

MODEL 500 SCRAPER

HOW TO ORDER PARTS:

Be sure to state MODEL and SERIAL NO. of machine, PARTS NO., DESCRIPTION, and QUANTITY wanted.

Unless this is done, we cannot provide prompt service or assure shipment of the correct parts.

INDEX

PAGE NO.

1-2.	Assembly Instructions
3.	Operator and Maintenance Instructions
4.	Frame Assembly
5.	Pole, Axle, Hub & Wheel
6.	Actuating Assembly
7.	Bucket & Apron Assembly
8.	Rear Frame Section
9.	Wheel, Hub and Spindle Assembly
10.	Single Lock Line Valve
11.	Sequence Valve, Line Check Valve
12.	Hydraulic Cylinder (Right, 4" x 16")
13.	Hydraulic Cylinder (Left, 4" x 16")
14.	Hydraulic Cylinder (4" x 8")
15.	PMC-5600D Series
16.	Plumbing Assembly
17.	How to Operate the W7B-20DC Rim

MODEL 500 SCRAPER ASSEMBLY INSTRUCTIONS

1. A suitable hoist or lift should be available for assembly.
2. Pack wheel bearing with grease and install hubs to rear spindles and front axle assembly. Be sure to follow the bearing numbers as shown in the parts listing as the front hubs require different bearings than the rear.
3. Raise the rear of the frame and install wheels to hubs. Also install wheels to front axle assembly.
4. Raise front of frame and remove the two 5/8" x 4" bolts which hold the cast socket halves inside the gooseneck. Remove the cast socket halves.
5. Roll the pole and axle assembly directly under the gooseneck, place the cast socket halves around the ball socket on the axle. Lower the frame into place so that the socket halves seat into the gooseneck. (If necessary, clamp halves together with C-clamp while inserting into gooseneck). Replace 5/8" x 4" bolts and tighten securely. Install long shank grease fitting into the hole in the back side of gooseneck.
6. Raise actuating frame over bucket and lower into place so that the holes in the arms of the actuating frame align with the rear hole on each side of the bucket. Insert 1 1/4" x 2-9/16" pin (with tab type head) from the inside of the bucket. Secure with 5/8" x 1 1/2" bolt through bucket side with lock nut to the outside.
7. Connect actuating arm bars to the front holes in the bucket. In doing so, be sure that the cast roller on the opposite end of the actuating arm is in the up position and facing inward. Insert 1 1/4" x 2-9/16" pin (with tab type head) from the inside on the bucket. Secure with 5/8" x 1 1/2" NF bolt through the bucket side with lockwasher and nut to the outside.
8. Connect a short chain from the cutting edge to the cross pipe of the actuating frame, then raise this bucket and actuating assembly over the main frame and lower into place so that the front of the actuating frame can be connected to the 1 1/2" ID bearing on each side of the main frame. Secure with 1 1/2" x 5-5/8" pins on each side. Lock these pins in place by turning the pin until the hole in the head aligns with threaded hole in the actuating frame, then secure with 1/2" x 1" NC capscrew and lockwasher.
9. Lift front end of actuating arms and connect to the brackets on the front frame cross member using the 1 1/4" x 4-1/8" pins. Secure with 1/4" x 2" cotter pin.
10. Installing the hydraulic cylinders:
 - A. Install the cylinder with three hose ports on the left side of the scraper with the rod end to the actuating frame and the grease hole in the rod end bushing facing up. Use 1-1/8" x 3 1/4" pin at the base of the cylinder. Secure with 3/16" x 1 1/2" cotter pins. Use 1-1/8" x 6" pin at the rod end of the cylinder. Secure with 1/2" x 1" NC capscrew and lockwasher.
 - B. Install 3/8" NPT 90° swivel adapters in all three ports of the cylinder. Tighten so that the swivel will be facing toward the rear. The extreme forward swivel will have to be turned slightly to the outside so that the hose will clear the swivel in the center port.
 - C. Connect a 3/8" x 18" hose from the forward pipe line on the frame cross-member to the base (rear) port of the cylinder.

- D. Connect a 3/8" x 36" hose from the pipe line on the frame cross-member to the center port of the cylinder.
- E. Connect a 3/8" x 36" hose from the center pipe line on the frame cross-member to the extreme forward port of the cylinder.
- F. Install the cylinder with the two hose ports on the right side of the scraper with the rod end to the actuating frame, and the grease hole in the rod end bushing facing up. Use the same size pins as the cylinder on the left side.
- G. Install 3/8" NPT 90° swivel adapters in both ports of the cylinder. Tighten so that the swivel will be facing toward the rear.
- H. Connect a 3/8" x 18" hose from the forward pipe line on the frame cross-member to the base (rear) port of the cylinder (same as left cylinder).
- I. Connect a 1/2" x 36" hose from the remaining pipe line on the frame cross-member to the forward port of the cylinder.
- J. Install the 4" x 8" hydraulic cylinder on the rear of the scraper with the rod end connected to the rear frame section with the grease hole facing up. Insert the 1-1/8" x 3-1/8" square head pin at the base of the cylinder. Secure with 3/16" x 1 3/4" cotter pin. Use 1-1/8" x 3 1/2" square head pin at the rod end of the cylinder and secure with a 3/16" x 1 3/4" cotter pin.
- K. Install 3/8" NPT male x 1/2" NPT female 90° swivel adapters in the two ports of the rear cylinder. Tighten so the swivels face toward each other and somewhat to the left of the scraper.
- L. Install one 1/2" x 24" hose form the lower elbow of the single line lock valve to the base port of the cylinder. Install the remaining 1/2" x 24" hose form the upper elbow of the lock valve to the rod end port of the cylinder.
11. Raise the apron assembly over the scraper and lower into position so that the holes in the arms of the apron align with the holes in the bucket sides. Insert the 1 1/4" to 1" shoulder pin through the apron arms and into the bucket. Install lock nut inside the bucket and tighten securely.
12. Install all the grease fittings and grease liberally.
13. If available, place assembled scraper on level floor or pavement and measure the distance from the cutting edge to floor, on both left and right sides, and then adjust axle spindle to obtain equal distance on both sides.

ASHLAND INDUSTRIES, INC.

OPERATOR AND MAINTENANCE INSTRUCTIONS

The scraper is a durable piece of equipment and with proper care will yield many years of trouble free operation. The scraper requires a power source with one 4-way (double acting) hydraulic control valve.

After scraper has been assembled, it should be greased at all points where grease fittings are provided. Connect hydraulic hoses to tractor and operate the scraper to maximum raise and drop several times to force any air from the hydraulic lines and cylinders. Check the oil level in the tractor hydraulic system and add to maintain the proper level.

When the scraper is placed into operation, the operator will have to "feel out" the amount of depth of cut to obtain maximum loading efficiency. This is usually accomplished by taking a lesser and more uniform cut. However, some soil conditions such as loose sand may require a "pumping action" obtained by taking successive deep cuts and lifting out of cut as the tractor begins to lose power or traction.

1. After 10 hours work, all bolts should be checked and tightened if necessary.
2. Every 10 hours all grease fittings should be lubricated.
3. After 50 hours work, all bolts should be rechecked and tightened if necessary. Check wheel bearings and adjust if necessary.
4. After 300 hours work, clean and repack wheel bearings and replace, if necessary, cutting edges, worn pins, etc.

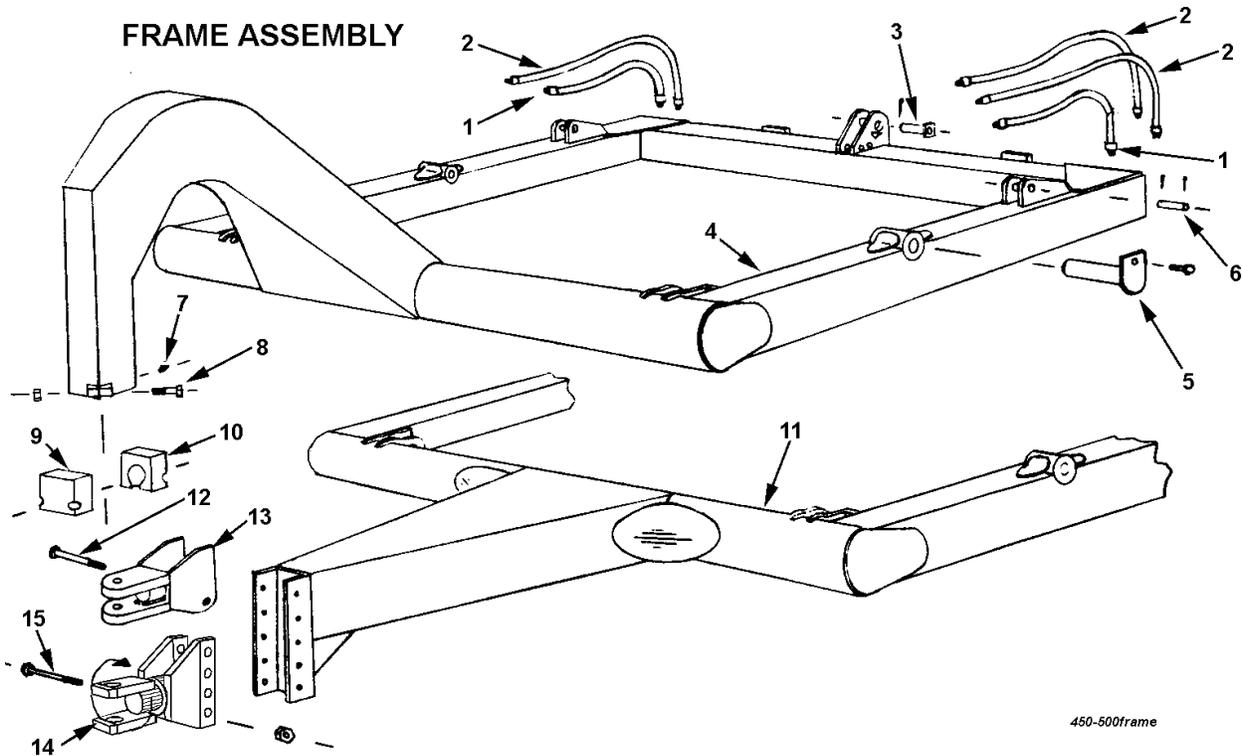
SPREAD CONTROL ON MODEL 500 SCRAPERS

The hydraulic cylinder on the rear section of the main frame controls the distance the cutting edge is from the ground after the bucket is in dump position. When the bucket first reaches dump position, the cutting edge is at the minimum spreading depth (approx. 2") and as additional depth of spread is desired, the same hydraulic control valve on the tractor is actuated and the cutting edge raises allowing for the increased depth of spread.

This is accomplished when the flow of hydraulic oil is automatically diverted from one of the hydraulic cylinders on the side of the scraper to the hydraulic cylinder at the rear. The rear cylinder lifts the entire main frame and bucket assembly upward, allowing for the increased distance between the cutting edge and the ground.

ASHLAND INDUSTRIES, INC.

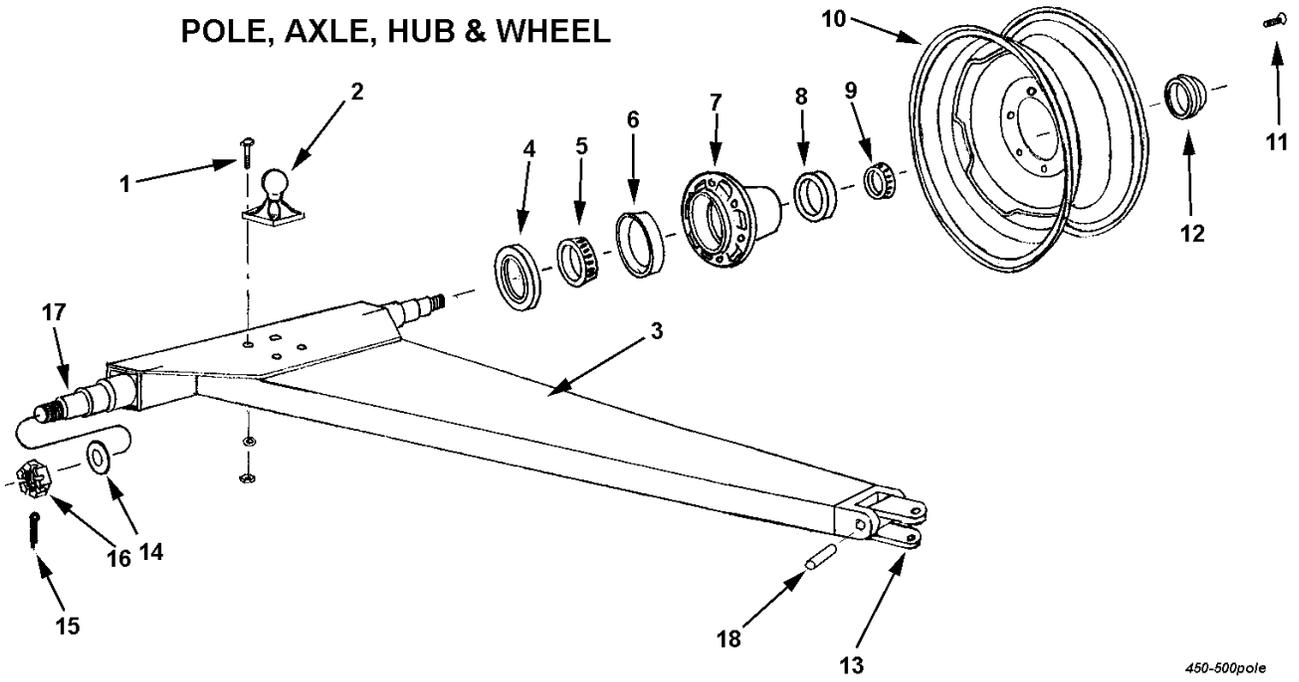
FRAME ASSEMBLY



450-500frame

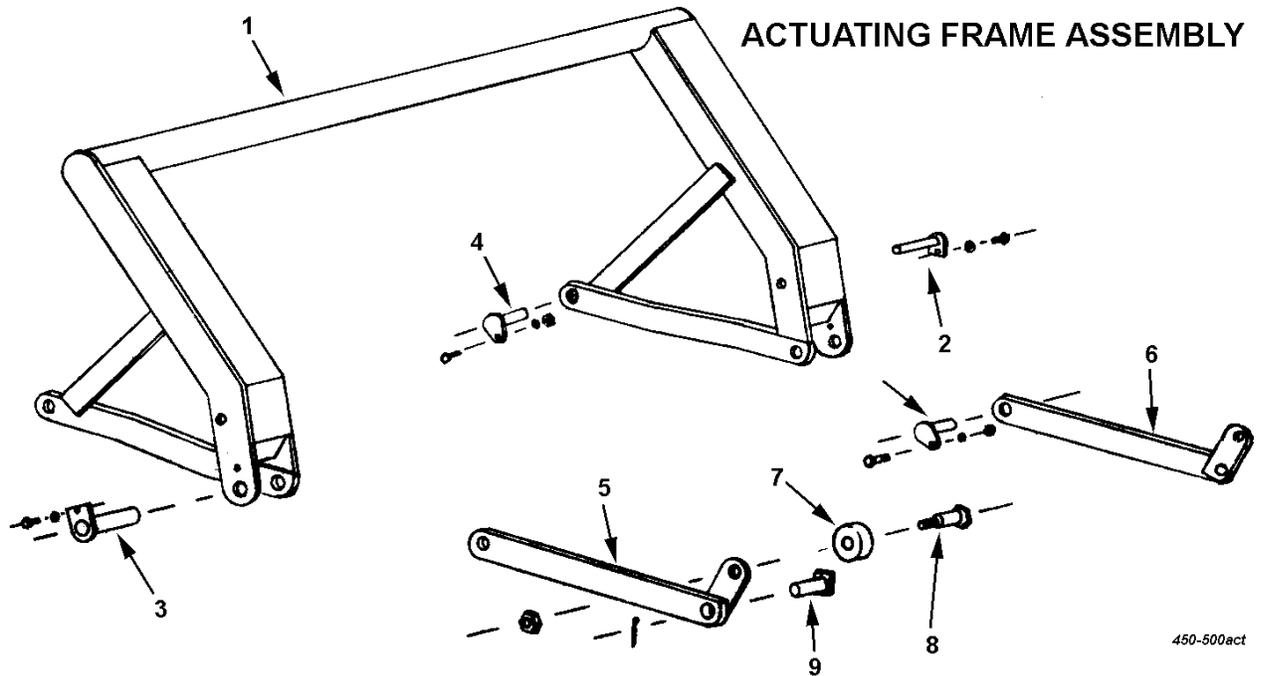
KEY NO.	PART NO.	DESCRIPTION
1	A450H01	Hydraulic hose, 3/8" x 18" single braid
2	A450H02	Hydraulic hose, 3/8" x 36" single braid
	A22H03	Swivel adapter, 3/8" 90°
3	A45001	Pin, 1-1/8" x 3-1/8" w/ sq. head
		Cotter pin, 3/16" x 1-1/2"
4	A45002	Frame, four wheel, Model D
5	A2502	Pin, 1-1/2" x 5-5/8" w/ tab head
6	A45003	Pin, 1-1/8" x 3-1/4", cotter both ends
		Cotter pin, 3/16" x 1-1/2"
7	A2206	Grease fitting, 1/8" NPT strt. long shank
8		Bolt, 5/8" x 4" NC, w/ nut & LW
9	A40004	Cast socket half, front
10	A40005	Cast socket half, rear w/ grease hole
11	A45004	Frame, two wheel, Model S
12		Bolt, 3/4" x 6" NC w/ nut & LW
13	A4523	Hitch
14	A5004	Swivel hitch
15		Bolt, 1" x 6-1/2" NC w/ nut & LW

POLE, AXLE, HUB & WHEEL

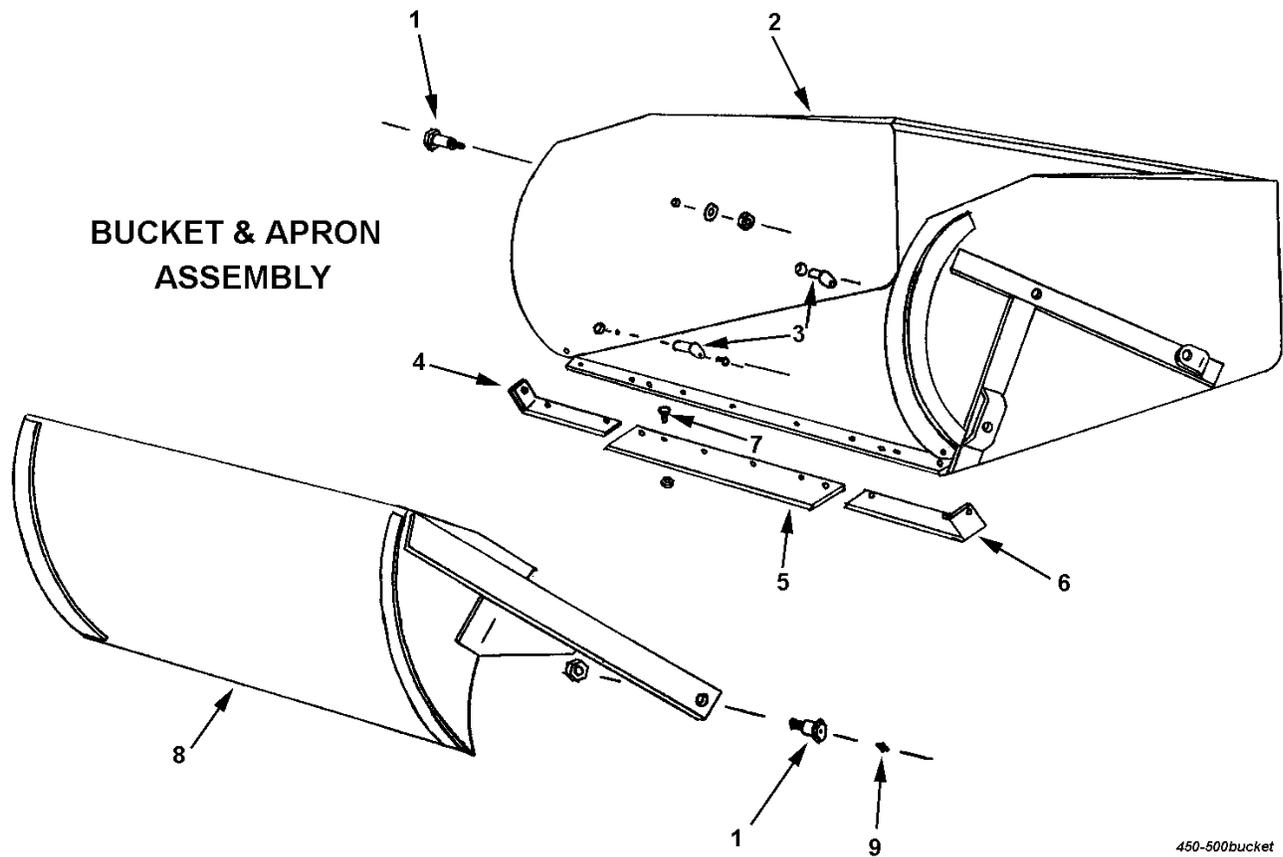


450-500pole

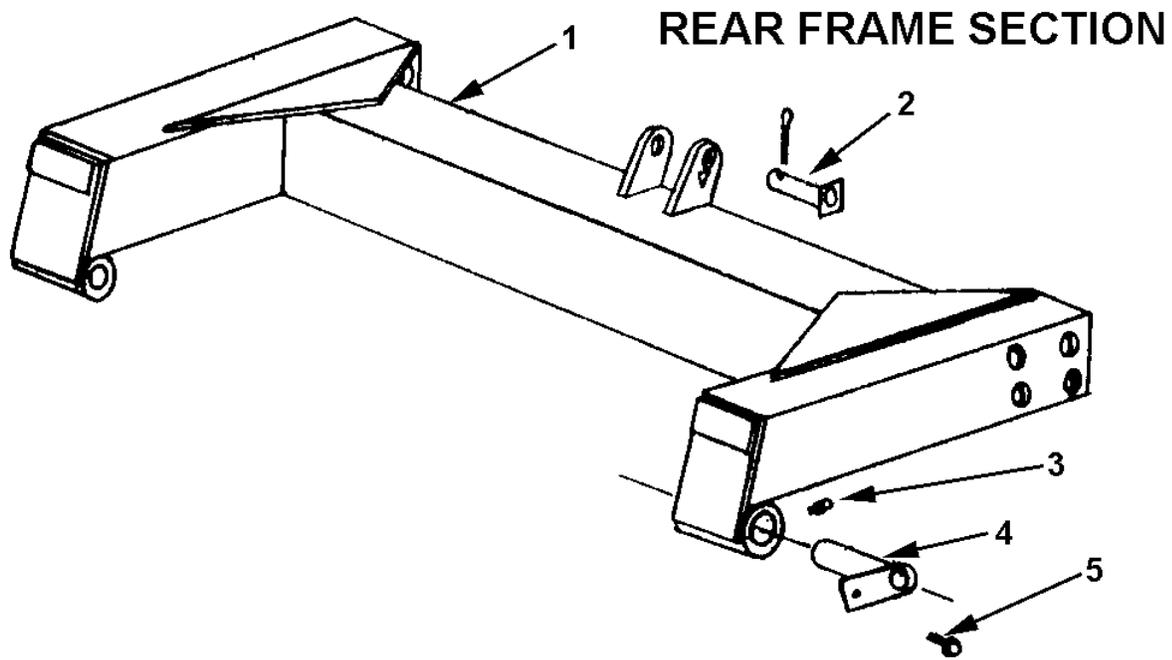
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1		Bolts, 3/4" x 2-1/2" NC w/ nut & LW
2	A40006	Ball swivel
3	A5002	Pole and axle
4	A2229A	Grease seal
5	A2230A	Bearing cone, inner
6	A2231	Bearing cup, inner
7	A2232	Hub, less bearing cups
8	A2233	Bearing cup, outer
9	A2234	Bearing cone, outer
10	A4554	Wheel, 15" x 8"
11	A2236	Wheel bolt
12	A2235	Hub cap
13	A4553	Swivel hitch
14	A2239	Washer, special 7/8" flat
15		Cotter pin, 5/32" x 1-1/4"
16		Nut, 7/8" NF castellated
17	A5006	Spindle, weld
18	A6014	Pin, 1-3/4" x 6-3/4"



<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A45005	Actuating frame
2	A4524	Pin, 1-1/8" x 6" w/ tab head
3	A2502	Pin, 1-1/2" x 5-5/8"
4	A45006	Pin, 1-1/4" x 2-9/16" w/ locking head
5	A45008	Actuating arm, right
6	A45007	Actuating arm, left
7	A30002	Roller
8	A30003	Shoulder pin, 2-1/2" shoulder, 1-1/4" to 1"
9	A6007A	Nut, 1" NF w/ lock nut
		Pin, 1-1/4" x 4-1/8" w/ sq. head & hole for gr. zerk
		Cotter pin, 1/4" x 2"



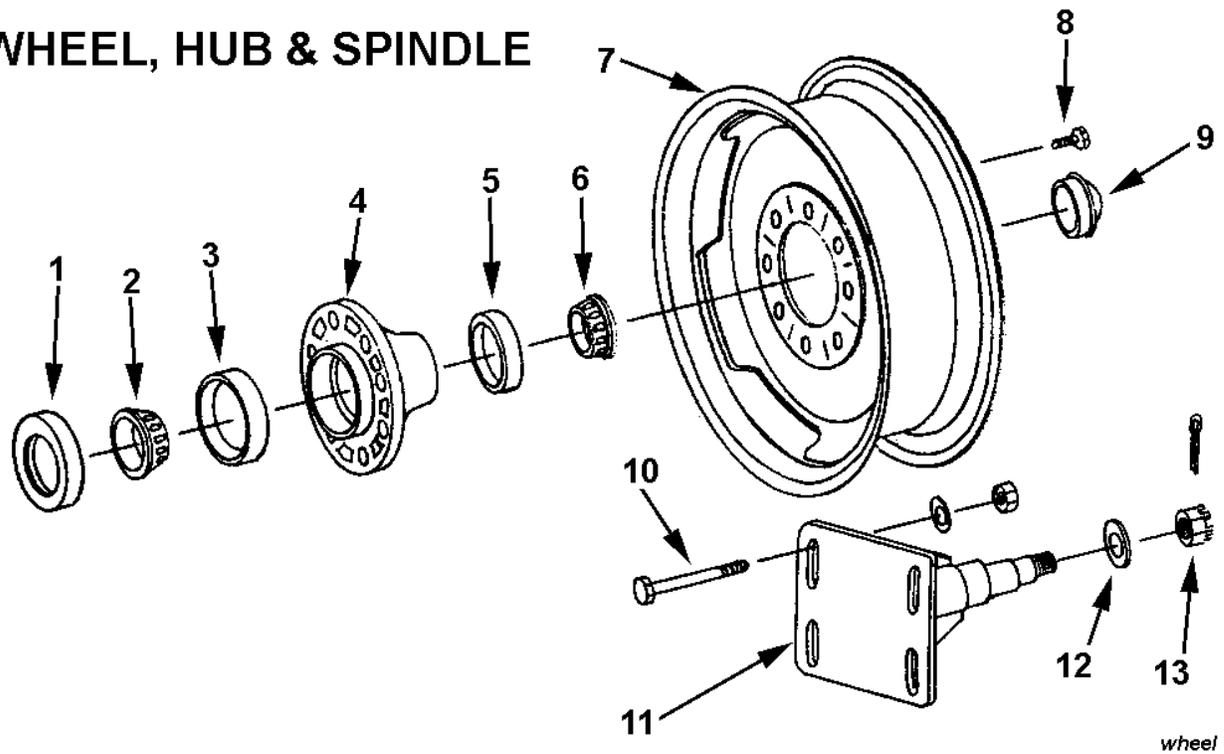
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A30020	Shoulder pin, 1-1/4" to 1" NF w/ ctsk. hole Nut, 1" NF lock type
2	A5003	Bucket, used on Model 500
3	A45006	Pin, 1-1/4" x 2-9/16" w/ locking head
4	A2225	Bolt, 5/8" x 1-1/2" NC w/ lock washer
5	A45010	Right cutting edge, 6"
6	A2222	Center cutting edge, 8" x 50"
7		Left cutting edge, 6"
7		Plow bolt, 1/2" x 1-3/4" w/ nut (6 req'd)
7		Plow bolt, 5/8" x 2" w/ nut (6 req'd)
8	A45011	Apron
9		Grease fitting, 1/8" NPT regular



450-500rearframe

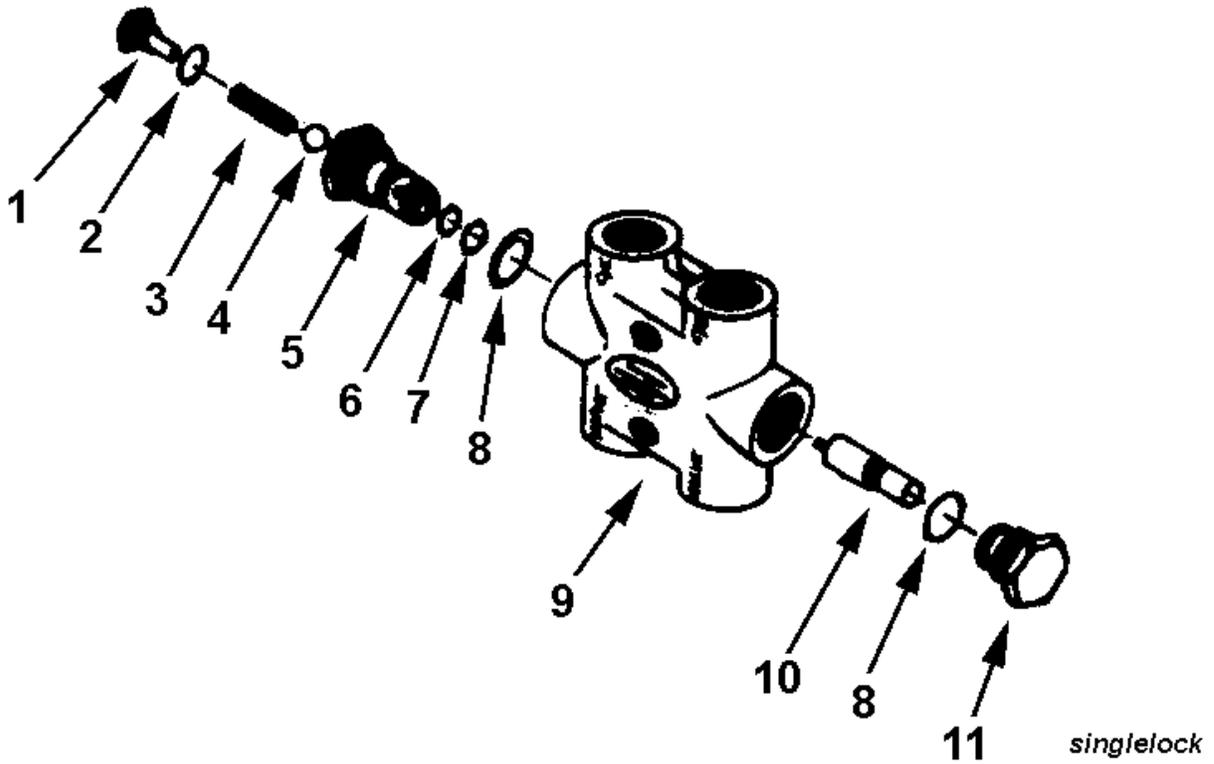
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A45012	Frame section
2	A60002	Pin, 1-1/8" x 3-5/8" w/ sq. head
3		Cotter pin, 3/16" x 1-1/2"
3		Grease fittings, 1/8" NPT strt. std.
4	A2502	Pin, 1-1/2" x 5-5/8"
5		Capscrew, 1/2" x 1" NC, w/ LW

WHEEL, HUB & SPINDLE



<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A4512	Grease seal
2	A4513	Bearing cone, inner
3	A4514	Bearing cup, inner
4	A4515	Hub, less bearing cups
5	A2233	Bearing cup, outer
6	A4516	Bearing cone, outer
7	A4521A	Wheel, 20" D.C.
8	A4519	Wheel bolt
9	A2235	Hub cap
10		Bolt, 3/4" x 6" NC w/ nut & FW
11	A4520	Spindle
12	A2239	Washer, special 7/8" flat
13		Nut, 7/8" NF castellated
		Cotter pin

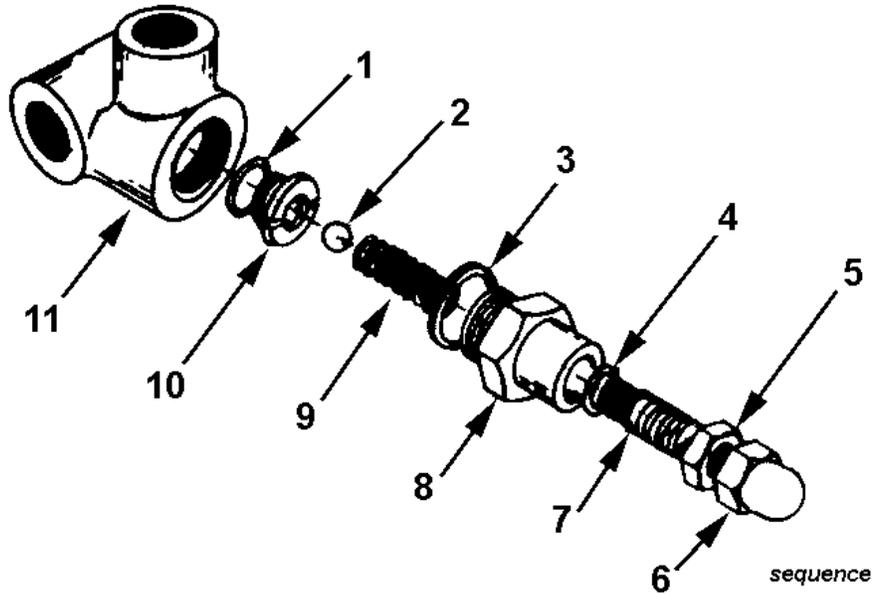
SINGLE LOCK LINE VALVE



<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
*1	A600H01	Valve stem plug
*2	A600H02	O-ring, seal
*3	A600H03	Spring
*4	A600H04	Ball valve
*5	A600H05	Valve seat sleeve
*6	A600H07	O-ring seal
*7	A600H08	Backup washer
*8	A600H06	O-ring seal
9	A600H10	Valve housing
*10	A600H09A	Plunger kit
*11	A600H11	Plug
	A600H12	Complete valve assembly

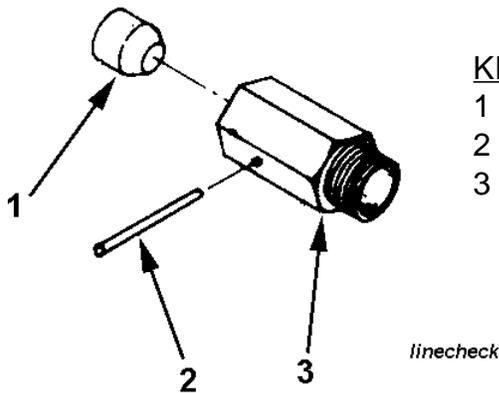
* Parts sold in kit only, Kit No. A600H09A

SEQUENCE VALVE



<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A600H22	Relief seat O-ring
2	A600H20	Ball
3	A600H18	Valve body gasket
4	A600H16	Adjusting screw O-ring
5	A600H14	Jam nut
6	A600H13	Acorn cap
7	A600H15	Adjusting screw
8	A600H17	Valve body
9	A600H19	Spring
10	A600H21	Relief seat
11	A600H23	Valve housing
	A600H24	Complete valve assembly

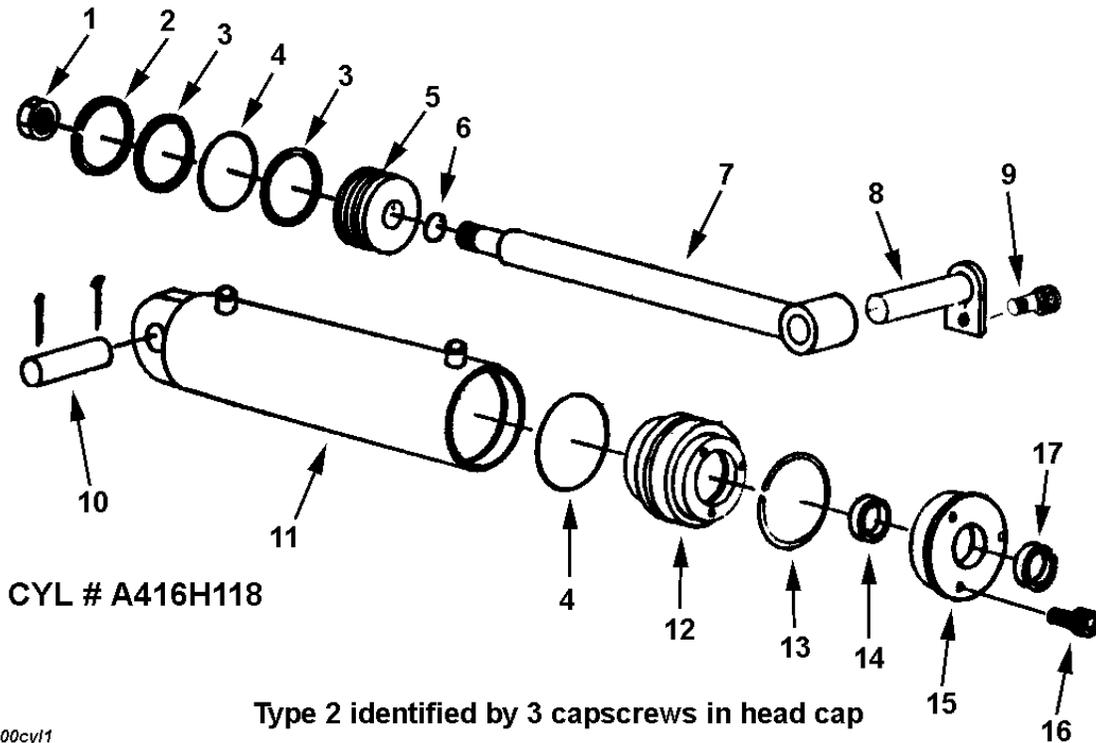
LINE CHECK VALVE



<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A600H25	Check poppet
2	A600H27	Taper pin
3	A600H26	Valve body
	A600H28	Complete valve assembly

RIGHT HYDRAULIC CYLINDER

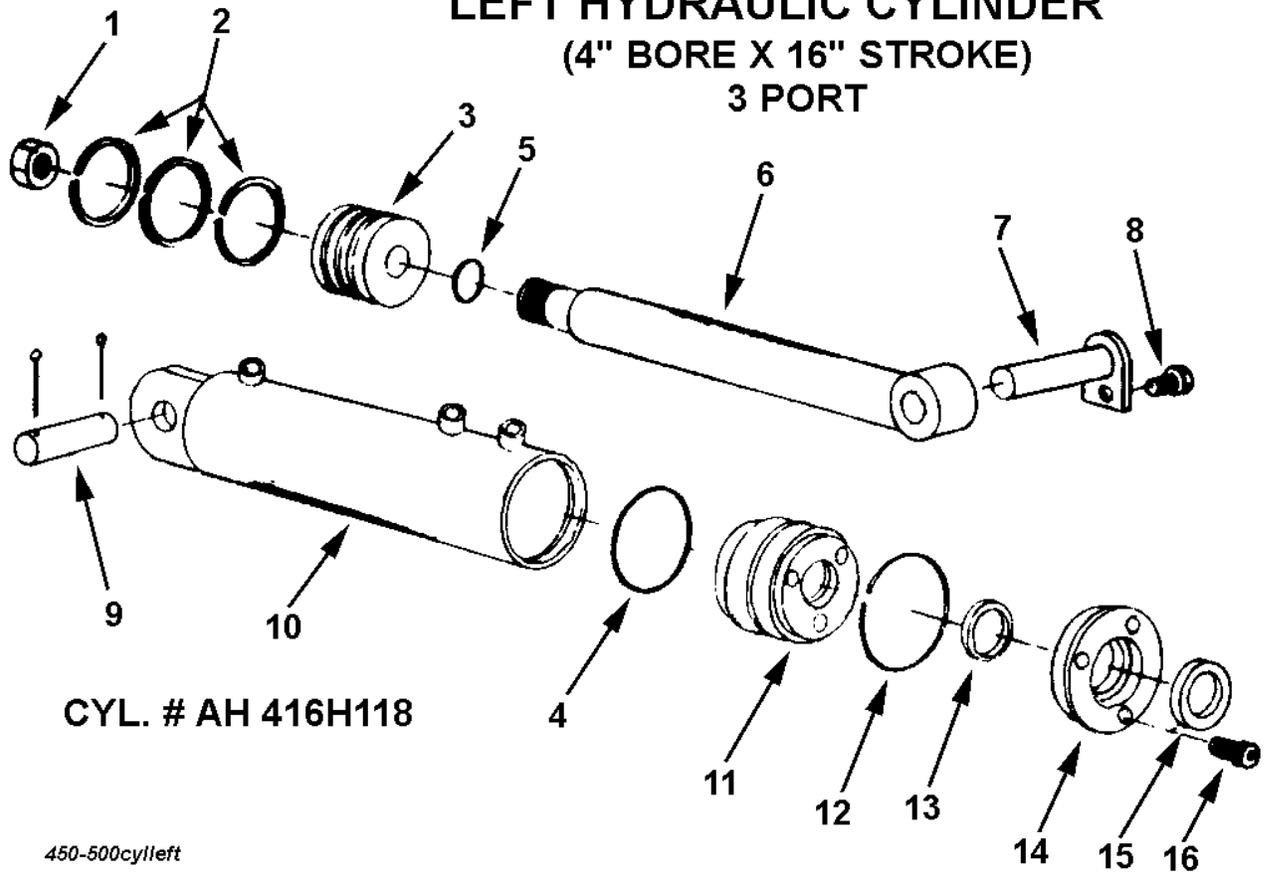
4" BORE X 16" STROKE



450-500cyl1

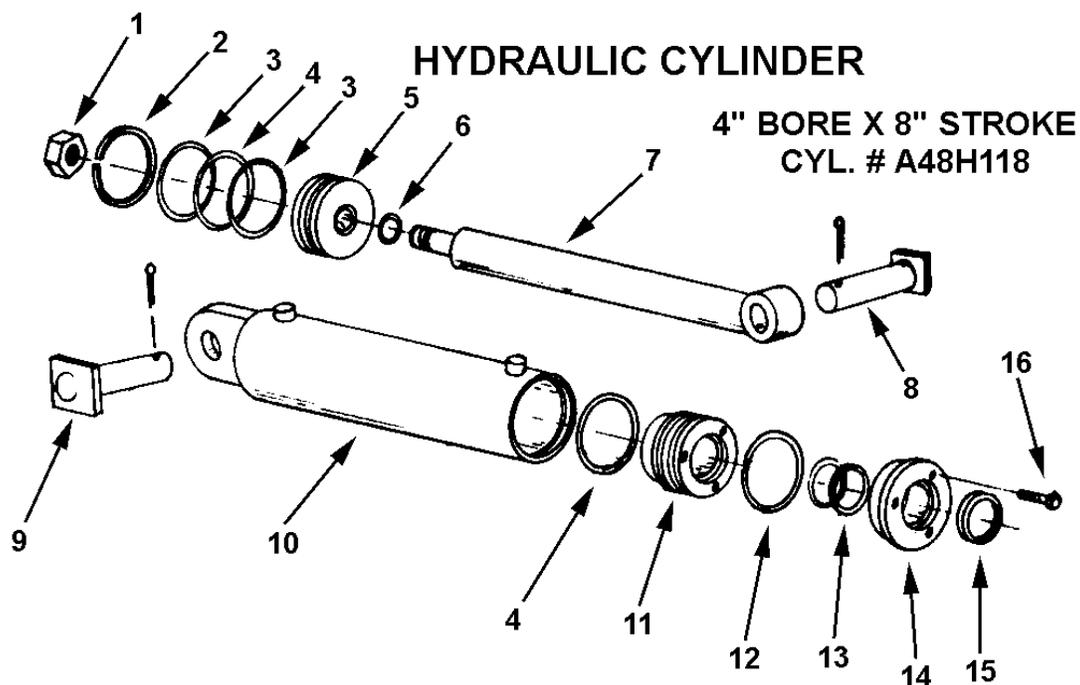
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A300H03	Piston nut, 1" NF
2	A300H04	Cast iron ring, 4" OD
3	A300H05	Backup washer, 4" OD
4	A300H06	O-ring seal, 4" OD x 3/16"
5	A300H07	Piston, 4"
6	A45H05	Piston gasket, 1"
7	A45H03	Shaft, 1-1/2" dia.
8	A4524	Pin, 1-1/8" x 6"
9		Capscrew, 1/2" x 1" NC w/ LW
10	A45003	Pin, 1-1/8" x 3-1/4"
		Cotter pin, 3/16" x 1-1/2"
11	A45H04	Barrel assembly
12	A300H11	Head gland
13	A300H12	Retainer ring
14	A22H15	O-ring, 1-1/2" x 1/8"
	A22H15A	Backup washer
15	A300H13	Head cap
16	A22H18	Capscrew, 1/4" x 1" NC
17	A22H17	Wiper seal, 1-1/2" ID
	A300H14B	Packing kit, containing:
		1 - A300H04 2 - A22H15 2 - A300H05
		1 - A22H15A 2 - A300H06 1 - A22H17
		1 - A45H05

LEFT HYDRAULIC CYLINDER (4" BORE X 16" STROKE) 3 PORT



450-500cylleft

KEY NO.	PART NO.	DESCRIPTION	
1	A300H03	Piston nut, 1" NF	
2	A300H04	Cast iron ring, 4" OD	
3	A450H15	Piston, 4"	
4	A300H06	O-ring seal, 4" OD, x 3/16"	
5	A45H05	Piston gasket, 1"	
6	A45H03	Shaft, 1-1/2" dia.	
7	A4524	Pin, 1-1/8" x 6"	
8		Capscrew, 1/2" x 1" NC w/ LW	
9	A45003	Pin, 1-1/8" x 3-1/4"	
10	A450H10	Barrel assembly w/ sequence porting	
11	A300H11	Head gland	
12	A300H12	Retainer ring	
13	A22H15	O-ring, 1-1/2" x 1/8"	
	A22H15A	Backup washer	
14	A300H13	Head cap	
15	A22H18	Capscrew, 1/4" x 1" NC	
16	A22H17	Wiper seal, 1-1/2" ID	
	A450H11B	Packing kit containing:	
	3 - A300H04	1 - A300H06	1 - A45H05
	2 - A22H15	1 - A22H17	2 - A22H15A

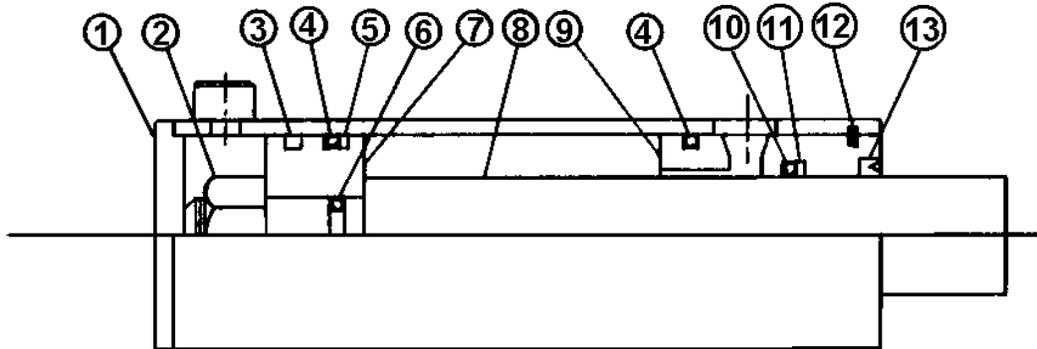


cyl4x8

<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A300H03	Piston nut, 1" NF
2	A300H04	Cast iron ring, 4" OD
3	A300H05	Backup washer, 4" OD
4	A300H06	O-ring seal, 4" OD x 3/16"
5	A300H07	Piston, 4" OD
6	A45H05	Piston gasket, 1"
7	A600H32	Shaft, 1-1/2"
8	A60002	Pin, 1-1/8" x 3-1/2" w/ sq. head
9	A45001	Pin, 1-1/8" x 3-1/4" w/ sq. head
10	A600H33	Barrel assembly
11	A300H11	Head gland
12	A300H12	Retainer ring
13	A22H15	O-ring seal, 1-1/2"
	A22H15A	Backup washer
14	A300H13	Head cap
15	A22H17	Wiper seal, 1-1/2" ID
16	A222H18	Socket head capscrew, 1/4" x 1"
	A300H14B	Packing kit, containing:
		1 - A300H04 1 - A45H05 2 - A300H06
		2 - A22H15 1 - A22H17 1 - A22H15A
		2 - A300H05

4" Bore
16" Stroke
2 Port

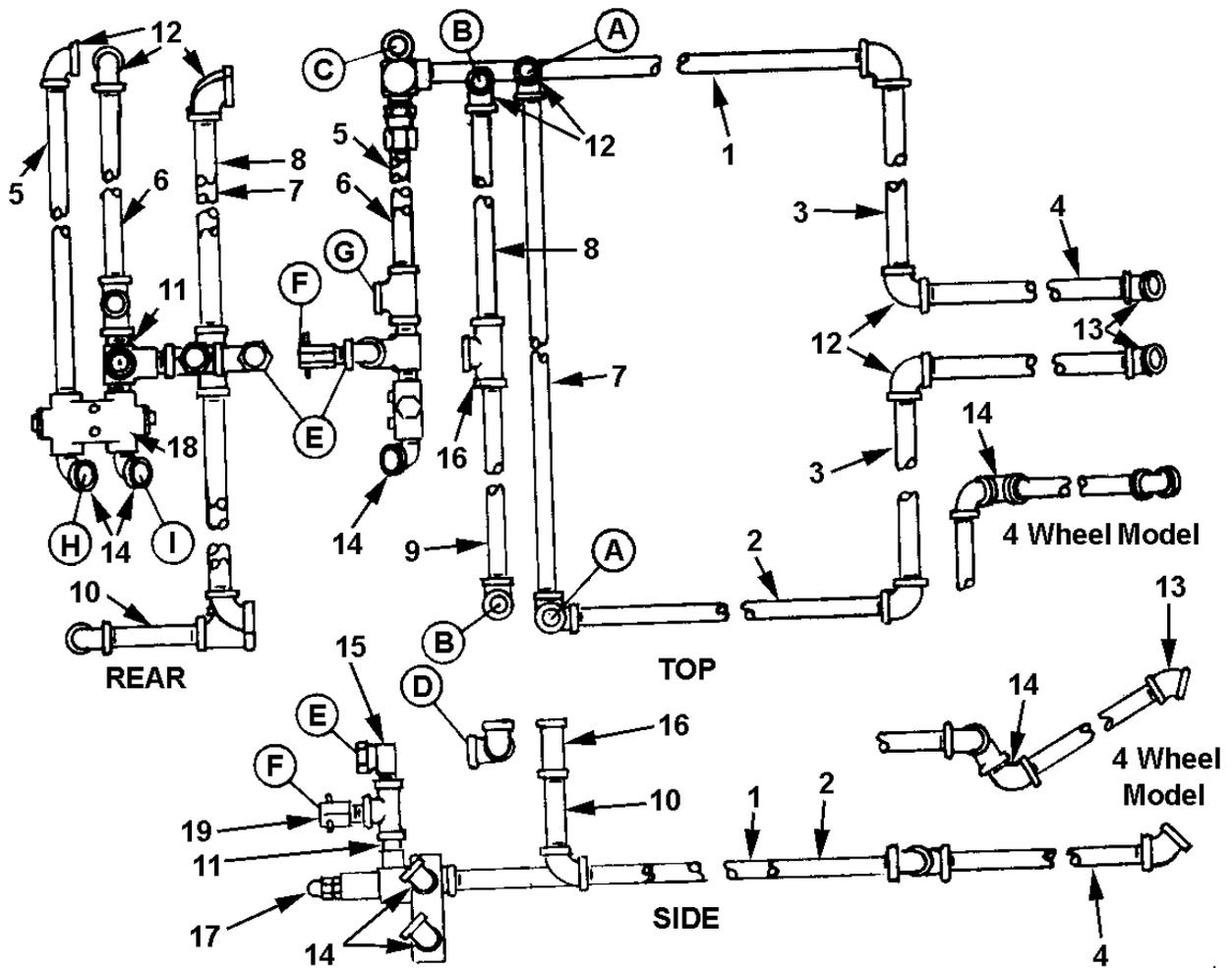
PMC-5600D Series



Type 4 identified by Snap ring securing gland

cyl-pmc-5600d

<u>KEY NO.</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	A45H04-P	Butt and tube assembly
2	1	A-2043-8	Lock nut
3	1	PMAP-R-45	Piston ring
4	2	PMAP-O-45	O-ring
5	1	PMAP-W-45	Bu-washer
6	1	PMAP-O-19	O-ring
7	1	P4-1130	Piston
8	1	A45H03-P	Piston rod
9	1	GIC-3940	Gland
10	1	PMAP-O-32	O-ring
11	1	PMAP-W-32	Bu-washer
12	1	PMAP-VB-32	Wiper
13	1	TSR-400	Snap ring
	1	PMCK-5600D	Packing kit



pipe

PIPE AND FITTINGS

KEY NO.	DESCRIPTION	LENGTH	QTY.
1	1/2" STD Black Pipe	90-1/4	1
2	1/2" STD Black Pipe	86-1/2	1
3	1/2" STD Black Pipe	34-1/2	2
4	1/2" STD Black Pipe	27-3/4	2
5	1/2" STD Black Pipe	37-1/2	1
6	1/2" STD Black Pipe	31-1/2	1
7	1/2" STD Black Pipe	90	1
8	1/2" STD Black Pipe	39-3/4	1
9	1/2" STD Black Pipe	45-3/4	1
10	1/2" STD Black Pipe	3	1

HYDRAULIC HOSES

QTY.	LOCATION	LG.
2	A to base port side cyl.	18"
2	B to rod port side cyl.	38"
1	C to center port left cyl.	38"
1	D to E	24"
1	F to G	24"
1	H to base port rear cyl.	24"
1	I to rod port rear cyl.	24"

KEY NO.	DESCRIPTION	QTY.
11	1/2" NPT Close nipple	3
12	1/2" NPT x 90° elbow	10
13	1/2" NPT x 45° elbow	2
14	1/2" NPT x 90° st.elbow	4
15	1/2" x 90° swivel adapter	1
16	1/2" NPT TEE	3
17	Relief valve	1
18	Lock valve	1
19	Check valve	1

HOW TO OPERATE THE W7B-20DC RIM

Note: This rim has been developed for 20" used truck tires up to and including 9.00-20 ten ply. However, many users have found it possible to mount 10.00-20 twelve ply tires. The following procedures should be followed:

Tools and Materials Required:

One Set Firestone Truck Tire Tools (48-A-200)
 One Pair Vise-Grip Pliers
 Lubricant (Avoid use of compound that contains water . . . or a solvent injurious to rubber — see your rim distributor)

MOUNTING:



1. Remove flap inasmuch as it is not required on the drop center rim mounting and it prevents mounting the tire. Check to see tube is in casing and inflated sufficiently to prevent sag below tire beads.



2. Place rim on floor with valve hole side up. Place tire over rim with valve stem pointing upwards. Force lower bead into well of rim as far as possible.



3. Lubricate last section of lower bead to facilitate mounting.



4. Using straight end of tool (with stop resting on rim flange) take small bites to work remaining section of lower bead onto rim.



5. Stand tire up with valve and valve hole at top of rim. Insert valve into valve hole.



6. To get top bead in place stand on tire and force bead down as far as possible and clamp vice grip pliers on the flange. (snub side toward tire). Using spoon end of tire iron with lug side towards rim, work progressively around bead using small bites until bead slips over flange onto rim base. In order to mount last 6" of bead it usually is necessary to insert second tire iron and lubricate the last bead portion.

DEMOUNTING:



1. Remove valve core to deflate and loosen tire from bead seat of rim on both sides. Lubricate upper bead of tire thoroughly. With stops toward rim, insert spoon ends of both tools about 10 inches apart. While standing on tire to hold bead in well, pull one tool back toward center of rim.



2. Hold first tool in position with one foot and pull second tool toward center of rim. Progressively work top bead off rim, taking additional bites if necessary.



3. Stand tire and tube in vertical position with valve at top of assembly and remove valve from valve hole. Then place valve at bottom of assembly and pull out upper portion of tube so it will not interfere with demounting the second bead. Lubricate second bead. At top of assembly insert straight end of tool between bead and back flange of rim at about a 45° angle. Turn tool so it is perpendicular to rim. Pry second bead off.

ELECTRIC WHEEL COMPANY-QUINCY, ILL.
 Division of the Firestone Tire & Rubber Company