0044	HYDRAULIC TANK MOUNT	EA
1	1	44-0045	HYDRAULIC TANK MOUNT	EA
1	1	44-0046	HYDRAULIC TANK MOUNT	EA
1	1	44-0047	HYDRAULIC TANK MOUNT	EA
1	1	44-0048	HYDRAULIC TANK MOUNT	EA
1	1	44-0049	HYDRAULIC TANK MOUNT	EA
1	1	44-0050	HYDRAULIC TANK MOUNT	EA
1	1	44-0051	HYDRAULIC TANK MOUNT	EA
1	1	44-0052	HYDRAULIC TANK MOUNT	EA
1	1	44-0053	HYDRAULIC TANK MOUNT	EA
1	1	44-0054	HYDRAULIC TANK MOUNT	EA
1	1	44-0055	HYDRAULIC TANK MOUNT	EA
1	1	44-0056	HYDRAULIC TANK MOUNT	EA
1	1	44-0057	HYDRAULIC TANK MOUNT	EA
1	1	44-0058	HYDRAULIC TANK MOUNT	EA
1	1	44-0059	HYDRAULIC TANK MOUNT	EA
1	1	44-0060	HYDRAULIC TANK MOUNT	EA
1	1	44-0061	HYDRAULIC TANK MOUNT	EA
1	1	44-0062	HYDRAULIC TANK MOUNT	EA
1	1	44-0063	HYDRAULIC TANK MOUNT	EA
1	1	44-0064	HYDRAULIC TANK MOUNT	EA
1	1	44-0065	HYDRAULIC TANK MOUNT	EA
1	1	44-0066	HYDRAULIC TANK MOUNT	EA
1	1	44-0067	HYDRAULIC TANK MOUNT	EA
1	1	44-0068	HYDRAULIC TANK MOUNT	EA
1	1	44-0069	HYDRAULIC TANK MOUNT	EA
1	1	44-0070	HYDRAULIC TANK MOUNT	EA
1	1	44-0071	HYDRAULIC TANK MOUNT	EA
1	1	44-0072	HYDRAULIC TANK MOUNT	EA
1	1	44-0073	HYDRAULIC TANK MOUNT	EA
1	1	44-0074	HYDRAULIC TANK MOUNT	EA
1	1	44-0075	HYDRAULIC TANK MOUNT	EA
1	1	44-0076	HYDRAULIC TANK MOUNT	EA
1	1	44-0077	HYDRAULIC TANK MOUNT	EA
1	1	44-0078	HYDRAULIC TANK MOUNT	EA
1	1	44-0079	HYDRAULIC TANK MOUNT	EA
1	1	44-0080	HYDRAULIC TANK MOUNT	EA
1	1	44-0081	HYDRAULIC TANK MOUNT	EA
1	1	44-0082	HYDRAULIC TANK MOUNT	EA
1	1	44-0083	HYDRAULIC TANK MOUNT	EA
1	1	44-0084	HYDRAULIC TANK MOUNT	EA
1	1	44-0085	HYDRAULIC TANK MOUNT	EA
1	1	44-0086	HYDRAULIC TANK MOUNT	EA
1	1	44-0087	HYDRAULIC TANK MOUNT	EA
1	1	44-0088	HYDRAULIC TANK MOUNT	EA
1	1	44-0089	HYDRAULIC TANK MOUNT	EA
1	1	44-0090	HYDRAULIC TANK MOUNT	EA
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1	1	44-0094	HYDRAULIC TANK MOUNT	EA
1	1	44-0095	HYDRAULIC TANK MOUNT	EA
1	1	44-0096	HYDRAULIC TANK MOUNT	EA
1	1	44-0097	HYDRAULIC TANK MOUNT	EA
1	1	44-0098	HYDRAULIC TANK MOUNT	EA
1	1	44-0099	HYDRAULIC TANK MOUNT	EA
1	1	44-0100	HYDRAULIC TANK MOUNT	EA

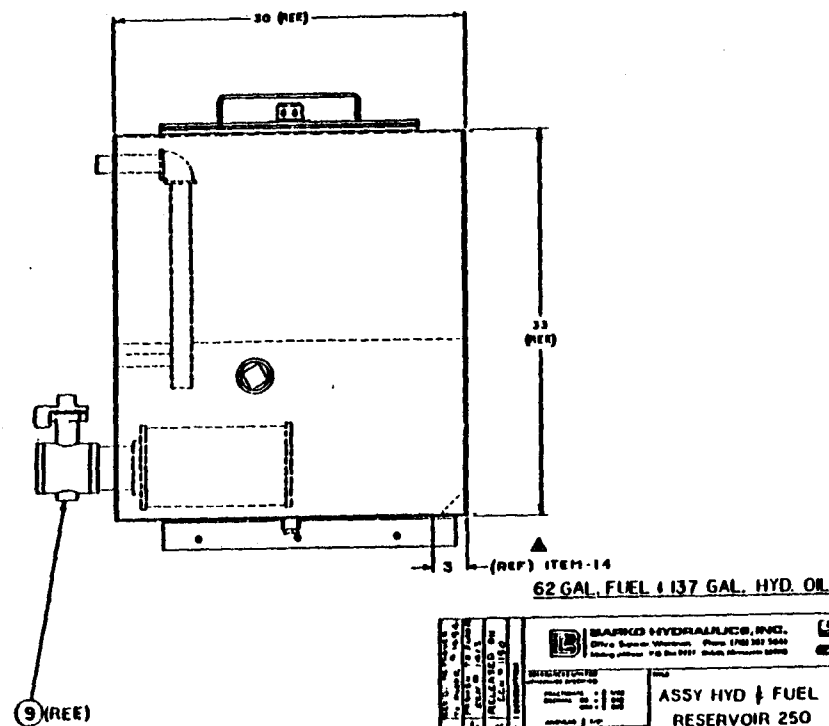


200 GAL. HYD. OIL

		ASSEMBLY HYD RESERVOIR (ELECTRIC)	
WLT 11-6-79		350	
4000		644-00018	

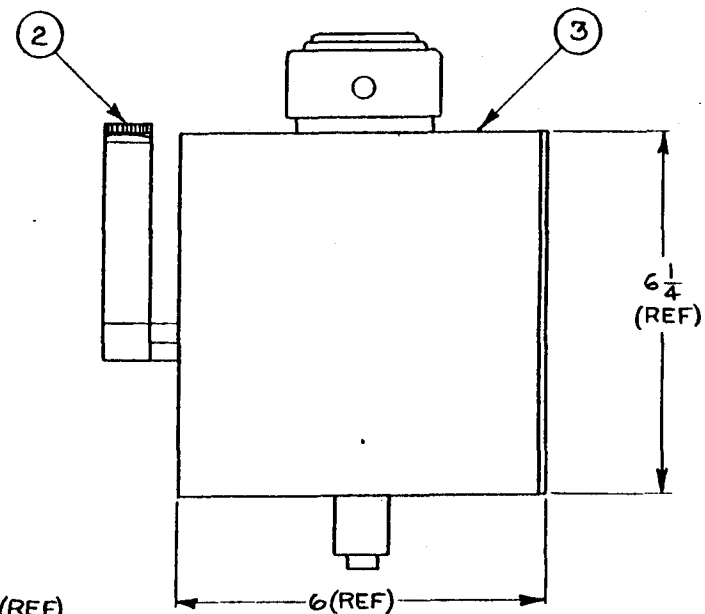
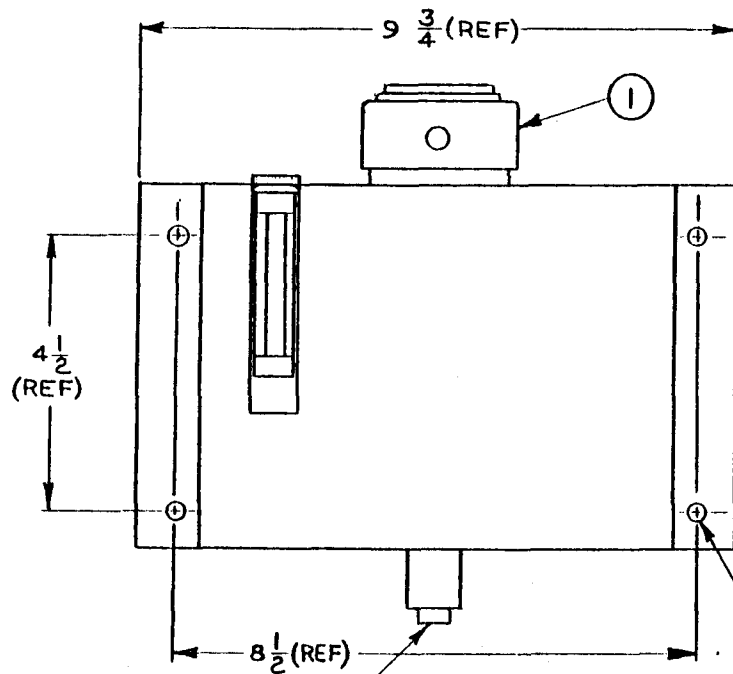


ITEM	QTY	MAT'L	PART NO	DESCRIPTION
1	1	-	644-00128	WELDT. FUEL'S HYD. RESERVOIR
2	1	-	642-00128	ASSY. INSPECTION COVER
3	1	-	642-00300	GASMET. INSPECTION COVER
4	1	-	642-00304	PLUG, 1" NPT
5	1	-	642-00304	PLUG, 1" NPT
6	1	-	642-00304	PLUG, 1" NPT
7	1	-	642-00304	PLUG, 1" NPT
8	1	-	642-00304	PLUG, 1" NPT
9	1	-	642-00304	PLUG, 1" NPT
10	1	-	642-00304	PLUG, 1" NPT
11	1	-	642-00304	PLUG, 1" NPT
12	1	-	642-00304	PLUG, 1" NPT
13	1	-	642-00304	PLUG, 1" NPT
14	1	-	642-00304	PLUG, 1" NPT



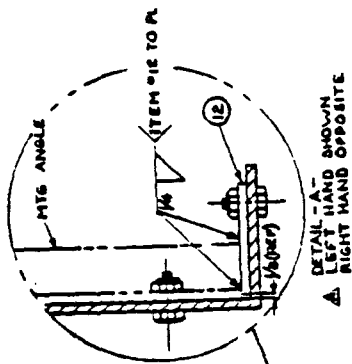
BARKER HYDRAULIC INC. 11111 S. Highway 100, Phoenix, AZ 85044 Phone: (602) 341-1000		
ASSY HYD + FUEL RESERVOIR 250		
WLT 11-5-79	11-5-79	644-00017

ITEM	QTY	MATL	PART NO.	DESCRIPTION	WT
1	1		539-00500	ASSY-FILLER CAP	1
2	1		539-00652	GAUGE-SITE	-
3	1	B/M	642-00133	WELDT-LUBE RESERVOIR	9.5

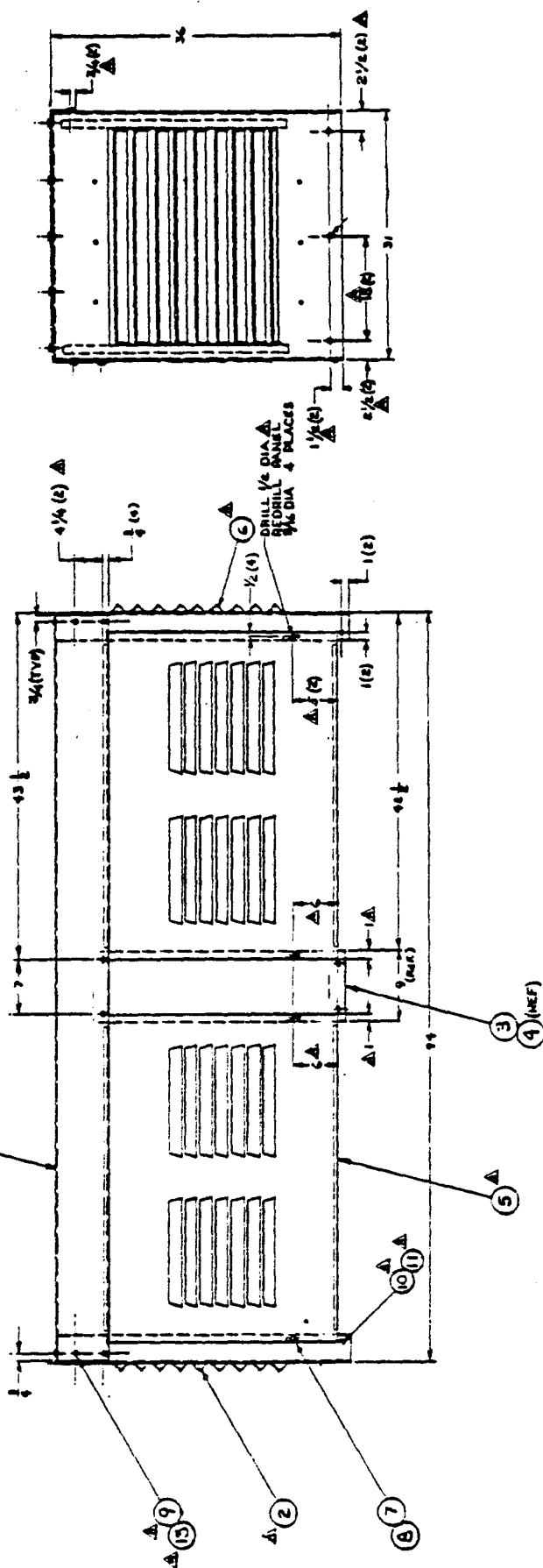
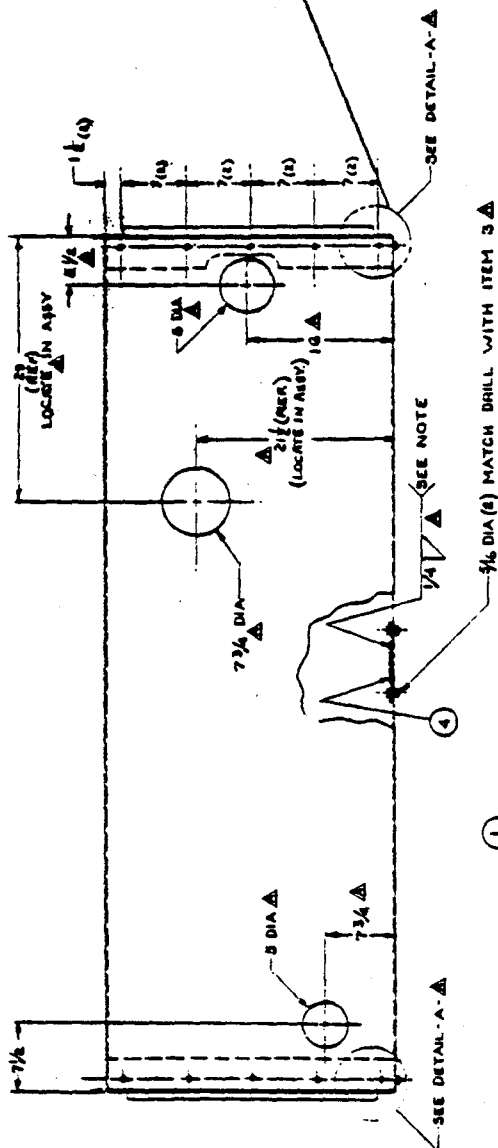


PLUG-IRON $\frac{1}{2}$ 522-00323
(REF- FOR STORAGE ONLY)

REL ECU 2027 12-8-80 12-8-80		BARKO HYDRAULICS, INC. Office: Superior, Wisconsin Phone: (715) 392-5641 Mailing address: P.O. Box 6227 Duluth, Minnesota 55806				
		TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONAL = $\pm \frac{1}{32}$ to $\pm \frac{1}{8}$ DECIMAL .00 = $\pm .010$.000 = $\pm .005$ ANGULAR $\pm 1/2^\circ$		TITLE ASSY-LUBE RESERVOIR		FIRST USED 250-550
DRAWN MATHESON	DATE 12-8-80	SCALE $\frac{1}{2}'' = 1''$		DRG. SIZE B	DRG. NO. 642-00015	EST. WT. 10.5
APPR. DHS	DATE 12-19-80					ACT. WT.



DETAIL-A-
LEFT HAND SHOWN
RIGHT HAND OPPOSITE

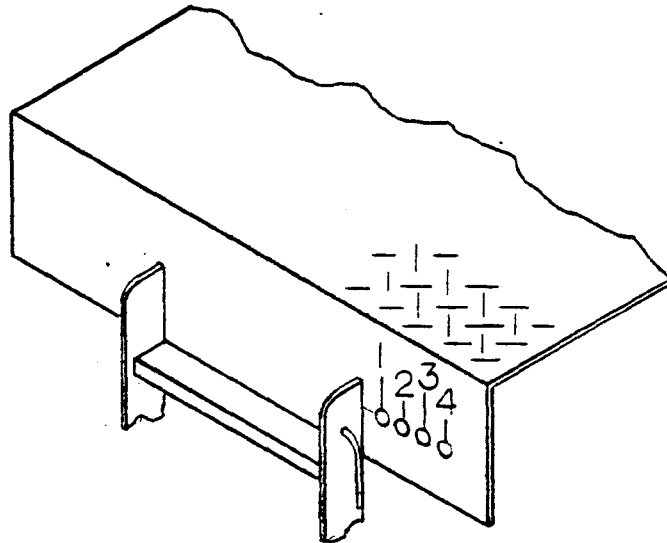


MODEL 250
SHROUDING ASSEMBLY
PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	704-00016
1	1	PLATE, shroud hood.....	702-00234
2	1	WELDMENT, end panel left.....	702-00118
3	1	PLATE, back brace.....	701-00325
4	1	PLATE, rectangular 1/4 x 2 x 9 Lg.....	441-00213
5	2	PLATE, louver door.....	701-00293
6	1	WELDMENT, end panel right.....	702-00119
7	4	PIN, yoke.....	515-00095
8	4	PIN, latch.....	539-00599
9	18	BOLT, self tapping 5/16 x 3/4" Lg.....	514-00442
10	10	BOLT, HEX 5/16 x 1"Lg.....	510-00631
11	10	NUT, nylock 5/16 UNC.....	513-00426
12	2	PLATE, rectangular 1/4 x 2 x 3"LG.....	441-00001
13	18	WASHER, lock 5/16".....	514-00060

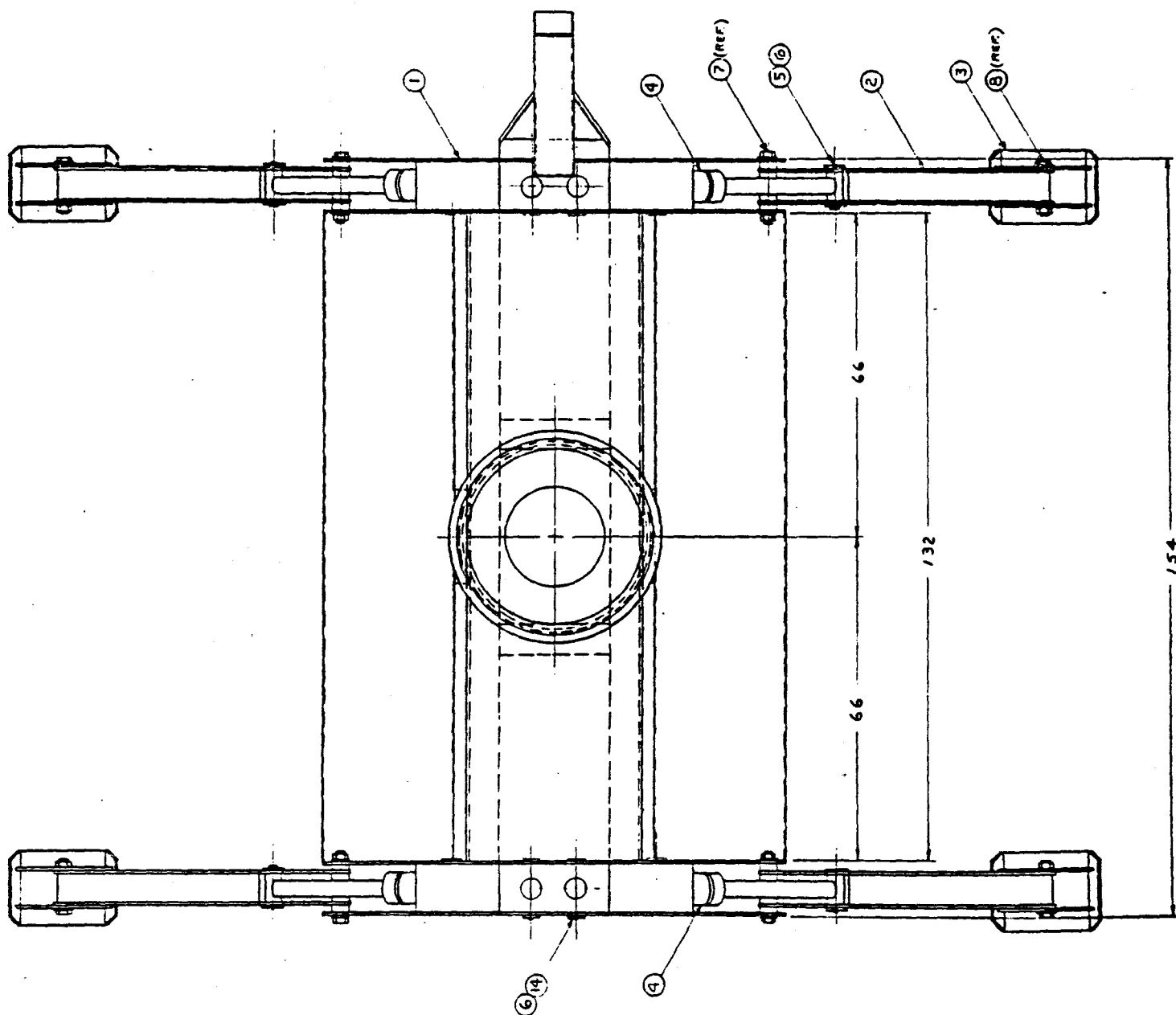
Effective date 3-9-81

MODEL 250
PRESSURE CHECK PORTS

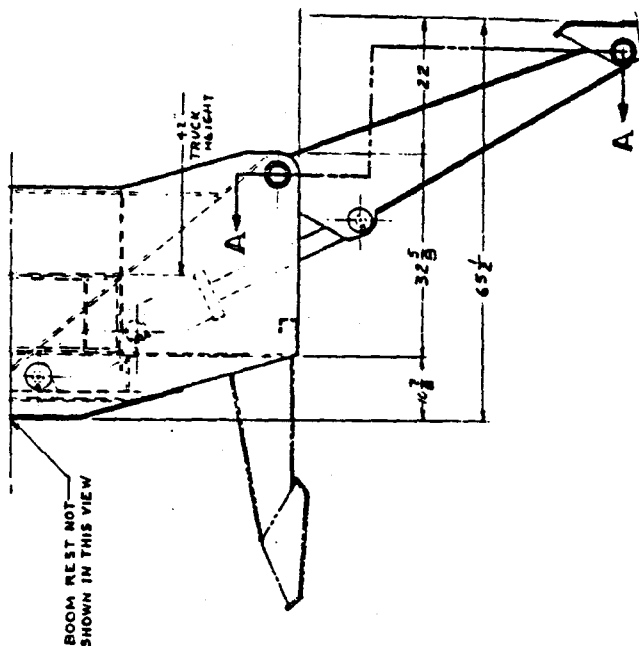
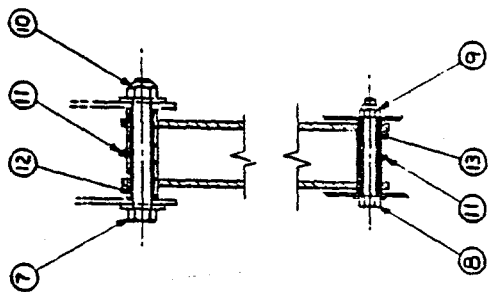


<u>ITEM NO.</u>	<u>DESCRIPTION</u>
1	SWING, pressure
2	SWING, pressure
3	PUMP, secondary 21 gallon
4	PUMP, primary 30 gallon

Effective Date 6/30/77



SECTION A-A



250 TRUCK
SUBFRAME-STABILIZER
PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	134-00011
1	1	WELDMENT, subframe truck mount.....	134-00176
2	4	WELDMENT, stabilizer leg.....	172-00108
3	4	WELDMENT, stabilizer pad.....	172-00307
4	4	ASSEMBLY, hydraulic cylinder 6 x 24 x 3".....	812-00440
5	4	WELDMENT, stabilizer cylinder pin.....	482-00008
6	8	BOLT, hex head ½ x ¾"Lg.....	510-00701
7	4	BOLT, body fit 2 x 13-7/8"Lg.....	482-00225
8	4	BOLT, body fit 1½ x 9-¾"Lg.....	482-00313
9	4	NUT, hex lock thin 1½".....	513-00770
10	4	NUT, nylock 2-12.....	513-00417
11	8	FITTING, grease straight 1/8".....	517-00300
12	8	BUSHING, bronze 2¼ x 2 x 2¼"Lg.....	542-00032
13	8	BUSHING, bronze 1-¾ x 1½ x 2"Lg.....	542-00020
14	4	WELDMENT, stabilizer cylinder pin.....	482-00007

Effective Date 3-10-81

ENGINE/PUMP ADAPTER ASSEMBLY

MODEL 250 ONLY

PARTS LIST

ITEM NO	QTY	DESCRIPTION	PART NO
-	-	ADAPTER UNIT, complete (Vickers & Denison pumps)	43207
1	1	PLATE, drive.....	43305
2	20	WASHER, lock, hi collar.....	14311
3	8	CAPSCREW, socket heat 3/8" - UNC x 3/4.....	11602
4	1	SHAFT, drive (SAE "C" spline).....	43303
5	4	BOLT, $\frac{3}{4}$ - UNF - 2" long.....	11079
6	4	WASHER, lock.....	14016
7	4	NUT, hex.....	13313
8	1	ADAPTER PLATE, engine (SAE #4).....	43300
9	1	ADAPTER PLATE, pump.....	43302
10	12	CAPSCREW, socket head, 3/8 - UNC - $1\frac{1}{4}$ long.	11605

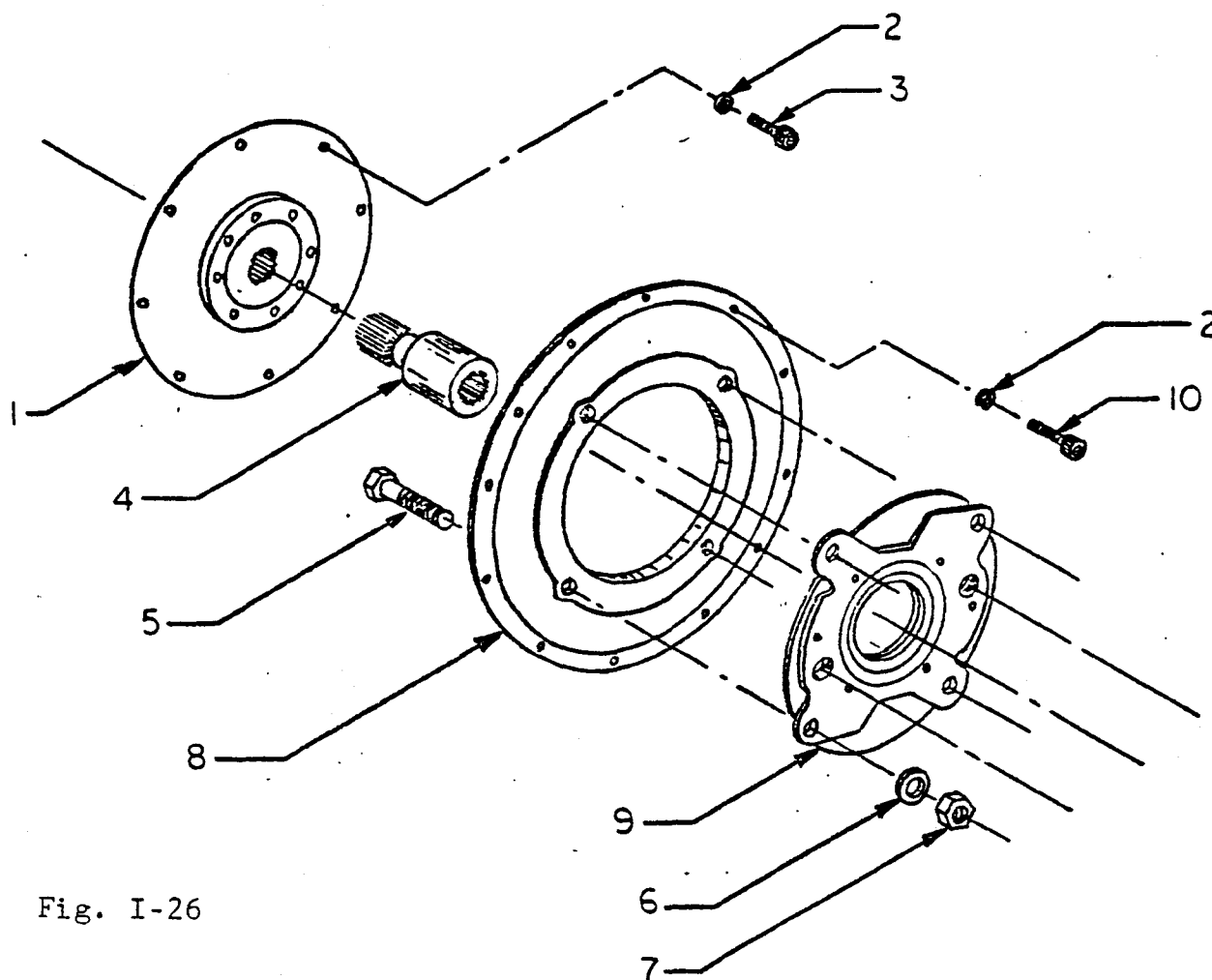


Fig. I-26

Effective: 11/24/75

PUMP/ENGINE MOUNTING DIAGRAM FOR A GMC 453 (MODEL 250)

SWING PUMP HOOK-UP

ITEM	PART NO.
PUMP (TA-15)	60619
BOLTS ($\frac{1}{2}$ -UNC x $1\frac{1}{4}$ lg)	2 req'd
LOCKWASHER	2 req'd

MAIN PUMP HOOK-UP

ENGINE/PUMP ADAPTER (For adapter breakdown & type, see page 27, Fig. I-26)	
PUMP, 30/21 (VICKERS)	60620
PUMP, 31/22 (DENISON)	60400
PUMP, 22/22 (DENISON)	60527
*BOLTS ($\frac{5}{8}$ UNC x $1\frac{3}{4}$ lg)	2 req'd
*LOCKWASHER	2 req'd

DISCONNECT CLUTCH ASSY (OPTIONAL)

ITEM	PART NO
DISCONNECT CLUTCH (For breakdown on Clutch see page 28, Fig. I-27)	39000
MAIN PUMP, MOUNTING BOLTS LOCKWASHERS - ARE SAME AS ABOVE.	

Hydraulic Oil Cooler:
Model 250 PN 53004

GMC 453

Fig. I-28

For Motor Mounting Details see Page

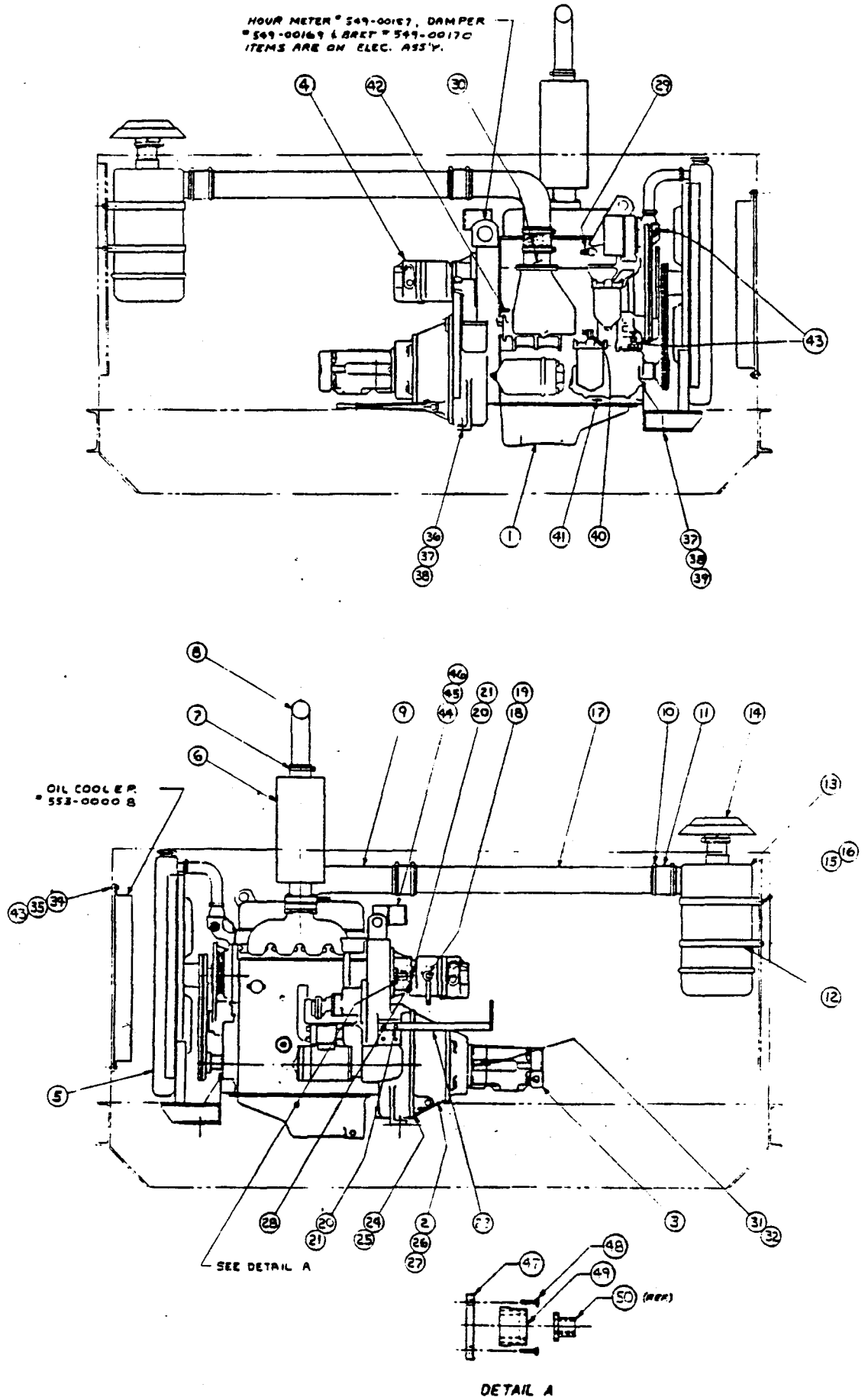
*These bolts & lockwashers shown
above are used with the Vickers
30/21 and Denison (31/22, 22/22)
pumps.

Effective: 11/24/75

STANDARD TRUCK MOUNT POWER PACKAGE

ASSEMBLY NO. 404-00022

HOUR METER * 549-00167, DAMPER
* 549-00169 & BRET * 549-00170
ITEMS ARE ON ELEC. ASS'Y.



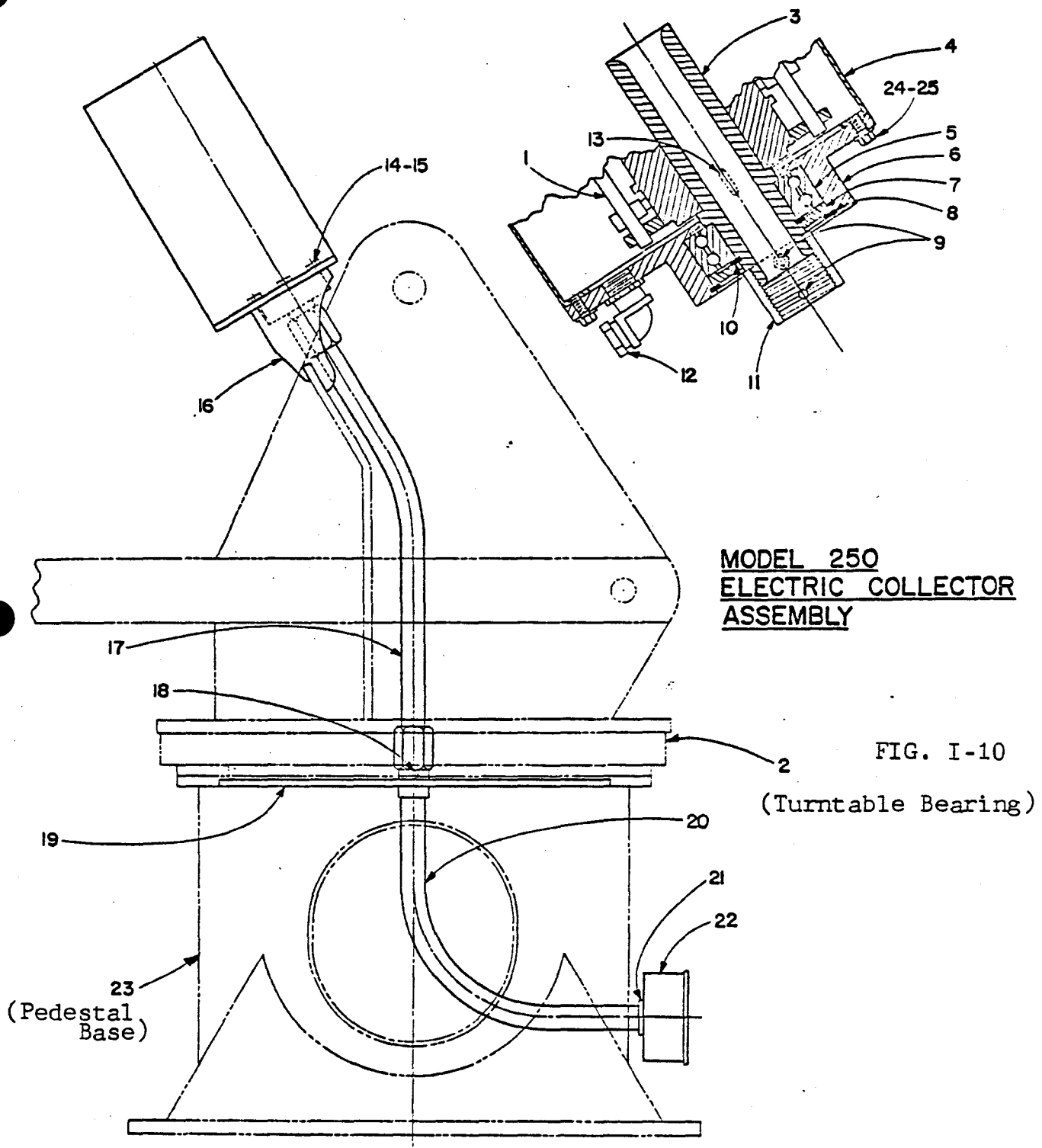
STANDARD TRUCK MOUNT

POWER PACKAGE

PART LIST

ITEM	QTY.	DESCRIPTION	PART NO.
-	1	ASSEMBLY, complete.....	404-00022
1	1	ASSEMBLY, engine 4-53.....	535-00006
2	1	ASSEMBLY, clutch.....	539-00000
3	REF	ASSEMBLY, pump 3525.....	560-00620
4	REF	ASSEMBLY, pump TA-19.....	560-00590
5	1	ASSEMBLY, radiator.....	535-00191
6	1	MUFFLER, Donaldson No. MFM 07-0008.....	535-00192
7	1	CLAMP, 3½".....	535-00173
8	1	EXHAUST, sweep 218-0079.....	535-00193
9	1	ELBOW, 90° x 4 dia. Det No. 5125345.....	535-00194
10	6	CLAMP, hose Det No. 5113246.....	569-00516
11	3	HOSE, 4I.D. x 4 Lg Det No. 5125281.....	535-00163
12	2	STRAP, air cleaner AAH00-0349.....	535-00195
13	1	CLEANER, air No. FGA12-7200.....	535-00196
14	1	HOOD, air cleaner GAH00-0471.....	535-00197
15	4	BOLT, hex head 3/8-16 x 1" Lg.....	510-00654
16	4	NUT, nylock 3/8-16".....	513-00427
17	1	AIR, cleaner tube 4 Dia. x 32" Lg.....	535-00198
18	1	WELDMENT, control lever.....	452-00129
19	1	SET, screw #10 NC x ½" Lg.....	512-00571
20	4	BOLT, hex head ½-13 x 1½" Lg.....	510-00704
21	4	WASHER, lock ½".....	514-00013
23	1	WELDMENT, control cable bracket.....	452-00131
24	12	BOLT, hex head 3/8-16 x 1½" Lg.....	510-00655
25	12	WASHER, lock 3/8".....	514-00011
26	8	CAP, screw socket head 3/8 x 1-3/4".....	511-00607
27	8	WASHER, lock high collar.....	514-00311
28	1	GASKET, hydraulic pump Det No. 5137221.....	535-00169
29	1	ADAPTER, 04MP-06MS.....	567-00568
30	1	ADAPTOR, air inlet Det No. 5122195.....	535-00160
31	2	BOLT, hex head 5/8-11 x 1½" Lg.....	510-00753
32	2	WASHER, lock 5/8".....	514-00015
34	6	BOLT, hex head 5/16-18 x 1" Lg.....	510-00631
35	6	NUT, nylock 5/16-18".....	513-00426
36	2	BOLT, hex head 9/16-12 x 2½" Lg.....	510-00735
37	4	WASHER, flat 9/16".....	514-00085
38	4	NUT, nylock 9/16-12".....	513-00430
39	2	BOLT, hex head 9/16-12 x 1½" Lg.....	510-00731
40	1	ADAPTER, 04MP-06FP x 90.....	566-00053
41	1	DRAIN, cock ¼".....	530-00016
42	1	DRAIN, cock 1/8".....	530-00015
43	6	WASHER, flat 5/16".....	514-00081
44	1	WELDMENT, control cable bracket.....	452-00132
45	3	BOLT, hex head ½-20 x 1" Lg.....	510-00604
46	3	WASHER, lock ½".....	514-00009
47	1	ADAPTER, spline Det No. 5170450.....	535-00183
48	4	BOLT, hex head 3/8-24 x 1-3/8" Lg.....	514-00542
49	1	ADAPTER, splined Det No. 5143616.....	535-00168
50	1	ADAPTER, spline.....	402-00820

Effective Date 3-3-81



MODEL 250 ELECTRIC
ELECTRIC COLLECTOR ASSEMBLY
PARTS LIST

ITEM NO	QTY	DESCRIPTION	PART NO
1	1	ELECTRIC COLLECTOR, standard.....	49250
		ELECTRIC COLLECTOR, 8 extra rings.....	49251
		ELECTRIC COLLECTOR, 16 extra rings.....	49256
		ELECTRIC COLLECTOR, 24 extra rings.....	49276
2	1	TURNTABLE BEARING.....	41507
3	1	SHAFT, collector.....	911603
(1) 4	1	COVER, collector.....	913204
5	1	BEARING.....	41518
6	1	MOUNTING PLATE, weldment.....	911200
7	1	COVER, bearing.....	911411
8	1	SNAP RING, internal.....	42566
9	2	SET SCREW, 5/16 UNC x 3/8" lg.....	12602
10	1	SNAP RING, external.....	42438
11		COUPLING, electrical w/set screw.....	911217
12	1	COUPLING, electrical, 1½".....	49336
13	1	KEY, radiused, ½" x ½" x 1" lg.....	-
14	6	BOLT, ½" UNC x 1½" lg.....	10104
15	6	LOCKWASHER, ½".....	14013
16	2	BRACKET, collector support.....	911412
17	1	DRIVE HOSE, assembly, 2".....	-
18	1	SET SCREW, 5/16 UNC x 3/8" lg.....	12602
19	1	ELECTRIC COUPLING SUPPORT, weldment.....	-
20	1	SWEEP, 90°, 2".....	49321
21	1	HUB, 2".....	49320
22		BOX, electrical.....	48005
23		BASE, pedestal.....	133125
24	9	CAPSCREW, 5/16 UNC x 1" lg.....	10031
25	9	LOCKWASHER, 5/16".....	14010

- (1) When ordering electric collector cover, specify the number of rings that are on the collector.

MODEL 350-450
ELECTRIC MOTOR MOUNTING

MODEL 350
(2) 75 HP MOTORS
MODEL 450
(2) 100 HP MOTORS

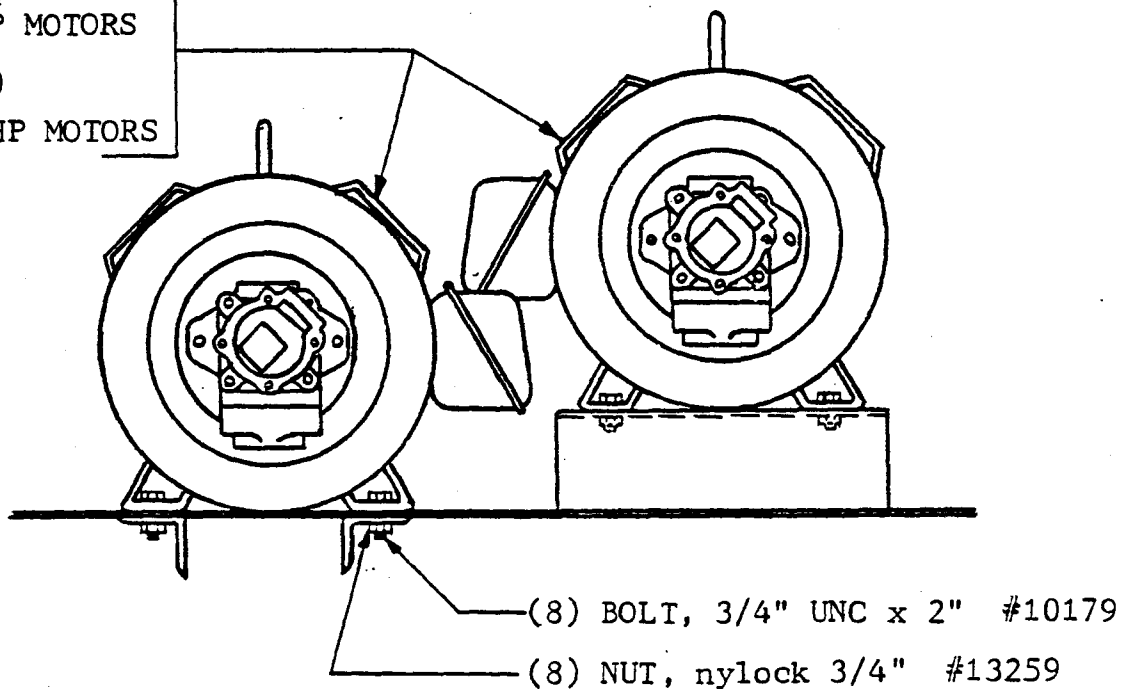
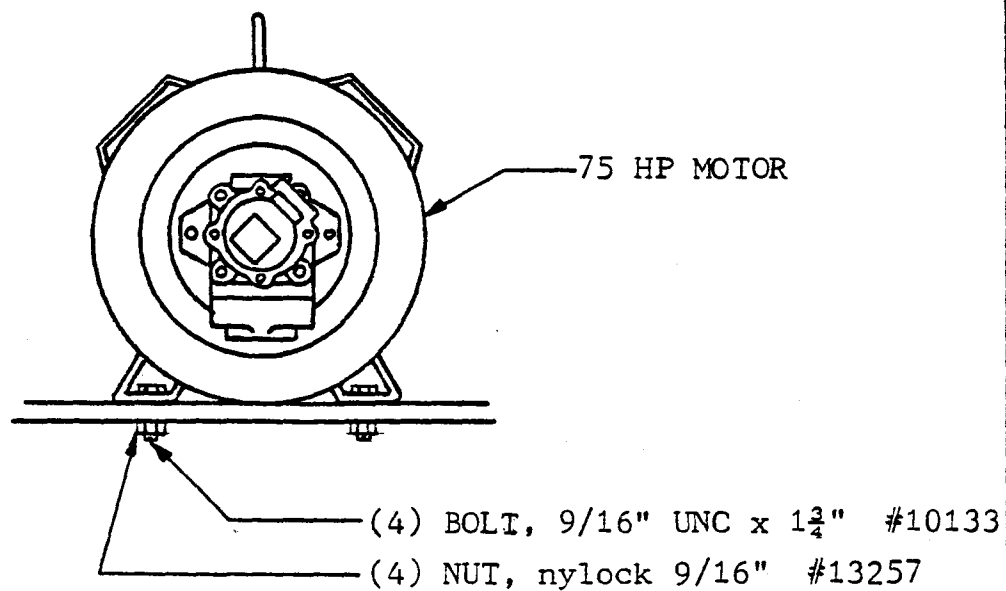


FIG. I-26

MODEL 250
ELECTRIC MOTOR MOUNTING

FIG. I-27



Effective Date: 3/8/76

MODEL 250-350-450 ELECTRIC

PUMP ADAPTER ASSEMBLY

ELECTRIC MOTOR

PARTS LIST

ITEM NO	QTY	DESCRIPTION	250	350	450
1	2	BOLT, $\frac{1}{2}$ " UNC x $1\frac{1}{2}$ ".....	10705	10705	10705
2	2	LOCKWASHER, $\frac{1}{2}$ ".....	14013	14013	14013
3	1	PUMP, main (31 gal. Denison).....	-	60529	60529
		PUMP, main (30/21 Vickers L.H.)....	60510	-	-
4	1	COUPLING.....	SEE COUPLING ILLUSTRATION		
5	2	KEY, $\frac{1}{2}$ " x $\frac{1}{2}$ " x 2" lg.....	-	-	-
6	1	ADAPTER.....	402107	402107	402107
7	1	MOTOR, 100 HP.....	-	-	49417
		MOTOR, 75 HP.....	49407	49407	-
8	18	LOCKWASHER, $\frac{5}{8}$ ".....	10415	10415	10415
9	18	BOLT, $\frac{5}{8}$ " - UNC x $2\frac{1}{4}$ ".....	10753	10753	10753
10	1	COUPLING.....	SEE COUPLING ILLUSTRATION		
11	1	KEY, $\frac{5}{16}$ " x $\frac{5}{16}$ " x $1\frac{1}{8}$ " lg.....	-	-	-
12	1	PUMP, swing (TA-15 Vickers).....	60619	60619	60619
13	1	ADAPTER.....	402108	402108	402108

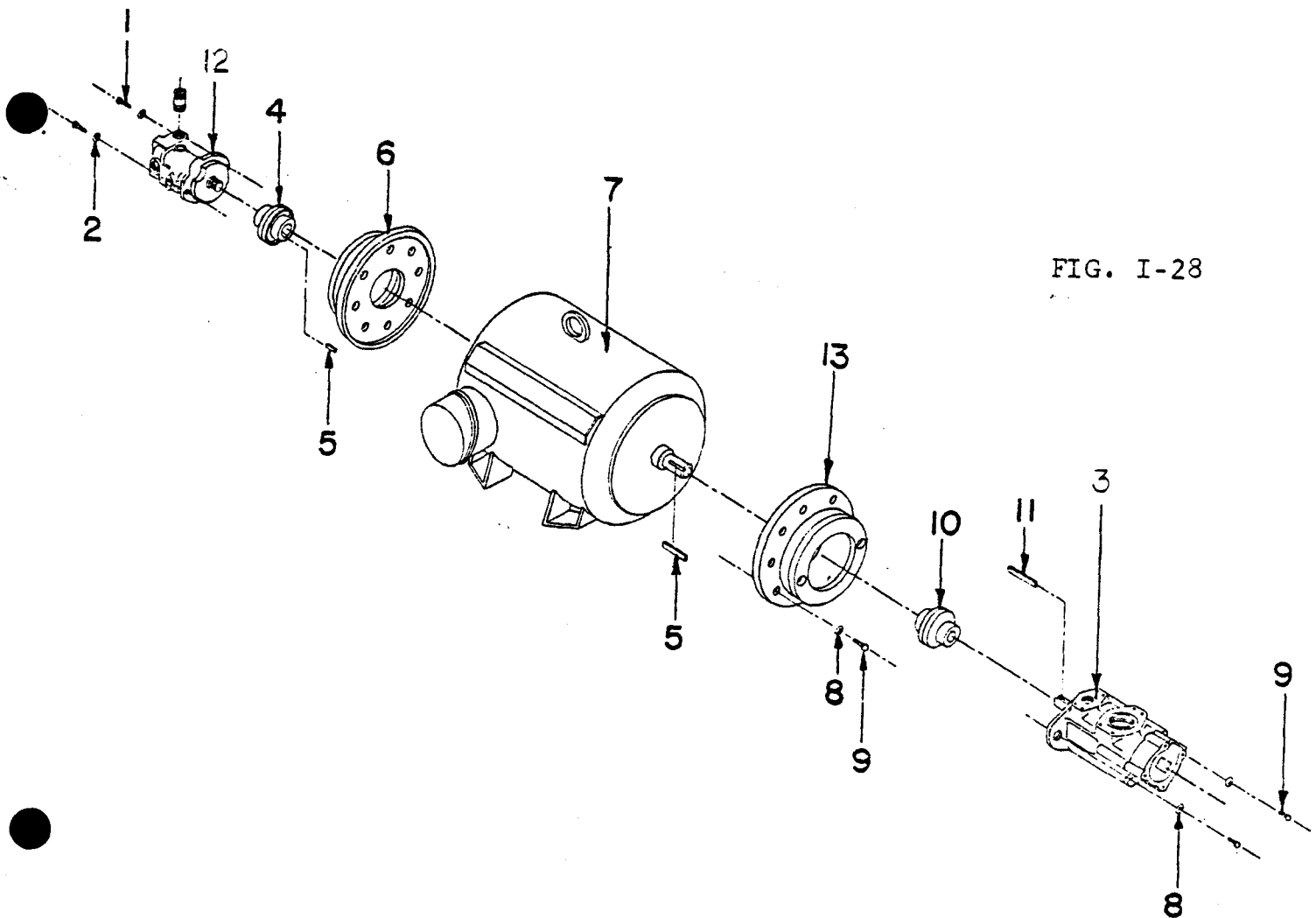
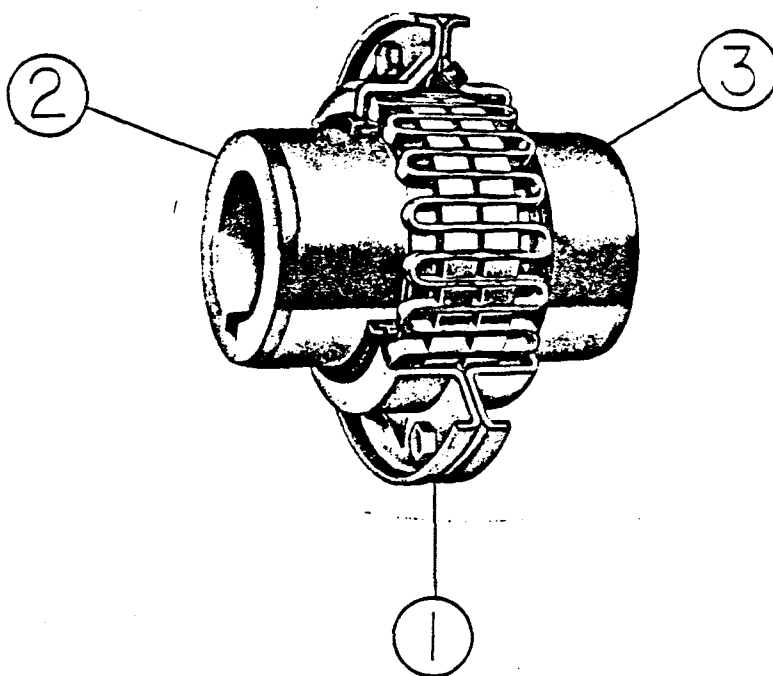


FIG. I-28

Effective Date: 3/8/76

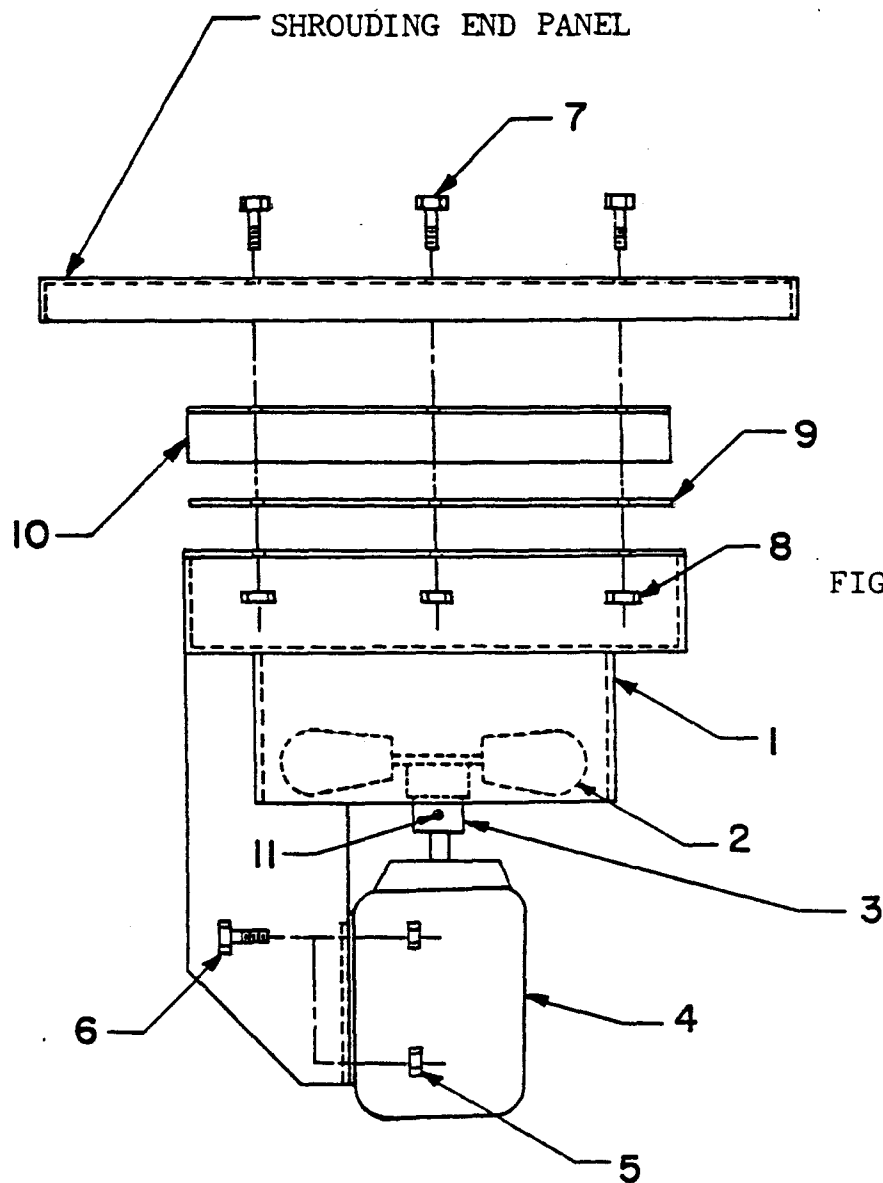


COUPLING ASSEMBLY

<u>ITEM NO.</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
	1	COUPLING assembly, complete -----	43203
1	1	COVER and grid assembly -----	43308
2	1	HUB, 1-7/8" bore with keyway (fits 75 HP- motor)	43315
	1	HUB, 2-1/8" bore with keyway (fits 100 HP motor)	43317
3	1	HUB, 1-1/4" splined (fits main pump) ----	43313
	1	HUB, 7/8" splined (fits swing pump) ----	43307

PLEASE SPECIFY HUB SIZES
AND PART NUMBERS WHEN
ORDERING COMPLETE ASSEMBLY.

Effective 4/7/78



MODEL 250 ELECTRIC
FAN AND COOLER ASSEMBLY
PARTS LIST

ITEM NO	QTY	DESCRIPTION	PART NO
1	1	SHROUD, weldment.....	702002
2	1	FAN, 14".....	48934
3	1	ADAPTER, fan.....	931408
4	1	MOTOR, 1/3 HP.....	49402
5	4	NUT, nylock, 5/16" UNC.....	13053
6	4	BOLT, 5/16" UNC x 1" lg.....	10031
7	6	BOLT, 5/16" UNC x 1 1/2" lg.....	10033
8	6	NUT, nylock, 5/16" UNC.....	13053
9	2	BRACKET, 1/2" x 1 1/4" x 20 1/2" lg.....	-
10	1	COOLER, oil.....	53004
11	1	SCREW, set, 1/4" UNC x 1/2" lg.....	12587

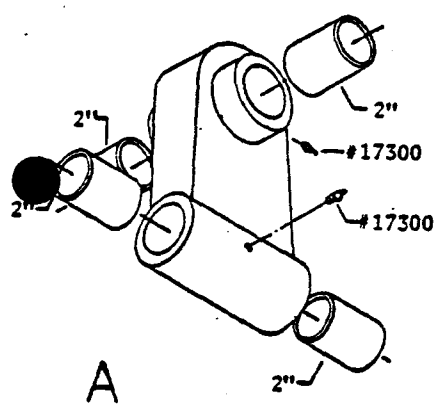


Fig. I-21

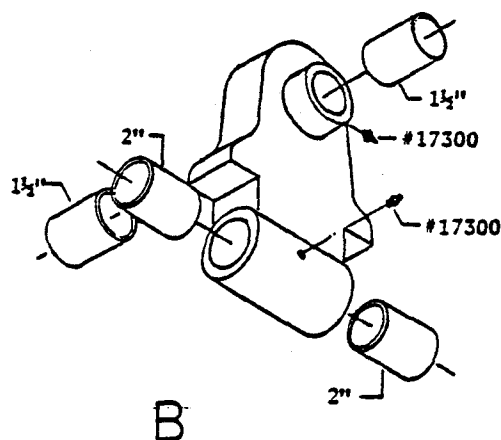


Fig. I-22

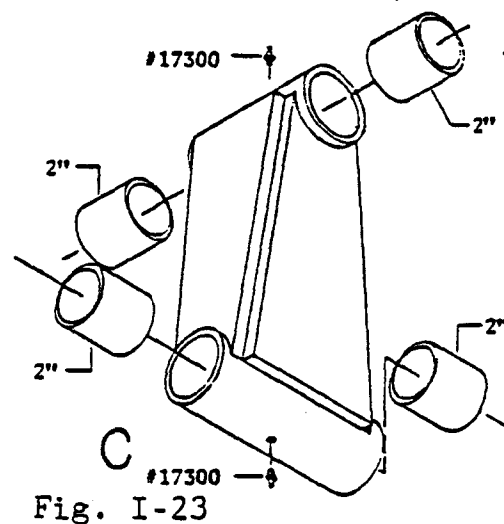
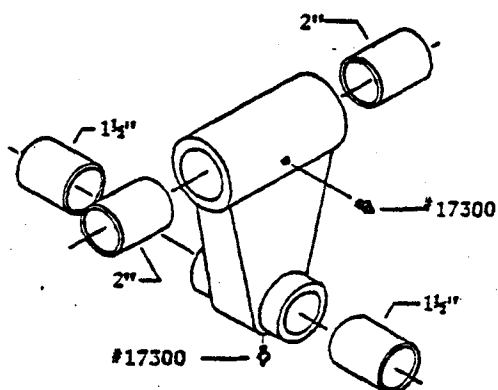


Fig. I-23



D Fig. I-24

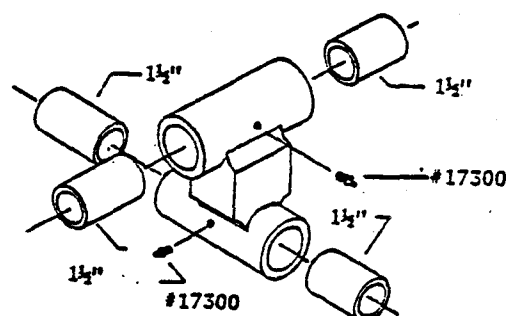


Fig. I-25

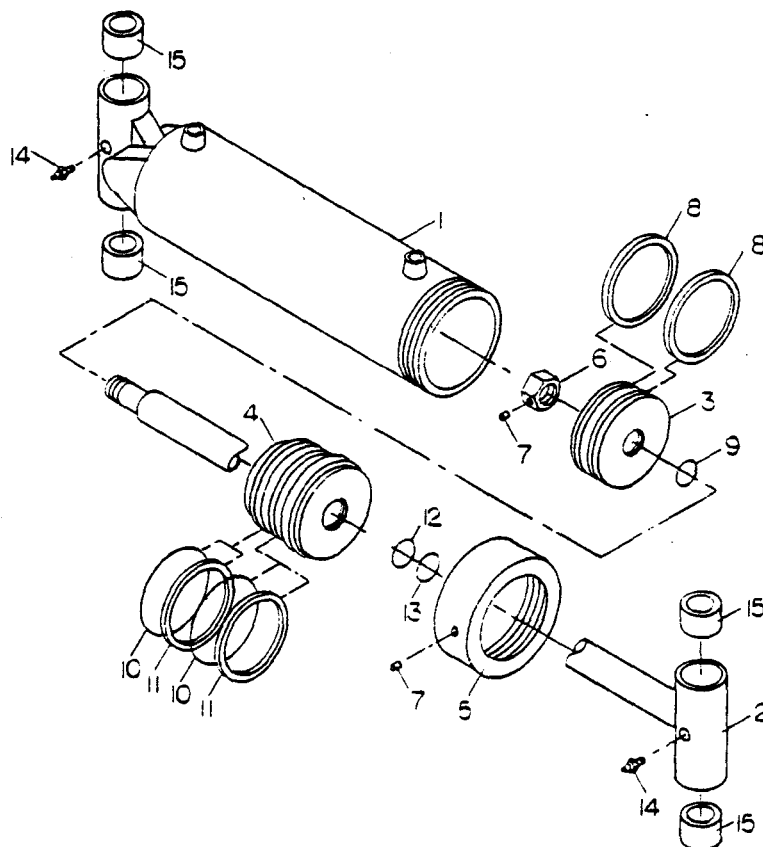
E

HANGERS FOR ATTACHMENTS

NOTE: 42020 - PART NO. FOR 1 1/2 BUSHING
42032 - PART NO. FOR 2 BUSHING

- (A) PART NO. 152116
GENERALLY USED IN CONJUNCTION WITH THE
54" & 60" BYPASS GRAPPLE
- (B) PART NO. 152148
GENERALLY USED WITH MODELS 60, 80, 120,
140 GEAR & RACK, 140 CONTINUOUS ROTATION
UTILIZING CONTINUOUS ROTATING GRAPPLES
- (C) PART NO. 152173
USED ON CONTINUOUS ROTATION MODELS
UTILIZING CONTINUOUS ROTATING GRAPPLES
- (D) PART NO. 152117
GENERALLY USED IN CONJUNCTION WITH THOSE
MACHINES USING THE STANDARD HEAVY DUTY
33" & 42" BYPASS GRAPPLE
- (E) PART NO. 152118
USED ON MODEL 140. GENERALLY USED IN
CONJUNCTION WITH THE STANDARD HEAVY DUTY
33" & 42" BYPASS GRAPPLE

Effective: 11/24/75



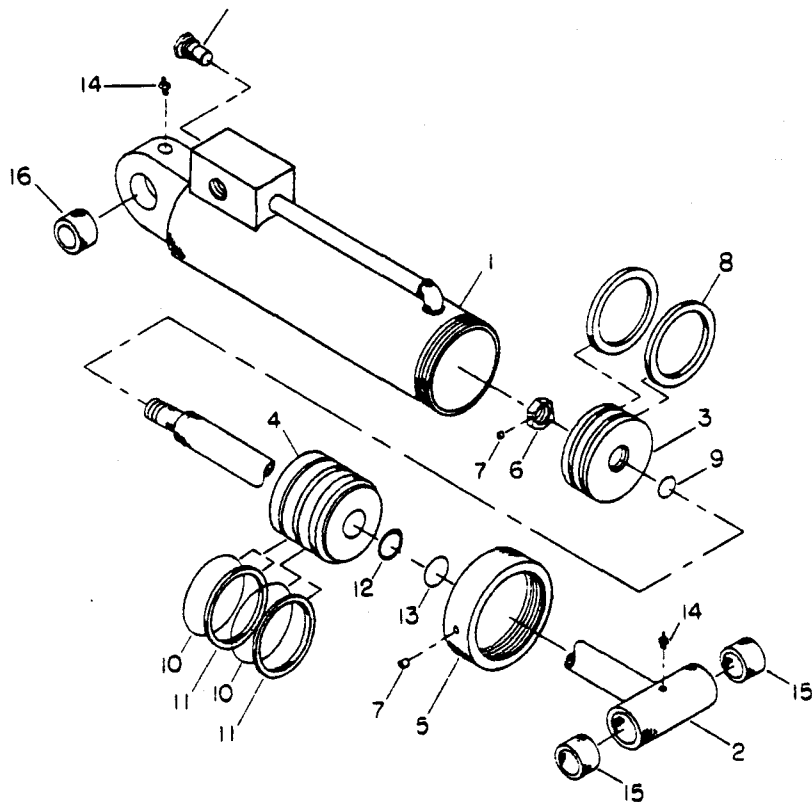
MODEL 250

MAIN BOOM CYLINDER

(6 x 48 WITH 3" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete-----	812-00510
1	1	WELDMENT, butt and tube-----	832-00136
2	1	WELDMENT, rod-----	842-00023
3	1	PISTON-----	852-00003
4	1	GLAND-----	852-00305
5	1	CAP, gland-----	852-00814
6	1	NUT, nylock-----	513-00413
7	2	SCREW, set-----	512-00616
(1) (3)	8	SEAL, piston (555-00044)-----	
(1) (3)	9	O-RING (565-00318)-----	
(2) (3)	10	O-RING (565-00355)-----	
(2) (3)	11	WASHER, back up (565-00655)-----	
(2) (3)	12	SEAL, rod (555-00171)-----	
(2) (3)	13	SEAL, wiper (556-00904)-----	
14	2	FITTING, grease-----	517-00300
15	4	BUSHING, bronze-----	542-00032
<u>SEAL KITS AVAILABLE</u>			
(1)		PISTON SEAL KIT-----	565-00489
(2)		GLAND SEAL KIT-----	565-00491
(3)		COMPLETE SEAL KIT-----	565-00539

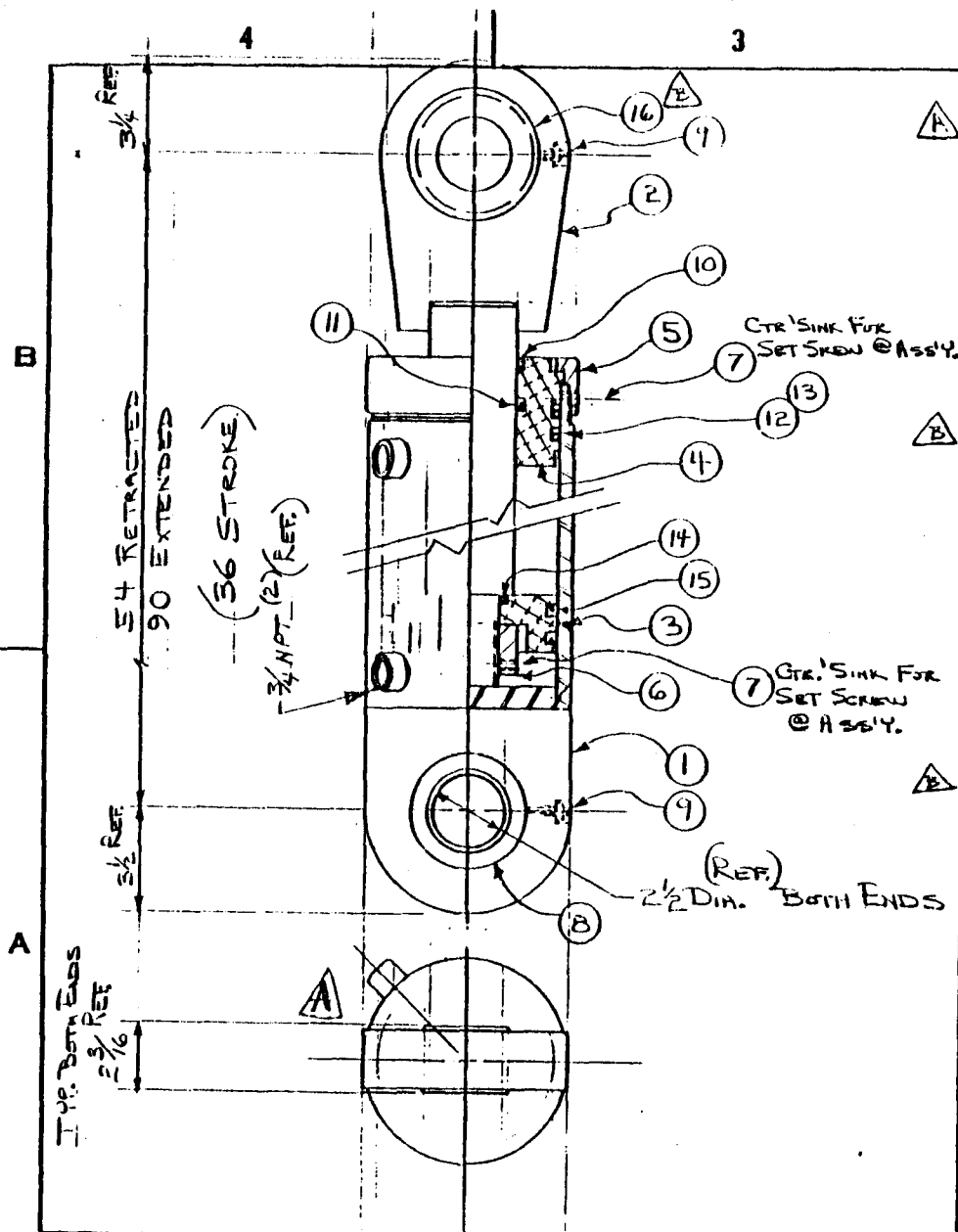
Effective 6-17-80



MODEL 250
SECONDARY BOOM CYLINDER
7 X 36 WITH 4" ROD

<u>ITEM NO.</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
0	1	ASSEMBLY, complete -----	812491
1	1	WELDMENT, butt and tube ---	832079
2	1	WELDMENT, rod -----	842076
3	1	PISTON -----	852004
4	1	GLAND -----	852308
5	1	CAP, gland -----	852811
6	1	NUT, hex -----	13123
7	2	SCREW, set -----	12616
(1) (3) 8	2	SEAL, piston -----	
(1) (3) 9	1	O RING -----	
(2) (3) 10	2	O RING -----	
(2) (3) 11	2	WASHER, back up -----	
(2) (3) 12	1	SEAL, rod -----	
(2) (3) 13	1	SEAL, wiper -----	
14	2	FITTING, grease -----	17300
15	2	BUSHING, bornze -----	421400
16	1	BUSHING, ball -----	41514
17	1	CARTRIDGE, load lock -----	53010
<u>SEAL KITS AVAILABLE</u>			
	1	PISTON SEAL KIT -----	65494
	2	GLAND SEAL KIT -----	65496
	3	COMPLETE SEAL KIT -----	65583
	4	COUNTER BALANCE SEAL KIT --	65575

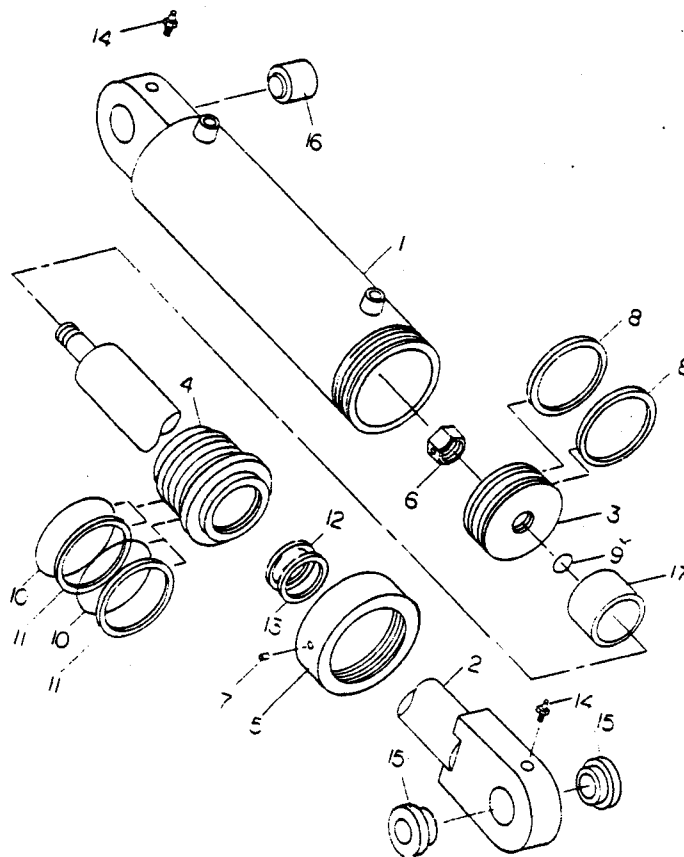
Effective 4/1/78



ITEM	QTY.	MAT'L.	PART NO.	DESCRIPTION	WT. # @
1	1	B.M.	832-001E2	WELDMENT, BUTT & TUBE R.H.	158
2	1	B.M.	842-00097	WELDMENT, ROD	111
3	1		852-00005	PISTON	5
4	1		852-00305	GLAND	7
5	1		852-00810	GLAND CAP	5
6	1		513-00417	NUT, HEX 2"-12 UN	1
7	1	-	512-00616	SCREW, SET	-
8	1	-	541-00514	BUSHING, SELF ALIGNING BALL	1
9	2	-	517-00300	FITTING, STRAIGHT GREASE	-
10	1	-	556-00904	SEAL, WIPER	-
11	1	-	555-00171	SEAL, LOADED LIP	-
12	1	-	565-00655	RING, BACK-UP	-
13	2	-	565-00355	O-RING	-
14	1	-	565-00403	O-RING	-
15	2	-	555-00044	SEAL, LOADED LIP	-
16	2		421-00403	BUSHING, 2 1/2 I.D. (1) GROOVE	1/2
		B.M.	*	INCLUDED IN SEAL KIT No. 56609	2

FILE 4-14 85-13 E.C.N. 1534 85-13 E.C.N. 542 85-13 E.C.N. 509 85-13 E.C.N. 389 85-13 E.C.N. 389		REV. DATE BY DESCRIPTION 1-17-78 P. Kangas 1-17-78		TOLERANCES UNLESS OTHERWISE SPECIFIED. FRACTIONAL ± 1/32 DECIMAL .00 ± .010 .000 ± .005 ANGULAR ± 1/2°		BARKO HYDRAULICS, INC. Office: Superior, Wisconsin Phone: (715) 392 5641 Mailing address: P.O. Box 6227 Duluth, Minnesota 55806		SCALE 1/4"=1"		DRG SIZE B		DRG NO 812-00525	
TITLE ASSEMBLY, CYLINDER 6 X 36 WITH 3" ROD (2" STUB WITH HVY. WALL TUBE) RIGHT HAND				FIRST USED 250 F2 NEXT ASSY				EST. WT. 241 # @ 29.					

FRONT



MODEL 250

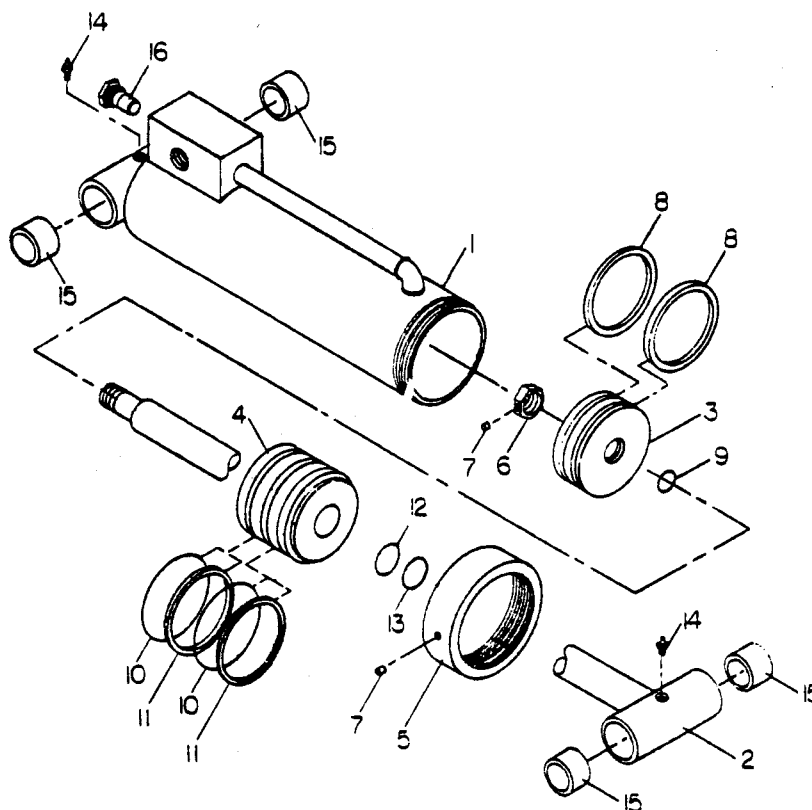
SECONDARY BOOM CYLINDER LEFT HAND APPLICATION

6 x 36 WITH 3" ROD)

<u>ITEM NO.</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	812-00535
1	1	WELDMENT, butt and tube.....	832-00152
2	1	WELDMENT, rod.....	842-00097
3	1	PISTON.....	852-00005
4	1	GLAND.....	852-00305
5	1	CAP, gland.....	852-00810
6	1	NUT, nylock.....	513-00417
7	1	SCREW, set.....	512-00616
8	2	SEAL, piston N.S.S.....	
9	1	O-RING N.S.S.....	
10	2	O-RING N.S.S.....	
11	2	WASHER, back-up N.S.S.....	
12	1	SEAL, rod N.S.S.....	
13	1	SEAL, wiper N.S.S.....	
14	2	FITTING, grease.....	517-00300
15	2	BUSHING, aluminum.....	421-00403
16	1	BUSHING, ball.....	541-00514
<u>SEAL KITS AVAILABLE</u>			
(1)		PISTON SEAL KIT.....	565-00492
(2)		GLAND SEAL KIT.....	565-00491
(3)		COMPLETE SEAL KIT.....	565-00609

N.S.S. - NOT SOLD SEPARATELY

Effective date 10-7-80



MODEL 250

STABILIZER ARM CYLINDER

(6 x 24 WITH 3" ROD)

<u>ITEM NO</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
0	1	ASSEMBLY, complete-----	812440
1	1	WELDMENT, butt and tube-----	832053
2	1	WELDMENT, rod-----	842016
3	1	PISTON-----	852003
4	1	GLAND-----	852305
5	1	CAP, lgand-----	852810
6	1	NUT, hex-----	13119
7	2	SCREW, set-----	12616
(1) (3) 8	2	SEAL, piston-----	
(1) (3) 9	1	O-RING-----	
(2) (3) 10	2	O-RING-----	
(2) (3) 11	2	WASHER, back up-----	
(2) (3) 12	1	SEAL, rod-----	
(2) (3) 13	1	SEAL, wiper-----	
14	2	FITTING, grease-----	17300
15	4	BUSHING, bronze-----	42032
16	1	CARTRIDGE, load lock-----	53009
<u>SEAL KITS AVAILABLE</u>			
		LOAD LOCK SEAL KIT-----	65575
(1)		PISTON SEAL KIT-----	65489
(2)		GLAND SEAL KIT-----	65491
(3)		COMPLETE SEAL KIT-----	65537

Effective 4-1-78

VICKERS 35/25 TANDEM MAIN PUMP

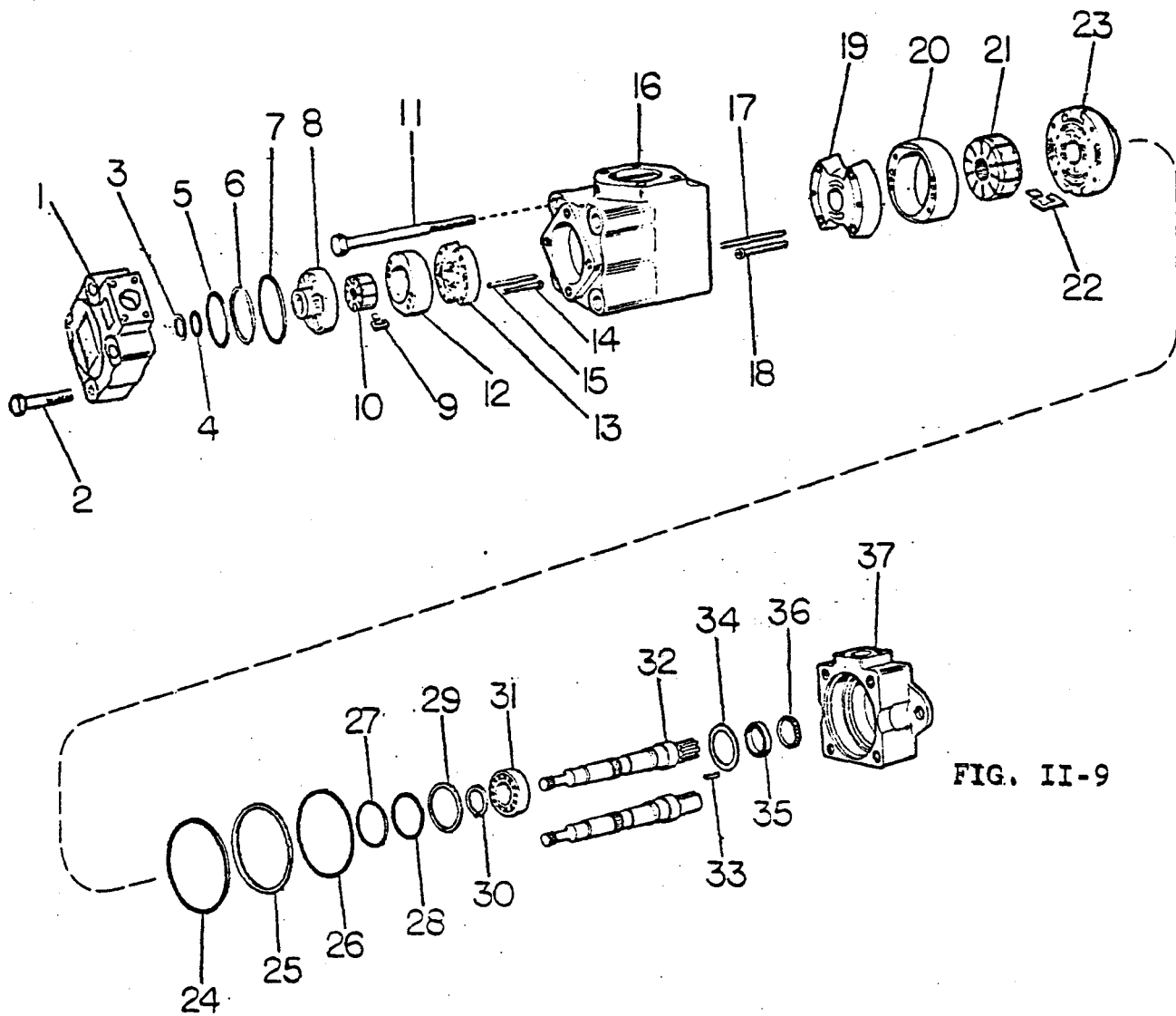


FIG. II-9

Effective Date: 3/8/76

VICKERS
3525 TANDEM PUMP (30/21 GPM)
PARTS LIST

ITEM NO	QTY	DESCRIPTION	PART NO
	1	PUMP, assembly, 30-21 GPM, R.H. Rotation.....	60620
	1	PUMP, assembly, 30-21 GPM, L.H. Rotation.....	60510
1	1	COVER.....	59152
2	4	BOLT.....	59153
(1)(2) 3	1	RING, back-up.....	(59154)
(1)(2) 4	1	O-RING.....	(65401)
(1)(2) 5	1	O-RING.....	(65414)
(1)(2) 6	1	RING, back-up.....	(59559)
(1)(2) 7	1	O-RING.....	(65417)
(2) 8	1	PLATE, pressure.....	(59522)
(2) 9	1	KIT, vane.....	(59526)
(2) 10	1	ROTOR.....	(59521)
11	4	BOLT.....	59158
(2) 12	1	RING.....	(59155)
(2) 13	1	PLATE, wear.....	(59156)
(2) 14	2	SCREW.....	(59519)
(2) 15	2	PIN.....	(59518)
16	1	HOUSING.....	59157
(3) 17	2	PIN.....	(59160)
(3) 18	2	SCREW.....	(59159)
(3) 19	1	PLATE, wear.....	(59161)
(3) 20	1	RING.....	(59162)
(3) 21	1	ROTOR.....	(59163)
(3) 22	1	KIT, vane.....	(59164)
(3) 23	1	PLATE, pressure.....	(59165)
(1)(3) 24	1	O-RING.....	(59166)
(1)(3) 25	1	RING, back-up.....	(59167)
(1)(3) 26	1	O-RING.....	(59168)
(1)(3) 27	1	O-RING.....	(59169)
(1)(3) 28	1	RING, back-up.....	(59170)
29	1	RING, lock.....	59171
30	1	RING, snap.....	59172
31	1	BEARING.....	59173
32	1	SHAFT, keyed.....	59174
	1	SHAFT, splined.....	59185
33	1	KEY.....	59175
34	1	WASHER.....	59176
(1) 35	1	SEAL.....	(59177)
(1) 36	1	WIPER.....	(59178)
37	1	BODY.....	59179

NOTE: Numbers in brackets () indicate superceded numbers.

- | | | |
|-----|---|-------|
| (1) | Included in Seal Kit..... | 65543 |
| (2) | Included in Cartridge Kit (21 gpm)..... | 65260 |
| (3) | Included in Cartridge Kit (30 gpm)..... | 65258 |

Effective Date: 3/8/76

ACCUMULATOR SET-UP

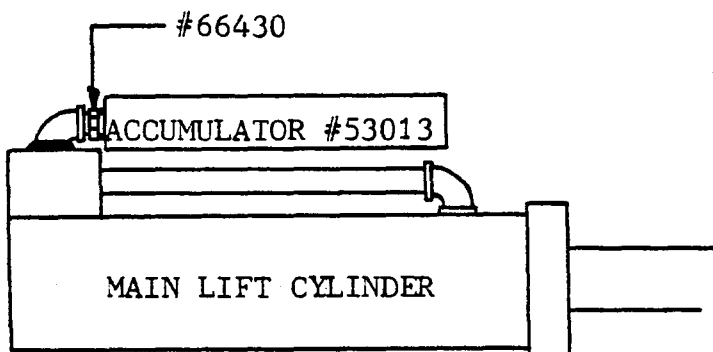


Fig. II-47

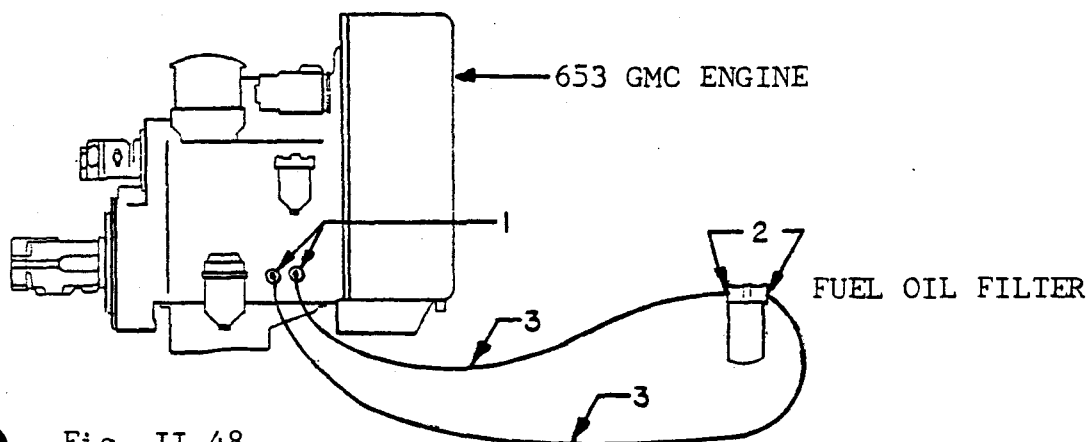


Fig. II-48

FUEL OIL FILTER CIRCUIT

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
1	2	ADAPTER, straight, 1" JIC - NPT.	66994
2	2	ADAPTER, 90°, 1" JIC-1" NPT.....	68783
(1) 3	2	HOSE, assembly, 1"-4W x 42"(350)	86627
	2	HOSE, assembly, 1"-4W x 60"(450)	86636

(1) Item 3 consists of the following:

HOSE, 1"-4W.....	94006
SWIVEL, straight JIC.....	66370
SWIVEL, 90°, JIC.....	66393

Effective: 11/24/75

ACCUMULATOR PARTS LIST

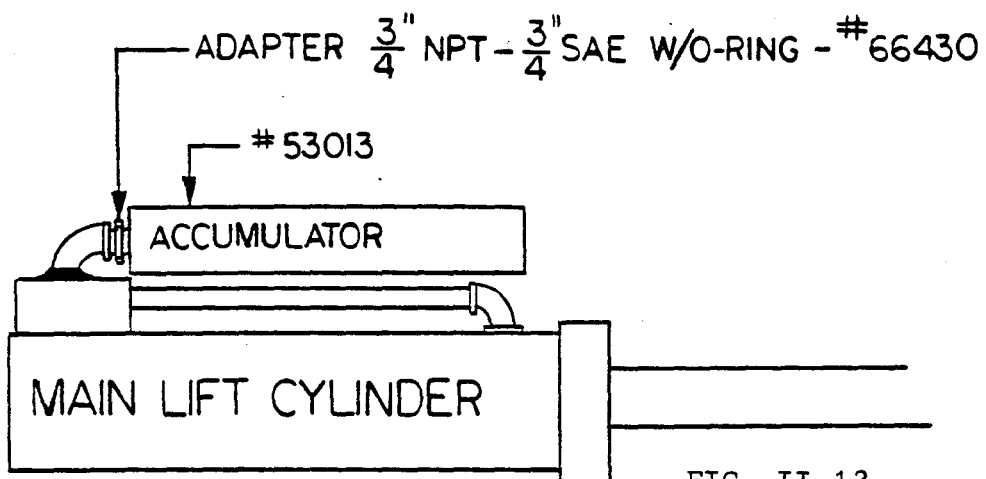


FIG. II-13

NOTE: For Cylinder Breakdown see page 33, Fig. II-1 and II-2.

Effective Date: 3/8/76

40P MAIN RELIEF VALVE (2500 PSI)

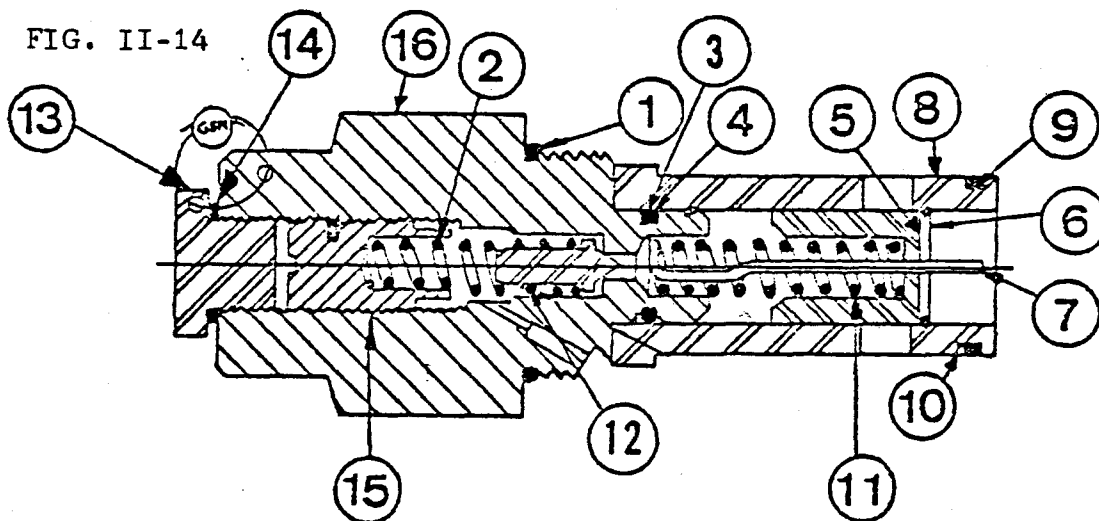
PARTS LIST

ITEM NO	QTY	DESCRIPTION	PART NO
-	1	VALVE, relief.....	51150
(1)(2) 1	1	SEAL, o-ring.....	(51151)
(1) 2	1	SPRING, pilot.....	(51161)
(1)(2) 3	1	WASHER, back-up.....	(51155)
(1)(2) 4	1	SEAL, o-ring.....	(51152)
(1)(3) 5	1	PISTON.....	(51156)
(3) 6	1	RING, retaining, piston.....	(51153)
(1)(3) 7	1	PIN, piston.....	---
(1)(3) 8	1	CYLINDER.....	(51154)
(1)(2) 9	1	SEAL, o-ring.....	(51163)
(1)(2) 10	1	WASHER, back-up.....	(51164)
(1) 11	1	SPRING, piston.....	(51162)
(1) 12	1	POPPET.....	(51165)
13	1	CAP.....	51159
(1)(2) 14	1	GASKET, cab.....	(51158)
15	1	SCREW, adjusting.....	51160
16	1	BODY, relief.....	51157

NOTE: Numbers in brackets () indicate superceded numbers

- (1) Included in Rebuilding Kit..... 52030
- (2) Included in Seal Kit..... 52018
- (3) Included in Piston and Cylinder Kit..... 52031

FIG. II-14



Effective Date: 3/8/76

BONNET ASSEMBLY

PARTS LIST

ITEM NO	QTY	DESCRIPTION	PART NO
-	1	BONNET, assembly.....	52028
1	1	SPRING, centering.....	(51114)
2	4	SCREW, machine.....	(51112)
3	1	COVER, bonnet.....	(51113)
4	1	SCREW, cap.....	(51116)
5	1	COLLAR, spool.....	(51117)
6	1	LOCKWASHER.....	(51118)
7	2	STOP, collar.....	(51115)

NOTE: Numbers in () indicate superceded numbers

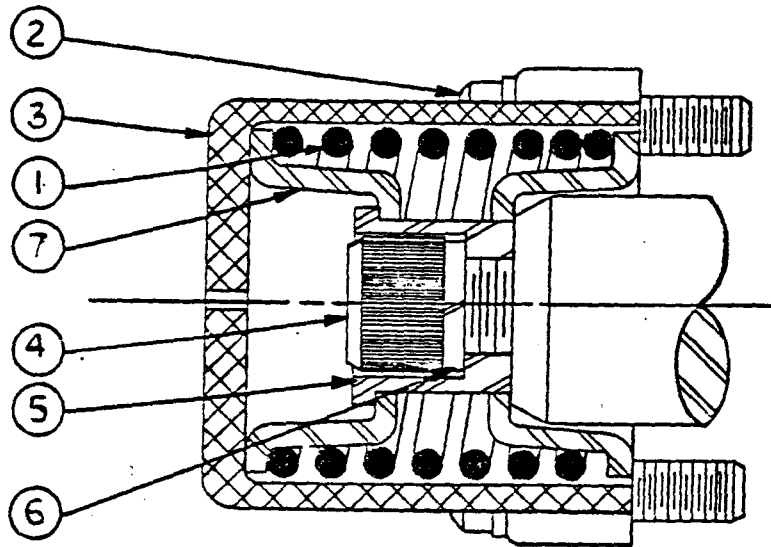


Fig. II-22

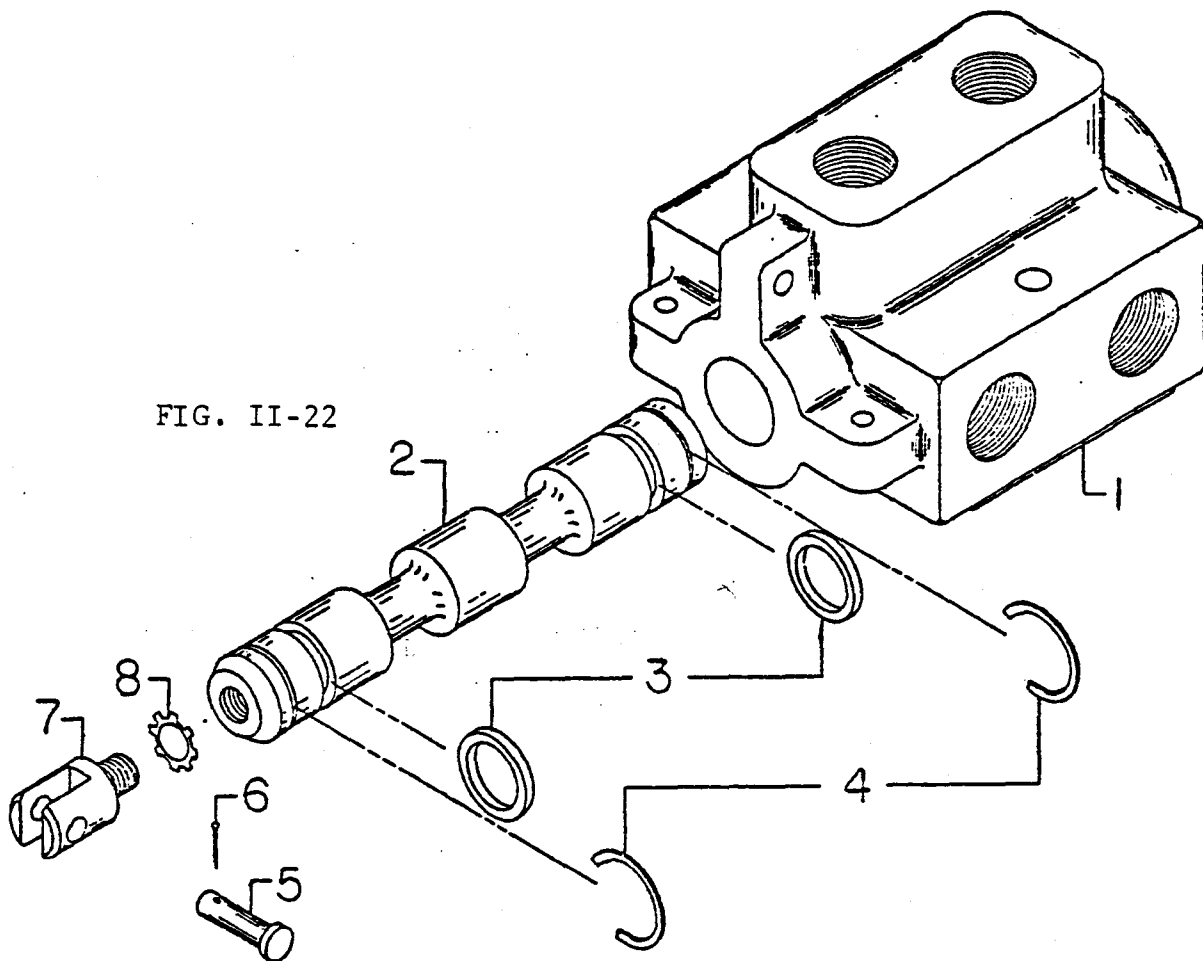
Effective: 11/24/75

DOUBLE SELECTOR VALVE
PARTS LIST

ITEM NO	QTY	DESCRIPTION	PART NO
-	1	VALVE, double selector.....	63046
(3) 1	1	HOUSING, valve.....	58320
(3) 2	1	SPOOL, valve.....	58321
(1) 3	2	SEAL, spool.....	58322
(1) 4	2	RING, snap.....	58323
(2) 5	1	PIN, handle.....	58324
(2) 6	1	PIN, cotter.....	58325
(2) 7	1	ADAPTER, handle.....	58326
(2) 8	1	LOCKWASHER.....	58327

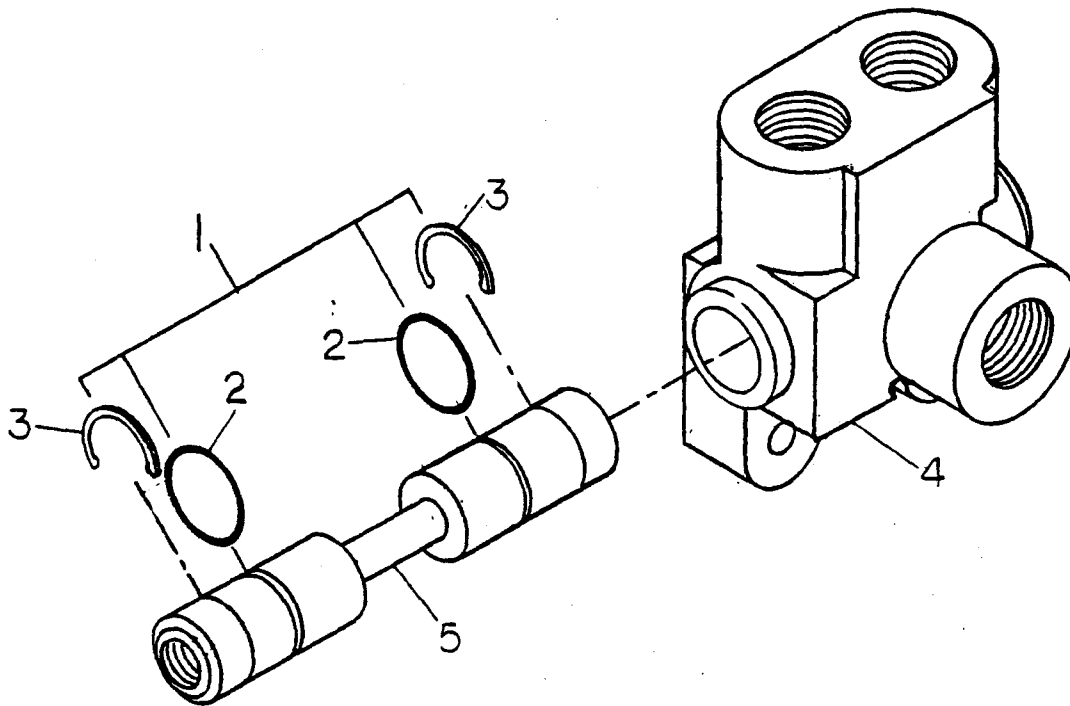
NOTE: Numbers in () indicate superceded numbers.

- (1) Included in Seal and Snap Ring Kit..... 52014
- (2) Included in Clevis Adapter Kit..... 52034
- (3) Not sold as separate items. Spools are factory honed to individual housing and are not interchangeable. Repair service available at factory.



Effective Date: 3/8/76

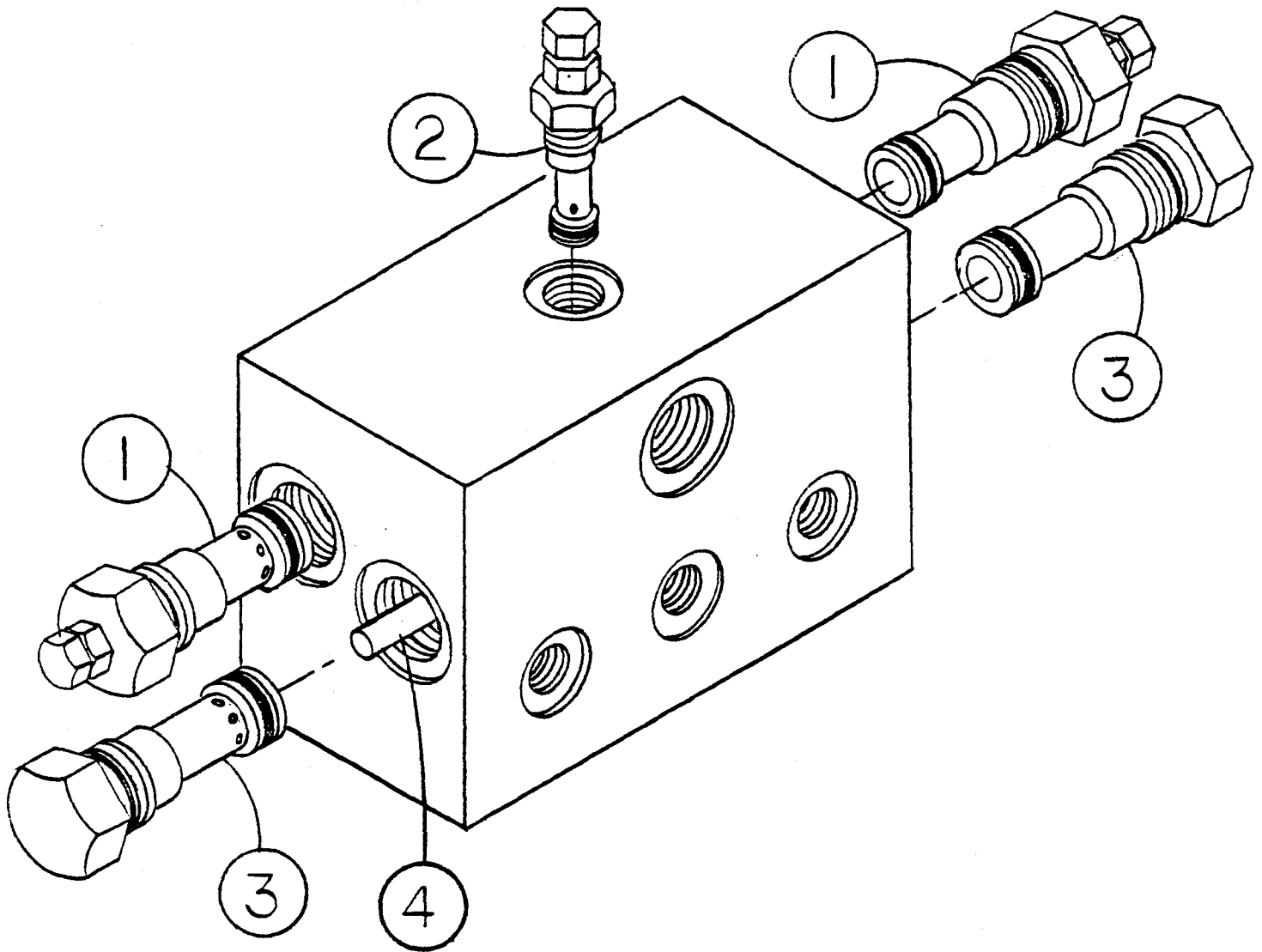
SELECTOR VALVE BREAKDOWN #563-00079



<u>ITEM NO.</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
	1	ASSEMBLY, complete includes all items listed below.....	563-00153
1	1	KIT, seal (includes items 2 & 3).....	552-00150
2	2	O-RING.....	
3	2	SNAP, ring.....	
4	1	CASTING, body (n.S.S.).....	
5	1	SPOOL, (N.S.S.).....	

(N.S.S.) - Not sold seperately

Effective date 9-23-80



CUSHION VALVE ASSEMBLY

<u>ITEM</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
1	1	ASSEMBLY, valve complete-----	563-00169
2	2	High Pressure Relief, adjustable---	563-00175
3	1	Low Pressure Relief, adjustable---	563-00176
4	2	Check Valve-----	563-00174
	1	PIN-----	
	1	Seal Kit, high pressure relief chck.	556-00667
	1	Seal Kit, low pressure relief-----	556-00666
	1	Seal Kit, Complete Valve-----	556-00665

Effective Date; 12-14-79

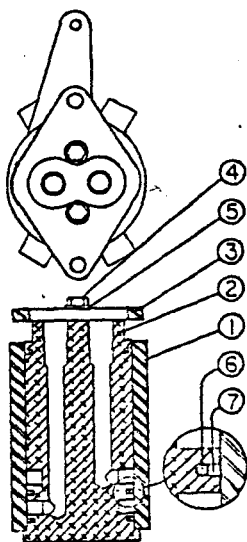
HYDRAULIC COLLECTOR PARTS LIST

ITEM NO	QTY	DESCRIPTION	2 PORT	8 PORT	12 PORT
—	1	COLLECTOR, assembly.....	692007	692005	692006
1	1	BARREL, weldment.....	602404	692402	692403
2	1	SPOOL.....	692211	692209	692210
3	1	PLATE, mounting.....	691304	691310	691310
4	8	SCREW, 5/16 - 18 UNC x 1".....	--	491234	491234
	2	BOLT, ½ - 13 UNC x 1½".....	10705	--	--
5	8	LOCKWASHER, 5/16" high collar.....	--	14310	14310
	2	LOCKWASHER, ½".....	14013	--	--
(1) 6	3	O RING.....	65388	--	--
(2)	9	O RING.....	--	65431	--
(3)	13	O RING.....	--	--	65431
(1) 7	3	TEFLON RING.....	50148	--	--
(2)	9	TEFLON RING.....	--	50170	--
(3)	13	TEFLON RING.....	--	--	50170

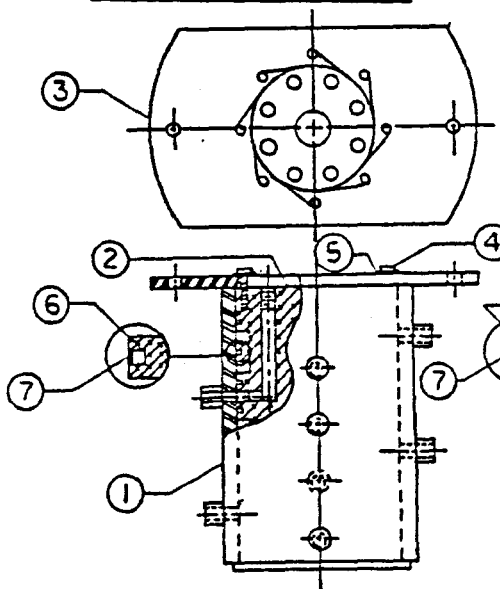
NOTE: (1) Included in Seal Kit #65576
 (2) Included in Seal Kit #65541
 (3) Included in Seal Kit #65582

(Improved seal kits may vary from parts listed above)

2 PORT (C/R GRAPPLE)



8 PORT (MODEL 250-350)



12 PORT (MODEL 450)

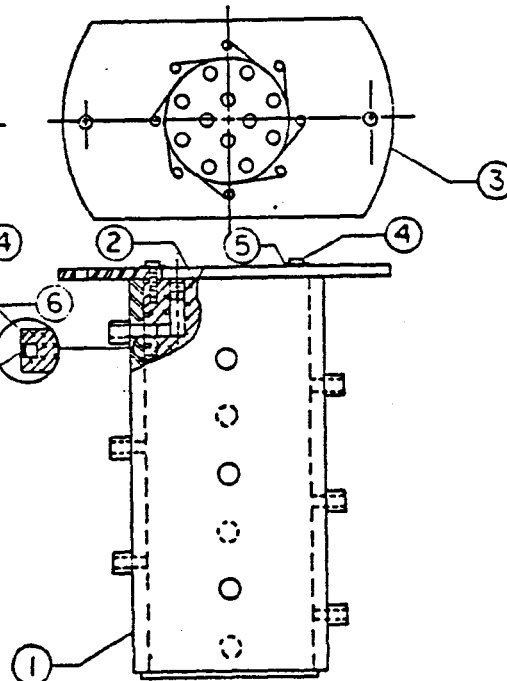
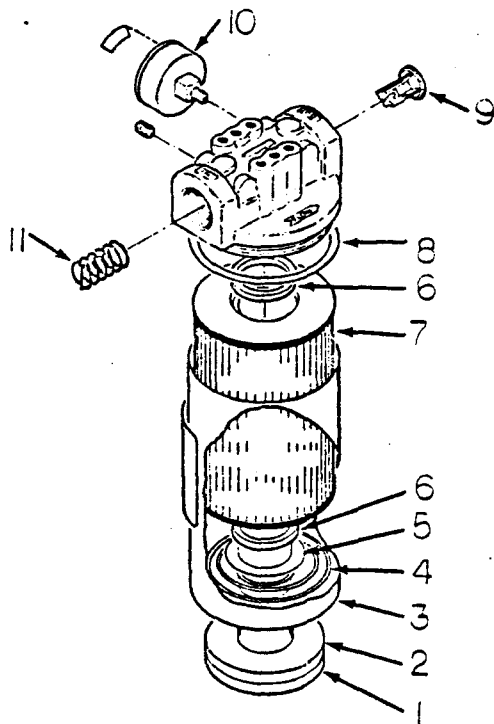


Fig. II-26



RETURN LINE FILTERS

PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
0	1	ASSEMBLY, complete 3 PSI shielded suction--- 10 micron	65040
0	1	ASSEMBLY, complete no relief shielded----- 10 micron	65041
0	1	ASSEMBLY, complete 15 PSI return 33 micron--	65042
1	1	POST, center-----	59001
2	1	GASKET, center post-----	See Filter Kits
3	1	HOUSING, filter-----	59003
4	1	SPRING, conical-----	59004
5	1	WASHER, back-up-----	59005
6	2	SEAL, filter element-----	See Filter Kits
7	1	ELEMENT, filter-----	See Filter Kits
8	1	O RING, housing seal-----	See Filter Kits
9	1	POPPET, relief valve-----	See Relief Ass'y
10		INDICATOR, compound-----	59009
		INDICATOR, 30" vacuum-----	59010
11		SPRING, relief valve-----	See Relief Ass'y
<u>FILTER KITS</u>			
		33 MICRON - RETURN LINE WITH SEALS-----	52019
		10 MICRON - RETURN LINE WITH SEALS-----	52020
		33 MICRON - SHIELD SUCTION WITH SEALS-----	52085
		10 MICRON - SHIELD SUCTION WITH SEALS-----	52086
<u>RELIEF ASSEMBLY</u>			
		3 PSI SUCTION - BLUE-----	52087
		15 PSI RETURN - SILVER-----	52088

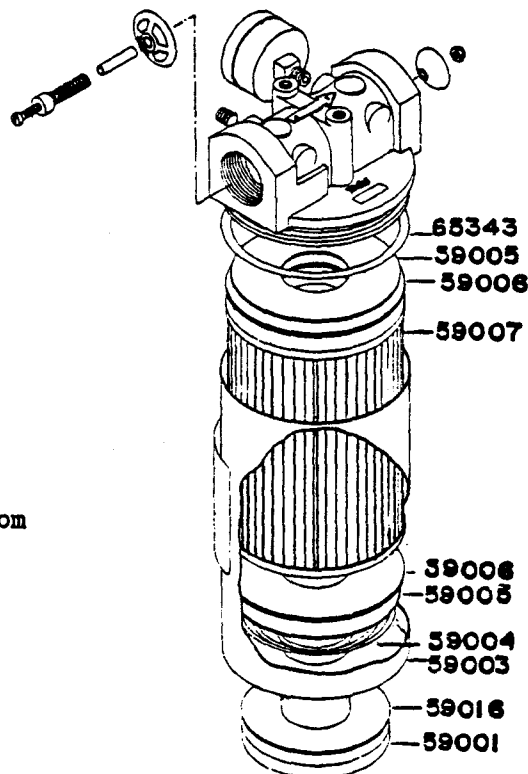
I N S T R U C T I O N S

FILTER ELEMENT REPLACEMENT

To remove the filter element, the following steps must be taken

1. Unscrew and drop #59001 Center Post (1" clearance for drop is all that is necessary to remove element container.)
2. Remove #59003 Filter Housing, #59005 Back-Up Washer, #59006 Gasket, #59007 Element, etc.
3. Clean all parts and filter housing. (CAUTION: Do NOT use solutions such as perchlorethylene or trichlorethylene to clean the Cork Gasket as these solutions will tend to cause swelling of the Gaskets which could result in malfunction of the filter when reassembled.)
4. Reassemble in the following order:
 - A. Put #59001 Post in Filter Housing. (Be sure Post has Gasket Seal, #59016, and that Gasket, Bottom of Filter Housing, and flange of Center Post are absolutely free of all oil and grease when tightening in order to prevent extrusion of Gasket.)
 - B. Insert #59004 Conical Spring, with small coil end down.
 - C. Insert #59005 - 4 1/4" Back-Up Washer (Bottom).
 - D. Insert #59006 Bottom Gasket.
 - E. Insert Filter Element.
 - F. Insert #59006 Top Gasket.
 - G. Insert Top #59005 Back-up Washer.
 - H. Position #59016 Filter Housing and tighten #59001 Center Post to MAXIMUM OF 20 FT. LBS. TORQUE.

CAUTION: When tightening Center Post, Hold Can From Turning, otherwise #65343 O-Ring may stretch out of shape and a leak may occur.



NOTE: Be sure Indicator reads "0" when system is not in operation

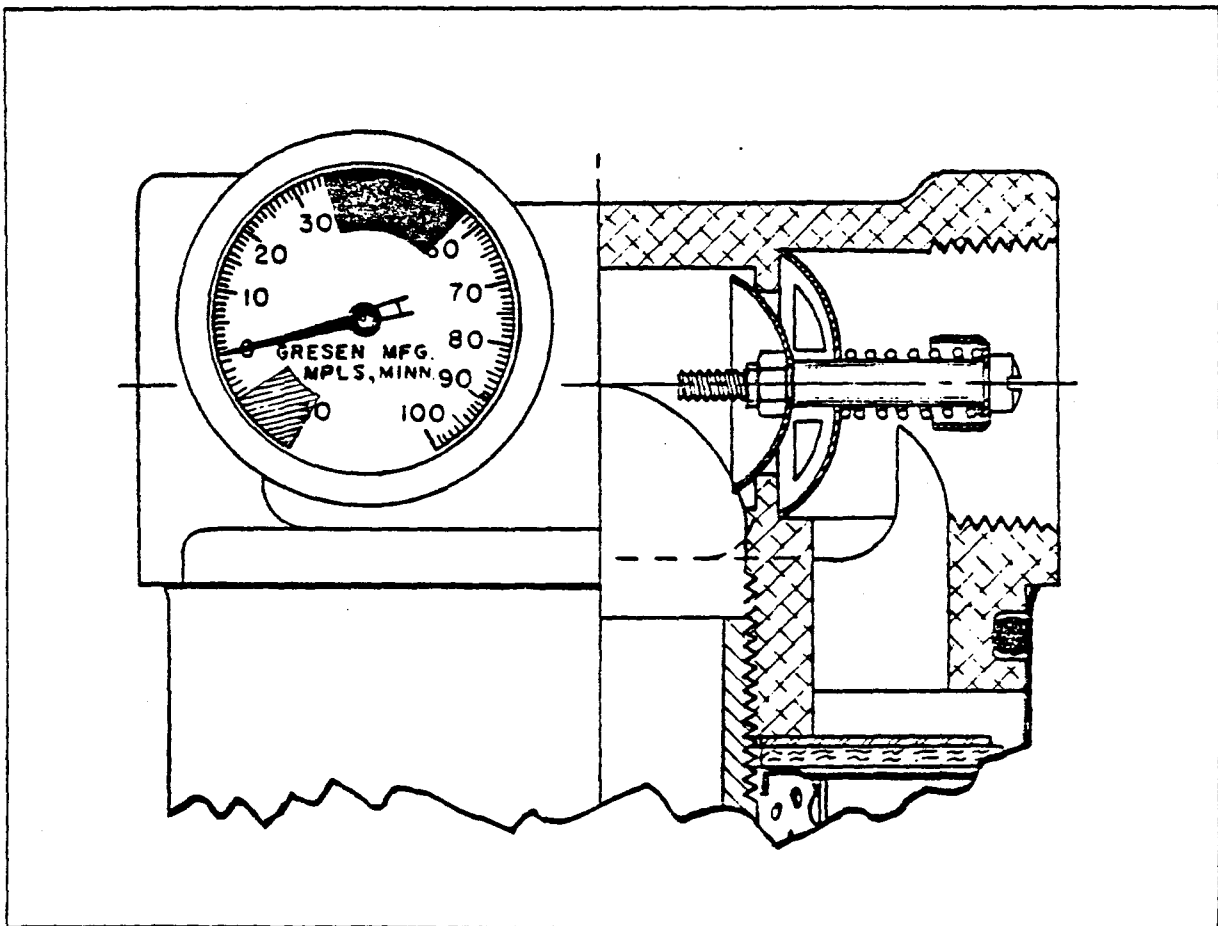
FILTER

INSTRUCTIONS TO REPLACE BY-PASS SPRING

TOOLS REQUIRED: One (1) Screwdriver
One (1) Socket Wrench - #11-11/32" Hex.

1. Disassemble Filter (See Filter Element Replacement Instructions)
2. For convenience, put #59022 Head Casting in Vise. (Upside-Down)
3. With screwdriver and socket wrench, remove By-Pass valve assembly. Observe carefully position of these parts.

Reinstall new spring.



BARKO HYDRAULICS, INC.

Office: Superior, Wisconsin Phone: (715) 392-5641
Mailing address: P.O. Box 6227 Duluth, Minnesota 55806

INSTRUCTIONS FOR REPLACING SPOOL SEALS

40 P VALVE

NOTE: FOR THE PURPOSE OF THESE INSTRUCTIONS WE SHALL CONSIDER THE CONTROL HANDLE SIDE OF THE VALVE AS THE FRONT, AND THE OPPOSITE SIDE THE BACK.

1. AT THE BACK OF THE VALVE. REMOVE ALL BONNET ASSEMBLY PARTS WHICH ARE CONNECTED TO THE SPOOL AND KEEP IN THE ORDER OF DISASSEMBLY. (SEE DRAWINGS ON THE REVERSE SIDE FOR THE PARTS INVOLVED IN THE MAKEUP OF DIFFERENT BONNET ASSEMBLIES.)
2. AT THE FRONT OF THE VALVE, REMOVE ALL PARTS CONNECTED TO THE SPOOL. (HANDLE AND ETC.)
3. THE SPOOL SEALS ON THE 40 P CONTROL VALVE CAN BE INSTALLED EXTERNALLY WITHOUT REMOVING THE SPOOL FROM THE VALVE SECTION.
4. REMOVE THE PART #51109 SEAL PLATE, THE #51008 SPOOL SEALS, AND THE #51110 O-RING SEAL.
5. THOROUGHLY CLEAN THE COUNTERBORE AND THE SEAL GROOVES IN THE SEAL PLATE.
6. LIGHTLY OIL THE NEW SEALS TO BE INSTALLED, AND INSERT THEM IN THE GROOVES IN THE SEAL PLATE.
7. SLIDE THE SEAL PLATE OVER THE END OF THE SPOOL INTO THE CASING COUNTERBORE.
8. RE-INSTALL ALL PARTS THAT WERE REMOVED IN REVERSE ORDER.

NOTE: IF THIS VALVE DID NOT HAVE A HANDLE INSTALLED, THE SPOOL CAN BE PREVENTED FROM TURNING WHILE REMOVING THE SPRING CENTERING PARTS BY USE OF A SCREWDRIVER INSERTED THROUGH THE CLEVIS SLOT.

FOLLOWING, IS A LIST OF WRENCHES THAT CAN BE PURCHASED
FROM BARKO. FOR USE ON YOUR BARKO LOADER.

PART NUMBER

TOOL

27000

FOR USE WHEN REPLACING SPOOL
SEALS IN 25 P VALVES

042200

WRENCH - 1½" BOLT

042201

WRENCH - 2" BOLT

042202

WRENCH - 2½" BOLT

042203

WRENCH - 3½" BOLT

The oil in a hydraulic system serves as the power transmission medium. It is also the system's lubricant and coolant. Selection of the proper oil is a requirement for satisfactory system performance and life.

Recommendations presented in this data sheet will assist in the selection of suitable oils for use with Sperry Vickers' products. Sperry Vickers does not publish a recommended oil list by brand name or supplier due to the extremely wide variety of oil types on the market.

In most cases, use of these recommendations will lead to selection of a suitable oil. However, due to the complex nature of oil formulation, the variety of oils available and peculiarities of individual hydraulic applications, there will be rare instances where an oil selected on the basis of these recommendations will yield unsatisfactory results. Sperry Vickers cannot be responsible for such exceptions. In this respect, the customer is encouraged to consult his Sperry Vickers representative when selecting an oil.

IMPORTANT FACTORS IN SELECTING AN OIL

- ADDITIVES** — Research has developed a number of additive agents which materially improve various characteristics of oil for hydraulic systems. These additives are selected to reduce wear, increase chemical stability, inhibit corrosion and depress the pour point.

Pump performance and reliability are directly affected by the anti-wear additive formulation contained in the oil. Oils providing a high level of anti-wear protection are recommended for optimum performance and long life.

- VISCOSITY** — Viscosity is the measure of fluidity. The oil selected must have proper viscosity to maintain an adequate lubricating film at system operating temperature.

In addition to dynamic lubricating properties, oil must have sufficient body to provide an adequate sealing effect between working parts of pumps, valves, cylinders and motors, but not enough to cause pump cavitation or sluggish valve action. Optimum operating viscosity of the oil should be between 16 cSt (80 SUS) and 40 cSt (180 SUS).

"Viscosity index" reflects the way viscosity changes with temperature. The smaller the viscosity change, the higher the viscosity index. The viscosity index of hydraulic system oil should not be less than 90. Multiple viscosity oils, such as SAE 10W-30, incorporate additives to improve viscosity index (polymer thickened). Oils of this type generally exhibit both a temporary and permanent decrease in viscosity due to oil shear encountered in the operating hydraulic system. The actual viscosity can, therefore, be far less in the operating hydraulic system than what is shown in normal oil data. Accordingly, when such oils are selected, it is necessary to use those with high shear stability to insure that viscosity remains within recommended limits while in service.

- CHEMICAL STABILITY** — Oxidative and thermal stability are essential characteristics of oils for Mobile hydraulic systems. The combination of base stocks and additives should be stable during the expected lifetime of the oil when exposed to the environment of these systems.

SUITABLE TYPES OF OIL

- CRANKCASE OIL** having letter designation SC, SD or SE per SAE Technical Report J183a. Note that one oil may meet one or more of these designations.
- ANTI-WEAR HYDRAULIC OIL** — There is no common designation for oils of this type. However, they are

produced by all major oil suppliers and provide the anti-wear qualities of the above designated crankcase oils.

- CERTAIN OTHER TYPES OF PETROLEUM OIL** are suitable if they meet the following provisions:

- Contain the type and content of anti-wear additives found in the above designated crankcase oils, or have passed pump tests similar to those used in developing anti-wear type hydraulic oils.
- Meet the viscosity recommendations shown in the following table.
- Have sufficient chemical stability for Mobile hydraulic system service.

OIL VISCOSITY RECOMMENDATIONS

HYDRAULIC SYSTEM OPERATING TEMPERATURE RANGE*	SAE VISCOSITY DESIGNATION
-10°F. to 130°F. (-23°C. to 54°C.)	5W 5W-20 5W-30
0°F. to 180°F. (-18°C. to 83°C.)	10W
0°F. to 210°F. (-18°C. to 99°C.)	10W-30
50°F. to 210°F. (10°C. to 99°C.)	20-20W

*Temperatures shown are cold (ambient) start-up to maximum operating. During cold start-up, avoid high-speed operation of hydraulic components until the system is warmed up to provide adequate lubrication.

ARTIC CONDITIONS represent a specialized field where extensive use is made of heating equipment before starting. If necessary, this and judicious use of the following recommendations should be used:

- SAE 5W or 5W-20 oil.
- Oils specially developed for use in arctic conditions; such as synthetic hydrocarbons, esters, or mixtures of the two.

Operating temperature should be closely monitored to avoid exceeding a temperature of 130°F. (54°C.) with any lightweight oil.

SPECIAL REQUIREMENTS

When special considerations indicate a need to depart from recommended oils or operating conditions, consult your Sperry Vickers representative.

CLEANLINESS

Thorough precautions should always be observed to insure the hydraulic system is clean:

- Clean (flush) entire system to remove paint, metal chips, welding shot, etc.
- Filter each change of oil to prevent introduction of contaminant into the system.
- Provide continuous oil filtration to remove sludge and products of wear and corrosion generated during the life of the system.
- Provide continuous protection of the system from entry of airborne contamination by sealing the system and/or by proper filtration of the air.
- During usage, proper oil filling and servicing of filters, breathers, reservoirs, etc., cannot be overemphasized.
- Thorough precautions should be taken, by proper system and reservoir design, to insure that aeration of the oil will be kept to a minimum.

SUBJECT: TURNTABLE BEARING SERVICE REQUIREMENTS

As noted in the Bearing Storage, Installation and Lubrication sheet included in each Parts Book, periodic servicing must be done to the turntable bearings to insure long bearing life. The turntable bearings must be greased approximately every 50 to 100 operating hours. It is necessary to distribute the grease around the race by injecting grease through any one fitting as the machine is rotated. Rotate at least two complete revolutions. Models equipped with two rows of fittings must be greased in both the upper and lower rows, following the above procedure.

Under extremely dusty or dirty conditions the bearings should be greased every 20 hours with sufficient grease to flush out all contaminated grease. See the Parts Book for recommended grease.

After the first 50 hours of operation, the bearing bolts must be retorqued and should be checked periodically after that to insure they remain tight.

NOTE: These specifications are applicable only to factory installed grade nine bolts with lubrication.
Effective as of July 1, 1978

<u>MODEL</u>	<u>TURNTABLE BOLT SIZE</u>	<u>TORQUE</u>
130	5/8"	175 FT. LBS.
160	5/8"	175 FT. LBS.
250	3/4"	310 FT. LBS.
350	7/8"	500 FT. LBS.
450	7/8"	500 FT. LBS.
550	1-1/4"	1500 FT. LBS.

IMPORTANT: FAILURE TO KEEP THE BOLTS TIGHT CAN LEAD TO
FATIGUE FAILURE OF BOLTS AND CONSEQUENTLY MACHINE
DAMAGE.

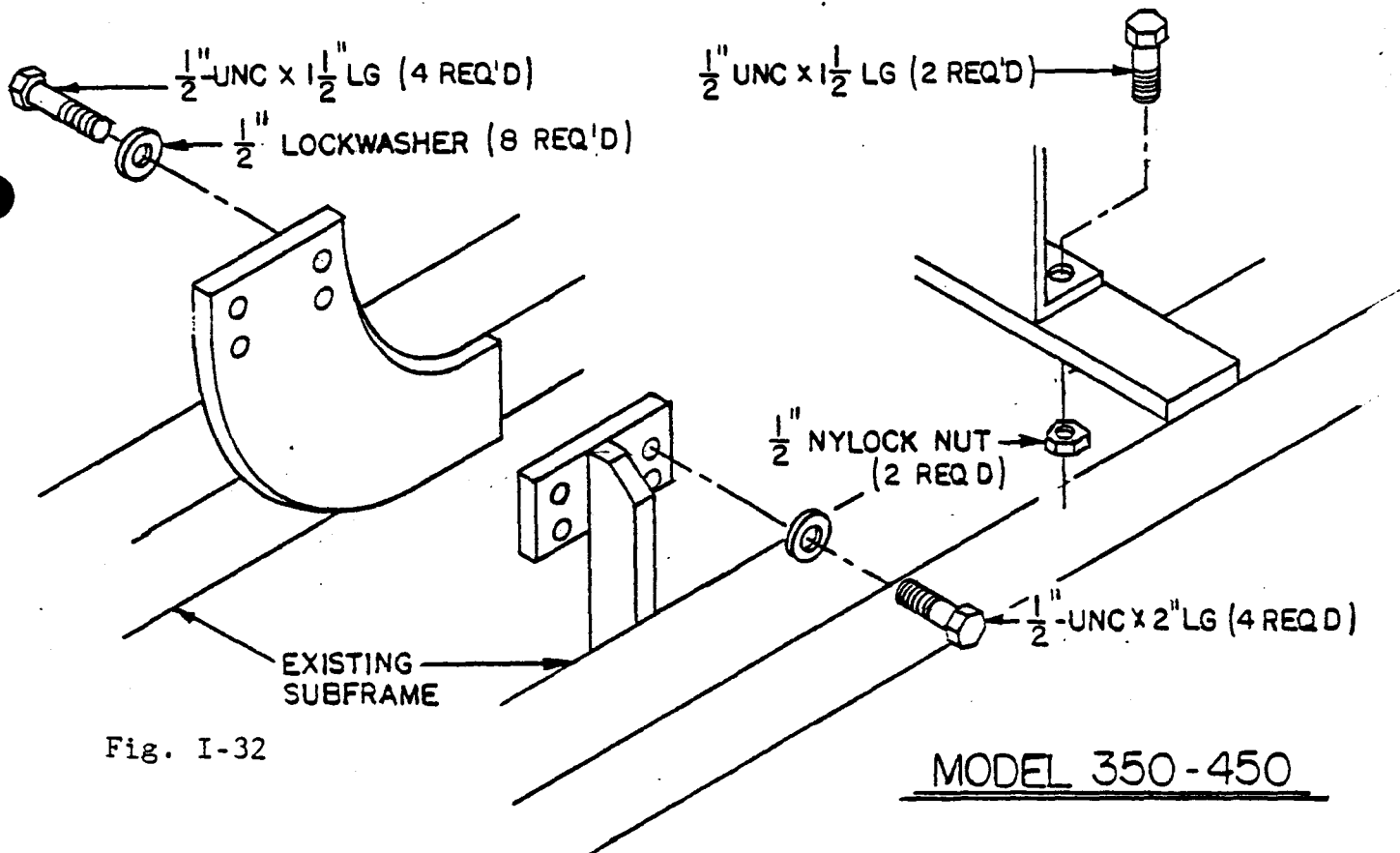


Fig. I-32

MODEL 250

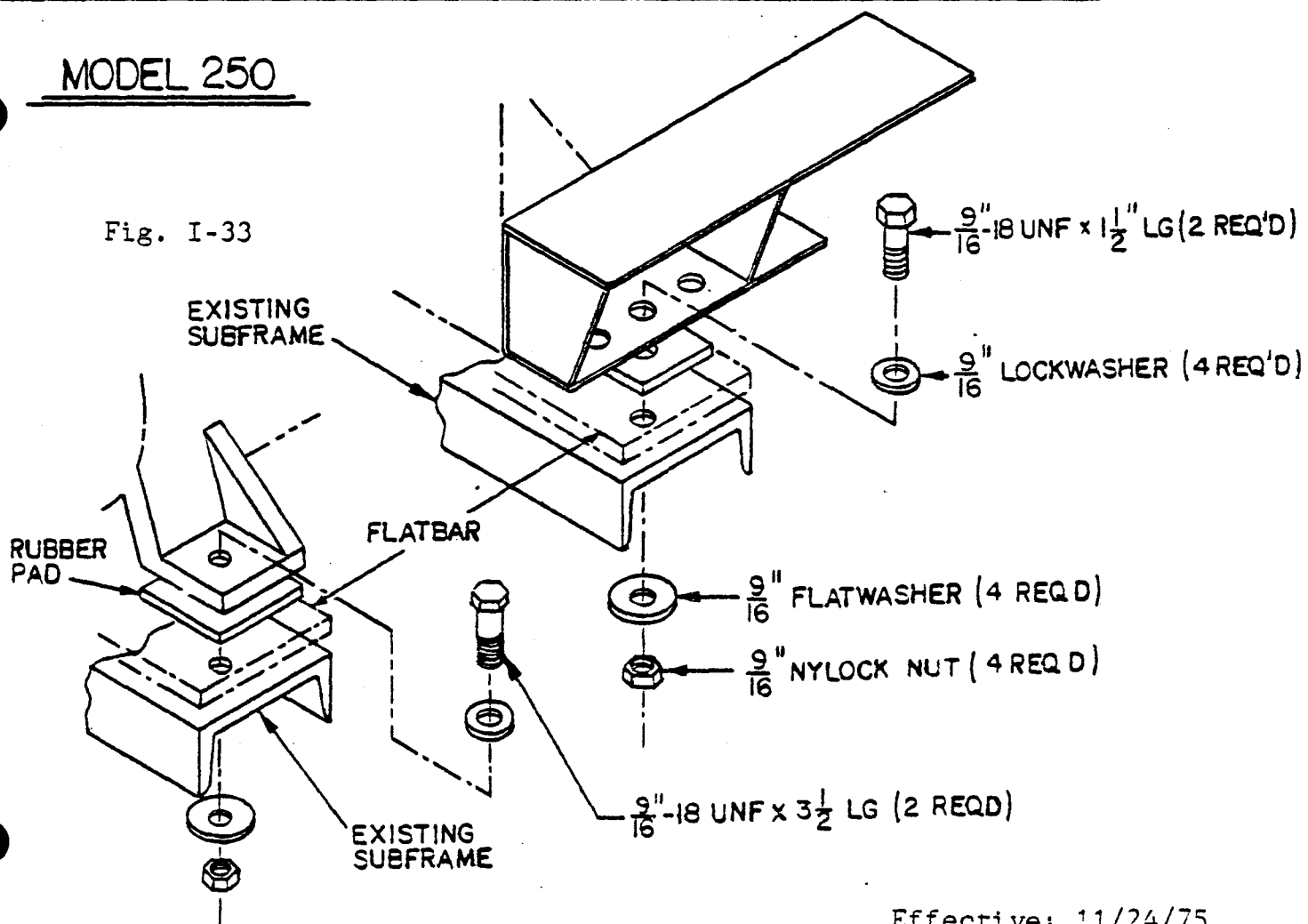


Fig. I-33

Effective: 11/24/75



LUBRICATION

CLUTCH - Apply small amount of lubricant to clutch throwout collar once a day.

POWER TAKE-OFFS - Apply small amount of lubricant to shaft bearings every 50 hours. Gun fittings below.

REDUCTIONS - Use universal gear lubricant, SAE 90 EP. Remove breather cap and fill to check plug on side. Change oil after first 5 hours and after each 6 months of operation.

CLUTCH ADJUSTMENT (OVERCENTER TYPE ONLY)

IMPORTANT- If clutch does not pull, heats, or operating lever jumps out, adjustment is required. To adjust clutch, remove hand hole plate, turn clutch until adjusting lock pin can be reached. Pull adjusting pin out and turn adjusting yoke to right or clockwise until operating lever requires a distinct pressure to engage. A new clutch requires several adjustments until friction discs are worn in.

COFFEYVILLE

FUNK MFG. CO.

KANSAS