



OWNERS MANUAL

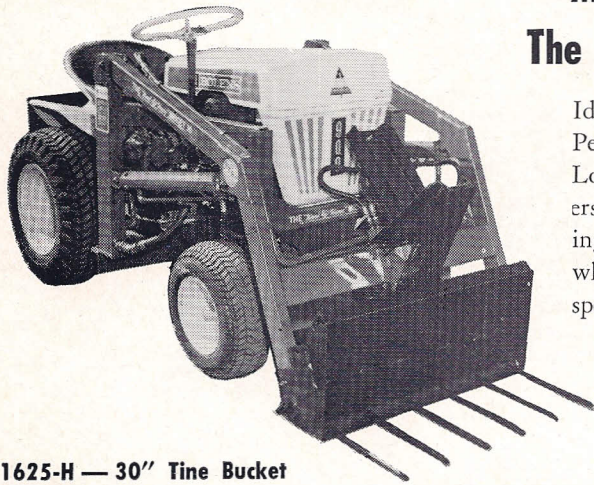
JOHNSON "Work Horse" LOADER

Midget Model 10

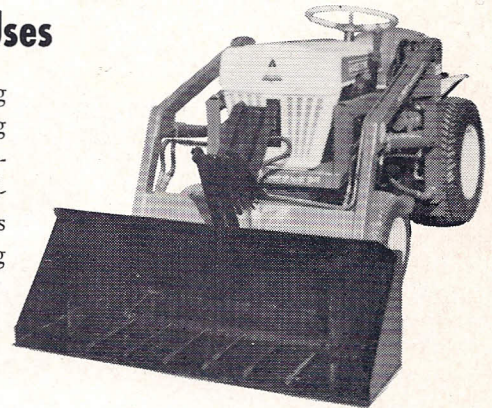
for use with **BOLENS** Lawn and Garden Tractors
Models 800 - 900 - 1000

The Loader with 1001 Uses

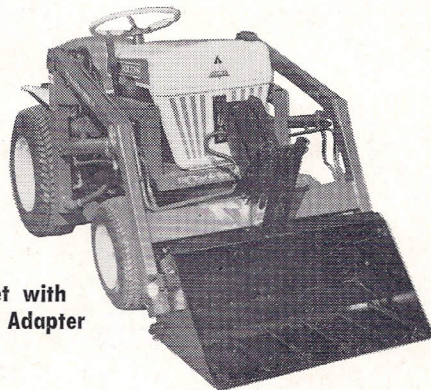
Ideal for Poultry Houses, Hog Pens, Calf Pens, Motels, Parking Lots, Fertilizer Plants, Landscapers, Greenhouses, Nurseries, Roofing Contractors, and any areas where loading and unloading space is limited.



1625-H — 30" Tine Bucket

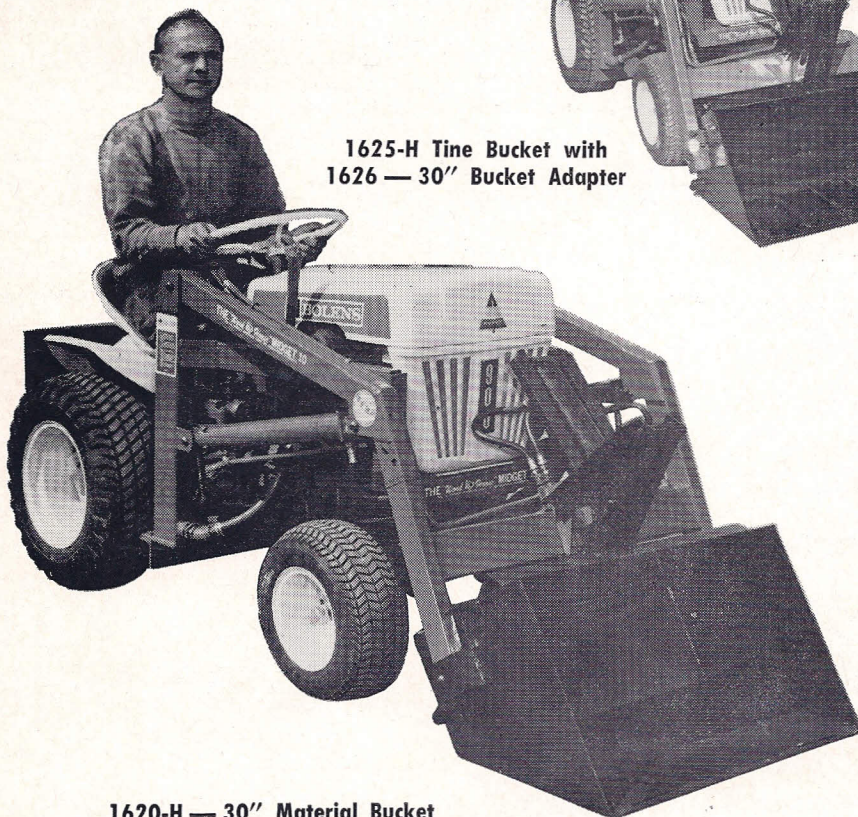


1625-H — Tine Bucket with
1640 — 48" Bucket Adapter



1625-H Tine Bucket with
1626 — 30" Bucket Adapter

Models Shown Here
Equipped With
Hydraulic Bucket
Control



1620-H — 30" Material Bucket



1635-H — Boom

Let the
"Work Horse"
work for
you!

PRINTED IN U.S.A.

Form No. 693 12-64

JOHNSON MANUFACTURED BY
HYDRAULIC EQUIPMENT COMPANY
515 W. 78th STREET MINNEAPOLIS, MINNESOTA 55420

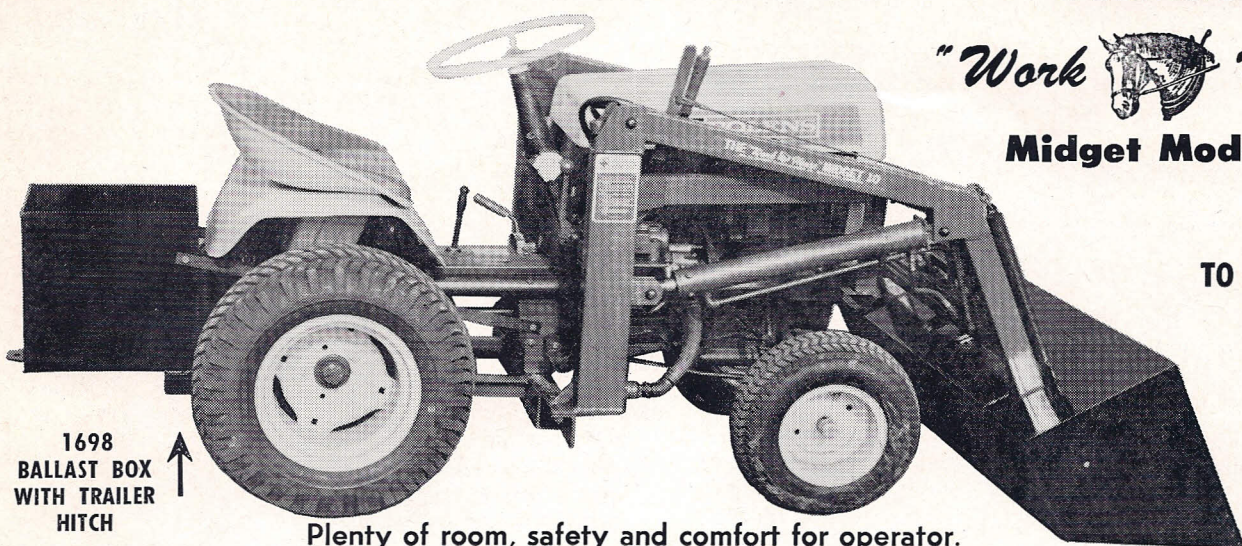
For Your **BOLENS** Tractor

JOHNSON

"Work Horse"

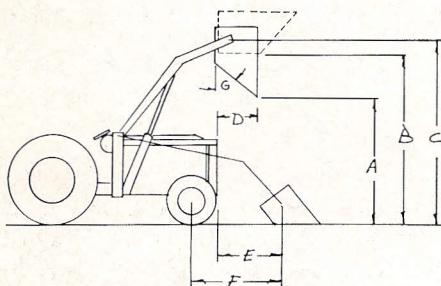
Midget Model 10

**BUILT
TO DO THE JOB
FOR YOU**



1698
BALLAST BOX
WITH TRAILER
HITCH

Plenty of room, safety and comfort for operator.



SPECIFICATIONS

Total weight as shown above—350 lbs.
Bucket Capacity 300 lbs.
Reservoir 4 qt., with filter screen in up-right.
Time of lift — 5 sec.
Counter weight required
Hydraulic valve — 2 way.
Hydraulic pump — 600 p.s.i.
Hydraulic cylinders, double acting

Unit construction — box construction.
A 46½" clearance under bucket fully dumped.
B 57" clearance under fully raised bucket.
C 62½" height to pivot fully raised.
D 22" reach with bucket fully dumped.
E 14" clearance from grille to bucket.
F 18" reach from axle to bucket.
G 47° dumping angle.



***Models on this Page
Shown with
Mechanical Trip***

Rugged all-box construction with powerful double acting cylinders.

1621 - 4 FT.
LIGHT MATERIAL BUCKET

To the Purchaser...

This manual will help you get the most value from your Johnson 'WORK HORSE' Midget Model 10 Loader. Read carefully all assembly, operating, adjusting and service information. You will find many helpful pointers which will not only save time but will help you operate the loader most efficiently.

Since 1944, Johnson Hydraulic Equipment Co. have specialized in building hydraulic loaders for agricultural and industrial use, and are one of the oldest loader manufacturers in the United States today.

The Midget Model 10 'WORK HORSE' Loader is manufactured to the high standards of Johnson Hydraulic Equipment Co., and it has been designed to give you, the customer, the many features you had in mind.

WARRANTY

WE WARRANT all new products of our own manufacture to be free from defects in material and workmanship, for a period of 90 days. Component parts not of our manufacture are covered by the guarantees of their respective manufacturers.

We will replace free of charge f.o.b. distributor's warehouse or customer's warehouse any parts covered by our warranty which shall within 90 days after date of delivery to original user, be returned to our factory, transportation charges prepaid, should our inspection show such parts to be defective in workmanship or material.

THIS WARRANTY shall not apply to products which have been repaired or altered prior to their inspection by our factory, nor shall it apply to products which have been subjected to abuse, negligence, or accident; further, this Warranty shall not apply to products which have been used in applications for which they were not designed or intended.

After you have read this manual thoroughly, keep it handy for ready reference. When in need of parts and major service, see your authorized Tractor dealer. He has trained servicemen as well as genuine service parts and the necessary tools and equipment to handle all your needs.

A complete list of parts is included in this manual.

Right-hand (R.H.) and Left-hand (L.H.) reference is determined by standing at the rear of the tractor or loader and facing the direction of travel.

REMOVING LOADER

One of the many outstanding features of this loader is the simplicity of removing it from your tractor when tractor is needed for other purposes or uses.

1. Simply remove two bolts from bottom of each upright from rear bracket.

2. Remove pump mounting bracket from tractor frame and support it on loader frame.

3. Remove four bolts from lower front mounting bracket. Loader may now be removed from tractor.

4. Remove rear mounting.

CONTENTS

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Operation	3
Service	4
Assembly	5-10
Parts List	5-10
Attachments	12

IMPORTANT

When in need of parts, be prepared to give serial number shown on top of Right Hand upright of loader—write it in the blank space below, now.

JOHNSON 'WORK HORSE' LOADER

Model No. 10

Serial No.

OPERATION

1. Check oil level periodically to make sure oil is not more than 8 inches below top of tank. **IMPORTANT: USE ONLY LIGHT WEIGHT ANTI-FOAM AND ANTI-SLUDGE HYDRAULIC OIL, FOR BEST PERFORMANCE.**

2. Start tractor and operate loader, extending all cylinders to remove air.

Always have engine running at least half speed while operating loader. If loader is operated at very low engine speed, hydraulic pump will not displace oil fast enough and oil will be forced out of breather.

To RAISE loader, pull control lever toward you as far as it will go. Lever will return to Neutral as soon as you release it.

To LOWER loader, push lever forward.

Check hydraulic oil level in system. If loader does not reach maximum height, a shortage of oil is indicated.

Operate loader several times, and with all cylinders collapsed check and maintain correct oil level.

For smooth performance and efficient operation, adhere to the following instructions:

Be sure pump is running whenever loader is operated.

Should loader be left in raised position, be sure to start pump before lowering loader. If loader is dropped with 'dead pump,' the oil lines will be filled with air, causing jerky loader operation and also causing oil to come out of top of tank through breather.

For ballast, use two sets of rear wheel weights with 150 lbs. in the ballast box or one set of rear wheel weights with 270 lbs. in the ballast box.

For maximum tire service, front tires should be inflated to 35 lbs. p.s.i. minimum. (Tire manufacturers recommend 4-ply rating at 70 lbs. p.s.i. for commercial type operation.)



CAUTION

1. Do not operate loader unless hydraulic pump is running.
2. Ballast tractor rear wheels for stability.
3. Lift load, engage tractor clutch and accelerate tractor with care.
4. In transport, carry working unit low.
5. Before servicing or adjusting equipment
 - (a) Lower working unit to ground (Bucket with springs should not be in tripped position)
 - (b) Disengage power and shut off engine.
 - (c) Relieve hydraulic pressure before disconnecting oil lines.

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SERVICE

BOLTS

For maximum life of your loader, check mounting bolts at periodic intervals. Through constant operation, bolts can loosen and cause excessive wear on loader.

BELT

When belt slippage is first noticed, tighten belt immediately to prevent excessive belt wear. Do so by loosening cap screw on bracket and moving pump back until a 10-pound pressure midway between the sheaves deflects the belt $\frac{1}{4}$ inch. Tighten cap screw to hold pump in this position to maintain proper tension.

SCREEN

After loader has been operated several hours, remove plug from bottom of right upright and drain oil from reservoir.

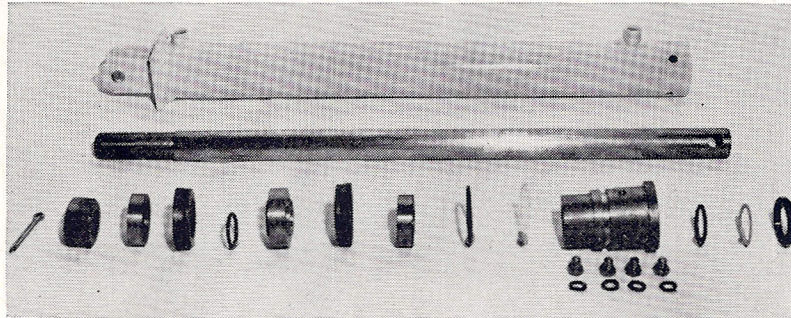
Disconnect low pressure hose from elbow on right upright, and remove screen from tank. Flush and clean tank and screen. Reassemble. (This screen should be removed from time to time for cleaning. If screen becomes clogged, cavitation of pump will result and pump will wear out very quickly.)

ADDITIONAL PARTS and SERVICE INFORMATION

For:

P 761 S Pump.....	Refer to: Page 11 and Insert Page 700-11-64
Gresen 400 Single Spool Valve	Insert Page 212
Gresen SP Single and 2 Spool Valve	Insert Page 205
Servicing Valve	Form 379

CYLINDERS



Cylinder service normally consists of replacing O-Rings and packing to correct a leaking condition. If disassembly reveals defective follower cups, wiper, scored piston, or barrel, these parts should be replaced.

To replace rings and packing:

1. Remove the four stuffing box screws and lockwashers or snap ring from cylinder.
2. Slide the piston rod and attached parts out of cylinder barrel.
3. Remove lock nut from end of the piston rod.
4. Slide components off the piston rod.
5. Replace defective rings and packing. If the cylinder cups are defective, replace them also at this time.

6. Assemble cylinder in reverse order of disassembly being careful not to damage any parts.

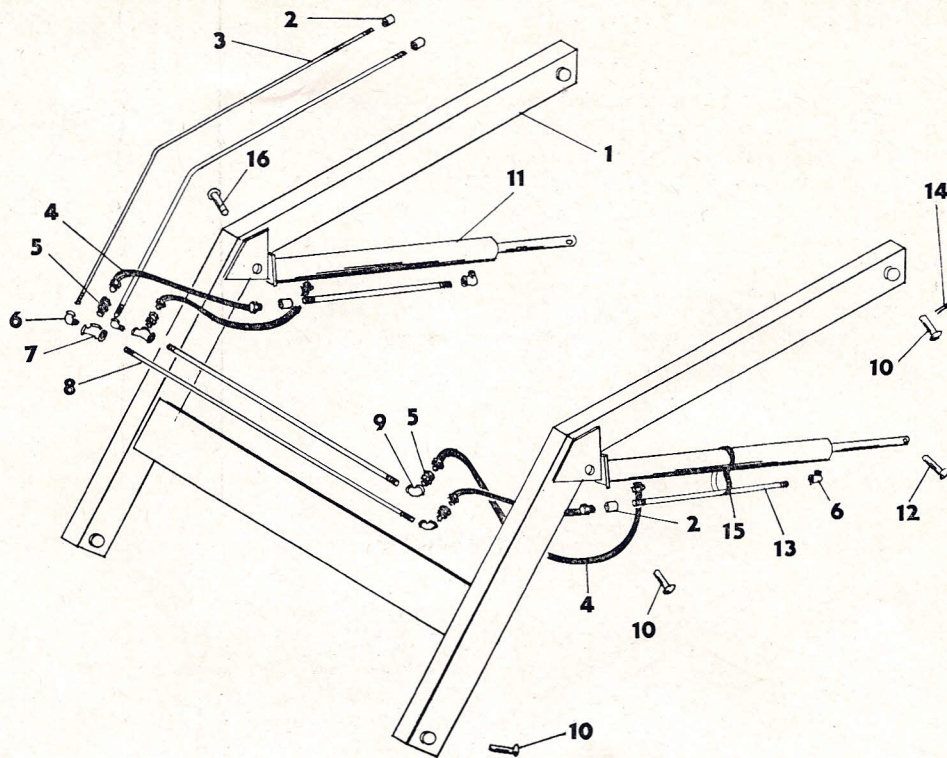
CAUTION: DO NOT EXERT EXCESSIVE PRESSURE ON THE CAP-TO-STUFFING BOX CAP SCREWS.

PUMP and VALVE

If trouble indicates pump or valve failure, do not attempt repairs but return to factory for inspection and proper servicing.

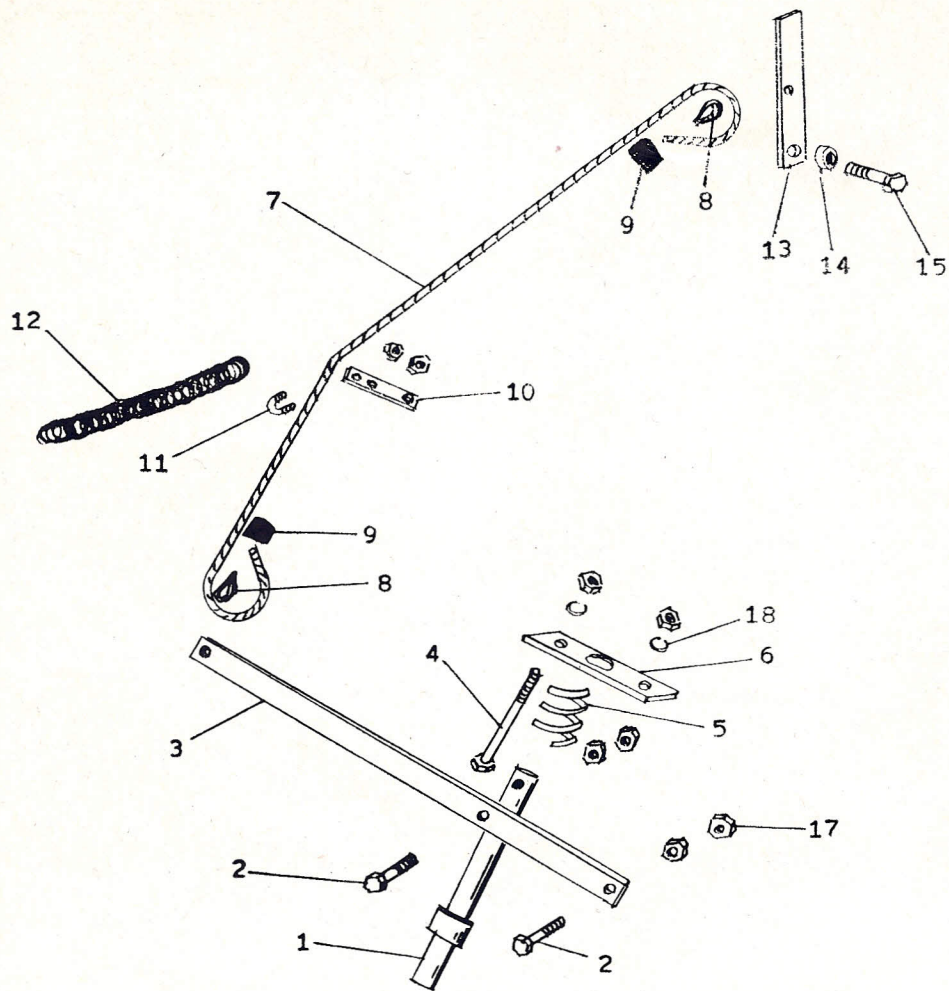
Valve and Pump pressure are preset by manufacturer, and should not be tampered with. They are set at tractor manufacturer's recommendations.

Work Horse MODEL 10 LOADER PARTS

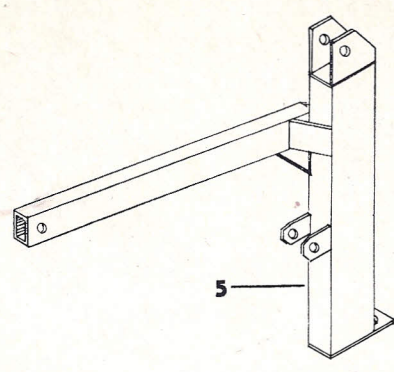
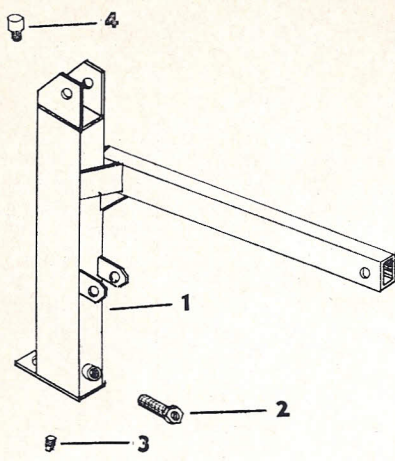


Ref. No.	Part No.	No. Req.	Name of Part
1	1601	1	Lift Frame
2	4 NF 4	4	1/4" Coupling
3	1601-12	2	Lift Frame Pipe
4	4 GA 11	4	1/4 x 11" Rayon Hose
5	4 GH 4	4	1/4" Male Adaptor
6	4 NC 3	4	1/4" St. Ell
7	4 ND 1	2	1/4" Tee
8	1601-13	2	Lift Frame Oil Line
9	4 NC 1	2	1/4" x 90° Ell
10	0062	3	1/2 x 2 1/2" Attachment Pin
11	1606	2	Lift Cylinder
12	0061	2	1/2 x 2" Cylinder Pin
13	1606-20	2	Cylinder Pipe
14	100 LD 20	8	1/8 x 1" Cotter Pin
15	12 GP 12	2	12" Universal Pipe Clamp
16	0064	1	1/2 x 3 1/4" Pin

MECHANICAL TRIP



Ref. No.	Part No.	No. Req.	Name of Part
1	1601-15	1	Pin (Trip)
2	6 M 28	2	Capscrew $\frac{3}{8}$ x $1\frac{3}{4}$ "
3	1601-10	1	Trip Lever
4	6 M 80	2	Capscrew $\frac{3}{8}$ x 5"
5	1601-19	1	Trip Spring
6	1601-11	1	Spring Cap
7	0059	1	Cable
8	4 L 3	2	Cable Thimble
9	5 L 3	2	Cable Clip
10	1601-20	1	Elbow Lever
11	5 LO 3	1	Cable Clamp
12	1601-18	1	Return Spring
13	1601-17	1	Trip Handle
14	1601-17 A	1	Spacer
15	4 MF 24	1	Machine Bolt $\frac{1}{4}$ x $1\frac{1}{2}$ "
16	4 MK 2	1	Flatwasher $\frac{1}{4}$ "
17	6 MJ 1	6	Nut $\frac{3}{8}$ "
18	6 MK 1	2	Lockwasher $\frac{3}{8}$ "

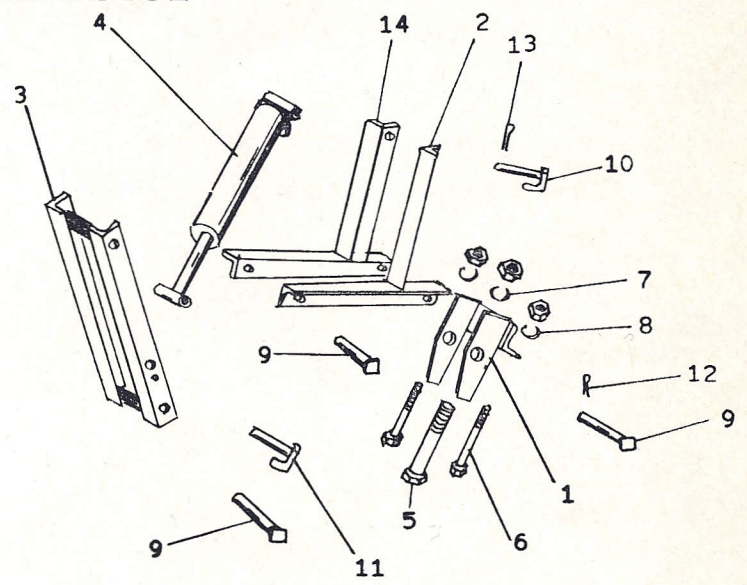


UPRIGHT

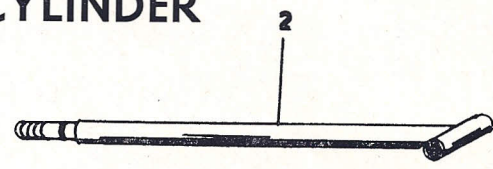
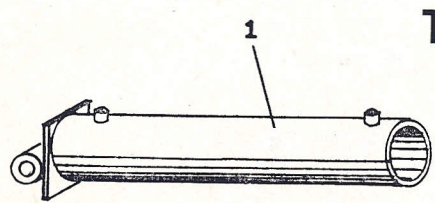
Ref. No.	Part No.	Name of Part
1	1670 R	Right Hand Upright
2	1043	Screen
3	4 NA 2	Pipe Plug 1/4"
4	568699	Breather
5	1670 L	Left Hand Upright

TILT LINKAGE

Ref. No.	Part No.	No. Req.	Name of Part
1	1608-1	1	Link Mounting
2	1608-2 L	1	Link, Left Hand
3	1608-3	1	Lever
4	1607	1	Tilt Cylinder
5	12 MF 88	1	Machine Bolt 3/4 x 5 1/2"
6	6 MF 80	2	Machine Bolt 3/8 x 5"
7	12 MK 1	1	Lockwasher 3/4"
8	6 MK 1	2	Lockwasher 3/8"
9	1608-4	3	Link Pin
10	1608-5	1	Cylinder Base Pin
11	1608-6	1	Cylinder Head Pin
12	150 LD 25	3	Cotter Pin
13	150 LD 30	2	Cotter Pin
14	1608-2 R	1	Link, Right Hand

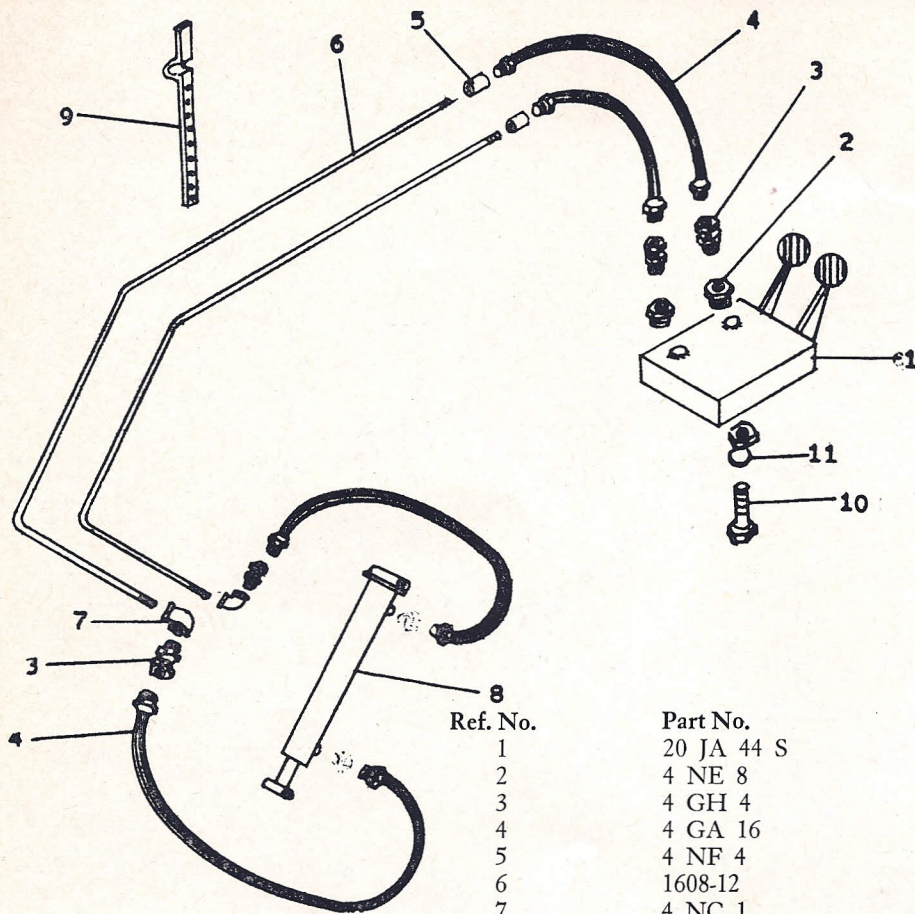


TILT CYLINDER



Ref. No.	Part No.	No. Reg.	Name of Part
1	1607-1	1	Tube
2	1607-2	1	Rod
3	18 MJ 3	1	Lock Nut 1 1/8"
4	HJ 114 A	2	Follow Plate
5	250 A 22	2	Cylinder Cup
6	HJ 123	1	Piston
7	112 EA 14	1	O Ring
8	250 EA 36	1	O Ring
9	250 F 36	1	Teflon Backup Washer
10	HJ 137 B	1	Cylinder Head
11	150 EA 20	1	O Ring
12	150 F 24	1	Leather Backup Washer
13	169 C 20	1	Wiper
14	250 K 5 M	1	Snap Ring

TILT HYDRAULIC KIT



Ref. No.

1
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11

Part No.

20 JA 44 S
4 NE 8
4 GH 4
4 GA 16
4 NF 4
1608-12
4 NC 1
1607
12 GP 14
6 MF 40
6 MK 1

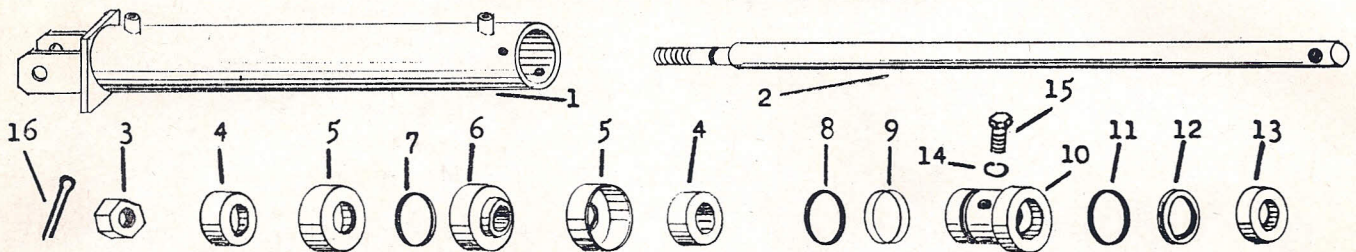
No. Req.

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3

Name of Part

SP 4-4 Valve
Bushing $\frac{1}{2} \times \frac{1}{4}$ "
Male Adapter $\frac{1}{4}$ "
Hose $\frac{1}{4} \times 16$ "
Coupling $\frac{1}{4}$ "
Pipe
Elb $\frac{1}{4}$ " x 90°
Tilt Cylinder
Pipe Strap
 $\frac{3}{8} \times 2\frac{1}{2}$ " Machine Bolt
 $\frac{3}{8}$ " Lockwasher

2" DA LIFT CYLINDER



Ref. No.

1
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16

Part No.

1606-1 A
1606-2
16 MJ 3
HJ 147
200 A 20
HJ 146
125 EA 16
200 EA 28
200 FA 28
HJ 145
137 EA 18
137 F 18
162 C 18
6 MK 1
6 M 8
200 LD 30

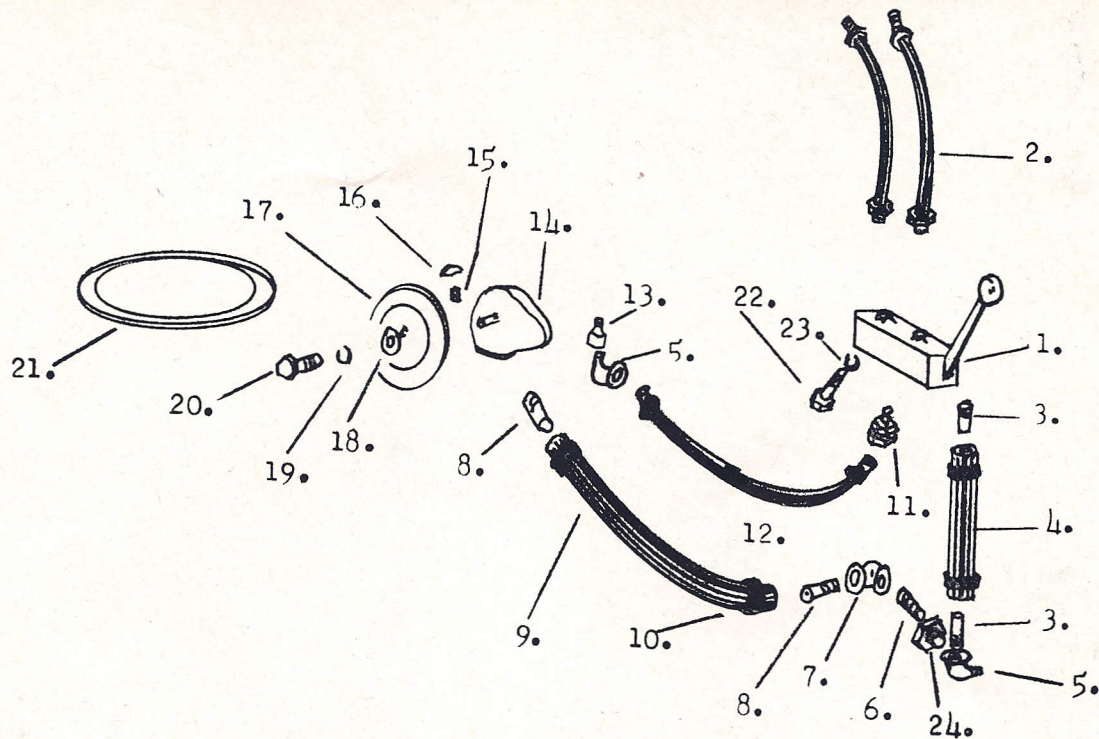
No. Req.

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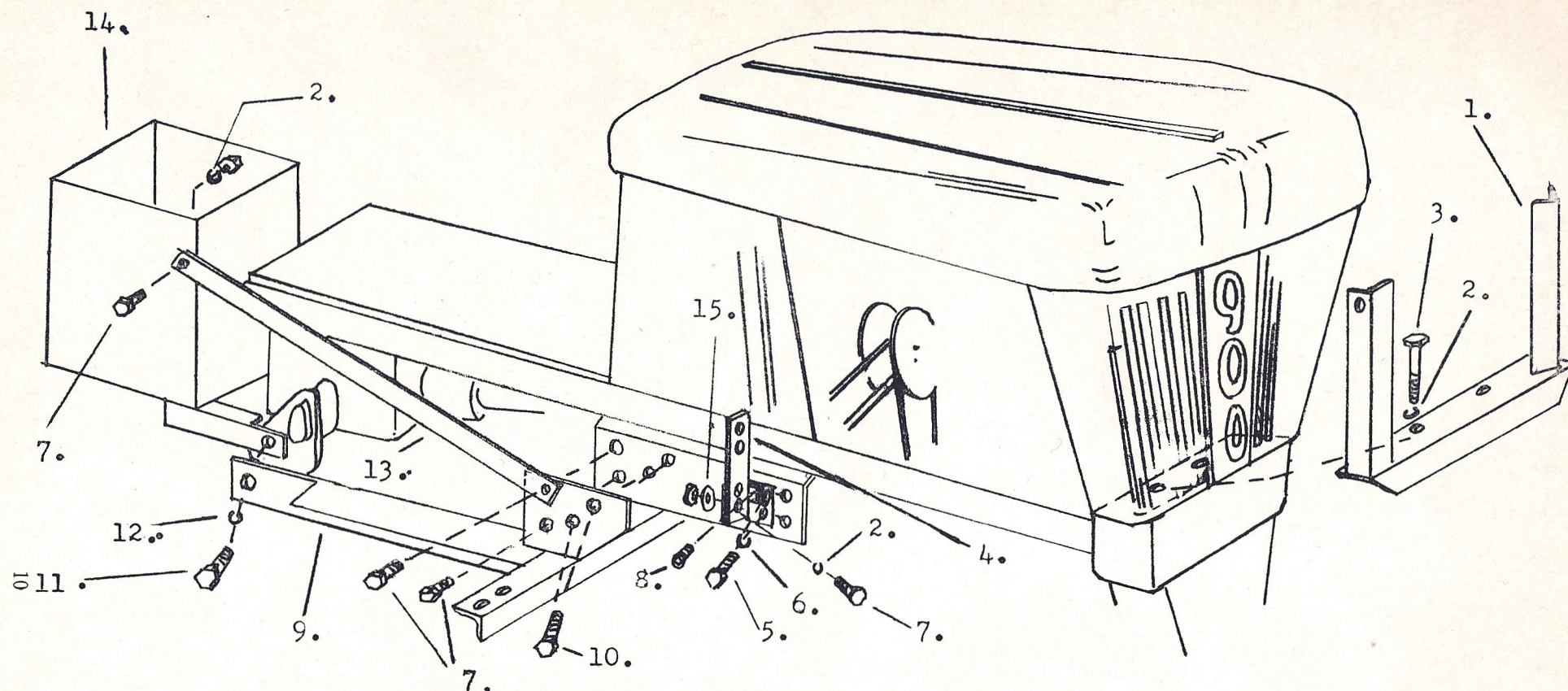
Name of Part

Cylinder Tube
Piston Rod
1" NF Nut
Follow Plate
Cylinder Cup
Piston
O Ring
O Ring
Teflon Backup Washer
Cylinder Head
O Ring
Leather Backup Washer
Wiper
 $\frac{3}{8}$ " Lockwasher
 $\frac{3}{8} \times \frac{1}{2}$ " Capscrew
 $\frac{3}{16} \times 2$ " Cotter Pin

HYDRAULIC KIT—MECHANICAL TRIP



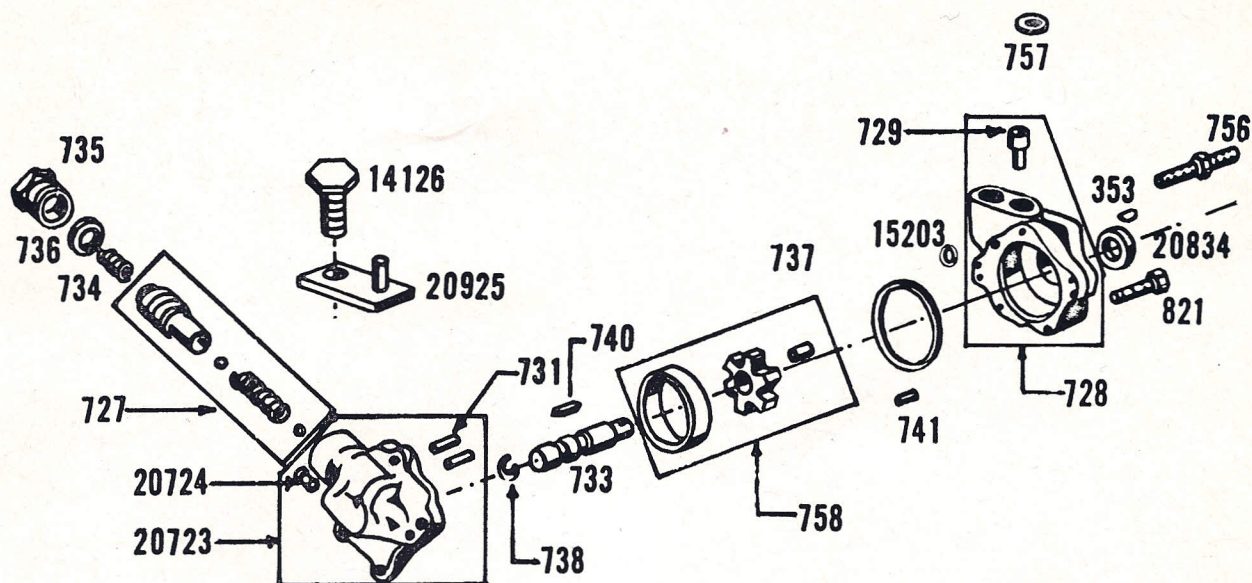
Ref. No.	Part No.	No. Req.	Name of Part
1	16 J 4S	1	Valve
2	4 GA 16	2	Hose $\frac{1}{4}$ x 16"
3	6 N 32	2	Tapered Nipple $\frac{3}{8}$ "
4	10 G 6	1	L P Hose $\frac{3}{8}$ x 6"
5	6 NC 3	2	St. Ell $\frac{3}{8}$ "
6	8 N 1	1	Close Nipple $\frac{1}{2}$ "
7	8 NC 2	1	Ell $\frac{1}{2}$ x 45°
8	8 N 32	2	Tapered Nipple $\frac{1}{2}$ "
9	12 G 8 $\frac{1}{2}$	1	L P Hose $\frac{3}{4}$ x 8 $\frac{1}{2}$ "
10	12 GT 1	2	Hose Clamp $\frac{3}{4}$ "
11	6 GH 6	1	Male Adapter $\frac{3}{8}$ "
12	6 GA 12	1	Hose $\frac{3}{8}$ x 12"
13	1614	1	Special Fitting
14	P 761 S	1	Pump
15	4 MD 5	1	Set Screw $\frac{1}{4}$ x 5/16"
16	2 L 8	1	Woodruff Key $\frac{1}{8}$ x $\frac{1}{2}$ "
17	2400	1	Pulley
18	6 MK 2	1	Flatwasher $\frac{3}{8}$ "
19	5 MK 1	1	Lockwasher 5/16"
20	5 MA 20	1	Capscrew 5/16 x 1 $\frac{1}{4}$ "
21	A-26	1	V-Belt
22	6 M 12	2	Capscrew $\frac{3}{8}$ x $\frac{3}{4}$ "
23	6 MK 1	2	Lockwasher $\frac{3}{8}$ "
24	8 NE 12	1	Bushing $\frac{1}{2}$ x $\frac{3}{4}$ "



MOUNTINGS AND BALLAST BOX

Ref. No.	Part No.	No. Req.	Name of Part
1	1695	1	Front Mounting
2	6 MK 1	14	Lockwasher $\frac{3}{8}$ "
3	6 M 48	2	Capscrew $\frac{3}{8}$ x 3"
4	1697	1	Pump Mounting
5	5 M 20	2	Capscrew $\frac{5}{16}$ x $1\frac{1}{4}$ "
6	5 MK 1	2	Lockwasher $\frac{5}{16}$ "
7	6 MF 20	8	Machine Bolt $\frac{3}{8}$ x $1\frac{1}{4}$ "
8	6 MD 20	1	Set Screw $\frac{3}{8}$ x $1\frac{1}{4}$ "
9	1696	1	Rear Mounting
10	6 M 56	4	Machine Bolt $\frac{3}{8}$ x $3\frac{1}{2}$ "
11	10 MF 32	2	Machine Bolt $\frac{3}{8}$ x 2"
12	10 MK 1	2	Lockwasher $\frac{3}{8}$ "
13	1698-1	2	Tie Strap
14	1698	1	Ballast Box
15	6 MK 2	2	Flatwasher $\frac{3}{8}$ "

P-761S HYDRAULIC PUMP



Part No.	Name of Part	Part No.	Name of Part
353	Woodruff Key	741	Pin, Dowel, Cam
727	Valve Assembly	756	(3) Stud, Special
728	Body, Bushing, Venturi Assembly	757	Gasket, Reservoir Intake
731	(2) Dowel	758	Kit, Cam, Insert, Roll, Carrier
733	Shaft	821	(2) Screw, Hex $\frac{3}{8}$ -16 NC x 2
734	Spring, Flow Control Valve	14126	Screw $\frac{3}{4}$ -16 NF x 1
735	Cap, Valve	15203	O Ring 11/16 OD x 1/16 S
736	O Ring, 1-1/16 OD x $\frac{1}{8}$ S	20733	Seat and Ball Assembly
737	Seal (body to cover)	20724 S	Seat, Tube
738	Retaining Ring	20834	Seal, Oil (shaft)
740	Pin, Drive	20925 S	Flange

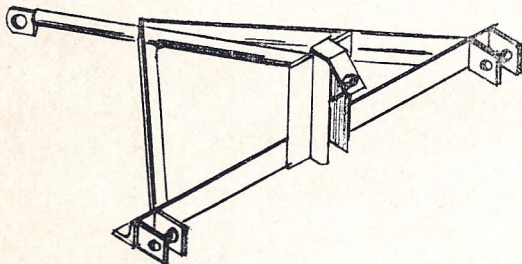
(One each item per assembly except as noted)

LOADER ATTACHMENTS

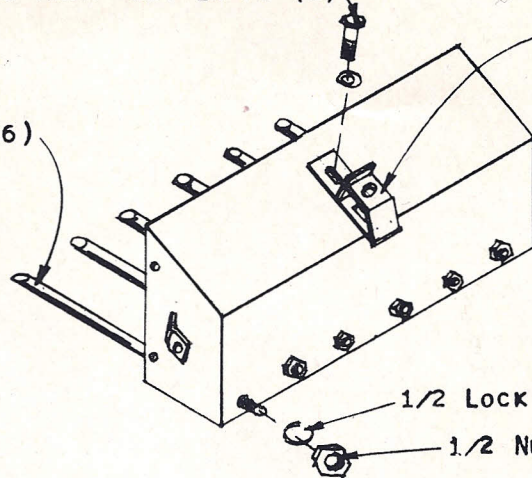
1/2 X 1-1/2 MACH BOLT LW FW (2)

1619-25 TRIP BLOCK

1625-6 TIE (6)

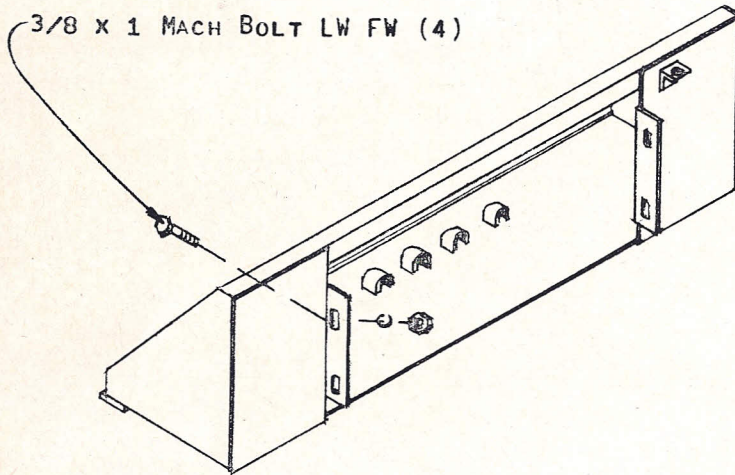


1635 BOOM



1625 MANURE BUCKET

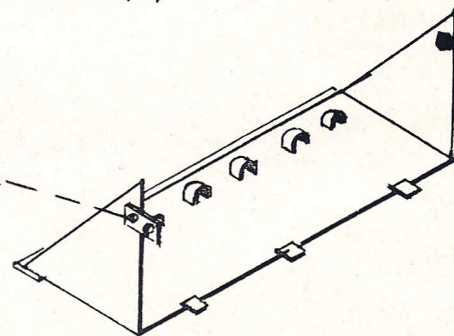
3/8 X 1 MACH BOLT LW FW (4)



1640 BUCKET ADAPTOR

3/8 X 1 MACH BOLT LW (4)

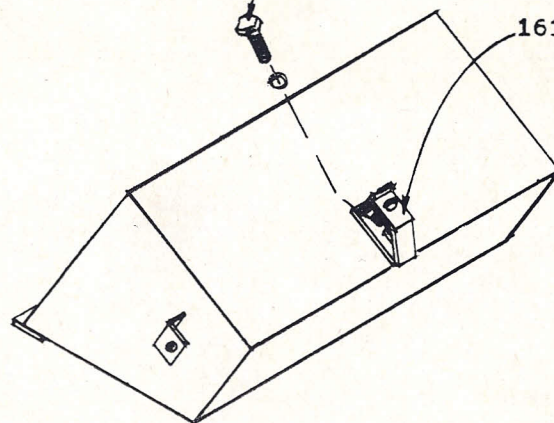
1626-6 TIE



1626 DIRT PLATE

1/2 X 1-1/2 MACH BOLT LW FW (2)

1619-20 TRIP BLOCK



1620 DIRT BUCKET