

## MODEL 610 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 & Wheel Assembly
6.	Actuating Assembly
7.	Bucket and Apron Assembly
8.	Wheel, Hub and Spindle Assembly
9.	Hydraulic Cylinder (Right, 5" x 16")
10.	Hydraulic Cylinder (Left, 5" x 16")
11.	Hydraulic Cylinder (4" x 8")
12.	Sequence Valve, Line Check Valve
13.	Single Lock Line Valve
14.	Plumbing Assembly
15.	How to Operate the W7B-20DC Rim

## Model 610 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. Install rear spindles to frame in the lowest possible setting to obtain the maximum spreading depth between the cutting edge and ground. If less depth of spread is desired, select a lower setting or reverse the spindle - bottom to top.
4. Raise the rear of the frame and install wheels to hubs. Also install wheels to front axle assembly.
5. Raise front of the frame and remove the two 5/8" x 4" bolts which hold the cast socket halves inside the gooseneck. Remove the cast socket halves.
6. Roll the pole and axle assembly directly under the gooseneck, place the cast socket halves around the ball 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 the 5/8" x 4" bolts and tighten securely. Install long shank grease fitting into hole in the back side of gooseneck.
7. 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 2-11/16" pin (with tab head) from the inside of the bucket. Secure with 5/8" x 1 1/2" NF bolt through bucket side with lockwasher and nut to outside.
8. Connect actuating arm bars to front holes in the bucket. In doing so, be sure that the ear and ear reinforcement on the opposite end of the actuating arm are in the up position and facing inward. Insert 1 1/4" x 2-11/16" pin (with tab head) from the inside of the bucket. Secure with 5/8" x 1 1/2" NF bolt through the bucket side with lockwasher and nut to the outside.
9. 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 3/4" ID bearing on the side of the frame. Secure with 1 3/4" x 6" pins on each side. Lock these pins in place by turning the pin until the hole in the head aligns with thread hole in the actuating frame, then secure with 1/2" x 1" NC capscrew and lockwasher.
10. 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 pins.
11. Raise the apron assembly over the scraper and lower into position so that the holes in the arm of the apron align with the holes in the bucket sides. Insert the 1-5/8" to 1 1/4" shoulder pins through the apron arms and into the bucket. Install lock nut inside the bucket and tighten securely. Slide actuating link around pin located on apron arm. Install lock block with two 3/8" x 4 1/2" NX bolts through link and block. Connect lower end of link to actuating arm with 1 1/4" to 1" shoulder pin with 1" lock nut to the outside.
12. Installing hydraulic cylinders
  - A. Install the cylinder with three hose ports on the left side of the scraper with the rod end to the actuat-

ing 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 1/2" NPT 90° swivel adapter 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 1/2" x 18" hose from the forward pipe line on the frame cross-member to the base (rear) port of the cylinder.

D. Connect a 1/2" x 38" hose from the pipe line on the frame cross-member to the center port of the cylinder.

E. Connect a 1/2" x 38" hose from the center pipe line on the frame cross-member to the extreme forward port of the cylinder.

F. Install the cylinder with 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 1/2" NPT 90° swivel adapters in both ports of the cylinder. Tighten so that the swivel will be facing toward the rear.

H. Connect a 1/2" 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 38" 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 1/2" 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 1/2" cotter pin.

K. Install 3/8" x 1/2" 90° swivel adapters in the two ports of the rear cylinder. Tighten so the 1/2" female threads 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.

13. Install all grease fittings and grease liberally.

14. If available, place assembled scraper on a level floor or pavement and measure the distance from the cutting edge to floor, on both left and right sides, and then adjust rear axle spindles to obtain equal distance on both sides.

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## OPERATOR AND MAINTENANCE INSTRUCTIONS

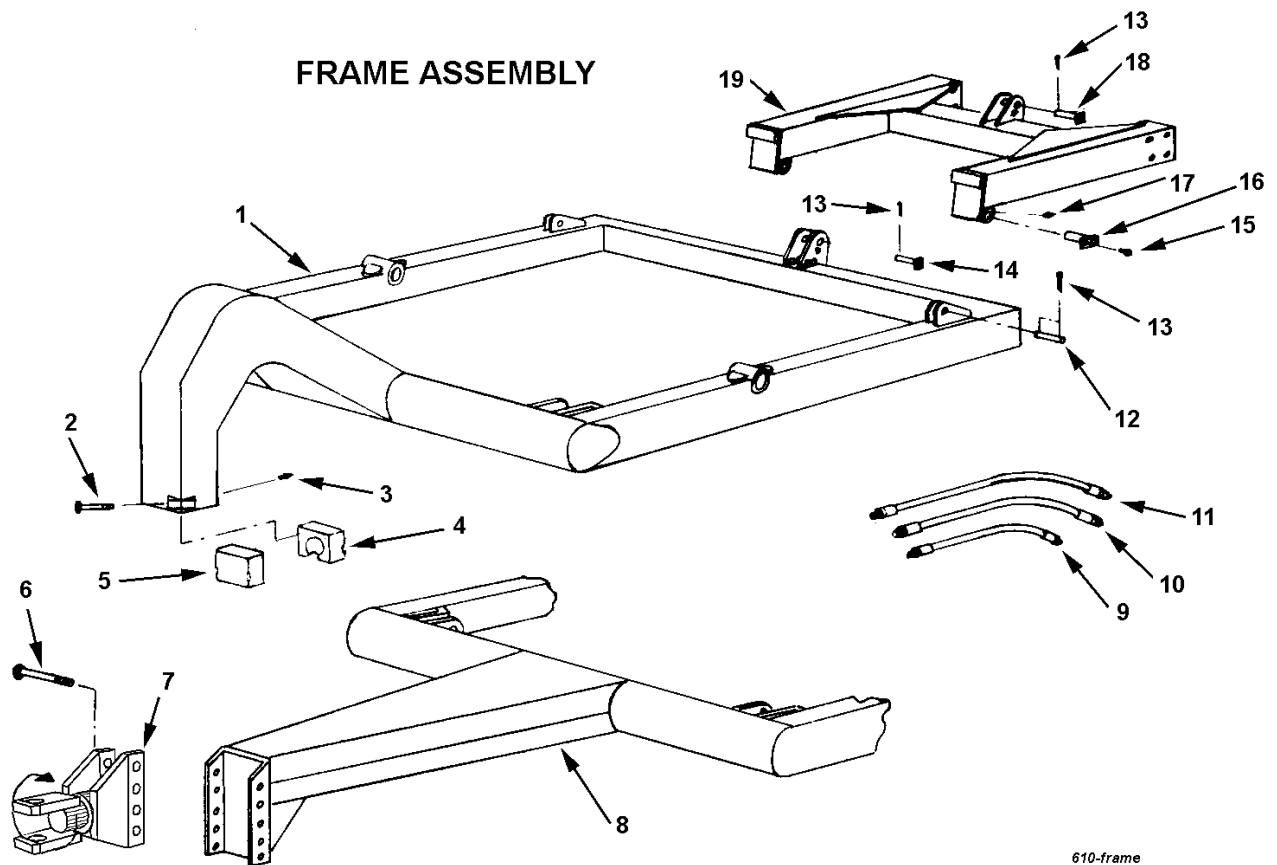
The scraper is a durable piece of equipment and with proper care will yield many years of trouble free operation. The scraper requires a power source with one 4-way (double acting) hydraulic control valve.

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.

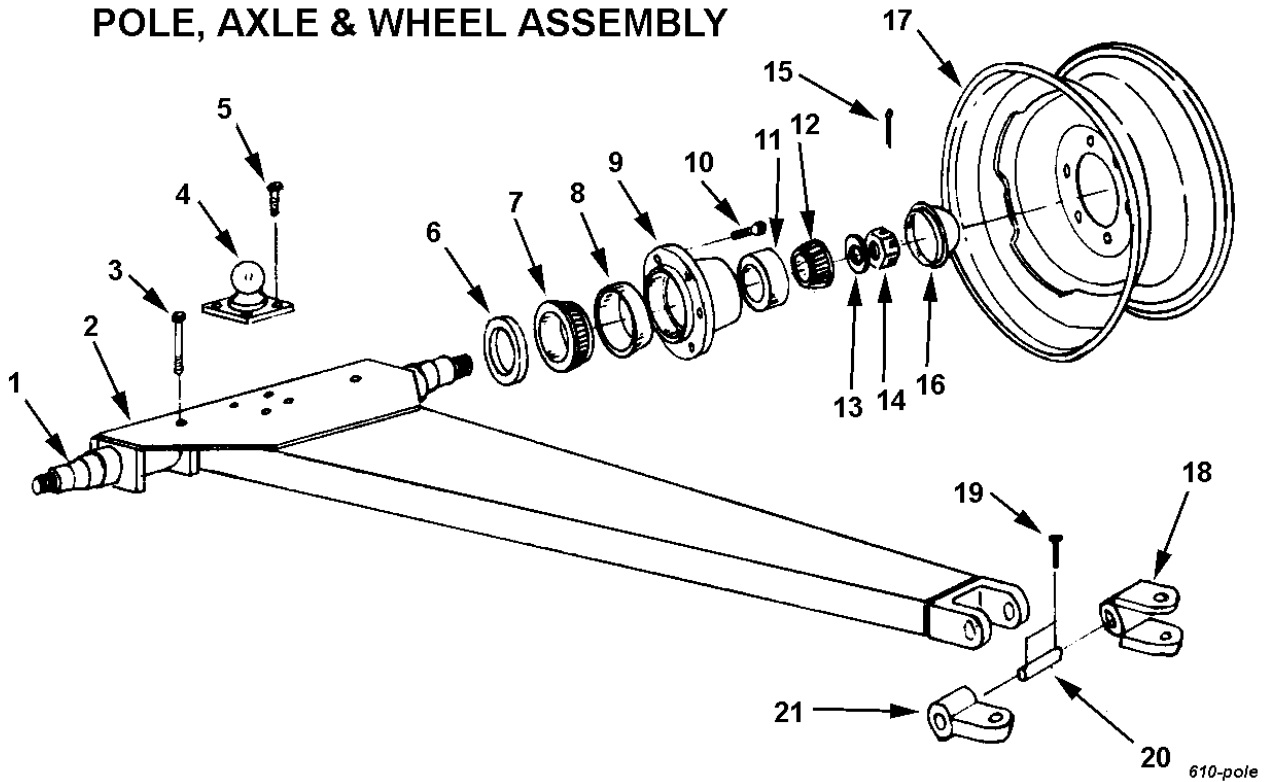
1. After 10 hours work, all bolts should be checked and tightened if necessary.
2. Every 10 hours all grease fittings should be lubricated.
3. After 50 hours work, all bolts should be rechecked and tightened if necessary. Check wheel bearings and adjust if necessary.
4. After 300 hours work, clean and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

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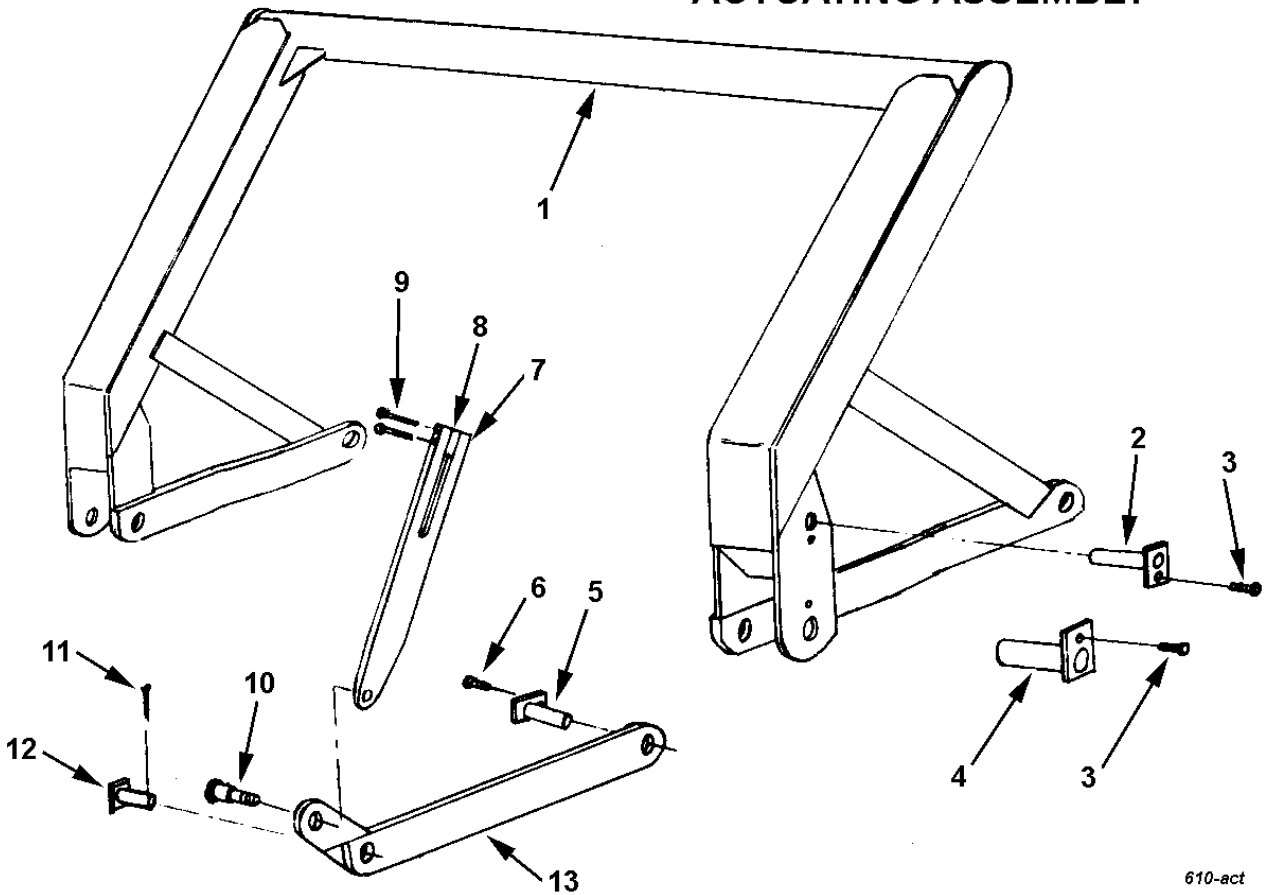
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1		Frame, FOUR WHEEL, Model, D
2		Bolt, 5/8" x 4" NC, w/ nut & LW
3	A2206	Grease fitting, 1/8" NPT straight, long
4	A40005	Socket half, rear w/ grease hole
5	A40004	Socket half
6		Bolt, 1-1/4 x 7" NF w/ lock nut
7	A8033	Swivel hitch
8		Frame, TWO WHEEL, Model S
9	A60H01A	Hydraulic hose, 1/2" x 18"
10	A45H06	Hydraulic hose, 1/2" x 24"
11	A400H01	Hydraulic hose, 1/2" x 38"
12	A45003	Pin, 1-1/8" x 3-1/4" Cotter both ends
13		Cotter pin, 3/16" x 1-1/2"
14	A45001	Pin, 1-1/8" x 3-1/8" w/ sq. head
15		Capscrew, 1/2" x 1" NC w/ LW
16	A2502	Pin, 1-1/2" x 5-5/8" tab head
17		Grease fitting, 1/8" NPT straight, STD
18	A60002	Pin, 1-1/8" x 3-5/8" w/ sq. head
19	A45012A	Rear frame section

## POLE, AXLE & WHEEL ASSEMBLY



<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A5006	Spindle - bolt on
2	A5005	Pole Assembly
3		Bolt, 1/2" x 4-1/2" Gd. 5 w/ nut LW
4	A40006	Ball swivel
5		Bolt, 3/4" x 2-1/2" NC w/ nut & LW
6	A2229A	Grease seal
7	A2230A	Bearing cone, inner
8	A2231	Bearing cup, inner
9	A2232	Hub, less bearing cups
10	A2236	Wheel bolt
11	A2233	Bearing cup, outer
12	A2234	Bearing cone, outer
13	A2239	Washer, special 7/8" Flat
14		Nut, 7/8" NF, Castellated
15		Cotter pin 5/32" x 1-1/4"
16	A2235	Hub cap
17	A3319A	Wheel, 15" x 8"
18	A4553	Clevis hitch
19		Bolt, 5/16" x 2-1/2"
20	A6014	Pin, 1-1/4" x 5-3/4" w/ bolt holes
21	A4553A	Single lip hitch

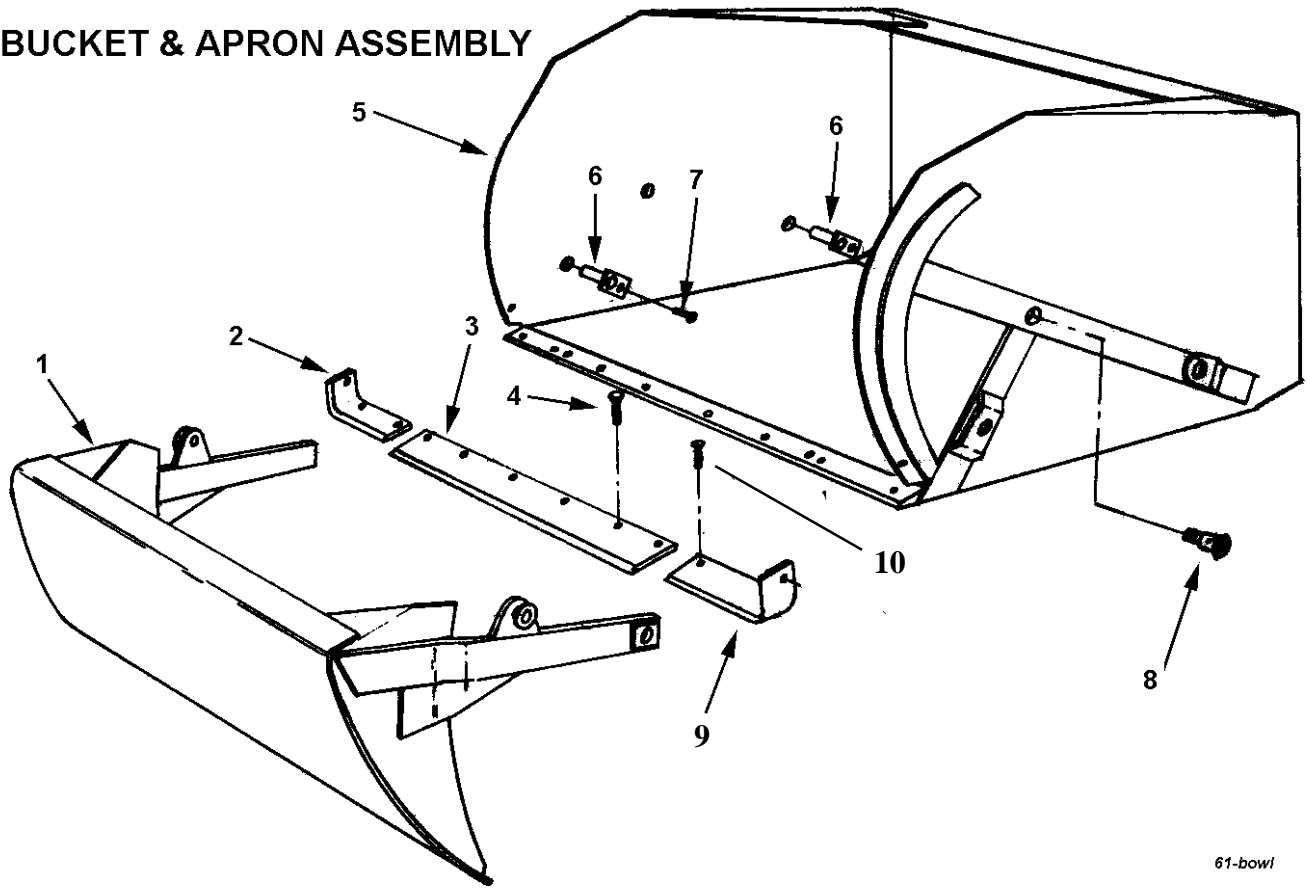
## ACTUATING ASSEMBLY



610-act

<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A6105	Actuating frame
2	A4524	Pin, 1-1/8" x 6" w/ tab head
3		Capscrew, 1/2" x 1" NC w/ LW
4	A6101	Pin, 1-3/4" x 6" w/ tab head
5	A6102	Pin, 1-1/4" x 2-11/16" w/ tab head
6		Capscrew, 5/8" x 1-1/2" w/ nut & LW
7	A6106	Actuating link
8	A6107A	Stop block
9		Bolt, 3/8" x 4-1/2" NC w/ nut & LW
10	A30020	Shoulder pin, 1-1/4" x 1" w/ ctsk grease hole
11		Cotter pin, 1/4" x 2"
12	A6007A	Pin, 1-1/4" x 4-1/8" w/ sq. head & hole for gr. zerk
13	A6108	Actuating arm, R.H.
	A6109	Actuating arm, L.H.

# BUCKET & APRON ASSEMBLY

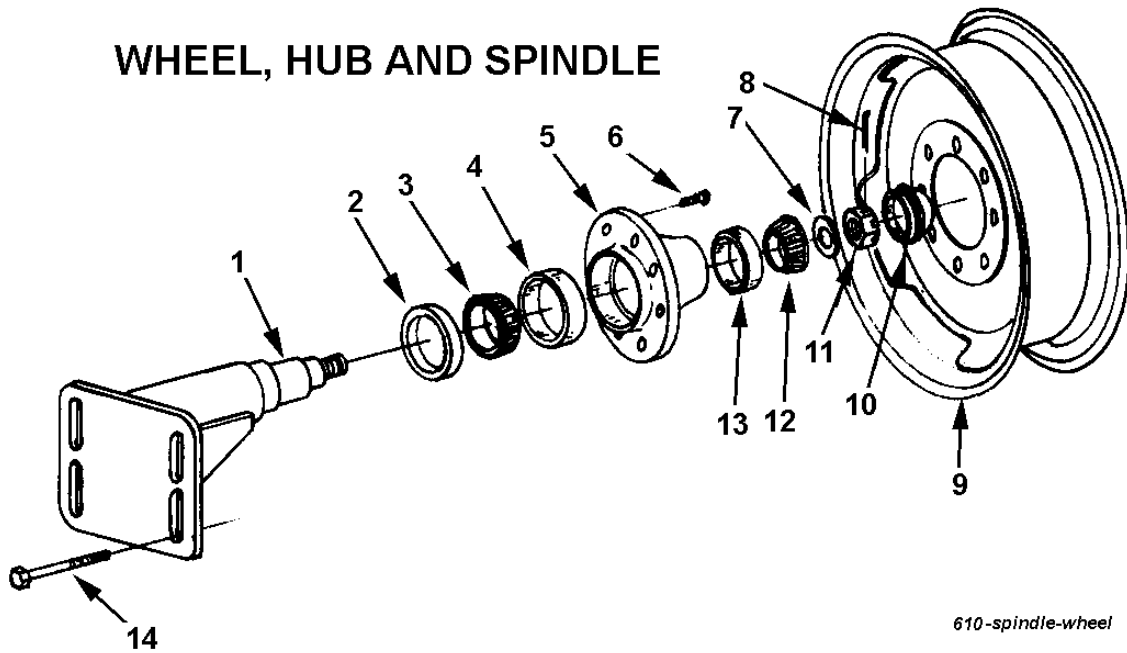


61-bowl

<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A6110	Apron
2	A2225	Cutting edge, Right 6"
3	A45010	Cutting edge, Center, 8" x 50"
4		Plow bolt, 5/8" x 2" w/ nut (6 req'd)
5	A6111	Bucket
6	A8005	Pin, 1-1/2" x 2-11/16" w/ tab head
7		Capscrew 5/8" x 1-1/2" w/ nut & LW
8	A6010	Shoulder pin, 1-5/8" to 1-1/4" w/ grease hole in head w/ lock nut
9	A2222	Cutting edge, Left 6"
10		Plow bolt, 1/2" x 1-3/4" (6 req'd)

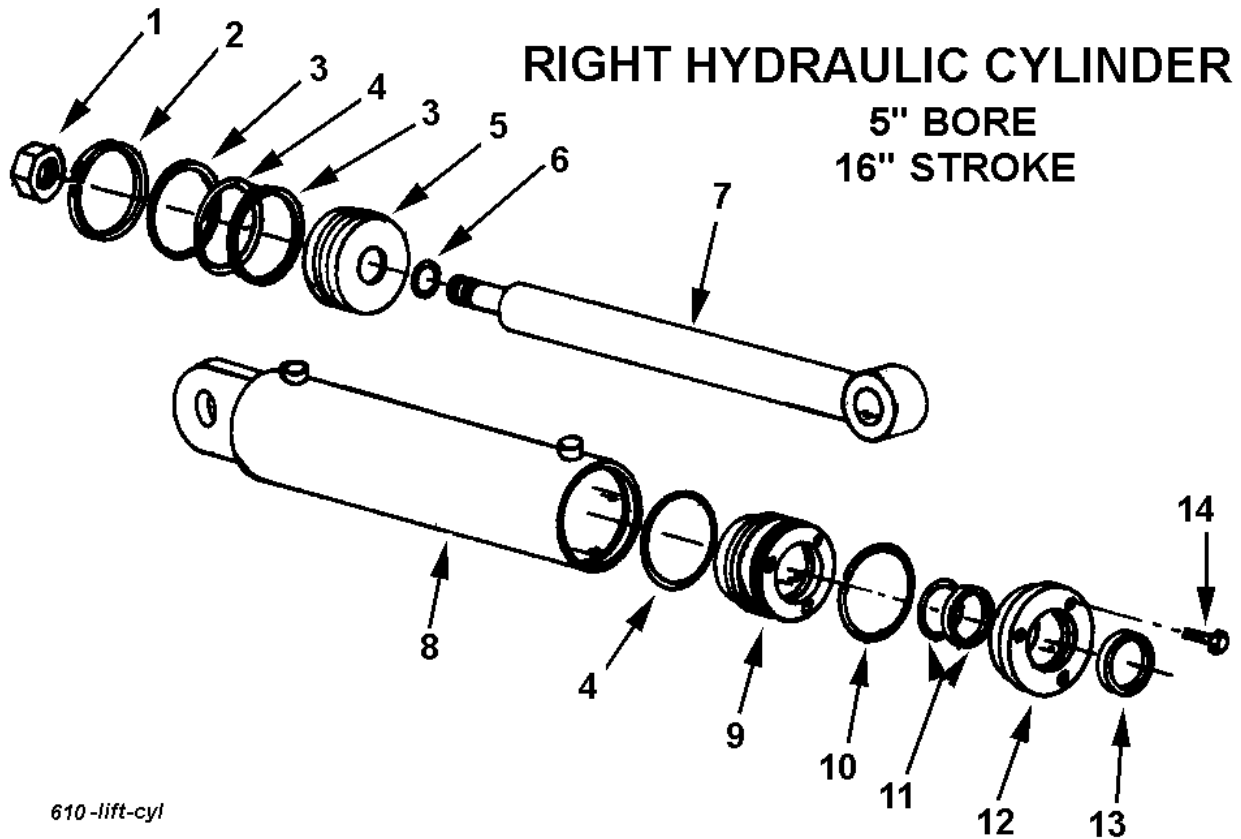


## WHEEL, HUB AND SPINDLE



610-spindle-wheel

<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A4520	Spindle, rear with flange
2	A4512	Grease seal
3	A4513	Bearing cone, inner
4	A4514	Bearing cup, inner
5	A4515	Hub, with bearing cups
6	A4519	Wheel bolt
7	A2239	Washer, special 7/8" flat
8		Cotter pin
9	A4521A	Wheel, 20" DC, 8 hole
10	A2235	Hub cap
11		Nut, 7/8" NC castellated
12	A2234	Bearing cone, outer
13	A2233	Bearing cup, outer
14		Bolt, 3/4" x 6" NC w/ flat washer and nut



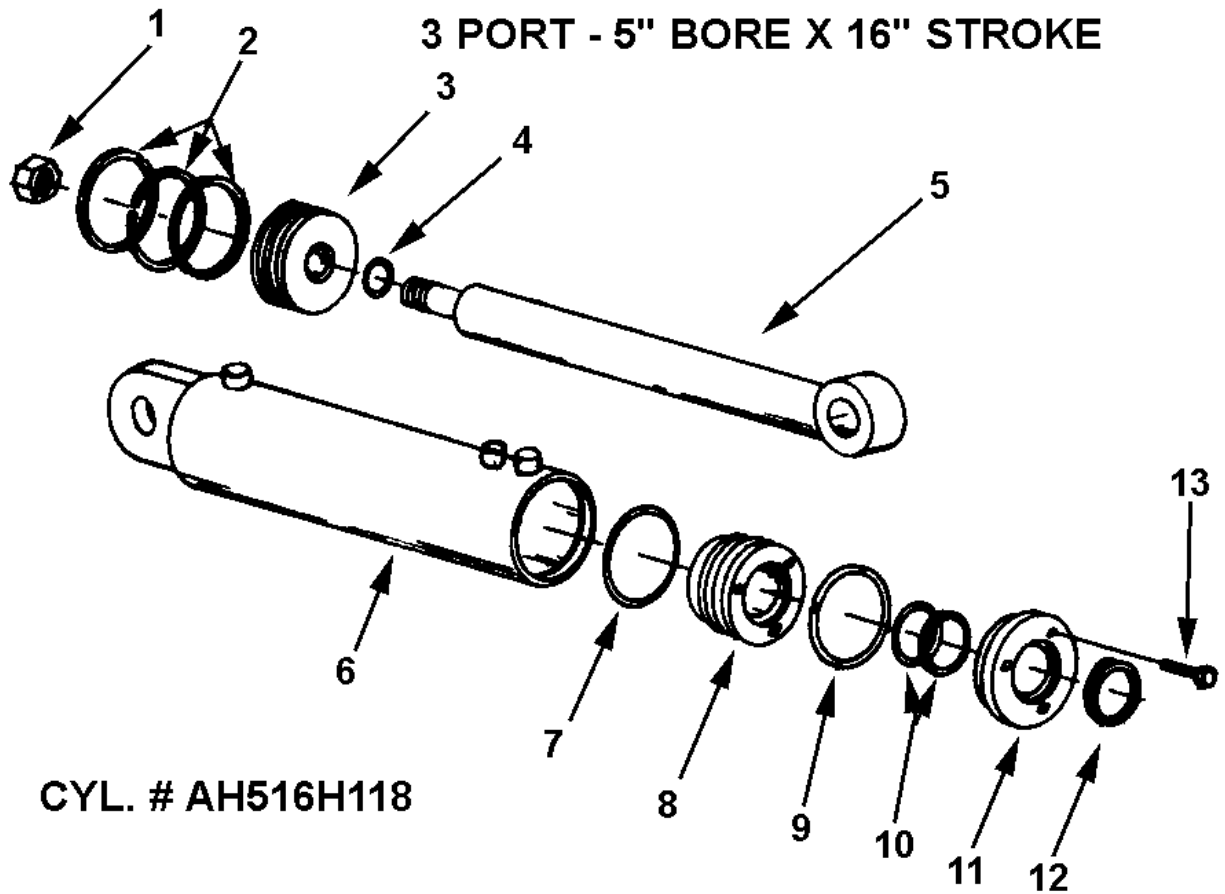
610-lift-cyl

CYLINDER PART NO. A516H118

<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A400H17	Lock nut, 1-1/4" NF
2	A400H04	Cast iron ring, 5" OD
3	A400H05	Back up washer, 5" OD
4	A400H06	O-ring, 5" OD x 1/4"
5	A400H07	Piston, 5" OD
6	A22H27	Piston gasket, 1-1/4" ID
7	A400H08	Shaft, 2" diameter
8	A400H09	Barrel assembly, 5" ID
9	A400H10	Head gland, 5" OD
10	A400H11	Retainer ring
11	A400H12	O-ring, 2" ID
	A400H12A	Back up washer, 2" ID
12	A400H13	Head cap
13	A400H14	Wiper seal, 2" ID
14	A22H18A	Capscrew, 5/16" x 1" NC
	A400H15C	Packing kit containing:
	1 - A400H04	1 - A400H11
	2 - A400H05	1 - A400H14
	2 - A400H06	1 - A400H12
	1 - A22H27	1 - A400H12A

# LEFT HYDRAULIC CYLINDER

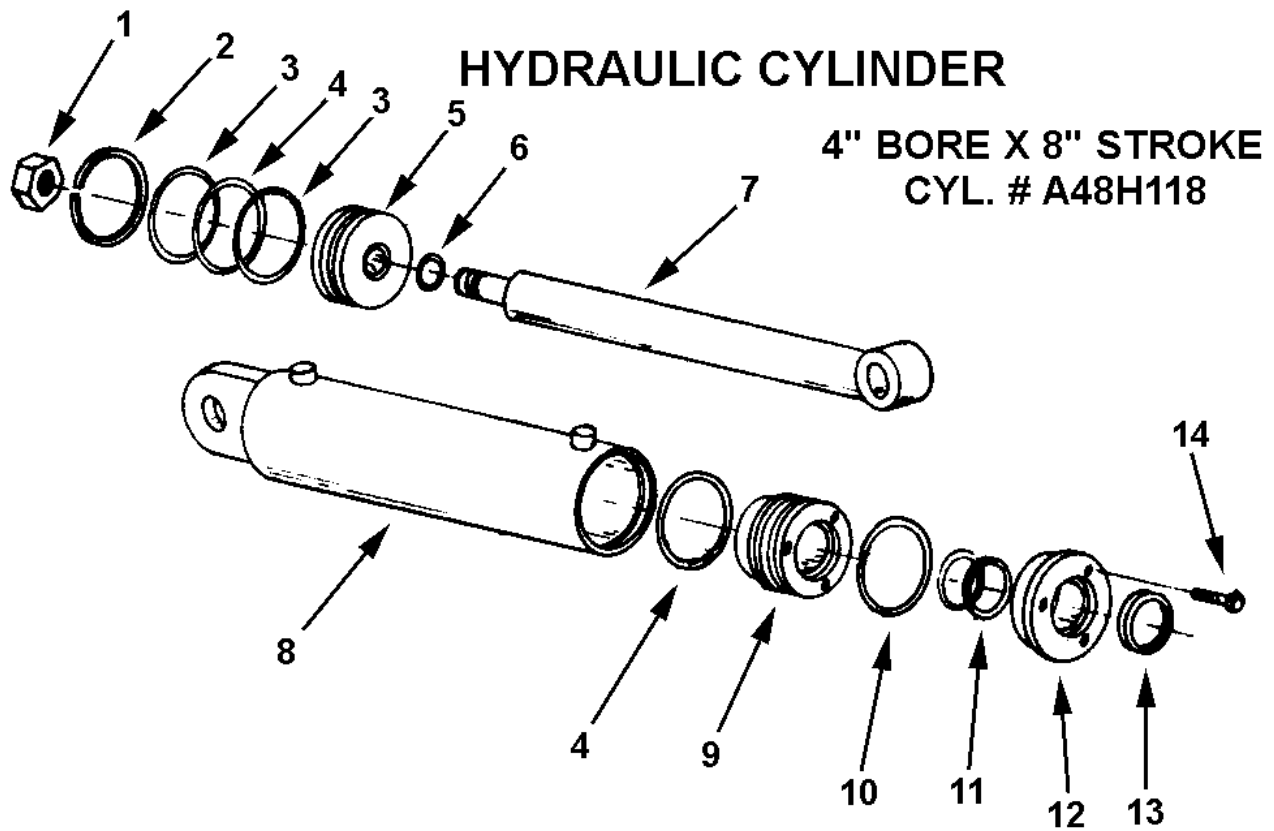
## 3 PORT - 5" BORE X 16" STROKE



**CYL. # AH516H118**

*cyl-left*

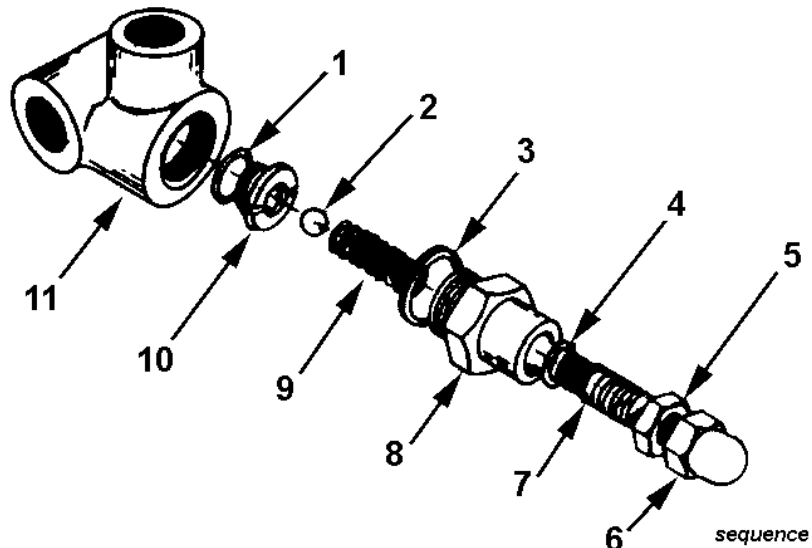
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	
1	A400H17	Piston nut, 1-1/4" NF	
2	A400H04	Cast iron ring, 5" OD	
3	A600H50	Piston, 5" OD	
4	A22H27	O-ring, 1-1/4" ID x 1/8"	
5	A400H08	Shaft, 2" dia.	
6	A600H30	Barrel assembly, w/ sequence porting	
7	A600H06	O-ring, 5" OD x 1/4"	
8	A400H10	Head gland	
9	AA400H11	Retainer ring	
10	A400H12	O-ring	
	A400H12A	Backup washer	
11	A400H13	Head cap	
12	A400H14	Wiper seal	
13	A22H18	Capscrew, 1/4" NC x 1"	
	A600H53C	Packing kit containing:	
	3 - A400H04	1 - A400H11	1 - A400H06
	1 - A400H12	1 - A22H27	1 - A400H12A
	1 - A400H14		



cy/4x8

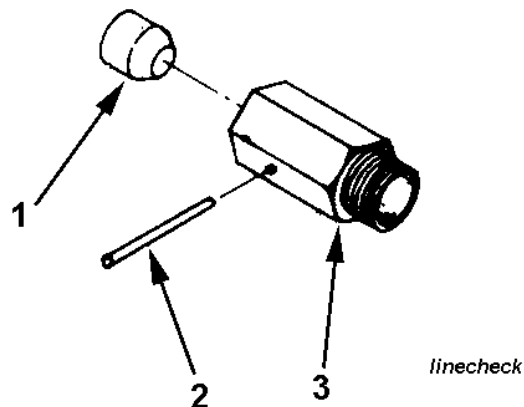
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A300H03	Piston nut, 1" NF
2	A300H04	Cast iron ring, 4" OD
3	A300H05	Backup washer
4	A300H06	O-ring, 4" OD, x 3/16"
5	A300H07	Piston, 4" OD
6	A45H05	O-ring, 1" ID
7	A600H32	Shaft, 1-1/2" dia.
8	A600H33	Barrel assembly
9	A300H11	Head gland
10	A300H12	Retainer ring
11	A22H15	O-ring, 1-1/2" ID
	A22H15A	Backup washer, 1-1/2" ID
12	A300H13	Head cap
13	A22H17	Wiper seal, 1-1/2" ID
14	A22H18	Capscrew, 1/4" NC x 1"
	A300H14C	Packing kit containing:
	1 - A300H04	1 - A300H12
	1 - A22H15	1 - A300H06
	1 - A45H05	1 - A22H17
		1 - A300H05
		1 - A22H15A

## SEQUENCE VALVE



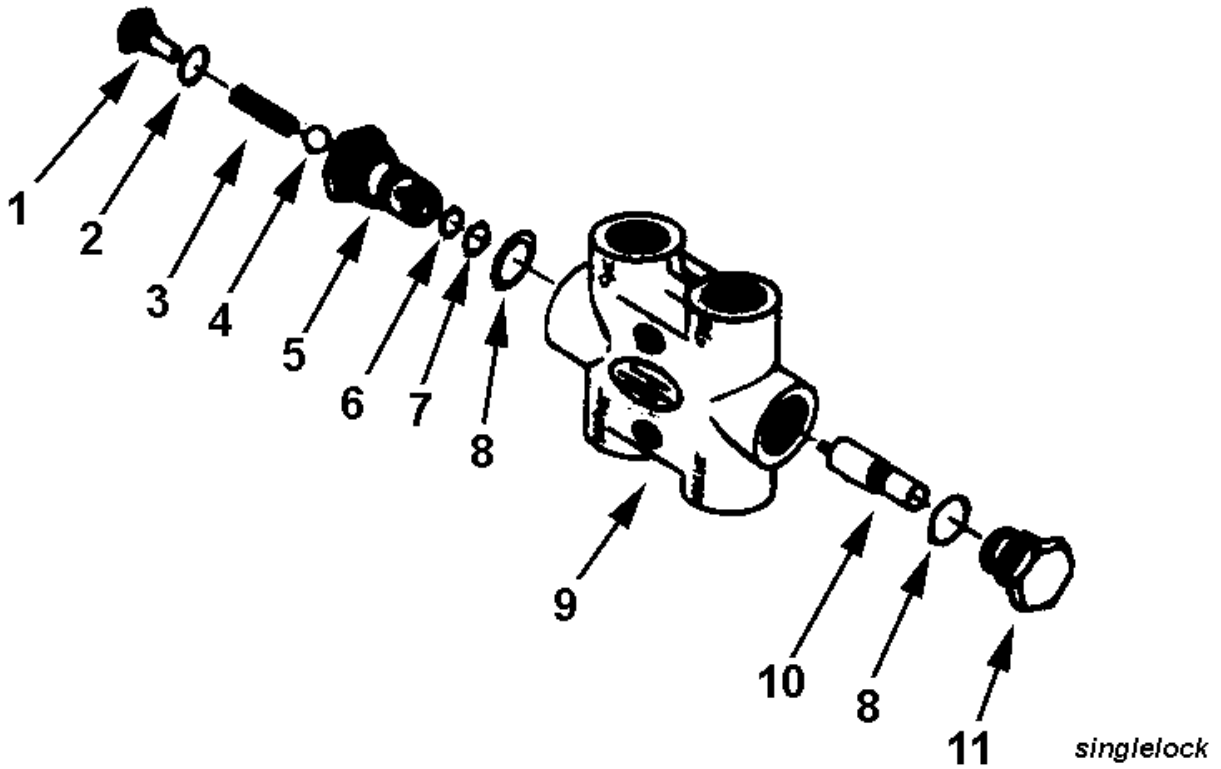
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A600H22	Relief seat O-ring
2	A600H20	Ball
3	A600H18	Valve body gasket
4	A600H16	Adjusting screw O-ring
5	A600H14	Jam nut
6	A600H13	Acorn cap
7	A600H15	Adjusting screw
8	A600H17	Valve body
9	A600H19	Spring
10	A600H21	Relief seat
11	A600H23	Valve housing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

## LINE CHECK VALVE



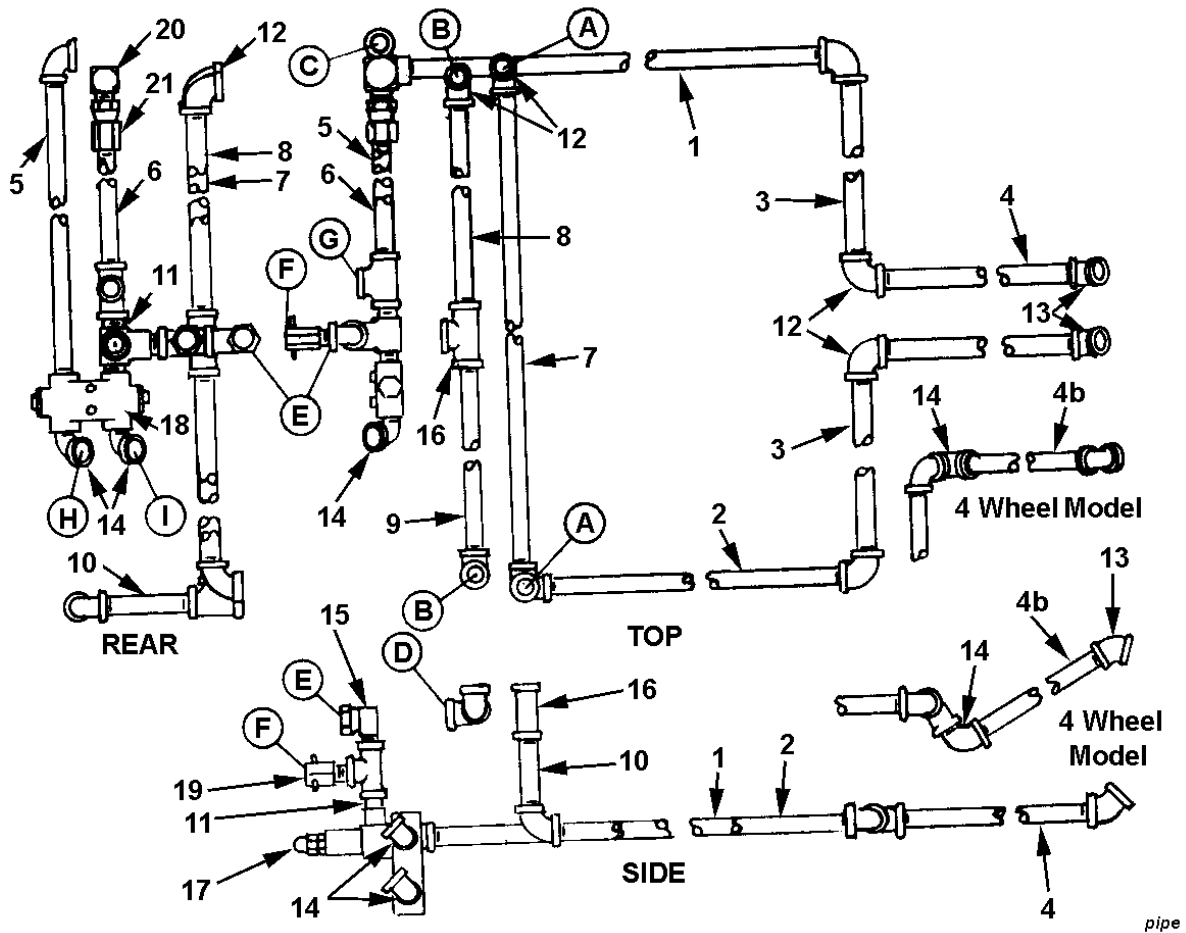
<u>KEY NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	A600H25	Check poppet
2	A600H27	Taper pin
3	A600H26	Valve body
	A600H28	Complete valve assembly

# 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



**PIPE AND FITTINGS**

KEY NO.	DESCRIPTION	LENGTH	QTY.	KEY NO.	DESCRIPTION	QTY.
1	1/2" STD Black Pipe	91	1	11	1/2" NPT Close nipple	3
2	1/2" STD Black Pipe	82-5/8	1	12	1/2" NPT x 90° elbow	9
3	1/2" STD Black Pipe	33-1/2	2	13	1/2" NPT x 45° elbow	2
4	1/2" STD Black Pipe	28-3/4	2	14	1/2" NPT x 90° st.elbow	2
4b	1/2" STD Black Pipe	42-1/4	2	(4 wheel model requires		4)
5	1/2" STD Black Pipe	39	1	15	1/2" x 90° swivel adapter	1
6	1/2" STD Black Pipe	30-1/2	1	16	1/2" NPT TEE	3
7	1/2" STD Black Pipe	90	1	17	Relief valve	1
8	1/2" STD Black Pipe	41-1/2	1	18	Lock valve	1
9	1/2" STD Black Pipe	46-1/2	1	19	Check valve	1
10	1/2" STD Black Pipe	3	1	20	1/2" NPT steel st. elbow	1
				21	1/2" NPT str. swivel adapter	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"

# 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 vise 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