

BARKO
250 AC

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 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.

MODEL 250



WARNING

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

BARKO HYDRAULICS, INC.

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

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

CAUTION



-  1. Under no circumstances should any modifications be made to Barko loaders without factory authorization. This machine was designed to do a specific job and alterations to loader could result in injury to operator or machine.
-  2. If loader is not functioning properly, machine should be shut down and proper repair procedures followed.
-  3. Read this manual thoroughly. Get to know the operation and care of your Barko Loader.
-  4. Become as familiar as possible with the requirements of each loading job and the terrain you'll be working in before you start each job.
-  5. Go through the pre-start checklist thoroughly before you start each job — to make sure your equipment is in safe, working condition. Be sure all damage or defects are corrected first by qualified service personnel.
-  6. Make sure that all walking and climbing surfaces of the loader are free of dirt, debris, water, grease, oil, ice and snow . . . and don't leave loose tools and rags on the loader. One slip can be disastrous.
-  7. Be sure to wear shoes with some kind of non-slip soles—and always use both hands when climbing aboard the machine.
-  8. Do not allow anyone to ride on the outside of the cab or anywhere else on the machine while you're operating. Only the operator should be on the machine.
-  9. Be constantly aware of people and obstacles in your job area while operating—and never allow anyone to be under your boom or load.
-  10. If your machine is equipped with stabilizers, do not operate the loader until you have lowered the stabilizers and the machine is on firm, level ground or cribbing.
-  11. Try to keep your eyes on the load at all times. If you must look elsewhere, bring the loader to a stop.
-  12. **DO NOT OPERATE THE LOADER NEAR POWER LINES!** If you must work near them, have them disconnected first.
-  13. Be sure to wear safety equipment and clothing required for working with, or near heavy equipment—and keep that hard hat on.



ORDERING INSTRUCTIONS - PARTS

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

When ordering parts, please specify the following information:

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

START-UP INSTRUCTIONS

Your pre-operational check should include the following:

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

COLD WEATHER INSTRUCTIONS

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

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

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

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

SERVICE AND MAINTENANCE INSTRUCTIONS

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

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

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

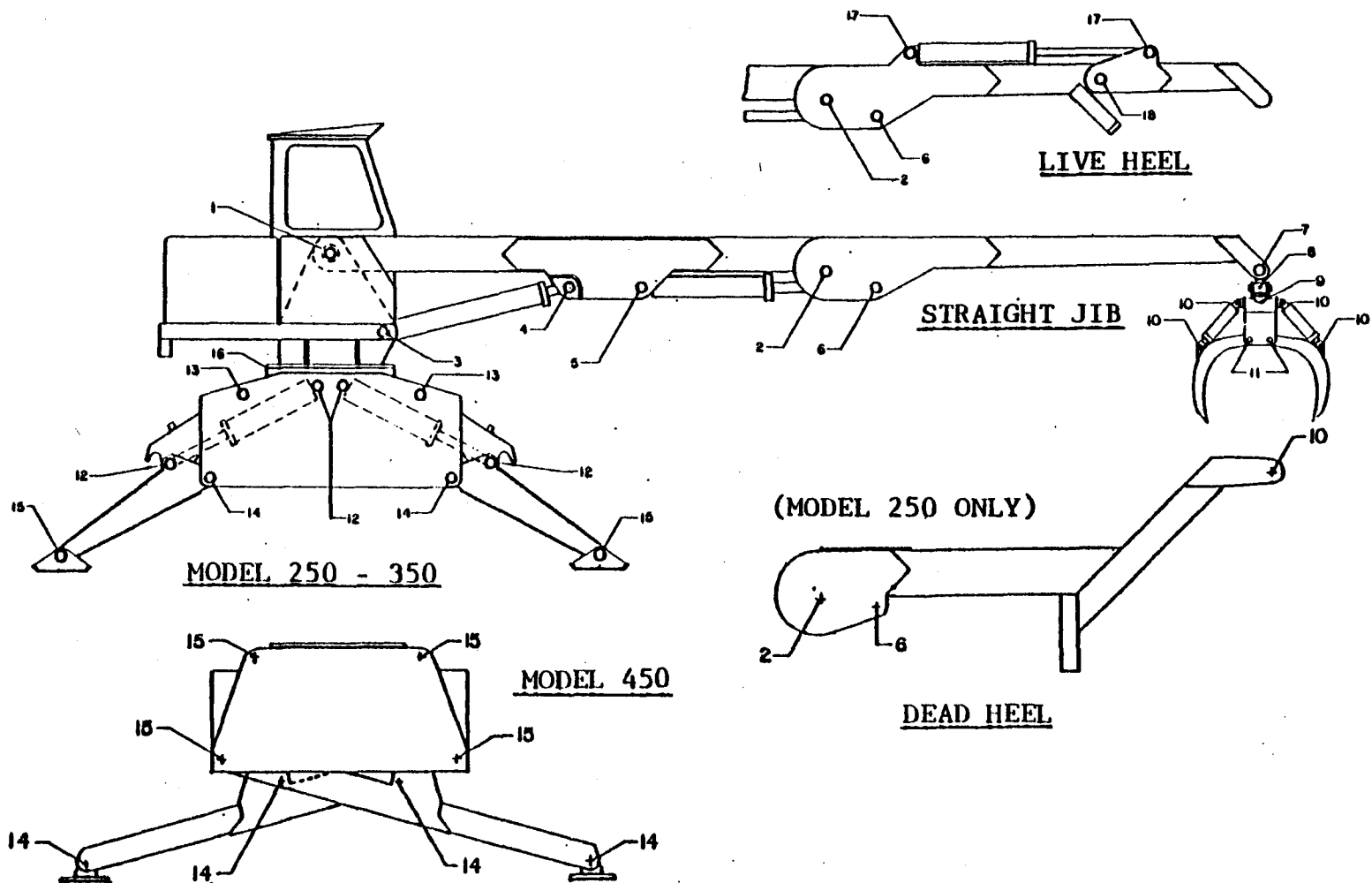
It is of utmost importance that the entire hydraulic system be kept clean and free from dirt, grit, water, air or acids at all times. Periodic draining, cleaning and refilling with new oil is recommended to insure proper performance and service. All openings in the hydraulic circuit must be properly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

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

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

LUBRICATION DIAGRAM

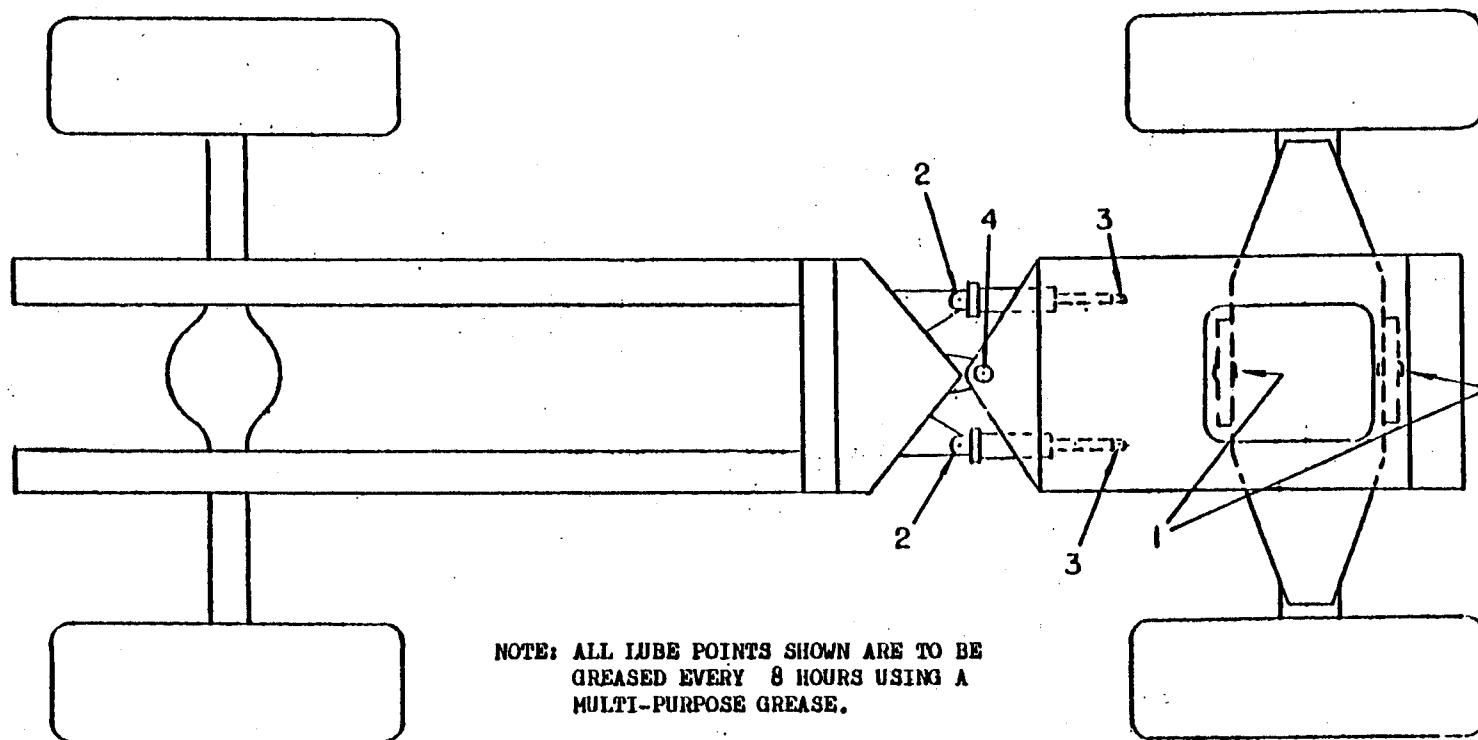
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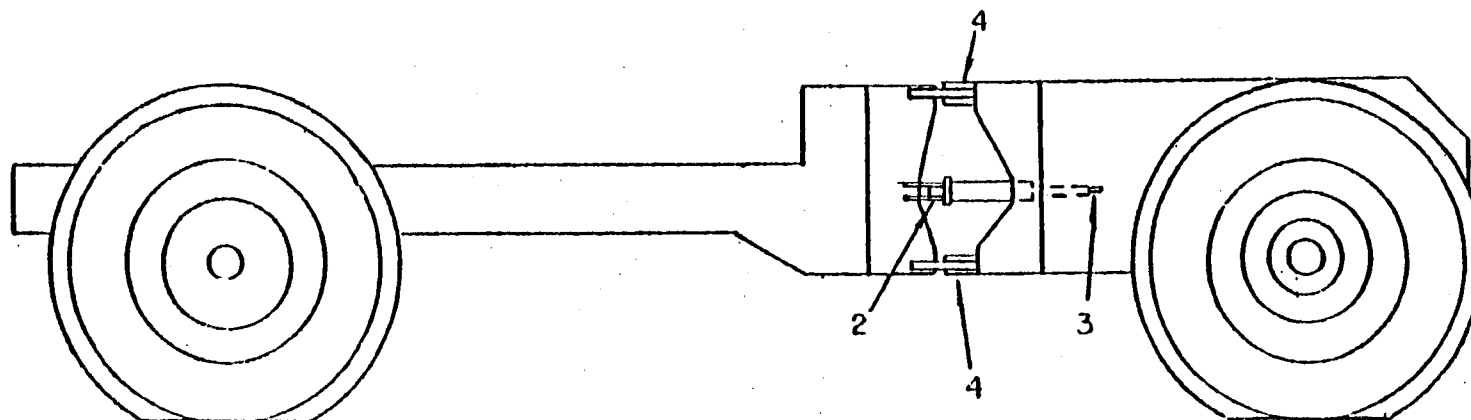
LUBRICATION CHART

MODELS 250 - 350 - 450

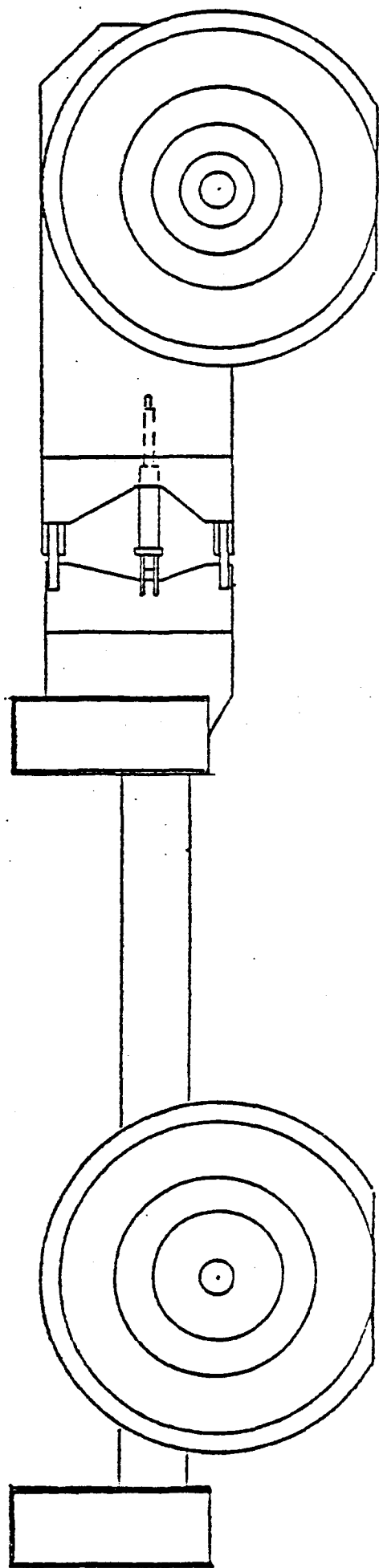
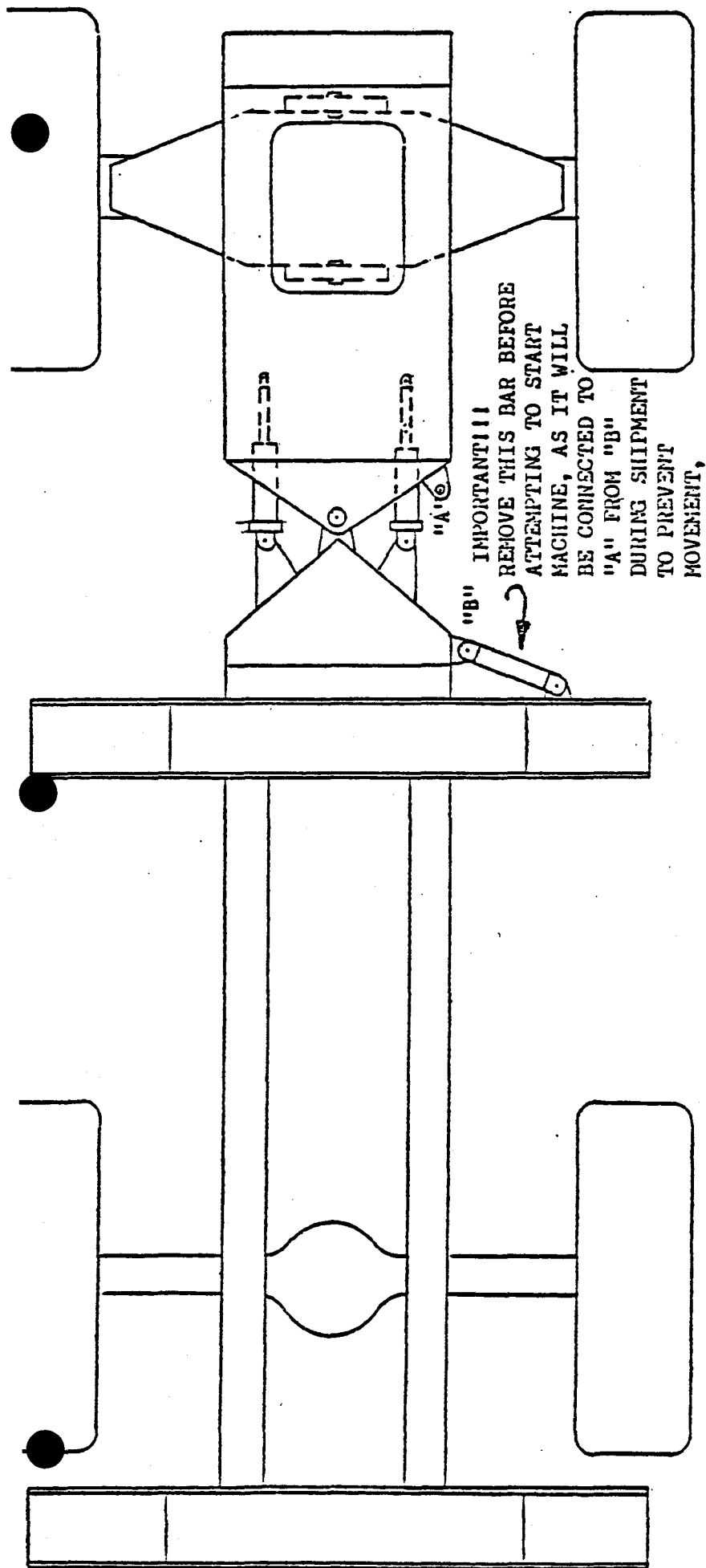
REF. NO.	LUBRICATION POINT	TYPE OF LUBRICATION	INTERVAL
1	Main Boom Pivot	Items 1-15 & 17, 18 Use a Multi-Purpose grease. Apply with pressure gun until grease is visible at end of bushings.	15 hours or twice weekly (minimum)
2	Jib Knuckle Pivot	"	"
3	Main Lift Cylinder	"	"
4	Main Lift Cylinder	"	"
5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



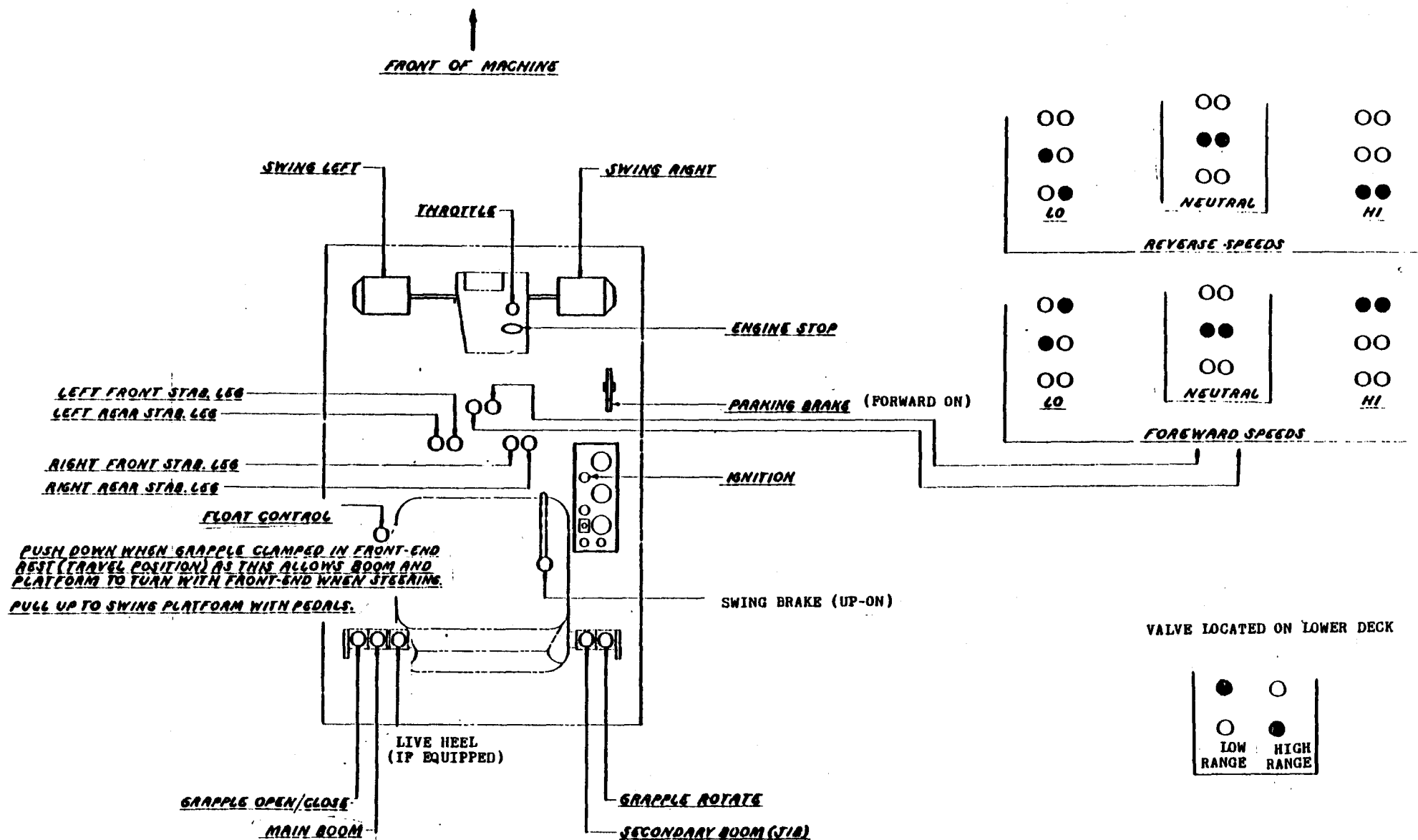
NOTE: ALL LUBE POINTS SHOWN ARE TO BE
GREASED EVERY 8 HOURS USING A
MULTI-PURPOSE GREASE.



LUBRICATION POINTS-CARRIER FRAME



MODEL 250 ARTICULATED CARRIER



WARRANTY

Barko Hydraulic Loader

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

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

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

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

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

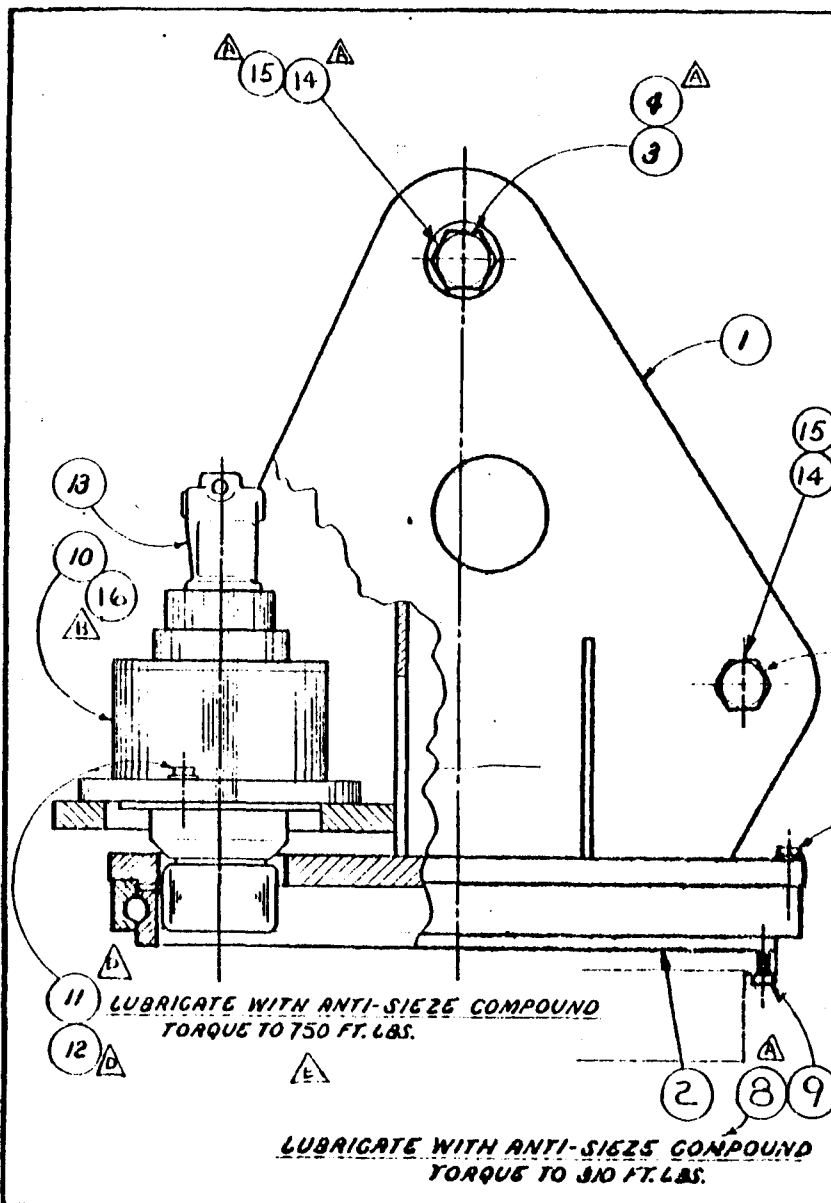
This Warranty does not extend to any of the following:

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

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

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

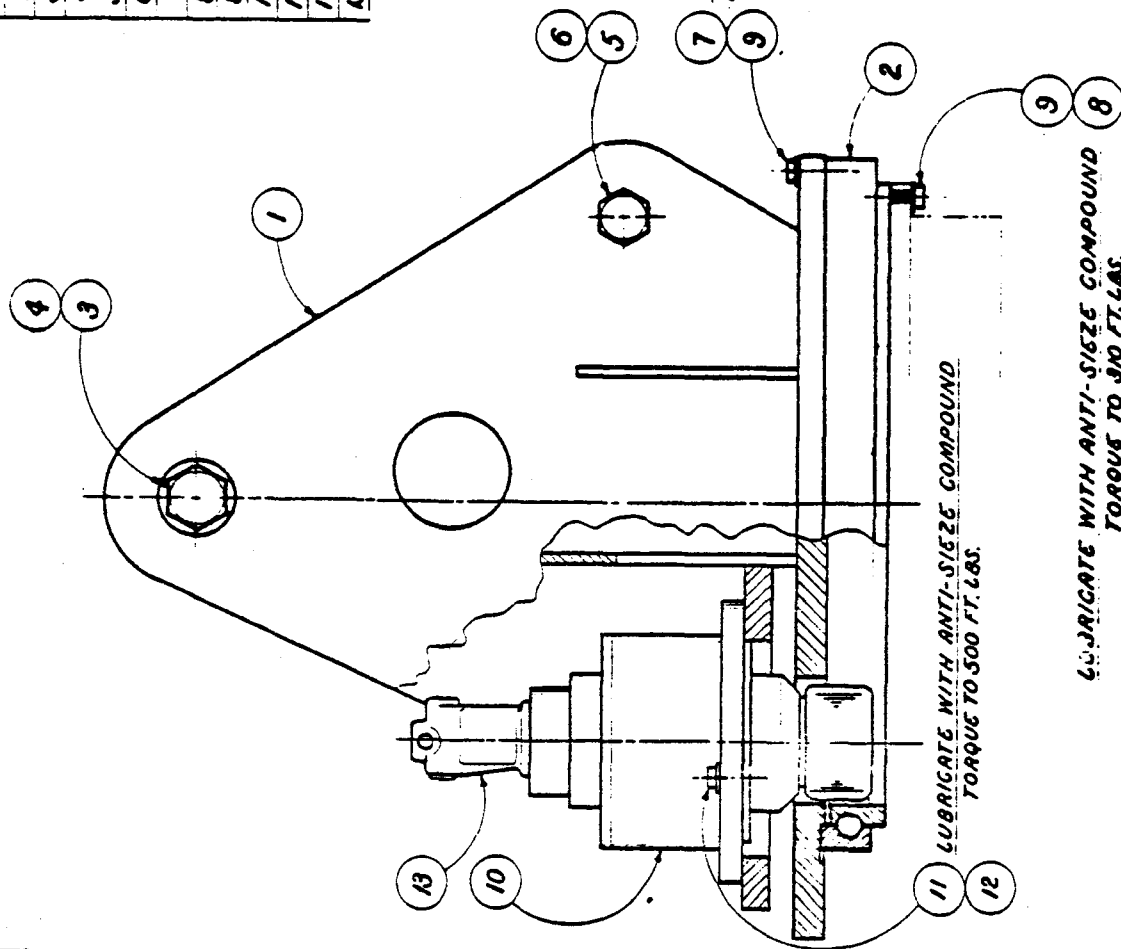
The warranties stated herein are in lieu of all other warranties whether written or oral, statutory, express or implied, including any warranty of merchantability or fitness for purpose.



ITEM	QTY	MATL.	PART NO	DESC.	WT
1	REF.	BN	124-00127	WLDMT-HEAD PLANET 250	2227.3
2	1		541-00564	BAS. - TURNABLE FORMMET-1243 B 7	931.0
3	1		482-00286	BOLT- BODY FIT	34.8
4	1		491-00715	NUT- HEX 2 1/2 - 12 UN	2.8
5	1		482-00331	BOLT- BODY FIT	27.0
6	1		481-00711	NUT- HEX 2 - 12 UN	2.0
7	36		511-00427	BOLT-NH 3/4 - 10 x 2 3/4" LG. GR 9	18.5 Tst
8	36		511-00426	BOLT-NH 3/4 - 10 x 2 1/2" LG. GR 9	11.8 Tst
9	72		514-00151	WASHER- FLAT 3/4	2.0 Tst
10	1		535-00540	PLANET-GEAR PROD D220-00007-1	700.0
11	9		511-00466	BOLT-NH 1-8 x 3" LG. GR 9	
12	9		514-00154	WASHER- FLAT 1" GR 9	
13	1		560-00047	MOTOR-VICKERS MFE 19-9-21	22.0
14	2		512-00616	SCREW-SET 3/8 - 16 x 3/8 LG	
15	2		550-00000	PLUG-TEFLON	
16	1		072-00016	PROCEDURE - OIL IN GEAR BOX	

10-31 13 ECN 1970 11-17 13 ECN 1567 12-17 13 ECN 1544 13-17 13 ECN 1544 14-17 13 ECN 1544 15-17 13 ECN 1544 16-17 13 ECN 1544 17-17 13 ECN 1544 18-17 13 ECN 1544 19-17 13 ECN 1544 20-17 13 ECN 1544 21-17 13 ECN 1544 22-17 13 ECN 1544 23-17 13 ECN 1544 24-17 13 ECN 1544 25-17 13 ECN 1544 26-17 13 ECN 1544 27-17 13 ECN 1544 28-17 13 ECN 1544 29-17 13 ECN 1544 30-17 13 ECN 1544 31-17 13 ECN 1544 32-17 13 ECN 1544 33-17 13 ECN 1544 34-17 13 ECN 1544 35-17 13 ECN 1544 36-17 13 ECN 1544 37-17 13 ECN 1544 38-17 13 ECN 1544 39-17 13 ECN 1544 40-17 13 ECN 1544 41-17 13 ECN 1544 42-17 13 ECN 1544 43-17 13 ECN 1544 44-17 13 ECN 1544 45-17 13 ECN 1544 46-17 13 ECN 1544 47-17 13 ECN 1544 48-17 13 ECN 1544 49-17 13 ECN 1544 50-17 13 ECN 1544 51-17 13 ECN 1544 52-17 13 ECN 1544 53-17 13 ECN 1544 54-17 13 ECN 1544 55-17 13 ECN 1544 56-17 13 ECN 1544 57-17 13 ECN 1544 58-17 13 ECN 1544 59-17 13 ECN 1544 60-17 13 ECN 1544 61-17 13 ECN 1544 62-17 13 ECN 1544 63-17 13 ECN 1544 64-17 13 ECN 1544 65-17 13 ECN 1544 66-17 13 ECN 1544 67-17 13 ECN 1544 68-17 13 ECN 1544 69-17 13 ECN 1544 70-17 13 ECN 1544 71-17 13 ECN 1544 72-17 13 ECN 1544 73-17 13 ECN 1544 74-17 13 ECN 1544 75-17 13 ECN 1544 76-17 13 ECN 1544 77-17 13 ECN 1544 78-17 13 ECN 1544 79-17 13 ECN 1544 80-17 13 ECN 1544 81-17 13 ECN 1544 82-17 13 ECN 1544 83-17 13 ECN 1544 84-17 13 ECN 1544 85-17 13 ECN 1544 86-17 13 ECN 1544 87-17 13 ECN 1544 88-17 13 ECN 1544 89-17 13 ECN 1544 90-17 13 ECN 1544 91-17 13 ECN 1544 92-17 13 ECN 1544 93-17 13 ECN 1544 94-17 13 ECN 1544 95-17 13 ECN 1544 96-17 13 ECN 1544 97-17 13 ECN 1544 98-17 13 ECN 1544 99-17 13 ECN 1544 100-17 13 ECN 1544		BARKO HYDRAULICS, INC. Office: Superior, Wisconsin Phone: (715) 382-5541 Mailing address: P.O. Box 6227 Duluth, Minnesota 55826		ASSY-HEAD PLANET		PART NO 122-00131	
VOLUNTARILY LUBRICATED OILS AND GREASES FRACTIONAL 80 - 2 1/2 SAE 80 - 2 1/2 SAE 80 - 2 1/2		APPROVAL LP		DATE 2-26-79		SCALE 1" = 1"	
REV. DATE 3-14-79		APPR JCM		DATE 3-14-79		SCALE 1" = 1"	

ITEM	QTY	MATL.	PART NO.	DESC.	WT.
1	1	BM	124129	WLDMT-HEAD	2355.1
2	1		91569	BAS. - TURNABLE	952.0
3	1		982286	BOLT-HEX 2 1/4" DIA = 20" LG	94.0
4	1		13949	NUT-NYLOCK 2 1/4"	2.1
5	1		982331	BOLT-HEX 2" DIA = 27 1/4" LG	27.0
6	1		13917	NUT-NYLOCK 2"	2.0
7	36		11927	BOLT-HEX 3/4" NO UNC = 2 1/4" LG. LB	19.570
8	36		11925	BOLT-HEX 3/4" NO UNC = 2 1/4" LG. LB	11.870
9	72		18151	WASHER - FLAT 3/4"	2.070
10	1		35540	GEARBOX - PLANETARY	700.0
11	10		11966	BOLT-HEX 1-8 NC x 3" LG. LB	
12	10		19159	WASHER - FLAT 1" LB	
13	1		60047	MOTOR-DRIVE	22.0



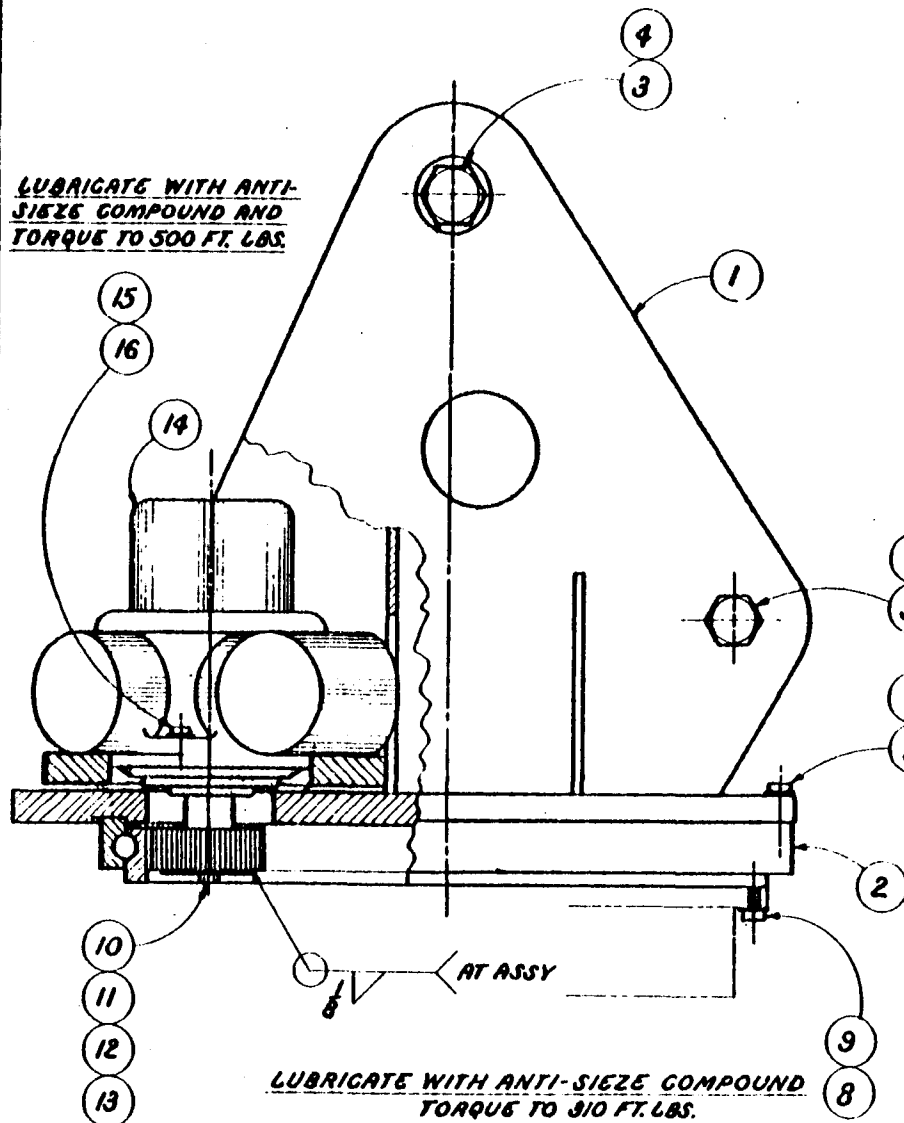
LUBRICATE WITH ANTI-SIEZE COMPOUND
TORQUE TO 310 FT. LBS.

LUBRICATE WITH ANTI-SIEZE COMPOUND
TORQUE TO 500 FT. LBS.

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

 BARKO HYDRAULICS, INC. Office: Superior, Wisconsin Phone: (715) 382-8441 Mailing address: P.O. Box 8227 Duluth, Minnesota 55808		TITLE ASSEMBLY-HEAD, M&S PLANETARY GEARBOX (270° STOPS)		REV. 1-79 1-79 1-79	DATE 4-18-79	BY 11/11	DATE 4-18-79
DESCRIPTION RELEASED CEN B/O		SCALE 1" = 1"		SCALE 1" = 1"		SCALE 1" = 1"	
QUANTITY 1		QUANTITY 1		QUANTITY 1		QUANTITY 1	
WEIGHT 2355.1		WEIGHT 952.0		WEIGHT 94.0		WEIGHT 2.1	
WEIGHT 27.0		WEIGHT 2.0		WEIGHT 19.570		WEIGHT 11.870	
WEIGHT 2.070		WEIGHT 700.0		WEIGHT 22.0		WEIGHT 22.0	

LUBRICATE WITH ANTI-SIEZE COMPOUND AND TORQUE TO 500 FT. LBS.



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

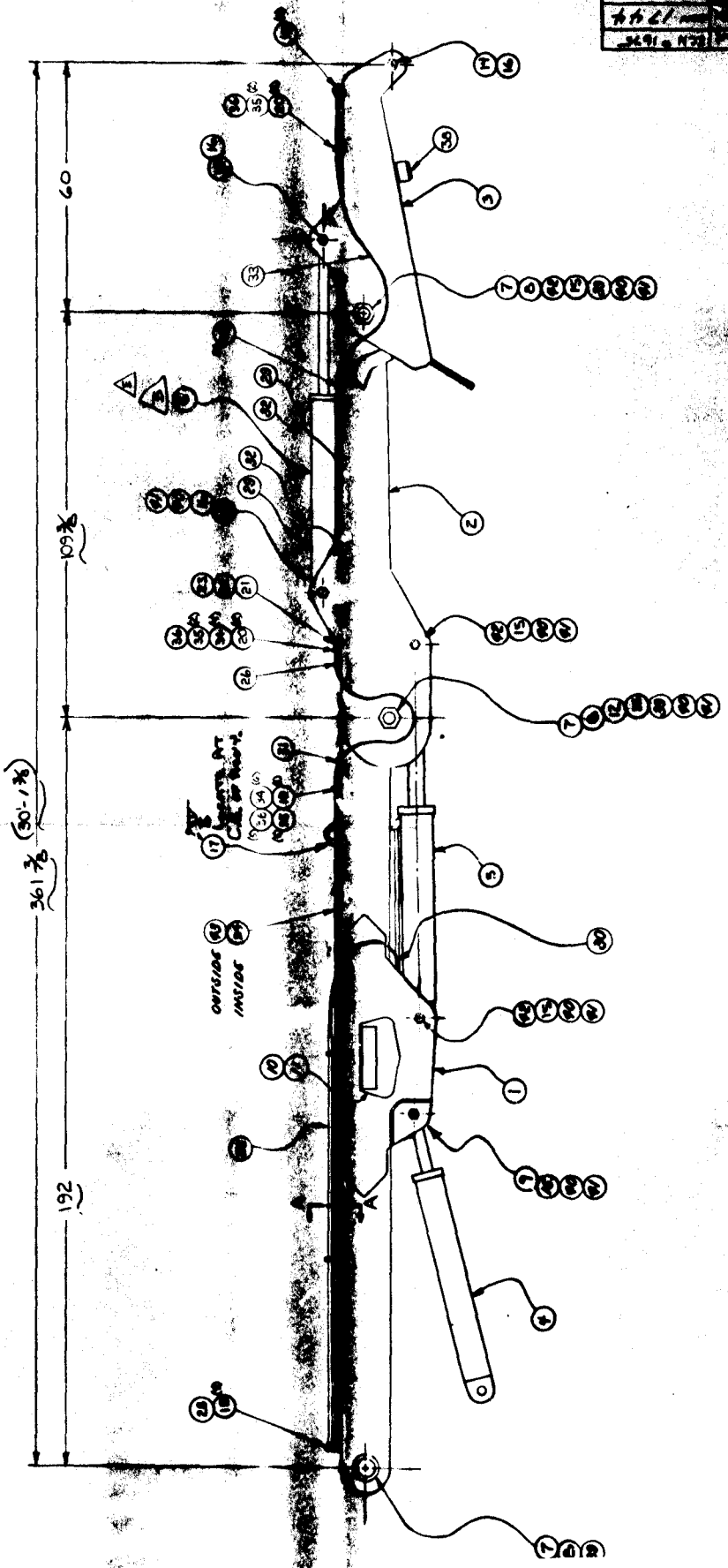
ITEM	QTY.	MATL.	PART NO.	DESC.	WT.
1	1	BM	124130	WLDMT-HEAD	2335.0
2	1		41564	BAG.-TURNABLE	951.0
3	1		482886	BOLT-HEX 2 1/2" DIA x 29" LG.	44.0
4	1		13419	NUT-NYLOCK 2 1/2"	2.5
5	1		482331	BOLT-HEX 2" DIA x 27 1/2" LG.	27.0
6	1		13417	NUT-NYLOCK 2"	2.0
7	36		11427	BOLT-HEX 3/4-10 UNC x 2 1/4" LG. L9	13.5 Tst
8	36		11425	BOLT-HEX 3/4-10 UNC x 2 1/4" LG. L9	11.5 Tst
9	72		14151	WASHER-FLAT 3/4"	2.0 Tst
10	1		401807	GEAR-PINION	21.0
11	1		121410	PLATE-PINION LOCK	2.0
12	1		14100	WASHER-LOCK 5/8"	
13	1		10752	BOLT-HEX 5/8-11 UNC x 1 1/4" LG. 6A.5	
14	1		60007	MOTOR-SWING	700.0
15	5		11450	BOLT-HEX 7/8-9 UNC x 3" LG. L9	
16	5		14152	WASHER-FLAT 7/8" L9	

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

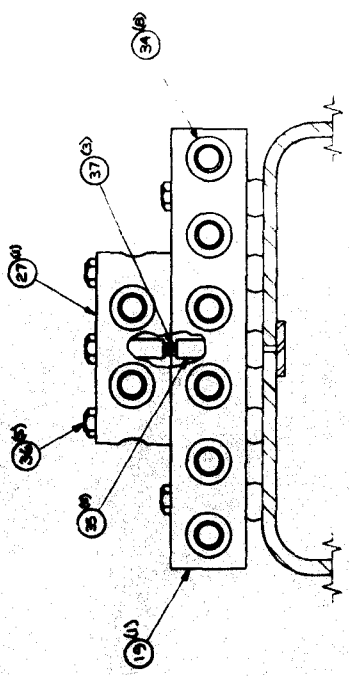
RELEASED FOR LP 4-15-79		BARKO HYDRAULICS, INC. Office: Superior, Wisconsin Phone: (715) 392-6641 Mailing address: P.O. Box 8227 Duluth, Minnesota 55808			
		TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONAL = ± 1/32 DECIMAL .00 = ± .010 .000 = ± .008 ANGULAR ± 1/2°		TITLE ASSEMBLY-HEAD M250 JUNDSTRAND SWING MTR. (270° STOPS)	
DRAWN LP		DATE 4-16-79		FIRST USED 250 NEXT ASSY	
APPR. JEM		DATE 4-18-79		EST. WT. 3611.5 ACT. WT.	
REV. DATE		SCALE 1" = 8"		DRG. NO. 122134	

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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41621
 3491-1173

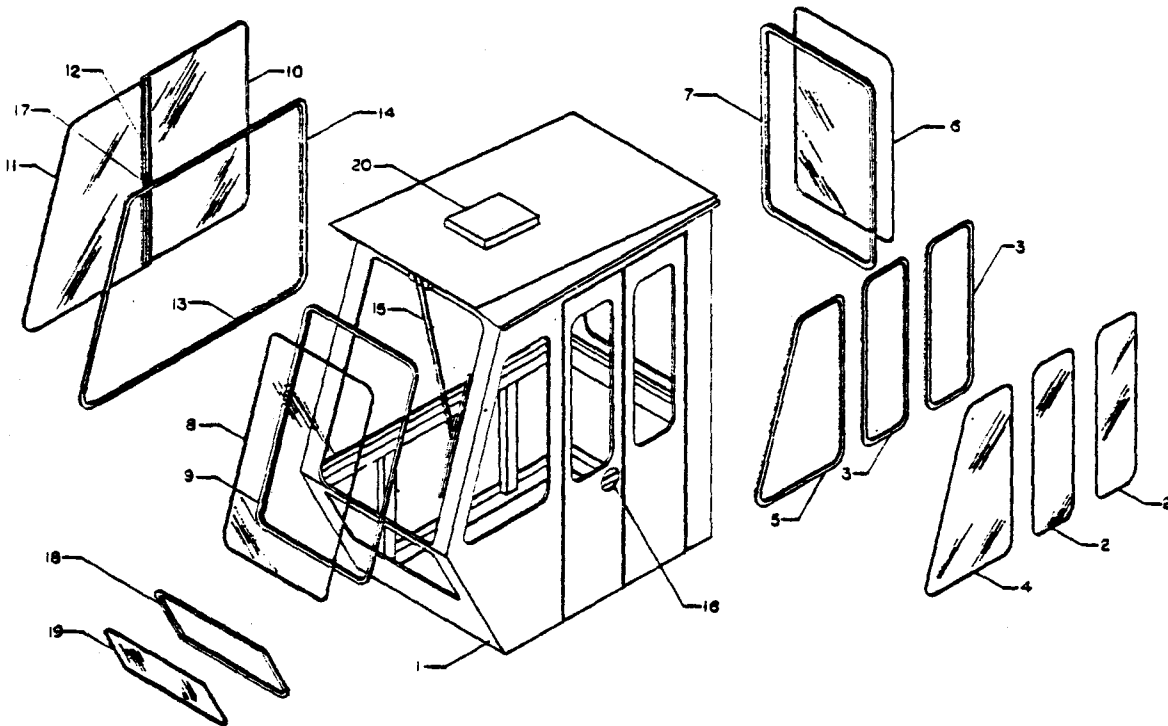


SECT. A-A



1	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
2	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
3	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
4	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
5	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
6	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
7	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
8	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
9	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
10	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
11	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
12	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
13	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
14	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
15	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
16	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
17	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
18	16	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
19	3	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
20	4	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
21	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
22	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
23	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
24	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
25	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
26	4	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
27	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
28	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
29	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
30	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
31	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
32	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
33	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
34	26	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
35	26	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
36	26	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
37	6	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
38	1	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
39	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
40	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
41	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
42	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1
43	2	2.0	500-00000	ADAPT. CLAMP - 12MJ	1

HIGH VISION CAB



Effective: 4/15/77

OPERATORS CAB & ACCESSORIES

34" x 51" LONG

HIGH VISION

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

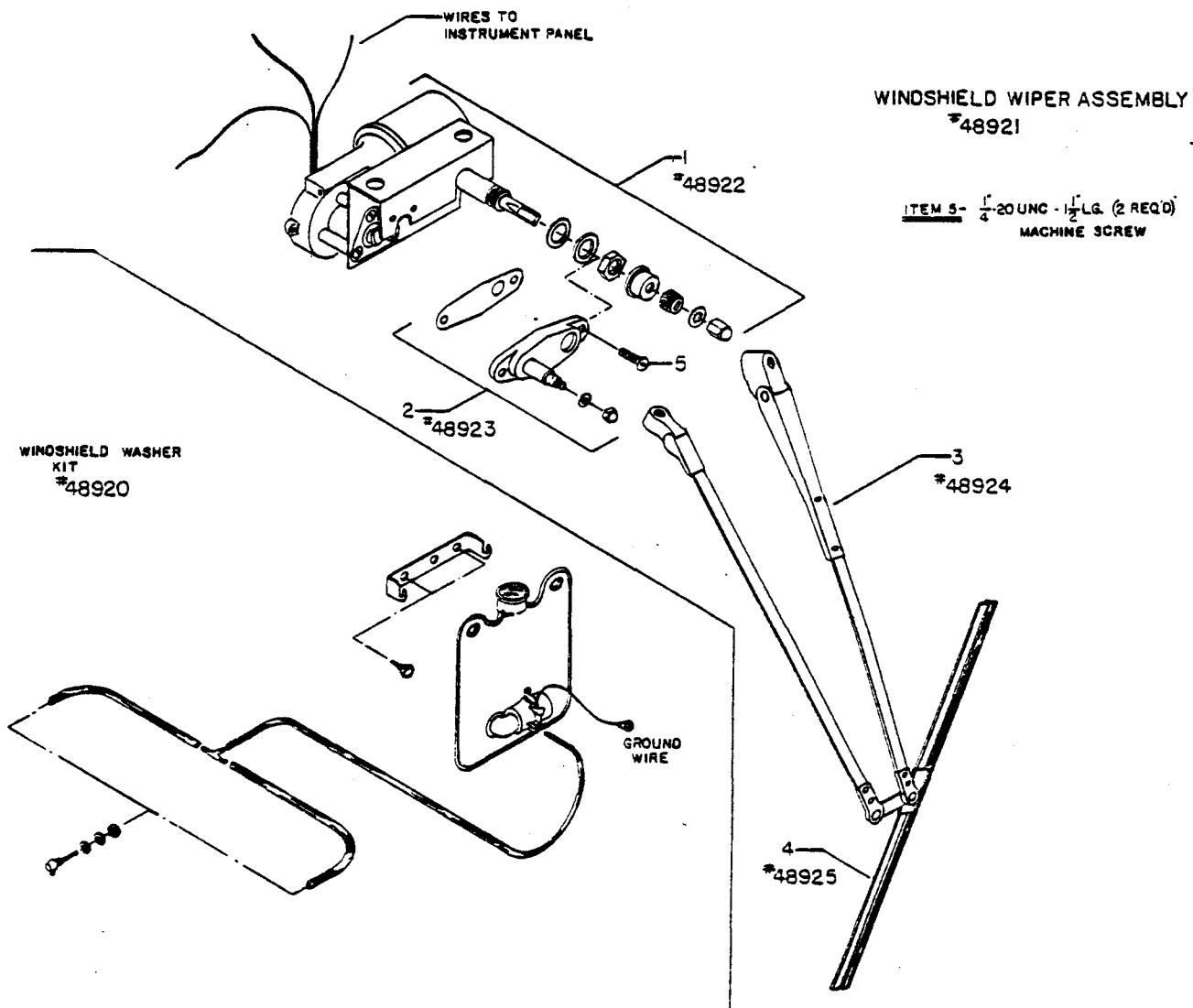
*NOTE: All window casing is sold by the foot. Approximate lengths are given in parts list above. When ordering, order by part number #36200 and proper length in feet, except item #14, order by part number 36205.

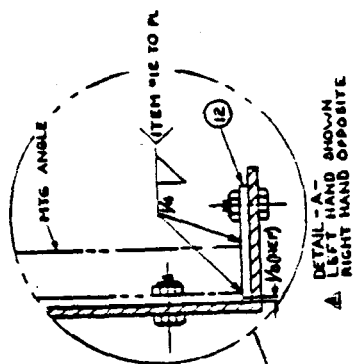
**Channel for sliding window #36250 is sold in 5-foot lengths. When ordering, order 10 feet of sliding channel for complete window.

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

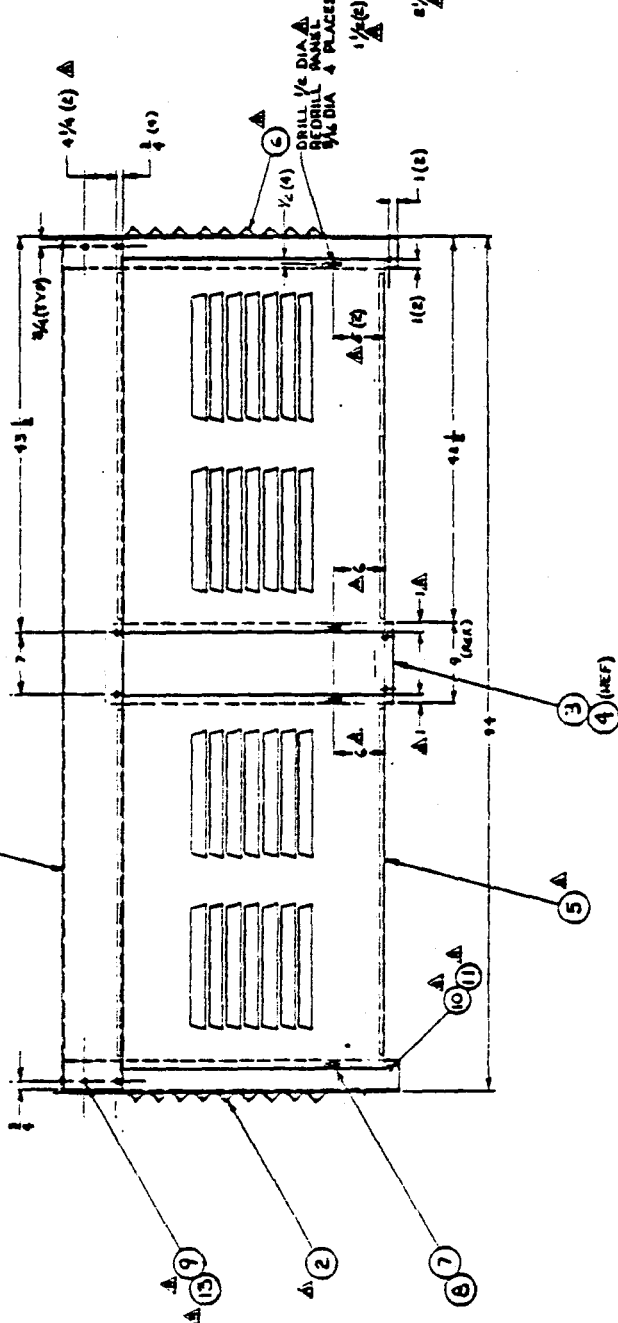
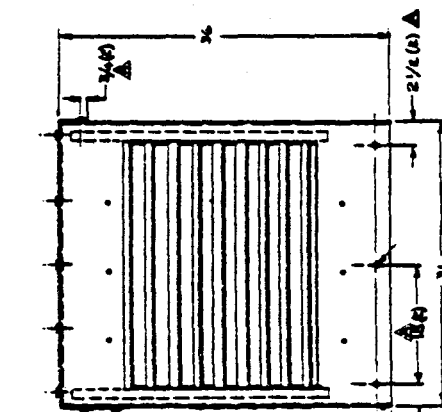
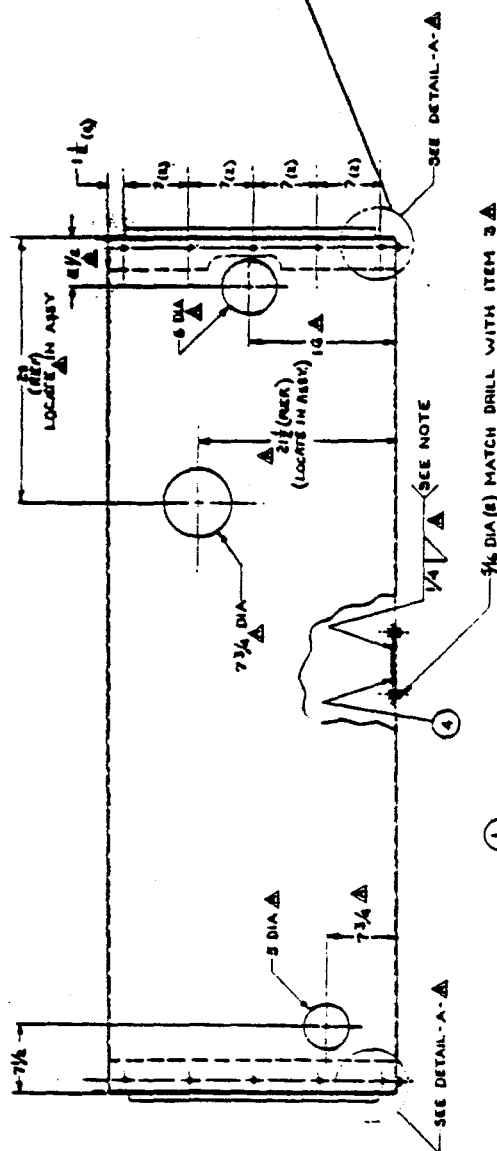
NOTE: ALL GLASS ON CAB IS FOR COZY CAB

Effective: 4/15/77





DETAIL - A -
LEFT HAND SHOWN
RIGHT HAND OPPOSITE

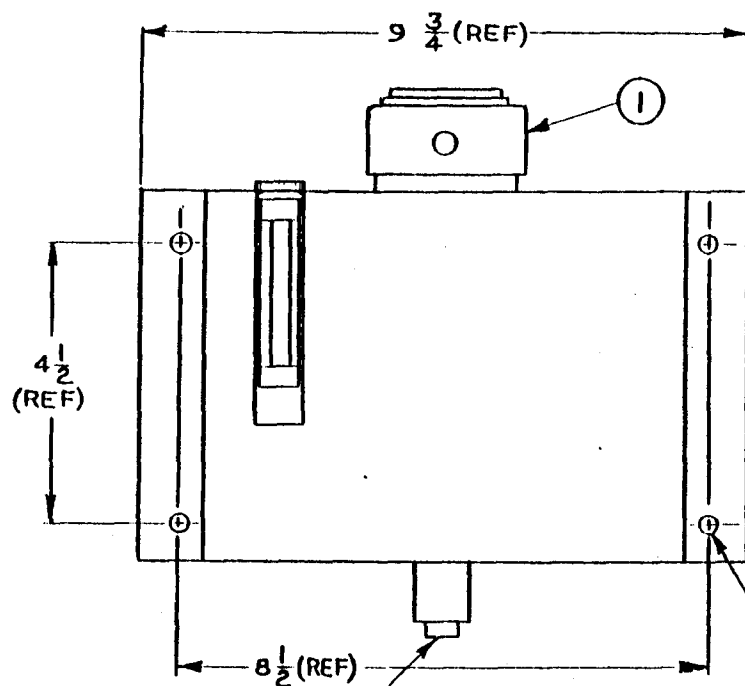


MODEL 250
SHROUDING ASSEMBLY
PARTS LIST

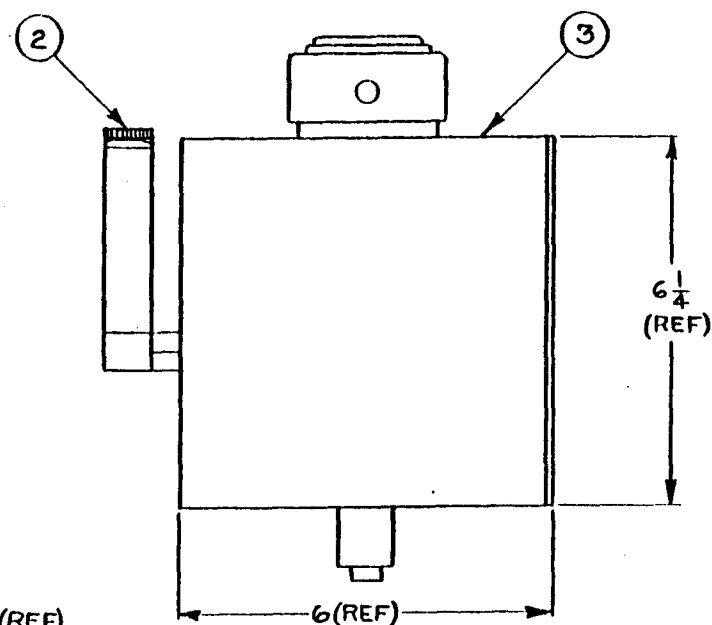
<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	704-00016
1	1	PLATE, shroud hood.....	702-00234
2	1	WELDMENT, end panel left.....	702-00118
3	1	PLATE, back brace.....	701-00325
4	1	PLATE, rectangular ¼ x 2 x 9 Lg.....	441-00213
5	2	PLATE, louver door.....	701-00293
6	1	WELDMENT, end panel right.....	702-00119
7	4	PIN, yoke.....	515-00095
8	4	PIN, latch.....	539-00599
9	18	BOLT, self tapping 5/16 x 3/4" Lg.....	514-00442
10	10	BOLT, HEX 5/16 x 1"Lg.....	510-00631
11	10	NUT, nylock 5/16 UNC.....	513-00426
12	2	PLATE, rectangular ¼ x 2 x 3"LG.....	441-00001
13	18	WASHER, lock 5/16".....	514-00060

Effective date 3-9-81

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

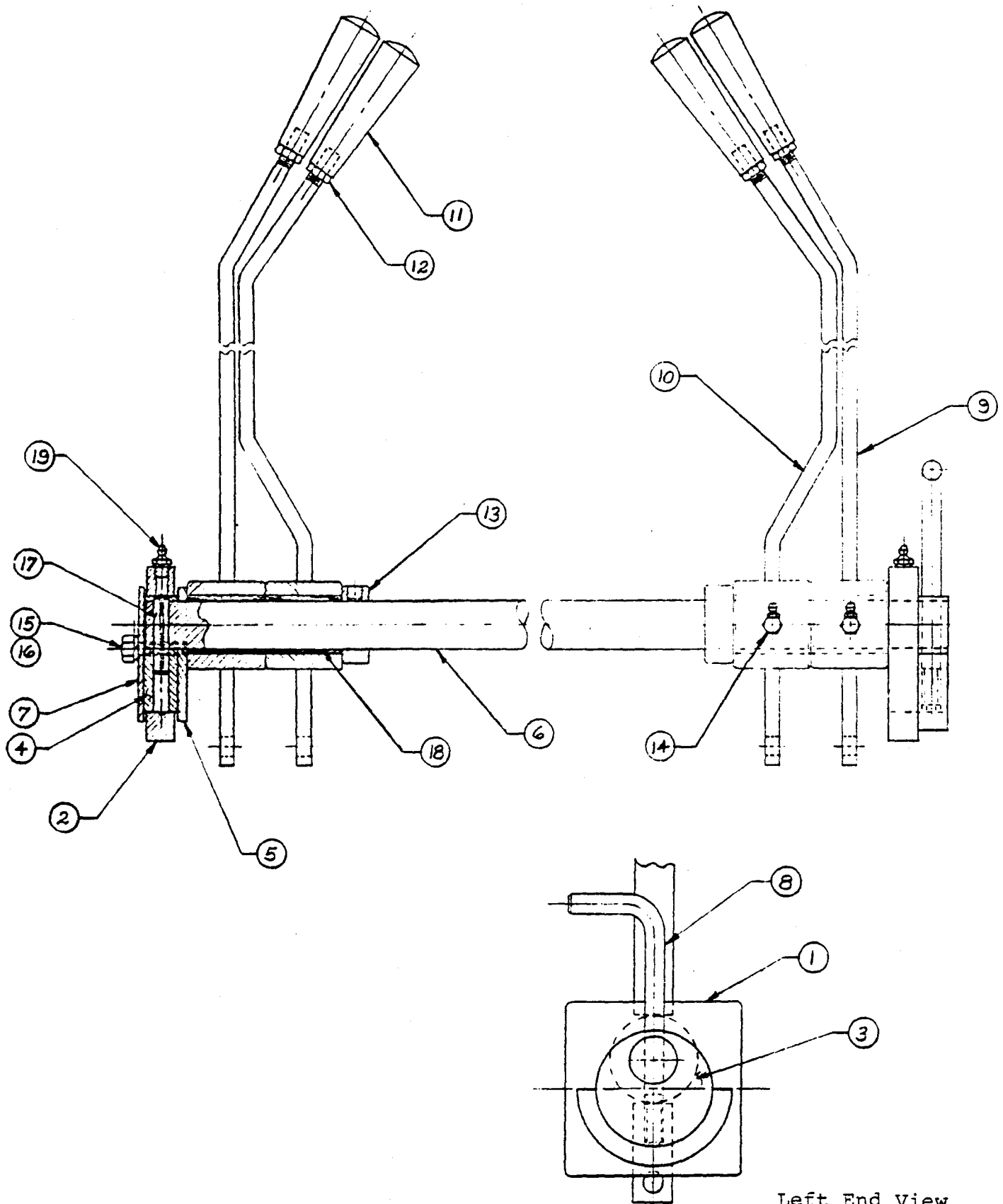


PLUG-IRON $\frac{1}{2}$ 522-00323
(REF- FOR STORAGE ONLY)



REV. DATE BY DESCRIPTION		 BARKO HYDRAULICS, INC. Office: Superior, Wisconsin Phone: (715) 392-6641 Mailing address: P.O. Box 6227, Duluth, Minnesota 55806			
		TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONAL = $\pm \frac{1}{32}$ DECIMAL .00 = $\pm .010$.000 = $\pm .005$ ANGULAR $\pm 1/2^\circ$		TITLE ASSY-LUBE RESERVOIR	
DRAWN MATHESON		DATE 12-8-80		FIRST USED 250-550	
APPR. DHS		DATE 12-19-80		NEXT ASSY 	
SCALE $\frac{1}{2}'' = 1''$		DRG. SIZE B		DRG. NO. 642-00015	

SWING AWAY SIDE CONTROLS
(CARRIER WITH REAR MOUNTED VALVES)
ASSEMBLY NO. 453-00006



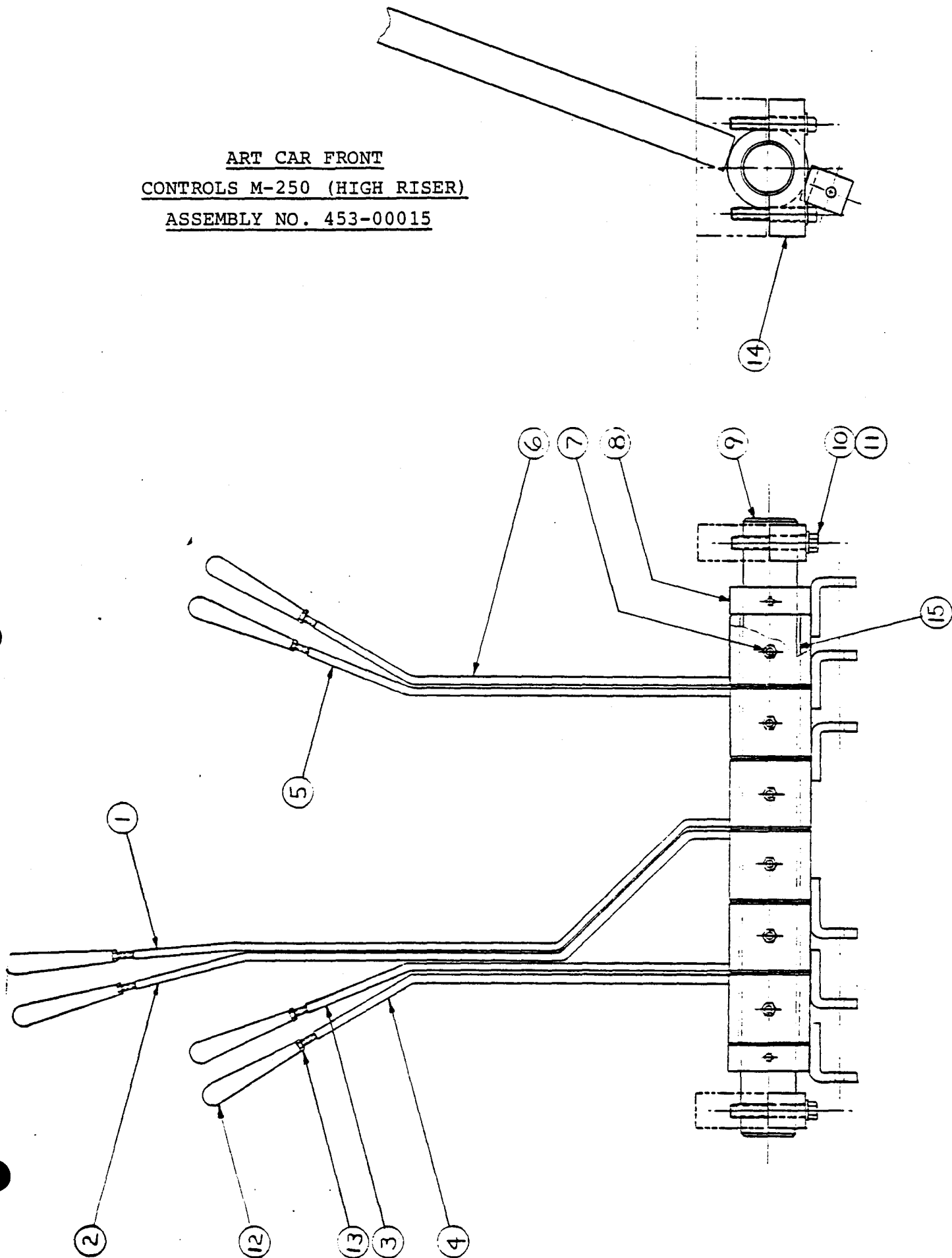
Left End View

SWING AWAY SIDE CONTROLS
(CARRIER WITH REAR MOUNTED VALVES)
PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	453-00006
1	1	WELDMENT, mount.....	162-00300
2	1	PLATE, mount.....	162-00301
3	1	CAM, eccentric.....	162-00302
4	1	CAM, eccentric.....	162-00303
5	1	RETAINER, cam-inner.....	162-00304
6	1	SHAFT, control.....	162-00305
7	1	RETAINER, cam-outer.....	161-00359
8	1	LEVER, control positioning.....	161-00417
9	2	WELDMENT, control handle.....	453-00102
10	2	WELDMENT, control handle.....	453-00101
11	4	HANDLE.....	395-00052
12	4	NUT, hex jam 3/8-24" UNF.....	131-00031
13	2	LOCK, collar 1 1/4".....	144-00048
14	4	GREASE, fitting 1/8 NPT 90°.....	173-00004
15	2	BOLT, hex head 3/8-16 UNC x 1 1/4"GR 2.....	100-00055
16	2	WASHER, lock 3/8".....	140-00011
17	2	PIN, roll 3/8 x 2".....	149-00011
18	4	BUSHING, 1 1/4 ID x 1 1/2 OD x 2".....	420-00015
19	2	GREASE, fitting 1/8 NPT straight.....	173-00000

Effective Date 3-3-81

ART CAR FRONT
CONTROLS M-250 (HIGH RISER)
ASSEMBLY NO. 453-00015

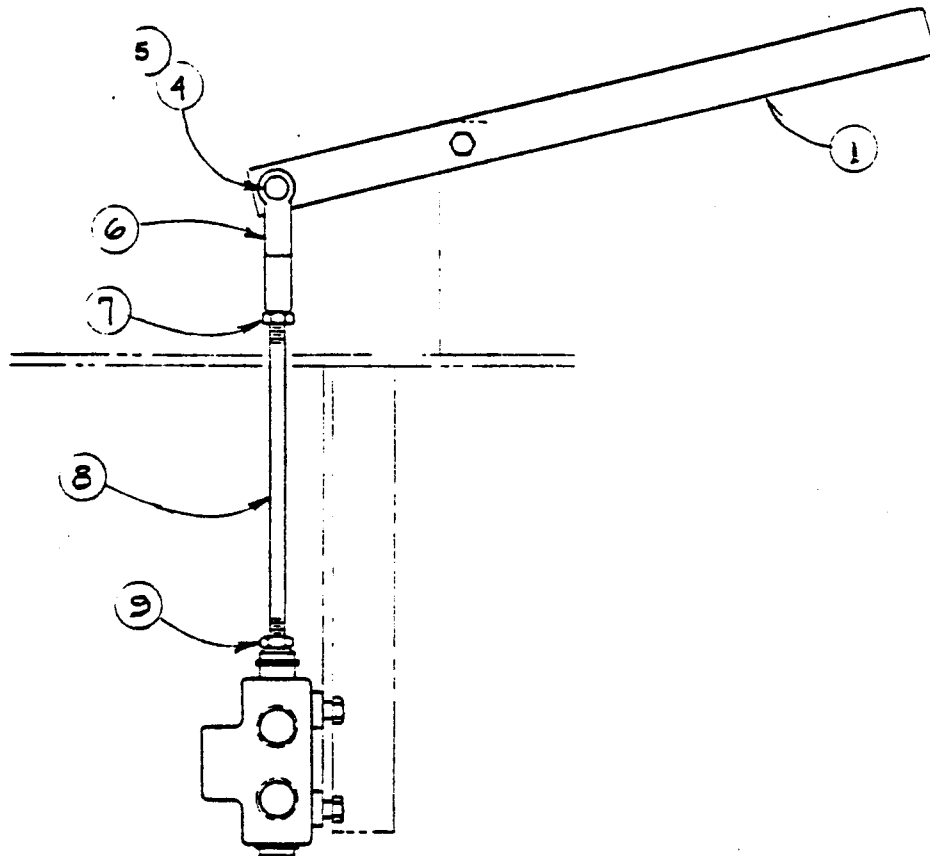
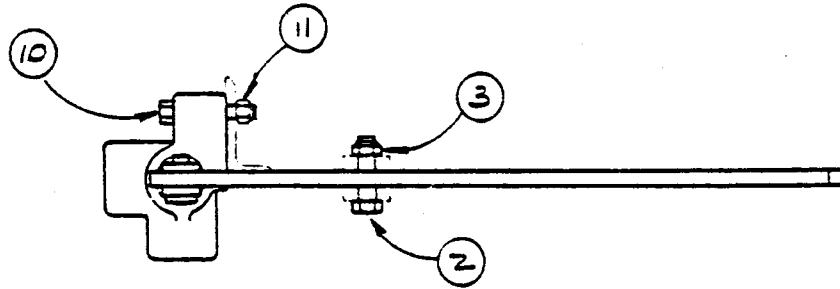


ART CAR FRONT
CONTROLS M-250 (HIGH RISER)
PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	453-00015
1	1	ASSEMBLY, control lever.....	452-00139
2	1	ASSEMBLY, control lever.....	452-00140
3	1	ASSEMBLY, control lever.....	452-00142
4	1	ASSEMBLY, control lever.....	452-00138
5	1	ASSEMBLY, control lever.....	452-00137
6	1	ASSEMBLY, control lever.....	452-00141
7	6	FITTING, grease straight 1/8-27"NPT.....	517-00300
8	2	COLLAR, lock.....	514-00446
9	1	BAR, round 1½ x 17"LG.....	441-00557
10	4	BOLT, hex head 3/8-16 UNC x 2"Lg.....	510-00658
11	4	WASHER, lock 3/8".....	514-00011
12	6	HANDLE.....	539-00552
13	6	NUT, jam 3/8-24"UNF.....	513-00731
14	2	BAR, mount bottom.....	161-00285
15	6	BUSHING, bronze 1-3/4 x 1½ x 2"LG.....	542-00020

Effective Date 3-3-81

SWING LOCK
ASSEMBLY NO. 163-00079

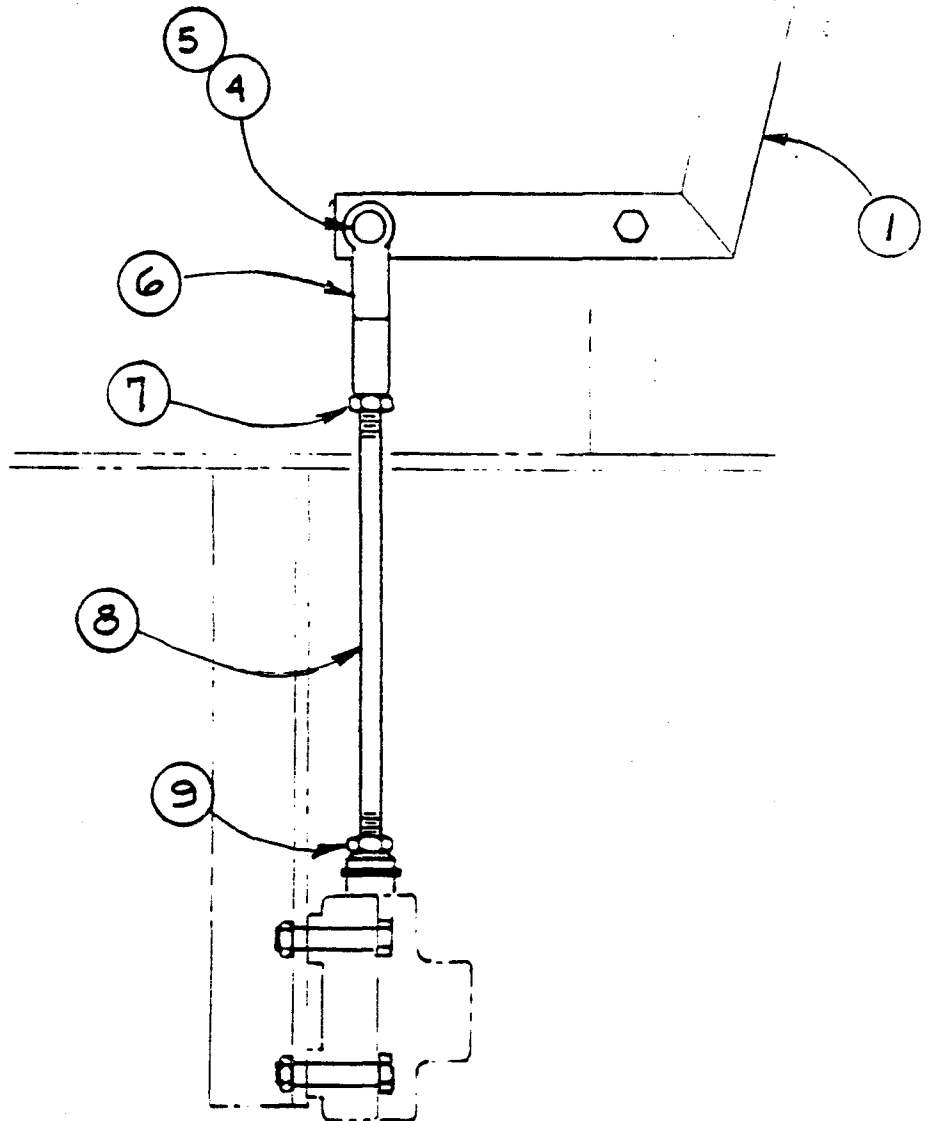
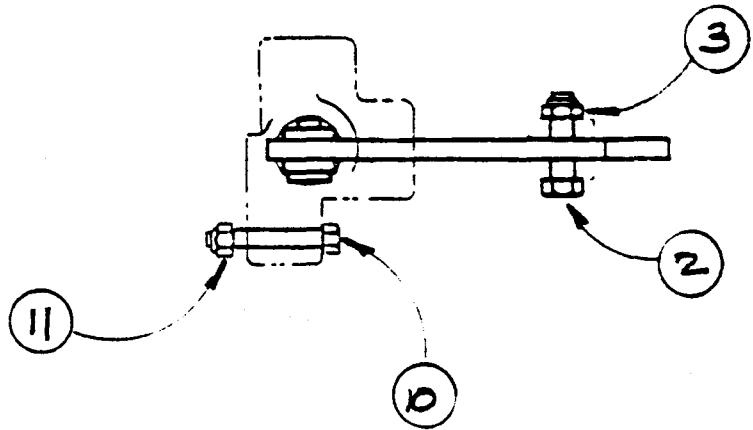


SWING LOCK ASSEMBLY

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	163-00079
1	1	RATE, handle.....	161-00364
2	1	BOLT, hex head 3/8-16 UNC x 1½"Lg.....	510-00656
3	1	NUT, nylock 3/8-16 UNC.....	513-00427
4	1	PIN, yoke 3/8 x 1"Lg.....	515-00061
5	1	PIN, cotter 3/32 x 3/4"Lg.....	543-00706
6	1	YOKE, 3/8".....	524-00003
7	1	NUT, jam 3/8-24"UNF.....	513-00331
8	1	ROD, linkage.....	161-00075
9	1	NUT, jam 3/8-16" UNC.....	513-00231
10	2	BOLT, hex head 5/16-18" UNC x 2"Lg.....	510-00635
11	2	NUT, hex 5/16-18"UNC.....	513-00426

Effective Date 3-3-81

ASSEMBLY NO. 163-00080

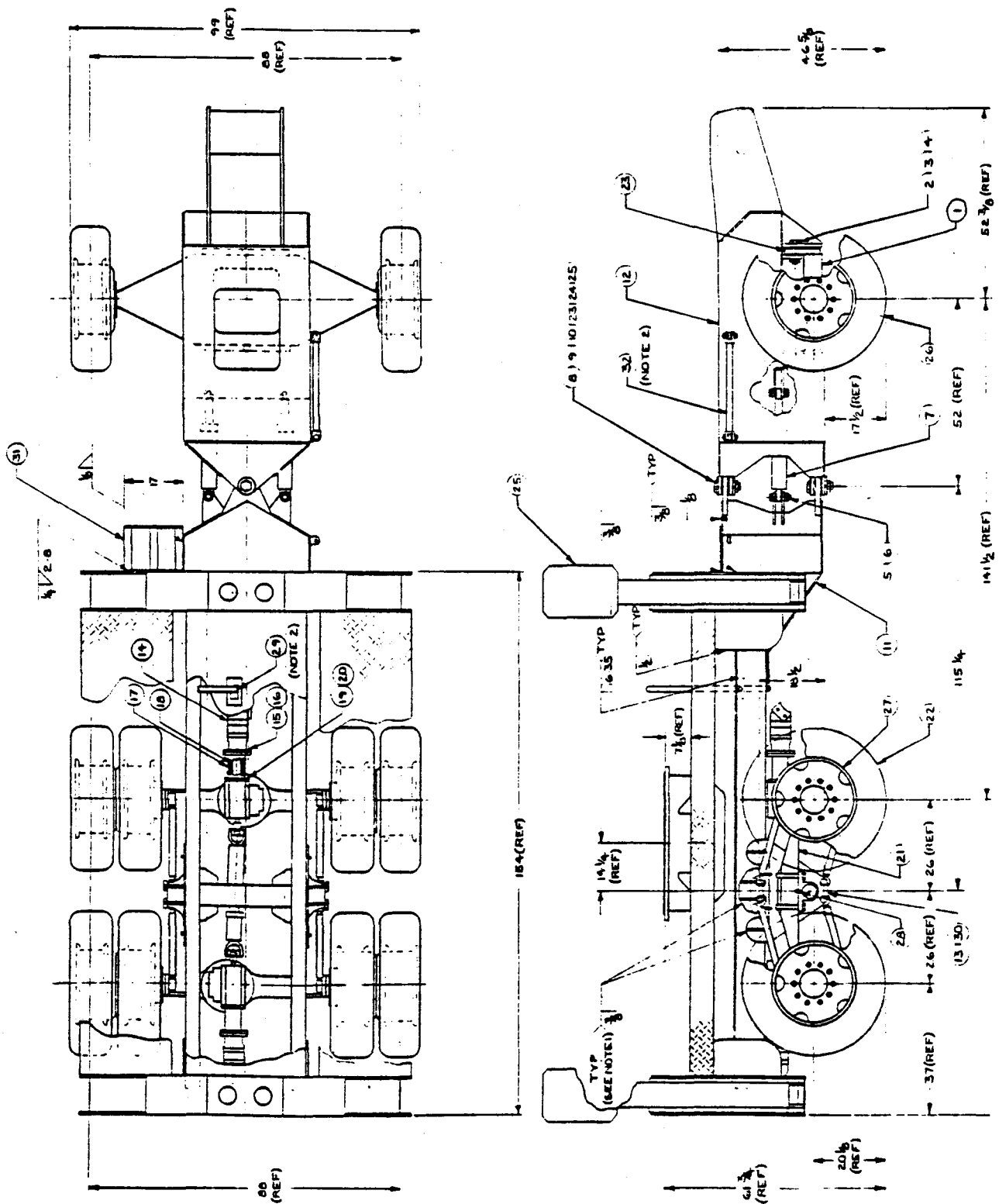


BRAKE CONTROL ASSEMBLY

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	163-00080
1	1	WELDMENT, control lever for S-50.....	162-00191
2	1	BOLT, hex head 3/8-16 x 1½"Lg.....	510-00656
3	1	NUT, nylock 3/8-16".....	513-00427
4	1	PIN, yoke 3/8 x 1"Lg.....	515-00061
5	1	PIN, cotter 3/32 x 3/4"Lg.....	543-00706
6	1	YOKE, 3/8".....	524-00003
7	1	NUT, jam 3/8-24".....	513-00331
8	1	ROD, linkage.....	161-00075
9	1	NUT, jam 3/8-16".....	513-00231
10	2	BOLT, hex head 5/16-18 x 2"Lg.....	510-00635
11	2	NUT, hex 5/16-18".....	513-00426

Effective Date 3-3-81

ASSEMBLY NO. 354-00026



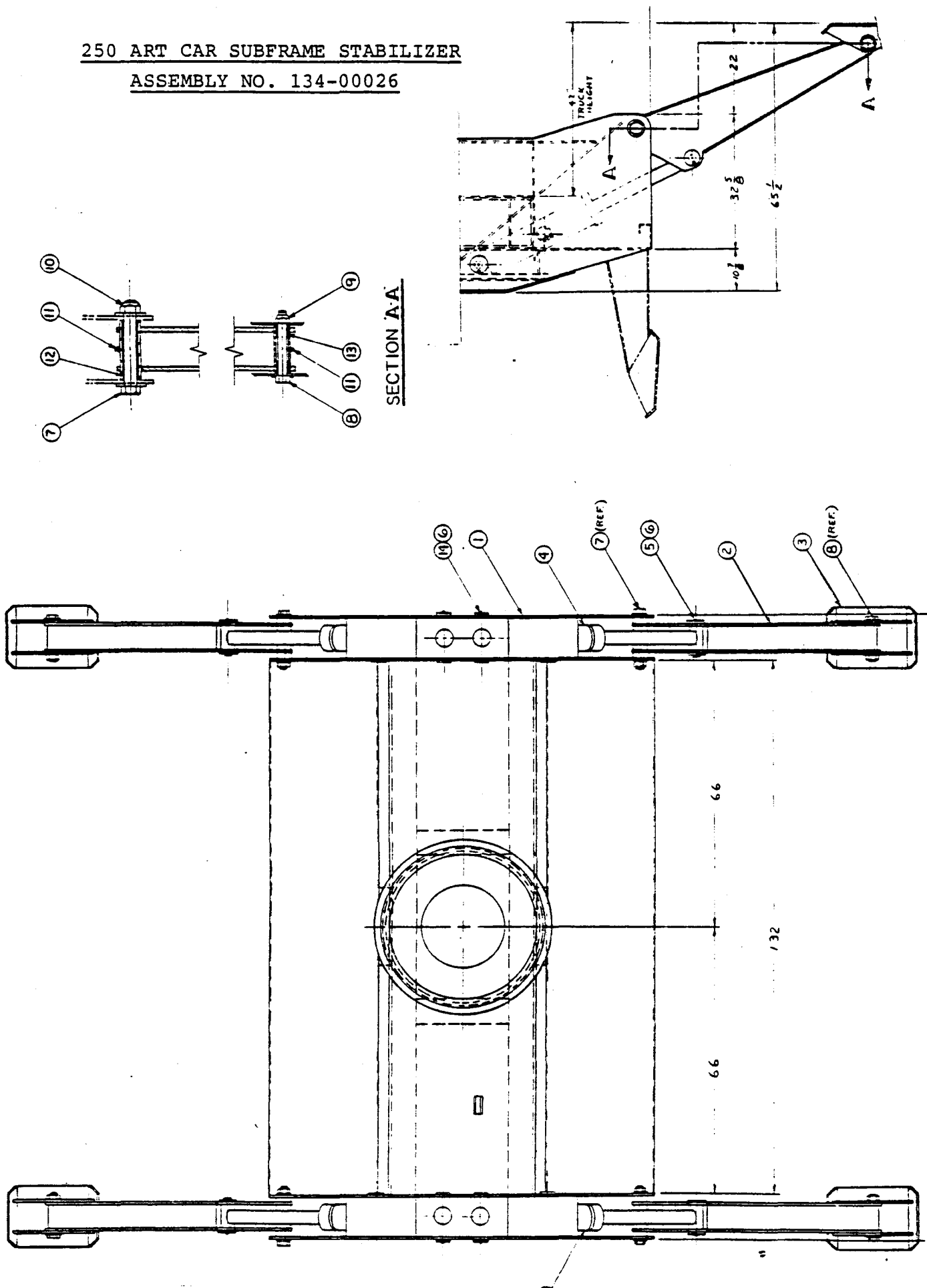
250 ART CAR
TANDEM DRIVE
PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	354-00026
1	1	ASSEMBLY, front axle.....	354-00000
2	2	BOLT, hex head 1½-12 UNF x 6½"GRS.....	482-00207
3	2	NUT, hex lock thin 1½-12"UNF.....	513-00770
4	4	BUSHING, 1½".....	421-00408
5	4	BOLT, hex head 1½-7UNC x 6"GR 5.....	510-00874
6	4	NUT, hex nylock 1½-7"UNC.....	513-00436
7	2	ASSEMBLY, hydraulic cylinder.....	812-00015
8	2	BOLT, hex head 2-12 UN x 6½".....	481-00222
9	2	NUT, hex locking 2-12 UN.....	481-00711
10	4	BUSHING, 2".....	421-00414
11	1	WELDMENT, rear frame.....	354-00208
12	1	WELDMENT, front frame.....	354-00201
13	1	ASSEMBLY, axle timken 1100 Ser. 7.33-1.....	535-00805
14	2	MOTOR, hydraulic Charlynn MD10040F011A.....	560-00016
15	8	BOLT, hex head 5/8-11 UNC x 2" GR 5.....	510-00755
16	8	WASHER, Lock 5/8".....	514-00015
17	2	WELDMENT, bell housing adapter.....	362-00210
18	2	WELDMENT, spline adapter.....	361-00201
19	12	BOLT, hex head ½-13UNC x 1-3/4" GR 5.....	510-00706
20	12	WASHER, lock ½".....	514-00013
21	2	REPLACER, Tandem axle spring.....	402-00400
22	8	TIRE, and tube 10.00 x 20-12 Ply.....	537-00619
23	4	LUBE, fitting straight.....	517-00300
24	2	SCREW, set 3/8-16 UNC x 3/8".....	512-00616
25	1	ASSEMBLY, subframe and stabilizer.....	134-00026
26	2	TIRE, and tube 10.00 x 20-12 Ply (hiway trd)	537-00621
27	10	RIM, 20" 10 hole bud 11½B.C.....	535-00877
28	2	BAR, round 3/4 x 1-3/4".....	441-00472
29	1	ASSEMBLY, shifting linkage.....	363-00504
30	1	ASSEMBLY, brake mounting.....	362-00000
31	1	WELDMENT, ladder.....	162-00170
32	1	ASSEMBLY, lock steering safety.....	353-00001

Effective Date 3-3-81

250 ART CAR SUBFRAME STABILIZER

ASSEMBLY NO. 134-00026

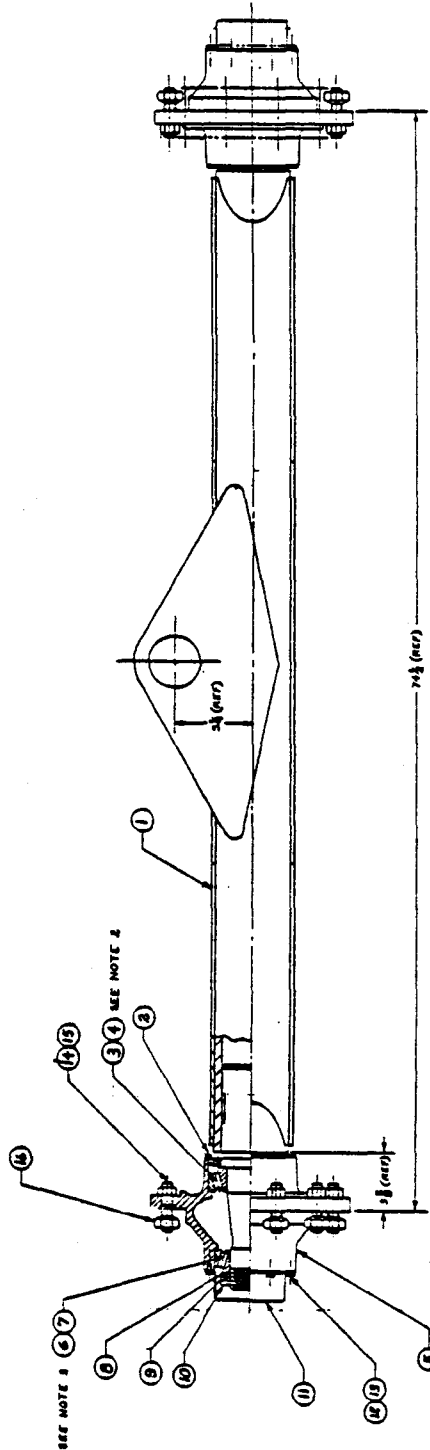


250 ART CAR
SUBFRAME STABILIZER
PART LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	134-00026
1	1	WELDMENT, subframe art car.....	134-00175
2	4	WELDMENT, stabilizer leg.....	172-00108
3	4	WELDMENT, stabilizer pad.....	172-00307
4	4	ASSEMBLY, hydraulic cylinder 6 x 24 x 3"..	812-00440
5	4	WELDMENT, stabilizer cylinder pin.....	482-00008
6	8	BOLT, hex head ½-13 x ¾" Lg.....	510-00701
7	4	BOLT, body fit 2-12 x 13-7/8" Lg.....	482-00225
8	4	BOLT, body fit 1½-12 x 9-¾" Lg.....	482-00313
9	4	NUT, hex lock thin 1½-12 UNF.....	513-00770
10	4	NUT, nylock 2-12.....	513-00417
11	8	FITTING, grease straight 1/8-27 NPT.....	517-00300
12	8	BUSHING, bronze 2-½ x 2 x 2-½" Lg.....	542-00032
13	8	BUSHING, bronze 1-¾ x 1½ x 2" Lg.....	542-00020
14	4	WELDMENT, stabilizer cylinder pin.....	482-00007

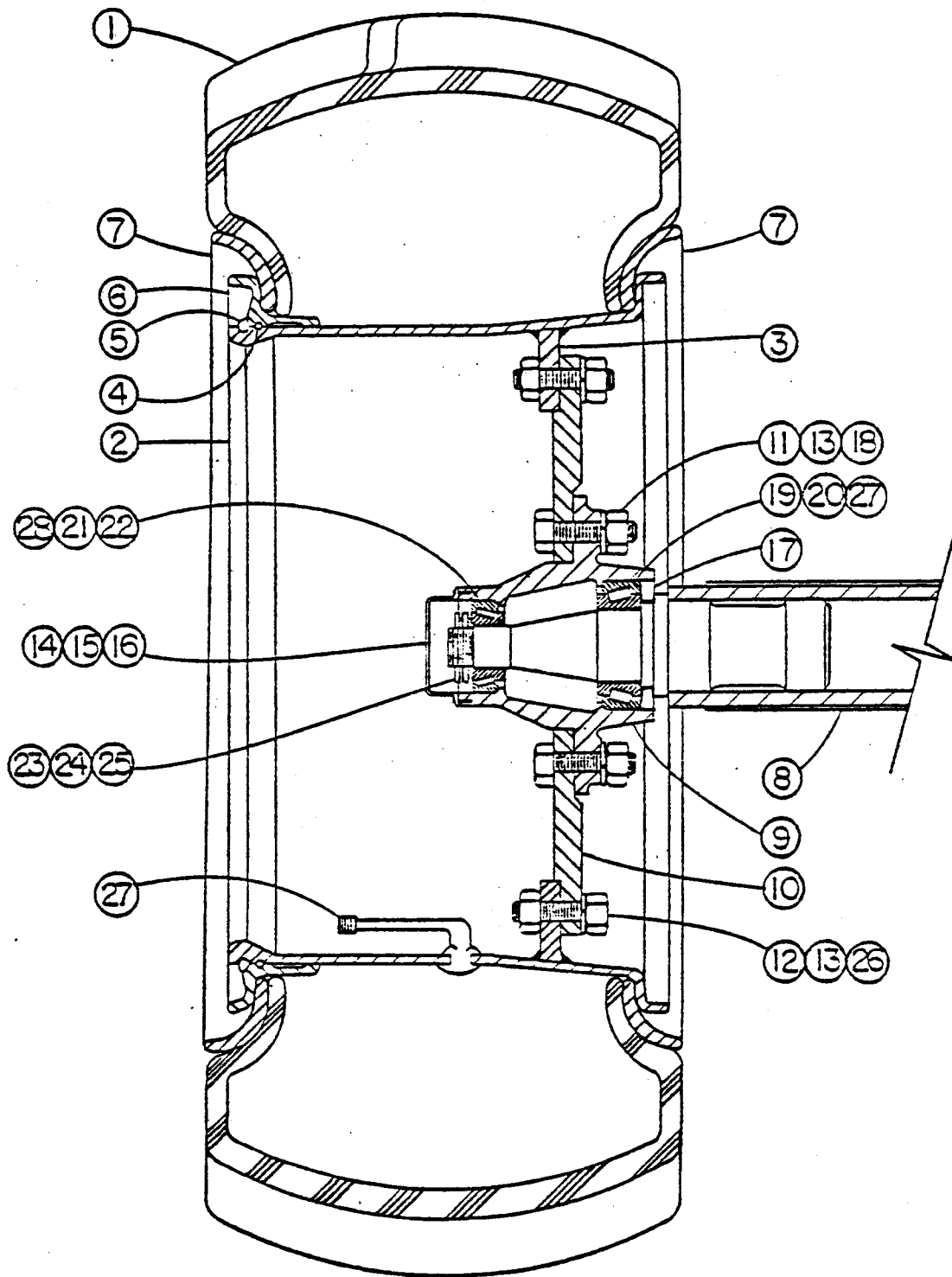
Effective Date 3-3-81

ITEM NO.		DESCRIPTION		QUANTITY	
1	333 0004	WELDT. AXLE	8/11		
2	515 0084	BEAL GREASE 3/4" x 1/2" x 1/2" (A-1000)			
3	515 0071	CONC. BEARING TIMKEN "6.53			
4	515 0074	CUP BEARING TIMKEN "6.53			
5	515 0080	HAIR WHEEL 3/4" x 1/2" x 1/2" (A-1000)			
6	515 0072	CUP BEARING TIMKEN "11.51010			
7	515 0079	CONC. BEARING TIMKEN "11.51010			
8	515 0081	HAIR WHEEL 3/4" x 1/2" x 1/2" (A-1000)			
9	515 0084	BEAL GREASE 3/4" x 1/2" x 1/2" (A-1000)			
10	515 0084	BEAL GREASE 3/4" x 1/2" x 1/2" (A-1000)			
11	515 0081	HAIR WHEEL 3/4" x 1/2" x 1/2" (A-1000)			
12	515 0080	HAIR WHEEL 3/4" x 1/2" x 1/2" (A-1000)			
13	515 0081	HAIR WHEEL 3/4" x 1/2" x 1/2" (A-1000)			
14	515 0084	BEAL GREASE 3/4" x 1/2" x 1/2" (A-1000)			
15	515 0080	HAIR WHEEL 3/4" x 1/2" x 1/2" (A-1000)			
16	515 0084	BEAL GREASE 3/4" x 1/2" x 1/2" (A-1000)			



- NOTES:
1. FOR 10 HOLE, 11.5" B.C. BUD WHEELS WITH 6.5" OFFSET (80° TRACK)
 2. ITEMS 3 & 4 MAKE UP 41011 BEARING ASSY.
 3. ITEMS 6 & 7 MAKE UP 41013 BEARING ASSY.

C 341-00721 WAS 341-00039 ECN 1079	
B 341-00039 WAS 341-00738 ECN 1067	
I 341-00738 WAS 341-00738 ECN 1067	
REVISION 1 UPDATED	
BARKO HYDRAULICS	
P. O. Box 1317 / P.O. Box, Minnesota 55004	
ASSEMBLY FRONT AXLE 200 SERIES	
ARTICULATED CARRIER (58 TRACK)	
354-00000	354-00000



RIM AND AXLE ASSEMBLY

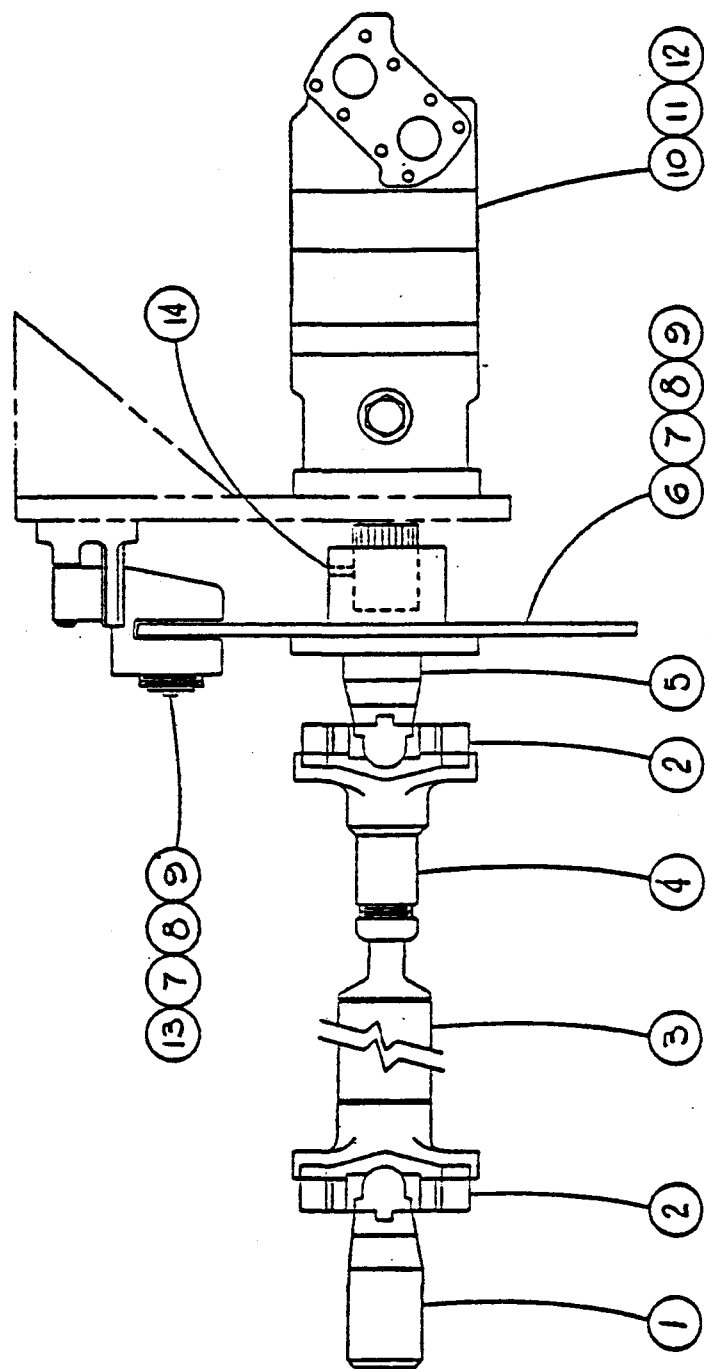
January 1, 1974

RIM & AXLE ASSEMBLY
MODEL 250 ARTICULATED CARRIER
PARTS LIST

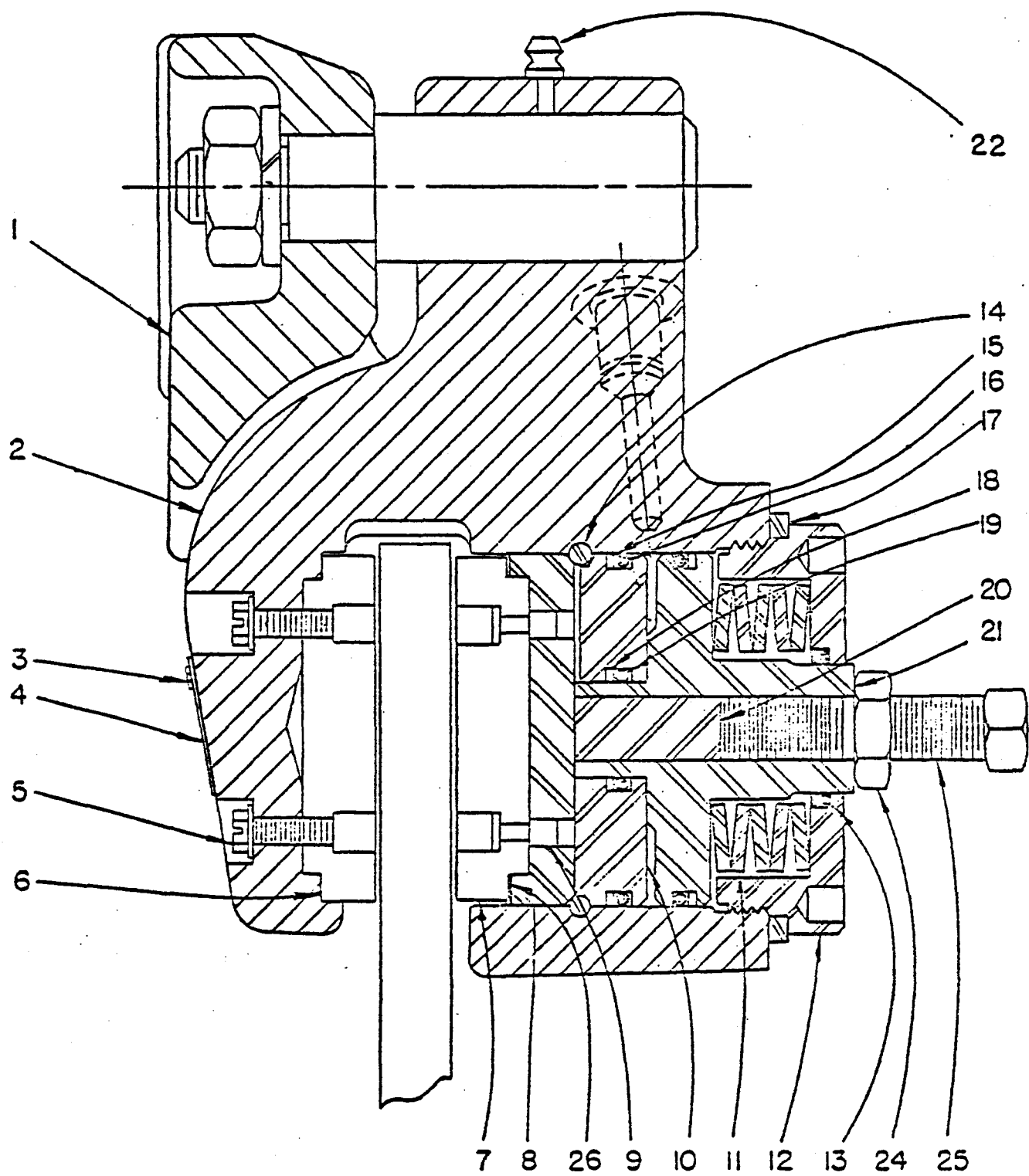
<u>ITEM NUMBER</u>	<u>QUANTITY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	1	352200	Rim Assembly
2	1	-	Rim
3	1	-	Center Flange
4	1	-	"O" Ring
5	1	-	Lock Ring
6	1	-	Adaptor Ring
7	2	-	Side Ring
8	1	353200	Axle Weldment
9	1	A-170046-1	Hub
10	1	351434	Rim Adaptor
11	6	11082	Hex Head Bolt
12	12	STD. Forge 13988	Wheel Studs
13	12	14016	Lock Washer
14	1	STD. Forge A-150014	Hub Cap
15	6	10629	Hex Head Bolt
16	6	14010	Lock Washer
17	1	STD. Forge A-150039	Grease Seal
18	6	13313	Hex Nut
19	1	41736	Cup
20	1	41737	Cone
21	1	41738	Cup
22	1	41739	Cone
23	1	STD. Forge A-150032-B	Spindle Nut-Inner
24	1	STD. Forge A-150034	Spindle Nut-Lock
25	1	STD. Forge A-150033	Spindle Nut-Outer
26	12	SHULER #37888	Wheel Nut
27	1	41041	Bearing Assembly
28	1	41039	Bearing Assembly

ARTICULATED CARRIER
BRAKE AND DRIVE LINE ASSEMBLY
PARTS LIST

<u>ITEM NUMBER</u>	<u>QUANTITY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	1	45029	Yoke
2	2	45028	Cross and Bearing
3	1	362200	Drive Shaft Weldment
4	1	361505	Slip Yoke
5	1	362203	Yoke Weldment
6	1	361505	Brake Disconnect
7	10	10105	Hex Head Bolt 1/2 - 13 NC 1 1/2 Long
8	10	13010	Hex Nut 1/2 - 13 NC
9	10	14013	Lock Washer 1/2
10	1	60026	Hydraulic Motor
11	4	10155	Hex Head Bolt 5/8 - 11 UNC X 2
12	4	14015	Lock Washer 5/8
13	1	443004	Caliper Brake Assembly
14	1		Socket Set Screw



BRAKE AND DRIVE LINE ASSEMBLY



January 1, 1974

MODEL 160;250 ARTICULATED CARRIER
DISC BRAKE ASSEMBLY
PARTS LIST

<u>ITEM NUMBER</u>	<u>QUANTITY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	1	43114	Mounting Assembly
2	1	43115	Housing
3	2	43116	Drive Screw
4	1	43117	Name Plate
5	2	43118	Screw
6	1	"A"	Lining
7	1	"A"	Lining
8	1	"A"	Piston
9	2	"A"	Rivet
10	1	"B"	Piston
11	5	43119	Belleville Springs
12	1	43120	End Cap
13	1	43121	Seal
14	1	43122	Lock Ring
15	2	"B"	Back-Up Ring
16	2	"B"	"O" Ring
17	1	43123	Spacer
18	1	"B"	Back-Up Ring
19	1	"B"	"O" Ring
20	1	43124	Push Rod
21	1	43125	Piston
22	1	43126	Fitting
23	1	43127	Bleeder Screw (Not Shown)
24	1	43128	Jam Nut
25	1	43129	Set Screw
26	1	"A"	Seal

"A" Parts included in kit no. 65200

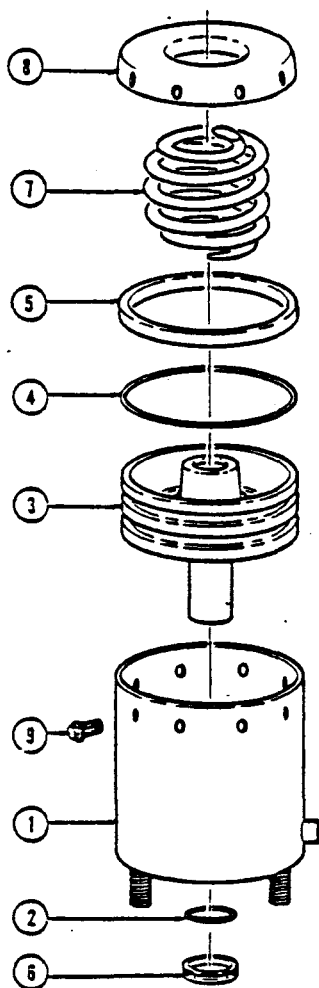
"B" Parts included in kit no. 65201

Gustin-Bacon "R" Series Service & Parts

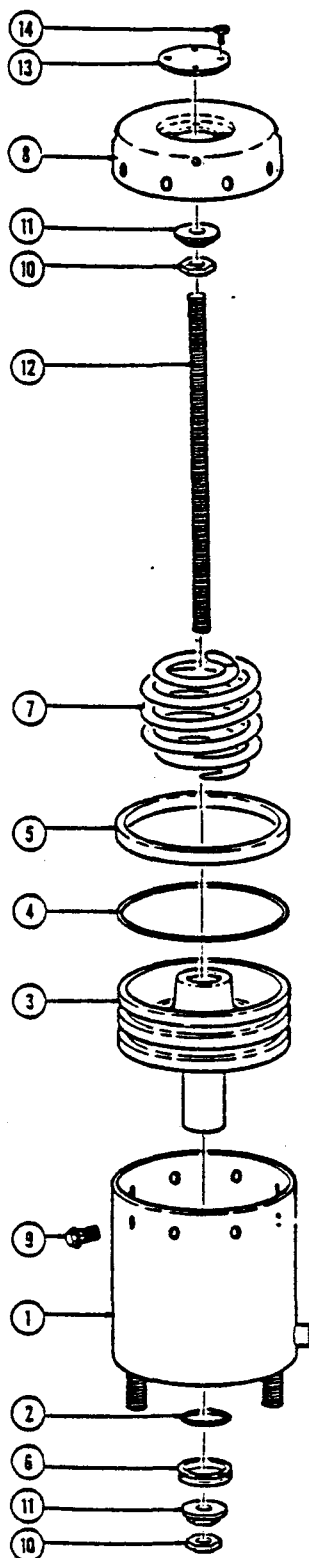
WARNING: Spring Brake Chambers are under compressed spring force. Installation and maintenance should be performed in full accordance with manufacturer's written instructions as covered on pages 18-28.

Parts replacement

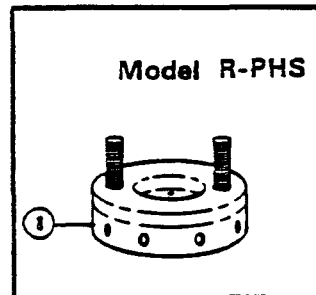
Model R-SB



Model R-PH



Model R-PHS



Note: balance of parts identical to Model R-PH at left.

WARNING: Spring Brake Chambers are under compressed spring force. Installation and maintenance should be performed in full accordance with manufacturer's written instructions as covered on pages 18-28.

Parts list/Models R-PH, R-PHS

Item	Model R-1PH (2.25" stroke)	Model R-2PH (2.62" stroke)	Model R-3PH (3.00" stroke)	Model R-2PHS (2.62" stroke)	Qty.	Description
1	4031043	4031090	4031089	4031090	1	Cylinder Assembly
2	4031044	4031044	4031044	4031044	1	"O" Ring Seal (small)
3	4031742	4031743	4031744	4031743	1	Piston assembly
4	4031045	4031045	4031045	4031045	1	"O" Ring seal (large)
5	4031173	4031173	4031173	4031173	1	Felt wiper ring
6	4031161	4031161	4031161	4031161	1	Nylon bushing
7	—	—	—	—	1	Spring (see chart below)
8	4031070	4031070	4031070	—	1	Spring support
8	—	—	—	4045876	1	Stud mounting plate
9	4031041	4031041	4031041	4031041	8	Capscrew
10	4031134	4031134	4031134	4031134	2	Jam nut
11	4031340	4031340	4031340	4031340	2	Flange nut
12	4040719	4040718	4040717	4040718	1	8" projection
13	4031164	4031164	4031164	4031164	1	Cover plate
14	4031178	4031178	4031178	4031178	4	Screw
16*	4036047	4036047	4036047	4036047	1	Yoke and pin (½" dia.)
17*	4031334	4031334	4031334	4031334	1	Dust boot
18*	4031134	4031134	4031134	4031134	1	Jam nut

*Customer option (not on standard models).

Parts list/Model R-SB

Item	Model R-1SB (2.25" stroke)	Model R-2SB (2.62" stroke)	Model R-3SB (3.00" stroke)	Qty.	Description
1	4031043	4031090	4031089	1	Cylinder Assembly
2	4031044	4031044	4031044	1	"O" Ring Seal (small)
3	4031742	4031743	4031744	1	Piston Assembly
4	4031045	4031045	4031045	1	"O" Ring Seal (large)
5	4031173	4031173	4031173	1	Felt Wiper Ring
6	4031161	4031161	4031161	1	Nylon Bushing
7	—	—	—	1	Spring (see chart at right)
8	4031017	4031017	4031017	1	Spring Support
9	4031041	4031041	4031041	8	Capscrew

Spring identification

Part number	Spring no.
4031295	# 50
KSM4040776	# 55
4031021	# 60
4031002	# 75

NOTE: Spring identified by stamping on cylinder.

Example

R-1PH60-2026

Spring size

Date code

SERVICE/PARTS

EXISTING BRAKE
MECHANISM

$\frac{3}{8}$ NPT (REF)

LOCATE DRAIN HOLE
IN BOOT DOWN

ITEM	QTY.	MATERIAL	PART No.	DESCRIPTION	WT.
1	1		362212	WELDMENT, BRAKE CHAMB. MTG. BRACKET	5 [#]
2	1		362213	WELDMENT, BRAKE CHAMB. MTG. BRACKET	5 [#]
3	2		43009	SPRING BRAKE ACTUATOR ^{KSMR1PH60} -545937	14 [#]
4	2		43010	BOOT ASSEMBLY	1 [#]
5	4		14015	WASHER, LOCK $\frac{5}{8}$	~
6	4		13112	NUT, HEX $\frac{5}{8}$ -18 UNF	~
7	8		10105	BOLT, HEX HEAD $\frac{1}{2}$ -13 UNC x $1\frac{1}{2}$ GR.2	~
8	8		13011	NUT, HEX $\frac{1}{2}$ -13 UNC	~
9	8		14013	WASHER, LOCK $\frac{1}{2}$	~



BARKO HYDRAULICS, INC.
Office: Superior, Wisconsin Phone: (715) 392-6641
Mailing address: P.O. Box 6227 Duluth, Minnesota 55808

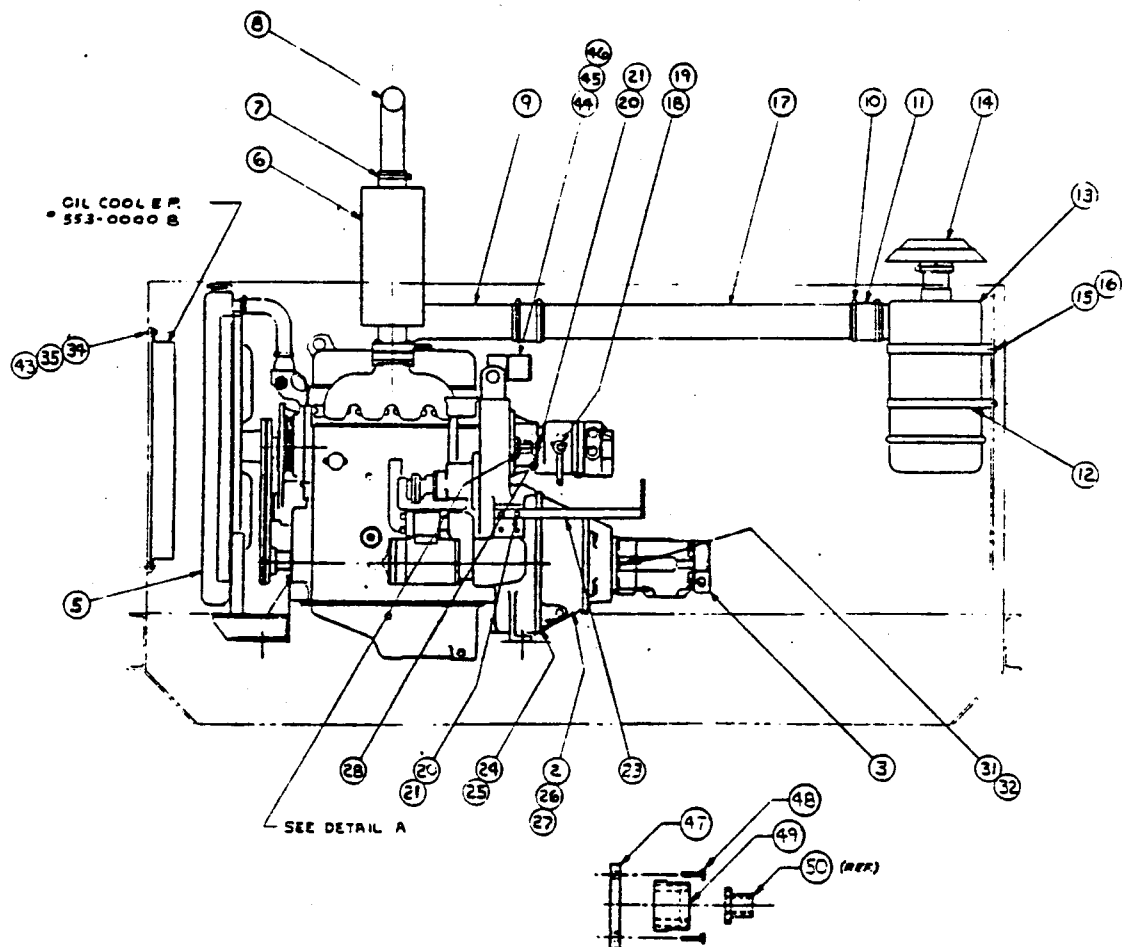
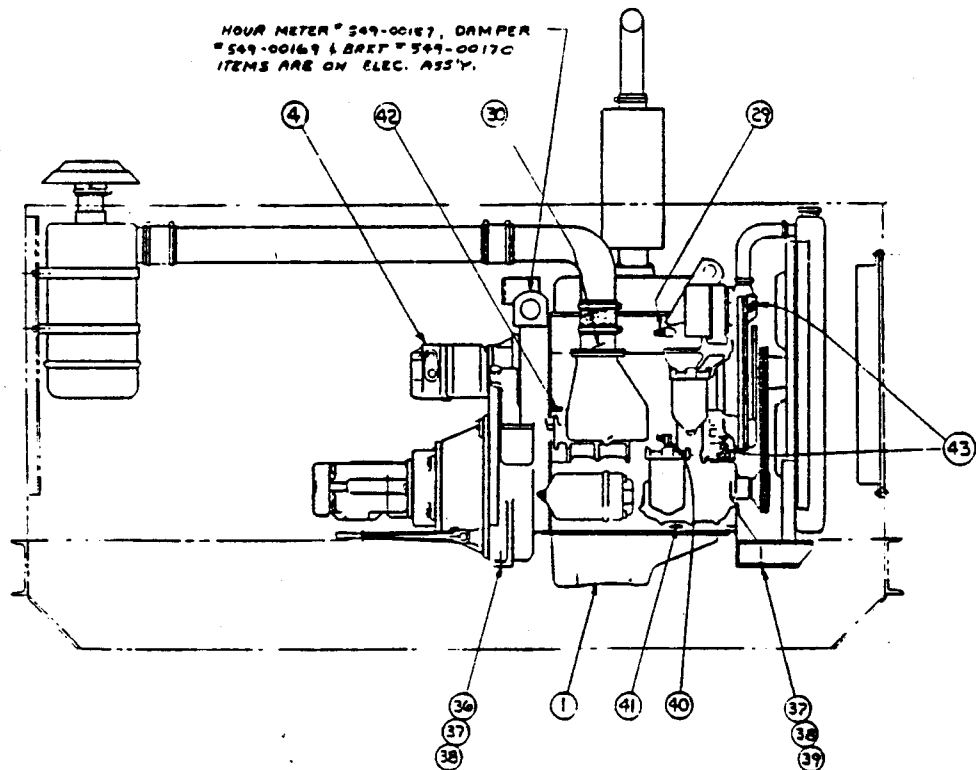


5-71015 REVISED 1-10-77 A	REV. DATE	BY	DESCRIPTION	TOLERANCES UNLESS OTHERWISE SPECIFIED: FRACTIONAL = $\pm \frac{1}{32}$ DECIMAL .00 = $\pm .010$.000 = $\pm .005$ ANGULAR $\pm 1/2^\circ$ DRAWN R. SHELTON DATE 5-6-77 APPR DATE	TITLE ASSEMBLY, BRAKE (200 & 300 ART CARS WITH DRUM BRAKES)	FIRST USED NEXT ASSY 034808 EST. WT. 40 [#] ACT. WT.
	SCALE	DRG. SIZE	DRG. NO.			
	$\frac{1}{2}$ "-1"	B	362000			

STANDARD TRUCK MOUNT POWER PACKAGE

ASSEMBLY NO. 404-00022

HOUR METER * 549-00187, DAMPER
* 549-00169 & REF * 549-0017C
ITEMS ARE ON ELEC. ASS'Y.



DETAIL A

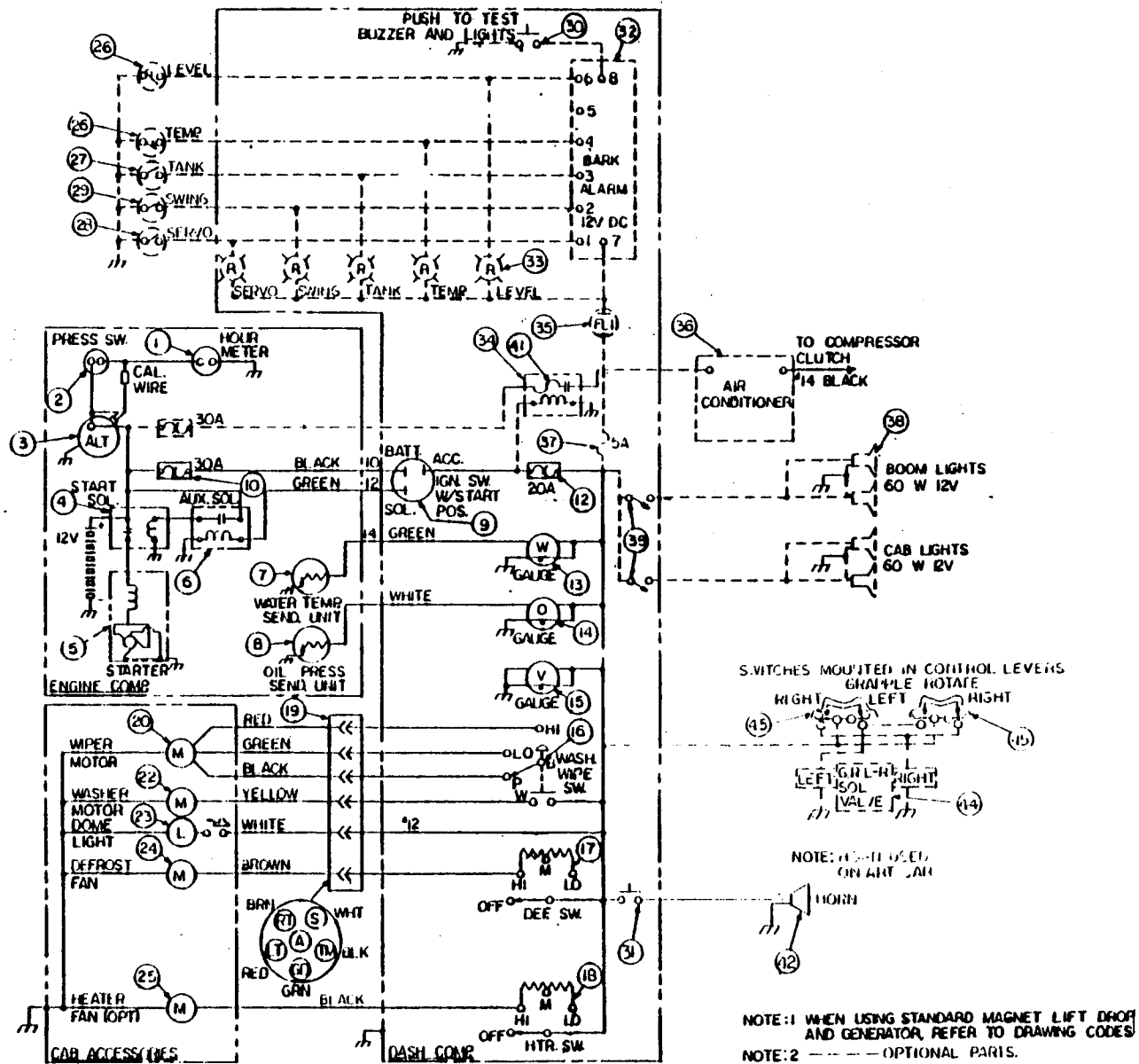
STANDARD TRUCK MOUNT

POWER PACKAGE

PART LIST

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

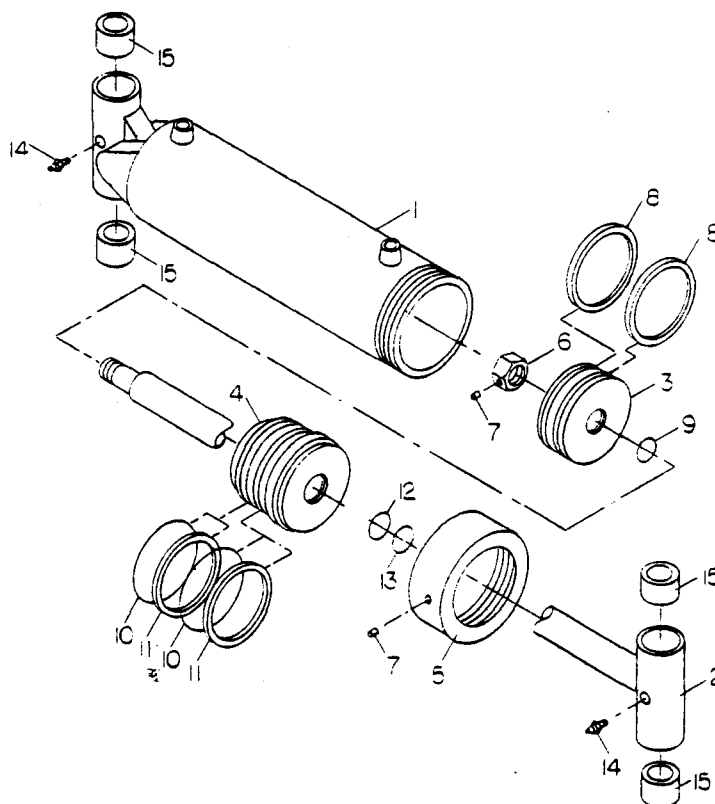
Effective Date 3-3-81



MODEL 250
SCHEMATIC-ELECTRIC
PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	904-00059
1	1	HOUR, meter.....	549-00157
2	REF	PRESSURE, switch.....	548-00991
3	REF	ASTERNATOR.....	548-00437
4	REF	STARTER, solenoid.....	
5	REF	STARTER.....	
6	1	AUXILIARY, starter solenoid.....	548-00231
7	1	WATER, temperature sending unit.....	549-00154
8	1	OIL, pressure sending unit.....	549-00152
9	1	IGNITION, switch with start positive.....	549-00149
10	2	CIRCUIT, breaker 30A.....	549-00138
12	1	CIRCUIT, breader 20A.....	549-00137
13	1	WATER, temperature gauge.....	549-00153
14	1	OIL, pressure guage.....	549-00151
15	1	VOLT, guard gauge.....	549-00158
16	1	WASHER, wiper switch.....	548-00214
17	1	DEFROSTER, switch.....	549-00147
18	1	HEATER, switch.....	549-00148
19	1	SOCKET.....	549-00328
20	REF	WIPER, motor.....	548-00922
22	REF	WASHER, motor.....	548-00920
23	REF	DOME, light and slide switch.....	548-00306
24	REF	DEFROST, fan.....	548-00909
25	REF	HEATER, fan motor.....	549-00431
26	1	TEMPERATURE, level sensor.....	549-00177
27	REF	SWITCH, tank filter.....	552-00089
28	REF	SWITCH, differential pressure.....	548-01102
29	1	SWITCH, swing filter.....	554-00066
30	1	PUSH, button switch.....	548-00477
31	1	PUSH, button.....	549-00139
32	1	BARK, alarm.....	548-00276
33A	1	LIGHT, swing filters.....	548-00347
33B	1	LIGHT, plain.....	548-00348
33C	1	LIGHT, tank filters.....	548-00346
33D	1	LIGHT, hi temperature.....	548-00344
33E	1	LIGHT, lo oil.....	548-00345
34	1	RELAY.....	548-00631
35	1	FLASHER, 12V.....	548-00277
36	1	AIR, conditioner.....	548-00939
37	1	FUSE, 5A.....	548-00863
37A	1	FUSE, holder-in-the-line.....	548-01097
38	4	LIGHTS, 60 W 12V.....	548-00315
39	2	TOGGLE, switch.....	548-00232
41	1	FUSE, 20A.....	548-00878
42	1	HORN.....	548-00253
44	REF	SOLENOID, valve.....	558-00728
45	REF	SWITCH, rocker.....	563-00141

Effective Date 3-10-81



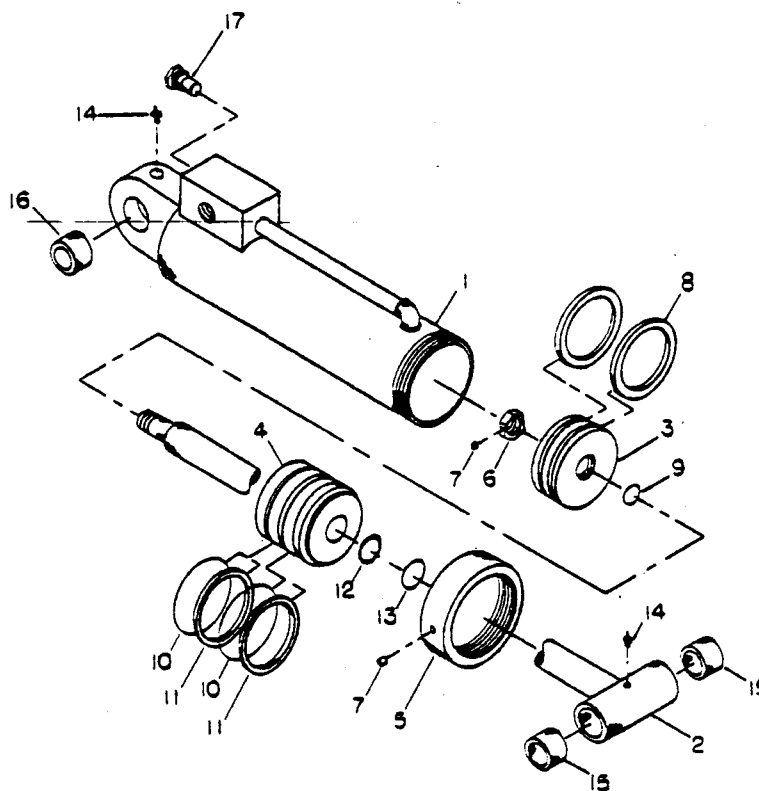
MODEL 250

MAIN BOOM CYLINDER

(6 x 48 WITH 3" ROD)

<u>ITEM NO</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
0	1	ASSEMBLY, complete-----	812-00510
1	1	WELDMENT, butt and tube-----	832-00136
2	1	WELDMENT, rod-----	842-00023
3	1	PISTON-----	852-00003
4	1	GLAND-----	852-00305
5	1	CAP, gland-----	852-00814
6	1	NUT, nylock-----	513-00413
7	2	SCREW, set-----	512-00616
(1) (3)	8	SEAL, piston (555-00044) -----	
(1) (3)	9	O-RING (565-00318) -----	
(2) (3)	10	O-RING (565-00355) -----	
(2) (3)	11	WASHER, back up (565-00655) -----	
(2) (3)	12	SEAL, rod (555-00171) -----	
(2) (3)	13	SEAL, wiper (556-00904) -----	
14	2	FITTING, grease-----	517-00300
15	4	BUSHING, bronze-----	542-00032
<u>SEAL KITS AVAILABLE</u>			
(1)		PISTON SEAL KIT-----	565-00489
(2)		GLAND SEAL KIT-----	565-00491
(3)		COMPLETE SEAL KIT-----	565-00537

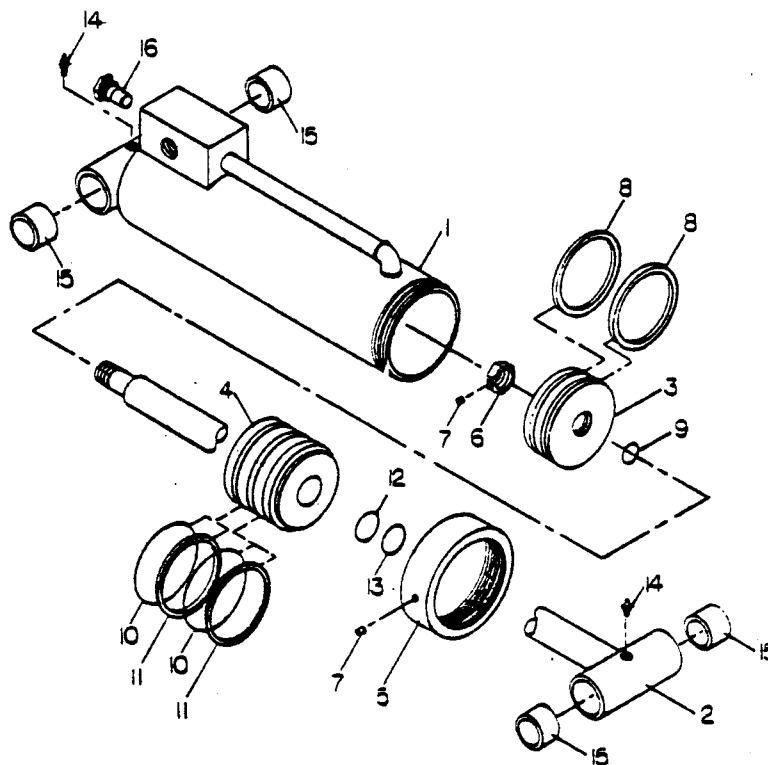
Effective 6-17-80



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

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

Effective 4/1/78



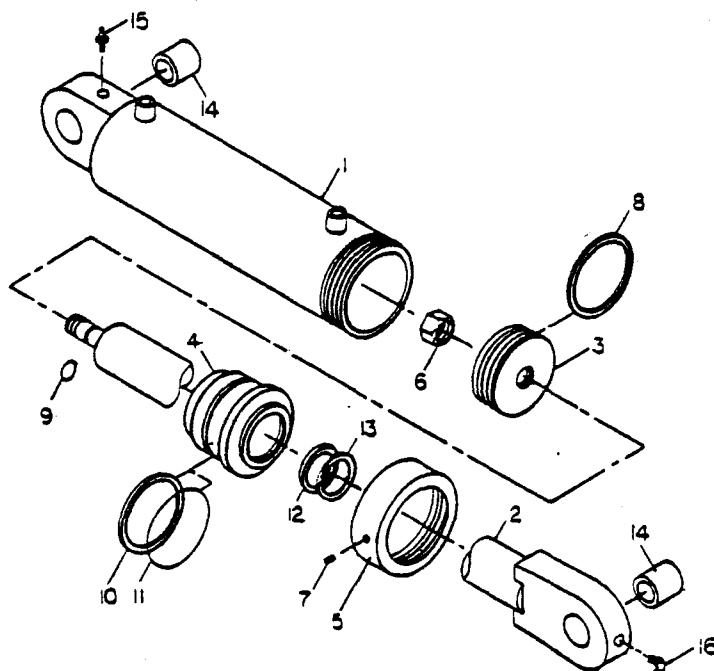
MODEL 250

STABILIZER ARM CYLINDER

(6 x 24 WITH 3" ROD)

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

Effective 4-1-78

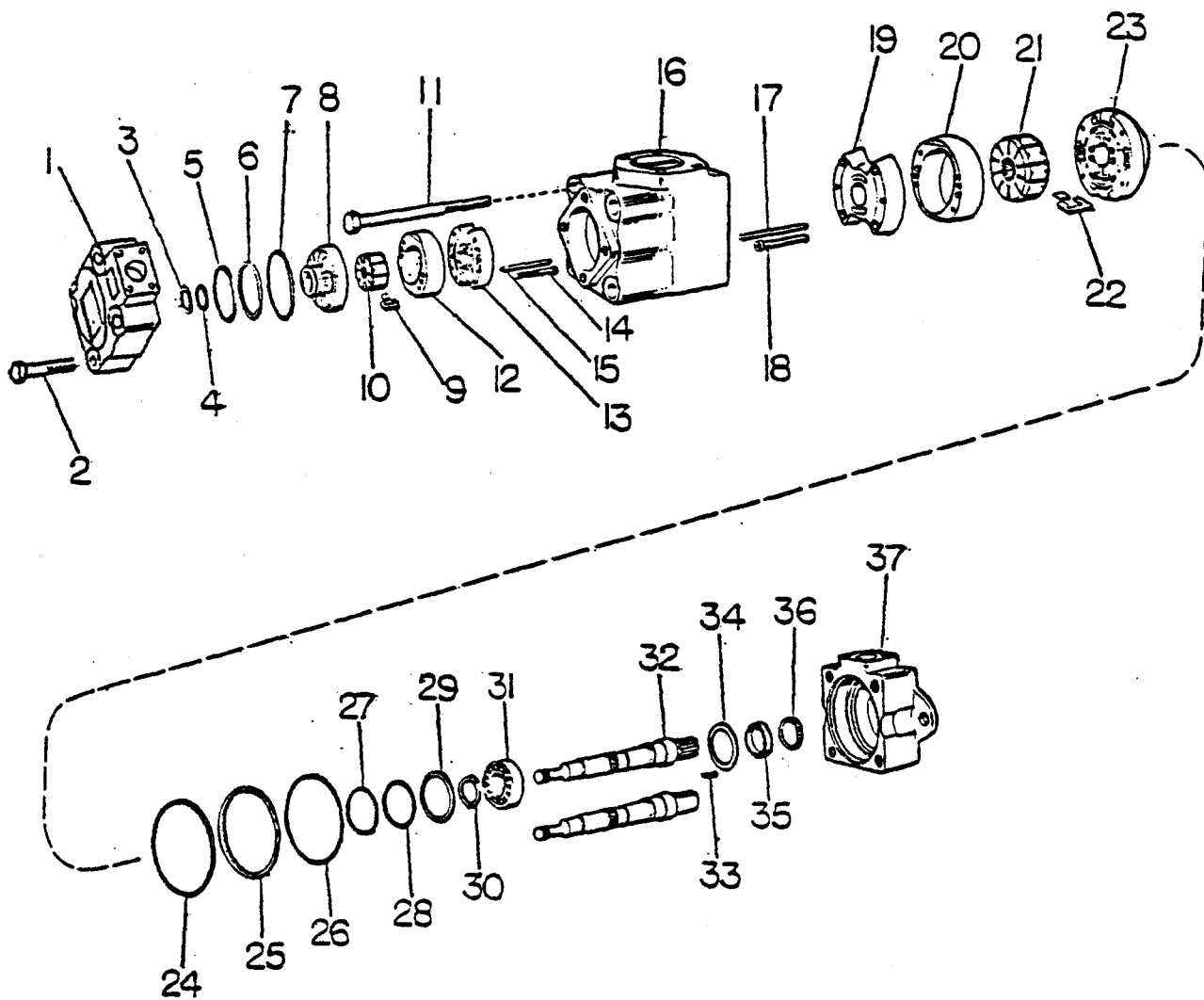


STEERING CYLINDER
(3 1/4 X 12 WITH 2" ROD)

<u>ITEM NO.</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
0	1	ASSEMBLY, complete -----	812015
1	1	WELDMENT, butt and tube -----	832074
2	1	WELDMENT, rod -----	842049
3	1	PISTON -----	852014
4	1	GLAND -----	852300
5	1	CAP, gland -----	852812
6	1	NUT, hex -----	13413
7	1	SCREW, set -----	12616
(1) (3)	8	SEAL, piston -----	
(1) (3)	9	O-RING -----	
(2) (3)	10	O-RING -----	
(2) (3)	11	WASHER, back up -----	
(2) (3)	12	SEAL, rod -----	
(2) (3)	13	SEAL, wiper -----	
14	2	BUSHING, steel -----	421409
15	1	FITTING, grease -----	17300
16	1	FITTING, grease 45° -----	17302
<u>SEAL KITS AVAILABLE</u>			
(1)		PISTON SEAL KIT -----	65482
(2)		GLAND SEAL KIT -----	65483
(3)		COMPLETE SEAL KIT -----	65533

Effective 4/1/78

VICKERS 35/25 TANDEM PUMP



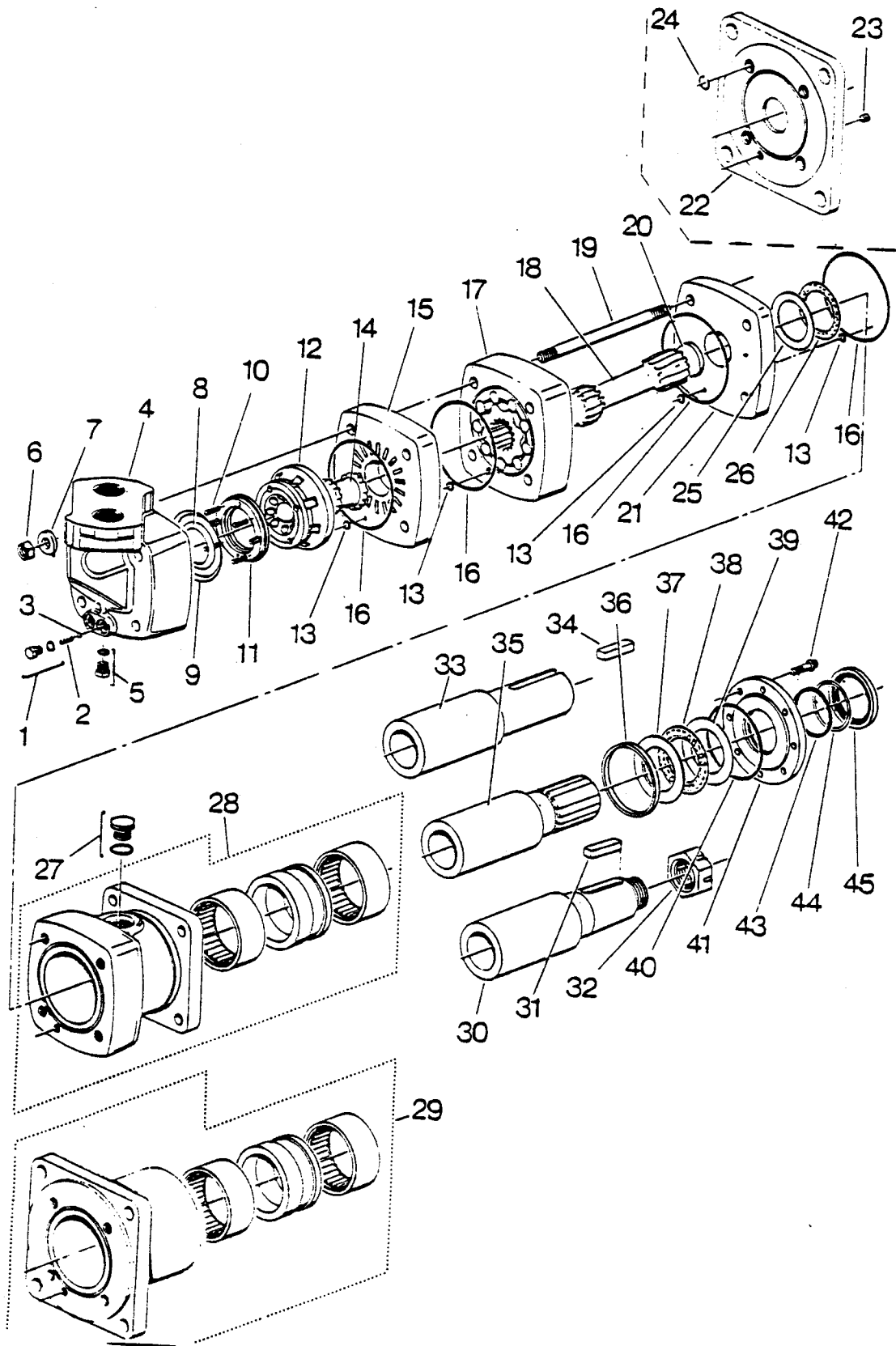
VICKERS
3525 TANDEM PUMP (30/21 GPM)
PARTS LIST

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

NOTE: Numbers in brackets () indicate superceded numbers.

- | | | |
|-----|---|-------|
| (1) | Included in Seal Kit..... | 65543 |
| (2) | Included in Cartridge Kit (21 gpm)..... | 56645 |
| (3) | Included in Cartridge Kit (30 gpm)..... | 56647 |

CHAR-LYNN 10,000 SERIES DRIVE MOTOR



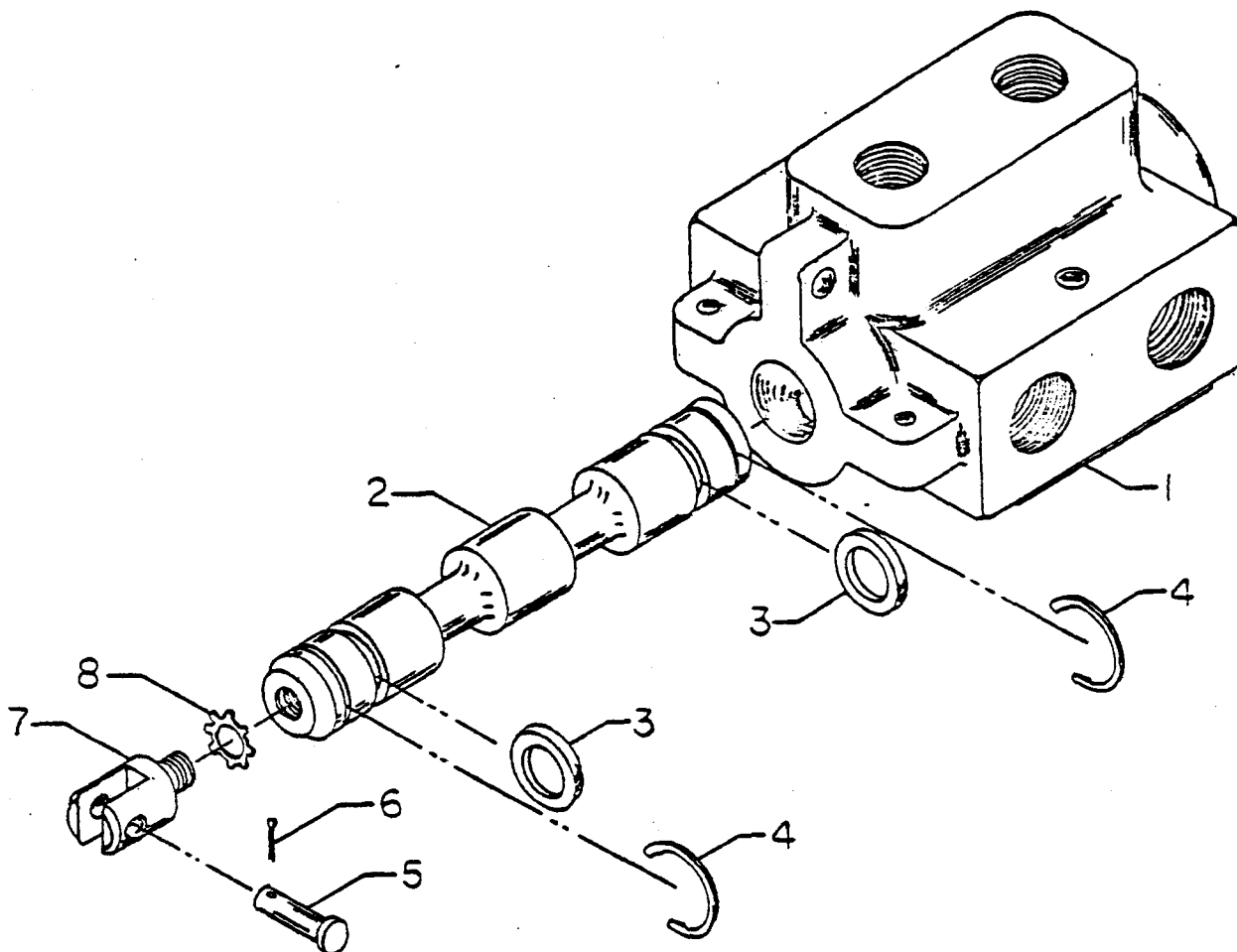
CHAR-LYNN 10,000 SERIES DRIVE MOTOR

(57.76 W. IN./REV.)

<u>ITEM NO.</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	COMPLETE 10,000 SERIES CHAR-LYNN MOTOR -----	60021
1	2	ASSEMBLY, VALVE CHECK PLUG (60450)	
2	2	SPRING -----	60451
3	2	BALL -----	60452
4	1	HOUSING -----	60453
5	1	ASSEMBLY, PLUG -----	60454
6	4	NUT, HEX -----	60455
7	4	WASHER, FLAT -----	60456
(3) (1) 8	1	SEAL, INNER FACE (60457)	
(3) (1) 9	1	SEAL, OUTER FACE (60458)	
10	4	SPRING -----	60459
11	1	ASSEMBLY, BALANCING PLATE -----	60460
12	1	VALVE -----	60461
(3) (1) 13	4	SEAL (60462)	
14	1	DRIVE (VALVE) -----	60463
15	1	PLATE (VALVE) -----	60464
(3) (1) 16	4	SEAL (60465)	
17	1	GEROLER -----	60384
18	1	DRIVE -----	60385
19	4	STUDS -----	60386
20	1	SPACER (DRIVE) -----	60469
21	1	PLATE (WEAR) -----	60470
ITEMS 22 - 24 ARE NOT APPLICABLE			
25	1	WASHER, THRUST (REAR) -----	60471
26	1	BEARING, THRUST (REAR) -----	60472
(3) (1) 27	2	ASSEMBLY, PLUG (60473)	
28	1	KIT, BEARING HOUSING -----	60474
ITEMS 29 - 34 ARE NOT APPLICABLE			
35	1	SHAFT, OUTPUT SPLINED -----	60475
36	1	SPACER (FRONT BEARING) -----	60476
37	1	WASHER (THRUST) -----	60477
38	1	BEARING, THRUST (FRONT) -----	60478
39	1	WASHER (THRUST) -----	60479
(3) (2) 40	1	O RING (FRONT RETAINER) (60480)	
41	1	RETAINER (FRONT) -----	60481
42	8	SCREW, CAP -----	60482
(3) (2) 43	1	SEAL (SHAFT) (60483)	
44	1	WASHER (BACKUP) -----	60484
(3) (2) 45	1	SEAL (DIRT) (60485)	
(1)	1	SEAL KIT (MOTOR) -----	65477
(2)	1	SEAL KIT (SHAFT) -----	65478
(3)	1	COMPLETE SEAL KIT (INCLUDES BOTH THE ABOVE) -----	65480

EFFECTIVE 4/20/78

PARTS LIST
DOUBLE SELECTOR VALVE

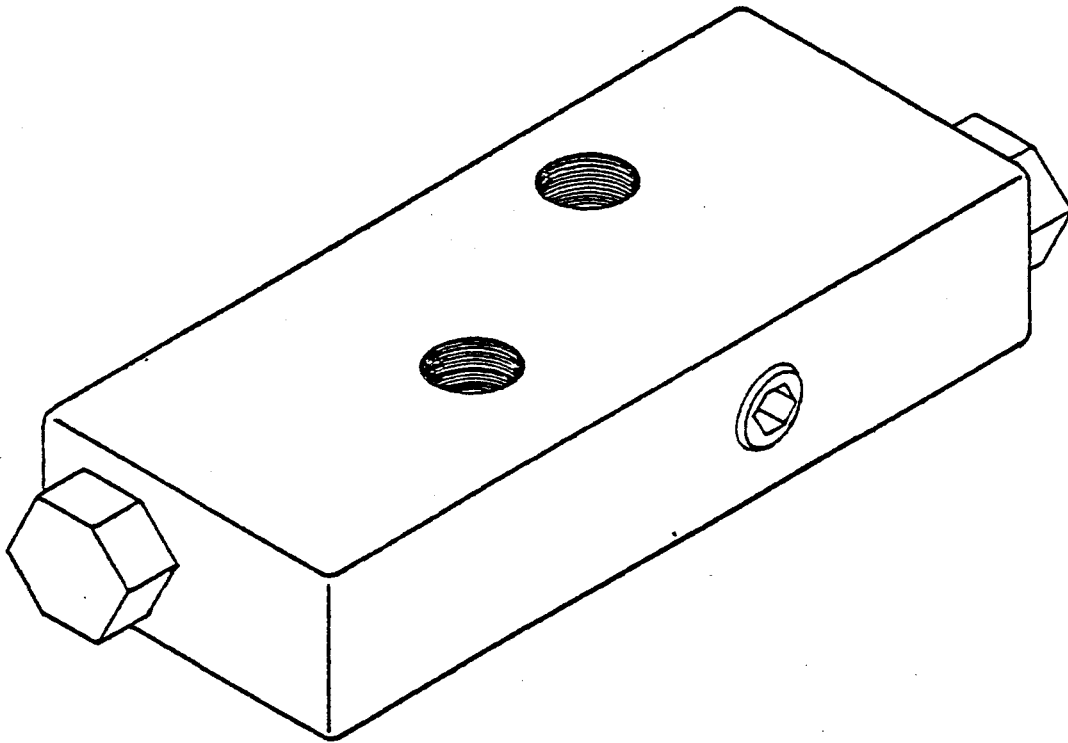


ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION
0	-	63046	Complete Valve
1	1	*	Valve Housing
2	1	*	Valve Spool
3	2	"A"	Spool Seal
4	2	"A"	Snap Ring
5	1	"B"	Handle Pin
6	1	"B"	Cotter Pin
7	1	"B"	Handle Adaptor
8	1	"B"	Lock Washer

*Not sold as separate items. Spools are factory honed to individual housing and are not interchangeable. Repair service available at factory.

"A" Included in seal and snap ring kit #52014

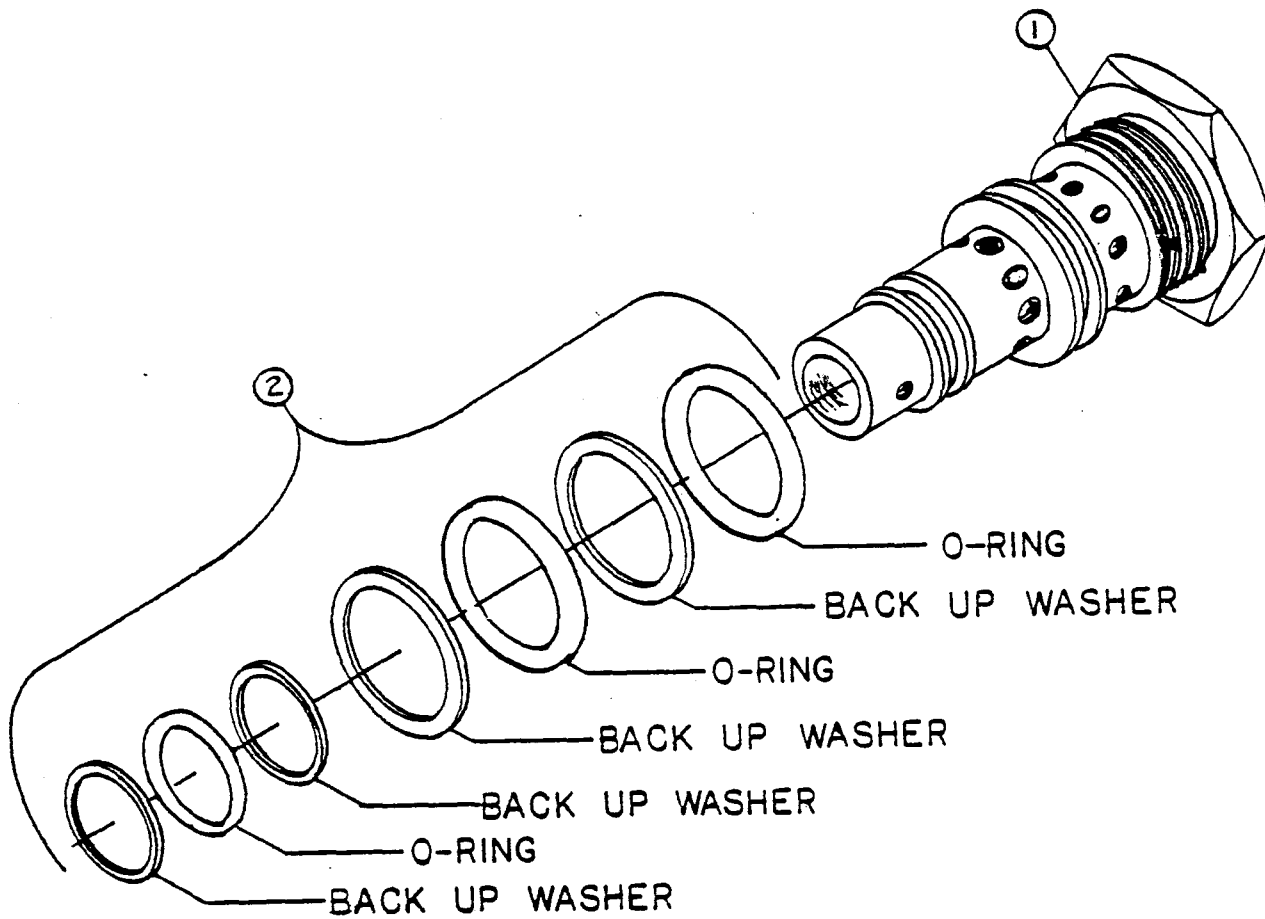
"B" Included in clevis adapter kit #52034



SWING CUSHION VALVE. PART NO. 63064

NOTE: THIS CUSHION VALVE IS LOCATED IN THE SWING CIRCUIT AND IS PLACED BETWEEN THE SELECTOR VALVE AND THE SWING MOTOR (S). SEE HYDRAULIC SCHEMATIC.

LOAD LOCK CARTRIDGE

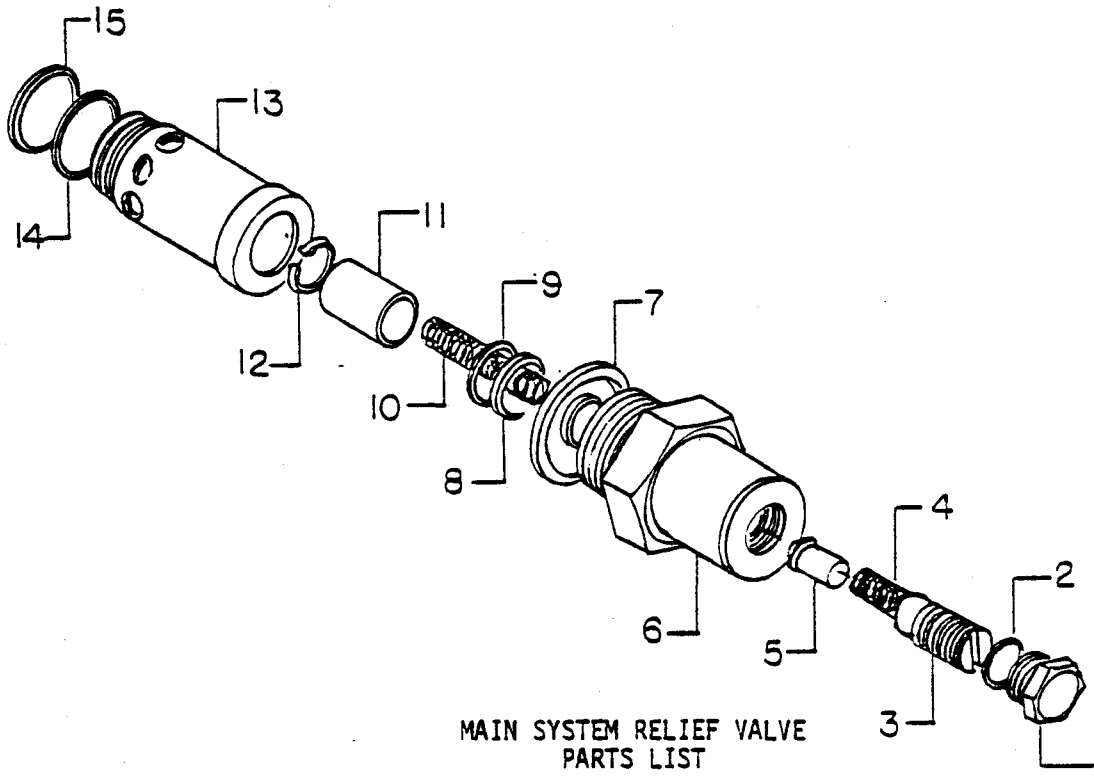


PARTS LIST

CYLINDER LOAD LOCK CARTRIDGE

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	58170	1	Load Lock Cartridge Complete
2	65575	1	Seal Kit

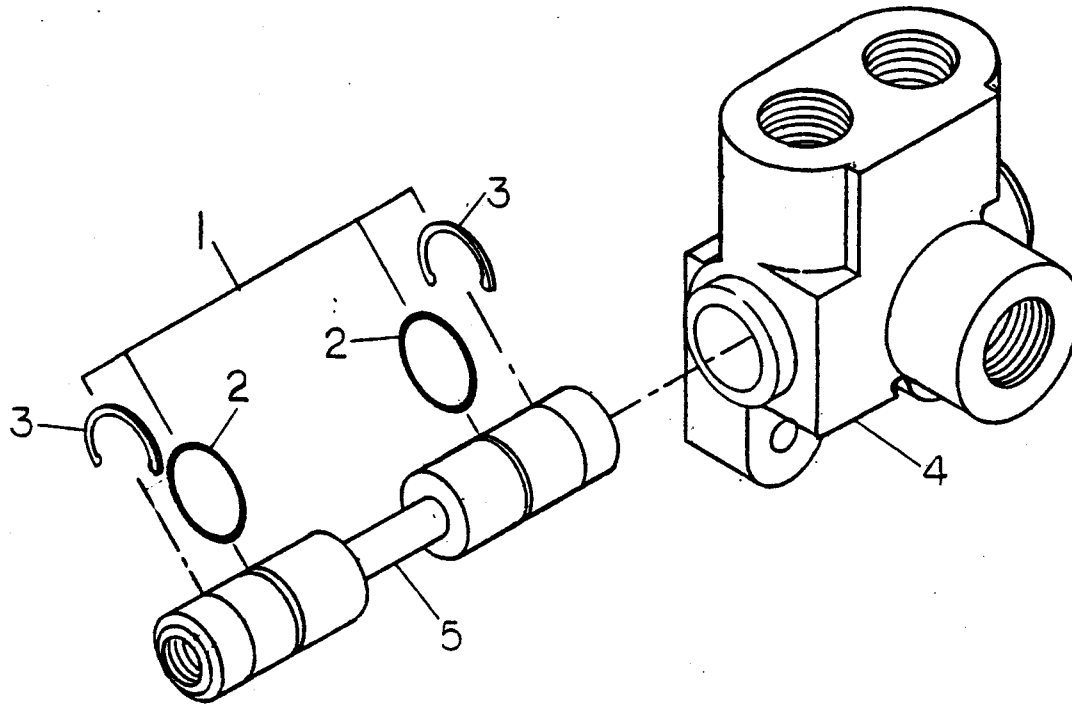
MAIN SYSTEM RELIEF VALVE



<u>REFERENCE NO.</u>	<u>PART NO.</u>	<u>QUANTITY</u>	<u>DESCRIPTION</u>
-	51150	-	Complete Relief Valve
1	51159	1	Relief Cap
2	51158	1	Gasket
3	51160	1	Adjusting Screw
4	51161	1	Pilot Spring
5	51165	1	Poppet
6	51157	1	Pilot Relief Body
7	51152	1	Gasket
8	51155	1	Back-Up Washer
9	51151	1	O-Ring Seal
10	51162	1	Piston Spring
*11	51156	1	Pilot Relief Piston
12	51153	1	Retaining Ring
*13	51154	1	Pilot Relief Cylinder
14	51164	1	Seal
15	51163	1	O-Ring

*Sold Only In Matched Sets

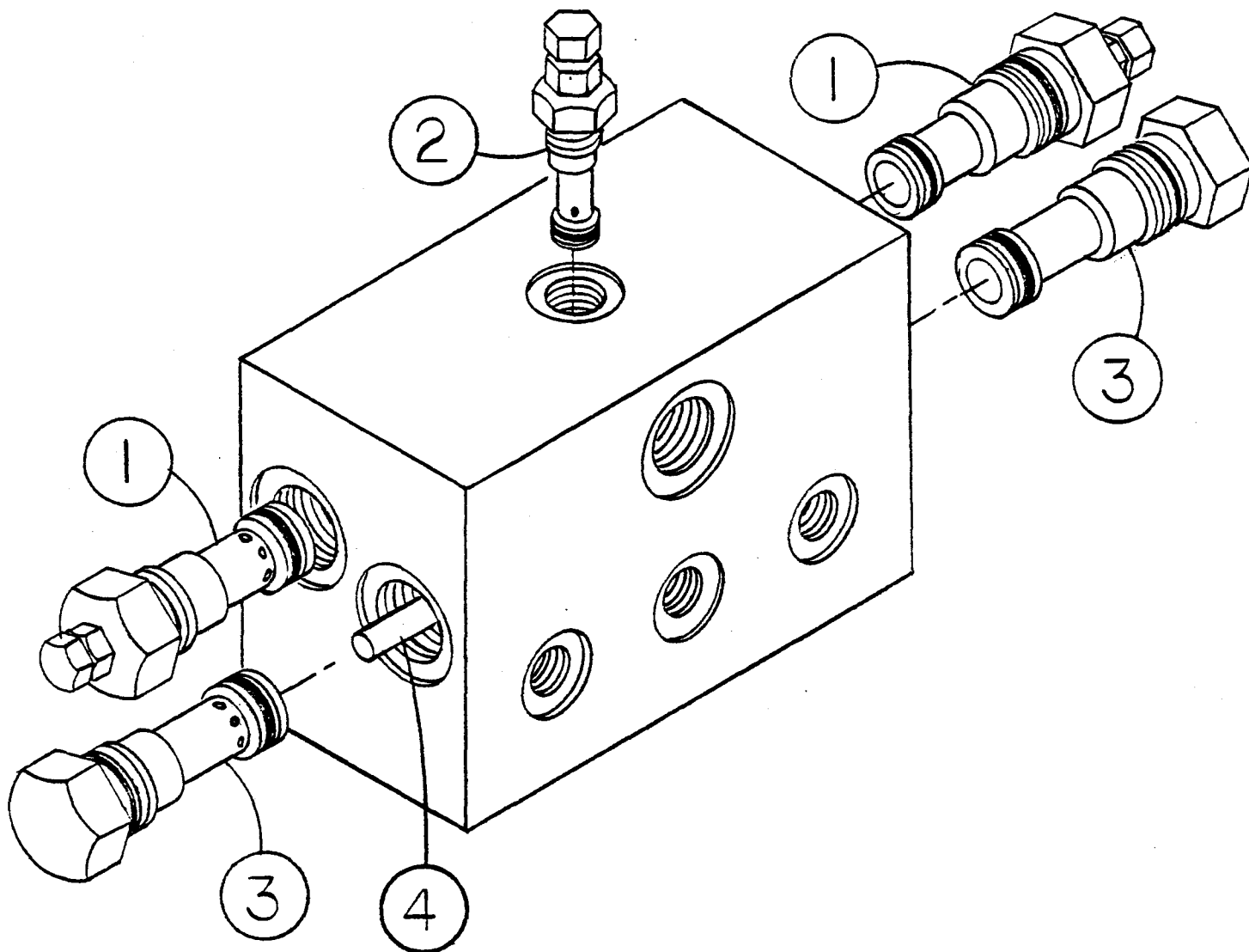
SELECTOR VALVE BREAKDOWN #563-00079



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

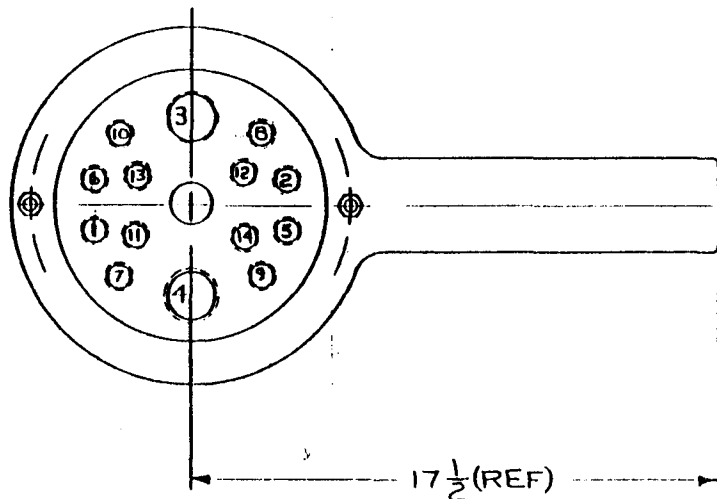
(N.S.S.) - Not sold seperately

Effective date 9-23-80

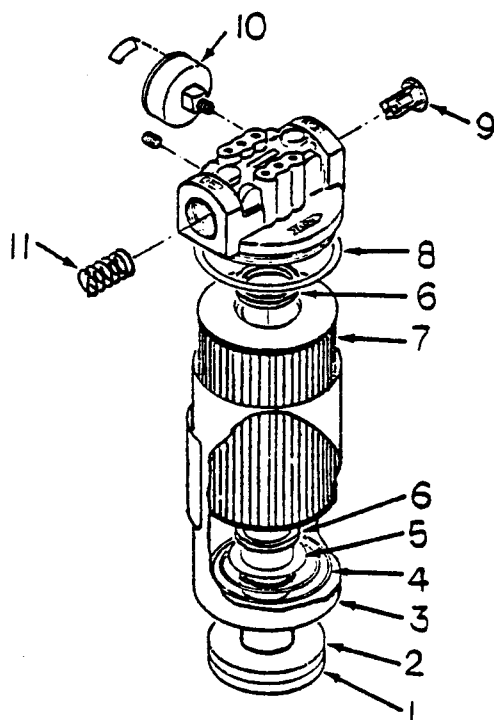


CUSHION VALVE ASSEMBLY

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



2% A		BN SEE ECN 2159		0.005 A		RELEASED ECN 1007		REV. DATE BY DESCRIPTION		B 1 1 1 1 1 1 1	
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RETURN LINE FILTERS

PARTS LIST

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

INSTRUCTIONS FOR REPLACING SPOOL SEALS

40 P VALVE

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

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

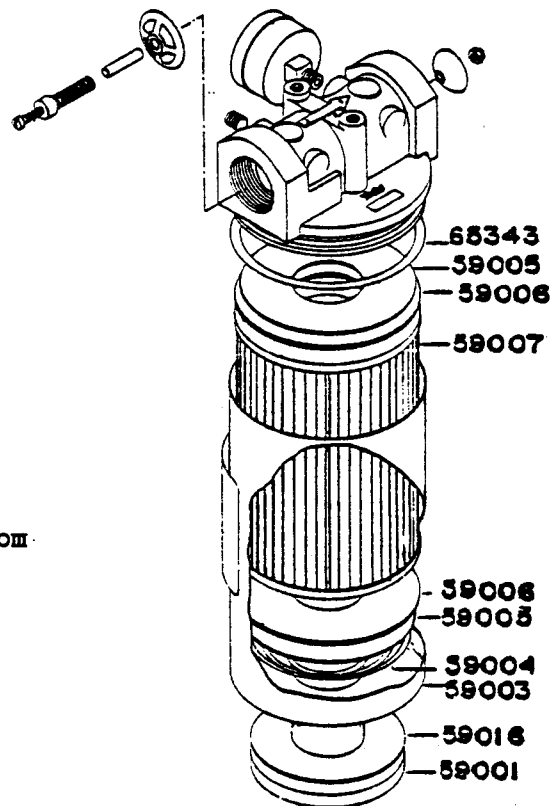
NOTE: IF THIS VALVE DID NOT HAVE A HANDLE INSTALLED, THE SPOOL CAN BE PREVENTED FROM TURNING WHILE REMOVING THE SPRING CENTERING PARTS BY USE OF A SCREWDRIVER INSERTED THROUGH THE CLEVIS SLOT.

I N S T R U C T I O N S
F I L T E R E L E M E N T R E P L A C E M E N T

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

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

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



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

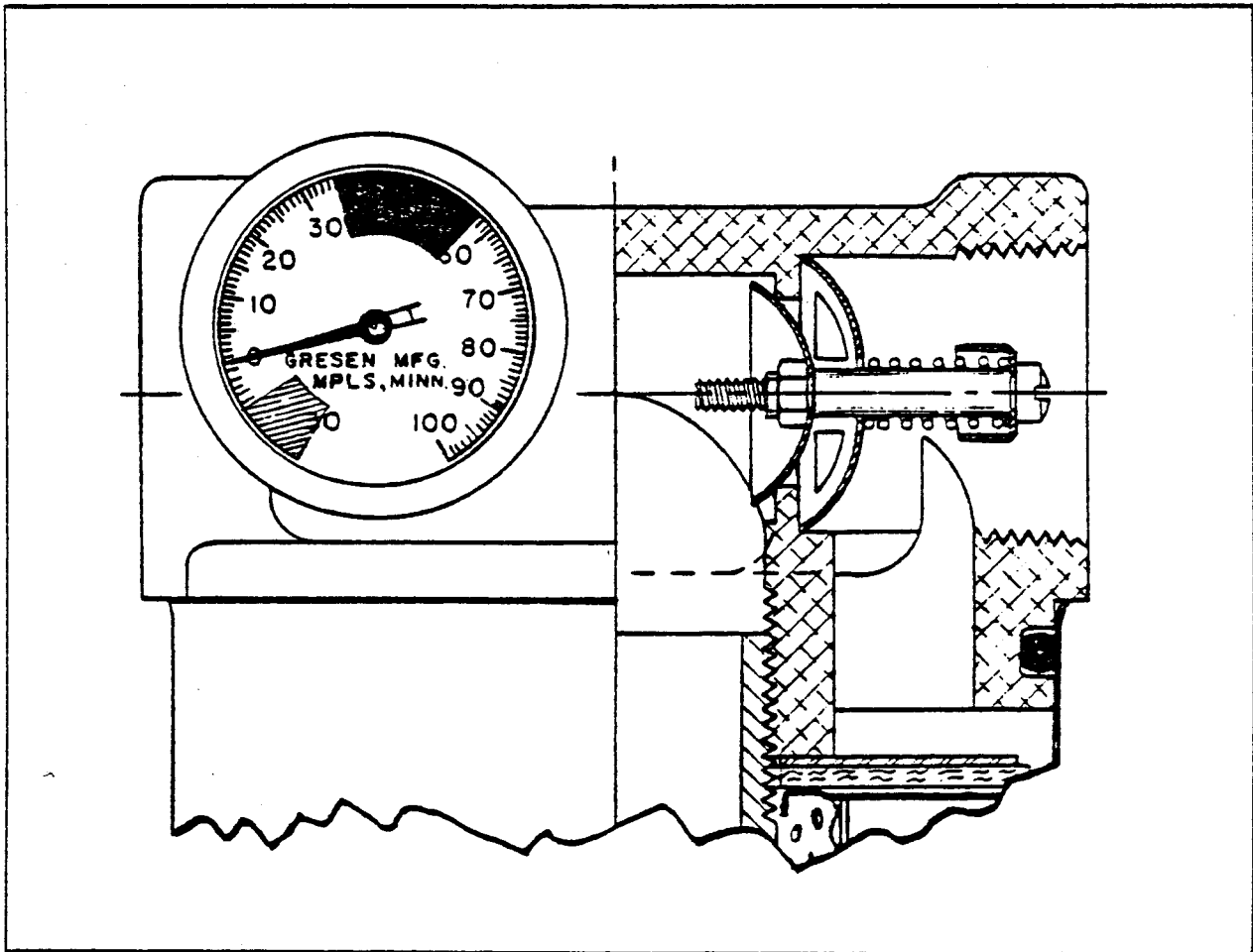
FILTER

INSTRUCTIONS TO REPLACE BY-PASS SPRING

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

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

Reinstall new spring.



BARKO HYDRAULICS, INC.

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

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.

SUBJECT: TURNTABLE BEARING SERVICE REQUIREMENTS

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

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

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

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

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

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

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

PART NUMBER

TOOL

27000	FOR USE WHEN REPLACING SPOOL SEALS IN 25 P VALVES
042200	WRENCH - 1½" BOLT
042201	WRENCH - 2" BOLT
042202	WRENCH - 2½" BOLT
042203	WRENCH - 3½" BOLT



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

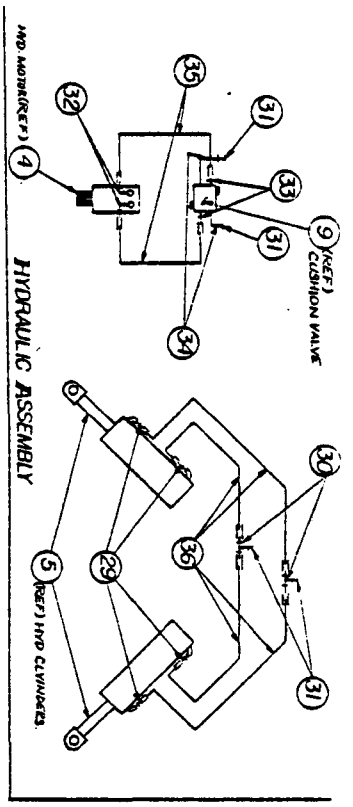
FUNK MFG. CO.

KANSAS

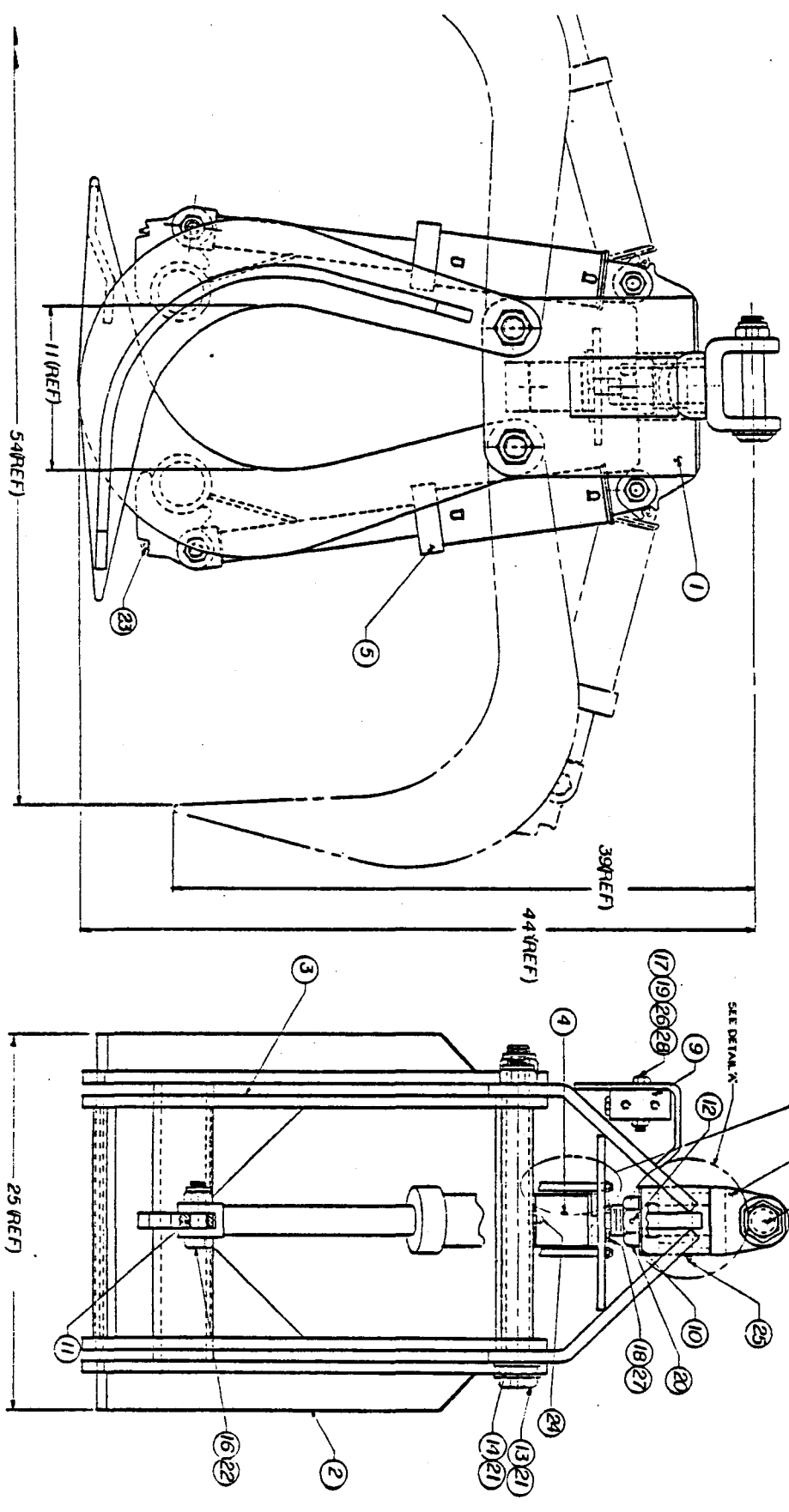
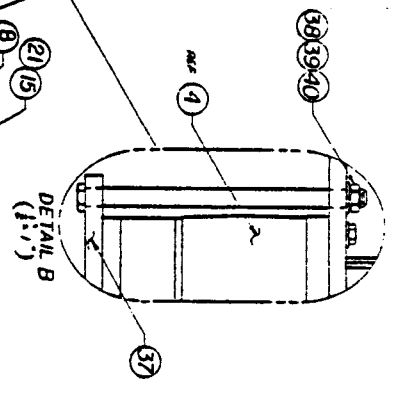
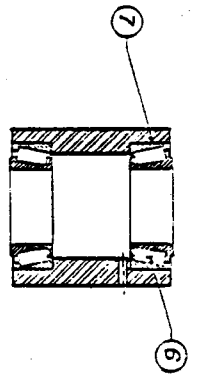
GRAPPLE ASSEMBLY
1/4 CORD BYPASS
360 NONCONTINUOUS ROTATION
PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	154-00002
1	1	WELDMENT, head.....	154-00115
2	1	WELDMENT, outer arm.....	153-00134
3	1	WELDMENT, inner arm.....	153-00133
4	1	MOTOR, hydraulic.....	560-00035
5	2	ASSEMBLY, cylinder, 3½ x 10 x 2" rods.....	812-00002
6	2	BEARING, cone-2" bore.....	541-00718
7	2	BEARING, cup-3.6718 bore.....	541-00717
8	1	WELDMENT, yoke.....	153-00188
9	1	VALVE, cushion.....	563-00124
10	1	WASHER, flat-2".....	514-00096
11	4	BUSHING, hardened steel 1"ID x 1½OD x 1"LG.....	542-00205
12	1	SCREW, socket set 3/8 x 3/8"LG.....	512-00616
13	1	BOLT, body fit 1½ x 21"LG.....	482-00314
14	1	BOLT, body fit 1½ x 19½"LG.....	482-00250
15	1	BOLT, body fit 1½ x 7-5/8"LG.....	482-00347
16	4	BOLT, hex head 1 x 3½"LG.....	514-00426
17	2	BOLT, hex 5/16 x 2-3/4"LG.....	510-00638
18	4	BOLT, hex head 3/8 x 1".....	510-00654
19	2	NUT, hex 5/16".....	513-00207
20	1	NUT, yoke 2".....	481-00711
21	3	NUT, hex lock thin 1½".....	513-00770
22	4	NUT, nylock 1".....	513-00434
23	4	FITTING, grease-straight ¼.....	517-00321
24	2	FITTING, grease-90° 1/8".....	517-00304
25	1	FITTING, grease-straight 1/8".....	517-00300
26	2	WASHER, flat 5/16".....	514-00081
27	4	WASHER, lock 3/8".....	514-00011
28	2	WASHER, lock 5/16".....	514-00010
29	4	ADAPTER, 08MP-08FPX.....	566-00008
30	2	TEE, 08FPX-08FPX-08FPX.....	566-00218
31	4	PLUG, 08MP.....	522-00323
32	2	ELBOW, 08MP-04FPX-90.....	566-00057
33	2	ADAPTER, 08MP-04FPX.....	566-00019
34	2	ELBOW, 08MP-08FPX-90.....	566-00059
35	2	04-2WR2-04MP-04MP-17.....	662-01372
36	4	08-2WR2-08MP-08MP-24.....	662-01373
37	1	PLATE, motor back-up.....	151-00502
38	4	BOLT, hex ½ x 8".....	510-00721
39	4	WASHER, lock ½".....	514-00013
40	4	NUT, hex ½".....	513-00210

Effective Date 12-16-80



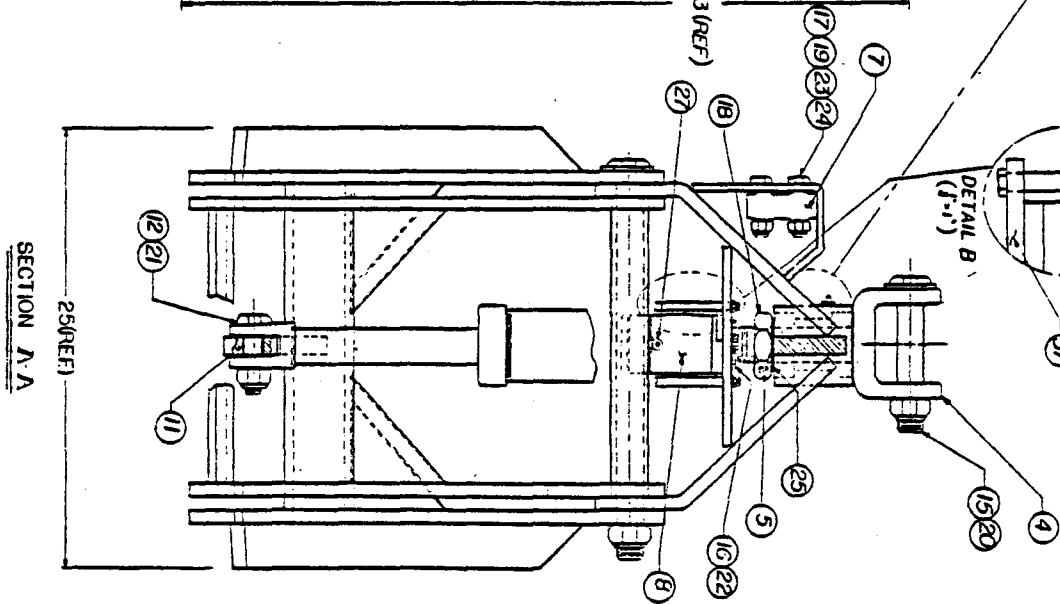
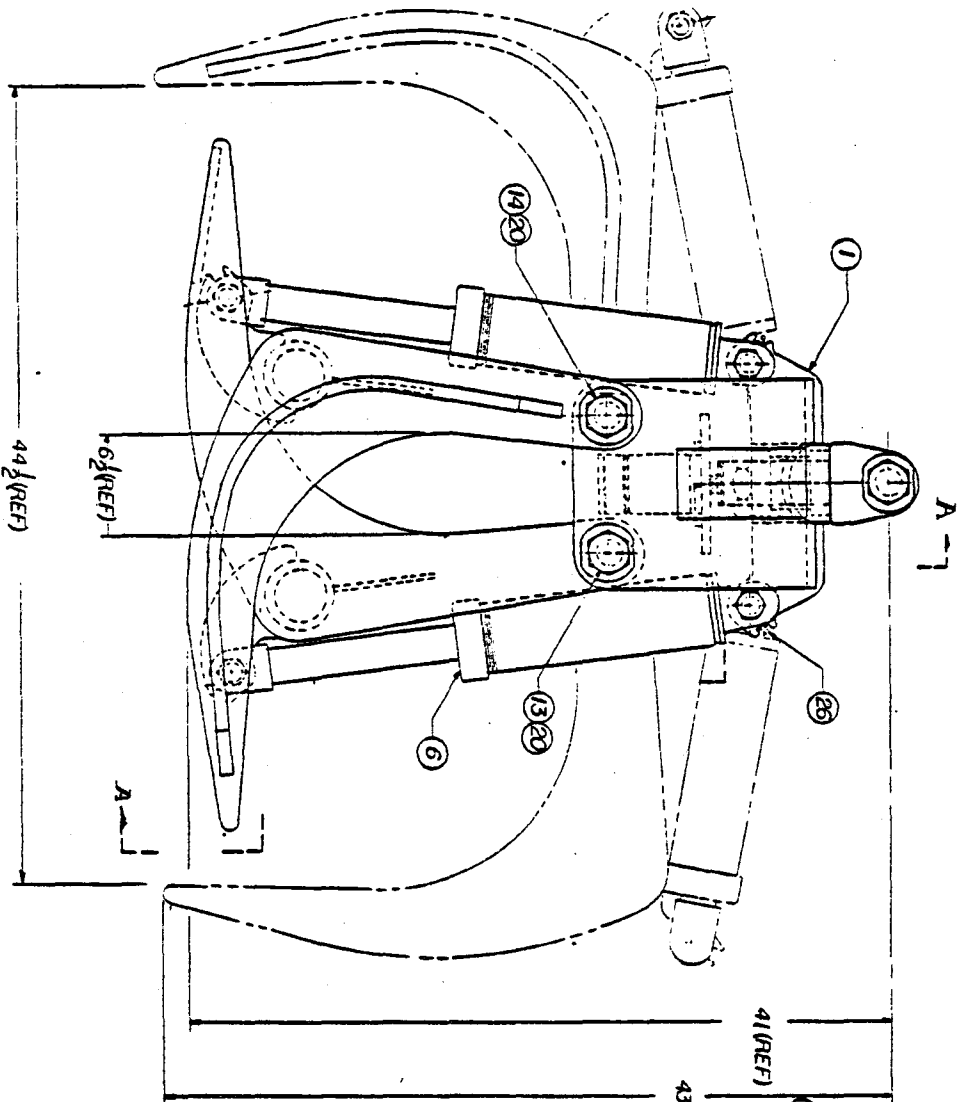
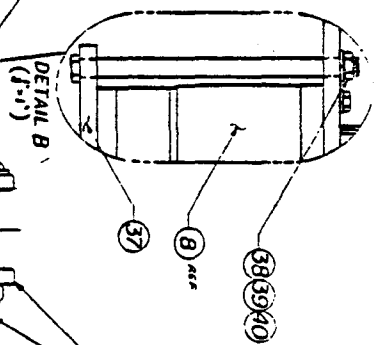
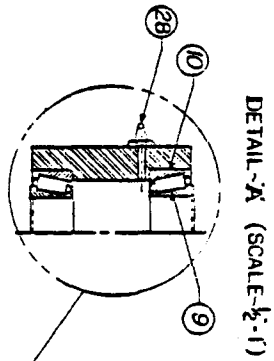
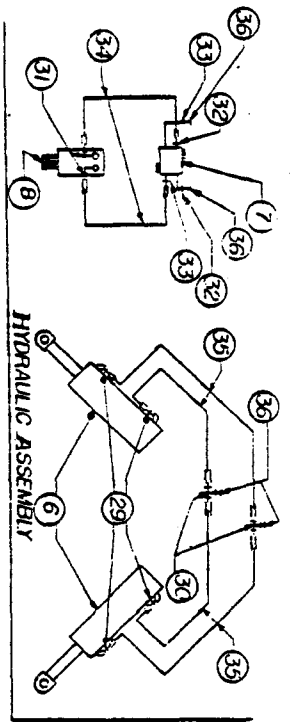
DETAIL A (SCALE 1:1)



GRAPPLE ASSEMBLY
1/5 CORD BYPASS
360 NONCONTINUOUS ROTATION
PARTS LIST

<u>ITEM</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
-	1	ASSEMBLY, complete.....	154-00001
1	1	WELDMENT, head.....	154-00115
2	1	WELDMENT, arm-outer.....	153-00215
3	1	WELDMENT, arm-inner.....	153-00216
4	1	WELDMENT, yoke.....	153-00188
5	1	SCREW, socket set 3/8-16 x 3/8"LG.....	512-00616
6	2	ASSEMBLY, hydraulic cylinder-3½ x 10 x 2".....	812-00002
7	1	CUSHION, block.....	563-00124
8	1	MOTOR, hydraulic.....	560-00035
9	2	BEARING, cone-2" dia. bore.....	541-00718
10	2	BEARING, cup-3.6718 dia. bore.....	541-00717
11	4	BUSHING, hardened steel 1"ID x 1½OD x 1"LG.....	542-00205
12	4	BOLT, hex head 1 x 3½"LG.....	514-00426
13	1	BOLT, body fit 1½ x 21" LG.....	482-00314
14	1	BOLT, body fit 1½ x 19½" LG.....	482-00250
15	1	BOLT, body fit 1½ x 7-5/8"LG.....	482-00347
16	4	BOLT, hex head 3/8 x 1" LG.....	510-00654
17	2	BOLT, hex head 5/16 x 2-3/4" LG.....	510-00638
18	1	NUT, yoke 2".....	481-00711
19	2	NUT, hex 5/16".....	513-00207
20	3	NUT, hex lock thin 1½-12".....	513-00770
21	4	NUT, nylock 1".....	513-00434
22	4	WASHER, lock 3/8".....	514-00011
23	2	WASHER, lock 5/16".....	514-00010
24	2	WASHER, flat 5/16".....	514-00081
25	1	WASHER, flat 2".....	514-00096
26	4	FITTING, grease ¼" straight.....	517-00321
27	2	FITTING, grease 90° 1/8".....	517-00304
28	1	FITTING, grease 1/8" straight.....	517-00300
29	4	ADAPTER, 08MP-08FPX.....	566-00008
30	2	TEE, 08FPX-08FPX-08FPX.....	566-00218
31	2	ELBOW, 08MP-04FPX-90.....	566-00057
32	2	ADAPTER, 08MP-04FPX.....	566-00019
33	2	ELBOW, 08MP-08FPX-90.....	566-00059
34	2	04-2WR2-04MP-04MP-17.....	662-01372
35	4	08-2WR2-08MP-08MP-24.....	662-01373
36	4	PLUG, 08MP.....	552-00323
37	1	PLATE, motor back-up.....	151-00502
38	4	BOLT, hex ½ x 8".....	510-00721
39	4	WASHER, lock ½".....	514-00013
40	4	NUT, hex ½".....	513-00210

Effective Date 12-16-80



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