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.

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

TYPICAL P.T.O. MOUNTING

INSTALLATION DIAGRAM

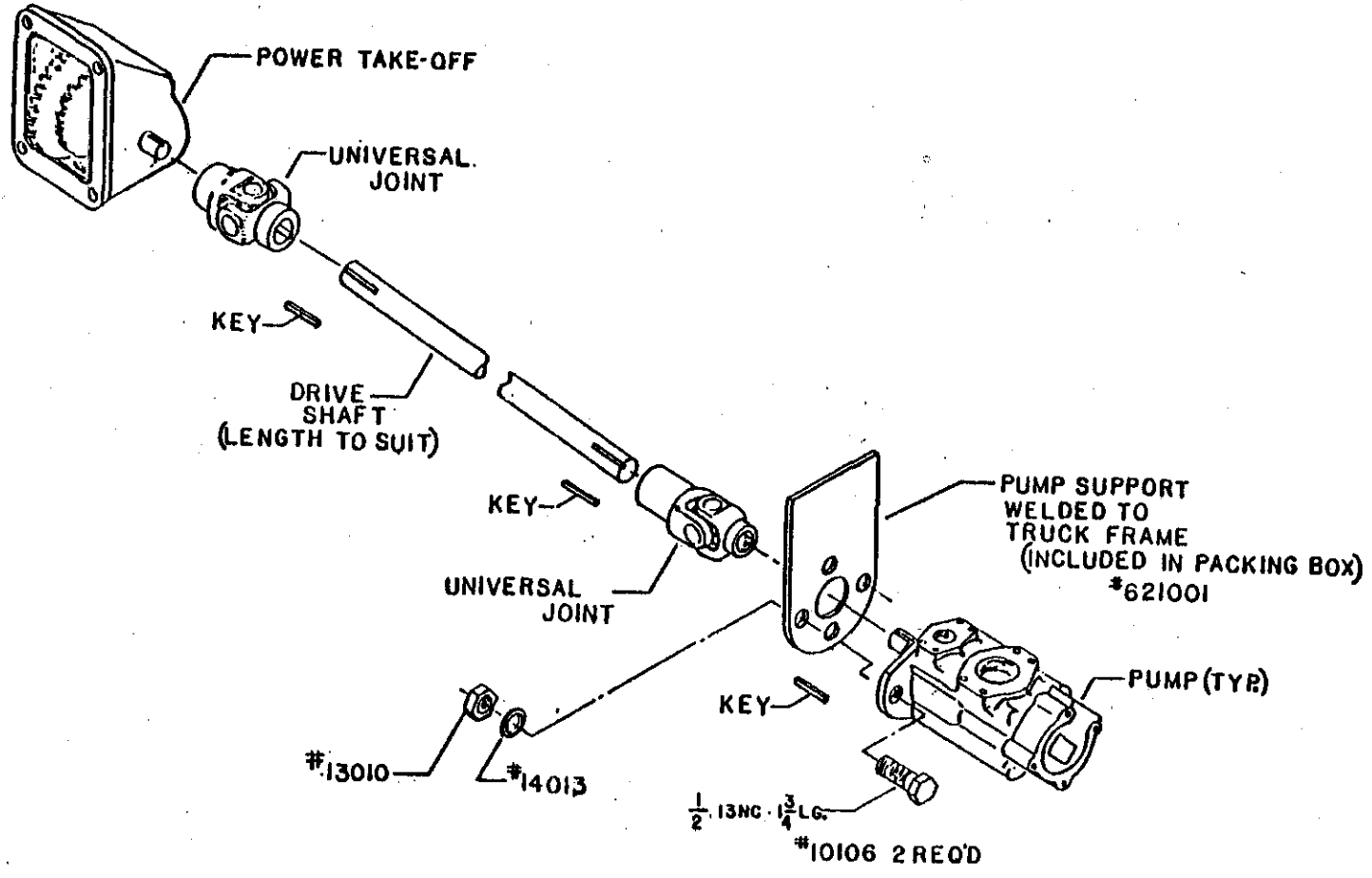
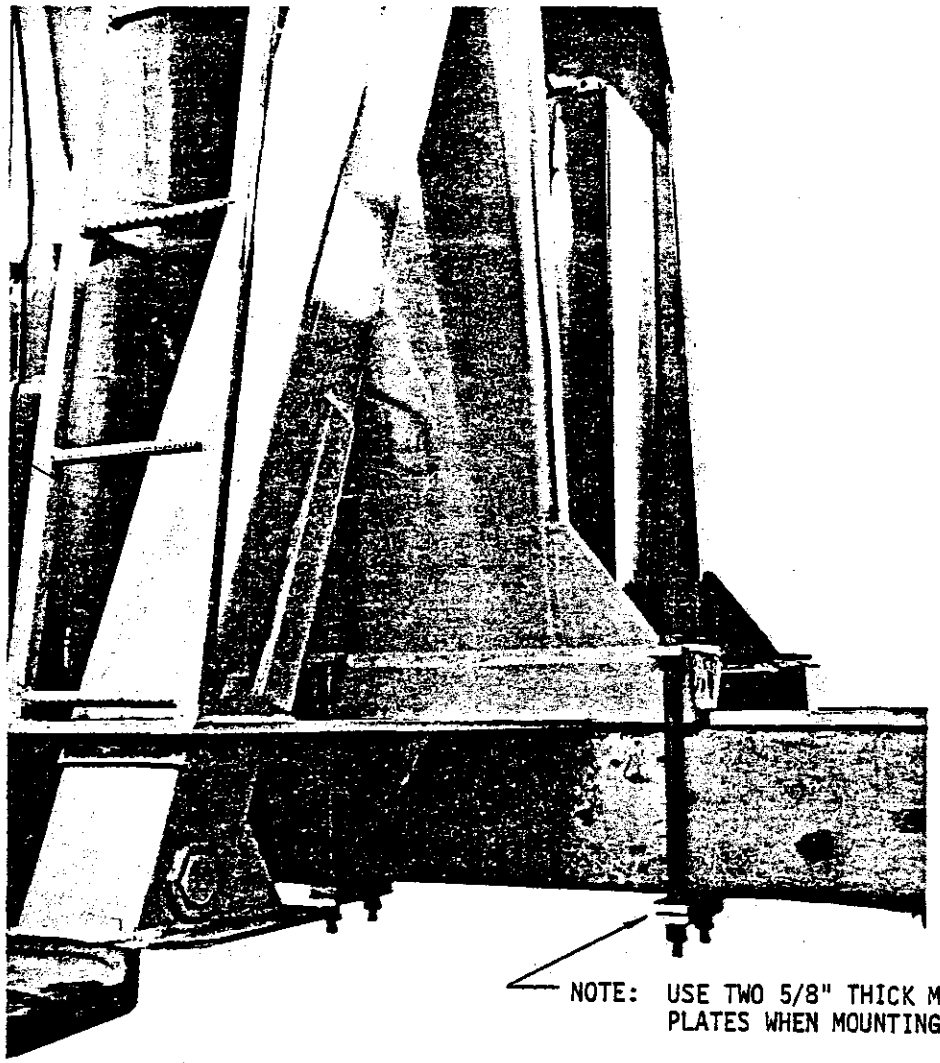
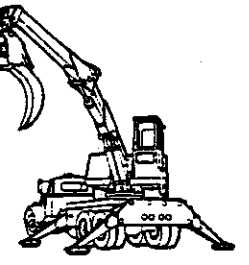


FIG. 2. MID MOUNT INSTALLATION OF MODELS 40;60;80
TELESCOPIC & STANDARD CONFIGURATIONS



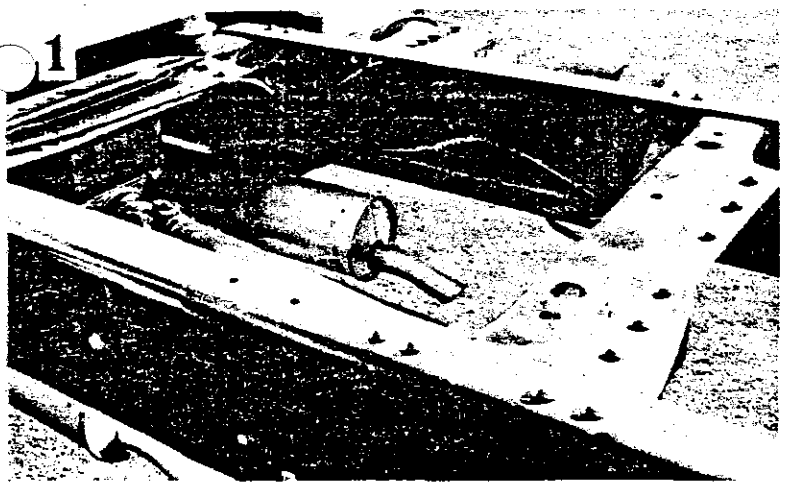
GENERAL MOUNTING PROCEDURE

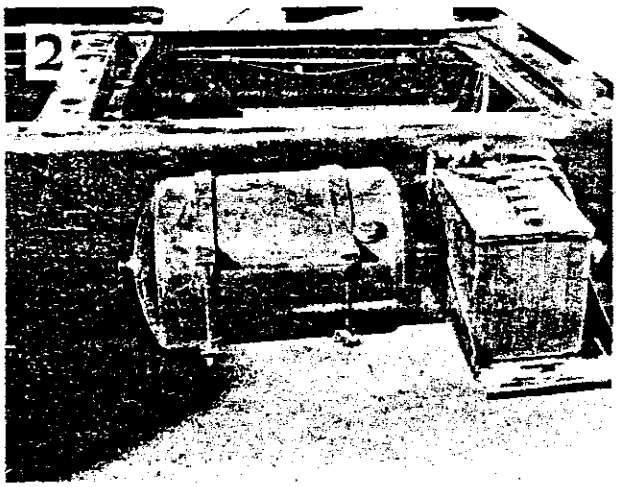
BARKO MID-MOUNT LOADERS

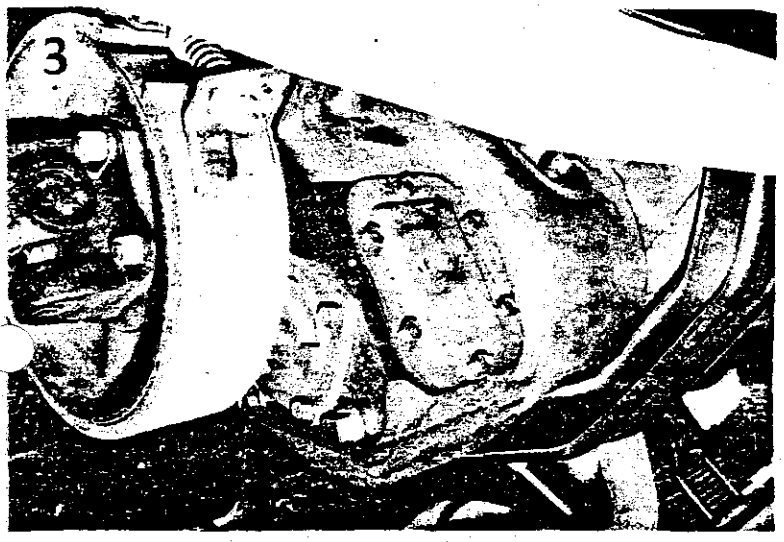


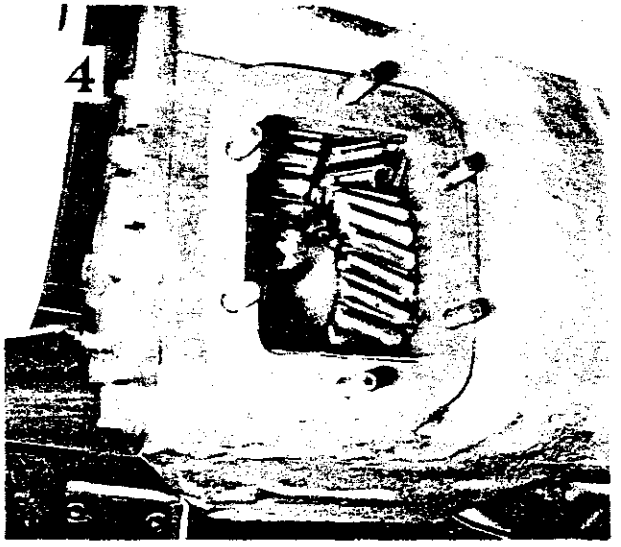
BARKO HYDRAULICS
DULUTH, MINNESOTA

"the loader with everything built in but the operator"









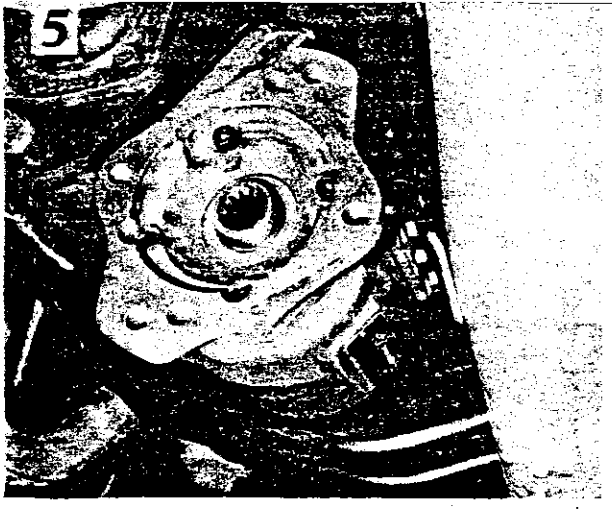
GENERAL INSTRUCTION FOR MOUNTING
MID-MOUNT BARKO LOADERS

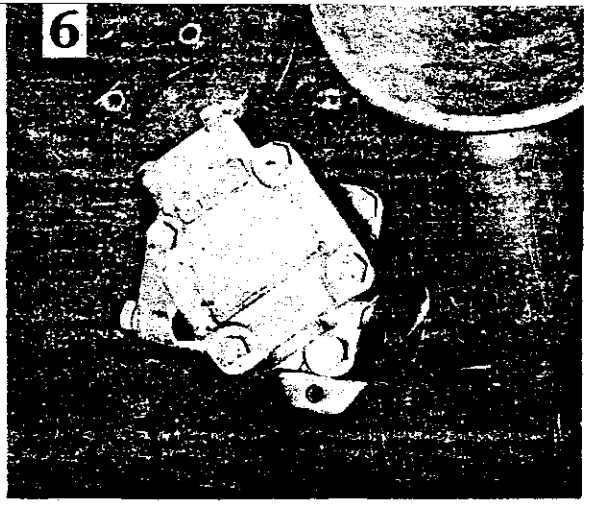
1. Remove or slide truck platform back to provide a minimum of 28" of unobstructed frame area.

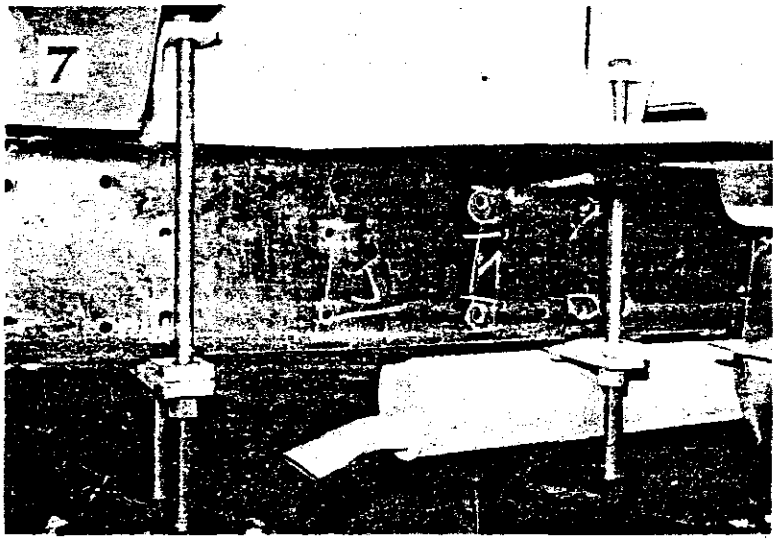
2. To facilitate mounting, remove all accessories that are frame mounted within the 28" area that the loader is to occupy on the frame, such as fuel tanks and mounting brackets, air or vacuum tanks, batteries and battery boxes, etc.

3. Select a power take off compatible with the transmission in the truck to secure a hydraulic pump operating speed of 1400-1800 RPM.

4. Install the appropriate PTO mounting studs in the transmission case using caution to be sure the studs are installed to the correct depth.



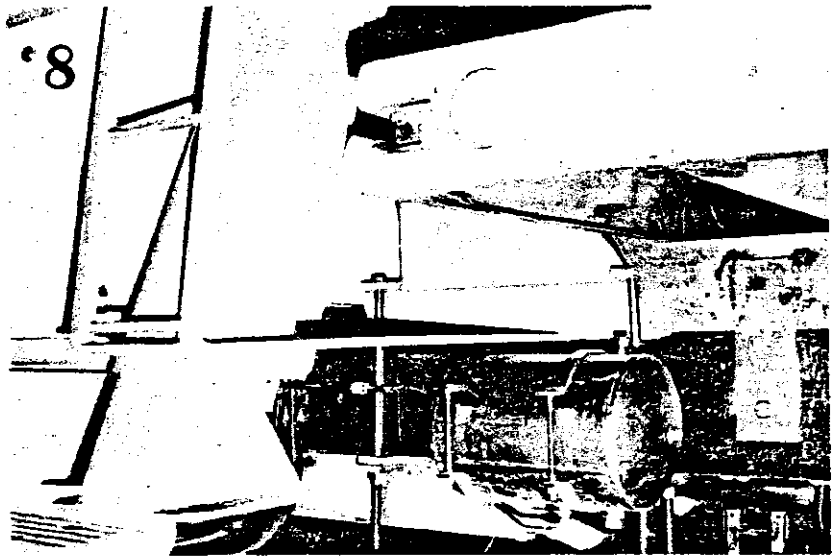


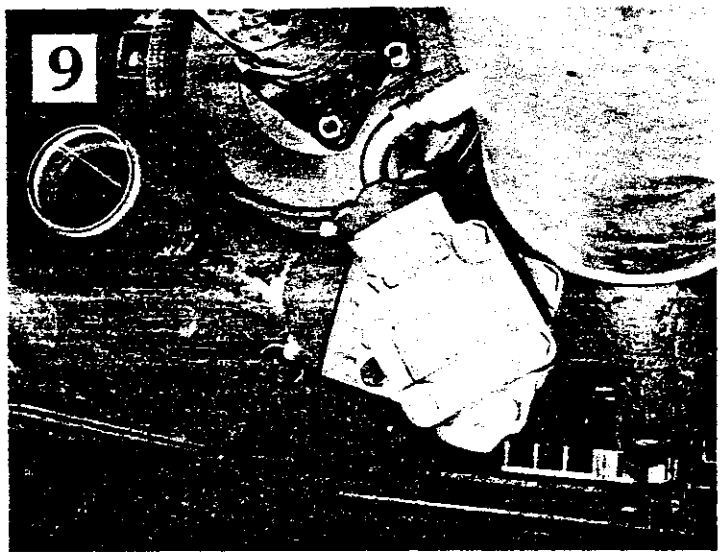


5. Install the previously selected PTO on the transmission using the proper amount of gaskets to assure the proper gear tooth contact between the transmission drive and PTO driven gear. Refill transmission W/lubricant.

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

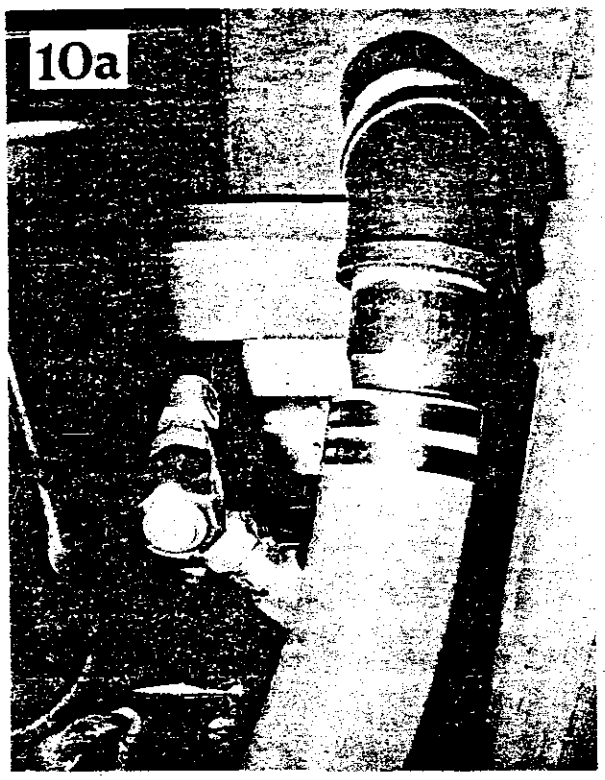
7. Using suitable lifting equipment, the loader can now be placed on the truck frame with the diagonal support gussets on the lower loader frame toward the truck load area. (i.e. truck bed). Install all hold down bolts and nuts utilizing two plates under the truck frame and tighten the nuts to approximately 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.)

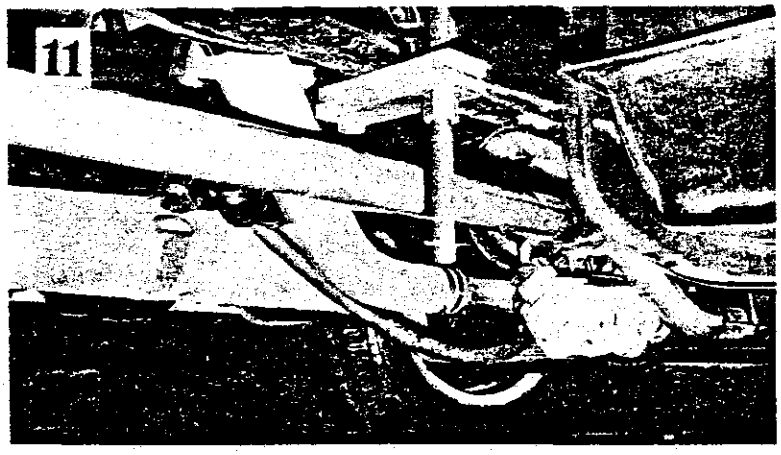




8. The truck bed can now be moved to within 1" of the loader frame and be secured. All items that were previously removed, tanks, batterys, etc., should now be reinstalled making modifications as necessary for re-mounting. Do NOT weld to truck frame. If dual fuel tanks are used, it must be remembered that the tops of both tanks must be at equal elevations.

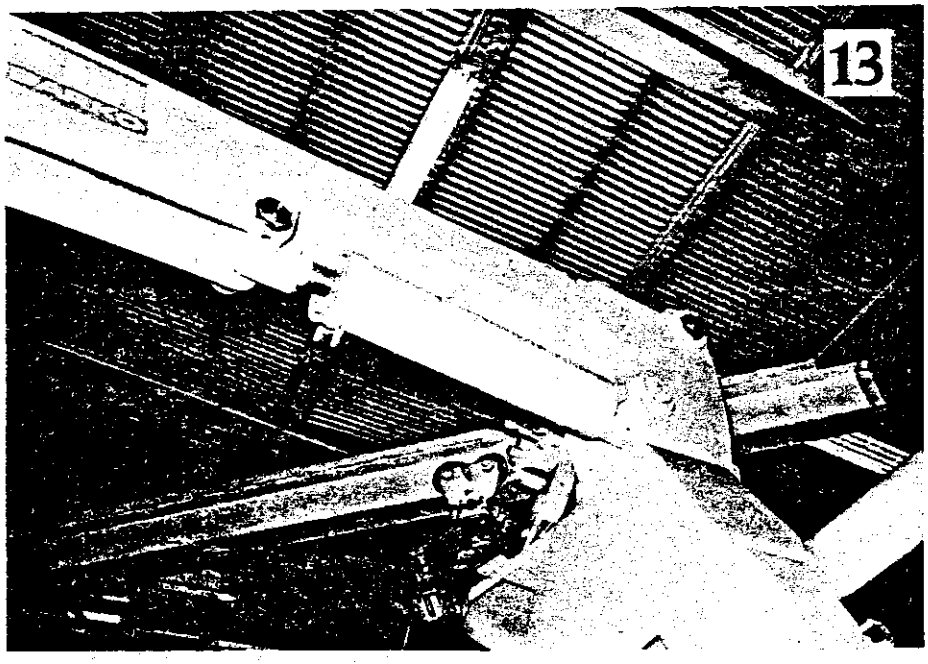
9. The hydraulic piping and hoses can now be installed between the pump and the loader. Under normal circumstances the small (rear) cartridge on vane style pumps is connected to the mid-inlet for tandem pump and valve installations.





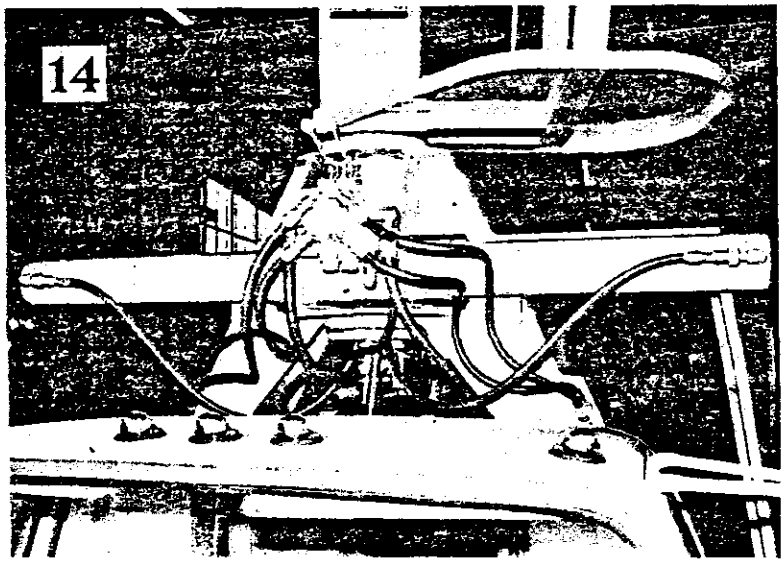
10. Connect the pump suction hose between the hydraulic tank (10a) and pump suction fitting (10b). There is a possibility that exhaust pipes, mufflers, air, vacuum, or fuel lines, miscellaneous linkage, etc. may have to be relocated or rerouted to clear hydraulic system or loader components.

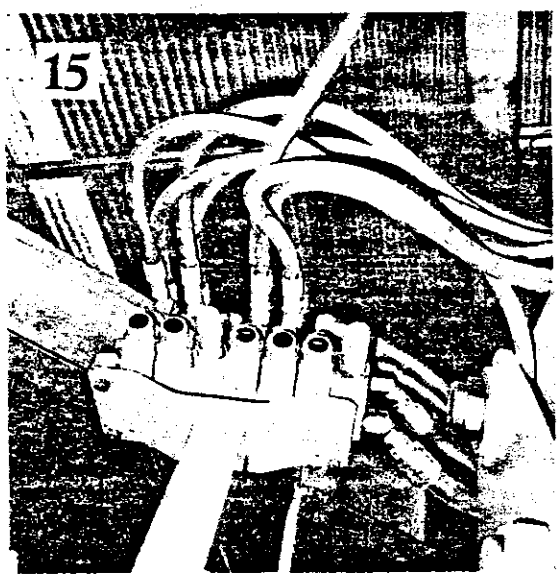
11. Any of these modifications should be made if there is any possibility of interference between the components or if the exhaust system is close enough to the hydraulic pump or lines that it can transmit heat to the hydraulic components.

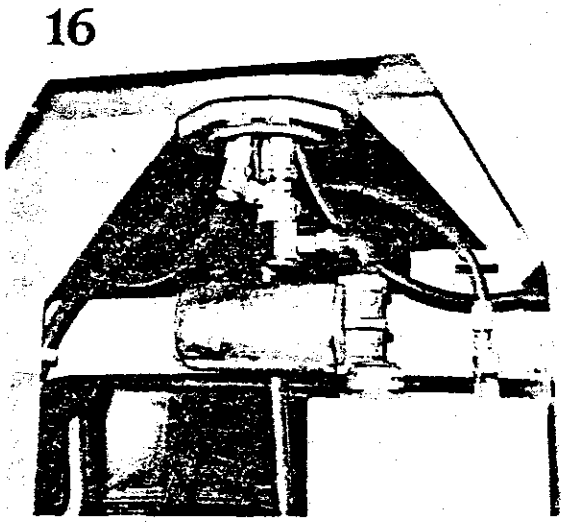


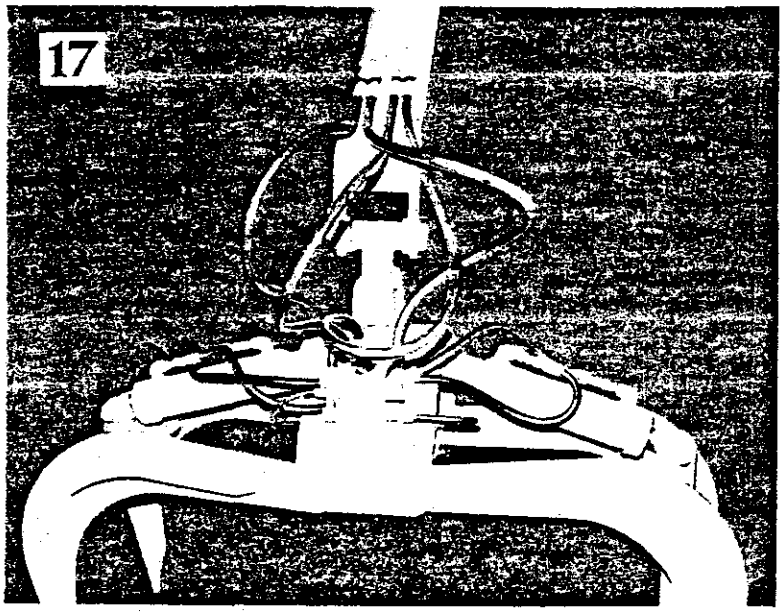
12. Mount, route and connect the P.T.O. control, and if so desired, an engine throttle control. Be sure that the PTO fully engages and disengages and the throttle does not allow the engine to run at excessive speed.

13. Assemble the boom to the head being sure that all bearings are properly installed and the body fit bolts used to connect the head and boom are of the correct length to properly tighten the boom bearings.









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° 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.

18. Start the engine and engage the P.T.O. - with the engine at idle, release the clutch to start the P.T.O. in motion and listen for any abnormal sounds such as gear noise, pump cavitation, or excessive power drain. If no problem exists allow the engine to idle, raise and lower the main boom to its extremes. Then raise the main boom to approximately a 45° angle and cycle the jib boom to its extremes. Next, operate the stabilizer cylinders through their strokes and return the stabilizers to ground level. Disengage the power take off and refill the hydraulic oil tank to its full mark. Reengage the P.T.O. and with the boom elevated high enough to clear all obstructions, fully cycle the swing system slowly to its extremes. Fully open and close the grapple and rotate the grapple in both directions to expell all air from the lines. Recheck the hydraulic system oil level. Make sure all bolts and nuts, including mounting bolts and body fit bolts, are properly tightened. Pick up a weight of approximately 800-1000 lbs. and function all operations to check all relief valves and the general machine operation.

GETTING TO KNOW YOUR BARKO LOADER

Your new Barko loader has been built to work hard for you for a long time — but just how hard and just how long will be determined by your technique of operation and your efforts at proper care and maintenance.

However, before you can properly operate the loader or give it proper maintenance, you need to know something about its construction and the theory of its operation. In other words, as with any other piece of operating equipment, you should get to know your Barko loader well. We hope this manual will help you with this process of familiarization.

Before we get into the specifics of your new loader, let's take a brief, simple look at the hydraulic theory behind the machine.

WHAT IS HYDRAULIC POWER?

Simply said — it is *energy transmitted by a liquid in a confined system.*

The fact that energy can be transmitted by a liquid is based on a fundamental law of physics discovered back in the year 1650 by French scientist Blaise' Pascal. "Pascal's Law" states that, "Pressure exerted on a confined liquid is transmitted undiminished in all directions and acts with equal force on all equal areas." The pressure applied to the liquid at one point will be transmitted to any other point the liquid reaches because a liquid (as compared to a gas) is essentially incompressible and flows readily.

In today's hydraulic systems, the fluid is usually some form of oil; the pressure is provided by a pump; there are hoses or tubes for containing and transmitting the fluid under pressure, and hydraulic cylinders and fluid motors to convert the energy in the fluid into mechanical work. In addition, the system includes valves to control and direct the flow of fluid and limit the pressure, a reservoir to contain the supply of the fluid, and return lines to carry the fluid back to the reservoir after it has done its job. Figure 1 shows the basic components of a simple hydraulic system.

Translated to the actual operation of the Barko loader, all of this simply means that as you move the foot and hand controls in the operators cab, you are regulating and directing the flow of liquid from the oil reservoir and the pump to either hydraulic cylinders, motors or other hydraulic components. Your foot and hand control levers are attached to valves which control, direct and limit the oil flow to the various working parts of the loader.

Because the direction and control of oil pressure and flow within the loader system is what makes the loader work for you, we will bear down rather heavily in this manual on the necessity of a smooth operating technique, of keeping the oil in the system clean and free of any dirt and debris, and of maintaining a leak-free system. These precautions observed at all times will insure not only a trouble-free, productive operation — but also safety on the job.

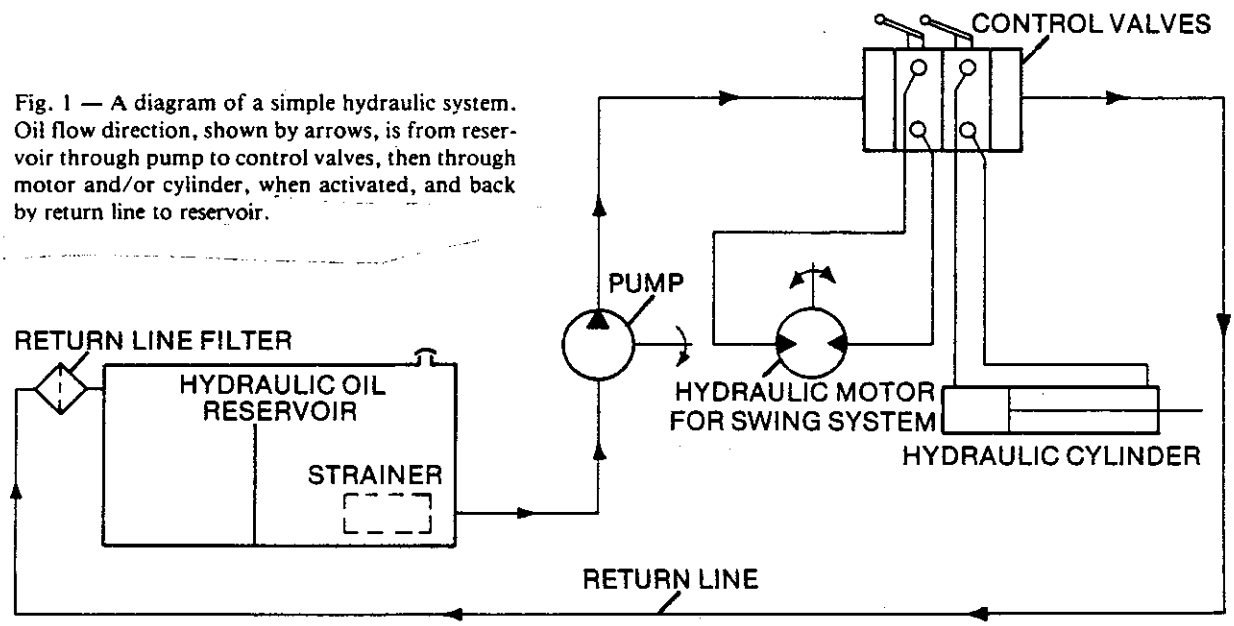
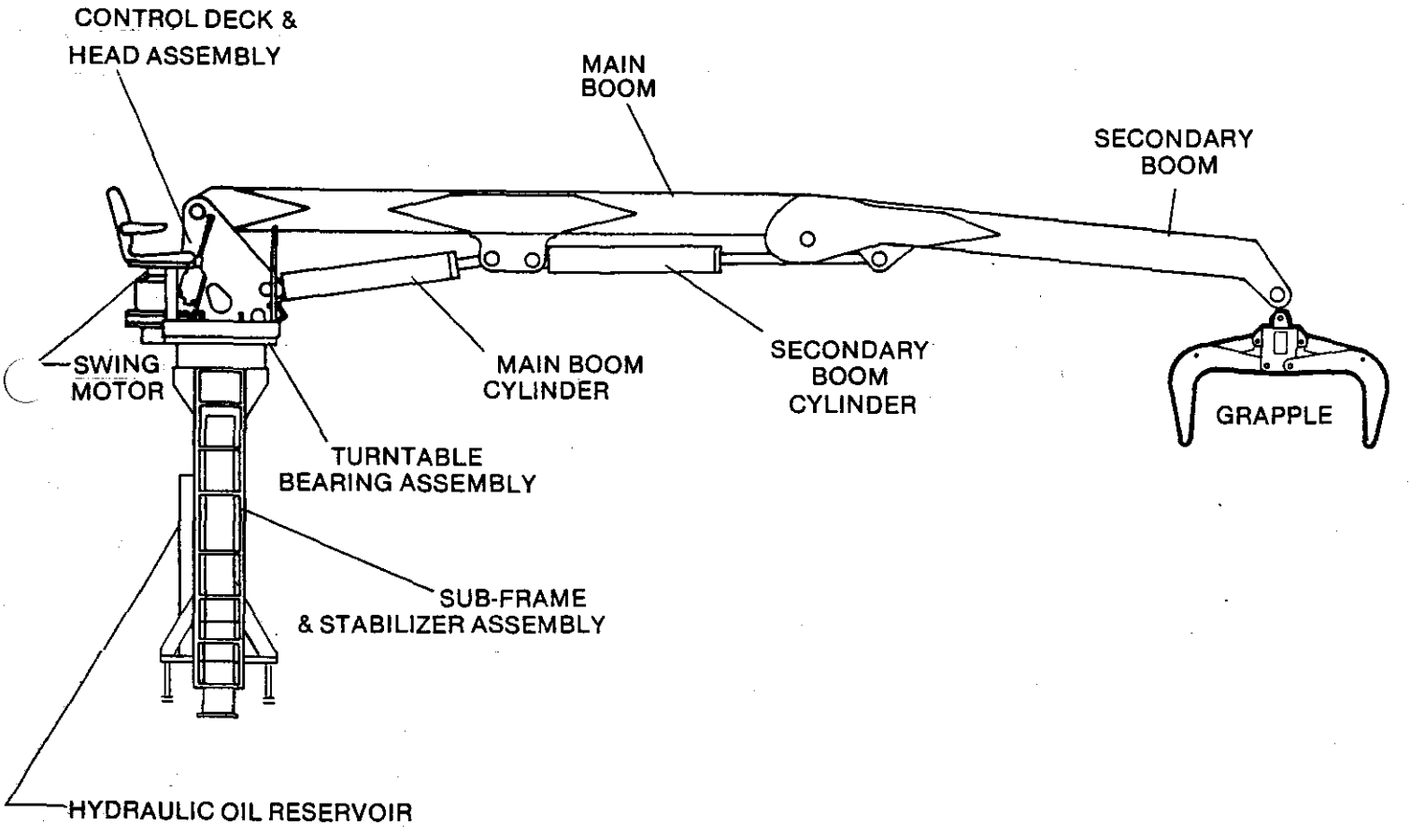


Fig. 1 — A diagram of a simple hydraulic system. Oil flow direction, shown by arrows, is from reservoir through pump to control valves, then through motor and/or cylinder, when activated, and back by return line to reservoir.

MODEL 80 CONTINUOUS ROTATION GENERAL ASSEMBLY



THE BOOM STRUCTURE

The description, 'knuckle-boom loader', comes from the combination of a main boom, secondary boom, and grapple (or other attachment), connected at pivot points and powered by hydraulic cylinders. This operates much like the combination of the human arm and hand (hence 'knuckle-boom') — and it is this combination which gives the Barko loader its agility, maneuverability and strength. And even greater maneuverability is provided by mounting this structure on a continuously rotating platform, also powered hydraulically.

HYDRAULIC MOTORS

Hydraulic motors mounted on the turntable head provide the power for the 360° continuous rotation on a shear-ball type turntable bearing. Swing system operating pressure for your loader can be found on the Specifications page in this manual.

HYDRAULIC CYLINDERS

The 'business-end' of the loader's hydraulic system — the part that does all the work — is the hydraulic cylinder. Cylinders move the main boom, the secondary boom, and in loaders so equipped, the live heel boom. They also provide the force for the attachments and stabilizers, when so equipped.

HYDRAULIC COLLECTOR

All hydraulic components below the turntable bearing continue to be operable during rotation of the upper because of the hydraulic collector. Located on the rotating turntable assembly, the collector is so designed as to allow the flow of hydraulic oil to the cylinders at all points in the turntable rotation. On most stationary electric models the hydraulic collector is replaced by an electric collector that feeds the power to the upper to run the electric motors and still allow for continuous rotation.

HYDRAULIC OIL FILTERS

The hydraulic oil filters are mounted in the vicinity of the reservoir. They are identical in construction, and each contains a replaceable filter element and a filter condition indicator, or gauge.

HYDRAULIC HOSE & TUBE NETWORK

A heavy-wall tubing and multi-wire hose network carries the hydraulic oil from the reservoir to the pumps and valves and then to cylinders and motors and finally back to the reservoir. Operating pressure of the hydraulic system varies from model to model. For your loader, consult the specifications page in this manual.

STABILIZER ASSEMBLY

Stabilizers on models so equipped provide stability during operation and allow the operator to maintain the loader in a level position. Attached to the sub-frame, they are activated by control levers in the operator's cab.

CONTROL VALVES

The valve system in the Barko loader performs a three-way job — to direct the oil flow to the cylinders and motors, to control the volume of oil, and to limit the pressure at difference points. The Barko loader uses stack-type valves to perform this task. The valve banks are mechanically activated by the control levers on the operator's platform. On large models these valves may be activated hydraulically by hand.

SWING CONTROL FOOT PEDAL. This pedal, located in front of the control lever cluster, has left and right foot pads. When operating, both feet must be on the pedal. Pressure on the right foot pad will swing the machine to the right — and pressure on the left pad will swing the machine to the left.

To slow the swing down or bring it to a stop, gradually bring the pedal to center by pushing on the foot pad opposite to the direction of travel. In other words, if your swing is to the right, and you want to stop the unit at a certain point, you should push gradually on the *left* pad until the pedal is back at center position.

A few moments of actual operation and you'll get the feel of the swing pedal. Just remember, both feet must be on the pedal at all times to insure a smooth, safe movement of the swing system.

GETTING THE FEEL OF YOUR BARKO LOADER

Before starting your first job with the new loader, it is our suggestion that you find a good open spot on firm, level ground that's free of obstructions such as trees, buildings and other equipment — and preferably free of people, too. Move your loader to this area — and spend some time just getting to know the "operating feel" of the machine.

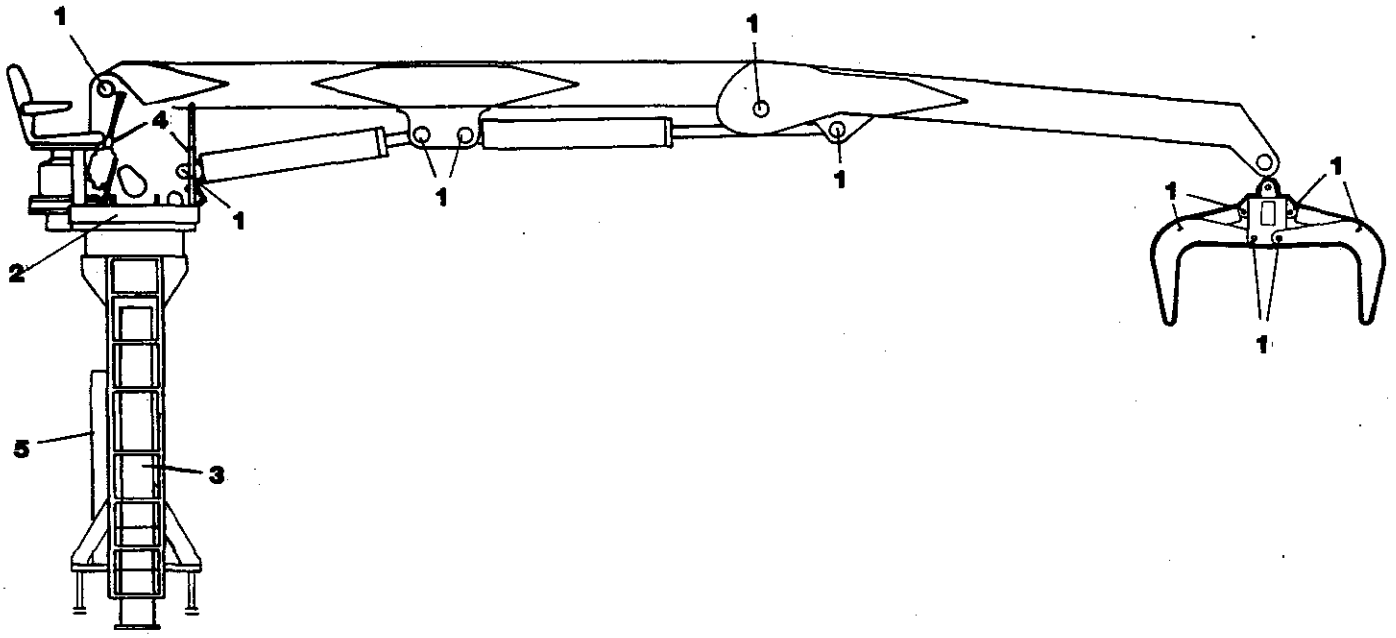
Every piece of operating equipment, no matter where it is manufactured, or by whom, has a slightly different "operating feel" — a sort of an individual machine response to the movement of the controls.

This extra 'get acquainted' time spent at the beginning will allow you to become familiar with the instrument panel and control levers and pedals *before* the work begins. It will bring you closer to the point at which your hydraulic loader will truly be a powerful extension of your hands and feet — and, for that matter, your brain.

BEFORE GETTING ON MACHINE

1. Check the entire machine for loose bolts, cracks, frayed or dangling hoses and loose fittings. Also, watch out for any possible vandalism that might have occurred between periods of operation.
2. Check all boom hoses for damage, including those between the head plates.
3. Look for suspicious oil leaks or pools of oil on the machine or on the ground under the machine.
4. Check the grapple for loose or frayed hoses.
5. Check the tires on your vehicle for proper pressure and any damage.
6. Check the hoses and other parts of your stabilizer assemblies for leaks, damage or looseness.
7. Remove any dirt, snow, ice, debris, tools or water from the working surfaces of the loader. A slippery, cluttered operator's deck can be exceedingly hazardous.

LUBRICATION INFORMATION



Regular, proper lubrication of your Barko loader will help prevent costly repairs and will promote longer life of the equipment. Again, lubrication is the key to *preventive* maintenance.

The chart illustrations, along with the following hints, will give you all the necessary information for proper lubrication.

When lubricating:

A. Be sure that all lubricants and lubricating equipment are kept free of contaminating dirt and foreign matter when in use and while in storage.

B. Before using your grease gun, clean all the fittings. This will prevent dirt from being forced into the fittings during greasing.

C. Don't be stingy with lubricants. It is hard to over-lubricate most equipment — but *under*-lubrication can cause damage and can even be dangerous. Always apply enough grease to force the old grease out of the fitting.

D. Be sure to wipe off excess lubricants that spill or overflow at the fittings. Surfaces that are oily or greasy collect dirt which can eventually work its way into bearings and gears.

LUBRICATION CHART

Location	Description		Frequency	Type
1	Boom & grapples		Daily	Multi-purpose
2	Turntable		Daily	Multi-purpose
3	Stabilizers		Daily	Multi-purpose
4	Control Linkage	———	Weekly	SAE 30 Oil
5	Hydraulic Reservoir	———	Check Daily	See below

REGULAR MAINTENANCE & LUBRICATION SCHEDULE

● DAILY, OR EVERY 8 HOURS ●

HYDRAULIC OIL RESERVOIR Check level & quality of oil.

DIESEL FUEL TANK Check level and fill, if necessary.

ENGINE CRANKCASE OIL Check level.

ENGINE RADIATOR Check coolant level, and inspect exterior for dirt, leaves, bugs, etc.

HOSES - CONNECTIONS - CYLINDERS Do 'walk-around' inspection for oil & water leaks and damage.

FAN & DRIVE BELTS Check for looseness & wear.

VEHICLE TIRES Check for proper pressure.

OPERATOR'S DECK Clean off debris, tools, rags, water, ice & snow.

BOOM, GRAPPLE, STABILIZER FITTINGS. Lubricate all fittings with multi-purpose grease.

TURNTABLE BEARINGS. Lubricate per instructions

● WEEKLY, OR EVERY 50 HOURS ●

HYDRAULIC OIL TANK BREATHER. Clean with fuel oil or nonflammable solvent.

NUTS AND BOLTS. Do walk-around inspection for tightness and/or damage on boom, grapple, turntable, and mounting nuts and bolts.

ENGINE AIR FILTER. Service per manufacturer's instructions.

CONTROL LINKAGE. Lubricate per instruction

● TWO WEEKS, OR 100 HOURS ●

TURNTABLE BOLTS. Check torque, and re-torque, if necessary.

HYDRAULIC OIL COOLER. Inspect and clean cooler fins.

OIL COLLECTOR. Check tightness of attaching bolts.

HYDRAULIC OIL FILTERS. Check condition and change.

● SIX MONTHS, OR 1000 HOURS ●

HYDRAULIC RESERVOIR. Drain old oil, clean tank and suction screens and refill with new oil.

ENTIRE LOADER. Steam clean, and check for stress and wear signs, cracks, damage and looseness.

LUBRICANT RECOMMENDATIONS

Hardworking equipment such as your Barko loader requires careful operation and regular maintenance if you want it to continue to work hard for a long time.

Just as important is the selection of lubricants to be used in the maintenance procedure. This includes the hydraulic oil that goes into the reservoir and the grease that lubricates all moving parts.

Hydraulic Fluid

The hydraulic fluid used in your loader will have to be tough enough to provide peak pressure and instant power through many hours of constant operation. It has to be ready-to-go on cold winter mornings and not let you down on hot summer afternoons.

Because of the wide variety of oils available we will not recommend oil by brand name. However, the following list of features to look for in an oil should help you in ordering the right oil from your supplier, Or, contact your Barko dealer for his advice. The hydraulic oil for your loader should feature:

1. Rust resistant additives to prevent rust formation from moisture condensation.
2. Anti-foam agents to break up air bubbles and prevent "foaming" that causes sluggish and erratic operation.
3. High stability to resist oxidation and prevent varnish formation and deposits that foul systems.
4. Anti-wear properties to prevent scuffing and excessive wear at high speeds and high pressure operation.
5. Good viscosity index for easy flow at low temperatures without thinning out at high temperatures after hours of use. We recommend an anti-wear hydraulic oil (AW) with a viscosity index of 90 or higher and an SSU viscosity of 140 or higher at 100 °F.

For operation in different outside temperatures, please use the following chart for selection of your hydraulic oil.

AVERAGE OUTSIDE TEMPERATURE	SAE DESIGNATION OR EQUIVALENT
Above 65 °F	SAE 30
From 32 °F. To 65 °F.	SAE 20
From 0 °F. to 32 °F.	SAE 10
*From -10 °F to 0 °F.	SAE 5W

*When exposed to these temperatures use of a tank heater to warm oil is advised. Also, when using lightweight oil, operating temperature of equipment should be closely monitored to avoid exceeding 130 °F.

Grease recommendation

All fittings on your Barko loader should be lubricated on schedule with good quality #2 multi-purpose lithium grease. Open control linkage should be lubricated with SAE 20W oil.

TAKING CARE OF YOUR BARKO LOADER

INTRODUCTION TO PREVENTIVE MAINTENANCE

Preventive maintenance is really just a simple matter of common sense. If you keep any piece of mechanical equipment clean and properly lubricated, and promptly replace any worn or damaged parts, you are going to "prevent" deterioration and promote long life and safe, productive service. The only other requisite to such a program is the *regular scheduling* of such maintenance.

Generally, there are two ways to set up a maintenance and lubrication schedule for your loader — either by the calendar (daily, weekly, monthly, etc.), or by the operating hours of the machine. For your convenience, we have used both methods of intervals in our suggested Maintenance and Lubrication Schedule.

Obviously, when you are operating under severe job conditions, such as a dusty job site, in extreme heat or cold, a long operating day, or extremely heavy loads, the recommended intervals in the schedule should be shortened.

The suggested schedule which follows is designed to be just a reminder of what should be done. For detailed instructions on each item, consult the Itemized Instructions which follow the Maintenance and Lubrication Schedule.

HYDRAULIC OIL CHANGING PROCEDURE

This procedure should be used once during the breaking period of a new loader (after one week, or 50 hours of operation) and then every six months, or 1000 hours.

Throughout the oil changing procedure remember that cleanliness is absolutely necessary. Hands, tools, funnels, oil filling equipment, the oil filler opening and, above all, the hydraulic oil itself must be kept absolutely clean. Dirt in the hydraulic system can cause serious damage to pumps, valves and cylinders.

CLEANING THE RESERVOIR

(1) Clean the area around the inspection cover on tank, and then remove the cover.
(2) Remove suction strainer from inside reservoir. Clean it with a solvent.
(3) Remove all dirt and sediment from inside the reservoir.
(4) Clean the oil filter screen and check for damage. If damaged, replace screen.
(5) After everything in and around reservoir is completely clean, replace suction strainer, drain plug and inspection cover.

DRAINING THE RESERVOIR

(1) First, raise main boom and extend secondary boom to their limits, and then turn off the engine.
(2) Remove the reservoir drain plug to drain oil.
(3) After the tank has drained, lower main and secondary booms gradually to force oil out of cylinders. DO NOT START ENGINE.

FILLING THE RESERVOIR

(1) With drain plug in place and tightened, refill the tank with recommended oil. Be sure filler opening screen is in place and clean.
(2) Start engine, running it slowly until the new oil circulates throughout system.
(3) With all control valves in neutral, run engine until the pump quiets down, then add more oil, if needed.
(4) As an operator works the main and secondary booms, grapple and stabilizers, add more oil as needed to maintain proper level in reservoir. This will work the air out of the system and prevent cavitation, which is caused by air bubbles in the oil as it passes through a pump.
(5) Check oil level again after the loader has been operating for an hour or two.

HOW TO CHANGE ELEMENTS ON RETURN LINE FILTERS

Order for Disassembly

1. Unscrew and drop the Center Post (1" clearance for drop is all that's needed to remove element container.)
2. Now remove the Filter Housing, Back-up Washer, Gasket and Element.
3. Clean all parts and filter housing. CAUTION: Do NOT use solutions like perchlorethylene or trichlorethylene as they tend to cause swelling of the cork gaskets, which could result in malfunction of the filter when reassembled.

Reassembly order

1. Put the Center Post in Filter Housing, making sure that the Gasket Seal is in place. Also, be be sure that the Gasket, bottom of the Filter Housing, and the flange of the Center Post are completely free of oil and grease. This will prevent unwanted extrusion of the Gasket.
2. Now insert Conical Spring, small coil end down.
3. Now insert the 4¼" Back-up Washer (bottom).
4. Next insert the Bottom Gasket.
5. Now, install the new Filter Element, followed by the Top Gasket and the top Back-up Washer.
6. Position the Filter Housing and tighten the Center Post to a maximum of 20 Ft. Lbs. of torque.
   CAUTION: When tightening Center Post, hold the can to keep from turning otherwise the O-Ring may stretch out of shape and a leak may occur.
7. Check to be sure that the indicator gauge reads "O" when system is not in operation.

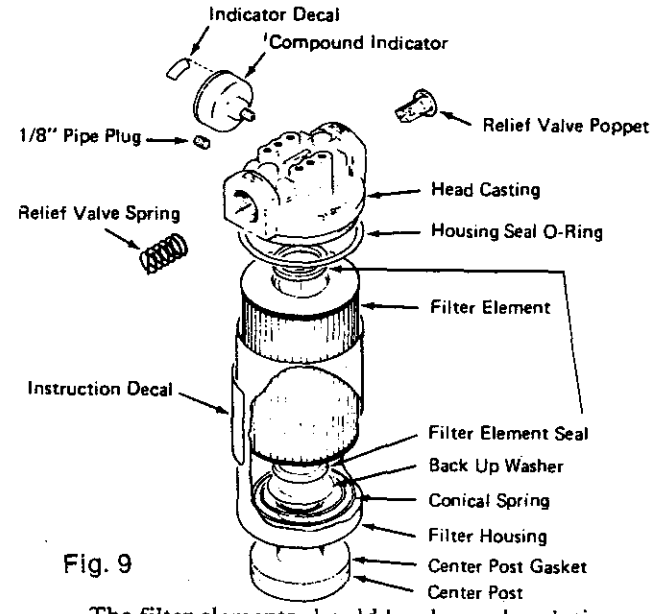


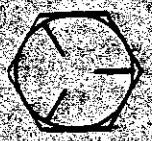
Fig. 9

The filter elements should be changed each time the hydraulic reservoir is drained and refilled (every 6 months) and the elements should be removed and inspected for dirt and damage every 2 weeks, or 100 hours of operation. Obviously, if the filter elements are dirty or damaged, they should be replaced.

The filter condition gauge, mounted on each filter housing, should be checked at the beginning of every period of operation. It measures oil pressure within the filter, or in other words, the rate of flow of oil through the filter. If filter becomes clogged with dirt and debris, the flow is impeded, and the pressure increases. When gauge needle goes into the "danger" zone, the element must be replaced.

TORQUE SPECIFICATIONS FOR BARKO BOLTS

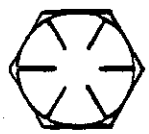
SAE GRADE 5
RECOMMENDED TORQUE FOOT POUNDS



GRADE 5

DIA.	DRY COARSE	DRY FINE	*LUBRICATED COARSE	*LUBRICATED FINE
1/4	9	10	5	6
5/16	17	20	10	12
3/8	31	35	19	21
7/16	50	55	30	33
1/2	75	85	45	51
9/16	110	120	66	72
5/8	150	170	90	100
3/4	265	300	160	180
7/8	400	435	240	260
1	600	650	360	390
1-1/8	800	900	480	540
1-1/4	1120	1240	670	745
1-3/8	1470	1670	880	1000
1-1/2	1950	2200	1170	1320

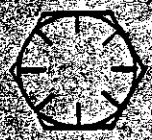
SAE GRADE 8
RECOMMENDED TORQUE FOOT POUNDS



GRADE 8

DIA.	DRY COARSE	DRY FINE	*LUBRICATED COARSE	*LUBRICATED FINE
1/4	12	14	7	9
5/16	25	27	15	17
3/8	44	49	26	30
7/16	70	78	42	47
1/2	107	120	64	72
9/16	154	171	92	102
5/8	212	240	127	144
3/4	376	420	226	252
7/8	606	668	364	400
1	909	995	545	597
1-1/8	1288	1444	773	866
1-1/4	1817	2012	1090	1207
1-3/8	2382	2712	1430	1627
1-1/2	3161	3557	1897	2134

BARKO GRADE 9 (BOWMALLOY)
RECOMMENDED TORQUE FOOT POUNDS



Grade 9
(MIN. 6 RADIAL MARKS
ON HEAD)

DIA.	DRY COARSE	DRY FINE	*LUBRICATED COARSE	*LUBRICATED FINE
1/4	17	19	10	12
5/16	34	37	20	22
3/8	60	68	36	41
7/16	96	108	58	65
1/2	145	165	87	100
9/16	210	235	125	140
5/8	290	330	175	200
3/4	515	575	310	345
7/8	830	980	500	590
1	1250	1350	750	810
1-1/8	1750	1950	1050	1170
1-1/4	2500	2750	1500	1650
1-3/8	3250	3700	1950	2220
1-1/2	4350	4850	2800	2900

*LUBRICATE WITH ANTI-SEIZE COMPOUND

NOTE: 1. GRADE 9 BOLTS MUST BE USED WITH GRADE 9 WASHERS

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.

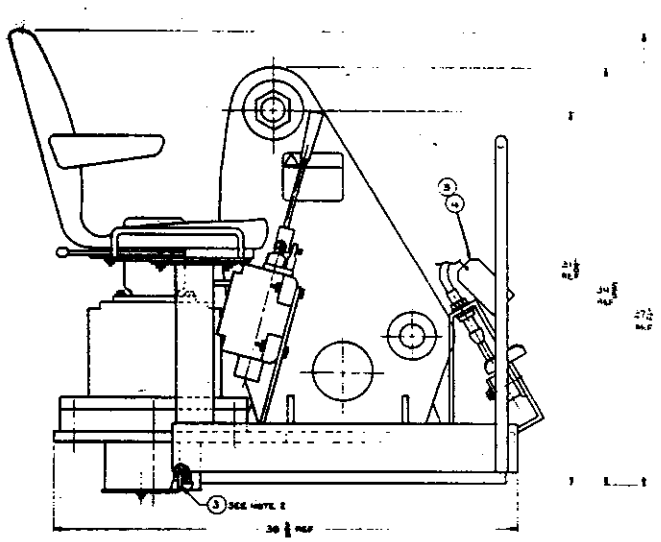
The warranties stated herein are in lieu of all other warranties whether written or oral, statutory, express or implied, including any warranty of merchantability or fitness for purpose.

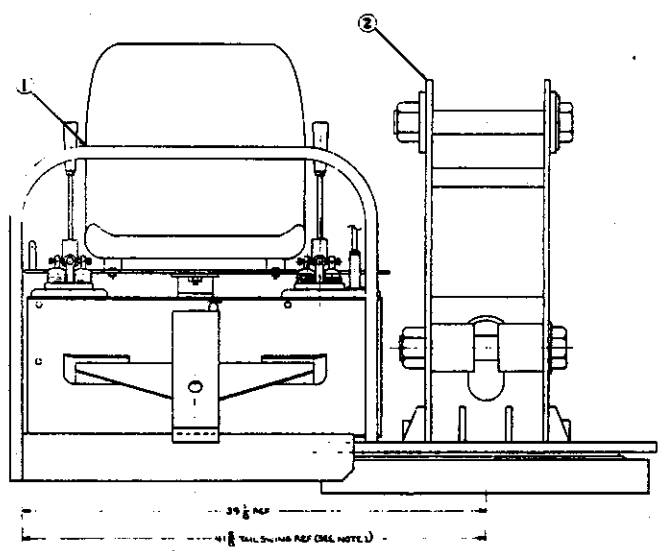
MODEL 80

HEAD AND PLATFORM ASSEMBLY (JOYSTICK)

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, head and platform.....	164-00370
1	1	ASSEMBLY, platform/joystick controls...	454-00023
2	1	ASSEMBLY, cont. rotation head.....	124-00052
3	1	BAR, shipping lock.....	161-01165
4	1	TAG, shipping lock.....	539-00687
5	1	TIE, nylon 6" lg.....	548-00950



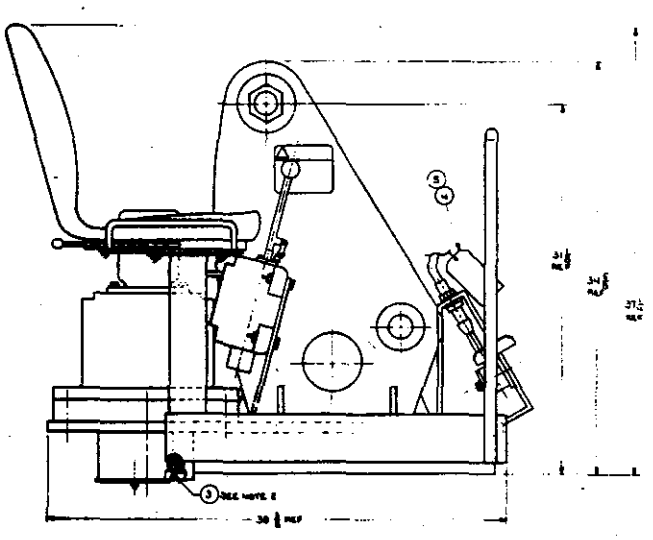


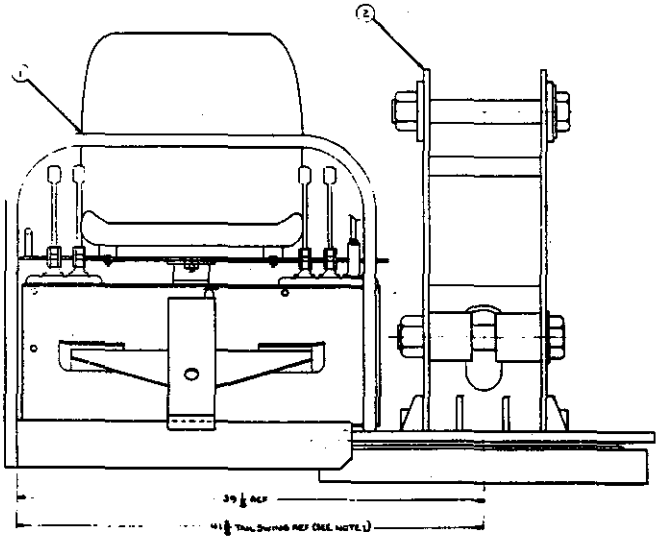
MODEL 80

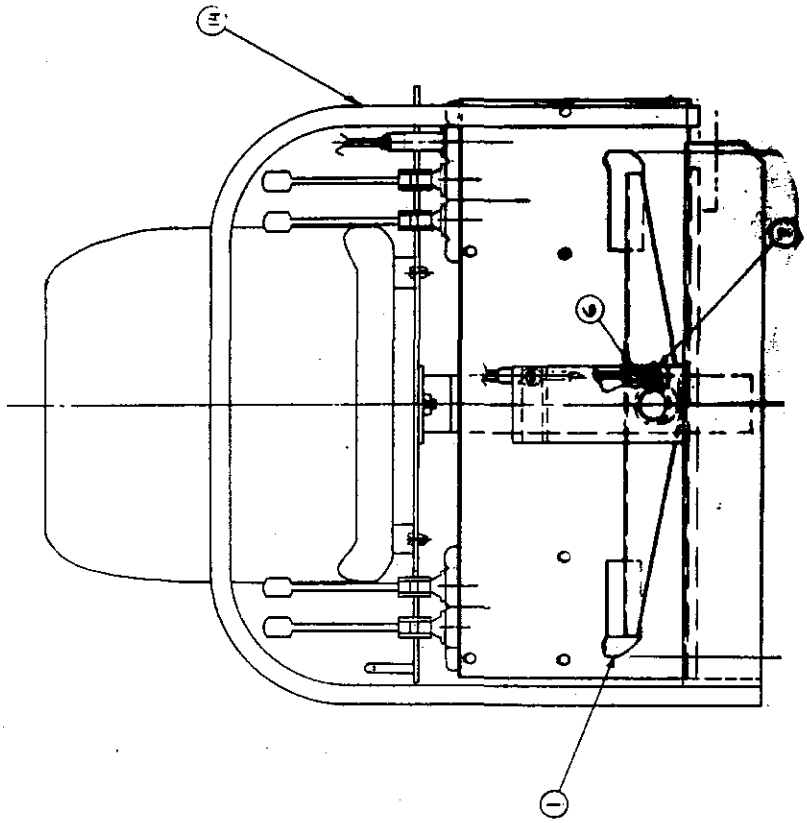
HEAD AND PLATFORM ASSEMBLY (STANDARD CONTROLS)

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, head and platform.....	164-00369
1	1	ASSEMBLY, platform/manual controls...	454-00028
2	1	ASSEMBLY, cont. rotation head.....	124-00052
3	1	BAR, shipping lock.....	161-01165
4	1	TAG, shipping lock.....	539-00687
5	1	TIE, nylon 6" lg.....	548-00950






13
9
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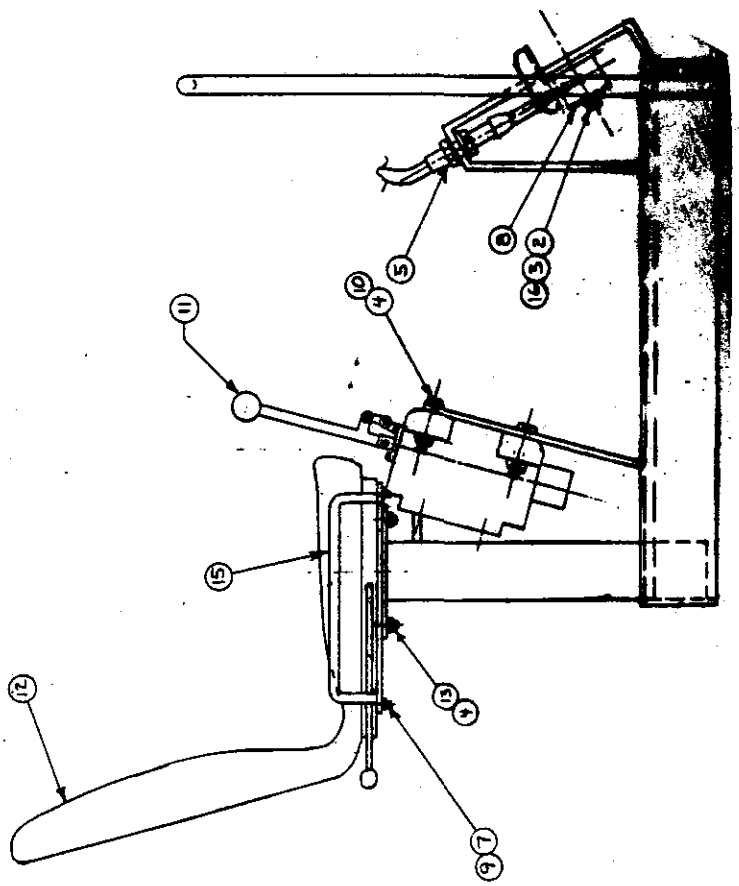
5
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6

MODEL 80

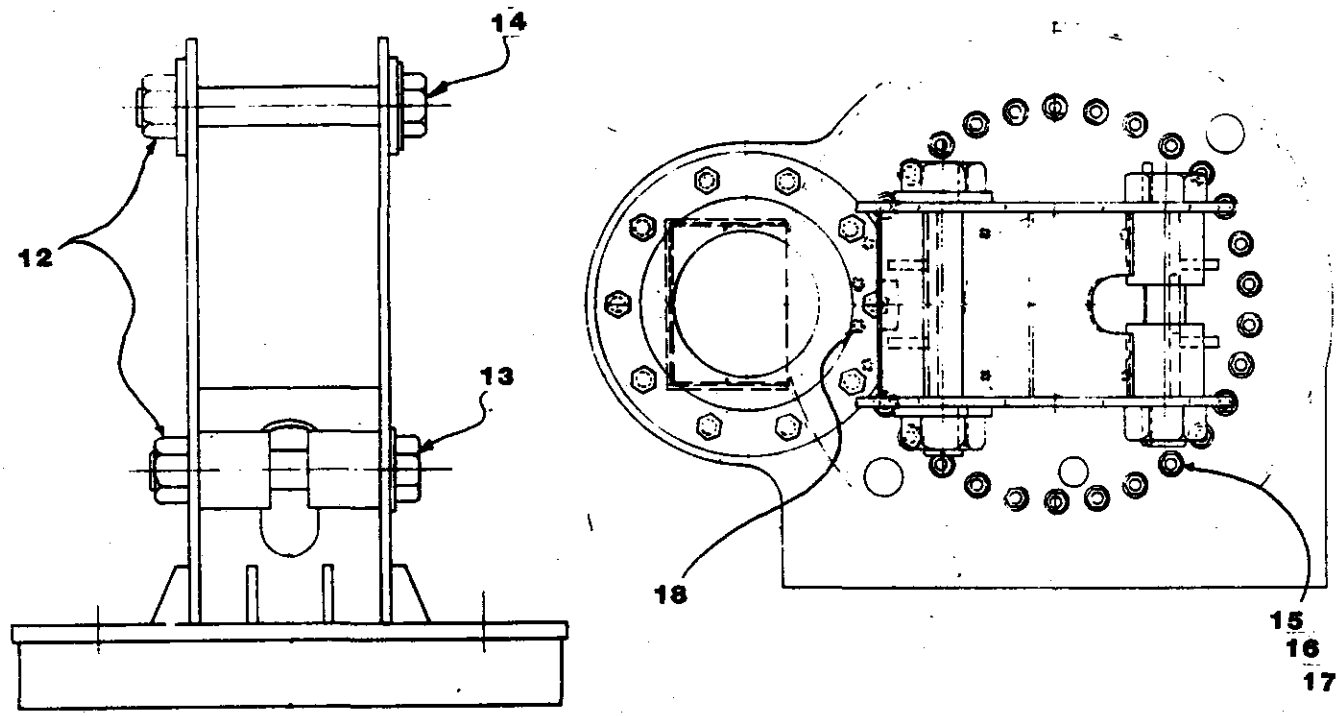
PLATFORM ASSEMBLY- (STANDARD CONTROLS)

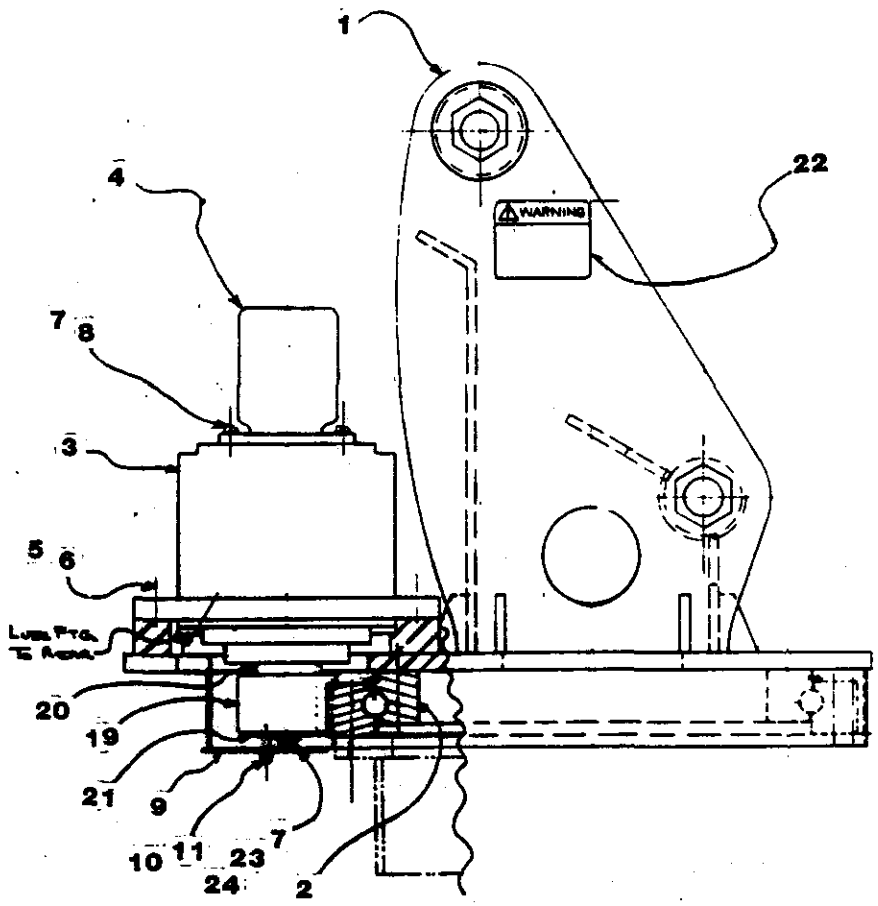
PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY PLATFORM.....	454-00028
1	1	WELDT, swing pedal.....	212-00114
2	1	WASHER, 1/2 lock.....	514-00013
3	1	BOLT, hex head 1/2 X 1.....	510-00703
4	8	NUT, hex nylock 1/2.....	513-00429
5	1	ASSEMBLY, swing cable 60".....	535-00237
6	1	BALL JOINT, 5/16.....	524-00100
7	5	NUT, hex nylock 5/16.....	513-00426
8	1	RETAINER, swing pedal.....	211-00204
9	4	BOLT, carriage 5/16 X 1.....	511-00231
10	6	BOLT, hex head 1/2 X 2 1/4 lg.....	510-00708
11	4	HANDLE, str.....	552-00164
12	1	SEAT, bucket.....	536-00023
13	2	BOLT, hex head 1/2 X 1 1/4.....	510-00704
14	1	WELDT, 80 cr rotating plem.....	164-00337
15	1	WELDT, seat adapter.....	162-00238
16	1	GREASE, ftg-str 1/8.....	517-00300

MODEL 80

HEAD ASSEMBLY



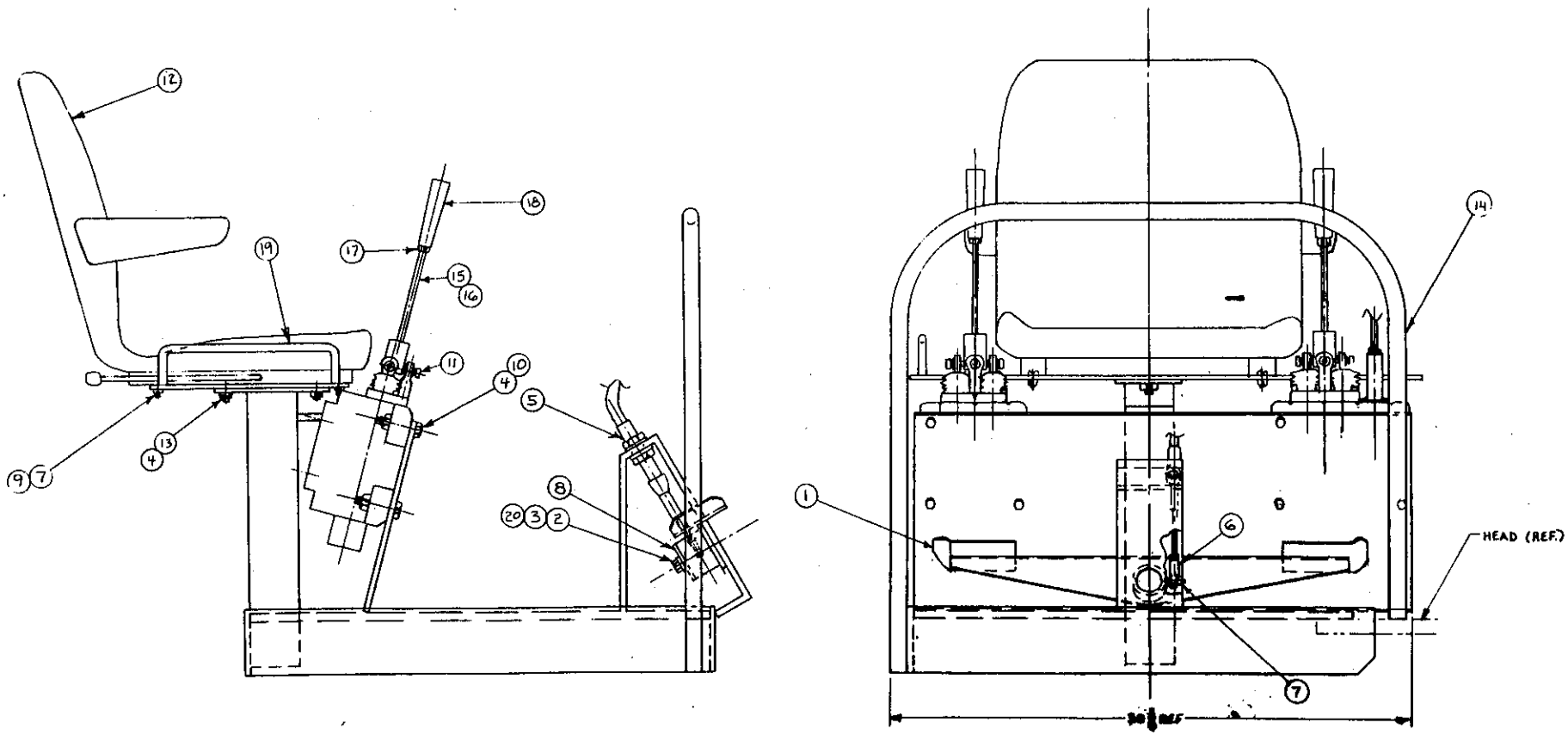


MODEL 80

HEAD ASSEMBLY

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, head continuous.....	124-00052
1	1	WELDMENT, head.....	124-00136
2	1	BEARING, turntable.....	541-00579
3	1	GEARBOX.....	535-00548
4	1	MOTOR, hydraulic.....	560-00056
5	10	WASHER, flat 3/4".....	514-00151
6	10	BOLT, hex head 3/4 x 2 1/2 lg.....	512-00415
7	4	WASHER, lock 1/2.....	514-00013
8	2	BOLT, hex head 1/2 x 1 1/4 lg.....	510-00704
9	1	COVER, pinion.....	121-00510
10	2	NUT, hex 3.8 nylock.....	513-00427
11	2	WASHER, flat 3/8.....	514-00082
12	2	NUT, hex nylock 2".....	513-00417
13	1	BOLT, body fit 2x12 1/2" lg.....	482-00350
14	1	BOLT, body fit 2 x 13 1/2".....	482-00272
15	50	CAPSCREW, socket head 3.8 x 4 1/2 lg...	511-00408
16	50	NUT, hex 5/8.....	513-00454
17	50	WASHER, flat hardneed 5/8.....	514-00150
18	4	CAPSCREW, socket head 5/8 x 3 1/4 lg...	511-00407
19	1	PINION, 16T 3.5 D.P.....	403-00804
20	1	SPACER, pinion.....	401-00849
21	1	PLATE, pinion retaining.....	121-00637
22	AR	DECAL, warning hyd press. 1750 PSI.....	539-00669
23	2	BOLT, hex head 1/2 x 1 lg.....	511-00003

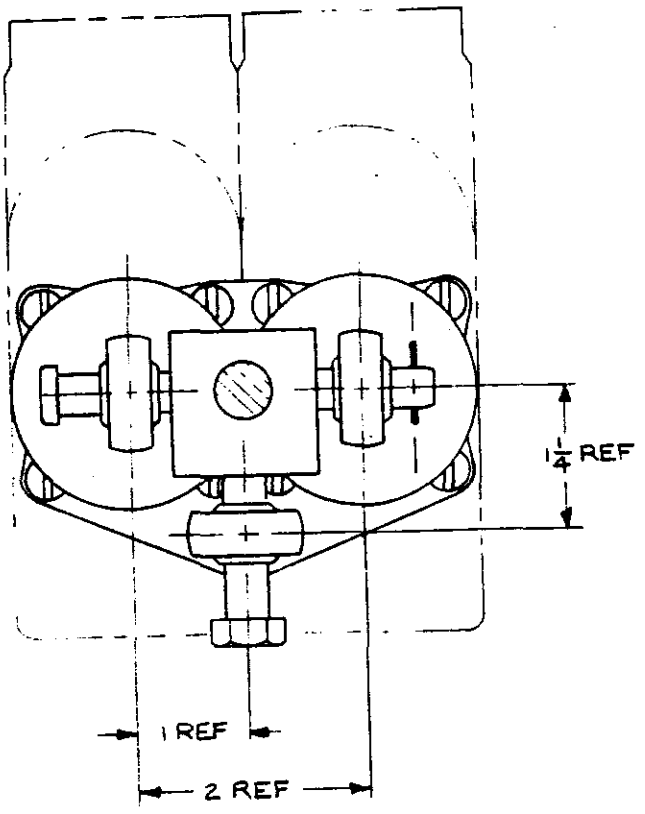

12
18
19
17
15
16
11
10
4
5
13
4
9
7
8
20
3
2
14
1
6
HEAD (REF)
7

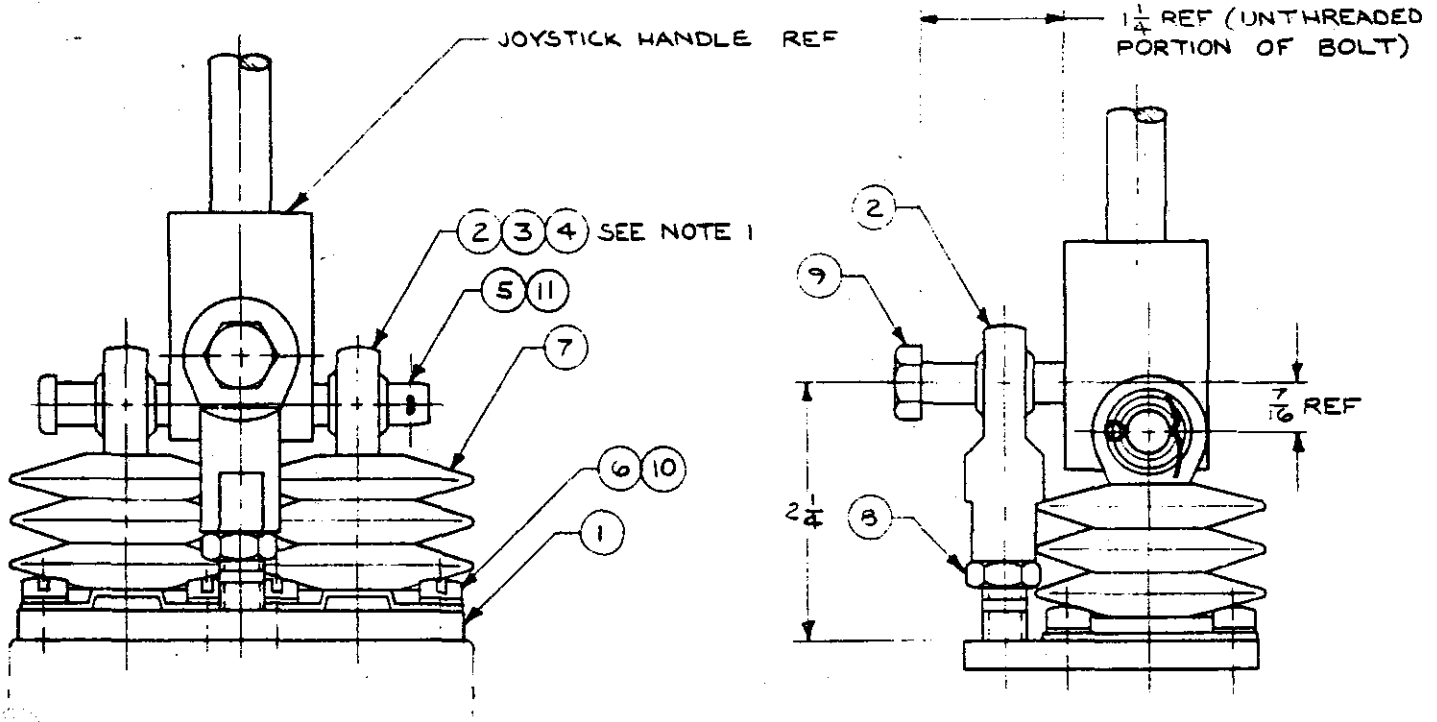
MODEL 80

PLATFORM ASSEMBLY - JOYSTICK

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, platform.....	454-00023
1	1	WELDT, swing pedal.....	212-00114
2	1	WASHER, 1/2 lock.....	514-00013
3	1	BOLT, hex head 1/2 X 1.....	510-00703
4	8	NUT, hex nylock 1/2.....	513-00429
5	1	ASSEMBLY, swing cable 60".....	535-00237
6	1	BALL JOINT, 5/16.....	524-00100
7	5	NUT, hex nylock 5/16.....	513-00426
8	1	RETAINER, swing pedal.....	211-00204
9	4	BOLT, carriage 5/16 X 1.....	511-00231
10	6	BOLT, hex head 1/2 X 2 1/4 lg.....	510-00708
11	2	ASSEMBLY, joystick controller.....	454-00030
12	1	SEAT, bucket w/arm rests.....	536-00033
13	2	BOLT, hex head 1/2 X 1 1/4.....	510-00704
14	1	WELDT, joystick rotating platform...	164-00337
15	1	WELDT, lh control lever.....	454-00200
16	1	WELDT, rh control lever.....	454-00201
17	2	NUT, hex 3/8.....	513-00308
18	2	KNOB, control tapered.....	539-00552
19	1	WELDT, seat adapter.....	162-00238
20	1	GREASE FITTING, straight 1/8.....	517-00300


1 1/4 REF
1 REF
2 REF

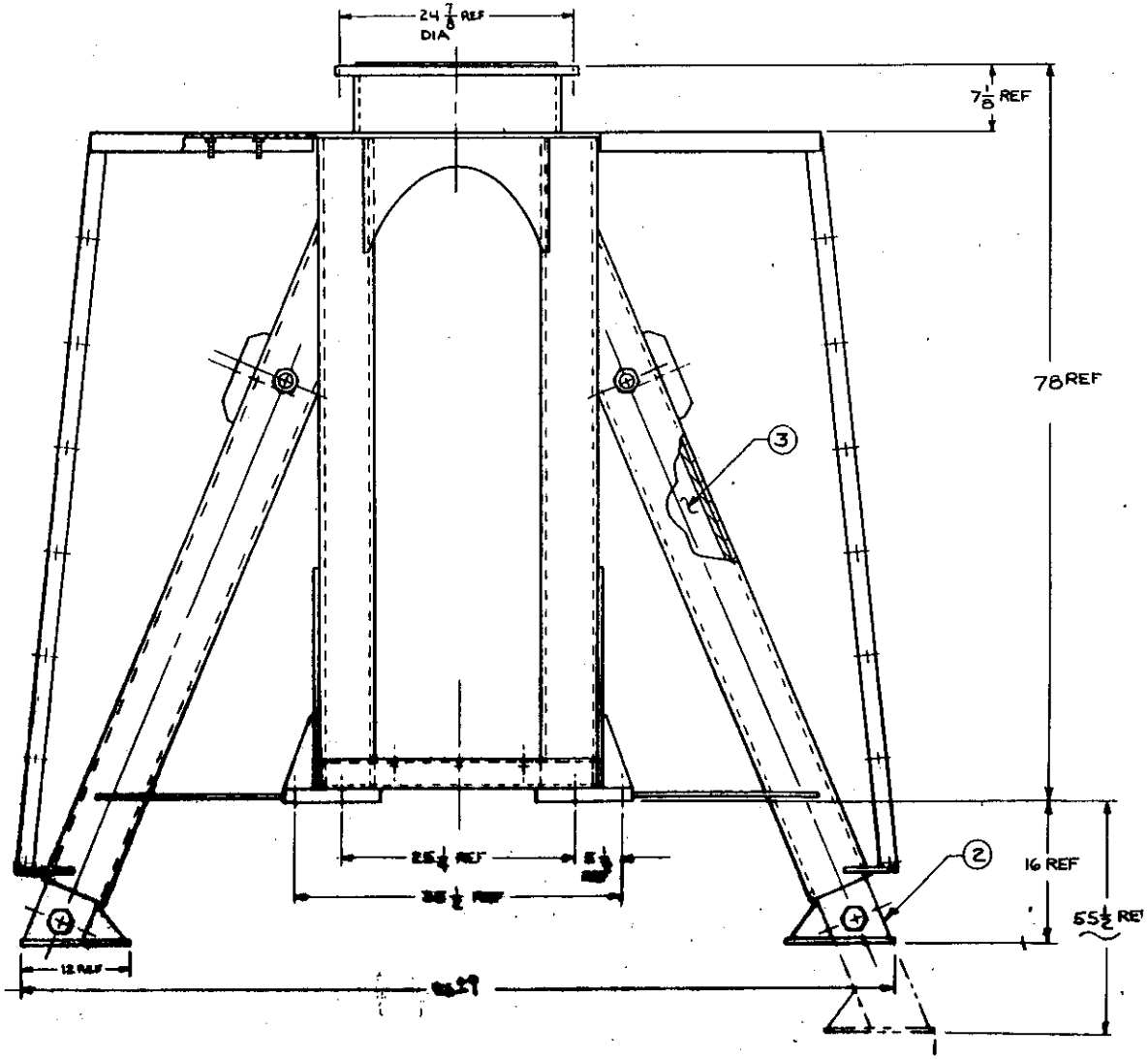

JOYSTICK HANDLE REF
2 3 4 SEE NOTE 1
5 11
7
6 10
1
1 1/4 REF (UNTHREADED PORTION OF BOLT)
2
9
7/16 REF
2 1/4
8

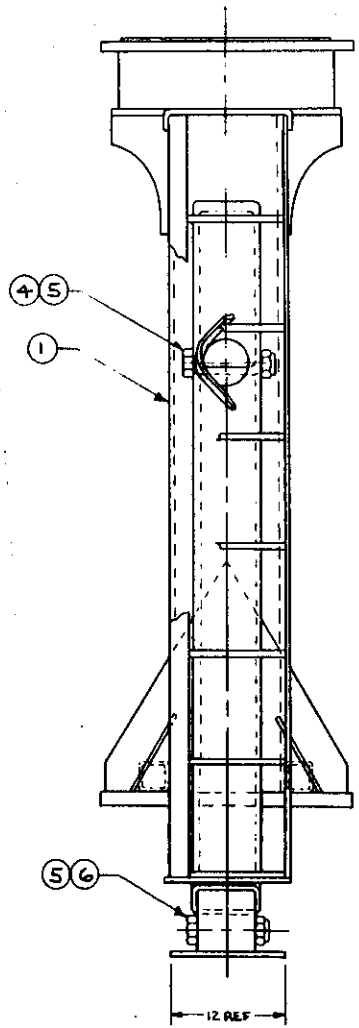
MODEL 80

ASSEMBLY JOYSTICK CONTROLLER

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
	1	ASSY, joystick.....	454-00030
1	1	WELDT, joystick mtg plate.....	452-00155
2	3	BALL JOINT, 3/8 X 3/8.....	524-00101
3	2	STUD, 3/8 X 3/8 X 1 1/4.....	513-00830
4	2	WASHER, lock 3/8.....	514-00011
5	1	PIN, clevis 3/8 X 3 1/4.....	514-00550
6	8	SCREW, 1/4 X 1.....	558-00027
7	2	SPOOL, protector kit.....	552-00163
8	1	NUT, jam 3/8.....	513-00331
9	1	BOLT, H.H. 3/8 X 2 1/4.....	510-00659
10	8	WASHER, lock 1/4.....	514-00009
11	1	PIN, cotter 3/32 X 1.....	543-00707


24 7/8 REF DIA
7/8 REF
78 REF
3
2
16 REF
55 1/2 REF
12 REF

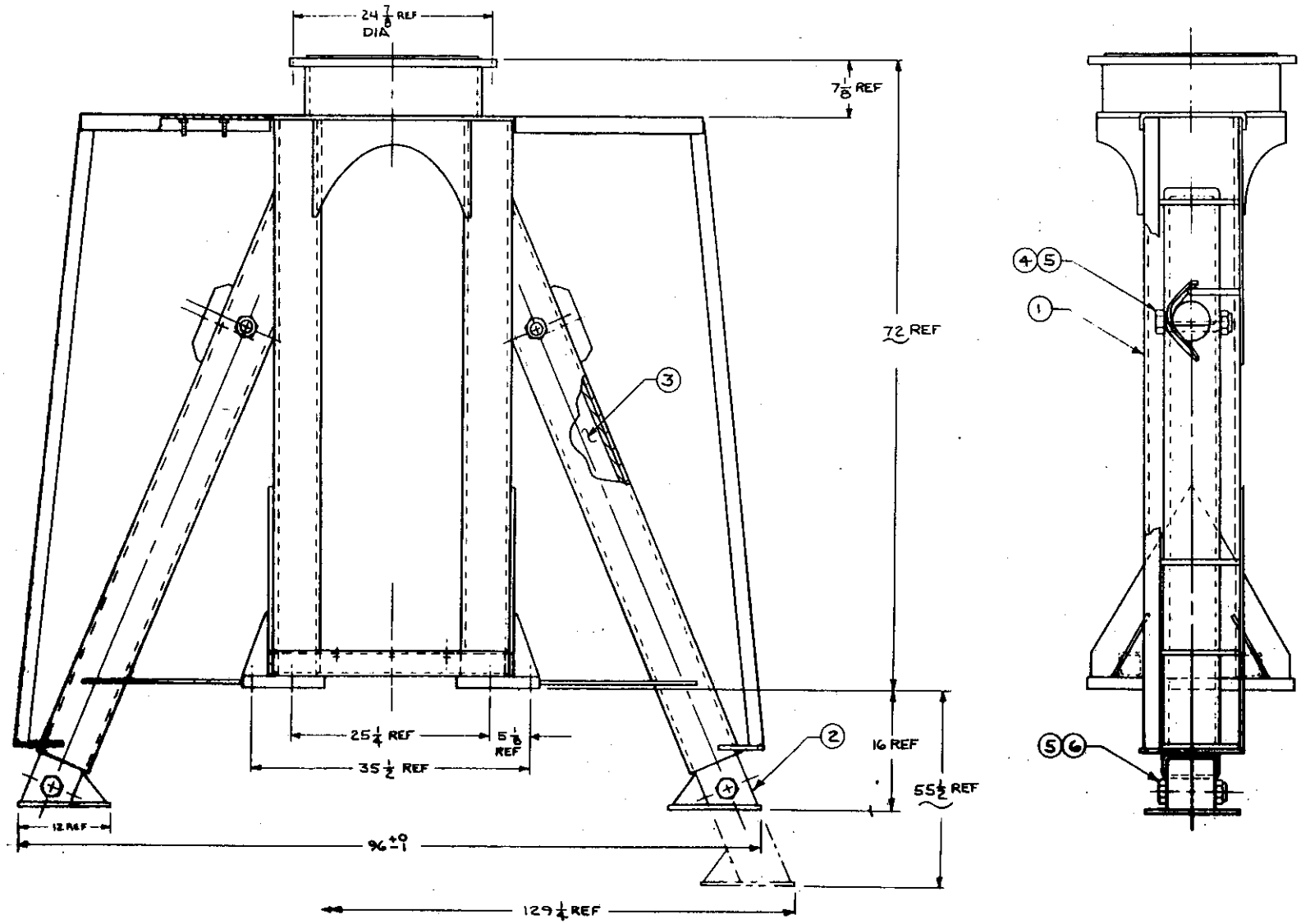

4 5
1
5 6
12 REF

MODEL 80

FRAME ASSEMBLY - 78" STANDARD BOC

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, frame.....	134-00043
1	1	WELDT, frame 78".....	134-00213
2	2	WELDT, stab leg.....	173-00116
3	2	ASSEMBLY, cyl 3 1/2 X 43 X 2.....	812-00045
4	2	WELDT, bolt 1 1/2 X 8.....	482-00201
5	4	NUT, hex lock thin 1 1/2.....	513-00770
6	2	WELDT, bolt 1 1/2 X 7.....	482-00204

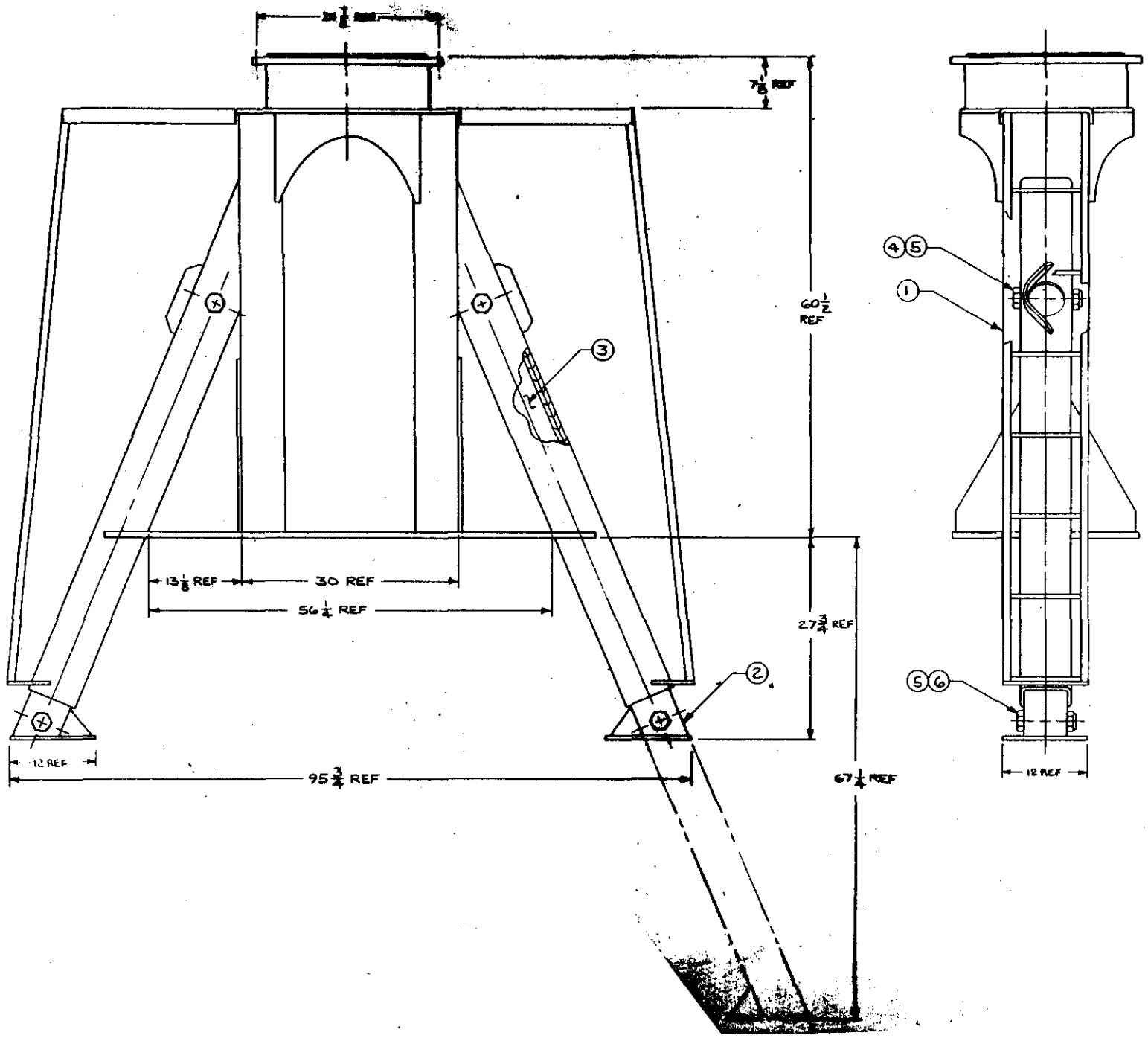

24 7/8 REF DIA
7 1/8 REF
72 REF
3
25 1/4 REF
5 1/8 REF
35 1/2 REF
2
16 REF
55 1/2 REF
12 REF
96 +9 -1
129 1/4 REF
4 5
1
5 6

MODEL 80

FRAME ASSEMBLY - 72" BOC

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, frame.....	134-00042
1	1	WELDT, frame 72".....	134-00212
2	2	WELDT, stab leg.....	173-00116
3	2	ASSEMBLY, cyl 3 1/2 X 43 X 2.....	812-00045
4	2	WELDT, bolt 1 1/2 X 8.....	482-00201
5	4	NUT, hex lock thin 1 1/2-12.....	513-00770
6	2	WELDT, bolt 1 1/2-12 X 7.....	482-00204


7/8 REF
60 1/2 REF
27 3/4 REF
67 1/4 REF
13 1/8 REF
30 REF
56 1/4 REF
95 3/4 REF
12 REF
12 REF
1
2
3
4 5
5 6

MODEL 80

FRAME ASSEMBLY - 60 1/2" TLR

PARTS LIST

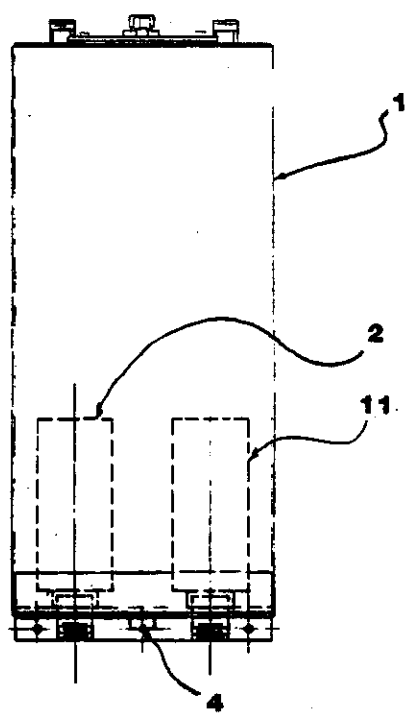
ITEM	QTY	DESCRIPTION	PARTS NO.
0	1	ASSEMBLY, frame.....	134-00041
1	1	WELDT, frame 80 C.R. TLR.....	134-00209
2	2	WELDT, stab leg.....	173-00116
3	2	ASSEMBLY, cyl 3 1/2 X 43 X 2.....	812-00045
4	2	WELDT, bolt 1 1/2 X 8.....	482-00201
5	4	NUT, hex lock thin 1 1/2.....	513-00770
6	2	WELDT, bolt 1 1/2 X 7.....	482-00204

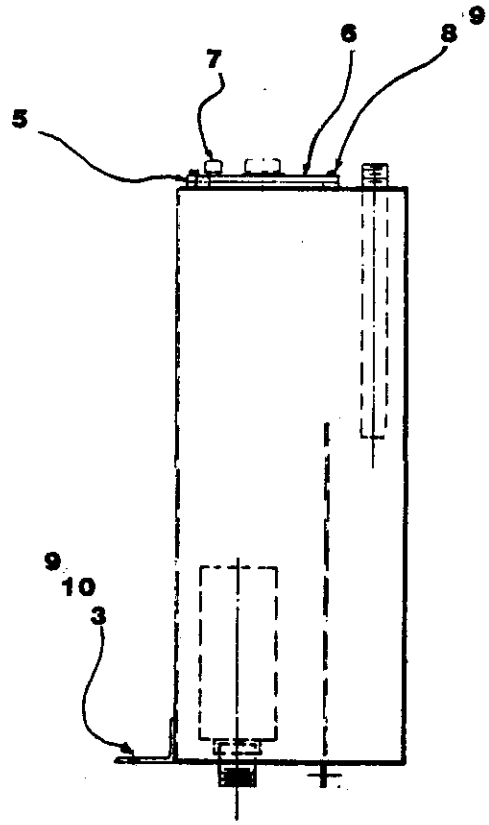
MODEL 80

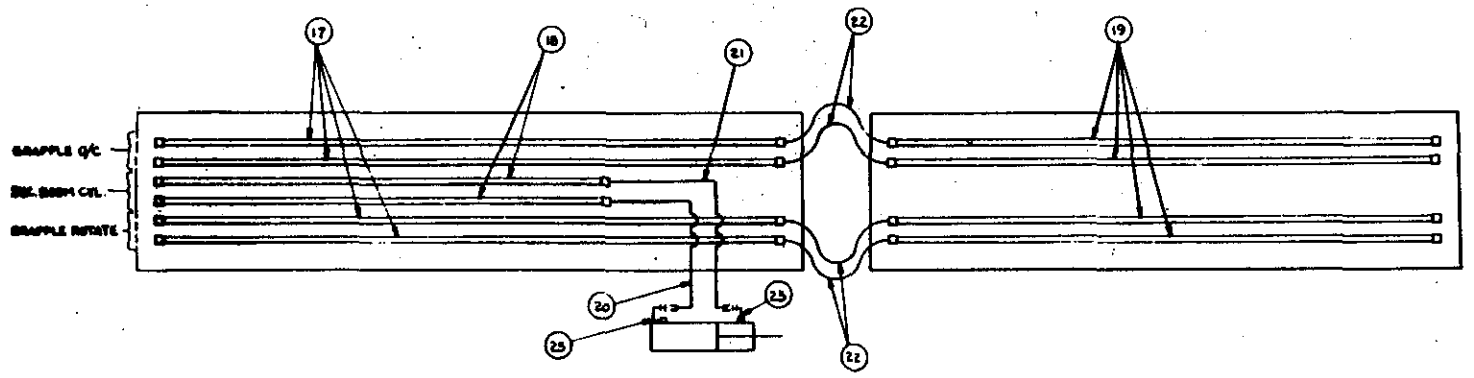
ASSEMBLY 42 GAL. HYD. RESERVOIR

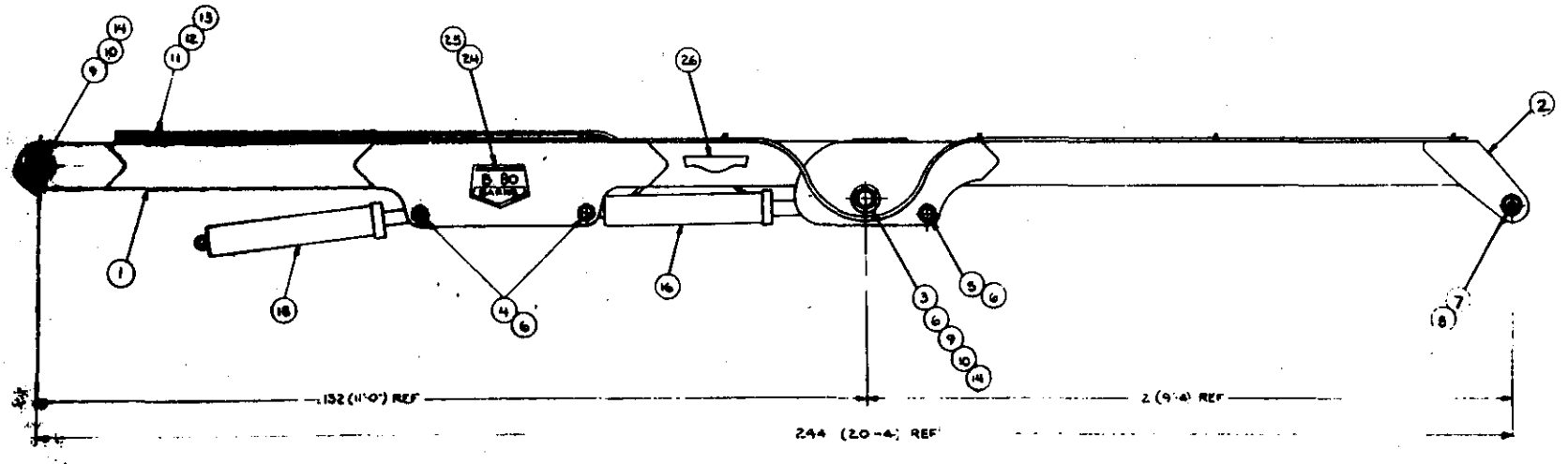
PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, reservoir.....	644-00028
1	1	WELDMENT, hydraulic reservoir.....	644-00131
2	1	STRAINER, suction 2".....	565-00018
3	6	WASHER, flat 3/8.....	514-00082
4	1	PIPE PLUG, 1" magnetic.....	522-00338
5	1	GASKET.....	651-00302
6	1	ASSEMBLY, inspection cover.....	643-00201
7	1	WELDMENT, 12" dipstick.....	641-00101
8	6	BOLT, hex head3/8 x 3/4 lg.....	510-00652
9	12	LOCKWASHER, 3/8.....	514-00011
10	6	BOLT, hex head 3/8 x 1 lg.....	510-00654
11	1	STRAINER, suction 3".....	565-00020






GRAPPLE O/C
GRAPPLE ROTATE

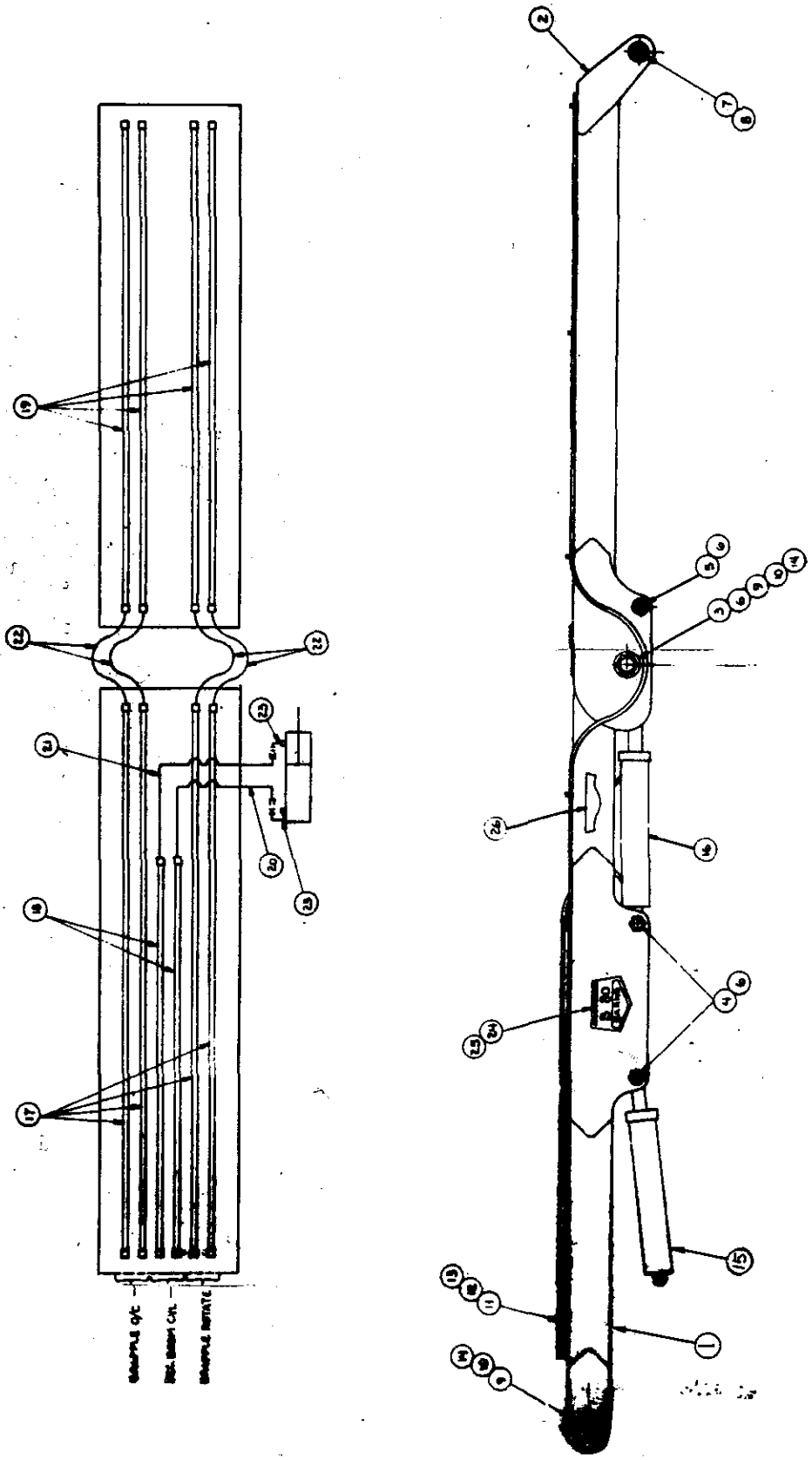

P.80
132 (11'-0") REF
2 (9'-4) REF
244 (20'-4) REF

MODEL 80

BOOM ASSEMBLY 20' 4"

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, boom.....	104-00127
1	1	WELDT, 11' main boom.....	103-00259
2	1	WELDT, str knuckle std 9'-4".....	113-00211
3	1	WELDT, bolt 2 X 10 1/2 DGP.....	482-00256
4	2	WELDT, bolt 2 X 8 3/4.....	482-00228
5	1	WELDT, bolt 2 X 9.....	482-00333
6	4	NUT, nylock 2.....	513-00417
7	1	WELDT, bolt 1 1/2 X 8 1/4.....	482-00242
8	1	NUT, hex lock thin 1 1/2.....	513-00770
9	4	CUP, roller bearing.....	541-00717
10	4	CONE, roller bearing.....	541-00718
11	17	CLAMP, pipe.....	491-00000
12	17	WASHER, spring lock 3/8.....	514-00011
13	17	NUT, hex 3/8.....	513-00208
14	2	GREASE, fitting str 1/8.....	517-00300
15	1	ASSEMBLY, cyl 6 X 36 X 2 1/2.....	812-00541
16	1	ASSEMBLY, cyl 6 X 24 X 2 1/2.....	812-00421
17	4	ASSEMBLY, hyd tubing 5/8 X 102.....	652-00446
18	2	ASSEMBLY, hyd tubing 5/8 X 76.....	652-00447
19	4	ASSEMBLY, hyd tubing 5/8 X 84.....	652-00448
20	1	HOSE, 08-2WR2-08FJX-10MJ-35.....	662-01535
21	1	HOSE, 08-2WR2-08FJX-10MJ-45.....	662-01536
22	4	HOSE, 08-2WR2-10MJ-10MJ-48.....	662-01537
23	2	ADAPTOR, 8MP-8MJ.....	566-00984
24	2	DECAL, blank background.....	539-00561
25	2	DECAL, 80 insert.....	539-00564
26	2	EMBLEM, PETTIBONE.....	539-00647

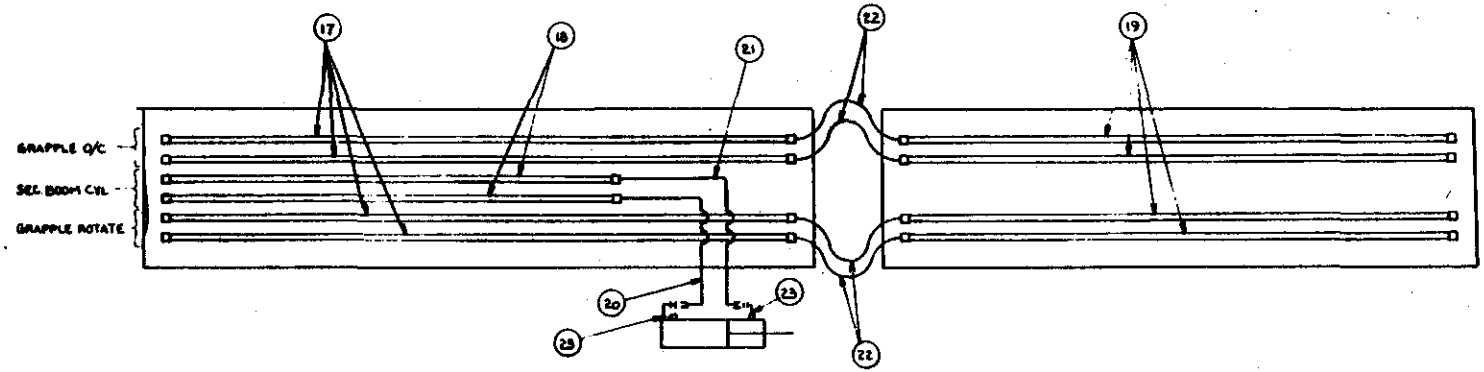


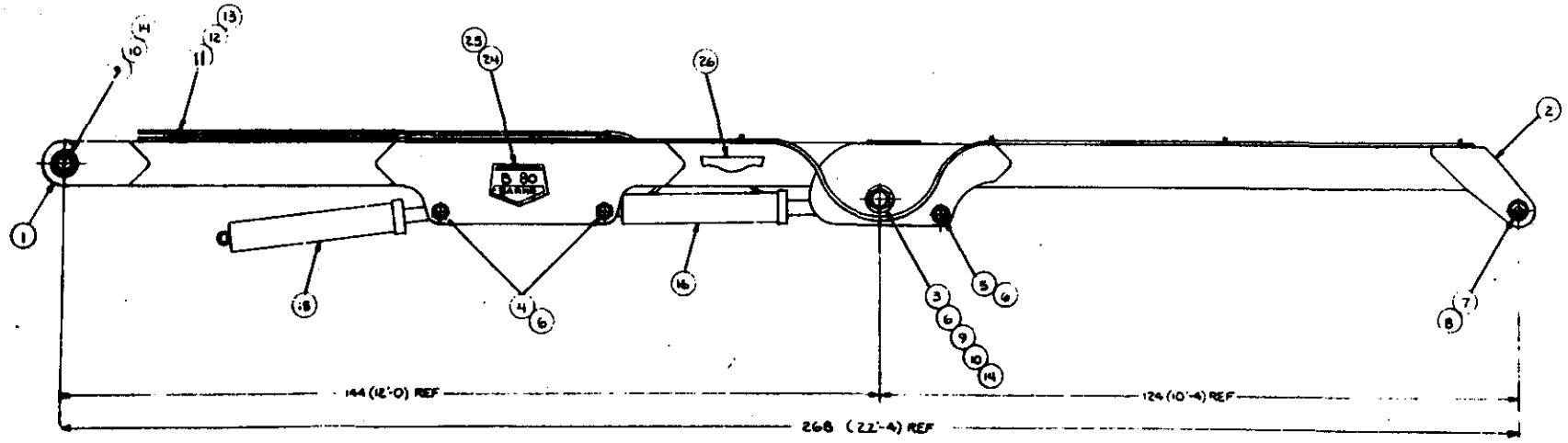
MODEL 80

BOOM ASSEMBLY - 20' - 4" (STANDARD)

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, boom.....	104-00126
1	1	WELDT, 12' main boom.....	103-00260
2	1	WELDT, sec str boom 8' 4".....	113-00323
3	1	WELDT, bolt 2 X 10 1/2 DGP.....	482-00256
4	2	WELDT, bolt 2 X 8 3/4.....	482-00228
5	1	WELDT, bolt 2 X 9.....	482-00333
6	4	NUT, nylock 2.....	513-00417
7	1	WELDT, bolt 1 1/2 X 8 1/4.....	482-00242
8	1	NUT, hex lock thin 1 1/2.....	513-00770
9	4	CUP, roller bearing.....	541-00717
10	4	CONE, roller bearing.....	541-00718
11	17	CLAMP, pipe.....	491-00000
12	17	WASHER, spring lock 3/8.....	514-00011
13	17	NUT, hex 3/8.....	513-00208
14	2	GREASE, fitting str 1/8.....	517-00300
15	1	ASSEMBLY, cyl 6 X 36 X 2 1/2.....	812-00541
16	1	ASSEMBLY, cyl 6 X 24 X 2 1/2.....	812-00421
17	4	ASSEMBLY, hyd tubing 5/8 X 102.....	652-00446
18	2	ASSEMBLY, hyd tubing 5/8 X 76.....	652-00447
19	4	ASSEMBLY, hyd tubing 5/8 X 72.....	652-00445
20	1	HOSE, 08-2WR2-08FJX-10MJ-35.....	662-01535
21	1	HOSE, 08-2WR2-08FJX-10MJ-45.....	662-01536
22	4	HOSE, 08-2WR2-10MJ-10MJ-48.....	662-01537
23	2	ADAPTER, 8MP-8MJ.....	566-00984
24	2	DECAL, blank background.....	539-00561
25	2	DECAL, 80 insert.....	539-00564
26	2	EMBLEM,PETTIBONE.....	539-00647


GRAPPLE O/C
SEL. BOOM CYL.
GRAPPLE ROTATE

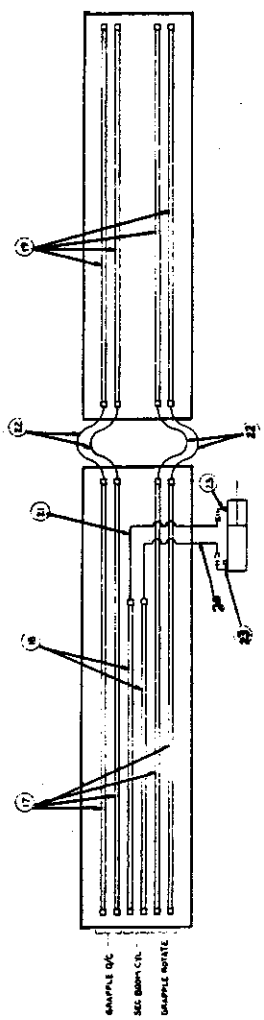

D 80
144 (12'-0) REF
124 (10'-4) REF
268 (22'-4) REF

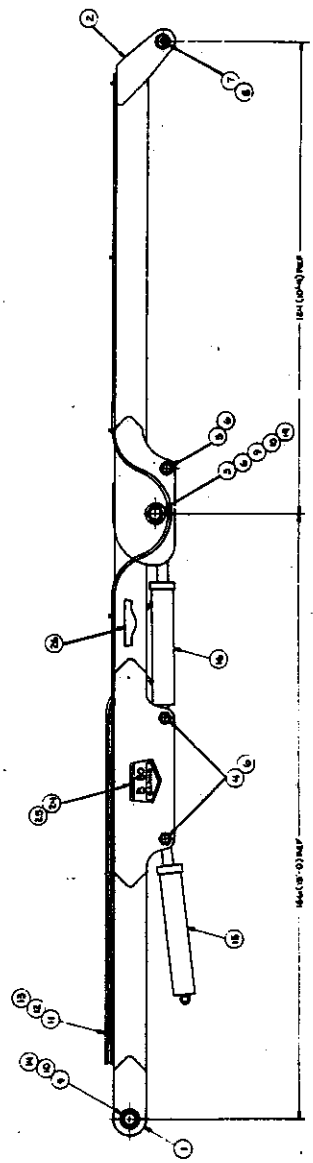
MODEL 80

BOOM ASSEMBLY - 22' 4"

PARTS LIST

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, boom.....	104-00125
1	1	WELDT,12' main boom.....	103-00260
2	1	WELDT, str knuckle 10'4".....	113-00212
3	1	WELDT, bolt 2 X 10 1/2 DGP.....	482-00256
4	2	WELDT, bolt 2 X 8 3/4.....	482-00228
5	1	WELDT, bolt 2 X 9.....	482-00333
6	4	NUT, nylock 2.....	513-00417
7	1	WELDT, bolt 1 1/2 X 8 1/4.....	482-00242
8	1	NUT, hex lock thin 1 1/2.....	513-00770
9	4	CUP, roller bearing.....	541-00717
10	4	CONE, roller bearing.....	541-00718
11	17	CLAMP, pipe.....	491-00000
12	17	WASHER, spring lock 3/8.....	514-00011
13	17	NUT, hex 3/8.....	513-00208
14	2	GREASE, fitting str 1/8.....	517-00300
15	1	ASSEMBLY, cyl 6 X 36 X 2 1/2.....	812-00541
16	1	ASSEMBLY, cyl 6 X 24 2 1/2.....	812-00421
17	4	ASSEMBLY, hyd tubing 5/8 X 114.....	652-00449
18	2	ASSEMBLY, hyd tubing 5/8 X 88.....	652-00450
19	4	ASSEMBLY, hyd tubing 5/8 X 96.....	652-00403
20	1	HOSE, 08-2WR2-08FJX-10MJ-35.....	662-01535
21	1	HOSE, 08-2WR2-08FJX-10MJ-45.....	662-01536
22	4	HOSE, 08-2WR2-10MJ-10MJ-48.....	662-01537
23	2	ADAPTOR, 8MP-MJ.....	566-00984
24	2	DECAL,blank background.....	539-00561
25	2	DECAL, 80 insert.....	539-00564
26	2	PETTIBONE, emblem.....	539-00647


GRAPPLE O/C
SEC BOOM CYL
GRAPPLE ROTATE



MODEL 80

BOOM ASSEMBLY 23' 4"

PARTS LIST

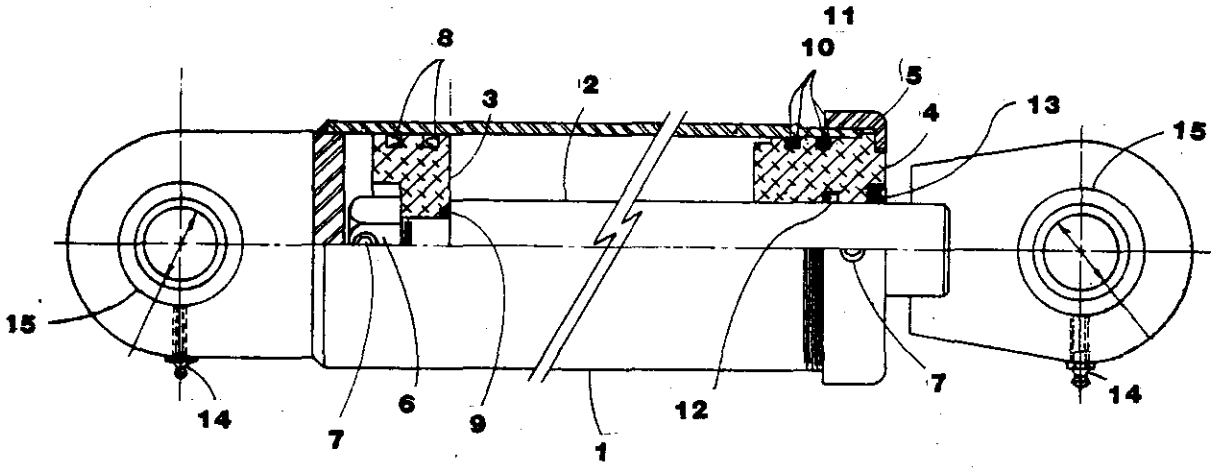
ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, boom.....	104-00123
1	1	WELDT, M-80 main boom 156".....	104-00264
2	1	WELDT, M-80 124" sec. boom.....	114-00286
3	1	WELDT, bolt 2 X 10 1/2 dgp.....	482-00256
4	2	WELDT, bolt 2 X 8 3/4.....	482-00228
5	1	WELDT, bolt 2 X 9.....	482-00333
6	4	NUT, nylock 2.....	513-00417
7	1	WELDT, bolt 1 1/2 X 8 1/4.....	482-00242
8	1	NUT, hex lock thim 1 1/2.....	513-00770
9	4	CUP, roller bearing.....	541-00717
10	4	CONE, roller bearing.....	541-00718
11	17	CLAMP, pipe.....	491-00000
12	17	WASHER, spring lock 3/8.....	514-00011
13	17	NUT, hex 3/8.....	513-00608
14	2	GREASE, fitting str 1/8.....	517-00300
15	1	ASSEMBLY, cyl 6 X 36 X 2 1/2.....	812-00541
16	1	ASSEMBLY, cyl 6 X 24 X 2 1/2.....	812-00421
17	4	ASSEMBLY, hyd tubing 5/8 X 126.....	652-00495
18	2	ASSEMBLY, hyd tubing 5/8 X 100.....	652-00511
19	4	ASSEMBLY, hyd tubing 5/8 X 96.....	652-00403
20	1	HOSE, 08-2WR2-08FJX-10MJ-35.....	662-01535
21	1	HOSE, 08-2WR2-08FJX-10MJ-45.....	662-01536
22	4	HOSE, 08-2WR2-10MJ-10MJ-48.....	662-01537
23	2	ADAPTOR, 8MP-8MJ.....	566-00984
24	2	DECAL, blank background.....	539-00561
25	2	DECAL, 80 insert.....	539-00564
26	2	PETTIBONE EMBLEM.....	539-00647

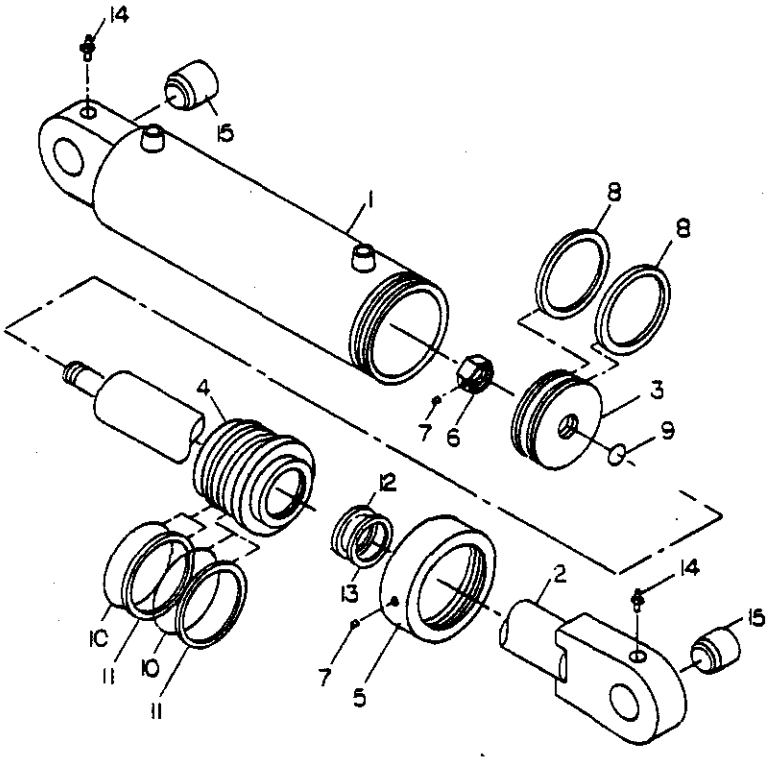
MODEL 80

MAIN BOOM CYLINDER

6" x 36" WITH 2 1/2" ROD

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, hyd. cylinder 6 x 36.....	812-00541
1	1	WELDMENT, butt & tube.....	832-00176
2	1	WELDMENT, rod.....	842-00018
3	1	PISTON.....	852-00003
4	1	GLAND.....	852-00304
5	1	CAP, gland.....	852-00814
6	1	NUT, hex head 1 1/2.....	513-00119
7	2	SCREW, set 3/8.....	512-00616
8	2	SEAL, loaded lip 6 O.D. x 3/8 SQ. CS....	555-00044*
9	1	O RING, 1 1/2 x 1 3/4 x 1 1/8.....	565-00318*
10	2	O RING, 5 1/2 x 6 x 1/4.....	565-00355*
11	2	BACK-UP RING, 5 1/2 x 6 x 1/8.....	565-00655*
12	1	SEAL-LOADED LIP, 2 1/2 I.D.-3/8x1/4CS...	555-00288*
13	1	SEAL-WIPER, 2 1/2 I.D.....	556-00902*
14	2	FITTING, lub. str. 1/8.....	517-00300
15	2	BUSHING, ball 2" I.D.....	541-00515
		* Included in Seal Kit.....	565-00524





MODEL 80

SECONDARY BOOM CYLINDER

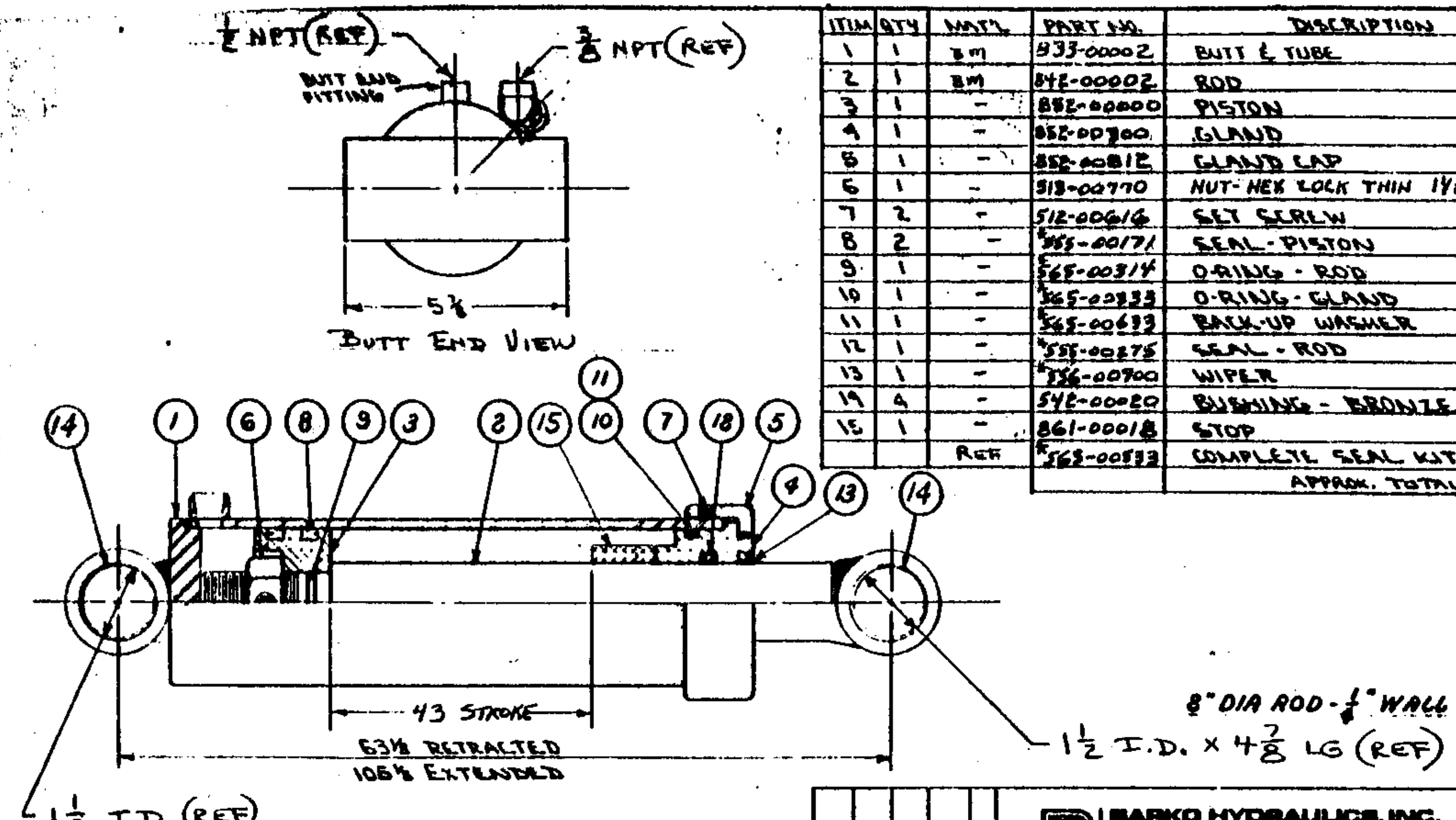
6 x 24 WITH 2¼" ROD

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



ITEM	QTY	MAT'L	PART NO.	DESCRIPTION	WT.
1	1	BM	833-00002	BUTT & TUBE	49
2	1	BM	842-00002	ROD	55
3	1	-	852-00800	PISTON	1
4	1	-	852-00700	GLAND	1.7
5	1	-	852-00812	GLAND CAP	3.6
6	1	-	513-00770	NUT-HEX LOCK THIN 1 1/2-12 UNF	
7	2	-	512-00616	SET SCREW	
8	2	-	565-00171	SEAL-PISTON	
9	1	-	565-00314	O-RING - ROD	
10	1	-	565-00333	O-RING - GLAND	
11	1	-	565-00633	BACK-UP WASHER	
12	1	-	555-00275	SEAL - ROD	
13	1	-	556-00900	WIPER	
14	4	-	542-00020	BUSHING - BRONZE	1.2
15	1	-	861-00018	STOP	.7
		REF	565-00533	COMPLETE SEAL KIT	1
				APPROX. TOTAL WEIGHT	114.2

REV	DATE	BY	DESCRIPTION
A	3/80	PK	REVISED ECN 1476
			SEE ECN 1929

BARKO HYDRAULICS, INC.
Office Superior, Wisconsin Phone (715) 392 5641
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: ASSY-HYD CYL - 8 1/2 × 43 × 2 (TELESCOPIC STABILIZER CYL [redacted] 80 [redacted])

[redacted]

DRAWN	DATE	APPR	DATE	SCALE	DWG SIZE	DWG NO	
PK	3-13-80	DHS.	4-15-80	NTS	B	X 812-00045	A

COMMERCIAL TANDEM PUMP (20/20)

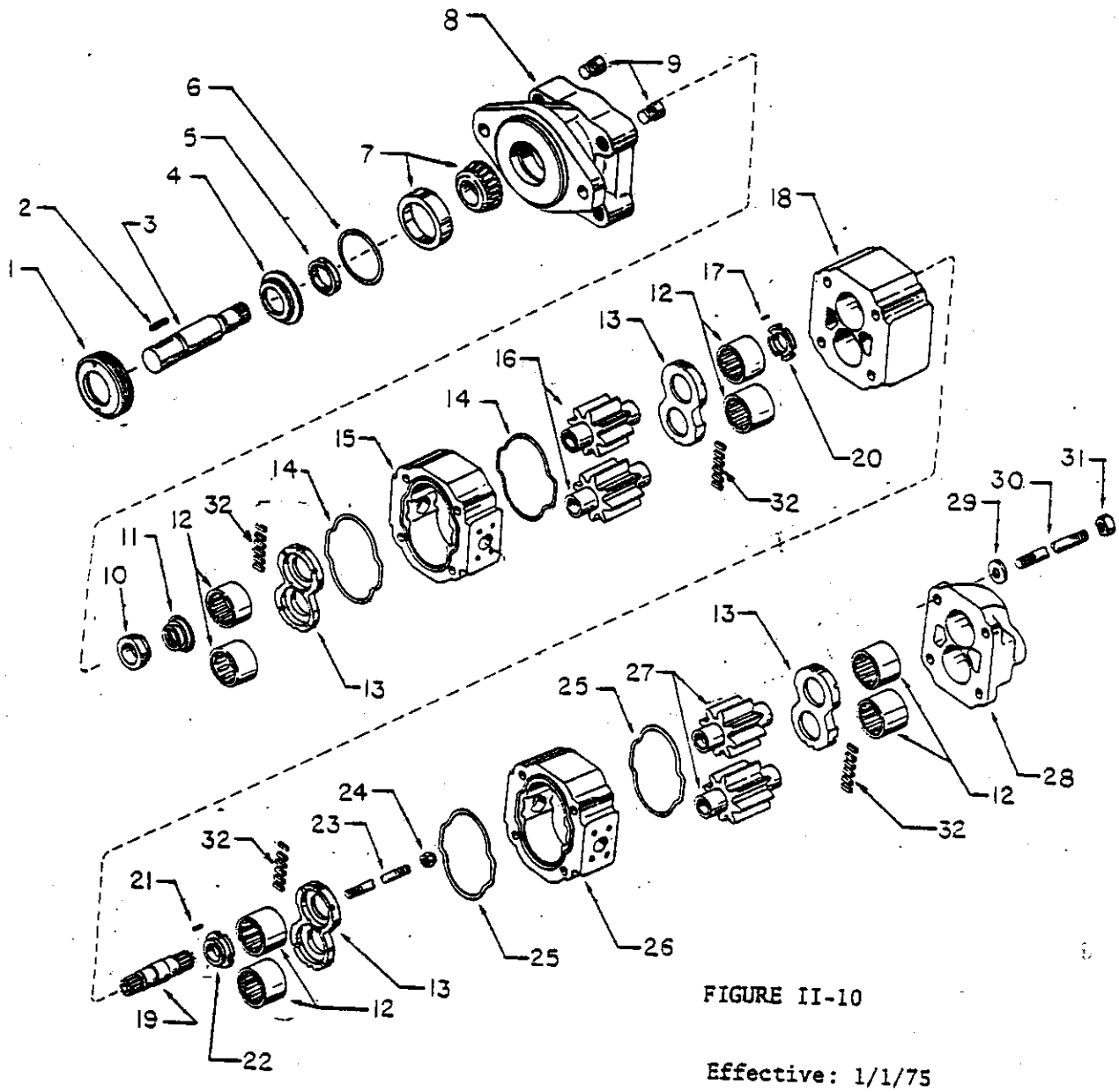


FIGURE II-10

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 TANDEM PUMP

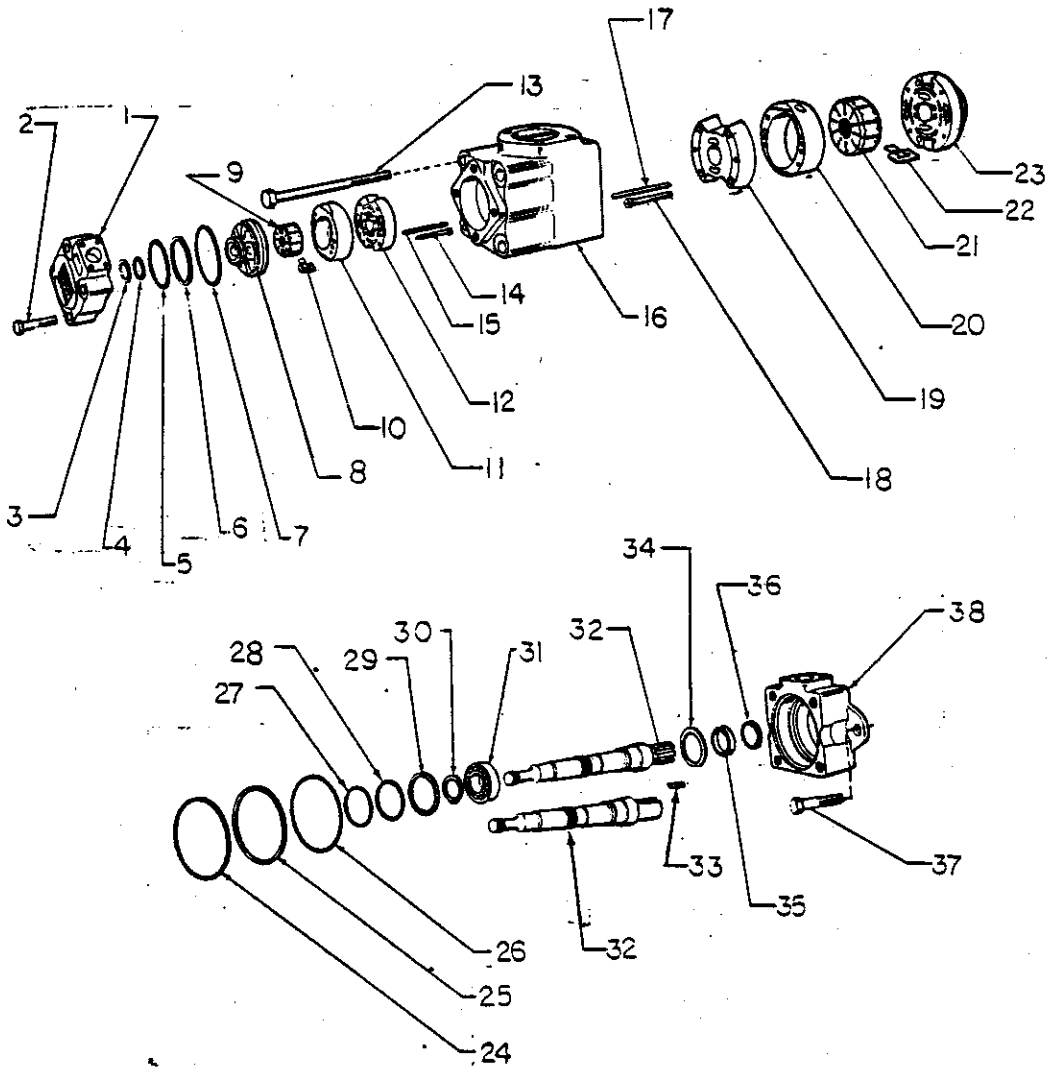


FIGURE II-12

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

Effective: 1/1/75

Supercedes Page Dated: 3/15/74

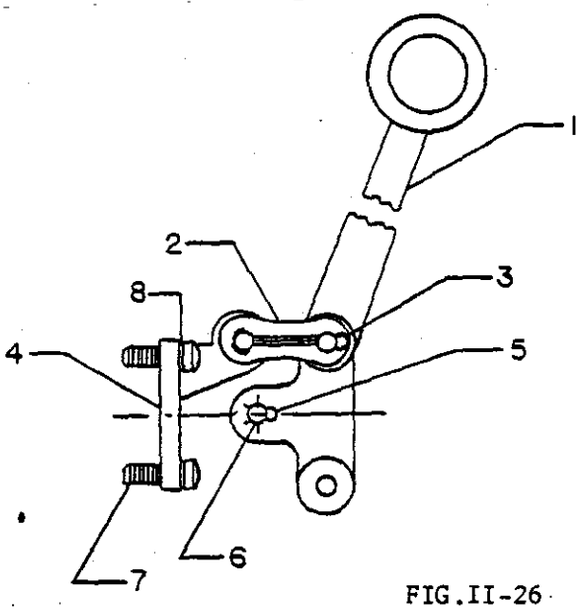


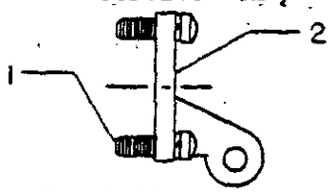
FIG.II-26

HANDLE ASSEMBLY

PARTS LIST

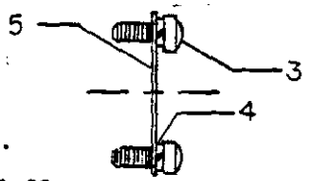
ITEM NO	QTY	DESCRIPTION	PART NUMBER
-	1	HANDLE, assembly.....	52006
(1)	1	HANDLE.....	(58009)
(2)	2	LINK, handle.....	(58003)
(3)	1	PIN, cotter.....	(58004)
(4)	1	BRACKET, handle.....	(58008)
(5)	1	PIN, cotter.....	(58001)
(6)	1	PIN, handle.....	(58000)
(7)	4	SCREW, machine.....	(58019)
(8)	4	LOCKWASHER.....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

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



HANDLE BRACKET

FIG.II-27



RETAINER ASSY.

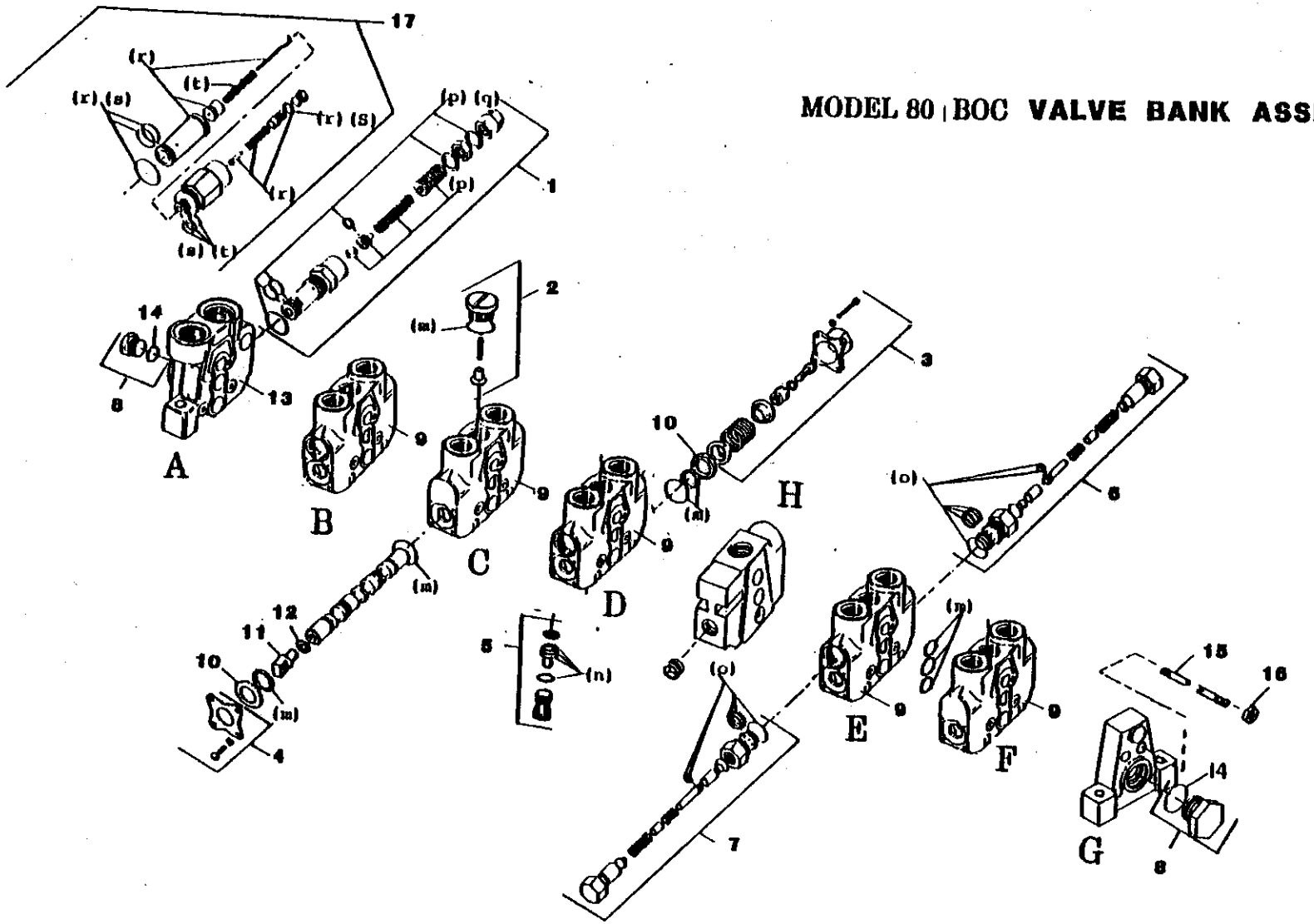
FIG.II-28

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	558-007.48	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)

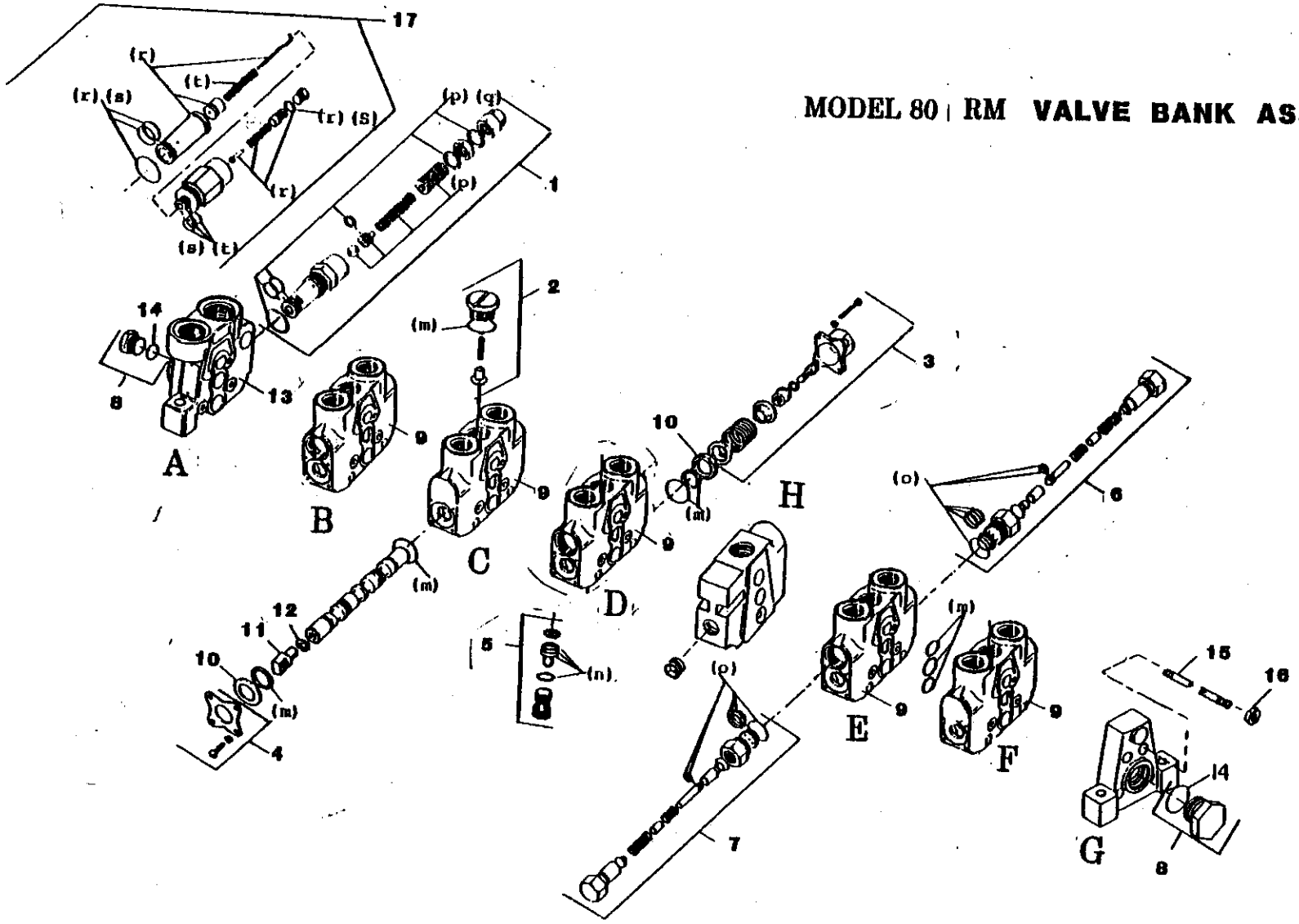
MODEL 80 BOC VALVE BANK ASSEMBLY (Continued)

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	551-00008								
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)	557-00150	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	Included in port relief seal kit	556-00660		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	558-007447	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

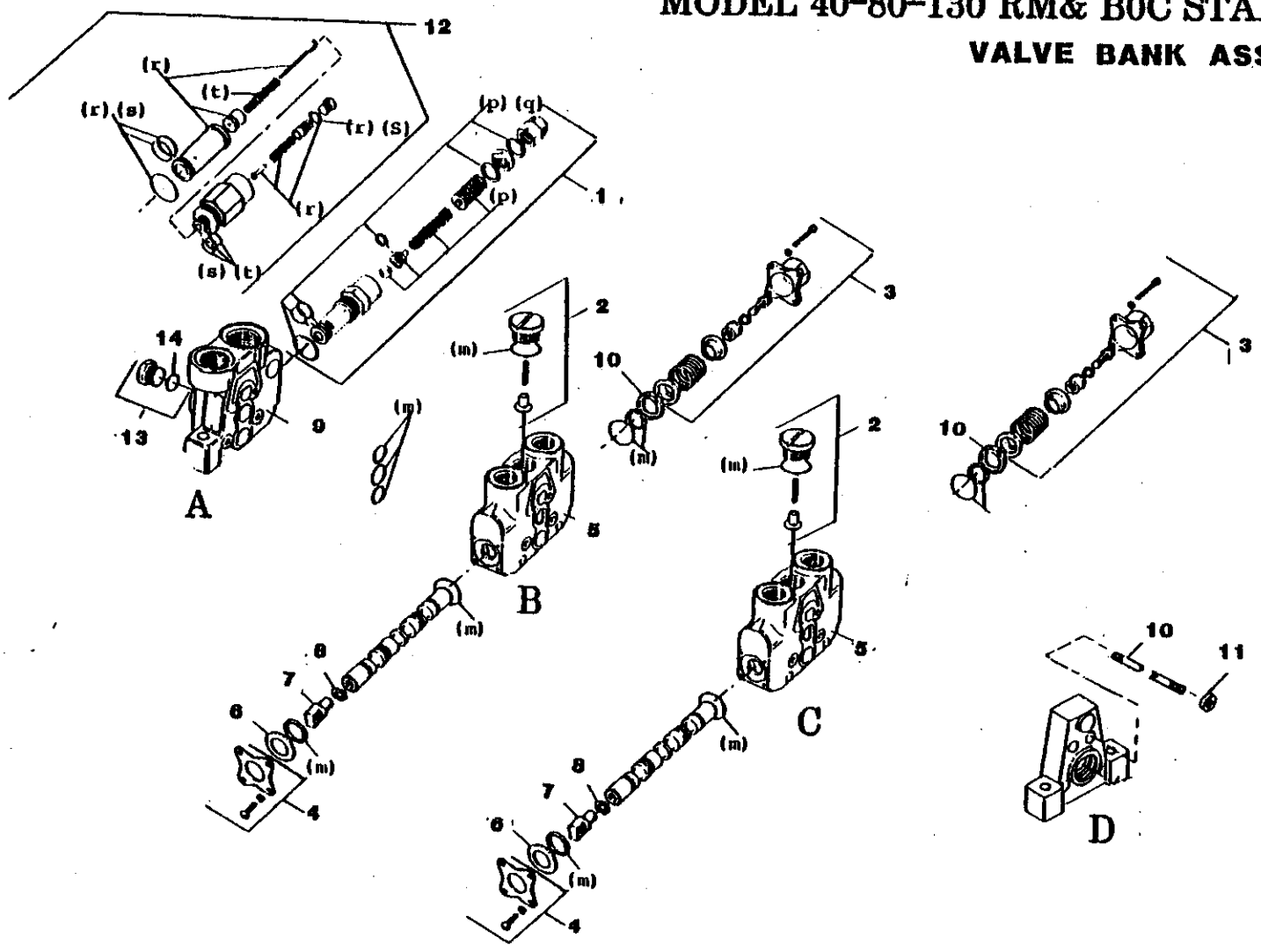
(N.S.S.) — NOT SOLD SEPARATELY

PART NO.	INCLUDED IN VALVE SECT. A	B	C	D	E	F	G	H
551-00065	X							X
551-00053		X	X	X	X	X		
551-00054		X	X	X	X	X		
551-00055		X	X	X	X	X		
551-00098		X		X	X			
551-000				X				
558-00100		X			X			
552-00002		X					X	
552-00028		X					X	
552-00029		X					X	
558-00534		X					X	
557-00019		X					X	
557-00017		X					X	
557-00015		X					X	
557-00017		X					X	
557-00015		X					X	
558-00510	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	558-00510	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

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

PARTS LIST

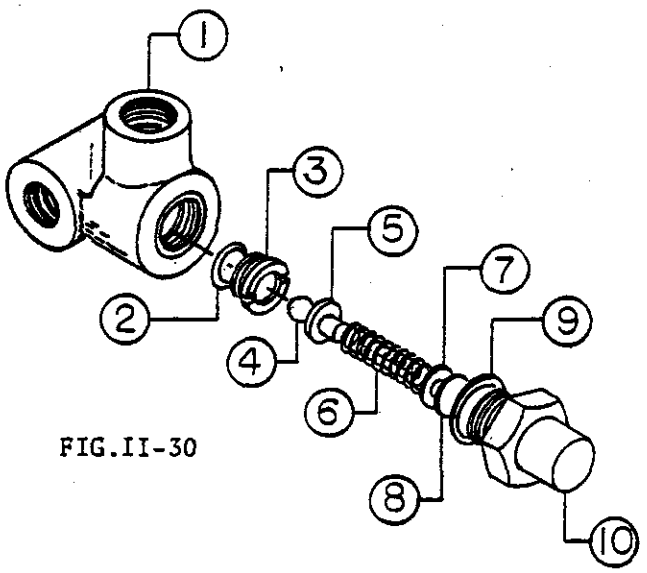


FIG.II-30

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.

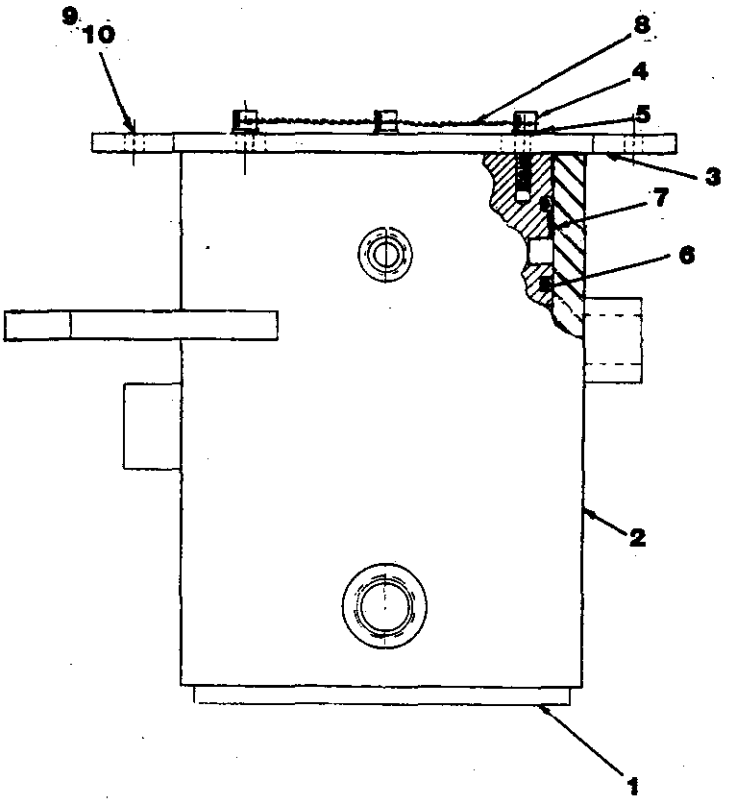
(1) Rebuilding kit includes items 2,3,5,6,7 and 9.... 52015
(2) Seal kit includes items 2 and 9..... 52016

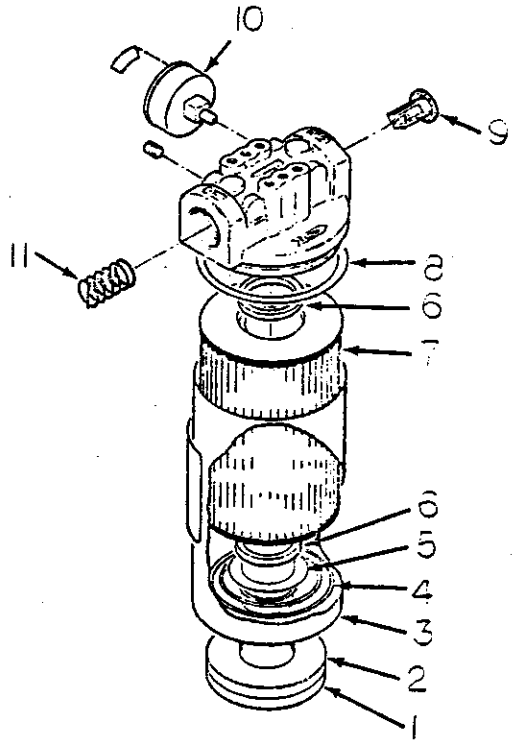
Effective: 1/1/75
Supercedes Page Dated: 3/15/74

HYDRAULIC COLLECTOR ASSEMBLY

7" 5 PORT #692-00035

ITEM	QTY	DESCRIPTION	PART NO.
0	1	ASSEMBLY, hyd collector.....	692-00035
1	1	SPOOL.....	693-00231
2	1	BARREL.....	693-00234
3	1	PLATE, mounting.....	691-00321
4	8	SCREW, cap.....	481-00238
5	8	WASHER, hi-collar lock.....	514-00311
6	6	SEAL, crown.....	550-00244
7	2	RING, wear.....	556-00790
8	1	WIRE, safety.....	539-00611
9	6	BOLT, 1/2 x 1 1/2 lg.....	510-00705
10	6	WASHER, 1/2 lock.....	514-00013





RETURN LINE FILTERS

PARTS LIST

ITEM	QTY.	DESCRIPTION	PART NO.
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
		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

BARKO MODEL 40-60-80 LOADERS

SECTION III - SERVICE INFORMATION

CONTENTS: