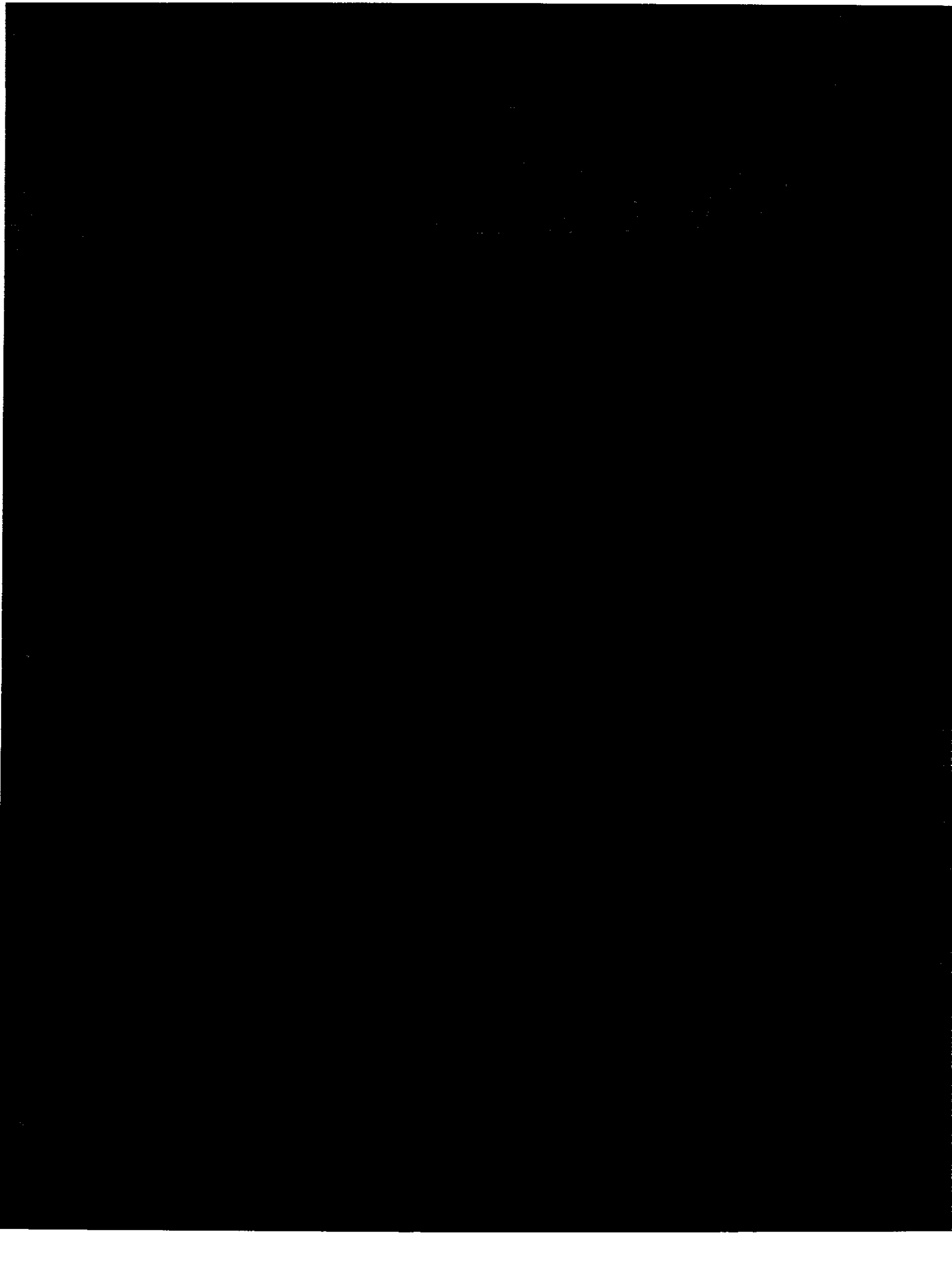


40-00

MODEL 40

⚠ WARNING

MAXIMUM HYDRAULIC PRESSURE FOR THIS MACHINE IS 1,750 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 on this equipment have been reset, increasing the maximum system pressure and with 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 **1,750 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.

MODEL 80

⚠ WARNING

MAXIMUM HYDRAULIC PRESSURE FOR THIS MACHINE IS 1,750 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 **1,750 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.

MODEL SUPER 80

⚠ WARNING

MAXIMUM HYDRAULIC PRESSURE FOR THIS MACHINE IS 2,250 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 **2,250 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.

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."

MODIFICATIONS

Slight modifications in design as dictated by field experiance 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.

SPERRY VICKERS

OIL RECOMMENDATIONS FOR MOBILE HYDRAULIC SYSTEMS

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

1. 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.

2. 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.

3. 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

1. 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.

2. 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.

3. CERTAIN OTHER TYPES OF PETROLEUM OIL are suitable if they meet the following provisions:

   A. 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.

   B. Meet the viscosity recommendations shown in the following table.

   C. 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:

1. SAE 5W or 5W-20 oil.

2. 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:

A. Clean (flush) entire system to remove paint, metal chips, welding shot, etc.

B. Filter each charge of oil to prevent introduction of contaminant into the system.

C. Provide continuous oil filtration to remove sludge and products of wear and corrosion generated during the life of the system.

D. Provide continuous protection of the system from entry of airborne contamination by sealing the system and/or by proper filtration of the air.

E. During usage, proper oil filling and servicing of filters, breathers, reservoirs, etc., cannot be overemphasized.

F. Thorough precautions should be taken, by proper system and reservoir design, to insure that aeration of the oil will be kept to a minimum.

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.

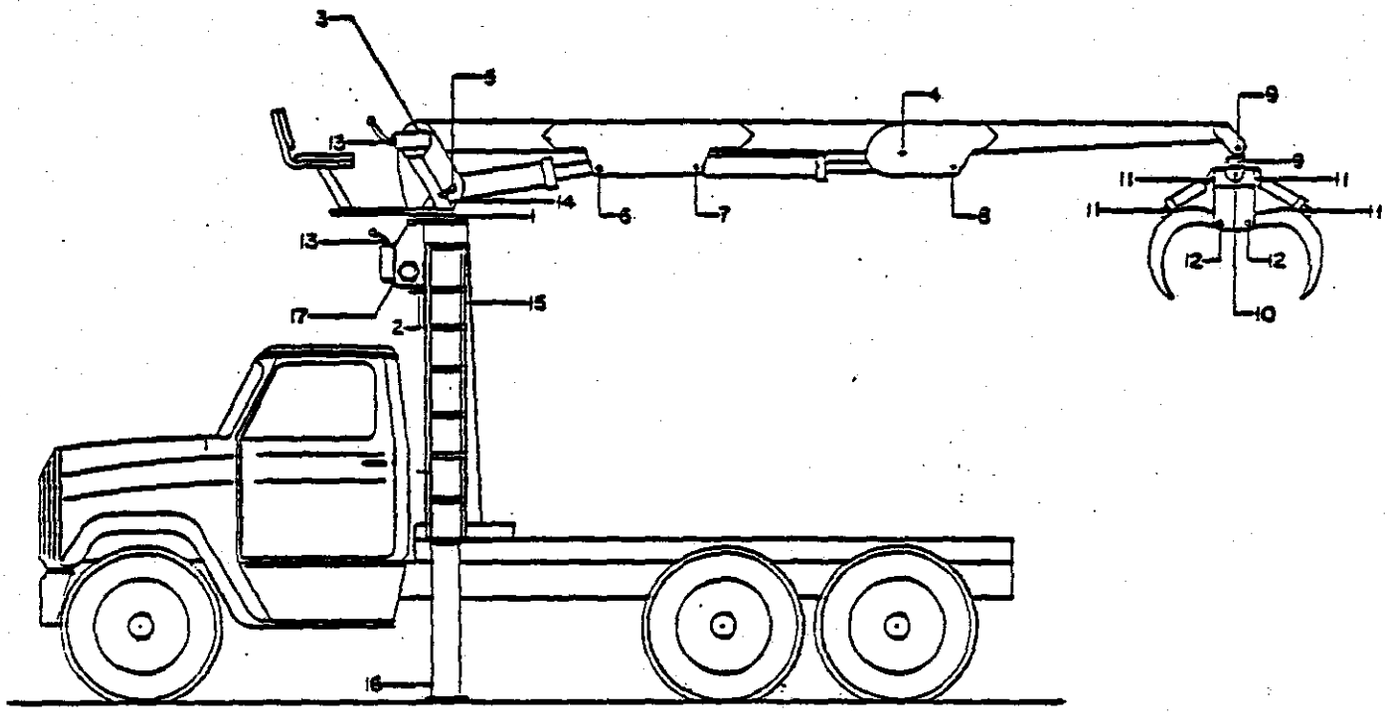
Two lifting lugs are provided on the boom, one closest to boom pivot for raising entire loader assembly and one farthest out for boom and job assembly.

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



LUBRICATION CHART

MODELS 40-140 GEAR & RACK

ITEM NO	LUBRICATION POINTS	TYPE OF LUBRICANT	INTERVAL
1	Top Bearing Retainer (Head)	Items 1-12 use a Multi-Purpose Grease. Apply with Pressure Gun until Grease is visable at ends of Bushings.	40 Hrs., or once weekly.
2	Lower Bearing Retainer (Head)	"	"
3	Main Boom Pivot	"	15 Hrs. or twice weekly (minimum)
4	Jib Knuckle Pivot	"	"
5&6	Main Lift Cylinder	"	"
7&8	Jib Cylinder	"	"
9	Grapple Hanger	"	8 Hrs. or each day
10	Grapple Head	"	"
11	Grapple Cylinder	"	"
12	Grapple Arms	"	"
13	Valve Handle Linkage	SAE #30 Oil	24 Hrs., or twice weekly.
14	Swing Pedal & Linkage	"	"
15&16	Stabilizer Cylinder	Multi-Purpose Grease	8 Hrs., or once a day (minimum)
17	Gear & Rack	"	"

GENERAL ASSEMBLY (models 40-60-80)

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 2SP VALVES
042200	WRENCH - 1 1/2" BOLT
042201	WRENCH - 2" BOLT
042202	WRENCH - 2 1/2" BOLT
042203	WRENCH - 3 1/2" BOLT

Funk

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

TYPICAL P.T.O. MOUNTING

INSTALLATION DIAGRAM

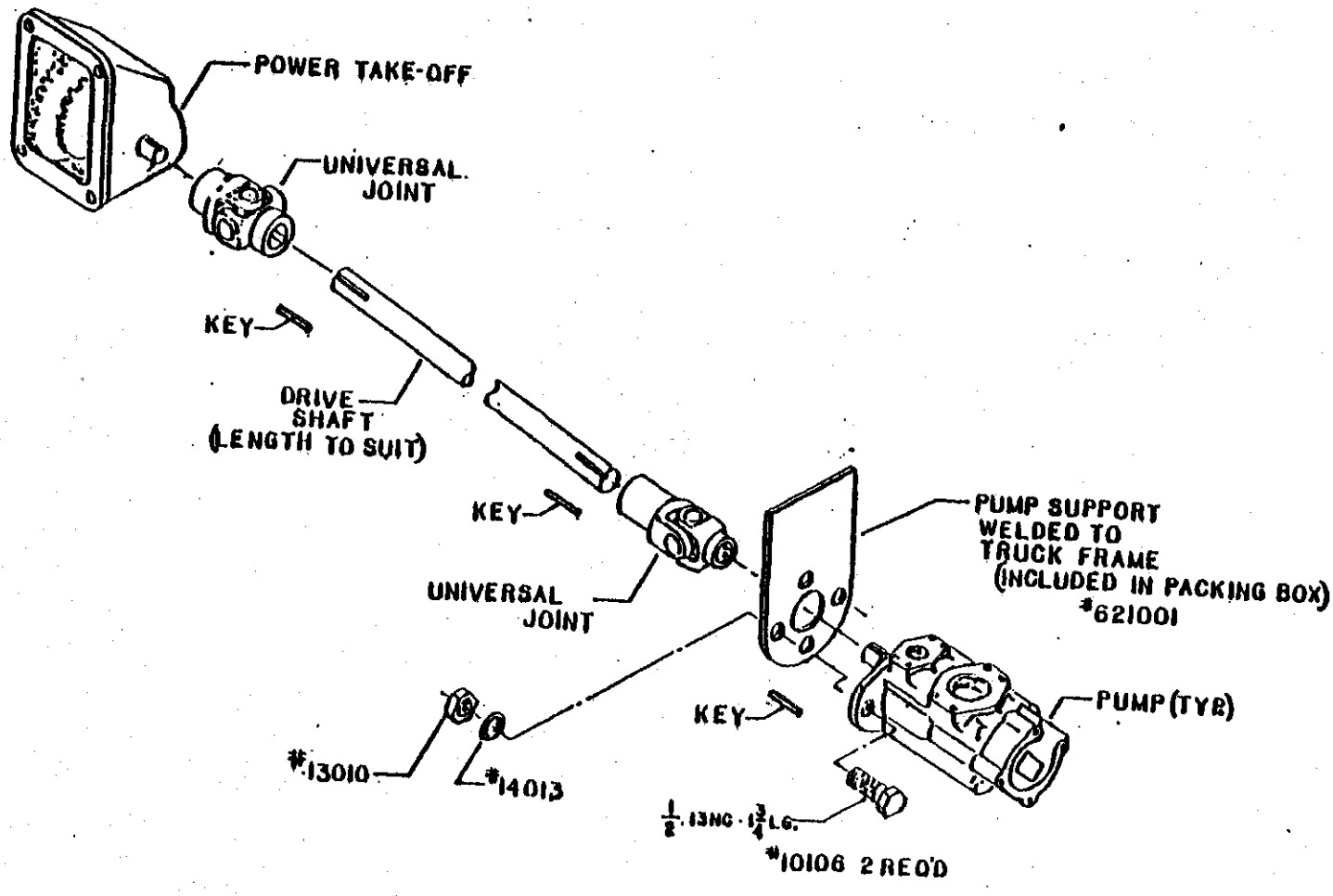
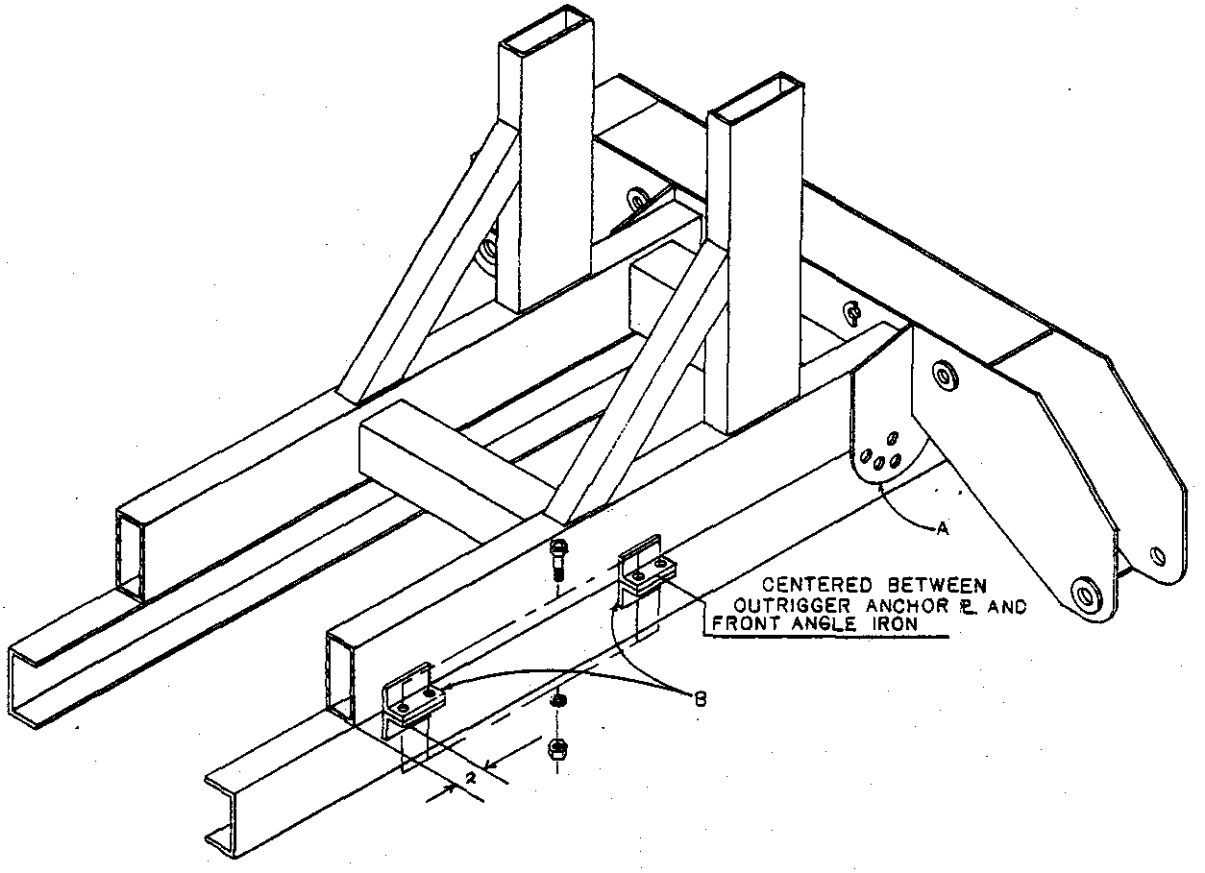


FIG. 1. REAR-MOUNT INSTALLATION
OF MODELS 40 - 120

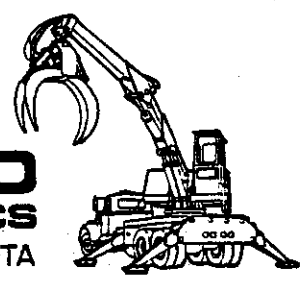


Use frame stiffener plate, "A" as a template when drilling holes for anchor bolts in the truck frame. Use 8, 1" diameter bolts, (4 each side) with lock washers and nuts.

See illustration for location of angle irons, "B" utilizing eight 3/4 - 16 UNF - 2" long bolts (Part No. 11079) with lock washers (Part No. 14016) and nuts (Part No. 13113). 6 Sets of mounting angles (Part No. 131655) is sent with machine.

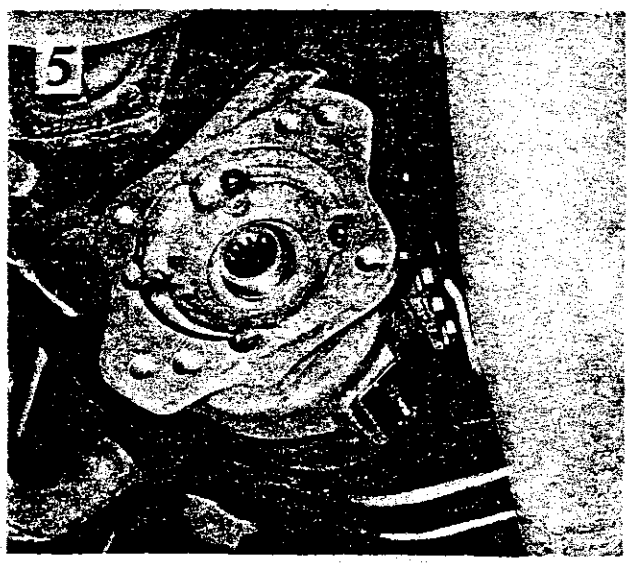
GENERAL MOUNTING PROCEDURE

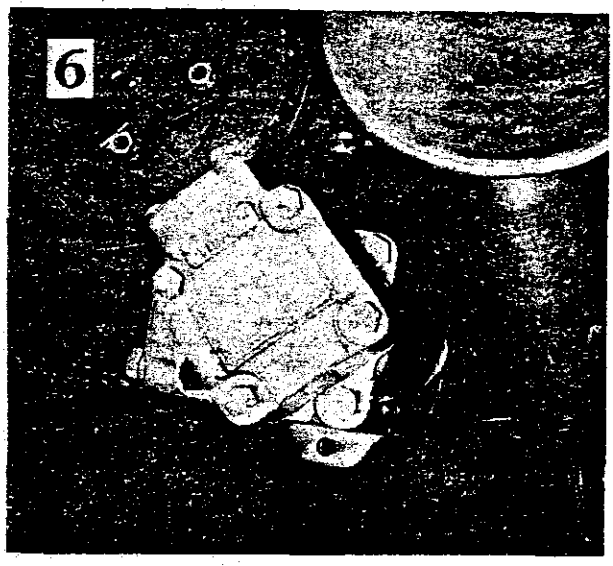
BARKO MID-MOUNT LOADERS

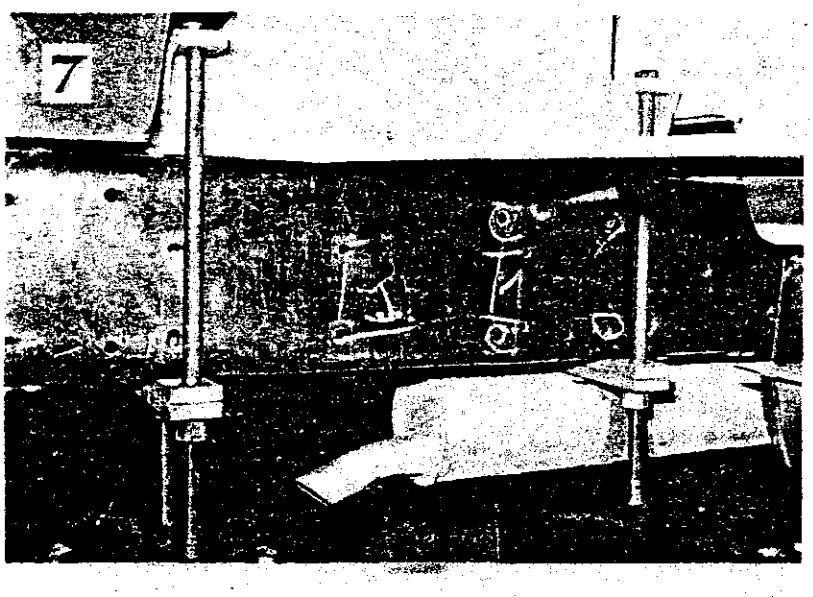


BARKO HYDRAULICS
DULUTH, MINNESOTA

"the loader with everything built in but the operator"



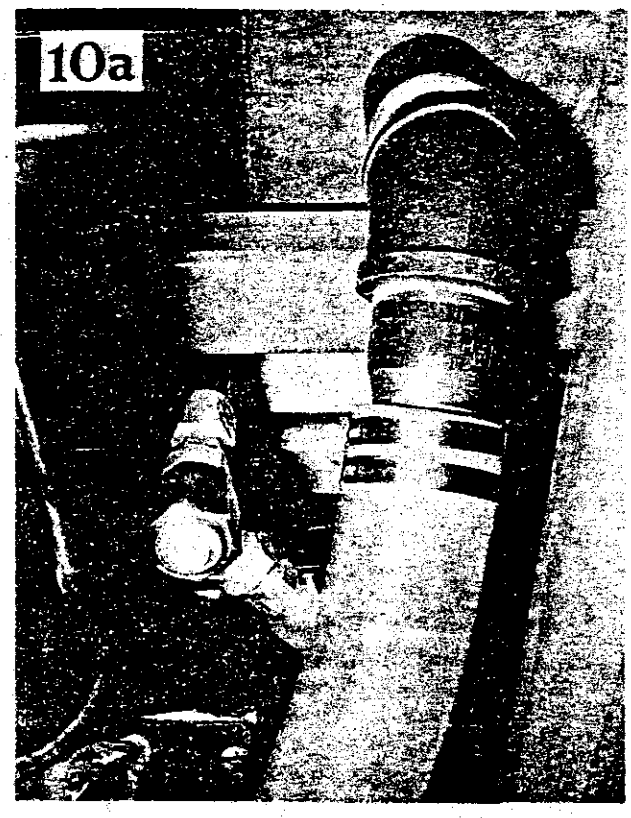


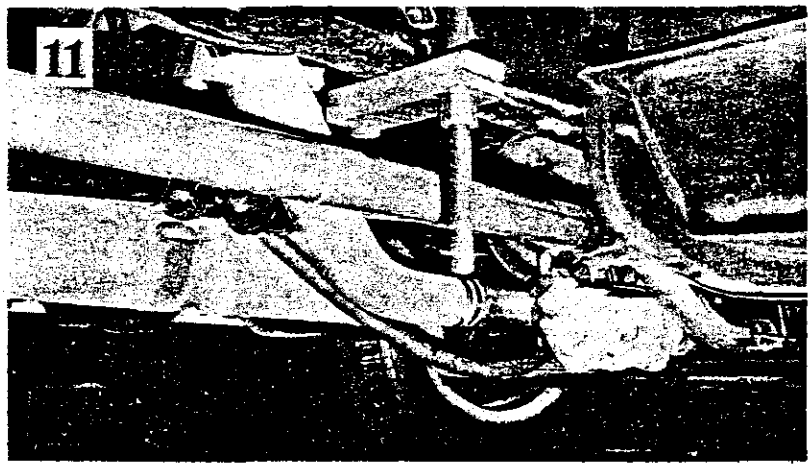


5. Install the previously selected PTO on the transmission using the proper amount of gaskets to assure the proper gear tooth contact between the transmission drive and PTO driven gear. Refill transmission W/lubricant.

6. Mount the hydraulic pump to the PTO (Vickers pump direct mounted to PTO shown, other combinations similar.)

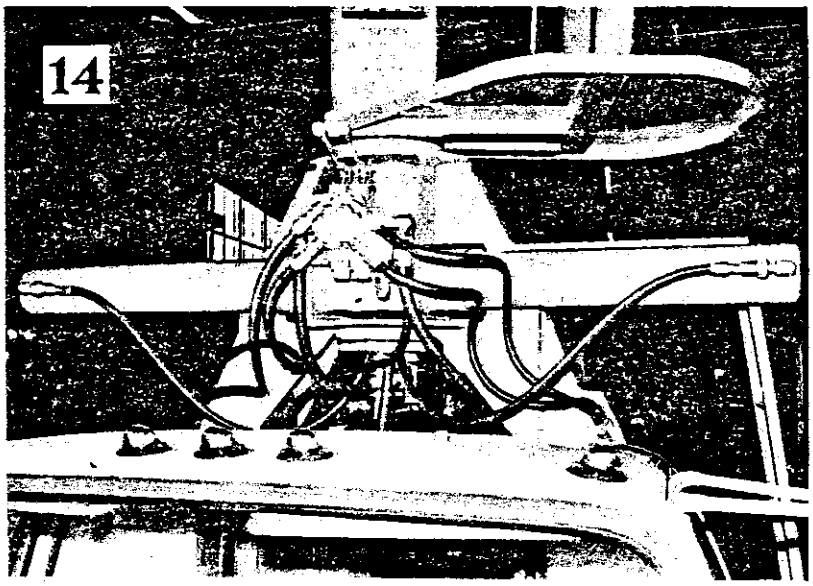
7. Using suitable lifting equipment, the loader can now be placed on the truck frame with the diagonal support gussets on the lower loader frame toward the truck load area. (i.e. truck bed). Install all hold down bolts and nuts utilizing two plates under the truck frame and tighten the nuts to approximately 100 ft. lbs. of torque - alternately loosen each set of mounting bolts and install a spacer between the frame flanges to prevent bending the lower flange when the loader mounting bolts are tightened. Tighten all mount bolts. (Note: In the accompanying photos some mount bolts are installed with the heads up and some with the heads down. This is done to provide clearance around various truck components. The way these bolts are installed is optional.)

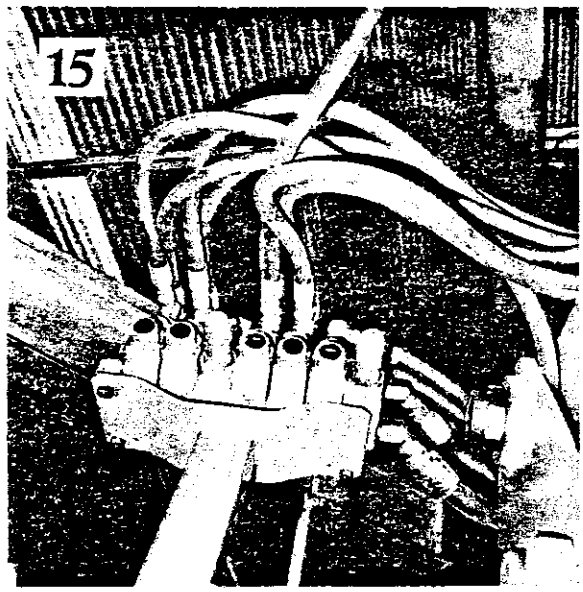


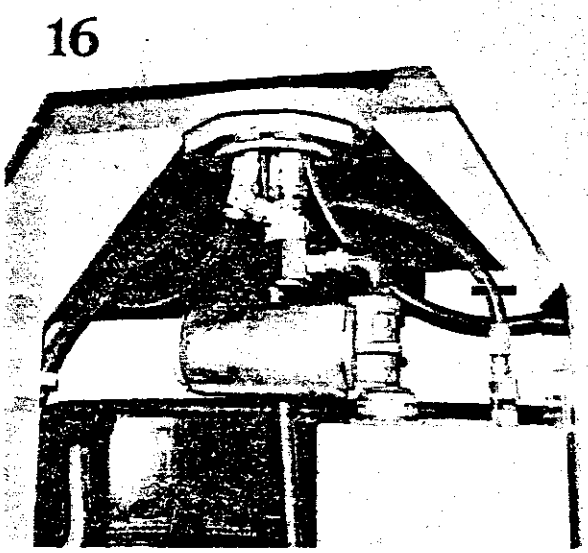


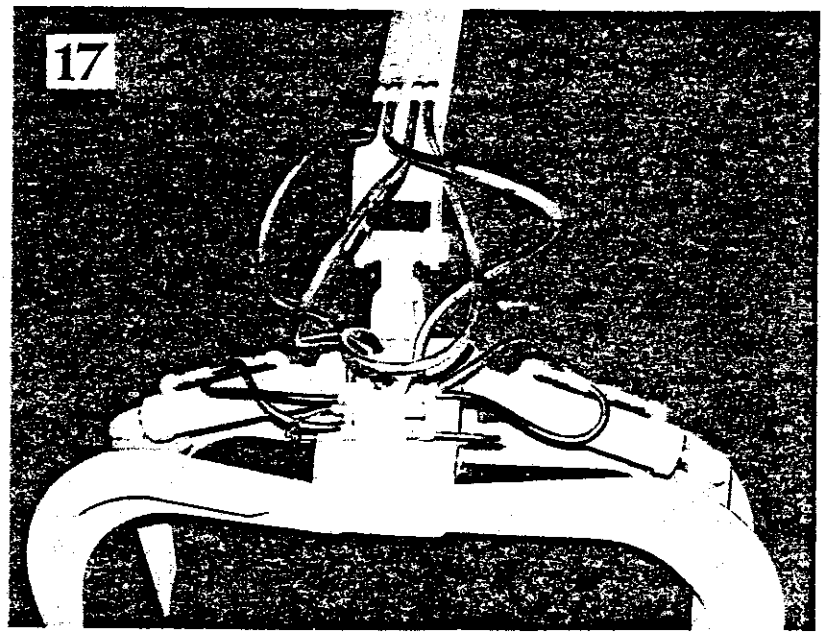
10. Connect the pump suction hose between the hydraulic tank (10a) and pump suction fitting (10b). There is a possibility that exhaust pipes, mufflers, air, vacuum, or fuel lines, miscellaneous linkage, etc. may have to be relocated or rerouted to clear hydraulic system or loader components.

11. Any of these modifications should be made if there is any possibility of interference between the components or if the exhaust system is close enough to the hydraulic pump or lines that it can transmit heat to the hydraulic components.









14 & 15. Complete the connection of all hydraulic hoses.

16. Fill the hydraulic reservoir with a good grade of H.D. hydraulic oil containing anti-wear and anti-foam properties with a viscosity of approximately 217 S.U.S. @ 100^{o} F.

17. Complete the hydraulic system by attaching the grapple to the boom tip and connect the grapple open-close and rotate hoses to their respective boom tubes.

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.

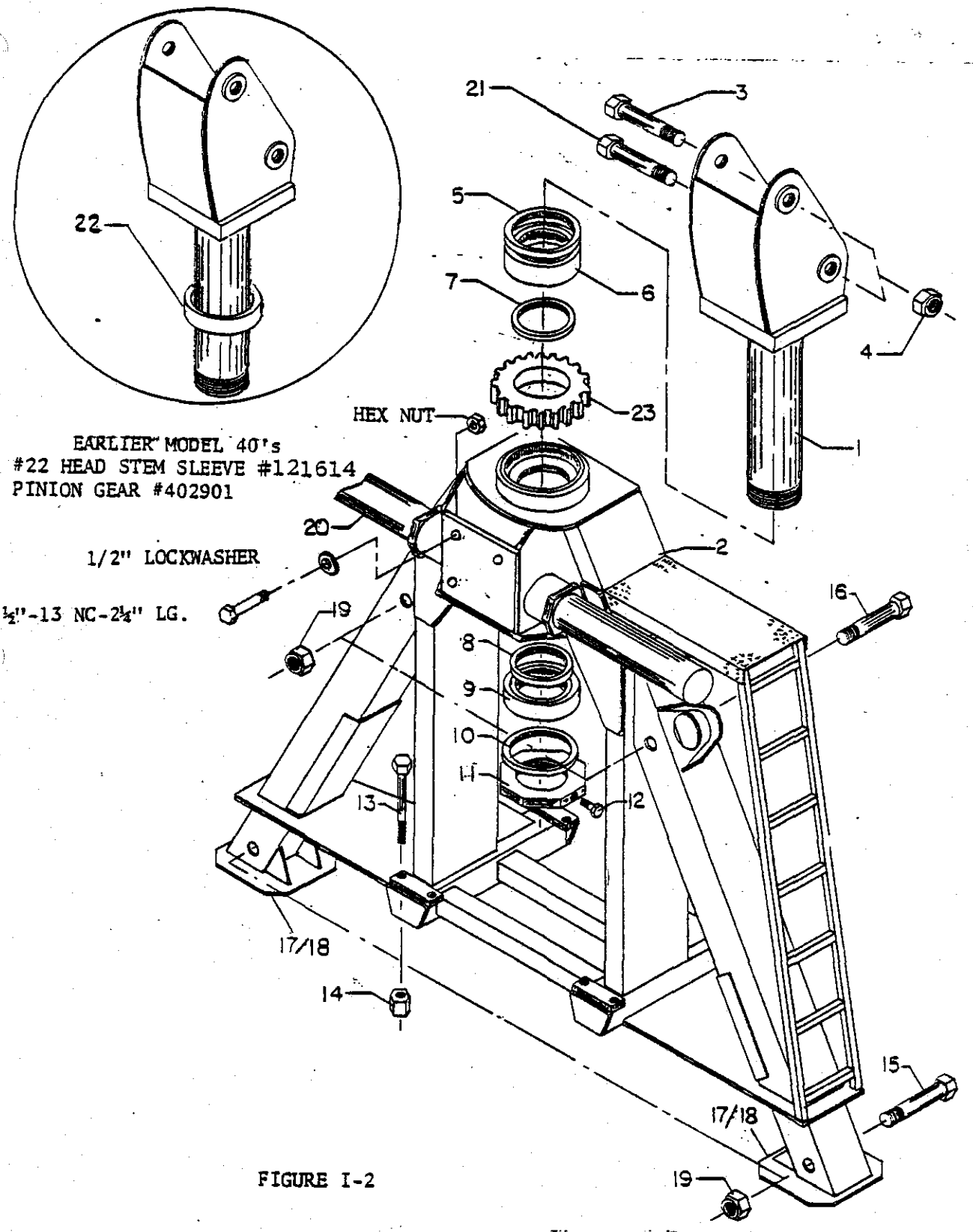


FIGURE I-2

Change Notice No. 2
Effective: 5/21/76
Supercedes page dated: 9/23/75

Models 40-60-80 Back-of-Cab TELESCOPIC STABILIZERS
PARTS LIST

ITEM	NO	QTY	DESCRIPTION	MODEL 40	MODEL 60	MODEL 80
(3)	1	1	HEAD, weldment.....	122102	122115	122118
	2	1	FRAME, weldment.....	132126	132125	132160
(3)	3	1	BOLT, body fit.....	482205	482272	482272
	4	2	NUT, hex, nylock.....	13413	13417	13417
(1)	5	1	SEAL, dust.....	(44534)	(44538)	(44538)
	6	1	BEARING, tapered roller.....	41079	41090	41090
		1	cone.....	41726	41730	41730
		1	cup.....	41727	41731	41731
(1)	7	1	SEAL, o-ring.....	(65361)	(65368)	(65368)
(1)	8	1	SEAL, o-ring.....	(65361)	(65361)	(65361)
	9	1	BEARING, tapered roller.....	41079	41079	41079
		1	cone.....	41726	41726	41726
		1	cup.....	41727	41727	41727
(1)	10	1	SEAL, dust.....	(44534)	(44534)	(44534)
	11	1	NUT, hex, stem.....	481707	481707	481707
	12	1	SCREW, cap, 3/8-UNC-5/8" Long..	10056	10056	10056
	13	8	BOLT, anchor, 3/4" x 21" long..	14409	14409	14409
	14	8	NUT, hex.....	13511	13511	13511
	15	2	BOLT, body fit, 1½" x 7" long..	482204	482204	482204
	16	2	BOLT, body fit, 1½" x 8" long..	482202	482202	482202
	17	2	LEG, stabilizer, Inner.....	171204	171204	171204
	18	1	CYLINDER, stabilizer, 3½ x 43 lh	812010	812010	812010
		1	CYLINDER, stabilizer, 3½ x 43 rh	812004	812004	812004
			For breakdown on cylinder see page 26, Fig. II-6			
	19	4	NUT, hex.....	13413	13413	13413
(2)	20	1	GEAR & RACK, assembly 300°, 5".	674207	674207	674207
		1	GEAR & RACK, assembly 400°, 5".	674208	674208	674208
			For breakdown on Gear & Rack Unit see page 30.			
(3)	21	1	BOLT, body fit.....	482205	482304	482304
	22	1	SLEEVE, head stem (see Fig. I-2)	-	-	-
	23	1	GEAR, pinion.....	402904	402901	402901

NOTES: THOSE PART NUMBERS IN BRACKETS ( ) HAVE BEEN SUPERCEDED, CHECK ACCOMPANYING FOOT NOTE IN 1st COLUMN.

(1)		Serviced in Head Stem Seal Kit.. 65499	65289	65289	
(2)		The following item pertains to those earlier machines with 4½" Gear & Rack Barrels:			
20	1	GEAR & RACK, assembly, 300°.....	674201	674201	674201
	1	GEAR & RACK, assembly, 400°.....	674200	674200	674200
(3)		REFERENCE MODELS 60/80 ONLY. The following items pertain to those earlier machines with 1½" bolts.			
1	1	HEAD, weldment.....	-		
3	1	BOLT, body fit, 1 1/2" x 13"....	-	482200	482200
23	1	BOLT, body fit, 1 1/2" x 13"....	-	482200	482200

(4) Reference Model 40 with rotating platform only: The following items pertain to machines dating after April 26, 1975.

1	1	FRAME, weldment.....	135201
2	1	HEAD, weldment.....	122122
6	1	BEARING, tapered roller.....	41090
		cone.....	41730
		cup.....	41731
		Head Stem Seal Kit used.....	65289

Change Notice No. 1
Effective : 9/23/75
Supercedes page dated: 1/1/75

REAR-MOUNT FOLD-A-WAY STABILIZERS

HEAD & FRAME ASSEMBLY

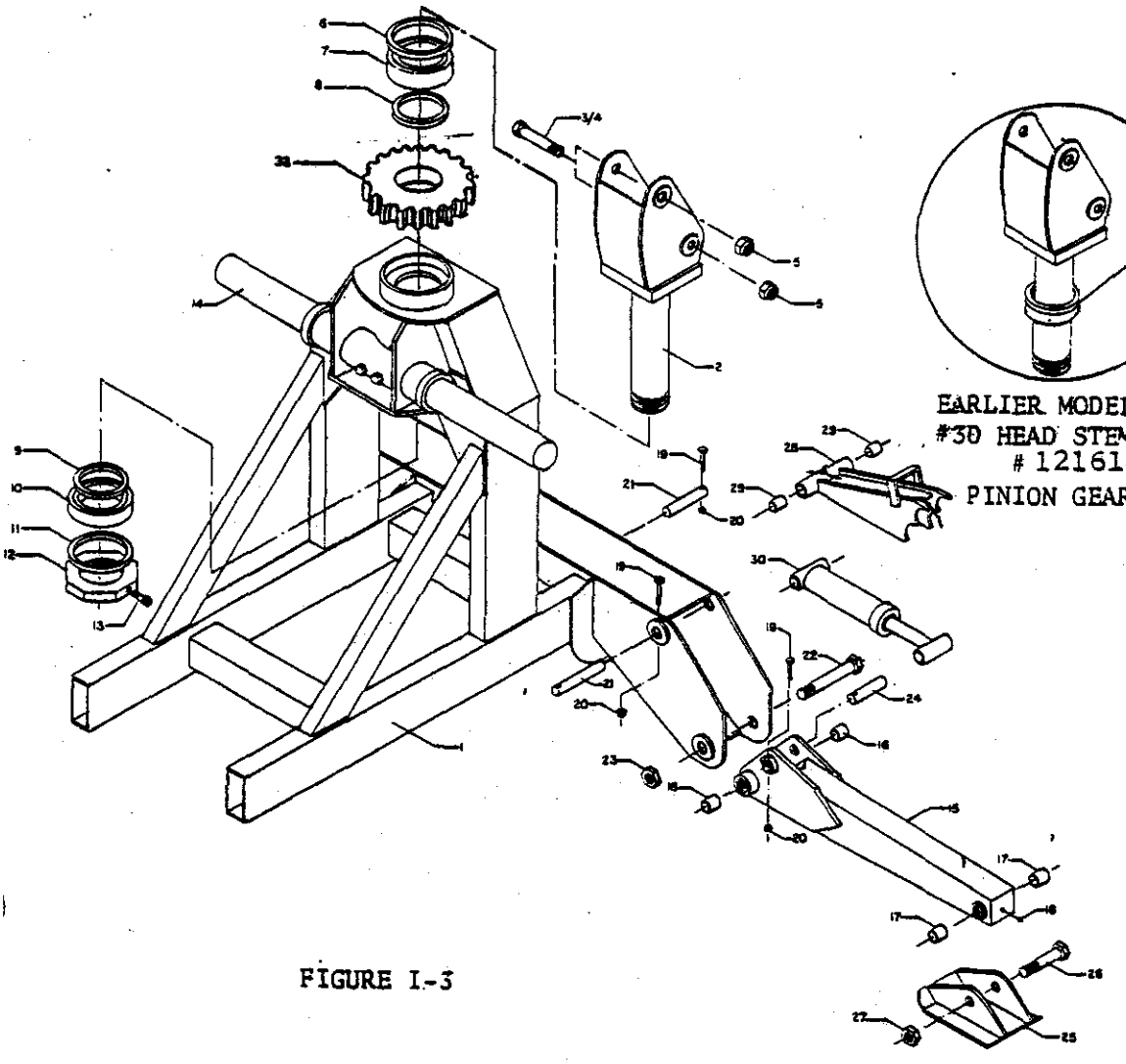


FIGURE I-3

Change Notice No. 2
Effective: 5/21/76
Supercedes page dated: 9/23/75

HEAD & FRAME ASSEMBLY PARTS LIST

ITEM NO	QTY	DESCRIPTION	MODEL 40	MODEL 60	MODEL 80
1	1	FRAME, assembly, 60".....	133156	133154	133155
	1	FRAME, assembly, 48".....	133133	133132	133131
2	1	HEAD, weldment.....	122102	122115	122118
3	1	BOLT, body fit.....	482205	482272	472272
4	1	BOLT, body fit.....	482205	482304	482304
5	2	NUT, hex, nylock,.....	13413	13417	13417
(1) 6	1	SEAL, dust.....	(44534)	(44538)	(44538)
7	1	BEARING, tapered roller.....	41079	41090	41090
	1	cone.....	41726	41730	41730
	1	cup.....	41727	41731	41731
(1) 8	1	SEAL, o-ring.....	(65361)	(65368)	(65368)
(1) 9	1	SEAL,O-ring.....	(65316)	(65368)	(65368)
10	1	BEARING, tapered roller.....	41079	41079	41079
	1	cone.....	41726	41726	41726
	1	cup.....	41727	41727	41727
(1) 11	1	SEAL, dust.....	(44534)	(44534)	(44534)
12	1	NUT, hex.....	481707	481707	481707
13	1	BOLT, 3/8-UNC 5/8 long.....	10051	10051	10051
(2) 14	1	GEAR & RACK, assembly, 300°.....	674207	674207	674207
	1	GEAR & RACK, assembly, 400°.....	674208	674208	674208
		For breakdown on Gear & Rack Unit see Page 30.			
15	2	LEG, outrigger, weldment.....	173203	173203	173203
16	4	BUSHING, 2 per leg.....	42032	42032	42032
17	4	BUSHING, 2 per leg.....	42020	42020	42020
18	2	FITTING, grease.....	17300	17300	17300
19	6	BOLT, 3/8-16 UNC x 3 1/2 long....	10664	10664	10664
20	6	NUT, hex, 3/8.....	13008	13008	13008
21	4	PIN, 2" x 13 1/2 long.....	171651	171651	171651
22	2	BOLT, 2-UNC x 13 1/2 long.....	482272	482272	482272
23	2	NUT, hex, nylock, 2".....	13417	13417	13417
24	2	PIN, 2 x 9 1/2 long.....	171659	171659	171659
25	2	PAD, outrigger.....	172300	172300	172300
26	2	BOLT, 1 1/2-UNC x 8 3/4 long.....	482202	482202	482202
27	2	NUT, hex, nylock, 1 1/2.....	13413	13413	13413
28	2	LOCKS, manual, (optional).....	172209	172209	172209
29	4	BUSHINGS, 9 per lock.....	42032	42032	42032
30	1	CYLINDER, stabilizer, 5 x 17 lh..	812418	812418	812418
	1	CYLINDER, stabilizer, 5 x 17 rh..	812405	812405	812405
		For breakdown on cylinder see Page 26, Fig. II-5.			
31	1	SLEEVE, head, stem (see Fig. I-3)	-	-	-
32	1	GEAR, pinion	402904	402901	402901

NOTES: THOSE PART NUMBERS IN BRACKETS ( ) HAVE BEEN SUPERCEDED. CHECK ACCOMPANYING FOOT NOTE IN 1st COLUMN.

(1) Serviced in Head Stem Seal Kit....- 65499 65289 65289

(2) The following item pertains to earlier model machines with 4½" Gear & Rack Barrels:

14	1	GEAR & RACK, assembly 300°.....	674201	674201	674201
	1	GEAR & RACK, assembly,400°.....	674200	674200	674200

(3) REFERENCE MODEL 60/80 ONLY
The following items pertain to earlier model machines with 1¼" Bolts.

1	1	HEAD, weldment.....	-		
3	1	BOLT, body fit, 1¼" x 13".....	-	482200	482200
4	1	BOLTS, body fit, 1¼" x 13".....	-	482200	482200

(4) Reference Model 40 with rotating platform only:
The following items pertain to machines dating after April 26, 1975.

1	1	FRAME, weldment, 60".....	133198
	1	FRAME, weldment, 48".....	133199
2	1	HEAD, weldment.....	122122
7	1	BEARING, tapered roller.....	41090
		cone.....	41730
		cup.....	41731
		Head Stem Seal Kit used.....	65289

Change Notice No. 1
Effective: 9/23/75
Supercedes page dated: 1/1/75

96 REF
7
1
4
5
3
2

8
12 REF
12
22 REF
8 REF

MODEL 40

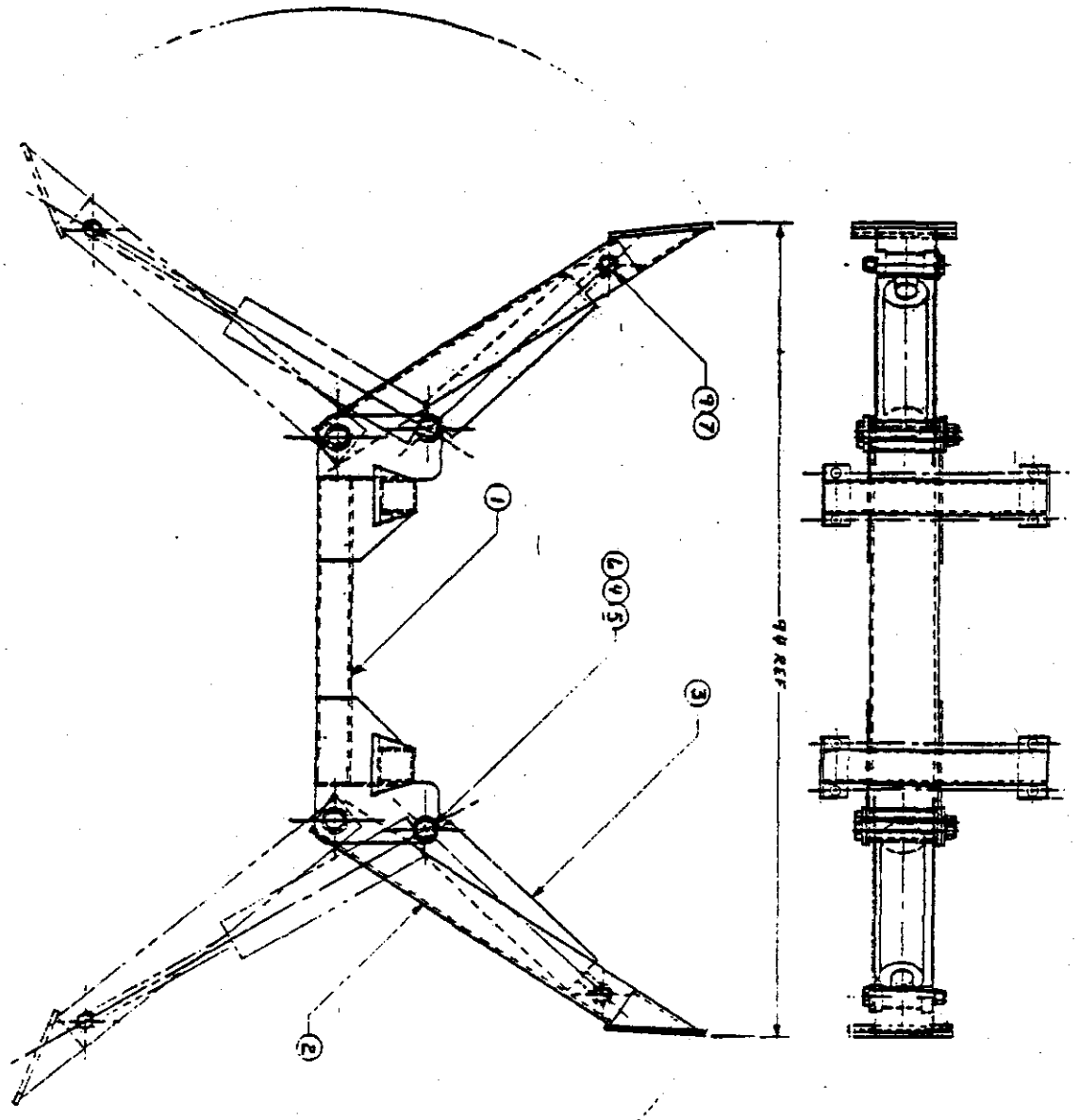
STABILIZER ASSEMBLY

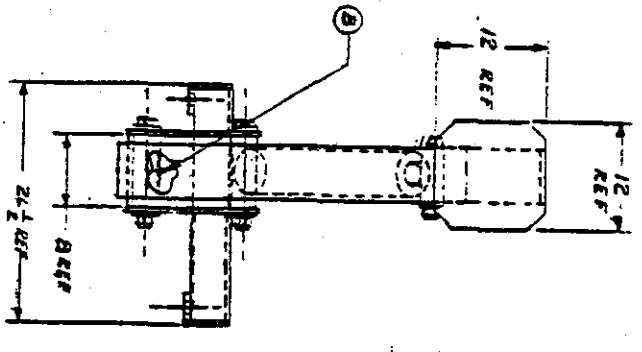
10 FT. FOLD-A-WAY

PARTS LIST

ITEM	QTY.	DESCRIPTION	PART NO.
-	1	ASSEMBLY, complete.....	174-00014
1	1	WELDMENT, housing 10 ft. fold-a-way.....	174-00105
2	2	WELDMENT, stabilizer leg.....	173-00201
3	2	ASSEMBLY, hydraulic cylinder 5 x 17 x 2½"....	812-00404
4	4	BOLT, body fit 1½ x 11".....	482-00205
5	4	NUT, nylock 1½".....	513-00476
6	8	BUSHING, bronze 1-3/4 x 1½ x 2".....	542-00102
7	2	BOLT, body fit 1½ x 8".....	482-00201
8	2	FITTING, grease 1/8".....	173-00000
9	2	NUT, hex lock thin 1½".....	513-00770

Effective Date 5-7-81


96 REF
1
2
3
4
5
6
7


8
12 REF
12 REF
24 1/2 REF
8 REF

MODEL 80

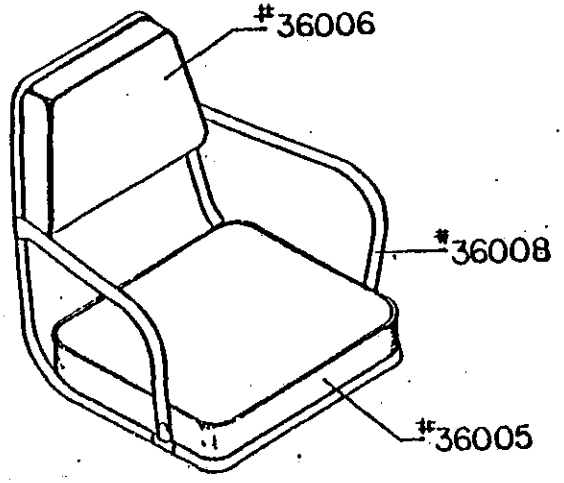
STABILIZER ASSEMBLY

10FT. FOLD-A-WAY

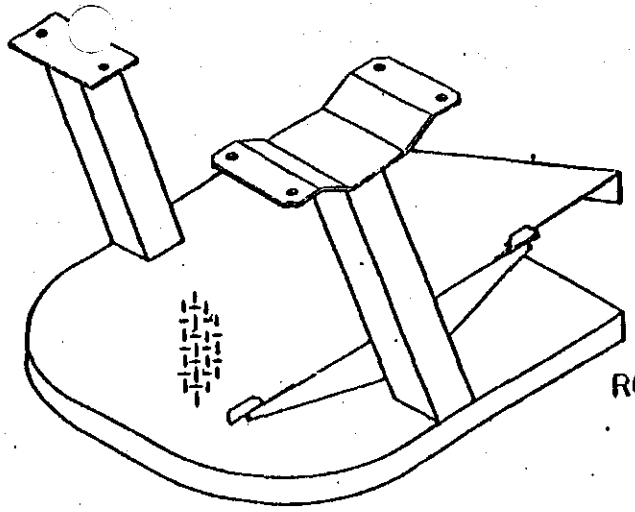
PARTS LIST

ITEM	QTY.	DESCRIPTION	PART NO.
-	1	ASSEMBLY, complete.....	174-00015
1	1	WELDMENT, housing 10 FT. fold-a-way.....	174-00106
2	2	WELDMENT, stabilizer leg.....	173-00201
3	2	ASSEMBLY, hydraulic cylinder 5 x 17 x 2½"....	812-00404
4	4	BOLT, body fit 1½ x 11".....	482-00205
5	4	NUT, nylock 1½".....	513-00476
6	8	BUSHING, bronze 1-3/4 x 1½ x 2".....	542-00102
7	2	BOLT, body fit 1½ x 8".....	482-00201
8	2	FITTING, grease 1/8".....	173-00000
9	2	NUT, hex lock thin 1½".....	513-00770

Effective Date 5-7-81

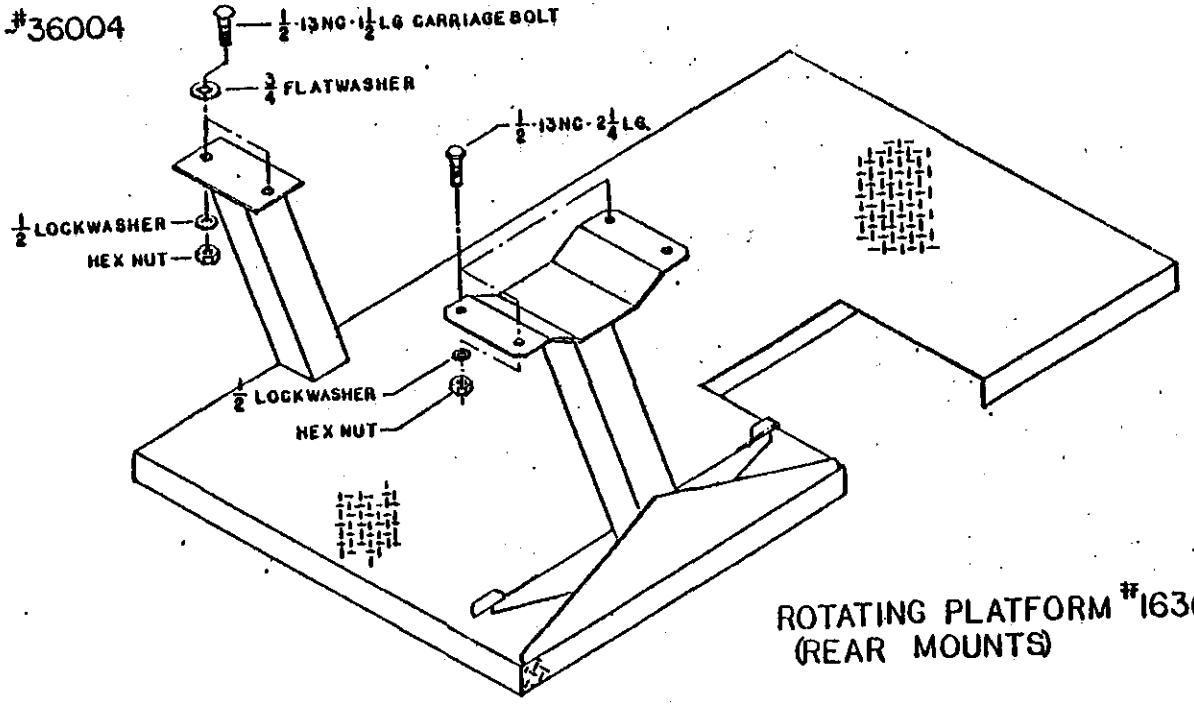


COMPLETE SEAT #36004



ROTATING PLATFORM #163005
(MID MOUNTS)

FIGURE I-4



ROTATING PLATFORM #163006
(REAR MOUNTS)

FIGURE I-5

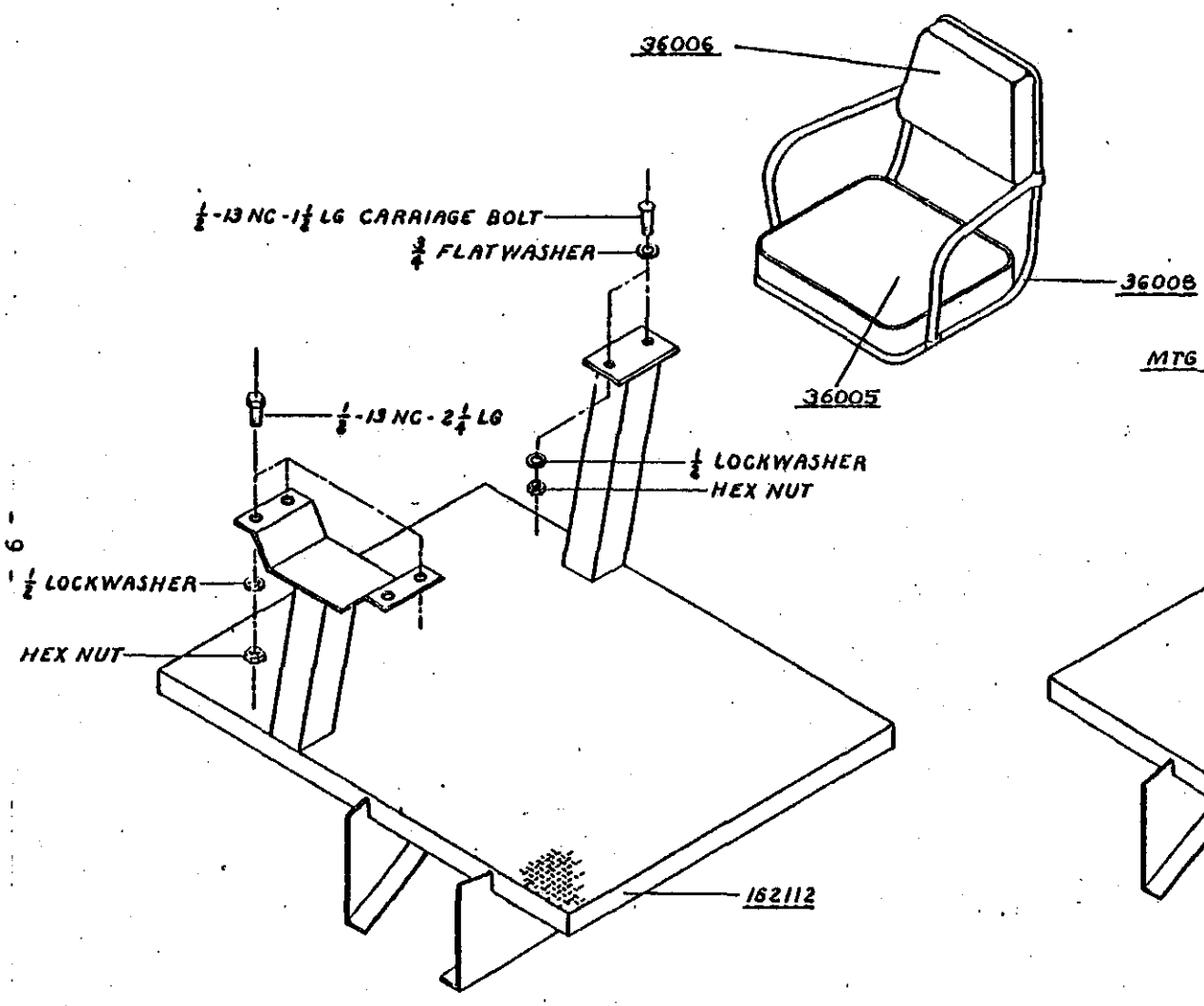


FIGURE I-6

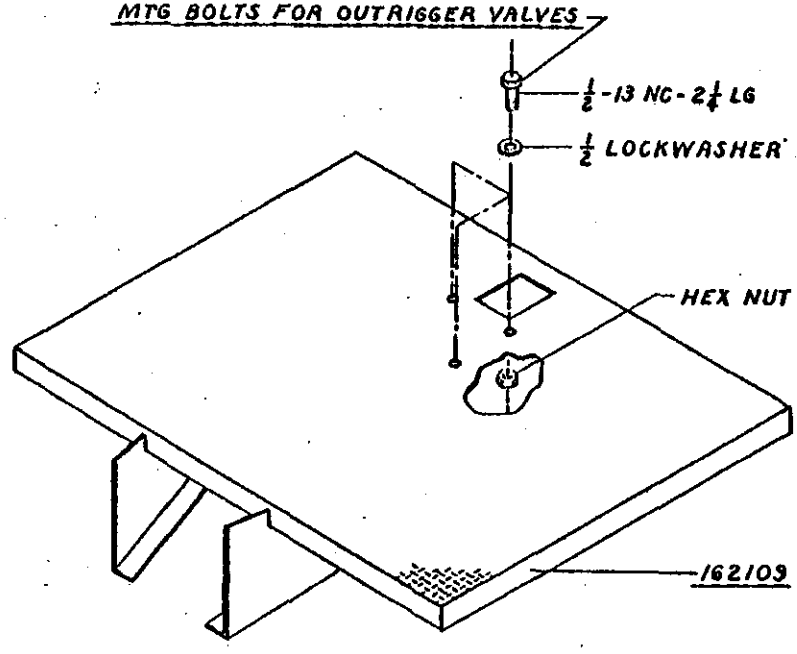
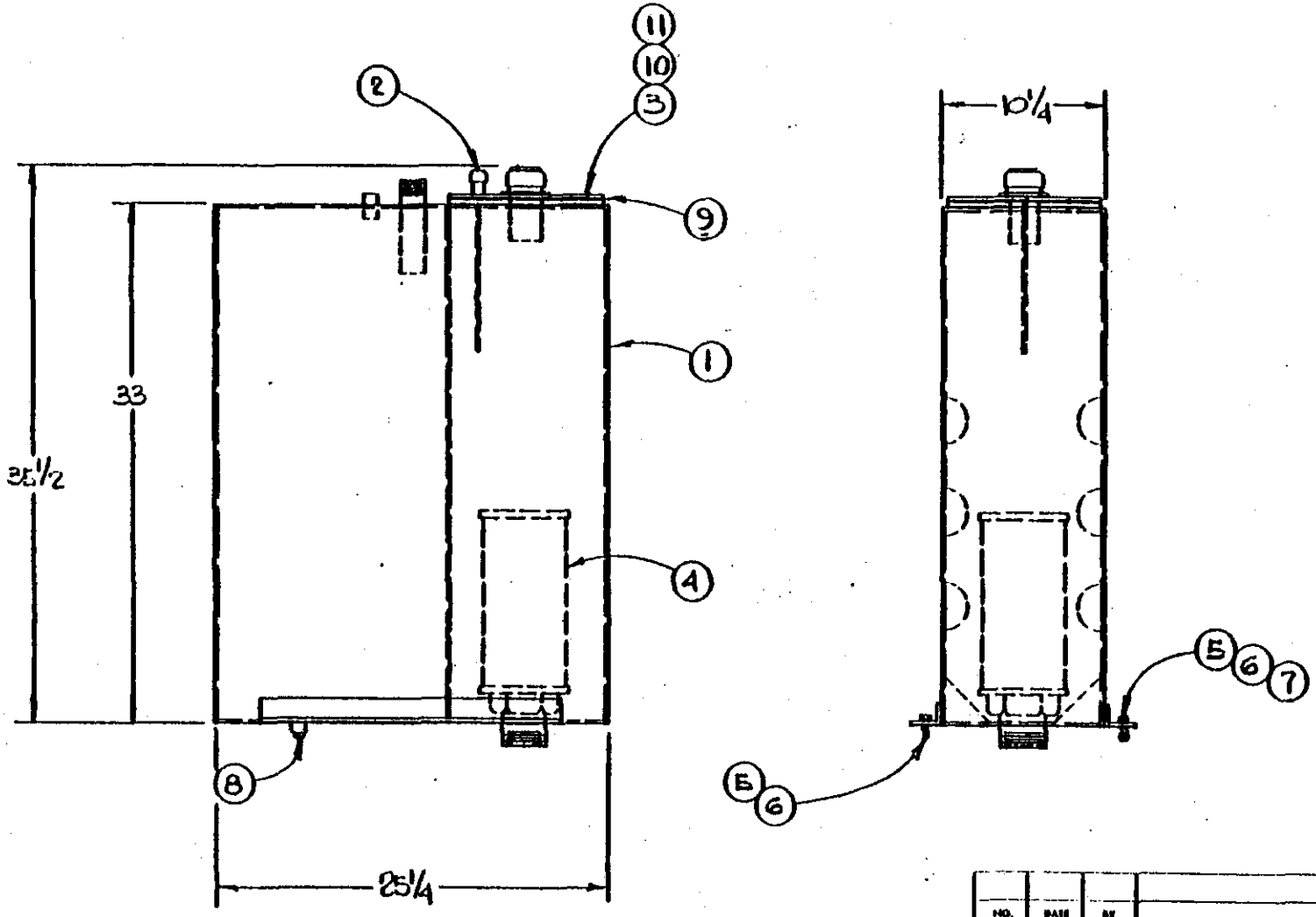


FIGURE I-7

SECONDARY PLATFORM
(USED ON REAR MOUNT APPLICATIONS)

STATIONARY PLATFORM OPTIONS

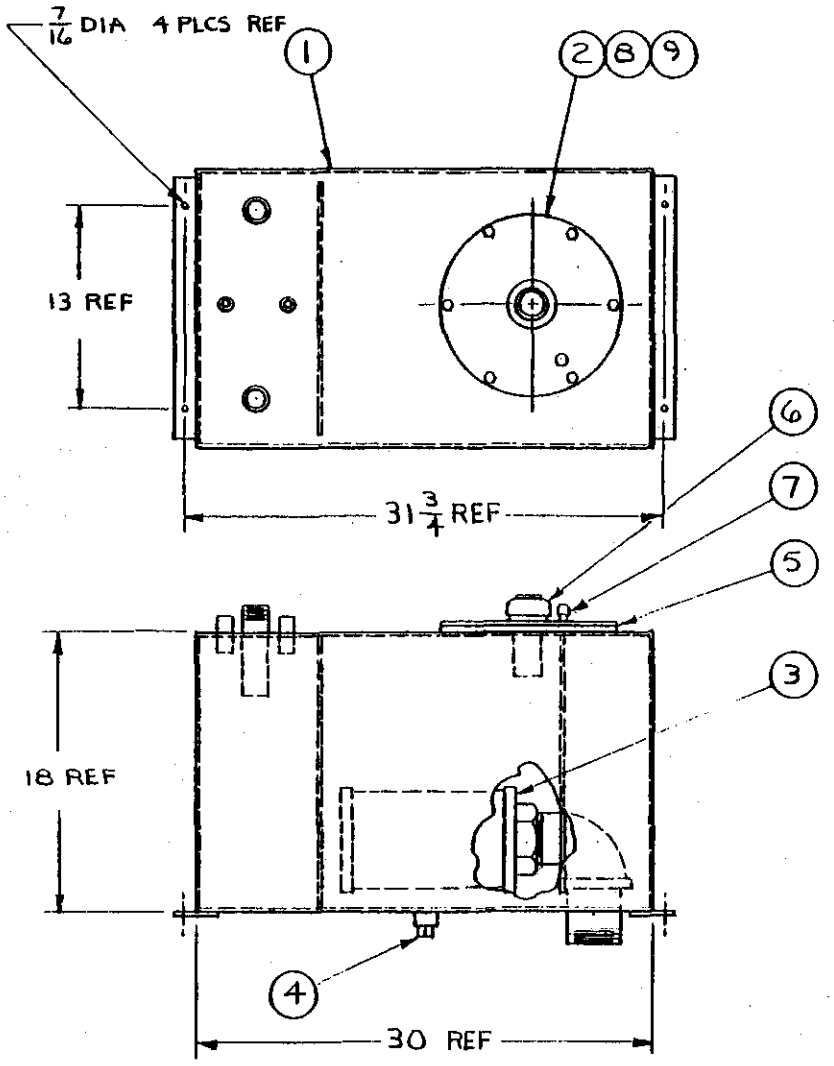


NO.	DATE	BY	DIVISION
MATERIAL:			BARKO HYDRAULICS, INC.
NO. REQ'D.:			ASSEMBLY, RESERVOIR 85 GALLON
WT.: 143			SCALE:
ASS'Y.: 643130			DATE: 7-29-76
MODEL:			DWN.: J. BORTL
			APP.:
			642002

BARKO HYDRAULICS DULUTH, MINNESOTA	TITLE: ASSEMBLY, RESERVOIR	NUMBER 642002	CHG.
	USED ON: 35 GALLON	DATE: 7/22/76	

ITEM	PART NO.	NO.	DESCRIPTION	MATERIAL		REMARKS
1	643130	1	WELDMENT, RESERVOIR 35 GALLON	B/M		130#
2	641101	1	WELDMENT, DIPSTICK 12"	B/M		2#
3	643201	1	ASSEMBLY, INSPECTION COVER	B/M		7#
4	65019	1	STRAINER OIL FILTER CO. M-650-B	-		3#
5	10652	4	BOLT, HEX HEAD 3/8 - 16-3/4 LONG	-		-
6	14011	4	WASHER, LOCK - SPRING 3/8	-		-
7	13008	2	NUT, HEX HEAD 3/8-16	-		-
8	22304	1	PIPE, PLUG 1/2"	-		.1#
9	651302	1	GASKET	GASKET MAT'L		-
10	10052	6	BOLT, HEX HEAD 3/8-16 X 3/4 LONG GRADE 2	-		-
11	14011	6	WASHER, SPRING LOCK 3/8	-		-

4		TITLE ASSEMBLY, RESERVOIR	NO. 642002
3			
2		BY	QTY. PRODUCTION NO.
1		DATE:	



ITEM	QTY	MAT'L:	PART NO	DESCRIPTION	WT
1	1	B M	643-00147	WELD'T-HYD RES 42 GAL	137
2	1	B M	642-00135	WELD'T - INSPECTION COVER	8*
3	1		565-00020	STRAINER - SUCTION 3"	3
4	1		522-00338	PLUG - MAGNETIC 1"	-
5	1		651-00304	GASKET - SEAL 1/16 THK	-
6	1		539-00500	ASSY - FILLER CAP	1
7	1	B M	641-00101	WELD'T - DIPSTICK	2
8	6		510-00652	BOLT - HH 3/8-16UNC x 3/4 LG	
9	6		514-00011	WASHER-LOCK 3/8	

REV.	DATE	BY	DESCRIPTION
△	5/14/81	BN	REL ECN 2412

FILMED

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

TOLERANCES UNLESS OTHERWISE SPECIFIED:
FRACTIONAL = ± 1/8
DECIMAL .00 = ± .010
.000 = ± .005
ANGULAR ± 1/2°

DRAWN NORDLUND DATE 5-13-81
APPR. DSM DATE 5-19-81
DHS

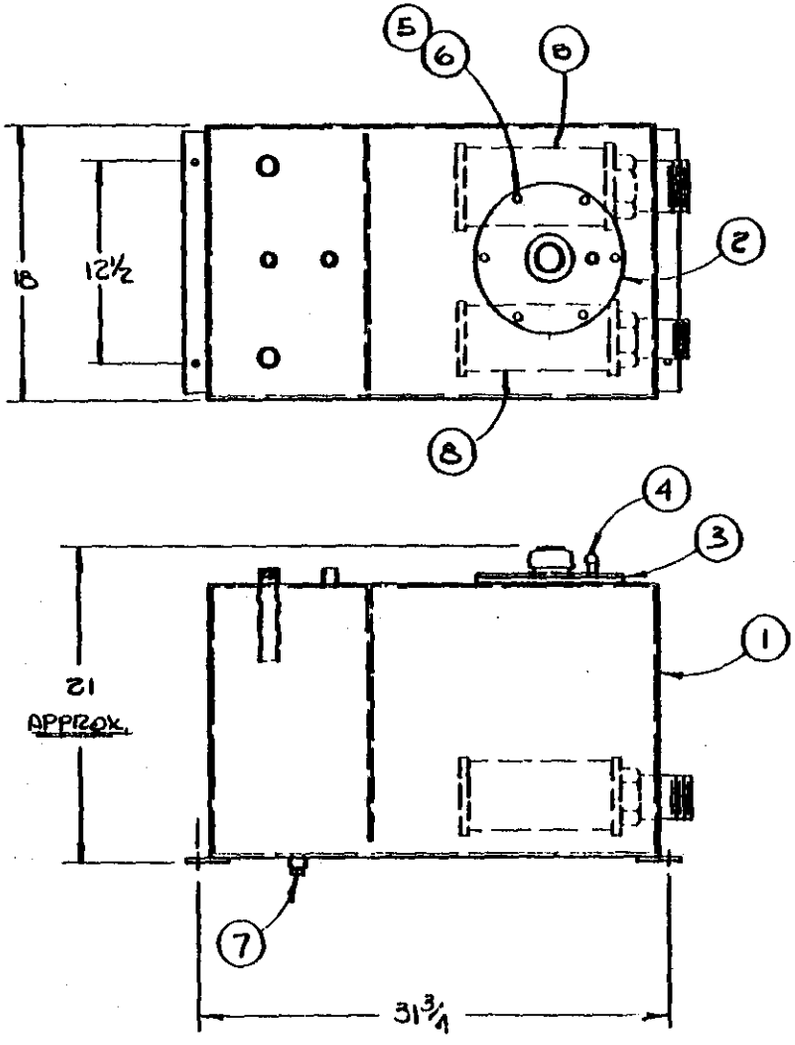
TITLE: ASSY - HYD RESERVOIR 42 GAL

FIRST USED 40-80
NEXT ASSY MATRIX
EST. WT. 151
ACT. WT.

SCALE 1/8" = 1" DRG. SIZE B DRG. NO. 642-00016 △0

FILMED

ITEM	QTY	MAT'L	PART NO.	DESCRIPTION	WT.
1	1	BM	643139	WELDMENT, RESERVOIR	139#
2	1	BM	643201	ASSEMBLY, INSPECTION COVER	7#
3	1	GASKET MATERIAL	651302	GASKET	-
4	1	BM	641101	WELDMENT, DIPSTICK	2#
5	6	-	10052	BOLT, HEX HEAD 3/8-16 x 3/4 LONG	-
6	6	-	14011	WASHER, LOCK	-
7	1	-	22388	PLUG, PIPE 1" (MAGNETIC)	-
8	1	-	65017	STRAINER 1½"	2#
9	1	-	65020	STRAINER 3"	3#

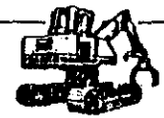


ITEM 4 WAS 2"
ECO 322

ECO 252

REV.	DATE	BY	DESCRIPTION
A	2/4/77	RS	

BARKO HYDRAULICS, INC.
Office: Superior, Wisconsin Phone: (715) 392-5641
Mailing address: P.O. Box 6277 Duluth, Minnesota 55806



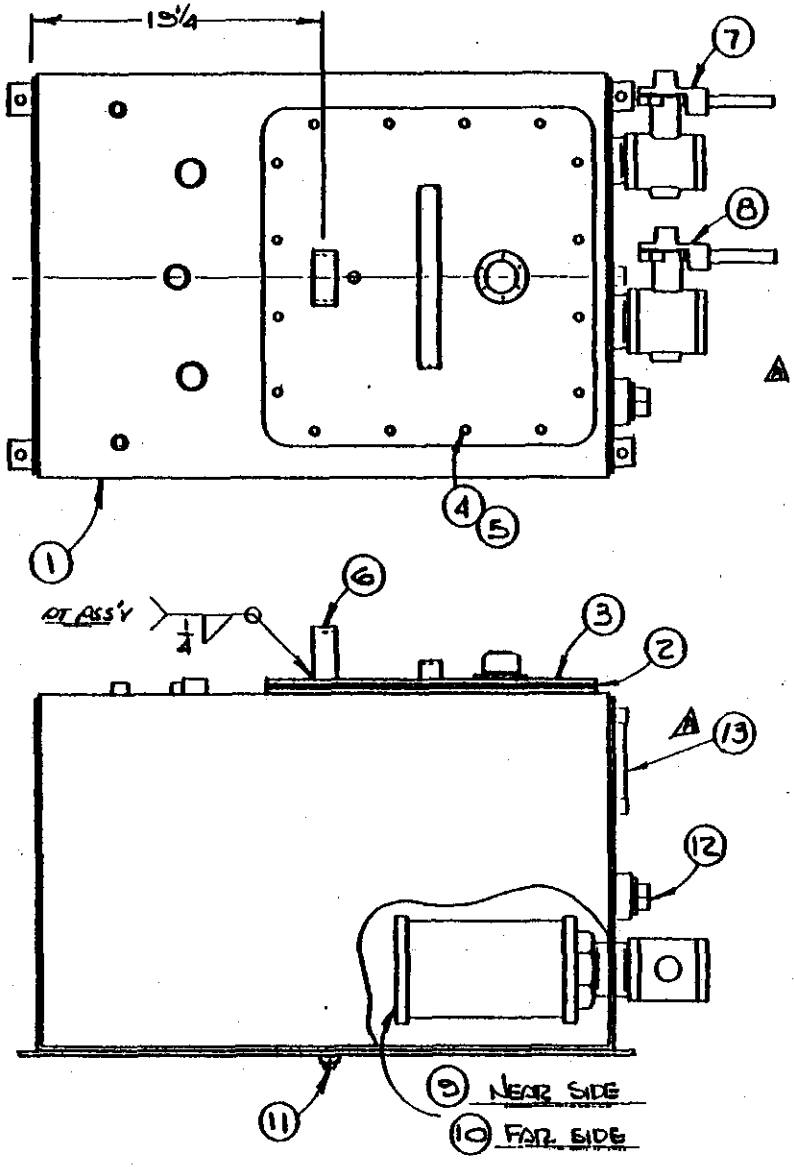
TOLERANCES UNLESS OTHERWISE SPECIFIED:
FRACTIONAL ± 1/32
DECIMAL .00 ± .010
.000 ± .005
ANGULAR ± 1/2°

DRAWN: J. BARTEL DATE: 12-19-77
APPR: DATE:

TITLE: ASSEMBLY, RESERVOIR
42 GALLON

FIRST USED: —
NEXT ASSY: —
EST. WT.: 153#
ACT. WT.:

SCALE: 1/8 DRG. SIZE: B DRG. NO.: 642003 8



ITEM	QTY	MAT'L	PART NO.	DESCRIPTION	WT.
1	1	B/M	693122	WELDMENT, RESERVOIR	255#
2	1	NEOPRENE	652300	GASKET, INSPECTION COVER	-
3	1	B/M	692128	ASSEMBLY, INSPECTION COVER	56#
4	16	-	10052	CAPSCREW 3/8 x 3/4 LONG	-
5	16	-	14011	WASHER, LOCK 3/8	-
6	1	TRI-TEN	401123	LUG, LIFTING	1#
7	1	-	63089	VALVE, SHUT-OFF 2½"	8#
8	1	-	63049	VALVE, SHUT-OFF 3"	11#
9	1	-	65020	STRAINER, SUCTION 3"	3#
10	1	-	65019	STRAINER, SUCTION 2½"	3#
11	1	-	22338	PLUG, PIPE 1"	-
12	1	-	22328	PLUG, PIPE 2"	-
13	1	-	39636	SIGHT GAGE	

REV.	DATE	BY	DESCRIPTION
A	3/6/78	RS	ADDED ITEMS 13 ECN

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

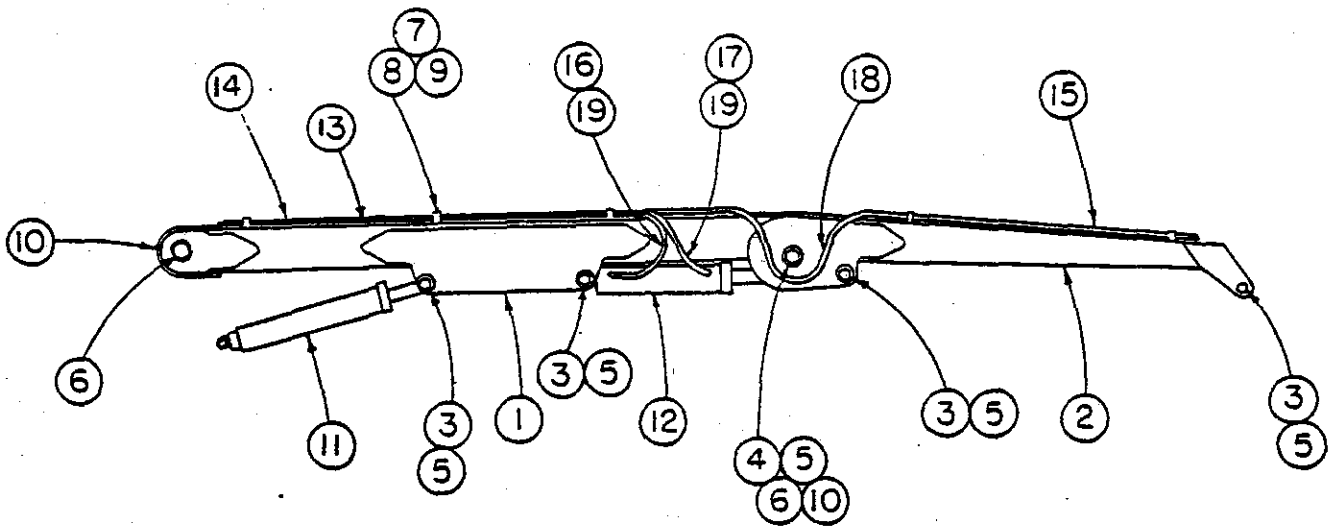
TOLERANCES UNLESS OTHERWISE SPECIFIED:
FRACTIONAL = ± 1/32
DECIMAL .00 = ± .010
.000 = ± .005
ANGULAR ± 1/2°

DRAWN: D. BARTEL DATE: 5-30-77
APPR. DATE: 5-30-77

TITLE: ASSEMBLY, RESERVOIR
100 GAL. HYDRAULIC OIL

FIRST USED: -
NEXT ASSY: -
EST. WT. 557#
ACT. WT.

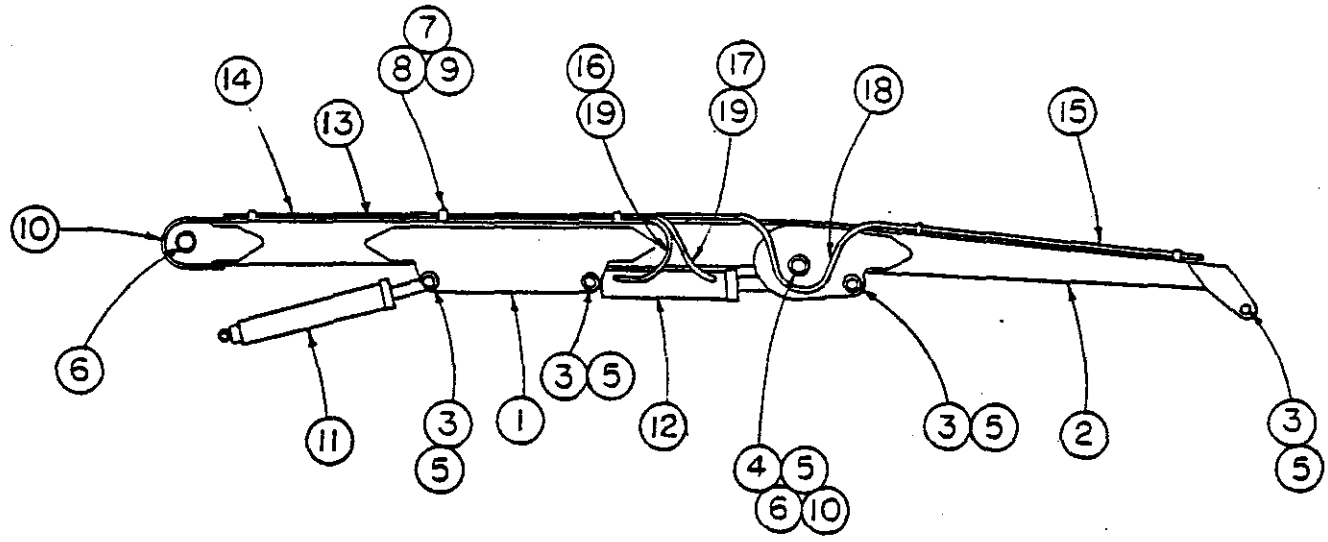
SCALE: 1/8 DWG. SIZE: B DWG. NO. 642004 REV. A



MODEL 40 BOOM ASSEMBLY

(STRAIGHT SECONDARY STD. LENGTH)

ITEM NO.	QTY.	DESCRIPTION	PART NO.
		ASSEMBLY, boom (complete)	103029
1	1	WELDMENT, main boom	103202
2	1	WELDMENT, straight jib	113206
3	4	BOLT, body fit 1-1/2 X 8 long	482201
4	1	BOLT, body fit 1-1/2 X 9-1/4 long	482262
5	5	NUT, nylock 1-1/2	13413
6	4	BEARING, tapered roller	41015
7	17	CLAMP, pipe	491000
8	17	WASHER, lock	14011
9	17	NUT, hex	13008
10	2	FITTING, grease	17300
11	1	ASSEMBLY, cylinder	812406
12	1	ASSEMBLY, cylinder	812407
13	4	ASSEMBLY, hydraulic tubing	93482
14	2	ASSEMBLY, hydraulic tubing	93431
15	4	ASSEMBLY, hydraulic tubing	93437
16	1	ASSEMBLY, hose	71608
17	1	ASSEMBLY, hose	71607
18	4	ASSEMBLY, hose	71830
19	2	ADAPTOR 08MP-08FPX	66008

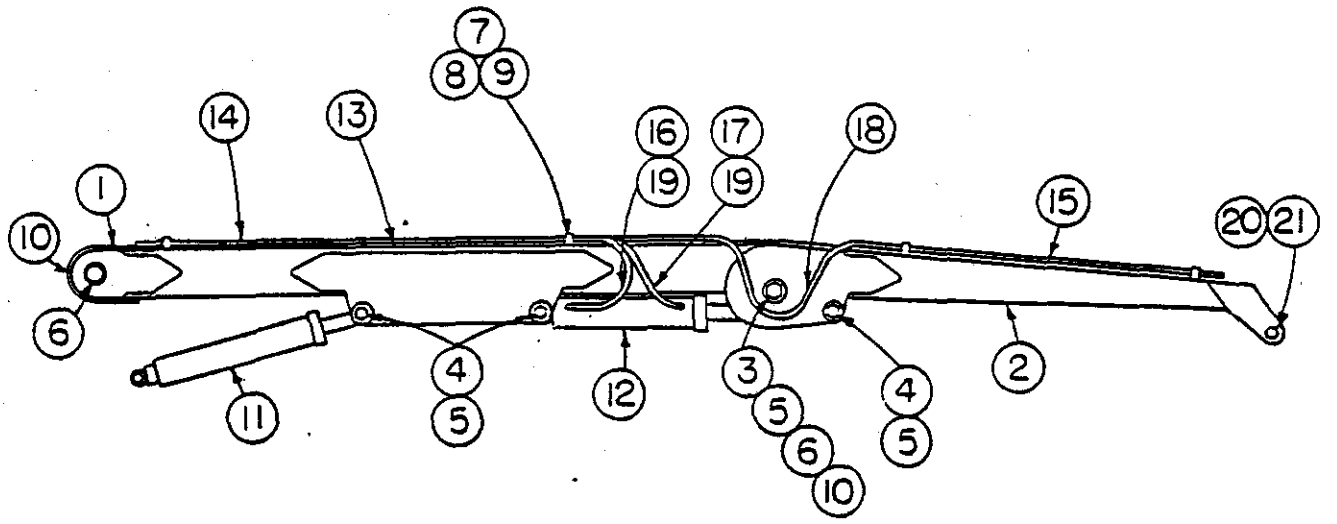


MODEL 40 BOOM ASSEMBLY

(STRAIGHT SECONDARY 2' EXTENSION)

ITEM NO.	QTY.	DESCRIPTION	PART NO.
	1	ASSEMBLY, boom (complete)	103030
1	1	WELDMENT, main boom	103210
2	1	WELDMENT, straight jib	113207
3	4	BOLT, body fit 1-1/2 X 8 long	482201
4	1	BOLT, body fit 1-1/2 X 9-1/4 long	482262
5	5	NUT, nylock 1-1/2	13413
6	4	BEARING, tapered roller	41015
7	17	CLAMP, pipe	491000
8	17	WASHER, lock	14011
9	17	NUT, hex	13008
10	2	FITTING, grease	17300
11	1	ASSEMBLY, cylinder	812406
12	1	ASSEMBLY, cylinder	812407
13	4	ASSEMBLY, hydraulic tubing	93484
14	2	ASSEMBLY, hydraulic tubing	93437
15	4	ASSEMBLY, hydraulic tubing	93483
16	1	ASSEMBLY, hose	71608
17	1	ASSEMBLY, hose	71607
18	4	ASSEMBLY, hose	71830
19	2	ADAPTOR 08MP-08FPX	66008

EFFECTIVE DATE 3/8/78

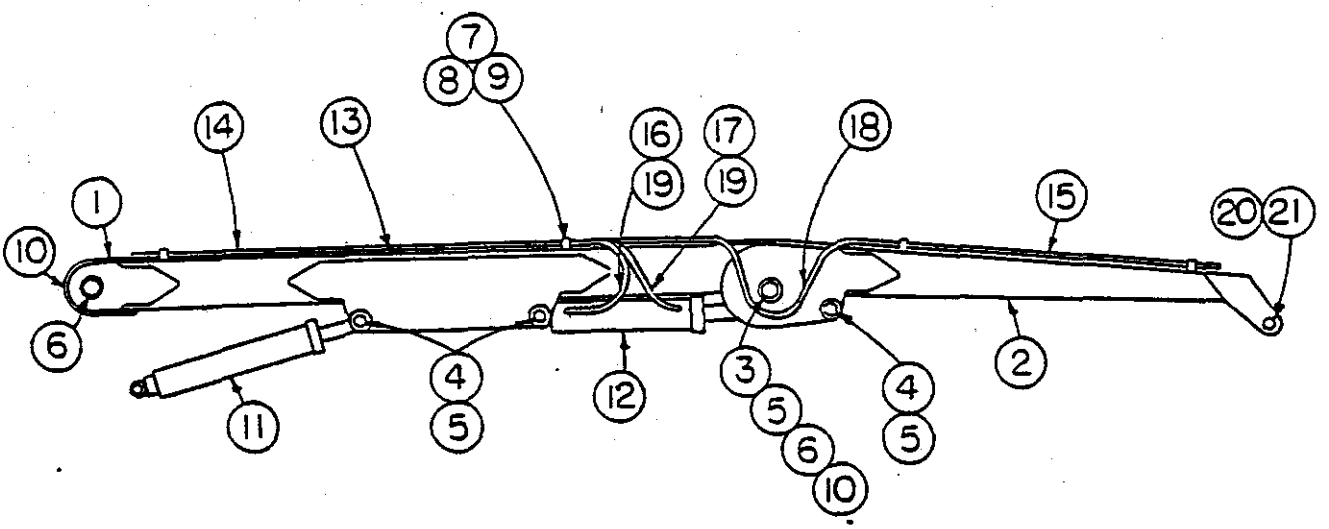


MODEL 80 BOOM ASSEMBLY

(STRAIGHT SECONDARY STD. LENGTH)

ITEM NO.	QTY.	DESCRIPTION	PART NO.
	1	ASSEMBLY, boom (complete)	103035
1	1	WELDMENT, main boom	103207
2	1	WELDMENT, straight jib	113211
3	1	BOLT, body fit 2 X 10 long	482248
4	3	BOLT, body fit 2 X 8-1/2 long	482294
5	4	NUT, nylock 2	13417
6	4	BEARING, tapered roller	41034
7	17	CLAMP, pipe	491000
8	17	WASHER, lock	14011
9	17	NUT, hex	13008
10	2	FITTING, grease	17300
11	1	ASSEMBLY, cylinder	812508
12	1	ASSEMBLY, cylinder	812421
13	4	ASSEMBLY, hydraulic tubing	93482
14	2	ASSEMBLY, hydraulic tubing	93431
15	4	ASSEMBLY, hydraulic tubing	93446
16	1	ASSEMBLY, hose	70284
17	1	ASSEMBLY, hose	70223
18	4	ASSEMBLY, hose	70230
19	2	ADAPTOR 08MP-08FPX	66008
20	1	BOLT, body fit 1-1/2 X 8 long	482201
21	1	NUT, nylock 1-1/2	13413

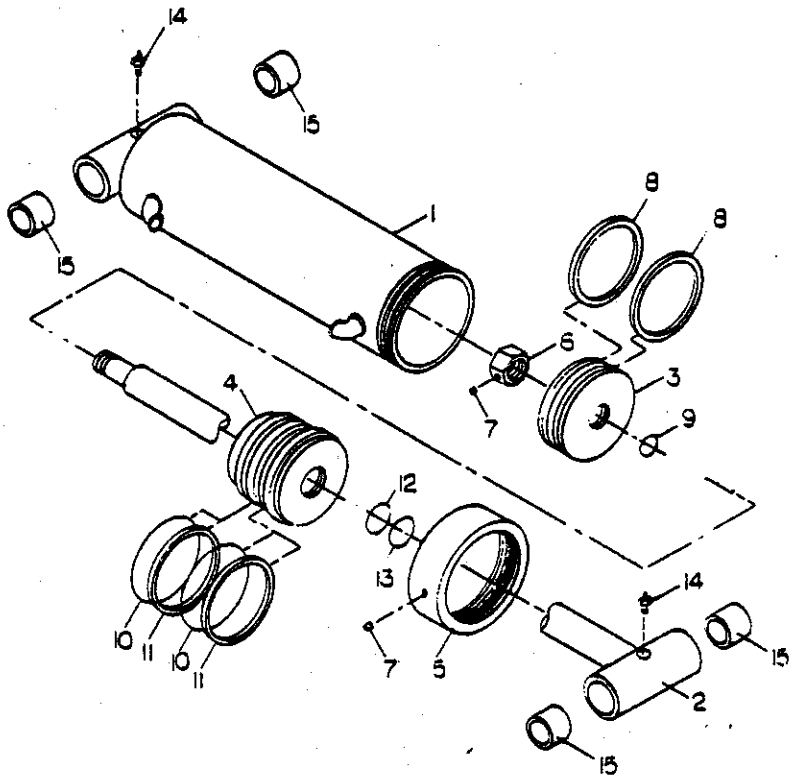
EFFECTIVE DATE 3/8/78



MODEL 80 BOOM ASSEMBLY

(STRAIGHT SECONDARY 2' EXTENSION)

ITEM NO.	QTY.	DESCRIPTION	PART NO.
		ASSEMBLY, boom (complete)	103036
1	1	WELDMENT, main boom	103213
2	1	WELDMENT, straight jib	113212
3	1	BOLT, body fit 2 X 10 long	482248
4	3	BOLT, body fit 2 X 8-1/2 long	482294
5	4	NUT, nylock 2	13417
6	4	BEARING, tapered roller	41034
7	17	CLAMP, pipe	491000
8	17	WASHER, lock	14011
9	17	NUT, hex	13008
10	2	FITTING, grease	17300
11	1	ASSEMBLY, cylinder	812508
12	1	ASSEMBLY, cylinder	812421
13	4	ASSEMBLY, hydraulic tubing	93452
14	2	ASSEMBLY, hydraulic tubing	93484
15	4	ASSEMBLY, hydraulic tubing	93449
16	1	ASSEMBLY, hose	70284
17	1	ASSEMBLY, hose	70223
18	4	ASSEMBLY, hose	70230
19	2	ADAPTOR 08MP-08FPX	66008
20	1	BOLT, body fit 1-1/2 X 8 long	482201
21	1	NUT, nylock 1-1/2	13413



MODEL 40

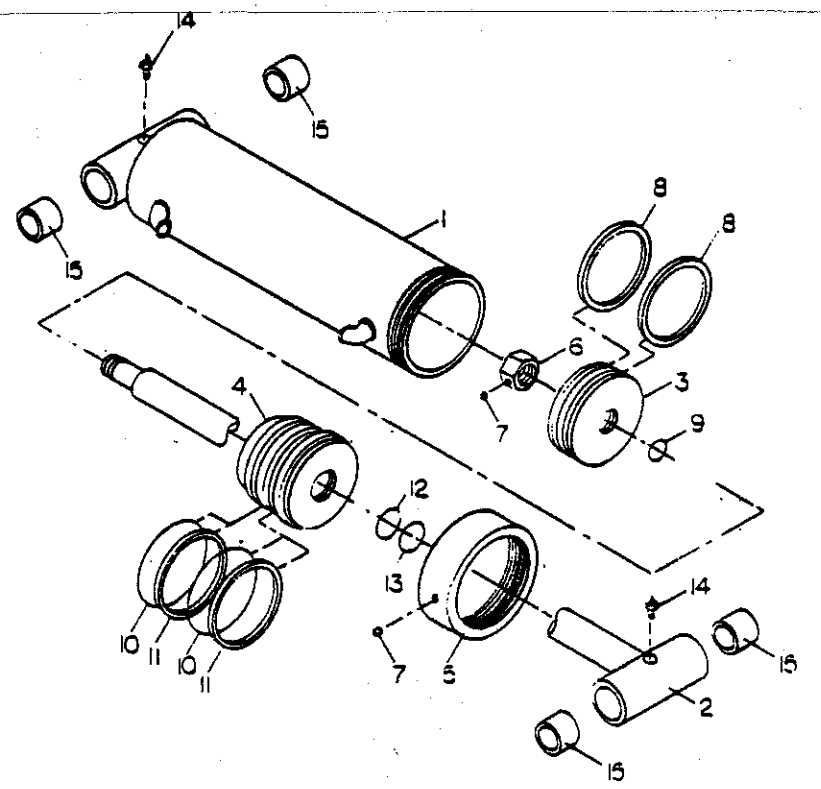
MAIN BOOM CYLINDER

(5 x 24 WITH 2½" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812406
1	1	WELDMENT, butt and tube	832015
2	1	WELDMENT, rod	842012
3	1	PISTON	852002
4	1	GLAND	852303
5	1	CAP, gland	852813
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	42020

SEAL KITS AVAILABLE

(1)	PISTON SEAL KIT	65484
(2)	GLAND SEAL KIT	65488
(3)	COMPLETE SEAL KIT	65586



MODEL 40

SECONDARY BOOM CYLINDER

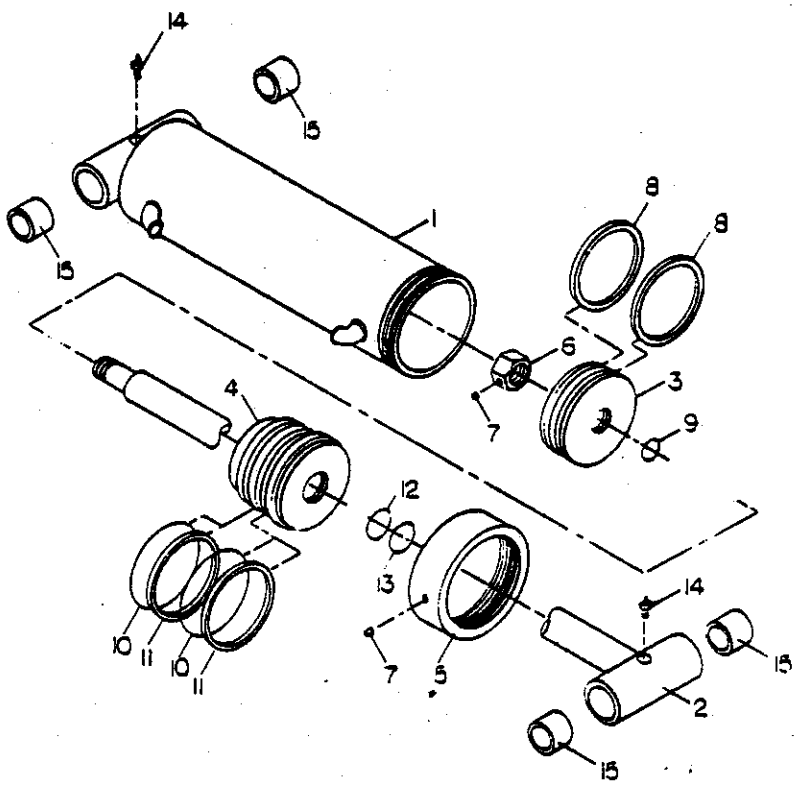
(5 x 24 WITH 2½" ROD)

ITEM NO.	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812407
1	1	WELDMENT, butt and tube	832016
2	1	WELDMENT, rod	842012
3	1	PISTON	852002
4	1	GLAND	852303
5	1	CAP, gland	852813
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	42020

SEAL KITS AVAILABLE

(1)	PISTON SEAL KIT	65484
(2)	GLAND SEAL KIT	65488
(3)	COMPLETE SEAL KIT	65586

Effective 4-1-78



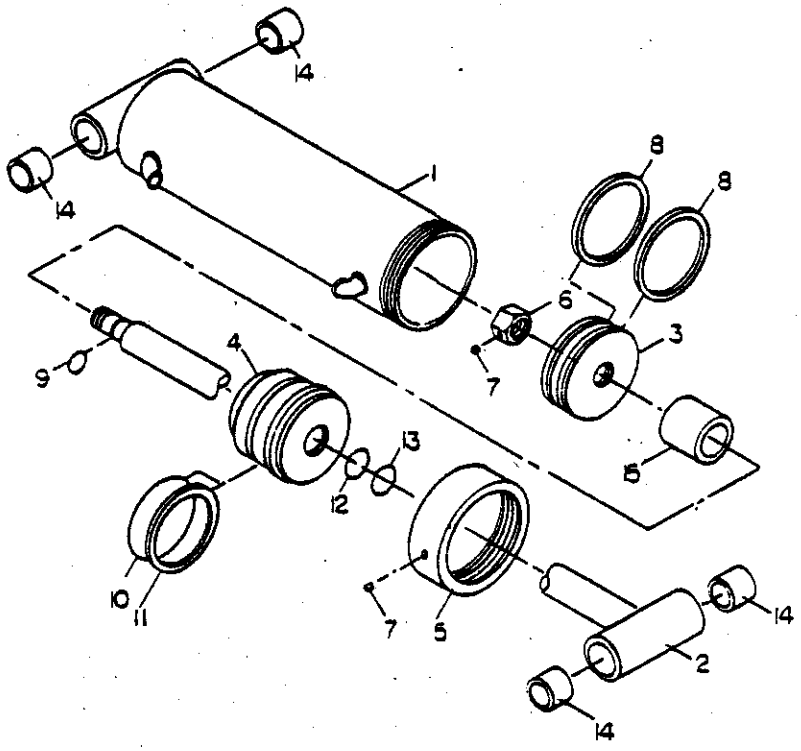
MODEL 40 ARM STABILIZER CYLINDER

(5 x 17 WITH 2½" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812405
1	1	WELDMENT, butt and tube	832014
2	1	WELDMENT, rod	842011
3	1	PISTON	852002
4	1	GLAND	852303
5	1	CAP, gland	852813
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

SEAL KITS AVAILABLE		
(1)	PISTON SEAL KIT	65484
(2)	GLAND SEAL KIT	65488
(3)	COMPLETE SEAL KIT	65586

Effective 4-1-78



MODEL 40

RIGHT TELESCOPIC STABILIZER CYLINDER

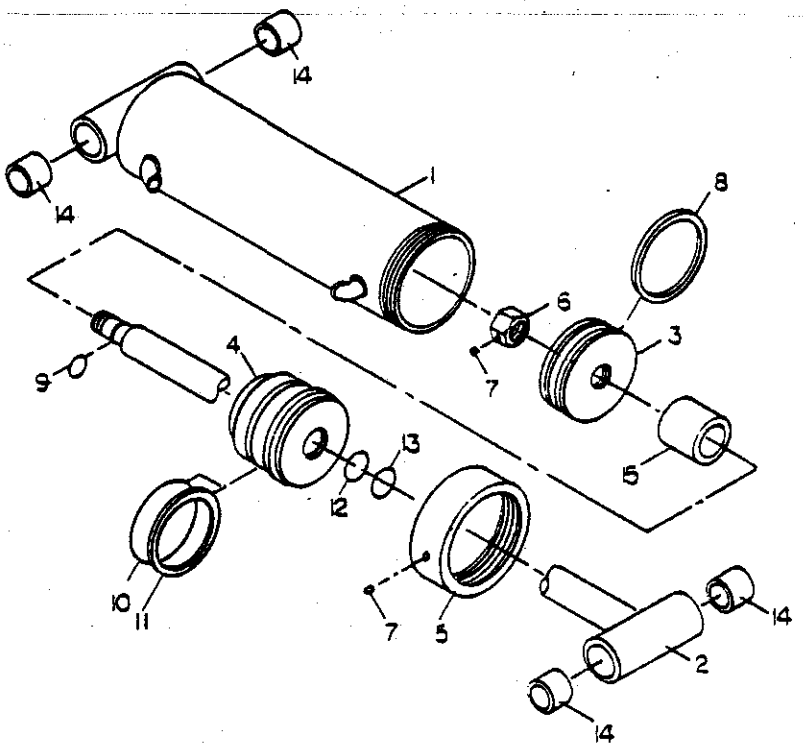
3½ x 43 WITH 2" ROD

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812004
1	1	WELDMENT, butt and tube	832004
2	1	WELDMENT, rod	842002
3	1	PISTON	852014
4	1	GLAND	852300
5	1	CAP, gland	852812
6	1	NUT, hex	13119
7	2	SCREW, set	12616
(1) (3) 8	1	SEAL, piston	
(1) (3) 9	1	O-RING	
(2) (3) 10	1	O-RING	
(2) (3) 11	1	WASHER, back up	
(2) (3) 12	1	SEAL, rod	
(2) (3) 13	1	SEAL, wiper	
14	4	BUSHING, bronze	42020
15	1	SPACER, stop	861018

SEAL KITS AVAILABLE

(1)	PISTON SEAL KIT	65482
(2)	GLAND SEAL KIT	65483
(3)	COMPLETE SEAL KIT	65533

Effective 4-1-78



MODEL 40

LEFT TELESCOPIC STABILIZER CYLINDER

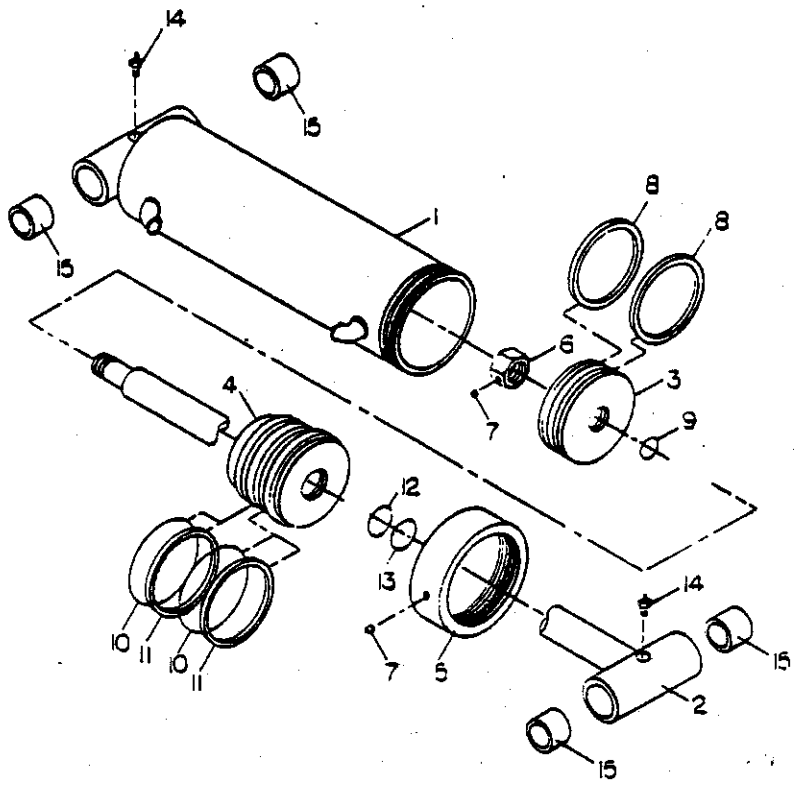
(3¼ x 43 WITH 2" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812010
1	1	WELDMENT, butt and tube	832028
2	1	WELDMENT, rod	842002
3	1	PISTON	852014
4	1	GLAND	852300
5	1	CAP, gland	852812
6	1	NUT, hex	13119
7	2	SCREW, set	12616
(1) (3) 8	1	SEAL, piston	
(1) (3) 9	1	O-RING	
(2) (3) 10	2	O-RING	
(2) (3) 11	1	WASHER, back up	
(2) (3) 12	1	SEAL, rod	
(2) (3) 13	1	SEAL, wiper	
14	4	BUSHING, bronze	42020
15	1	SPACER, stop	861018

SEAL KITS AVAILABLE

(1)	PISTON SEAL KIT	65482
(2)	GLAND SEAL KIT	65483
(3)	COMPLETE SEAL KIT	65533

Effective 4-1-78



MODEL 40

FOLD AWAY STABILIZER CYLINDER

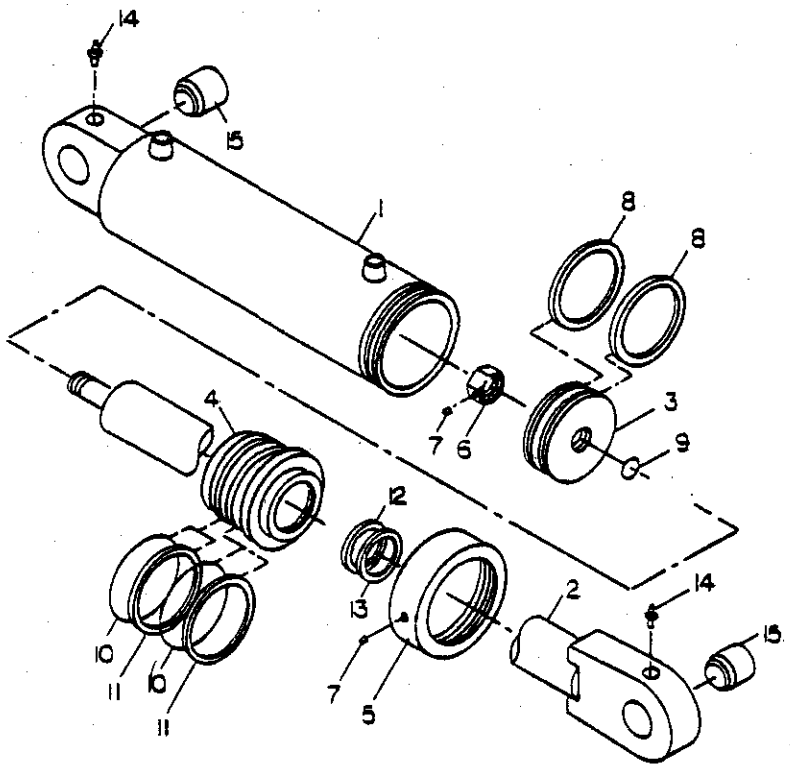
(5 x 17 WITH 2¼" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812404
1	1	WELDMENT, butt and tube	832013
2	1	WELDMENT, rod	842010
3	1	PISTON	852002
4	1	GLAND	852303
5	1	CAP, gland	852813
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	42020

SEAL KITS AVAILABLE

(1)	PISTON SEAL KIT	65484
(2)	GLAND SEAL KIT	65488
(3)	COMPLETE SEAL KIT	65586

Effective 4-1-78



MODEL 80

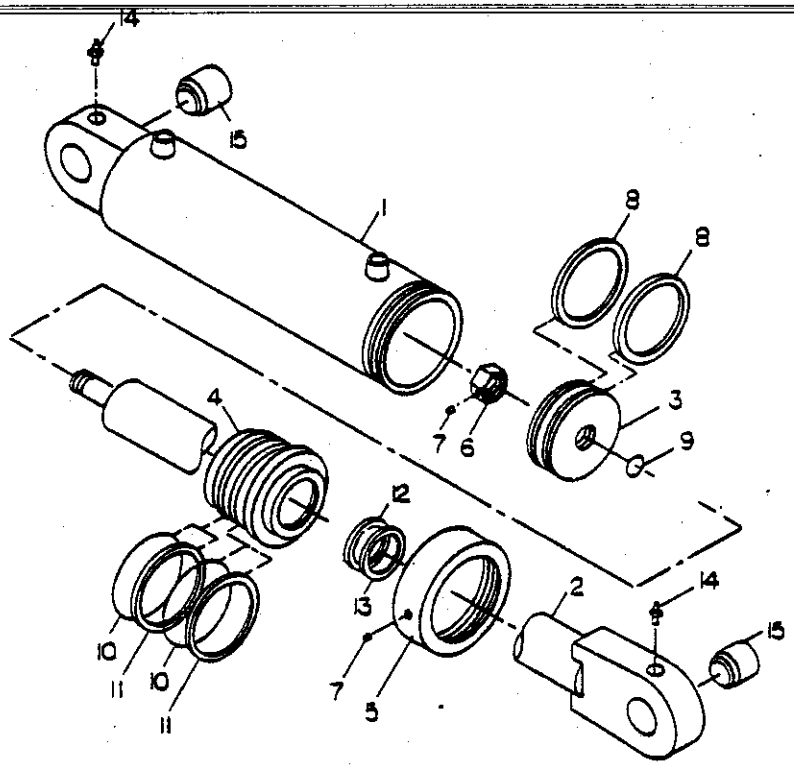
MAIN BOOM CYLINDER

(6 x 36 WITH 2½" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812508
1	1	WELDMENT, butt and tube	832134
2	1	WELDMENT, rod	842018
3	1	PISTON	852003
4	1	GLAND	852304
5	1	CAP, gland	852814
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	2	BUSHING, ball	41515

SEAL KITS AVAILABLE		
(1)	PISTON SEAL KIT	65489
(2)	GLAND SEAL KIT	65490
(3)	COMPLETE SEAL KIT	65524

Effective 4-1-78



MODEL 80

SECONDARY BOOM CYLINDER

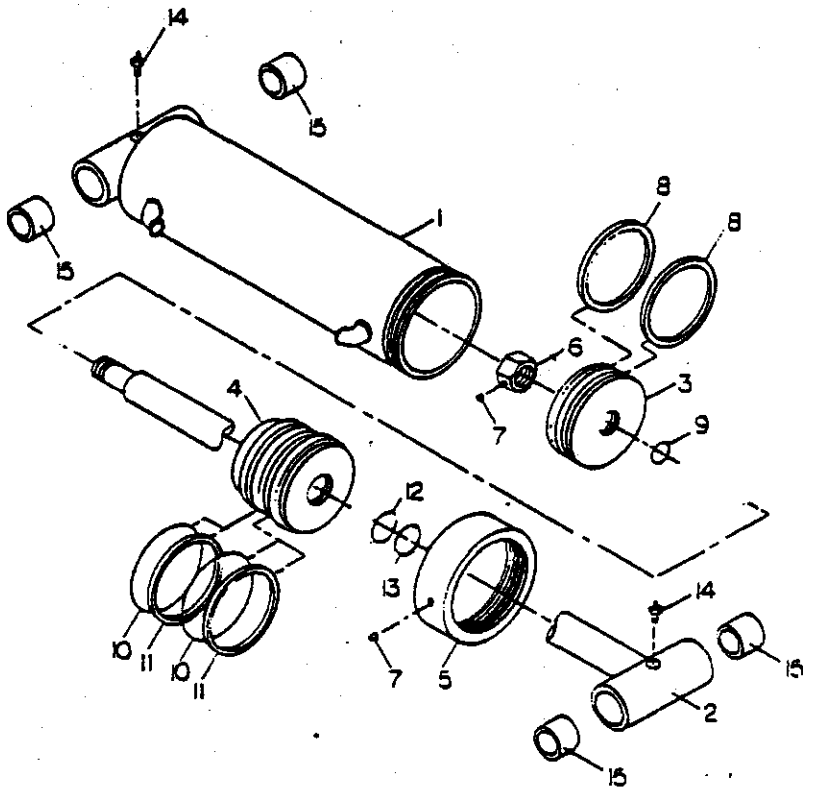
6 x 24 WITH 2¼" ROD

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812421
1	1	WELDMENT, butt and tube	832033
2	1	WELDMENT, rod	842015
3	1	PISTON	852003
4	1	GLAND	852304
5	1	CAP, gland	852814
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	2	BUSHING, ball	41515

SEAL KITS AVAILABLE

(1)	PISTON SEAL KIT	65489
(2)	GLAND SEAL KIT	65490
(3)	COMPLETE SEAL KIT	65524

Effective 4-1-78



MODEL 80 ARM STABILIZER CYLINDER

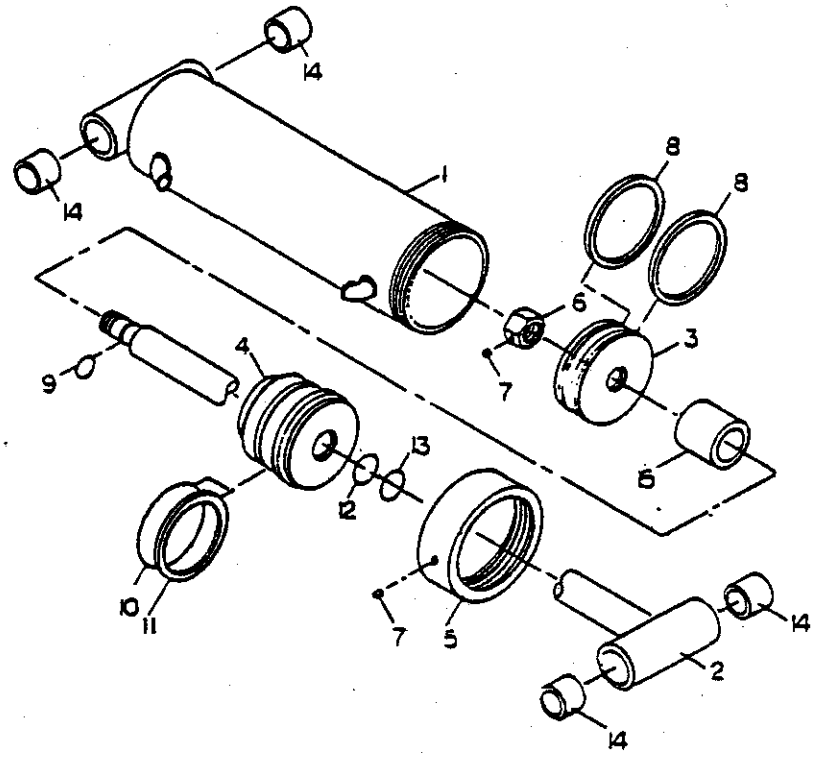
(5 x 17 WITH 2½" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812405
1	1	WELDMENT, butt and tube	832014
2	1	WELDMENT, rod	842011
3	1	PISTON	852002
4	1	GLAND	852303
5	1	CAP, gland	852813
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

SEAL KITS AVAILABLE

(1)	PISTON SEAL KIT	65484
(2)	GLAND SEAL KIT	65488
(3)	COMPLETE SEAL KIT	65586

Effective 4-1-78



MODEL 80

RIGHT TELESCOPIC STABILIZER CYLINDER

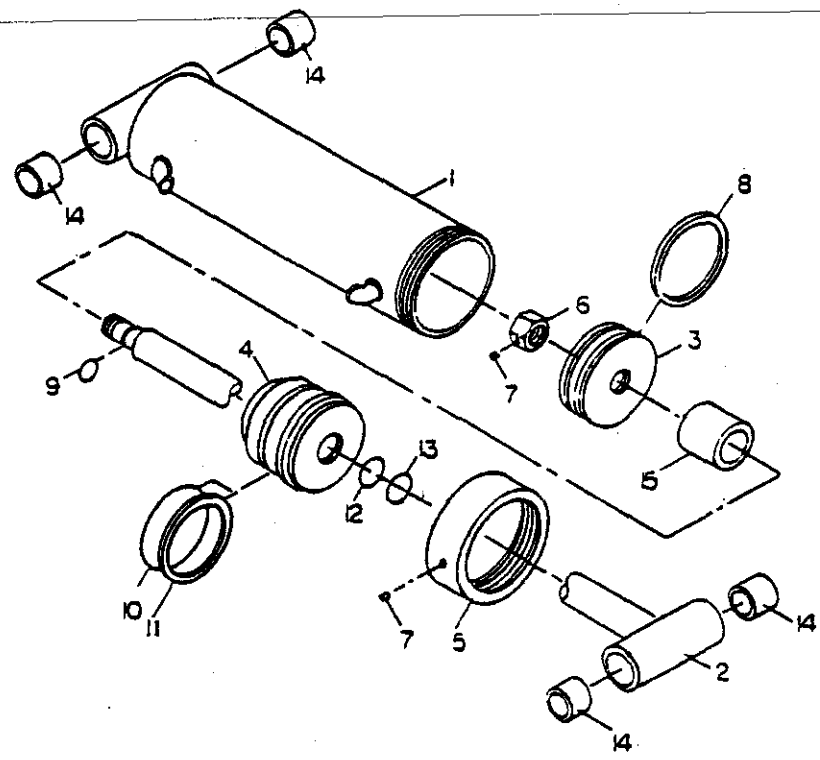
3½ x 43 WITH 2" ROD

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812004
1	1	WELDMENT, butt and tube	832004
2	1	WELDMENT, rod	842002
3	1	PISTON	852014
4	1	GLAND	852300
5	1	CAP, gland	852812
6	1	NUT, hex	13119
7	2	SCREW, set	12616
(1) (3) 8		SEAL, piston	
(1) (3) 9	1	O-RING	
(2) (3) 10	1	O-RING	
(2) (3) 11	1	WASHER, back up	
(2) (3) 12	1	SEAL, rod	
(2) (3) 13	1	SEAL, wiper	
14	4	BUSHING, bronze	42020
15	1	SPACER, stop	861018

SEAL KITS AVAILABLE

(1)	PISTON SEAL KIT	65482
(2)	GLAND SEAL KIT	65483
(3)	COMPLETE SEAL KIT	65533

Effective 4-1-78



MODEL 80

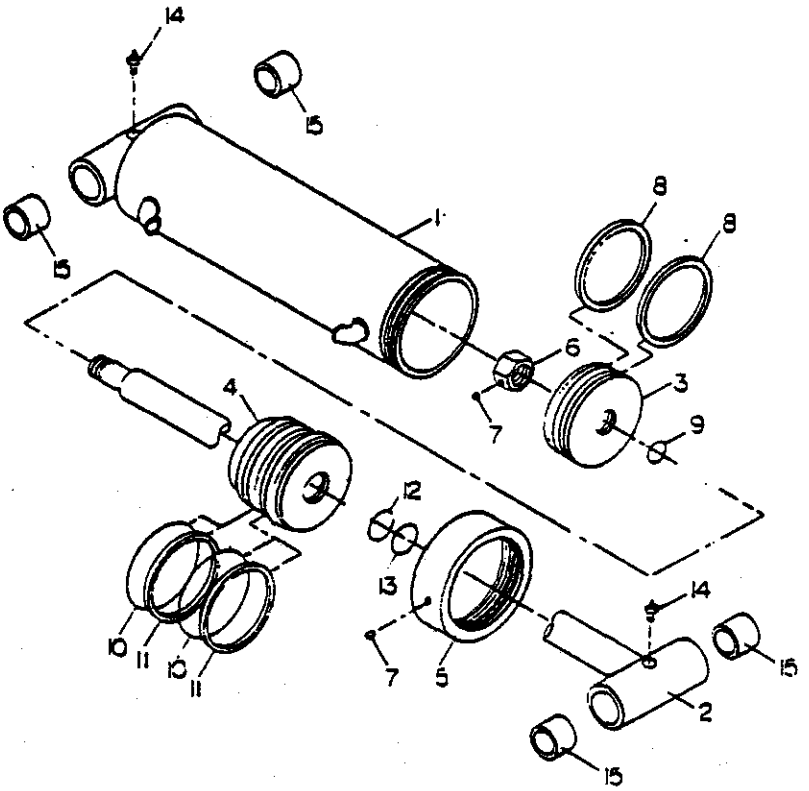
LEFT TELESCOPIC STABILIZER CYLINDER

(3½ x 43 WITH 2" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812010
1	1	WELDMENT, butt and tube	832028
2	1	WELDMENT, rod	842002
3	1	PISTON	852014
4	1	GLAND	852300
5	1	CAP, gland	852812
6	1	NUT, hex	13119
7	2	SCREW, set	12616
(1) (3) 8		SEAL, piston	
(1) (3) 9	1	O-RING	
(2) (3) 10	2	O-RING	
(2) (3) 11	1	WASHER, back up	
(2) (3) 12	1	SEAL, rod	
(2) (3) 13	1	SEAL, wiper	
14	4	BUSHING, bronze	42020
15	1	SPACER, stop	861018

SEAL KITS AVAILABLE		
(1)	PISTON SEAL KIT	65482
(2)	GLAND SEAL KIT	65483
(3)	COMPLETE SEAL KIT	65533

Effective 4-1-78



MODEL 80

FOLD AWAY STABILIZER CYLINDER

(5 x 17 WITH 2½" ROD)

ITEM NO	QTY	DESCRIPTION	PART NO
0	1	ASSEMBLY, complete	812404
1	1	WELDMENT, butt and tube	832013
2	1	WELDMENT, rod	842010
3	1	PISTON	852002
4	1	GLAND	852303
5	1	CAP, gland	852813
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	42020

SEAL KITS AVAILABLE		
(1)	PISTON SEAL KIT	65484
(2)	GLAND SEAL KIT	65488
(3)	COMPLETE SEAL KIT	65586

Effective 4-1-78

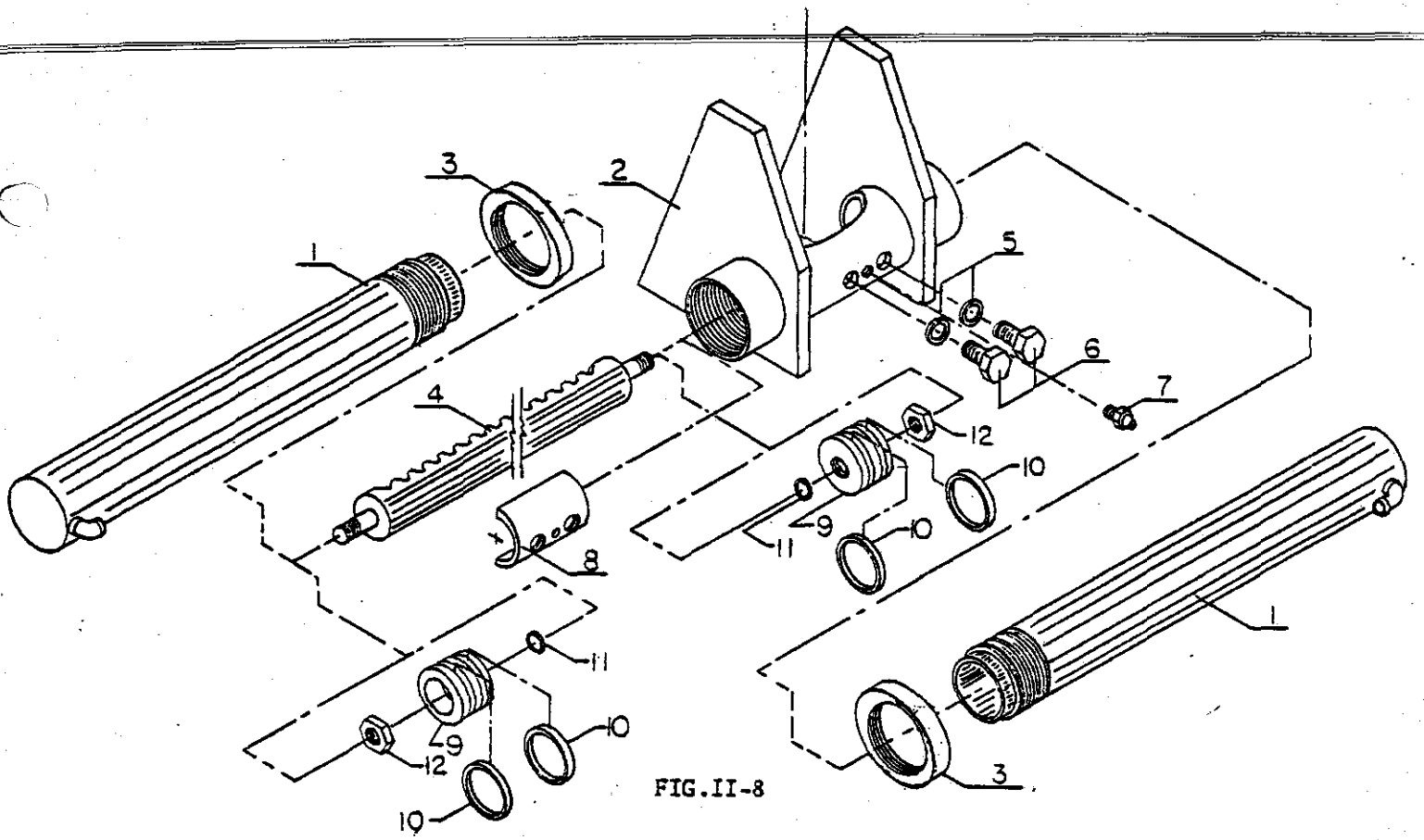


FIG.II-8

GEAR AND RACK
300° and 400° SWING, 5" and 4 1/2" BARREL
PARTS LIST

ITEM NO	QTY	DESCRIPTION	5" BARREL 300°	5" BARREL 400°	4 1/2" BARREL 300°	4 1/2" BARREL 400°
-	1	GEAR & RACK, assembly.....	674207	674208	674201	674200
1	2	BUTT & TUBE, weldment.....	672971	672800	672953	672921
2	1	HOUSING, center.....	402104	402104	402100	402100
3	2	CLAMP.....	481728	481728	481705	481705
4	1	GEAR, rack.....	402905	402900	402905	402900
5	2	LOCKWASHER, 3/4".....	14016	14016	14016	14016
6	2	BOLT, brass, 3/4".....	14400	14400	14400	14400
7	1	FITTING,straight grease, 1/8"...	17300	17300	17300	17300
8	1	GUIDE, rack gear.....	491406	491406	401406	491406
9	2	PISTON.....	682342	682342	682304	682304
(1) 10	4	SEAL, piston.....	(56855)	(56855)	(55185) (55027)	(55185) (55027)
(1) 11	2	O-RING.....	(65314)	(65314)	(65314)	(65314)
12	2	NUT, nylon jam.....	13411	13411	13411	13411

NOTE: Numbers in ( ) indicate superceded numbers. Serviced only in appropriate kits.

(1) .. SEAL KIT, 5"..... 65588
4 1/2"..... 65532

Change Notice No. 1
Effective: 5/21/76
Supercedes Page Dated: 1/1/75

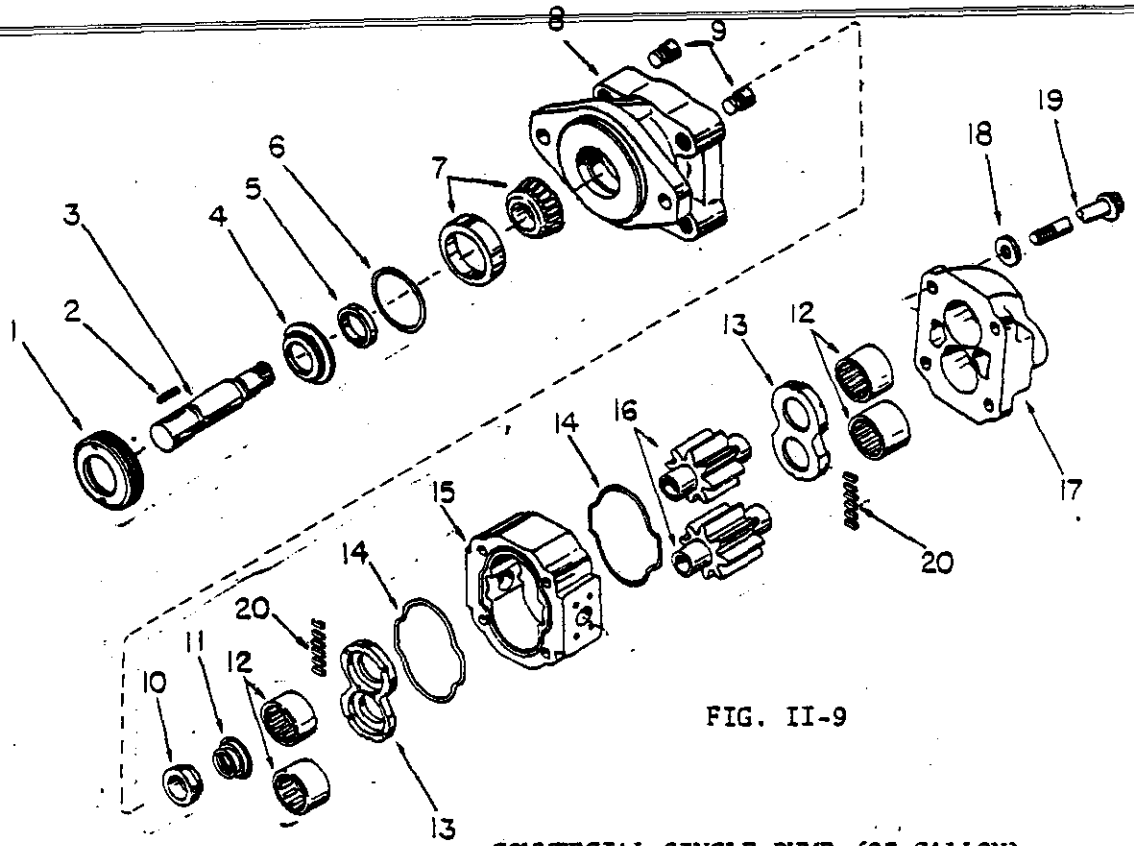


FIG. II-9

COMMERCIAL SINGLE PUMP (25 GALLON)

PARTS LIST

ITEM NO		QTY	DESCRIPTION	PART NUMBER
	-	-	PUMP, 25 GPM	60617
	1	1	RING, retainer	60673
	2	1	KEY	60679
		1	SHAFT, splined (optional)	60677
	3	1	SHAFT, keyed (standard)	60676
	4	1	SEAL, retainer	60674
(1)	5	1	SEAL, double lip	(60627)
(1)	6	1	O-RING	(60628)
	7	1	BEARING, assembly	60675
	8	1	END COVER, shaft	60680
(1)	9	1	CHECK, assembly	(60681)
(1)	10	1	BUSHING, bronze shaft	(60636)
	11	1	SPRING, conical	60637
	12	4	BEARING	60682
	13	2	PLATES, thrust	60678
	14	2	GASKET, o-ring	60662
	15	1	HOUSING, gear	60663
	16	2	GEARS, matched	60664
	17	1	END COVER, port	60653
	18	4	WASHERS	60654
	19	4	FASTENERS	60665
	20	2	SEALS, pocket	(65581)

NOTE: Numbers in ( ) indicate superceded numbers. Serviced only in appropriate kits.

(1) Included in Seal Kit #65580.

Change Notice No. 1
Effective: 5/24/76
Supercedes Page Dated: 1/1/75

COMMERCIAL TANDEM PUMP (20/20)

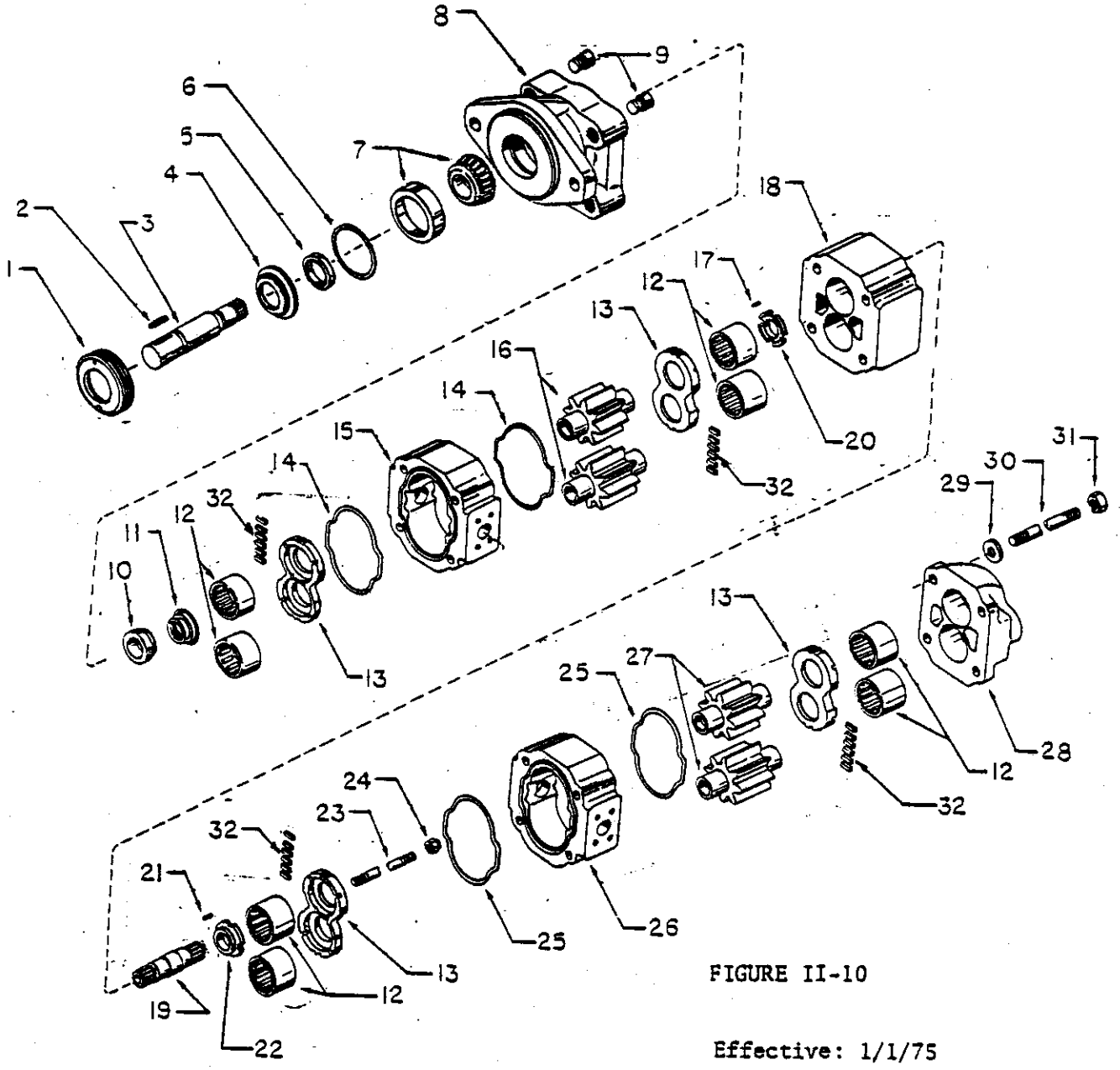


FIGURE II-10

Effective: 1/1/75

COMMERCIAL TANDEM PUMP

TYPE: 1½ GEARS

PARTS LIST

ITEM NO	QTY	DESCRIPTION	PART NO
-	-	PUMP, assembly (splined).....	60527
-	-	PUMP, assembly (keyed).....	60552
1	1	RING, retainer.....	60673
2	1	KEY.....	60679
	1	SHAFT, splined (optional).....	60677
3	1	SHAFT, keyed (standard).....	60676
4	1	SEAL, retainer.....	60674
(1) 5	1	SEAL, double lip.....	(60627)
(1) 6	1	O-RING.....	(60628)
7	1	BEARING.....	60675
8	1	END COVER, shaft.....	60680
9	1	CHECK ASSEMBLY.....	60681
(1) 10	1	BUSHING, bronze shaft.....	(60636)
(1) 11	1	SPRING, conical.....	(60637)
12	8	BEARING, roller.....	60682
13	4	PLATE, thrust.....	60678
(1) 14	2	GASKET, o-ring.....	(60641)
15	1	HOUSING, gear.....	60642
16	2	GEARS, matched, 1½".....	60685
17	1	PIN, roll.....	60646
18	1	CARRIER, bearing.....	60647
19	1	SHAFT, connecting.....	60648
(1) 20	1	BUSHING, shaft.....	(60645)
21	1	PIN, roll.....	60646
(1) 22	1	BUSHING, shaft.....	(60645)
23	1	STUD.....	60649
24	1	NUT, lock.....	60650
(1) 25	2	GASKET, o-ring.....	(60641)
26	1	HOUSING, gear.....	60642
27	2	GEARS, matched, 1½".....	60685
28	1	END COVER, port.....	60653
29	4	WASHER.....	60654
30	4	STUD.....	60669
31	4	NUT,.....	60657
(1) 32	4	SEALS, pocket.....	(60640)

(1) The following items are included in Seal Kit #65581

Change Notice No. 2
Effective: 5/21/76
Supercedes page dated:
11/24/75

VICKERS SINGLE PUMP

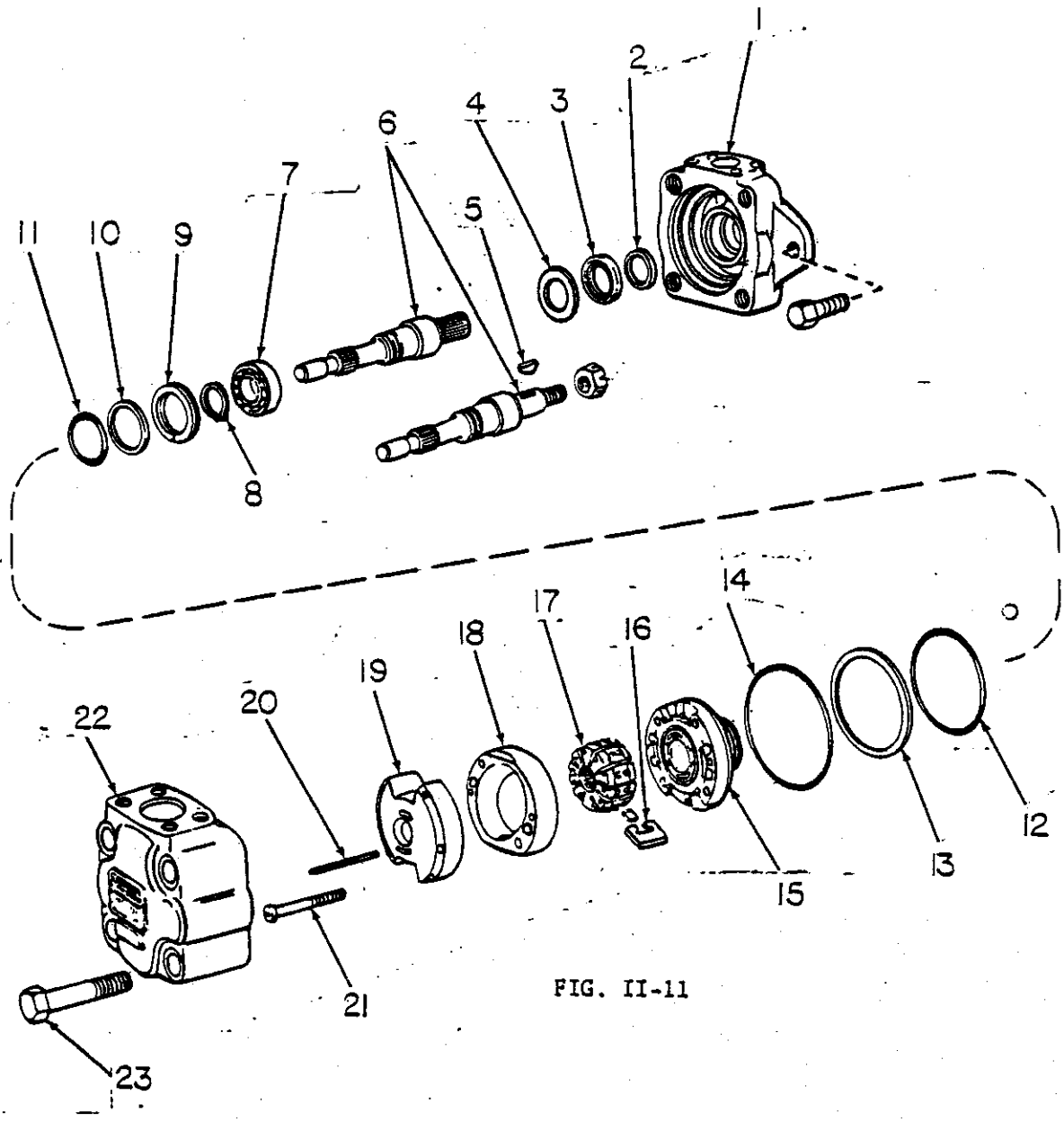


FIG. II-11

Effective: 1/1/75

VICKERS SINGLE PUMP

SERIES 25V (21 GPM)

PARTS LIST

ITEM NO		QTY	DESCRIPTION	PART NUMBER
	-	-	Complete Pump Assembly R.H.....	60603
	-	-	Complete Pump Assembly, L. H.....	60602
	1	1	Body.....	59571
(1)	2	1	Wiper seal.....	(44512)
(1)	3	1	Seal.....	(59569)
	4	1	Washer.....	59568
	5	1	Key.....	59566
	6	1	Shaft (Keyed).....	59567
		1	Shaft (Splined).....	59584
	7	1	Bearing.....	59565
	8	1	Snap Ring.....	59564
	9	1	Lock Ring.....	59563
			The following Items 10-21 Below are Serviced only in Cartridge Kit, Part No. 65251:	
(1)	10	1	Back-up Ring.....	(59562)
(1)	11	1	O-Ring.....	(65414)
(1)	12	1	O-Ring.....	(65417)
(1)	13	1	Back-up Ring.....	(59559)
(1)	14	1	O-Ring.....	(65418)
	15	1	Pressure Plate.....	(-)
	16	1	Vane Assembly.....	(59556)
	17	1	Rotor.....	(-)
	18	1	Ring.....	(-)
	19	1	Wear Plate, Sub-Assembly.....	(-)
	20	2	Pin.....	(59551)
	21	2	Screw.....	(-)
	22	1	Cover.....	59575
	23	4	Bolt.....	59574

NOTES: PART NUMBERS IN BRACKETS ( ) ARE SUPERCEDED NUMBERS AND ARE SERVICED ONLY IN APPROPRIATE KITS.

(1) Seal Kit..... 65507

Effective: 1/1/75
Supercedes Page Dated: 3/15/74

VICKERS TANDEM PUMP

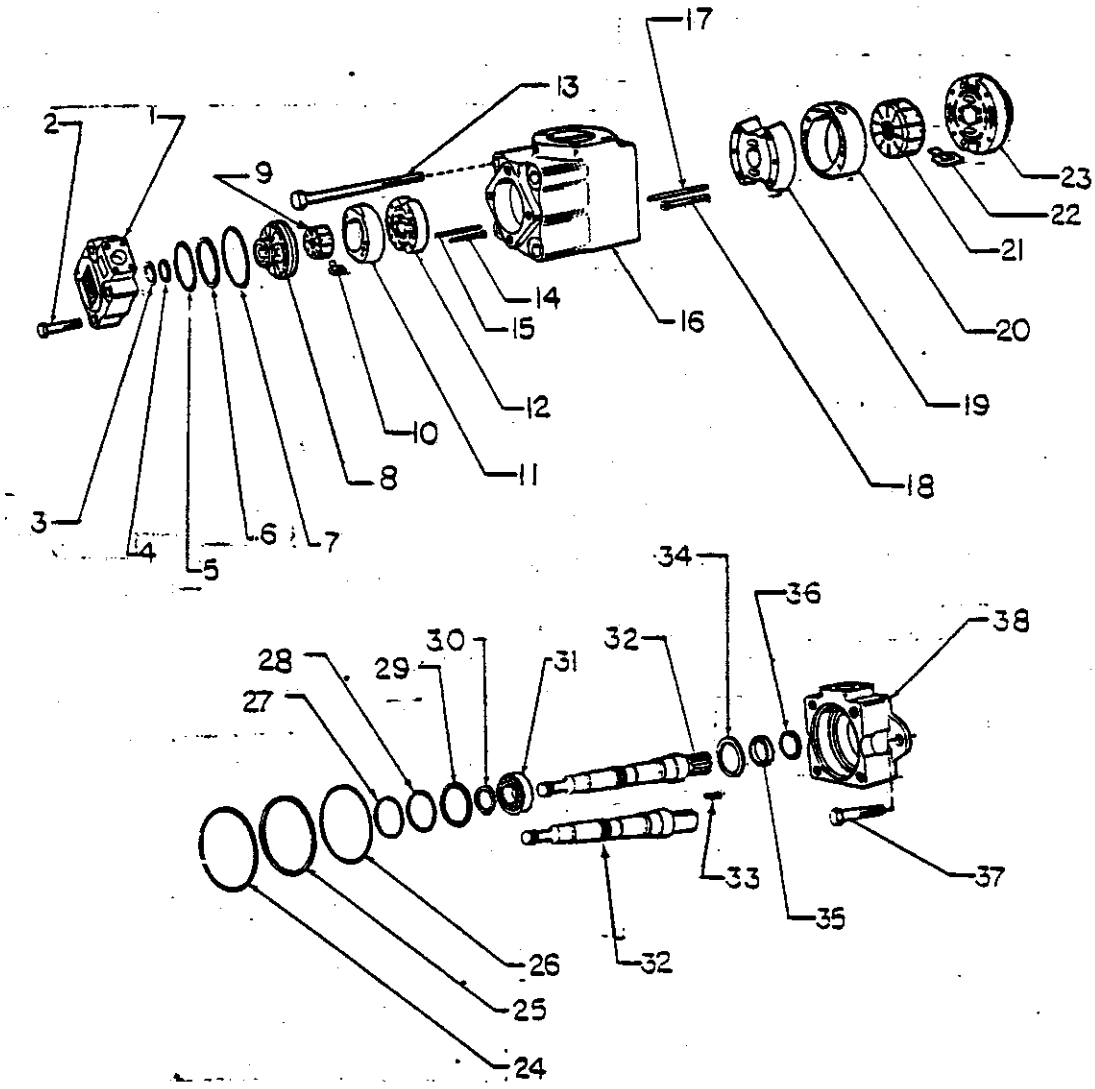


FIGURE II-12

Effective: 1/1/75
Supercedes Page Dated: 3/15/74

VICKERS TANDEM PUMP
SERIES 252V (21/14 GPM)
PARTS LIST

ITEM NO		QTY	DESCRIPTION	PART NUMBER
	-	-	PUMP, assembly, R.H.....	60601
	-	-	PUMP, assembly, L.H.....	60600
	1	1	COVER.....	59500
	2	4	BOLT.....	59506
			The following Items 3-14 below are serviced only in Cartridge Kit, Part No. 65257:	
(1)	3	1	RING, back-up.....	(59510)
(1)	4	1	O-RING.....	(65318)
(1)	5	1	O-RING.....	(65413)
(1)	6	1	RING, back-up.....	(59511)
(1)	7	1	O-RING.....	(65413)
	8	1	PLATE, pressure.....	(59512)
	9	1	ROTOR.....	(59503)
	10	1	KIT, vane.....	(59513)
	11	1	RING.....	(59514)
	12	1	PLATE, wear.....	(59515)
	13	2	PIN.....	(59516)
	14	2	SCREW.....	(59517)
	15	4	BOLT.....	59504
	16	1	HOUSING.....	59505
			The following Items 17-28 below are serviced only in Cartridge Kit, Part No. 65251:	
	17	2	PIN.....	(59518)
	18	2	SCREW.....	(59519)
	19	1	PLATE.....	(59524)
	20	1	RING.....	(59525)
	21	1	ROTOR.....	(59521)
	22	1	KIT, vane.....	(59526)
	23	1	PLATE, pressure.....	(59522)
(1)	24	1	O-RING.....	(65417)
(1)	25	1	RING, back-up.....	(59523)
(1)	26	1	O-RING.....	(65414)
(1)	27	1	O-RING.....	(65401)
(1)	28	1	RING, back-up.....	(59527)
	29	1	RING, lock.....	59536
	30	1	RING, snap.....	59528
	31	1	BEARING.....	59529
	32	1	SHAFT, splined.....	59531
		1	SHAFT, keyed.....	59530
	33	1	KEY.....	59532
	34	1	WASHER.....	50537
(1)	35	1	SEAL.....	(44206)
(1)	36	1	WIPER.....	(44512)
	37	2	BOLT.....	59539
	38	1	BODY.....	59534

NOTES: PART NUMBERS IN BRACKETS ( ) ARE SUPERCEDED NUMBERS AND ARE SERVICED ONLY IN APPROPRIATE KITS.

(1) Seal Kit..... 65506

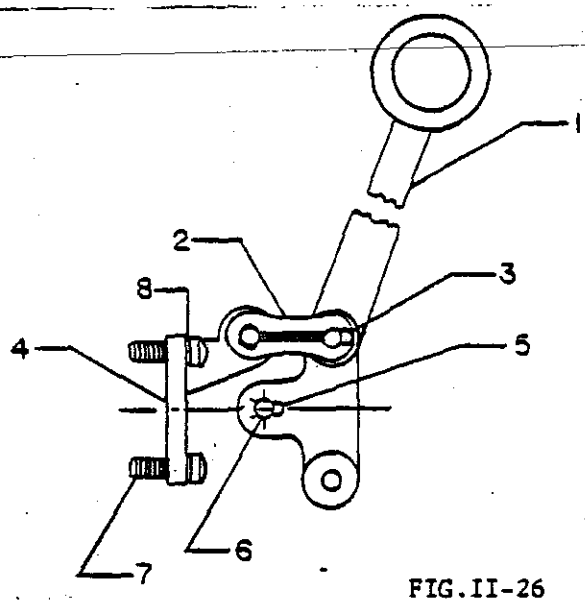


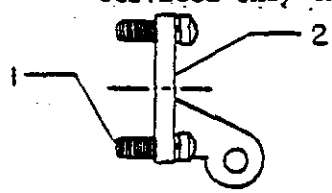
FIG.II-26

HANDLE ASSEMBLY

PARTS LIST

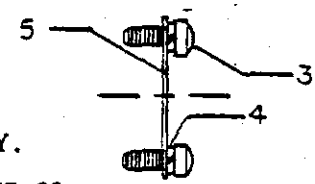
ITEM NO	QTY	DESCRIPTION	PART NUMBER
-	1	HANDLE, assembly.....	52006
(1)	1	HANDLE.....	(58009)
(2)	2	LINK, handle.....	(58003)
(3)	1	PIN, cotter.....	(58004)
(4)	1	BRACKET, handle.....	(58008)
(5)	1	PIN, cotter.....	(58001)
(6)	1	PIN, handle.....	(58000)
(7)	4	SCREW, machine.....	(58019)
(8)	4	LOCKWASHER.....	(58002)

NOTE: Numbers in brackets ( ) indicate superceded numbers.
Serviced only in appropriate kits.



HANDLE BRACKET

FIG.II-27



RETAINER ASSY.

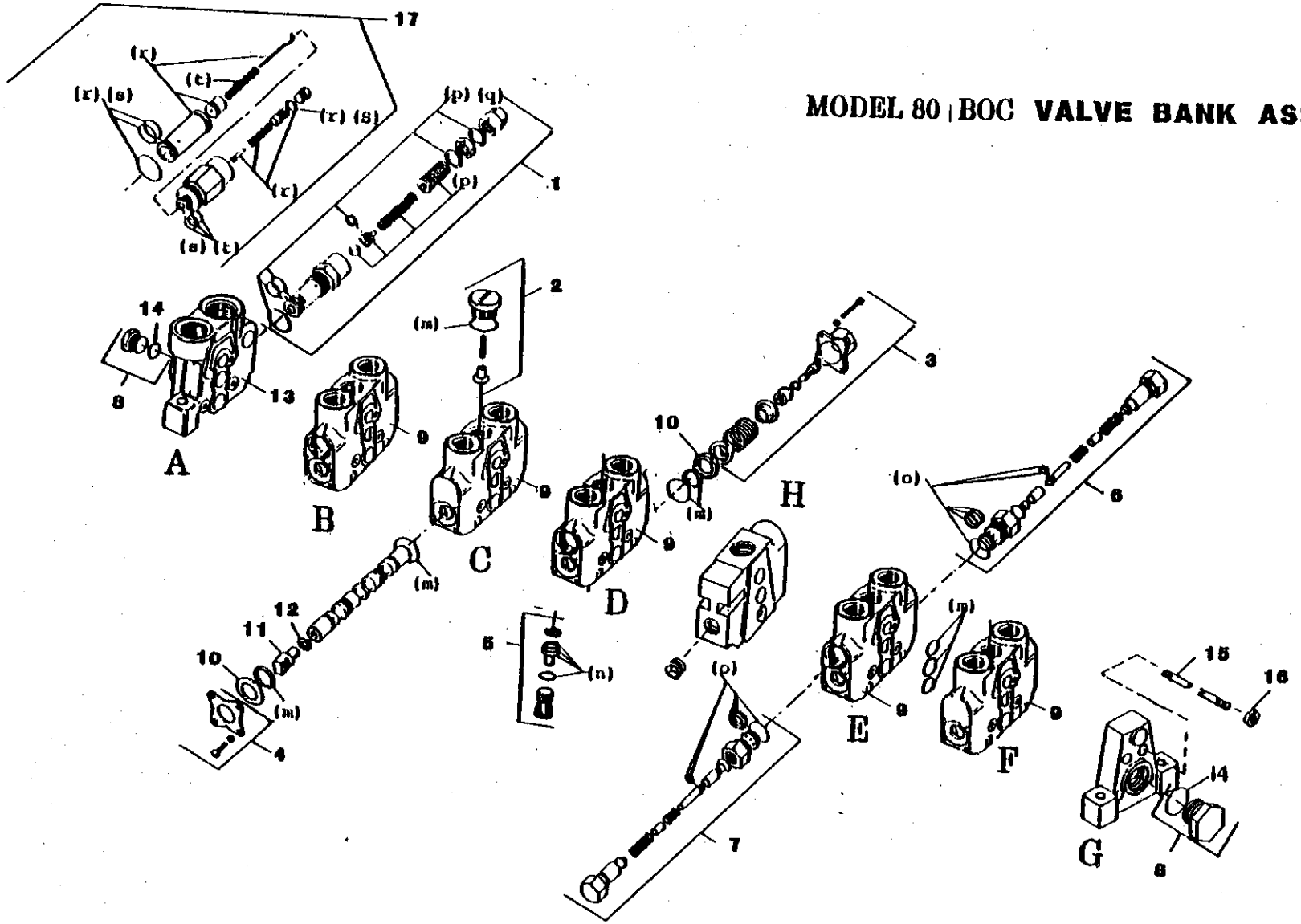
FIG.II-28

ITEM NO	QTY	DESCRIPTION	PART NUMBER
-	1	BRACKET, handle.....	52007
1	4	SCREW.....	
2	1	BRACKET.....	
-	1	RETAINER, assembly.....	52029
3	4	SCREW.....	
4	4	LOCKWASHER.....	
5	1	PLATE, retainer.....	

Effective: 1/1/75
Supercedes Page Dated: 3/15/74

EFFECTIVE DATE 1/1/81

MODEL 80 | BOC VALVE BANK ASSEMBLY



ITEM NO.	QTY.	DESCRIPTION	PART NO.	INCLUDED IN VALVE SECT.
	1	ASSEMBLY, valve bank (complete) includes all items below	558-00748	A B C D E F G H
A	1	VALVE SECTION, leftend inlet/outlet	551-00097	
B	1	VALVE SECTION, swing	551-00051	

(Continued on Next Page)

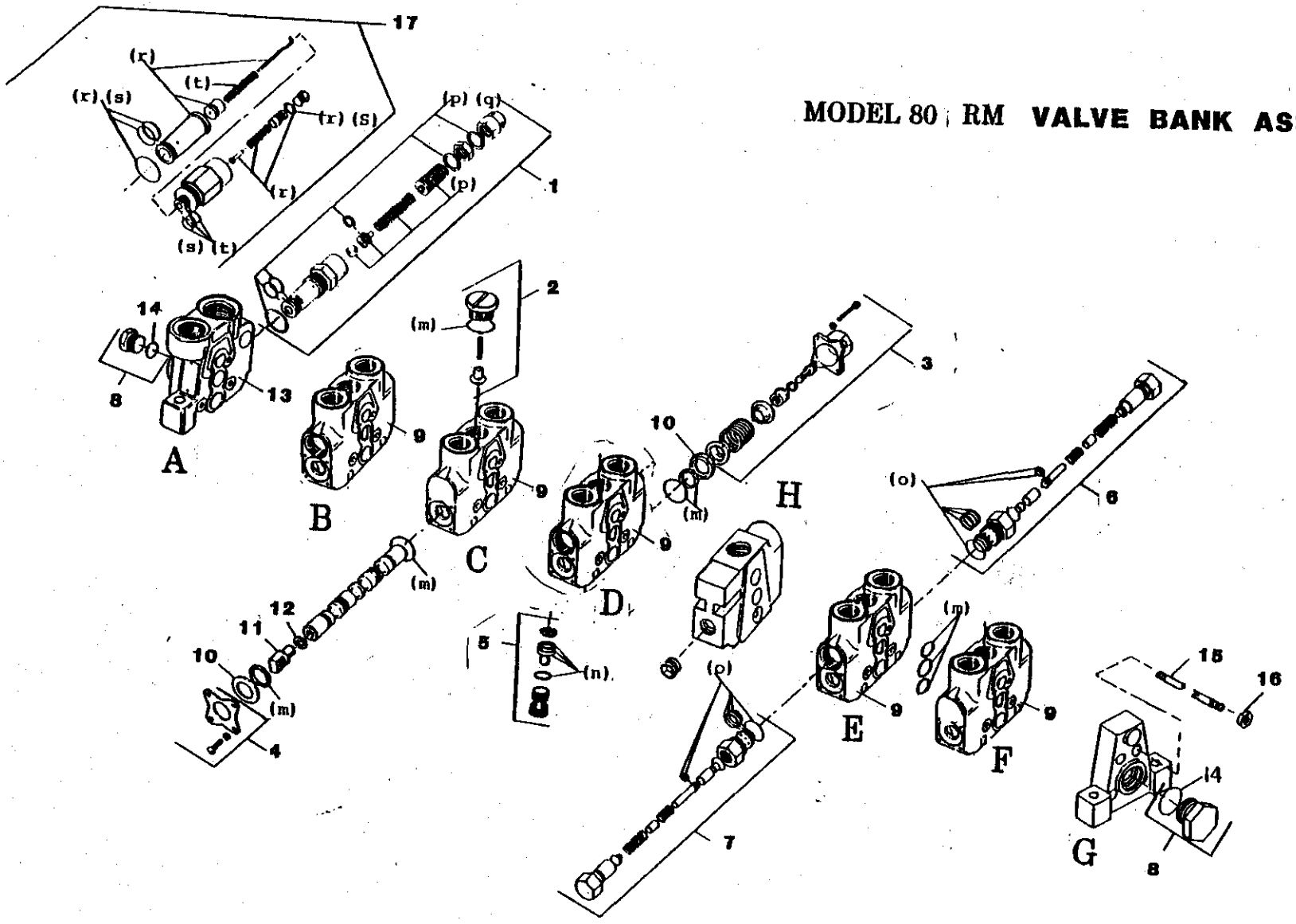
MODEL 80 BOC **VALVE BANK ASSEMBLY**
(Continued)

ITEM NO.	QTY.	DESCRIPTION	PART NO.	INCLUDED IN VALVE SECT.							
				A	B	C	D	E	F	G	H
C	1	VALVE SECTION, grapple	551-00058								
D	1	VALVE SECTION, main boom lift	551-00059								
E	1	VALVE SECTION, secondary boom lift	551-00060								
F	1	VALVE SECTION, grapple	551-00058								
G	1	VALVE SECTION, right end outlet	551-00098								
H	1	VALVE SECTION, mid inlet,	551-000								
1	2	ASSEMBLY, main relief valve	558-00100	X							X
2	5	KIT, check plug	552-00002		X	X	X	X	X		
3	5	ASSEMBLY, positioner	552-00028		X	X	X	X	X		
4	5	KIT, retainer	552-00029		X	X	X	X	X		
5	3	ASSEMBLY, anti cavitation check	558-00534		X		X	X			
6	2	ASSEMBLY, port relief valve	557-00017				X	X			
6	1	ASSEMBLY, port relief valve	557-00015		X						
7	1	ASSEMBLY, port relief valve	557-00017					X			
7	1	ASSEMBLY, port relief valve	557-00015		X						
7	1	ASSEMBLY, port relief valve	557-00019				X				
8	2	PLUG & O-RING	558-00510	X						X	
9	5	HOUSING & SPOOL, (N.S.S.) (order complete valve section)			X	X	X	X	X		
10	10	PLATE, seal	551-00109		X	X	X	X	X		
11	5	ADAPTER, clevis	551-00119		X	X	X	X	X		
12	5	LOCKWASHER	551-00118		X	X	X	X	X		
13	1	CASTING, outlet cover		X							
14	2	O-RING		X						X	X
15	4	STUD		X	X	X	X	X	X	X	X
16	4	NUT	558-00034	X	X	X	X	X	X	X	X
17	1	ASSEMBLY, main relief valve (optional)	557-00160	X							X
(m)	as req'd	included in seal kit	552-00013		X	X	X	X	X		
(n)	as req'd	included in anti cavitation seal kit	552-00047		X		X	X			
(o)	as req'd	inlcuded in port relief seal kit	558-00660		X		X	X			
(p)	as req'd	included in rebuilding kit	552-00032	X							X
(q)	as req'd	included in seal kit	552-00017	X							X
(r)	as req'd	included in rebuilding kit	552-00030	X							X
(s)	as req'd	included in seal kit	552-00018	X							X
(t)	as req'd	included in piston & cylinder kit	552-00031	X							X

(N.S.S.) — NOT SOLD SEPARATELY

EFFECTIVE DATE 1/1/81

MODEL 80 ; RM VALVE BANK ASSEMBLY



ITEM NO.	QTY.	DESCRIPTION	PART NO.	INCLUDED IN VALVE SECT.
	1	ASSEMBLY, valve bank (complete) includes all items below	558-007.47	A B C D E F G H
A	1	VALVE SECTION, leftend inlet/outlet	551-00097	
B	1	VALVE SECTION, swing	551-00056	

(Continued on Next Page)

MODEL 80 RM VALVE BANK ASSEMBLY (Continued)

ITEM NO.	QTY.	DESCRIPTION
C	1	VALVE SECTION, grapple
D	1	VALVE SECTION, main boom lift
E	1	VALVE SECTION, secondary boom lift
F	1	VALVE SECTION, grapple
G	1	VALVE SECTION, right end outlet
H	1	VALVE SECTION, mid inlet,
1	1	ASSEMBLY, main relief valve
2	5	KIT, check plug
3	5	ASSEMBLY, positioner
4	5	KIT, retainer
5	3	ASSEMBLY, anti cavitation check
6	1	ASSEMBLY, port relief valve
6	1	ASSEMBLY, port relief valve
6	1	ASSEMBLY, port relief valve
7	2	ASSEMBLY, port relief valve
7	1	ASSEMBLY, port relief valve
8	2	PLUG & O-RING
9	5	HOUSING & SPOOL, (N.S.S.) (order complete valve section)
10	10	PLATE, seal
11	5	ADAPTER, clevis
12	5	LOCKWASHER
13	1	CASTING, outlet cover
14	2	O-RING
15	4	STUD
16	4	NUT
17	1	ASSEMBLY, main relief valve (optional)
(m)	as req'd	included in seal kit
(n)	as req'd	included in anti cavitation seal kit
(o)	as req'd	inlcuded in port relief seal kit
(p)	as req'd	included in rebuilding kit
(q)	as req'd	included in seal kit
(r)	as req'd	included in rebuilding kit
(s)	as req'd	included in seal kit
(t)	as req'd	included in piston & cylinder kit

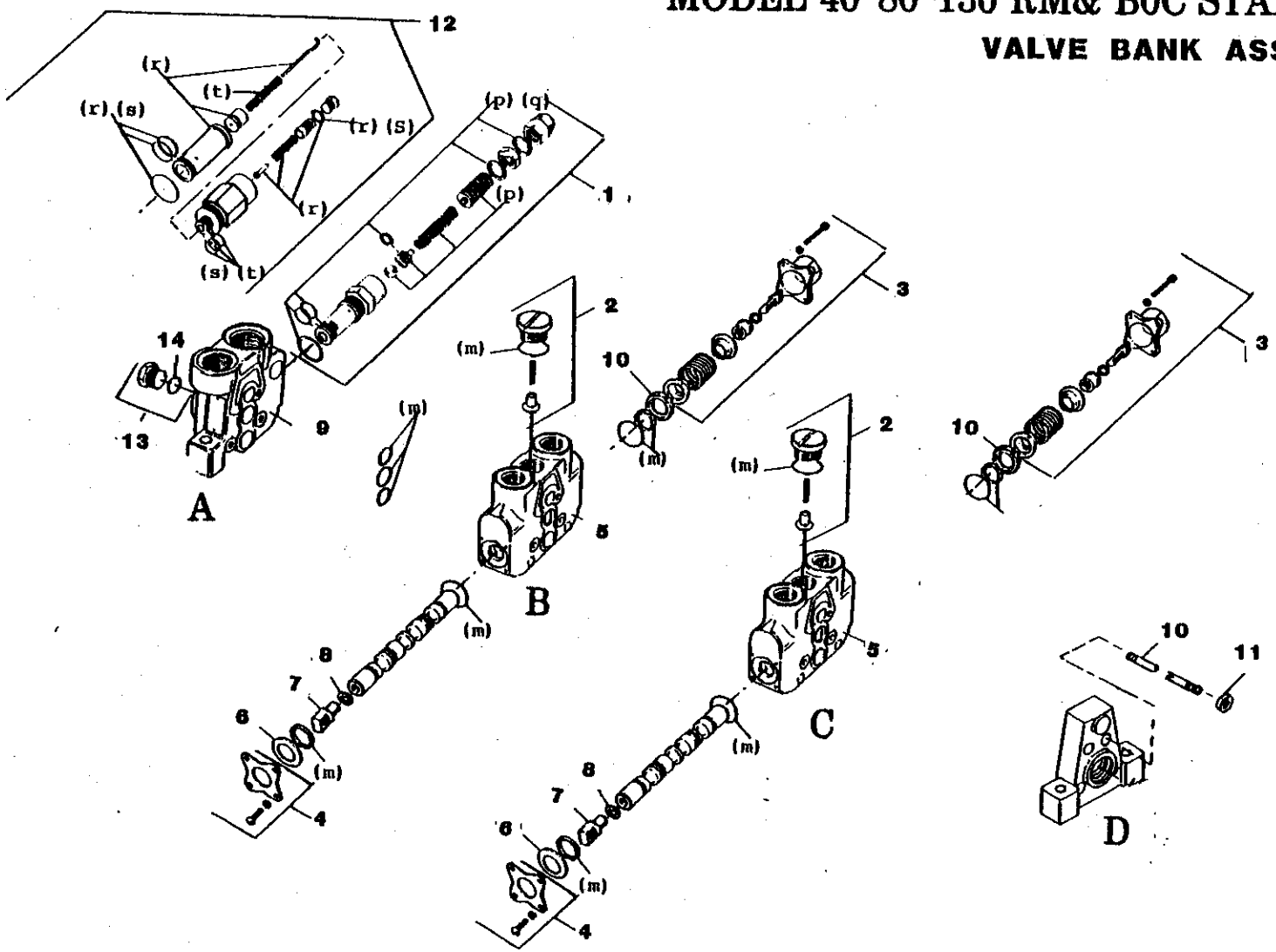
(N.S.S.) — NOT SOLD SEPARATELY

PART NO.	INCLUDED IN VALVE SECT.							
	A	B	C	D	E	F	G	H
551-00055								
551-00053								
551-00054								
551-00055								
551-00098								
551-000								
558-00100	X							X
552-00002		X	X	X	X	X		
552-00028		X	X	X	X	X		
552-00029		X	X	X	X	X		
558-00534		X		X	X			
557-00019				X				
557-000/17					X			
557-00015		X						
557-00017				X	X			
557-00015		X						
568-00510	X						X	
		X	X	X	X	X		
551-00109		X	X	X	X	X		
551-00119		X	X	X	X	X		
551-00118		X	X	X	X	X		
	X							
	X						X	X
	X	X	X	X	X	X	X	X
558-00034	X	X	X	X	X	X	X	X
557-00150	X							X
552-00013		X	X	X	X	X		
552-00047		X		X	X			
556-00660		X		X	X			
552-00032	X							X
552-00017	X							X
552-00030	X							X
552-00018	X							X
552-00031	X							X

EFFECTIVE DATE 1/1/81

MODEL 40-80-130 RM& B0C STABILIZER

VALVE BANK ASSEMBLY



ITEM NO.	QTY.	DESCRIPTION	PART NO.	INCLUDED IN VALVE SECT.
	1	ASSEMBLY, stabilizer valve bank (complete) includes all items below	558-00714	A B C D
A	1	VALVE SECTION, leftend inlet/outlet	551-00097	
B	1	VALVE SECTION, stabilizer, left side	551-00058	

(Continued on Next Page)

MODEL 40-80-130 RM& B0C STABILIZER

VALVE BANK ASSEMBLY

(Continued)

ITEM NO.	QTY.	DESCRIPTION	PART NO.	INCLUDED IN VALVE SECT.			
				A	B	C	D
C	1	VALVE SECTION, stabilizer, left side	551-00058				
D	1	VALVE SECTION, right end outlet	551-00049				
1	1	ASSEMBLY, main relief valve	558-00100	X			
2	2	KIT, check plug	552-00002		X	X	
3	2	ASSEMBLY, positioner	552-00028		X	X	
4	2	KIT, retainer	552-00029		X	X	
5	2	HOUSING & SPOOL, (N.S.S.) (order complete valve section)			X	X	
6	5	PLATE, seal	551-00109		X	X	
7	2	ADAPTER, clevis	551-00119		X	X	
8	2	LOCKWASHER	551-00118		X	X	
9	1	CASTING, outlet cover		X			
10	4	STUD		X	X	X	X
11	4	NUT	558-00034	X	X	X	X
12	1	ASSEMBLY, main relief valve (optional)	557-00150	X			
13	2	PLUG & O-RING	568-00510	X			
14	2	O-RING		X			
(m)	as req'd	included in seal kit	552-00013		X	X	
(p)	as req'd	included in rebuilding kit	552-00032	X			
(q)	as req'd	included in seal kit	552-00017	X			
(r)	as req'd	included in rebuilding kit	552-00030	X			
(s)	as req'd	included in seal kit	552-00018	X			
(t)	as req'd	included in piston & cylinder kit	552-00031	X			

(N.S.S.) — NOT SOLD SEPARATELY

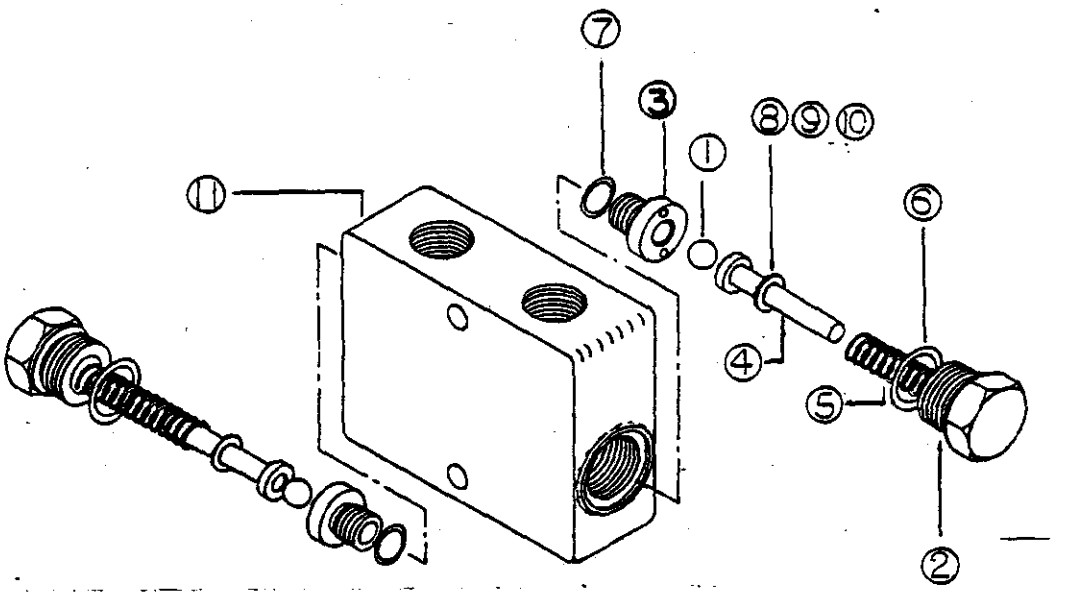


FIG.II-29

GRAPPLE CUSHION VALVE

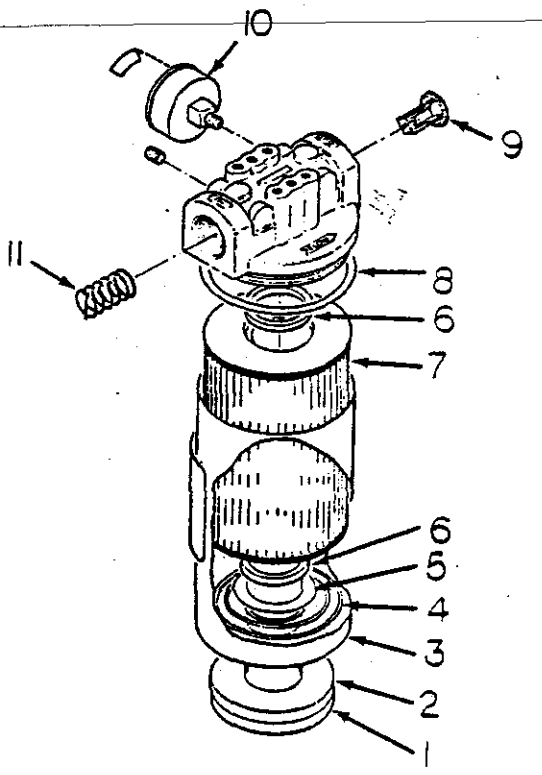
PARTS LIST

ITEM NO		QTY	DESCRIPTION	PART NUMBER
	-	1	VALVE, cushion.....	63010
(1)	1	2	BALL, steel.....	(58301)
(1)	2	2	CAP, spring.....	(58302)
(1)	3	2	SEAT, standard.....	(58303)
(1)	4	2	GUIDE, ball and spring.....	(58304)
(1)	5	2	SPRING.....	(58317)
(1)	6	2	O-RING, spring cap.....	(58306)
(1)	7	2	O-RING, seat.....	(58307)
	8	as req'd	WASHER, steel spacer, .010" thick.....	58310
	9	as req'd	WASHER, steel spacer, .040" thick.....	58311
	10	as req'd	WASHER, steel spacer, .020" thick.....	58312
	11	1	HOUSING, valve.....	58313

NOTE: NUMBERS IN BRACKETS ( ) INDICATE SUPERCEDED NUMBERS.

(1) Included in Cushion Valve Kit..... 52039

Change Notice No. 1
Effective: 9/23/75
Supercedes Page Dated: 1/1/75



RETURN LINE FILTERS

PARTS LIST

ITEM	QTY.	DESCRIPTION	PART NO.
	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

FILTER KITS

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

RELIEF ASSEMBLY

3 PSI SUCTION - BLUE----------	52087
15 PSI RETURN - SILVER----------	52088

RELIEF VALVE (used on Rear Mount Applications , 1750 P.S.I.)

PARTS LIST

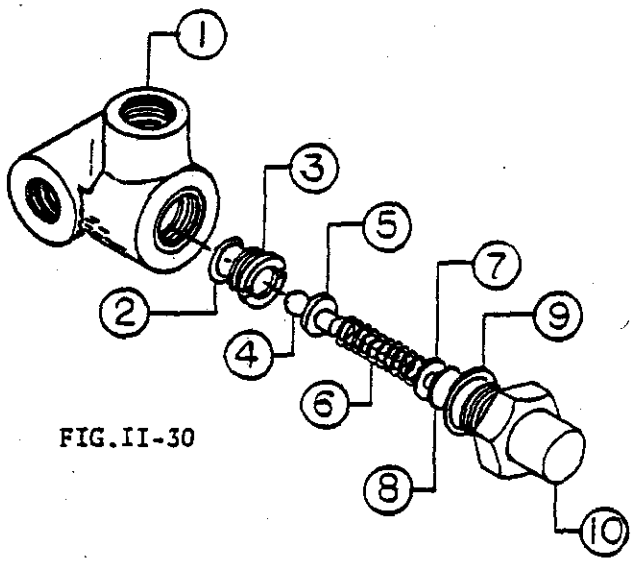


FIG.II-30

ITEM NO.		QTY.	DESCRIPTION	PART NUMBER
	-	-	VALVE, relief assembly.....	63026
	1	1	HOUSING.....	58118
(1)(2)	2	1	O-RING, seat.....	(58120)
(1)	3	1	RELIEF, seat.....	(58122)
	4	1	RELIEF, ball.....	58124
(1)	5	1	SPACER, spring.....	(58130)
(1)	6	1	SPRING.....	(58126)
(1)	7	As Req'd	WASHER, spacer.....	(58129)
	8	As Req'd	SHIM.....	58132
(1)(2)	9	1	GASKET, body.....	(58121)
	10	1	BODY.....	58128

NOTE: Numbers in ( ) indicate superceded numbers. Serviced only in appropriate kits.

(1) Rebuilding kit includes items 2,3,5,6,7 and 9.... 52015
(2) Seal kit includes items 2 and 9..... 52016

Effective: 1/1/75
Supercedes Page Dated: 3/15/74

BARKO MODEL 40-60-80 LOADERS

SECTION III - SERVICE INFORMATION

CONTENTS:

INSTRUCTIONS

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 - 4¼" Back-Up Washer (Bottom).

   D. Insert #59006 Bottom Gasket.

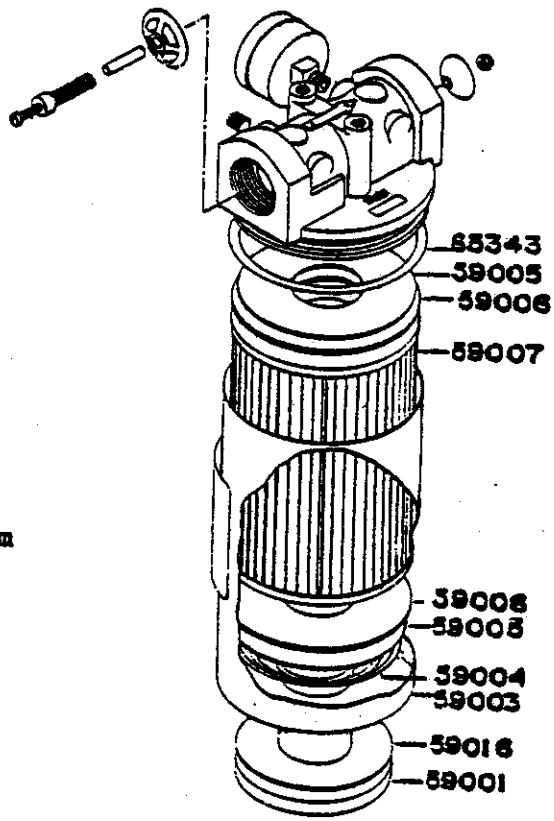
   E. Insert Filter Element.

   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

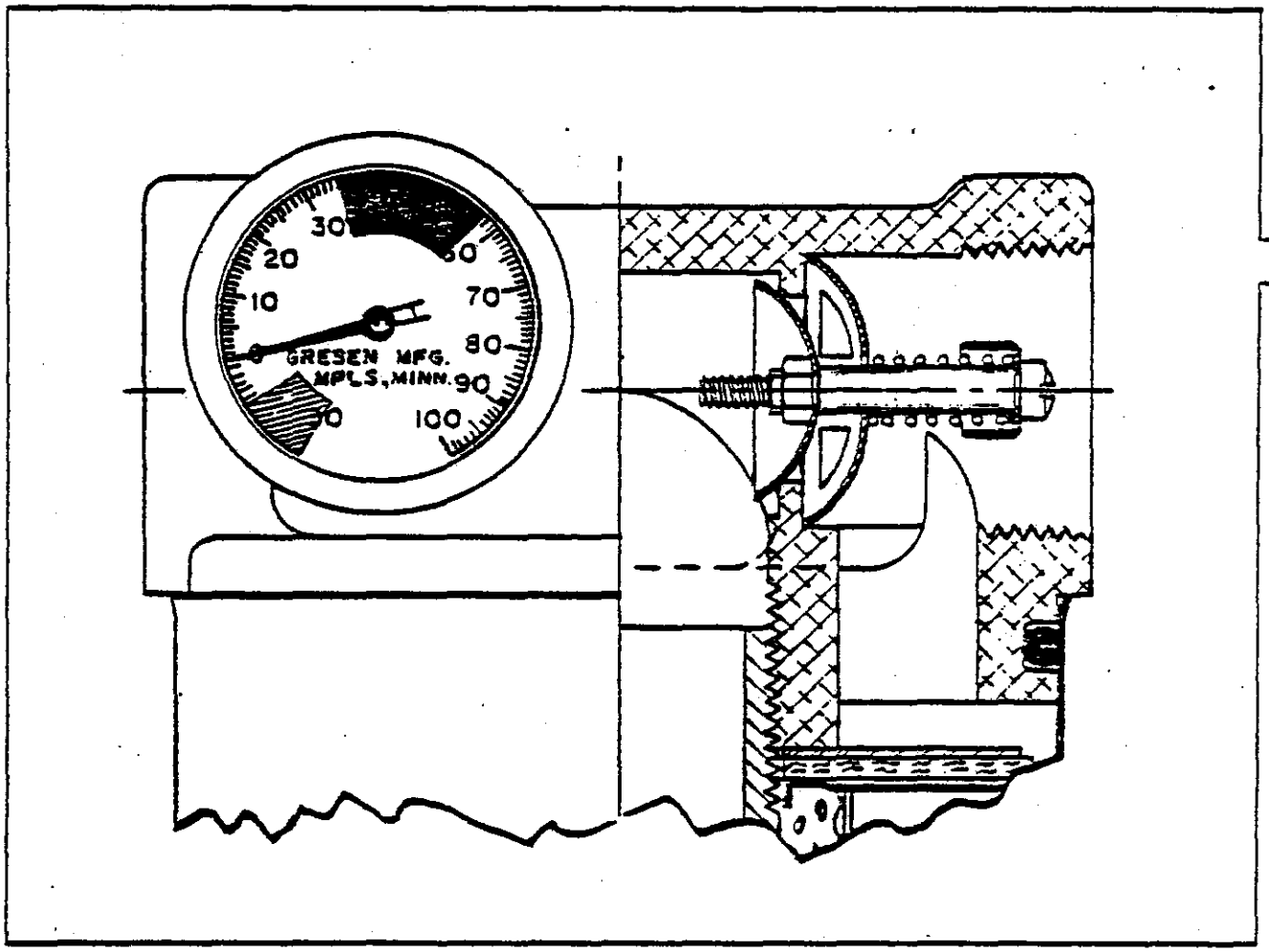
TOOLS REQUIRED: One (1) Screwdriver
One (1) Socket Wrench - #11-11/32" Hex.

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
MANUFACTURERS OF BARKO STRONG-ARM LOGGING & INDUSTRIAL LOADERS
310 South 1st. Avenue E. / Duluth, Minnesota 55802 / (218) 727-7476

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 80

WARNING

MAXIMUM HYDRAULIC PRESSURE FOR THIS MACHINE IS 1,750 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 **1,750 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.
14. This machine should not be used unless operators manual is read and thoroughly understood.

SPERRY VICKERS

OIL RECOMMENDATIONS FOR MOBILE HYDRAULIC SYSTEMS

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

1. 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.

2. 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.

3. 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

1. 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.

2. 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.

3. CERTAIN OTHER TYPES OF PETROLEUM OIL are suitable if they meet the following provisions:

   A. 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.

   B. Meet the viscosity recommendations shown in the following table.

   C. 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:

1. SAE 5W or 5W-20 oil.

2. 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:

A. Clean (flush) entire system to remove paint, metal chips, welding shot, etc.

B. Filter each change of oil to prevent introduction of contaminant into the system.

C. Provide continuous oil filtration to remove sludge and products of wear and corrosion generated during the life of the system.

D. Provide continuous protection of the system from entry of airborne contamination by sealing the system and/or by proper filtration of the air.

E. During usage, proper oil filling and servicing of filters, breathers, reservoirs, etc., cannot be overemphasized.

F. Thorough precautions should be taken, by proper system and reservoir design, to insure that aeration of the oil will be kept to a minimum.

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.