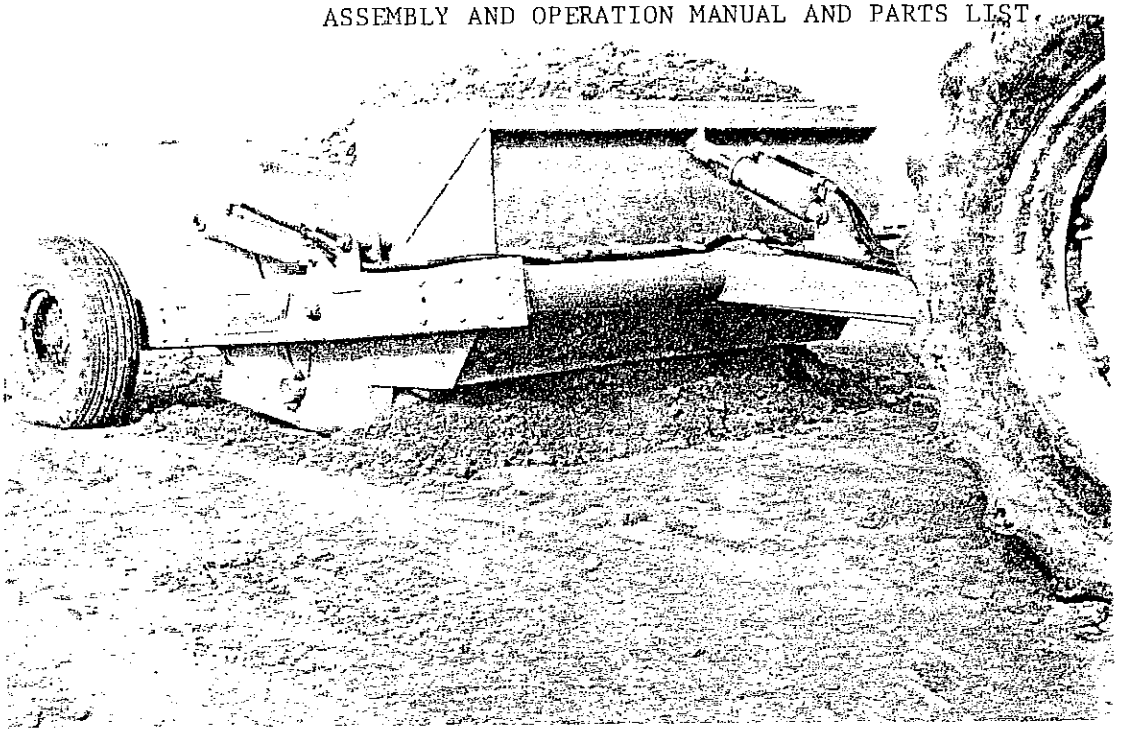
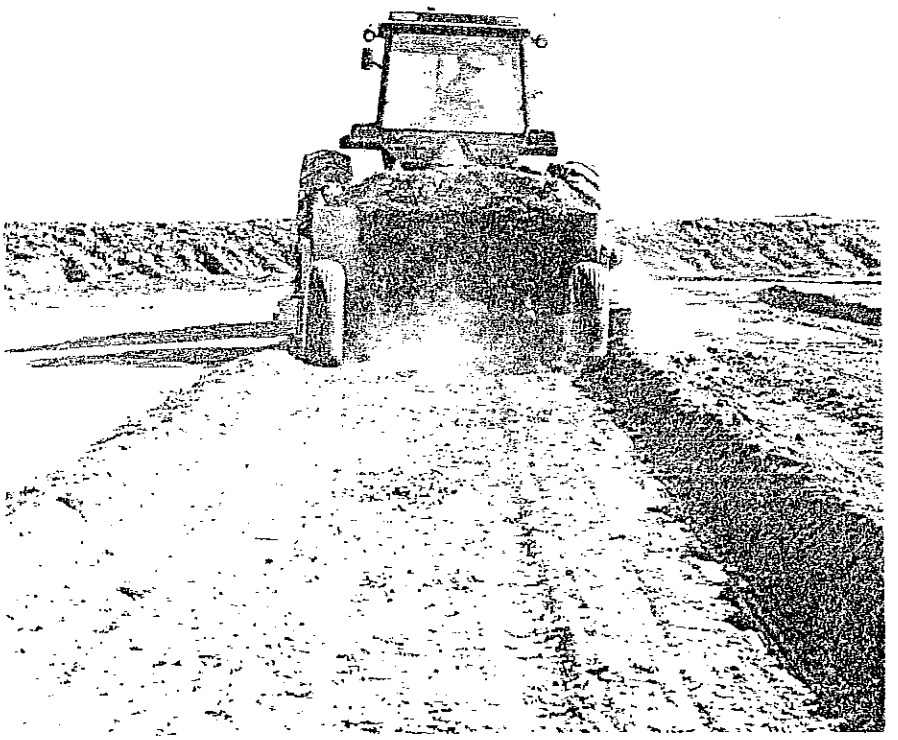
Eversman SCRAPER

MODEL 450 UTILITY SCRAPER

ASSEMBLY AND OPERATION MANUAL AND PARTS LIST





THE EVERSMAN MANUFACTURING COMPANY

FIFTH STREET AT CURTIS - P.O. BOX 4345 - DENVER, COLORADO 80204 - (303) 572-1140

WARRANTY

Eversman Mfg. Company warrants its products to be free of defects in material and workmanship for a period of 12 months from the date of first use by the original purchaser, at retail, under normal and proper use in accordance with the recommendations and suggestions in our operation manuals. The obligation of Eversman under this warranty will be limited to replacement or repairs, without charge, to the purchaser of the part or parts acknowledged by the Company to be defective in workmanship or material. The defective parts are to be returned to Eversman, Denver, Colorado, for inspection, transportation charges and handling fees prepaid.

No warranty is made with respect to parts purchased from outside suppliers, since such items are warranted by their manufacturers. No liability is assumed for expenses or damages resulting from improper assembly, malfunction in operation of Eversman equipment, or if damaged in any accident, fire, flood or act of God. This warranty is not extended to used equipment, rental or leased units or Eversman products on which repairs or alterations have been made without authorization.

Eversman Mfg. Company reserves the right to make changes in its products at any time without becoming liable to make similar changes on equipment previously manufactured. This warranty is in lieu of all other warranties, expressed or implied.

To the Purchaser and Dealer: This manual covers the necessary assembly instructions, operating instructions and parts list for the Model 450 Utility Scraper. Record the Serial Number, and delivery date, at once so this information will be available in the future when ordering parts.

RECORD FOR FUTURE REFERENCE

EVERSMAN MODEL 450 UTILITY SCRAPER

SERIAL NUMBER: _____

DATE DELIVERED: _____

(Always give Serial Number when ordering parts.)

EVERSMAN
HYDRAULIC SCRAPER
MODEL 450
THE EVERSMAN MFG COMPANY
DENVER, COLO.
SERIAL NO. S[ ]

To The Operator

This manual covers the necessary assembly, operating instructions and parts list for the Model 450 Utility Scraper. A careful operator is the best insurance against an accident. Most farm accidents are a result of the failure to observe, and follow, safety suggestions.

SAFETY

Safety is everyone's responsibility and should be foremost in your mind when operating, transporting or servicing this machine. All possible consideration for safety of the operator has governed the design of the 450. You can avoid accidents by following these recommendations and suggestions.

a) Be certain all bystanders are not near machine when transporting, turning, operating or moving on or off the field.

b) Do not operate bucket cylinders or gate control cylinder with anyone close to the bucket section.

c) Lower machine to ground and shut off tractor before servicing or lubricating.

d) Never pemit anyone to ride on the scraper while operating or transporting.

e) Install "Slow Moving Vehicle" sign for transporting. Transport with care and slowly over rough ground.

f) Relieve pressure on hydraulic system before disconnecting hose fittings, and be certain all hoses, lines and fittings are tight before applying pressure to the system.

g) Refer to section on operating instructions and be certain you have sufficient weights on front of tractor.

When you see this symbol, be aware that it identifies an important safety message. Read the message carefully and exercise caution to avoid personal injury or machine damage.

TABLE OF CONTENTS

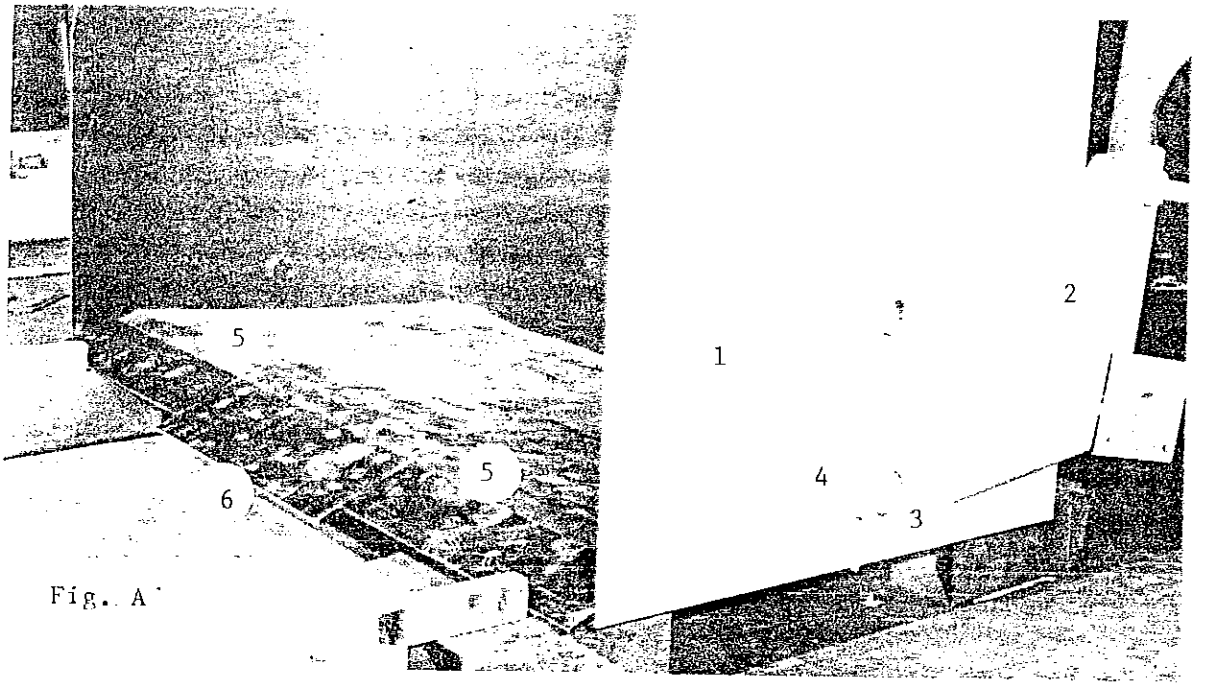


Fig. A

1. Bucket (022796)
2. Lift Pipe (024560)
3. Bearing Insert (022050)
4. Cap (021961)
5. Side Bit (024693)
6. Center Bit (024694)

1. The side bits (5) are assembled to the bucket with 5/8 X 1-3/4" plow bolts and lock nuts. The bolts will be easier to tighten if the bucket is placed on its back.
2. With 5/8 X 1-3/4" and 5/8 X 2-1/2" plow bolts and lock nuts attach center bit to bucket. The Center bit can be assembled as shown as a frost bit, or place in line with the side bits for an even cut over the entire width.
3. Then set bucket and gate on 6" blocks. This height is important for proper assembly.
4. Attach lift pipe to bucket pins with bearing inserts and caps, using 5/8 X 2", Grade 5 capscrews and lock washers. The lift pipe must also be blocked in an approximately level position to facilitate assembly of siderails.

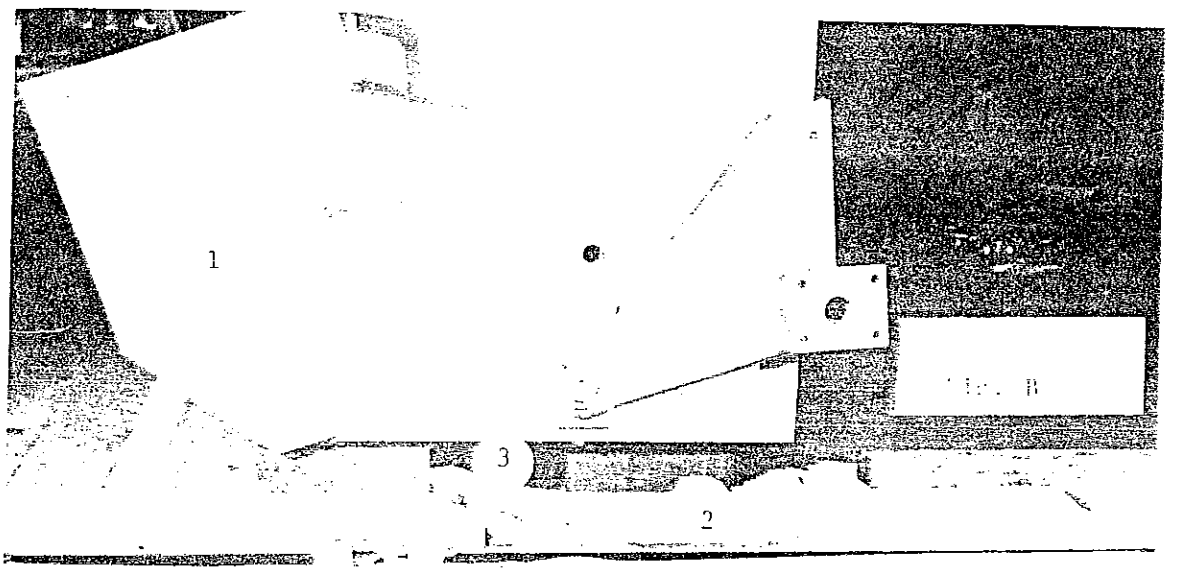
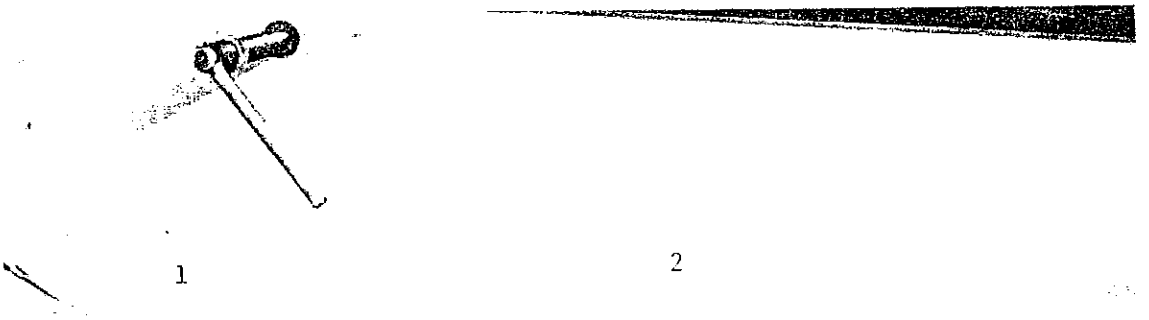


Fig. B

1. Gate (023095)
2. Siderail (LH-022793)
2A. Siderail (RH-022794)
3. Link Weldment (024591)
4. 1-1/2" Stop Nut (0

1. Move gate in place on bucket and secure with C-clamps.
2. Attach link weldments (3) to siderails with 1-1/2" elastic stop nuts (4) and 1-1/2" SAE flat washers. (Note Figure D).



1. Gate (023095)
2. Bucket (022796)

Fig. C

1) Clamp gate to bucket with the gate pin located 21" from the bucket pin hole. This will make it easier to attach the siderail and control link weldment.

1. Siderail (022793)
   Link Weldment (024591)
3. 1-1/2" Stop Nut (064596)
4. 1-1/2" SAE Flat Washer (063596)
5. Link Pivot Pin (024594)

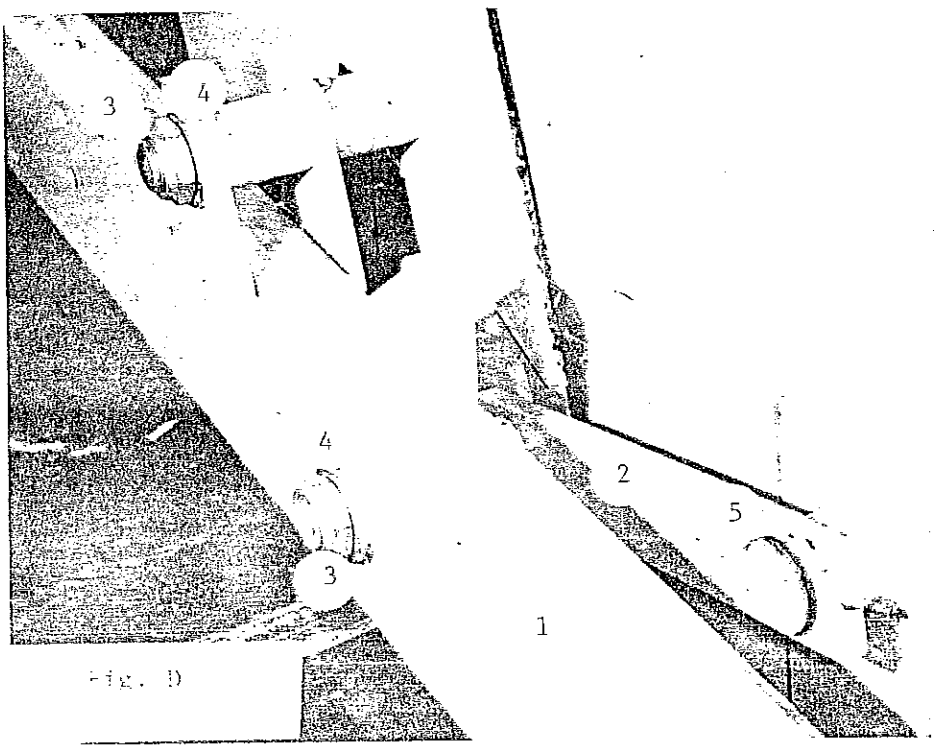


Fig. D

1) To assist assembly, grease gate pin and bucket tube.
2) Then guide siderail lugs on gate pin and secure with 1-1/2" flat washer (4) and stop nut (3).
3) Connect link weldment to bucket with pivot pin (5) and 1-1/2" stop nut.

NOTE: The pivot pin locknuts on the inside of the bucket are frequently found to be loose during field operation. After final assembly of the scraper, it is recommended that the locknuts be carefully checked and thoroughly tightened with a long-handled wrench, preferably by someone working on the inside of the bucket. If necessary to retighten the nut several times during operation, replacement of the locknut may be required.

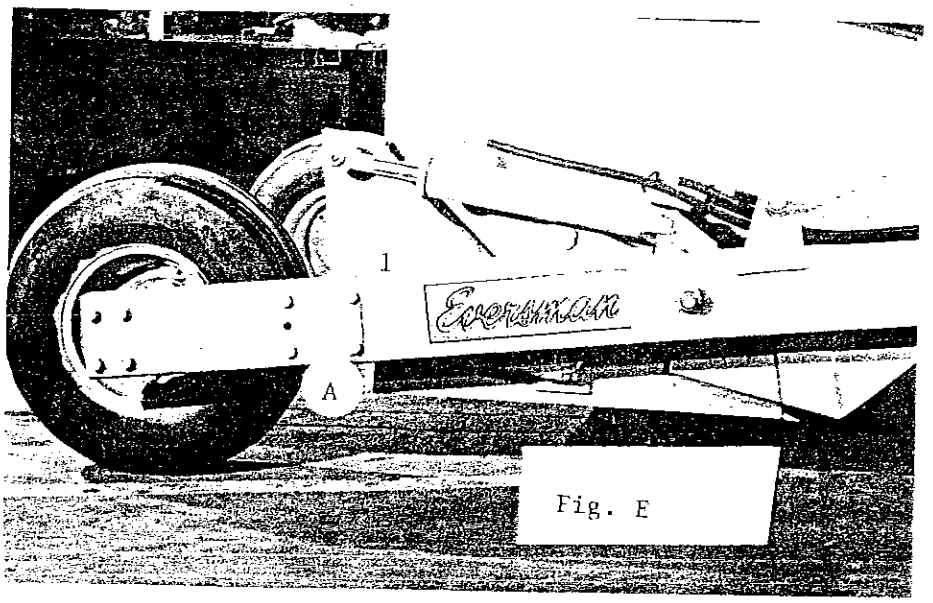


Fig. E

1. Spacer Bar (024781).

1) Rotate plates on ends of lift pipe to match holes (Point A) in siderails and attach with 3/4 X 4-1/2" Grade 5 bolts, lockwashers and hex nuts.

2) IMPORTANT - Note that a spacer bar (1) is necessary on the outside of the siderail to avoid interference between the nuts and the lift pipe. Also note that the bolt heads are on the outside of the siderail. The hole on the centerline of the siderail is a tooling hole only.

3) Do not thoroughly tighten these nuts until tongue is also assembled at front of siderails.

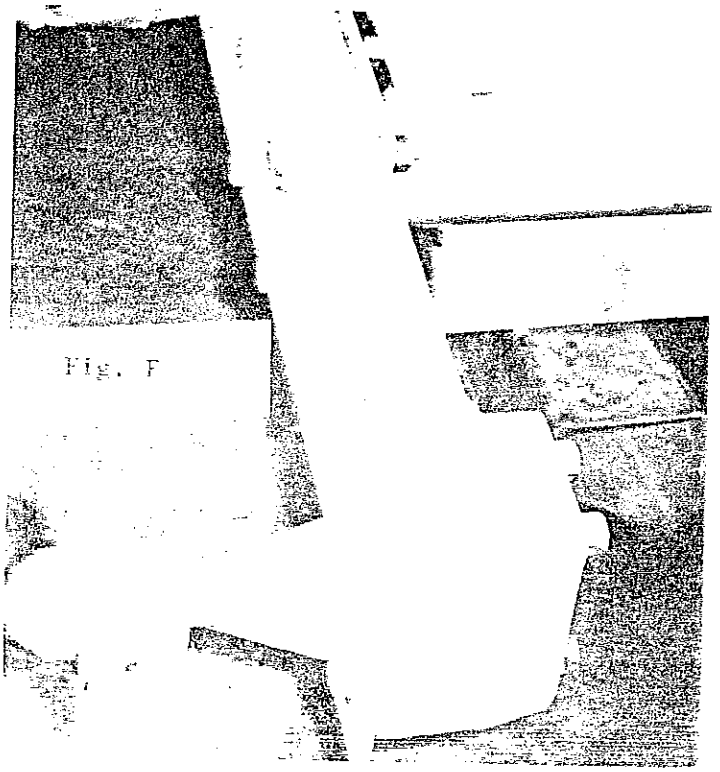


Fig. F

1) Mount spindle and hub assembly to siderails with 3/4" SAE flat washers, 3/4 X 6-1/2" Grade 5 bolts, lockwashers and hex nuts. Set spindle brackets even with top of siderails and adjust as necessary to level out cutting bit.
2) The spindles can be installed either outside the rails or inside, so that the wheels run inside the cut. (Refer instructions, page 12.)

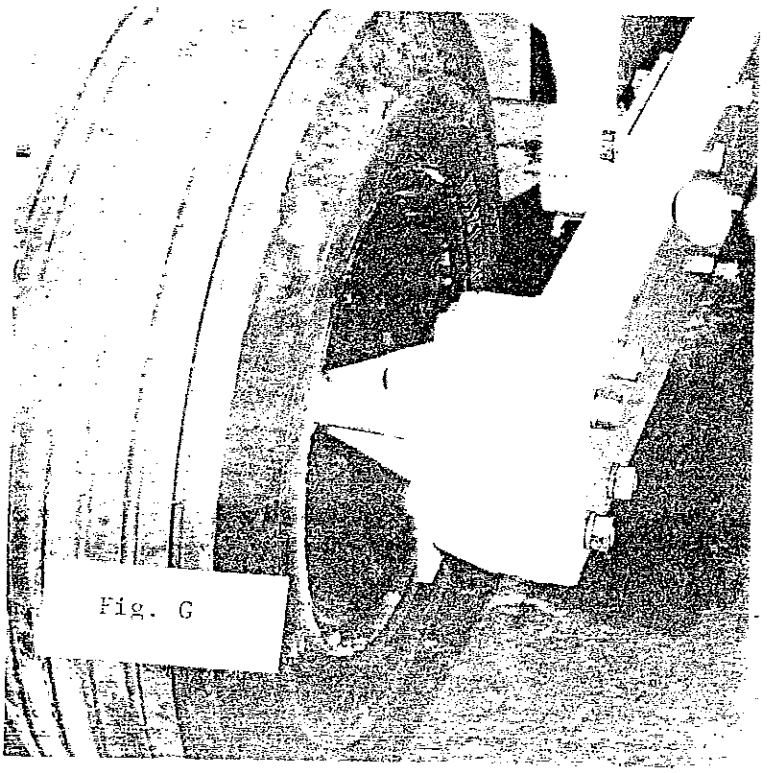


Fig. G

1) Assemble wheel and tire to hub with 007000 lug bolts.
2) The 9.5L X 15 optional tire is shown mounted on the standard 15" wheel.
3) An optional 9:50 - 10:00 X 16.5 wheel can be substituted at a small additional cost, and used pick-up tires installed.

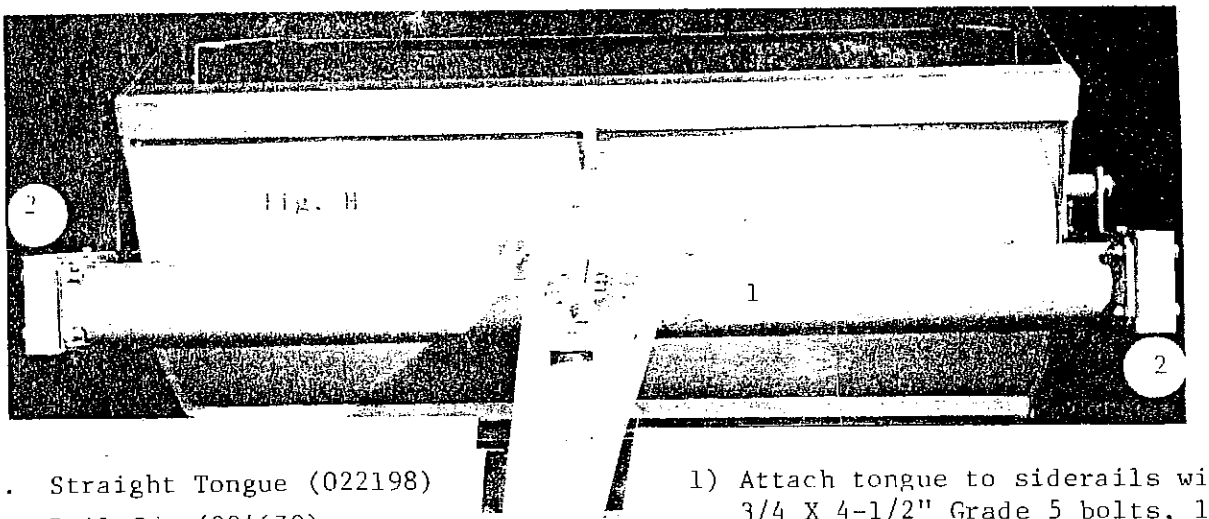


Fig. H

1. Straight Tongue (022198)
2. Rail Cap (024670)

⚠ WARNING: Set Tongue on stand and block wheels so tongue will not fall while preceding with assembly.

1) Attach tongue to siderails with 3/4 X 4-1/2" Grade 5 bolts, lock-washers and hex nuts.
2) Note that the siderail caps are attached with the two front bolts on each rail.
3) Do not thoroughly tighten the bolts at this time. (Refer to page 9.)

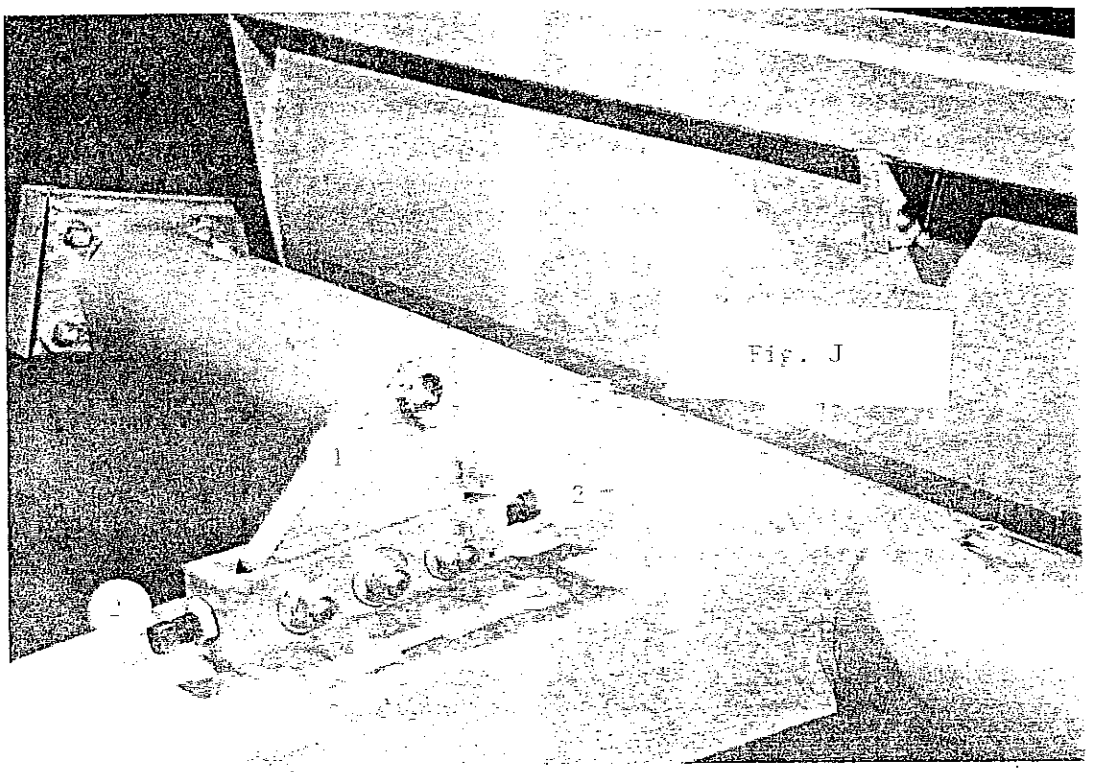


Fig. J

1. Cylinder Anchor (024792)
2. Setscrew (060294)

1) Move cylinder anchor in end of slots closest to gate and attach (1) to tongue with 5/8 X 3" Grade 5 bolts, 5/8" flat washers on both sides of weldment and 5/8 lock nuts. Do not tighten these bolts until the gate control cylinder is installed.
2) The set screws (2) are used to adjust the proper location of the anchor and the jam nuts will lock it in place. (Refer page 9.)

HYDRAULIC ASSEMBLY

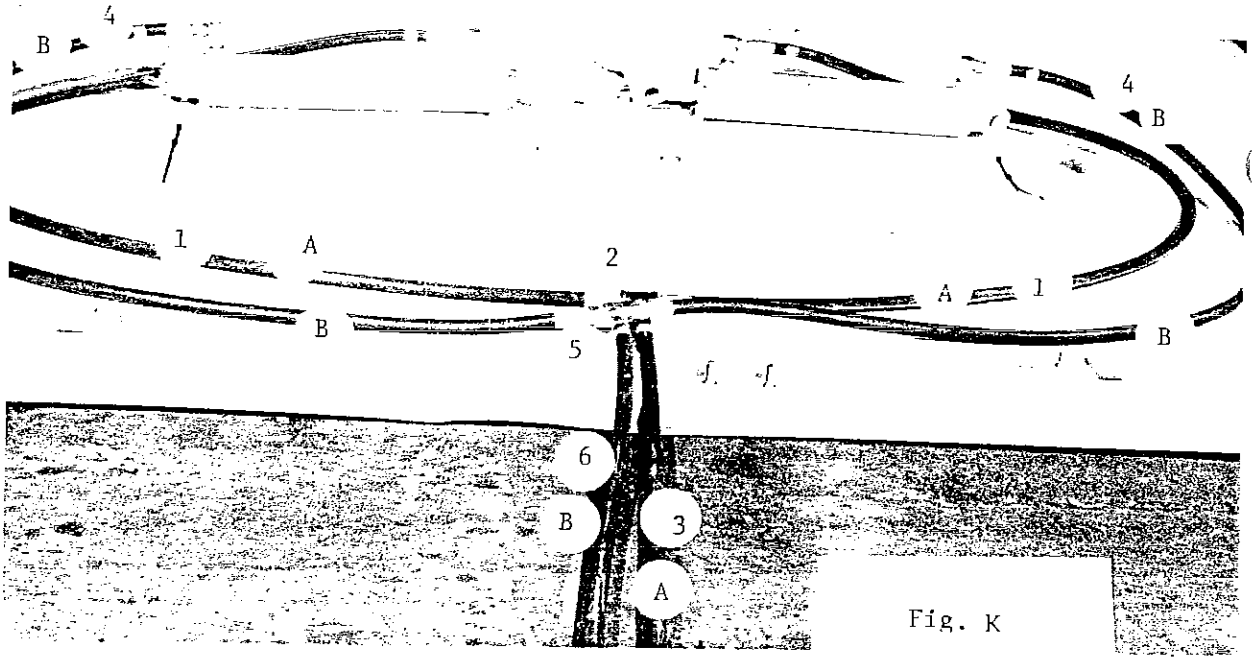


Fig. K

Line A

1. 100" - Male-Male Hose (024697)
2. 1/2" Black, Female-Female Tee (623020)
3. 120" Male-Male Hose (150340)

Line B

4. 79" Male-Female Hose (024696)
5. Special Tee, Female-Female (041089)
6. 120" Male-Male Hose (150340)

To avoid crossing the lines which would permanently twist and damage the lift pipe, the hoses and fittings are designed with male or female fittings. It is recommended that the lines be preassembled before mounting on scraper.

Line A - Using pipe dope for all connections, attach the 100", male-male hoses (1) to the black tee (2), and a 120", male-male hose (3) to the tee. Do not attach to cylinder at this time.

Line B - The 79", male-female hoses (4) are assembled to the female-female special tee (5) along with the other 120" hose (6).

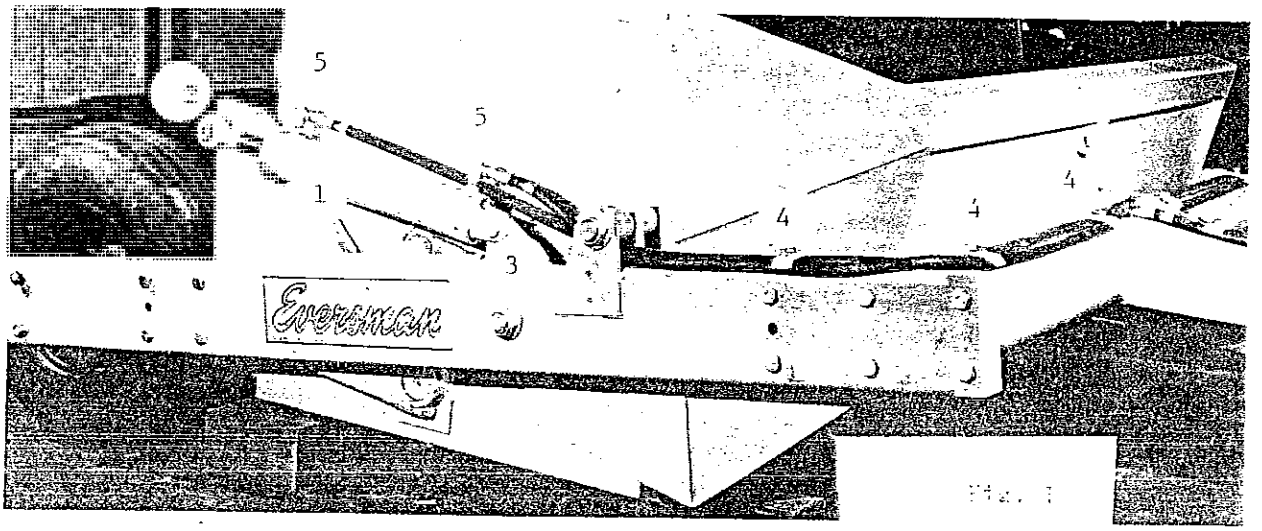


Fig. L

1. Bucket Cylinder (024300)
2. Snap Ring (021880)
3. Clevis Pin (701026)
4. Pipe Clip (705800)
5. 90° Swivel Fitting (612028

1) Attach 90° swivels (5) on front and rear ports of bucket cylinder.
2) The bucket cylinders are assembled to the siderail anchor lugs with clevis pins (3) and 1/4 X 2" cotters, and to the lift pipe pins with snap rings (2).
3) Feed line A under the siderail brackets and connect to the rear cylinder port swivel
4) Assemble line B to the front ports.
5) Clamp both lines to the tongue and siderails with pipe clips (4), 1/2 X 1-1/4" hex bolts and lock washers.

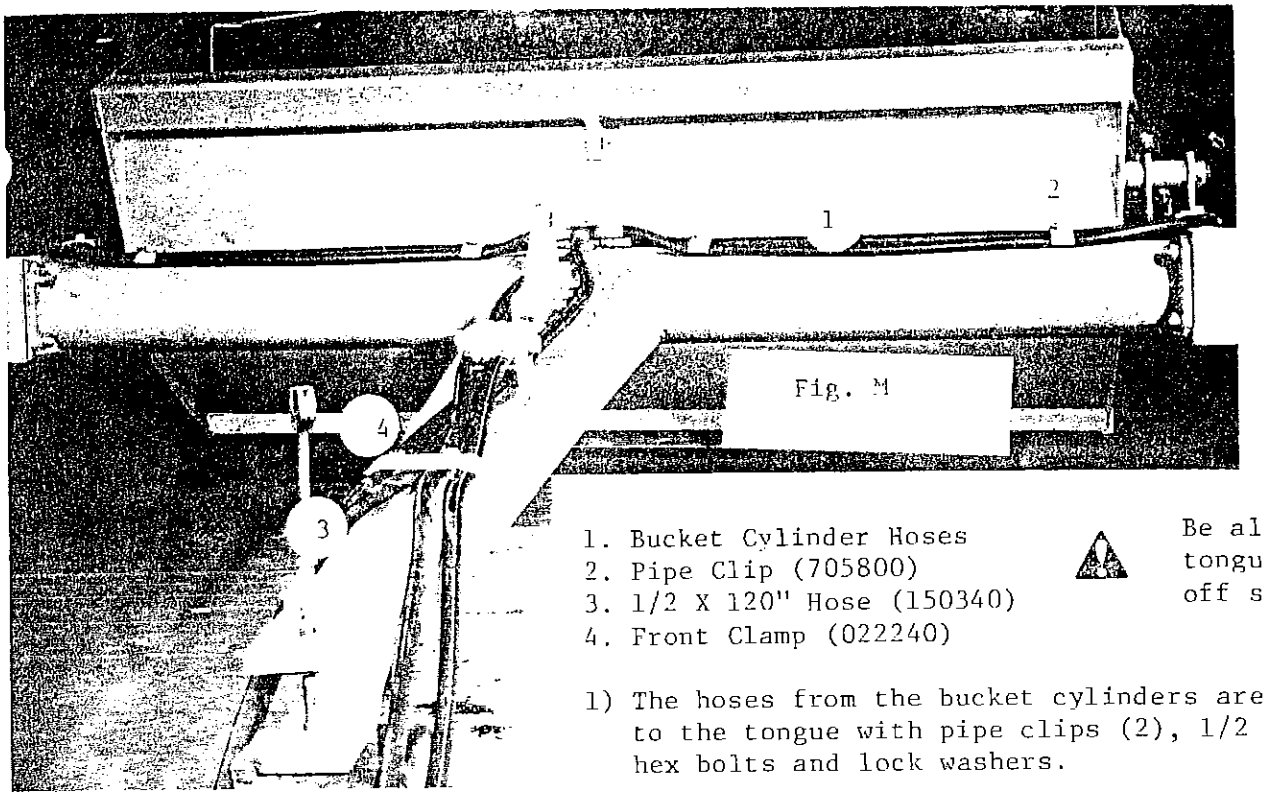


Fig. M

1. Bucket Cylinder Hoses
2. Pipe Clip (705800)
3. 1/2 X 120" Hose (150340)
4. Front Clamp (022240)

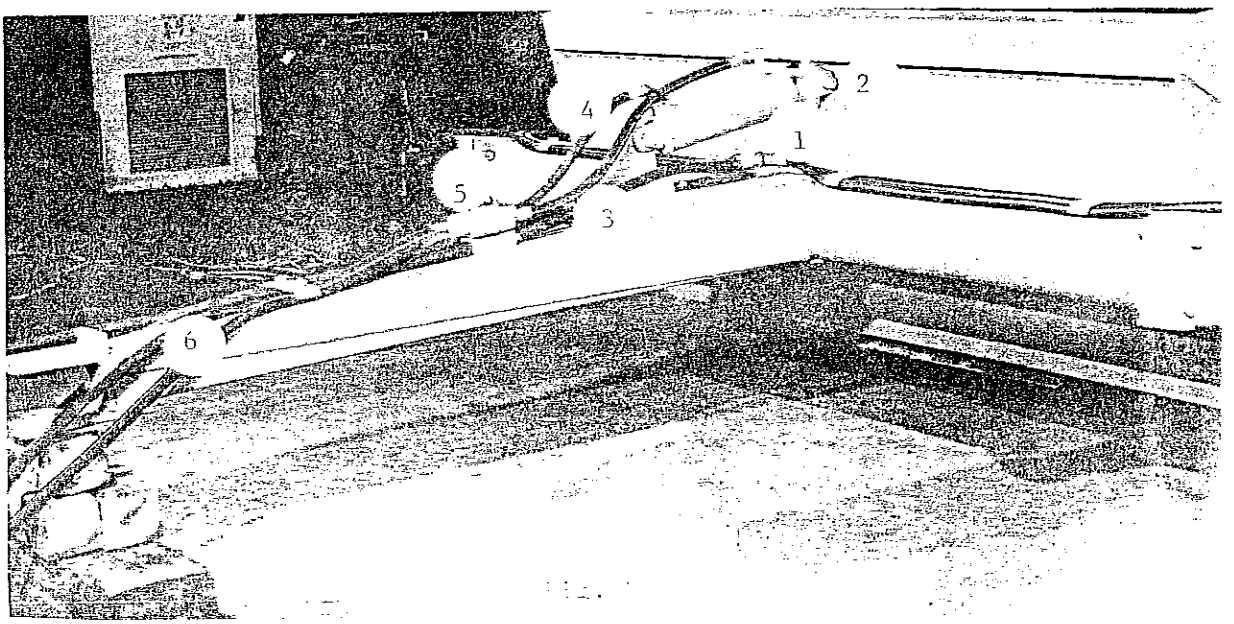
⚠ Be alert to tongue falling off stand.

1) The hoses from the bucket cylinders are secured to the tongue with pipe clips (2), 1/2 X 1-1/4" hex bolts and lock washers.

2) Feed the 120" hoses (3) under the bracket on the tongue and fasten to tongue with front clamp (4), 1/2 X 1-1/4" hex bolts and lock washers after the cushion valve hoses have also been assembled (6, Fig. N).

Optional Power Gate Cylinder Kit

1. 3-1/2 X 8" Stroke Cylinder (311021)
2. Clevis Pin (701026)
3. 1-1/2 X 30" Hose(024698)
4. 1/2 X 19" Hose (602900)
5. Cushion Valve (609550)
6. 1/2 X 90" Hose (024699)



NOTE: The cushion valve and the 2 - 90" hoses are standard equipment, however, the cylinder and short hoses are optional if the purchaser does not already have a 3-1/2 X 8" stroke cylinder and hoses he can install to operate the gate.

1) The cylinder is attached to the gate lug and the cylinder anchor with clevis pins (2) and 1/4 X 2" cotters.
2) The 30" (3) and 19" (4) hoses are first assembled to the cushion valve and then to 90° swivels on the cylinder ports.
3) The cushion valve (5) is mounted on the tongue bracket with 5/16 X 2-1/2" hex bolts and lock washers.
4) The 90" hoses (6) are assembled to the cushion valve and secured to the tongue with the front clamp.

FINAL POWER GATE ASSEMBLY AND ADJUSTMENT

⚠ In making the final adjustment for the gate, caution must be exercised to avoid damage to the bucket or gate. Proceed as follows:

1) You will need to provide a tractor for final assembly. Attach tongue to tractor drawbar and connect hydraulic lines to tractor.

2) Note that instructions for Fig. J, page 6, were to move cylinder anchor in end of slots closest to gate. If this was not done, do so now.

3) Cycle bucket through complete range 3 or 4 times from full cut to full dump positions.

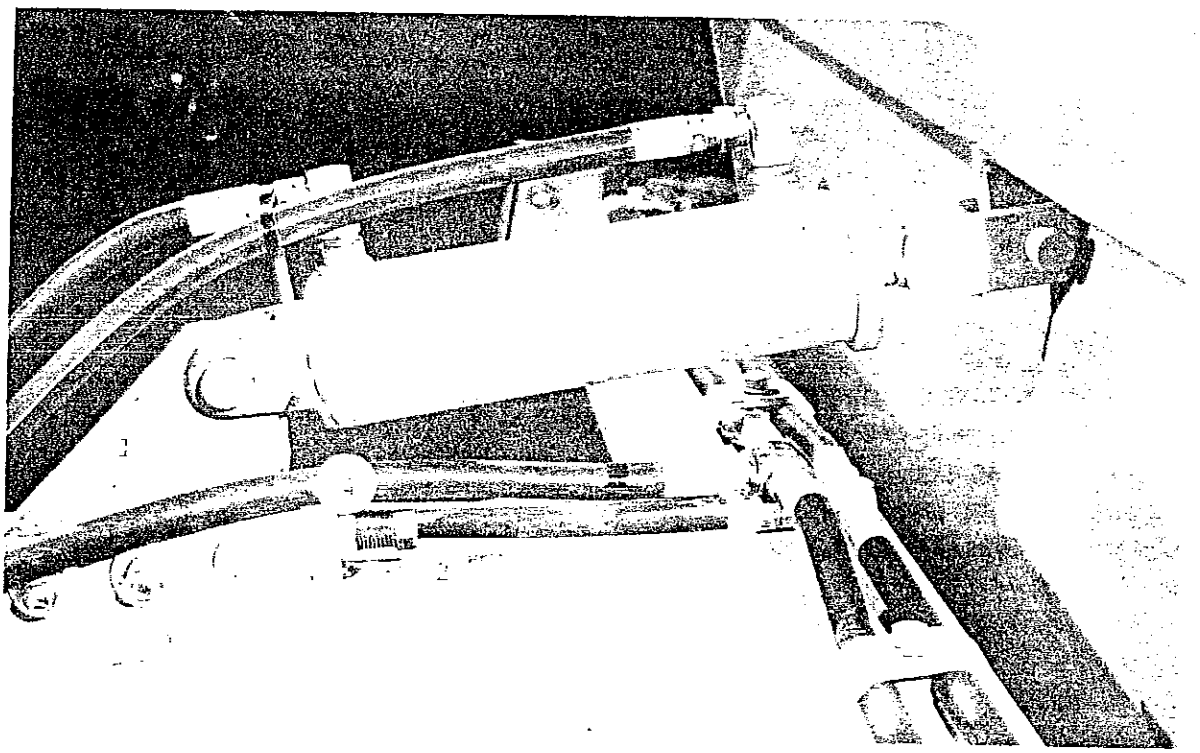
   Then place 6" blocks under the side bits and lower scraper so the weight is supported on the blocks and the rear tires. Thoroughly tighten all frame bolts, progressively, by moving around the machine. If the bolts in one corner are completely tightened before moving to the next corner it is possible to pull the frame out of line. Hence, tighten each bolt several turns and then move to the next corner, continuing until all are tight.

4) Extend bucket cylinders to 33-1/8" between pin centers and fully retract gate cylinder. Then adjust gate cylinder anchor (1) away from gate with the set screws (2) at front and rear until the gate edge just makes contact with the cutting bit. Then thoroughly tighten the 5/8 X 3" bolts (3) and secure the jam nuts (4) front and rear, so the set screws are locked in place.

5) Again run bucket through full cycle 3 or 4 times and check tightness of all frame bolts.

NOTE: Even though the purchaser is going to use his own cylinder for the gate control, it will be necessary to temporarily install an 8" stroke cylinder to make this final assembly and adjustment.

⚠ CAUTION: Be certain the cushion valve is installed and hoses from gate cylinder go through it before operating cylinder. (Ref. Fig. N, page 8.)



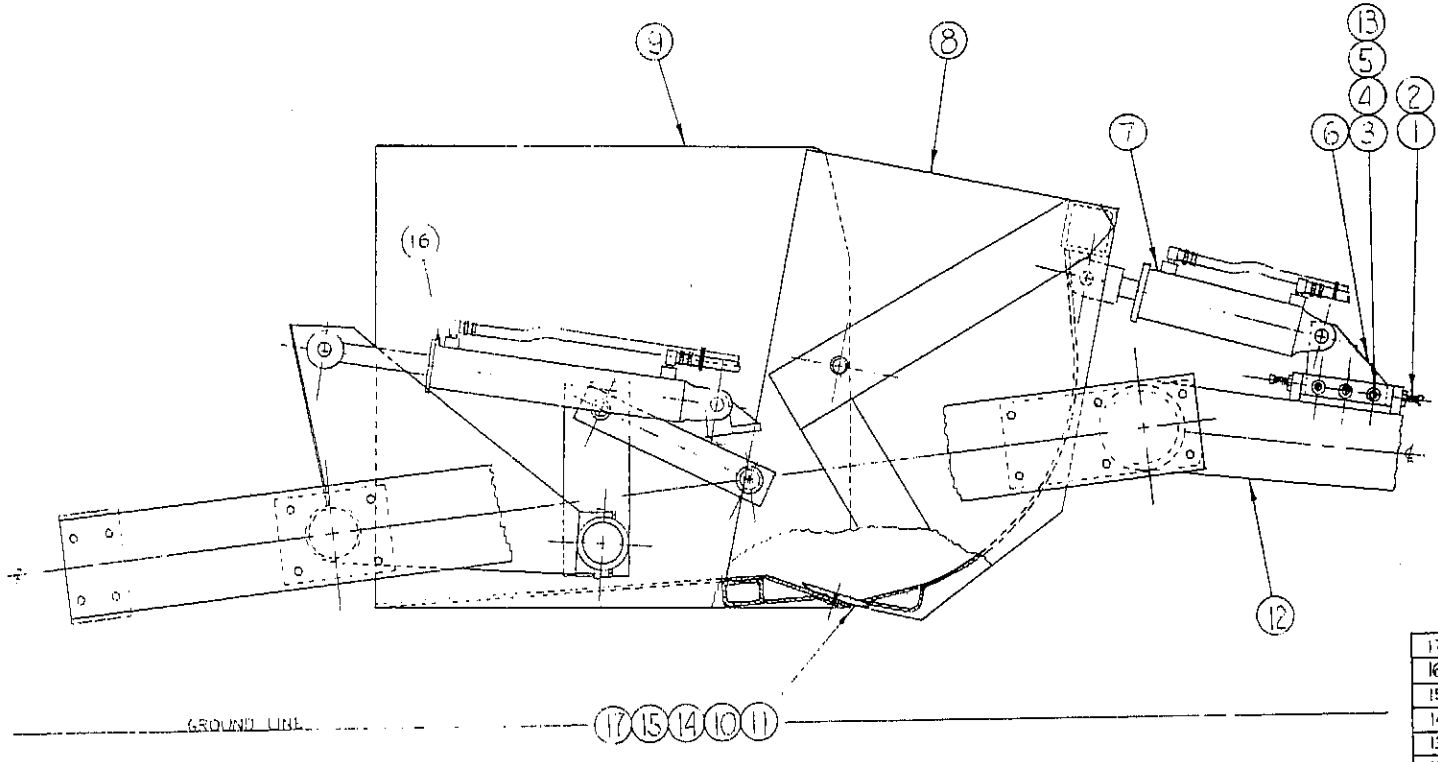
ADJUSTMENT PROCEDURE

I. DURING ASSEMBLY, GATE CYLINDER ANCHOR (ITEM 6) MUST-BE FULLY ADJUSTED TOWARDS GATE (ITEM 8) WITH SETSCREWS. (ITEM 1 & 2)

II. COMPLETELY CYCLE BUCKET (ITEM 9) THREE TO FOUR TIMES.

III. WITH MACHINE SUPPORTED ON REAR TIRES AND SIX INCH BLOCKS UNDER SIDE BITS. (ITEM 10) TIGHTEN ALL FRAME BOLTS.

IV. WITH BUCKET CYLINDERS (ITEM 16) EXTEND TO 33 1/8 INCHES (PIN CENTERS) AND GATE CYLINDER (ITEM 7) FULLY RETRACTED, ADJUST GATE CYLINDER ANCHOR (ITEM 6) AWAY FROM GATE (ITEM 8) UNTIL GATE EDGE JUST MAKES CONTACT WITH CUTTING BIT.



FRONT OF MACHINE →

023573

ITEM	DWG NO	QTY	DESCRIPTION	SIZE
17	064615	20	NUT 5/8 LOCK PL	N
16	024300	2	CYL. ASM., 16 x 3½ x 1½	C
15	059802	14	BOLT, 5/8 NC x 1 3/4 FLOW	N
14	059805	6	BOLT, 5/8 x 2½ FLOW	N
13	063140	3	WSHR, 5/8 STD PL LOCK	N
12	022198	1	TONGUE W'MENT, STRAIGHT	D
11	024694	1	BIT, CENTER 8 x 34	B
10	024693	2	BIT, SIDE 6 x 22	B
9	022796	1	BUCKET W'MENT, 450	D
8	023095	1	GATE W'MENT, 450	D
7	311021	1	CYL. A.S.M., 8 x 3½ x 1½	C
6	024792	1	W'MENT - CYL. ANCHOR	A
5	061940	3	NUT, 5/8 NC PL. HEX	N
4	063540	3	WSHR, 5/8 FLAT PL	N
3	057326	3	BOLT, 5/8 x 3 HHM GR 5	N
2	062141	2	NUT, 3/4 JAM PL.	N
1	060294	2	SETSCREW 3/4 x 2½ SQ. HD. PL	N

LET.	REVISIONS	DATE	CH'K	ECN

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LET.	REVISIONS	DATE	CH'K	ECN

MAT'L:

MATERIAL CODE NO.

TOLERANCES, UNLESS NOTED: Fractional Dimensions ± 1/32. Stock Mass Commercial Limits. Angles ± 1 Degree. Decimal Dimensions as Shown. DO NOT SCALE DRAWINGS.

DWG SIZE C

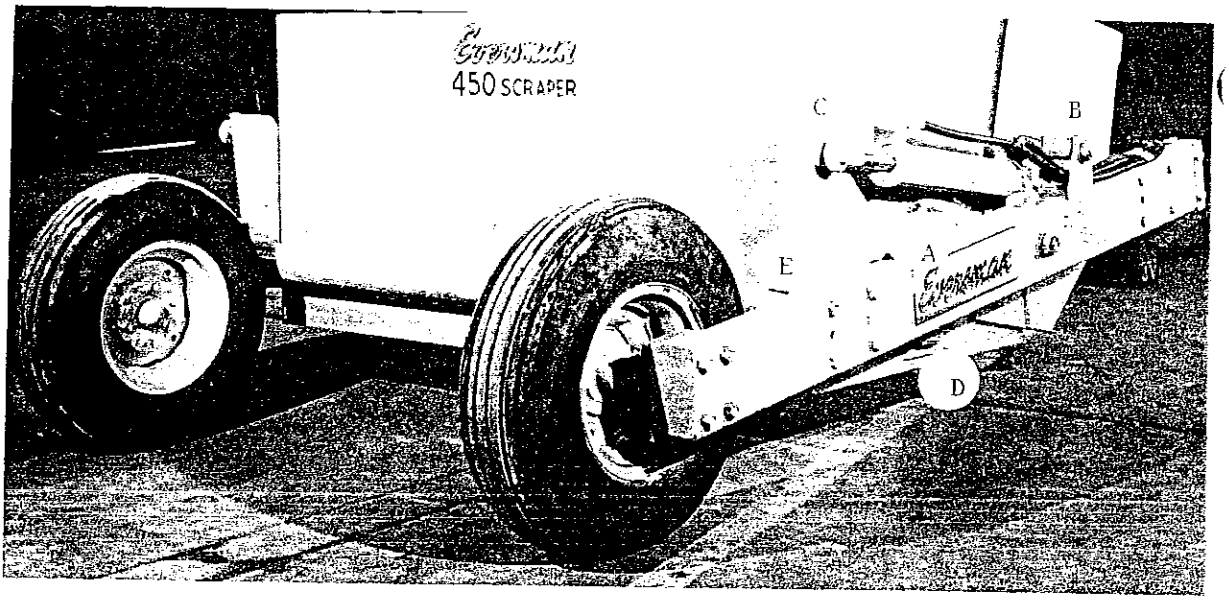
THE EVERSMAN MFG. COMPANY
DENVER, COLORADO

MACHINE SCRAPER

TITLE LAYOUT, GATE-BUCKET ADJ.

SCALE 1/8	DATE	MODEL	DRAWING NO.
DR'N. [illegible]	6-30-81	450	023573
CH'K. [illegible]	7-1-81		
APP.			

LUBRICATION



1. Grease zerks on wheel hubs each week.

2. Grease all zerks on control links (A); gate pins (B); cylinder ball joints (C); bucket bearings (D) and lift pipe (E) each day during heavy usage.

HYDRAULIC SYSTEM

Check hydraulic oil reservoir in tractor after hoses and cylinders are full. Be certain all air is bled from the system since air pockets can produce erratic operation.

CAUTION: Before connecting hydraulic fitting to the tractor, relieve all pressure. Check all fittings and hoses for possible leaks before applying pressure to the system.

HOOKING, UNHOOKING FROM TRACTOR

Before attaching tongue to tractor drawbar, or detaching from tractor: Lower cutting bit to ground to relieve weight on tongue, shut off tractor engine and release hydraulic pressure before disconnecting couplers.

During storage, block tongue so it will not fall if hydraulic hose should fail.

DECALS

The decals are included in the envelope with the Assembly and Operation Manual. Wipe dust off siderails and place large "Eversman" decals directly under the bucket cylinders. Center SMV decal on rear of bucket, under "450" decal. Stick the two "Warning" decals on the bucket cylinders to protect future hose crossings and possible lift pipe damage.

OPERATING INSTRUCTIONS

The Eversman Scraper will work under a very wide variety of soil and moisture conditions, however, dirt moving is primarily a dry soil operation. If the soil sticks to the wheels and builds up excessively, it is too wet to work. Excessive slippage, unnecessary power consumption, and over compaction of the fill areas may result. On extremely hard "dried-out" soil it may be more economical to loosen it first with plow, stiff shank teeth, or subsoiler.

The questions of top soil removal, proper finished grade and balancing out your cuts and fills can be answered by your local, state, or federal technicians if you are in doubt.

It does not require any special skill or training to operate the Eversman Scraper. However, a little experience plus good management can help get the job done more quickly. The TOTAL YARDS MOVED PER HOUR depends on: (1) having a definite planned program and following it; (2) the average load size; (3) the hauling distance; (4) the speed of operations (or total time per cycle); (5) the amount of lost time from interruptions, unnecessary stops, etc. It will pay in time and fuel saved to lay out a definite program before you start your project, especially on field leveling or terracing. Some suggestions on planning "cut-haul-fill" patterns are covered below under "Field Grading".

Fig.D

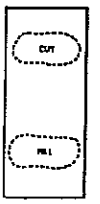


Fig.A

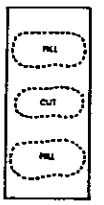


Fig.B

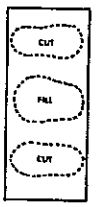


Fig.C

FIELD GRADING: It will pay to determine, before you start operations, the areas to be cut and filled, the depth of each cut and fill, and the best haul route pattern. It is cheaper to haul in two directions from the same cut if possible. There are, in general, three "cut-haul-fill" patterns, as noted above. Sometimes they can be combined at a definite saving. If you can work plan shown in Fig. B or C, rather than A, it will save travel and turning time. It may be possible to reduce empty travel time by combining several cuts, hauls and fills on the field in one overall or continuous circuit. Often it is profitable to pause and walk around the project to review your progress. Figure D shows an efficient method of working in a cut area. For cuts up to 3 or 4" you can put the wheels outside the frame, and leave strips 2 to 5' wide so the amount cut off can be easily seen. Clean out the strips and repeat the process as many times as necessary. Add the depth between levels to determine the total removed. CAUTION: If cuts are made more than 4" deep and the strips are long it will be easy to get "high-centered".

LOADING: The size of your loads will depend on: (1) the tractor power and traction; (2) the soil conditions; and (3) your operating skill and procedure. Your average load size can usually be increased with practice. While the Eversman 450 can be heaped to a 4-yard capacity, in general, more yards per hour can be moved by taking the largest load you can pick up quickly, then hauling, unloading, and returning as fast as you can safely. Under some conditions (like loading sand) speed may help in heaping the load, while in others, power is more often a factor. Generally, it is preferable to make long, thin, smooth cuts and keep the tractor moving. It is better for succeeding loads to keep the cut area relatively smooth. Normally the best gear for loading is the highest gear in which the tractor will spin the wheels before stalling the engine. When possible, make the cut in the same direction as you haul to save time and avoid turning with a full load. Start to make your cut as you approach a slight ridge, or high spot. It requires power to take the dirt back and up in the bucket which can best be supplied by cutting into the ridge. For work where it is not required to have the rear wheels inside the frame you will find it easy to control the cut accurately with the wheels outside (unless your field is very rough or corrugated.) For better penetration and easier, improved, controlled loading, assemble center bit ahead of side bits. For finishing work and smoother over-all cut, assemble all bits in line.

SPREADING AND DUMPING

One of the best features of the Eversman Scraper is the wide range of dumping and spreading which can be easily controlled from the tractor. From the hauling position, the bucket rotates swinging the cutting edge down and back through a minimum spread position and up to a full dump position. Since bucket can be stopped at any point, the thickness of the spread can be varied from approximately 3 to 12 inches by selective operation of the gate control cylinder.

All the load, even in damp sticky soils, should be emptied without difficulty since the bottom of the bucket rotates past vertical. To save time the bucket can be returned to the hauling position or slightly below while enroute back to the loading site.

You can avoid pulling full loads over loose fills by spreading the first load at the far side of the low spot, then placing each succeeding load behind the previous one.

Some owners attempt to spread dirt with the cutting bit by backing up the scraper in full dump position. This practice can result in serious damage to the cylinder piston rods unless the tractor control valve is opened to return the scraper to transport position.

HAULING

If the field or work area is rough or the distance to haul is rather long, it will be worthwhile to make a smooth hauling lane and possibly a separate return path so you can haul and return in a high gear. As you leave the loading area, raise the load to the hauling position.

FIELD FINISHING

After completing your dirt moving work, you still must finish your field by smoothing, especially the cut and fill areas. A few times over the field with an Eversman Land Smoother will wipe out the rough spots and surface irregularities.

AFTER EXTENSIVE EARTH MOVING and land forming, you should consider the need to: (a) Use a subsoiler or pan breaker if moisture conditions and heavy traffic have caused excessive compaction; (b) apply proper fertilizer to the cut areas; (c) plant an annual crop the first season while permitting the fill areas to settle; (d) recheck the grades and correct any settlement by again leveling before planting a perennial crop; (e) maintain the correct surface (and produce a good seedbed) by always using a land smoother ahead of your seeder. It takes time, money and effort to establish correct grades on your fields. Erosion and tillage operations cause surface irregularities. To protect your investment, keep the surface smooth and maintain correct grades by using an Eversman Plane or Land Leveler.

WARNING:

Full front end weights must be installed on tractor for field operation and transporting.

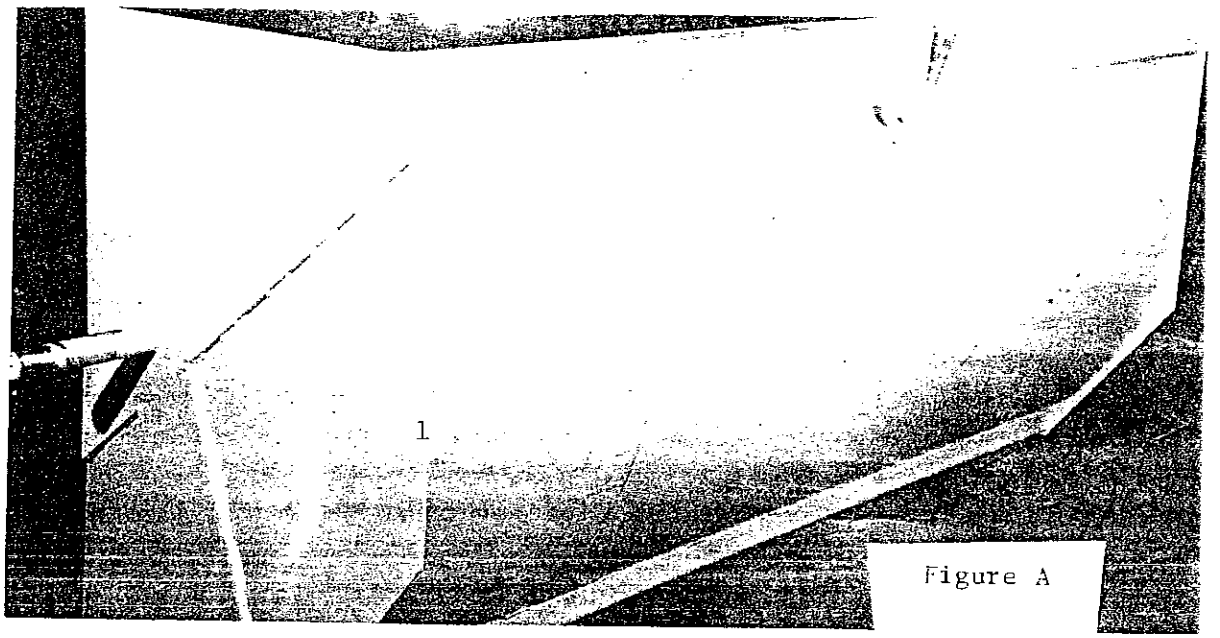


Figure A

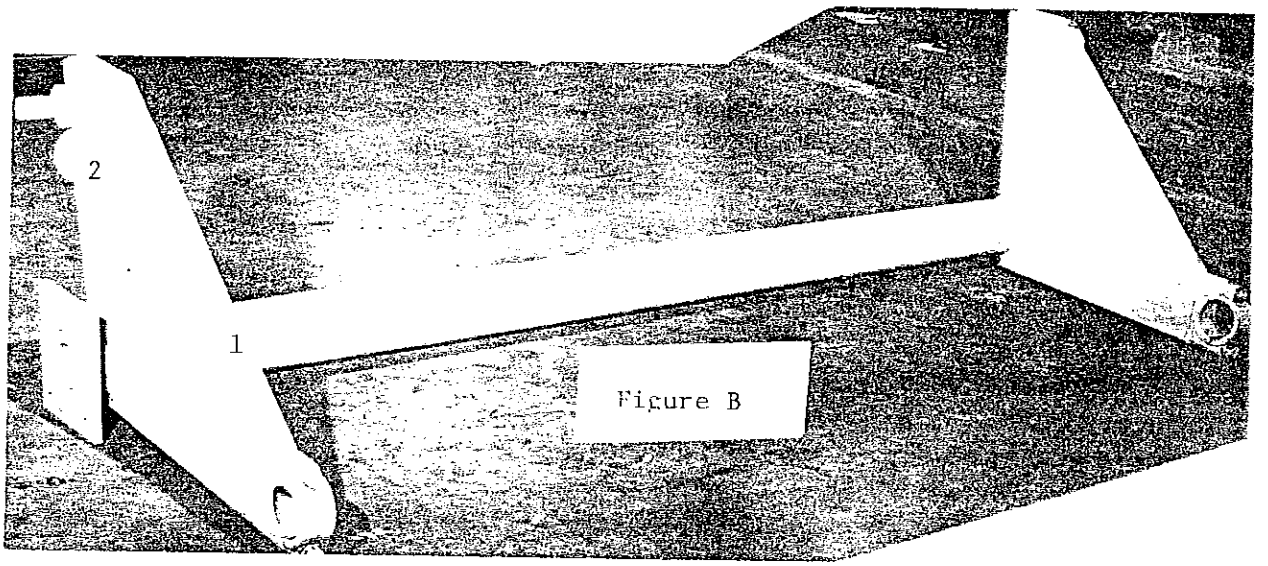


Figure B

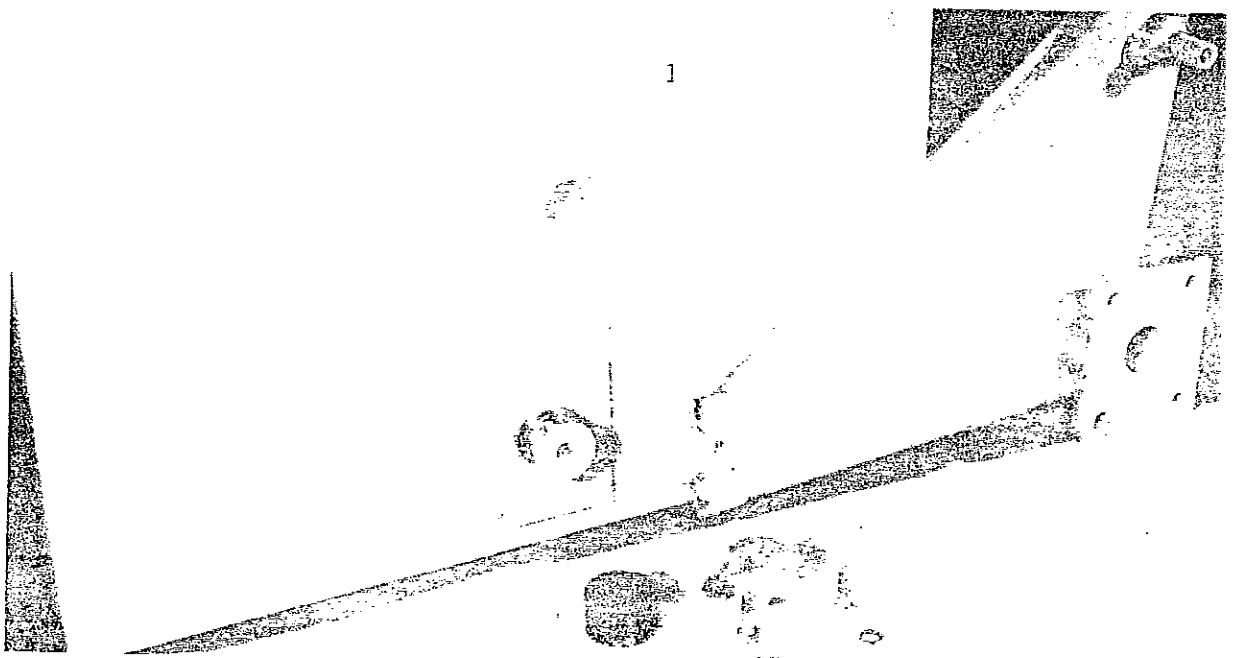


Fig. No.	Ref. No.	Description	Part Number	No. Req.
A	1	Gate	023095	1
B	1	Lift Pipe	024560	1
"	2	Pin Replacement Kit	044113	2
C	1	Bucket	022796	1
"	2	Lift Pipe	024560	
"	3	Bearing Insert	022050	2
"	4	Bearing Cap (a)	021961	2
	-	5/8 X 2" Bolts & Lock Washers	057318	4
D	1	Side Bit, Reversible (6" X 22")	024693	2
"	2	Center Bit (8" X 34")	024694	1
	-	5/8 X 1-3/4" Plow Bolt	059802	14
	-	5/8 X 2-1/2" Plow Bolt	059805	6
	-	Lock Nut	064615	20

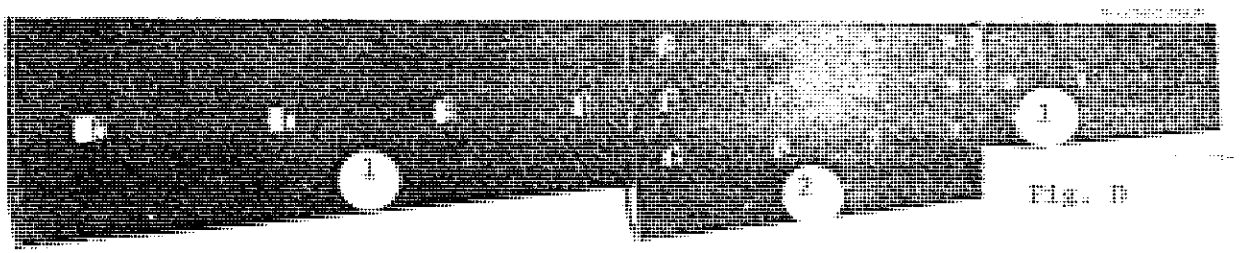


Fig. D

(a) If the casting welded to the lift pipe must be replaced, order bearing kit #022060 which consists of a matched machined casting and cap.

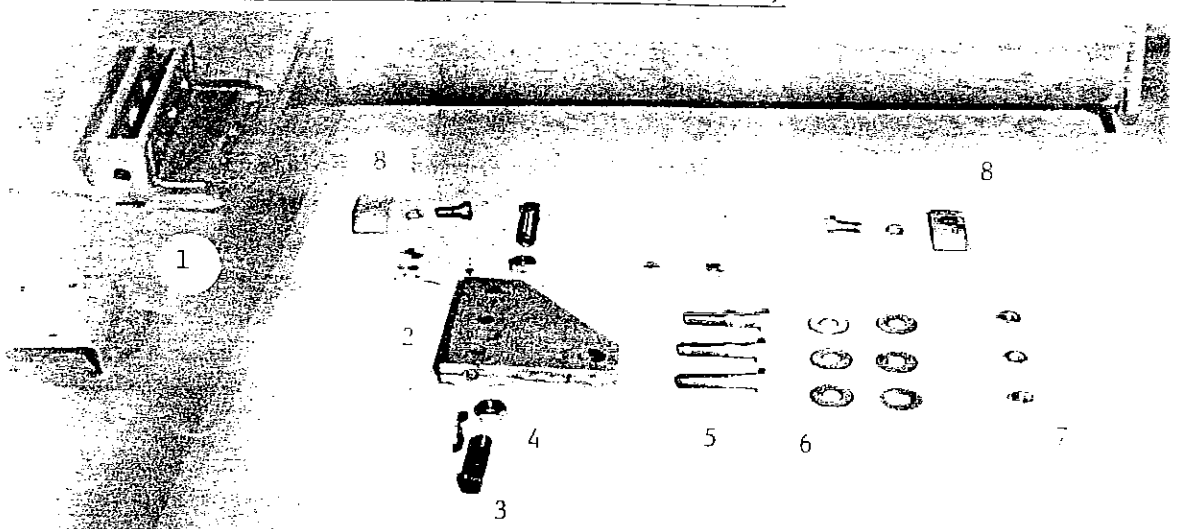


Fig. E

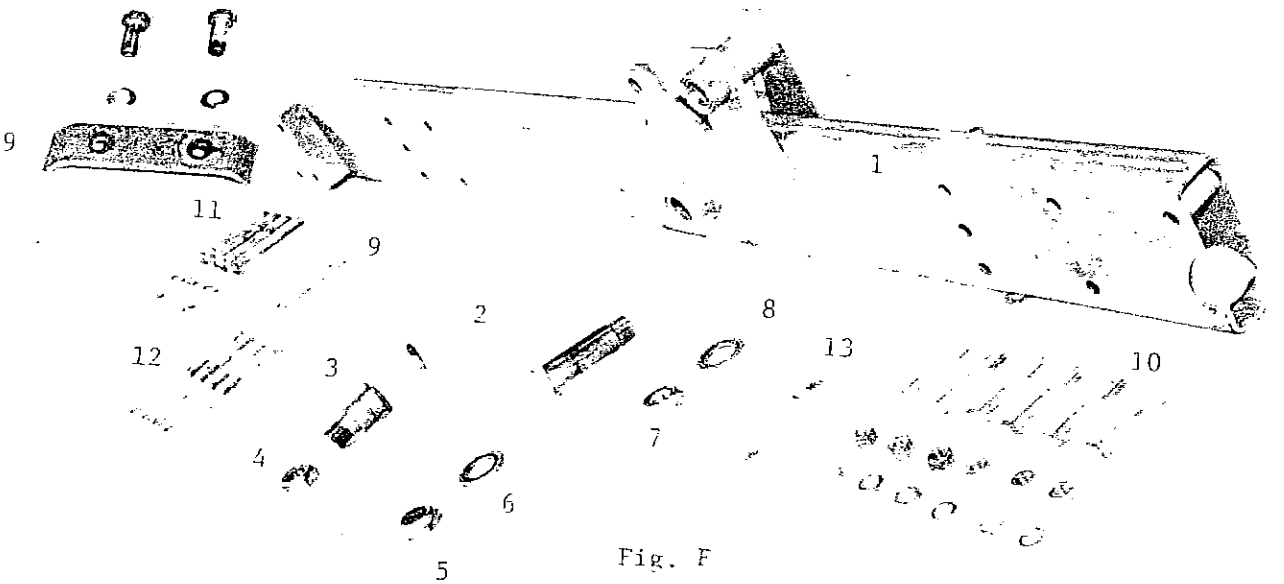


Fig. F

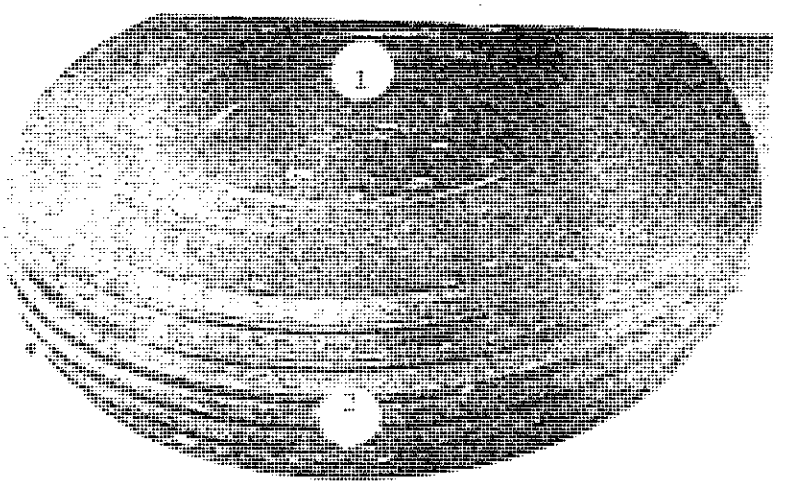


Fig. No.	Ref. No.	Description	Part Number	No. Req.
E	1	Straight Tongue	022198	1
"	2	Cylinder Anchor	024792	1
"	3	3/4 X 2-1/2" Set Screw	060294	2
"	4	3/4 Jam Nut	062141	2
"	5	5/8 X 3" GR 5 Bolt	057326	3
"	6	5/8 Flat Washer	063540	6
"	7	5/8 Lock Nut	064615	3
"	8	Pipe Clip	705800	4
"	-	1/2 X 1-1/4 Hex Bolt & Lock Washer	055212	4
"	9	Front Clamp	022240	1
"	-	1/2 X 1-1/4 Hex Bolt & Lock Washer	055212	2
F	1	L.H. Side Rail	022793	1
"	-	L.H. Cylinder Anchor	023550	1
"	-	R.H. Side Rail	022794	1
"	-	R.H. Cylinder Anchor	023560	1
"	2	Link Weldment	024591	2
"	3	Link Rear Pivot Pin	024594	2
"	4	1-1/2 Elastic Stop Nut	064596	2
"	5	1-1/2 Elastic Stop Nut	064596	2
"	6	1-1/2 SAE Flat Washer	063596	2
"	7	1-1/2 Elastic Stop Nut	064596	2
"	8	1-1/2 SAE Flat Washer	063596	2
"	9	Spacer Bar	024781	2
"	10	3/4 X 4-1/2" Grade 5 Bolt	057438	12
"	11	3/4 X 6-1/2" Grade 5 Bolt	057452	8
"	12	3/4 X 4-1/2" Grade 5 Bolt	057438	8
"	13	Pipe Clip	705800	6
G	1	Wheel (15 X 8)	590410	2
"	2	9.5L X 15, 8-Ply, Tire (Optional)	590780	2
"	-	Optional Wheel for Used 9:50-10:00X16.5 Tires	020703	2
"	3	Spindle and Hub Assembly	024450	2
"	4	Spindle Weldment	025101	2
"	-	3/4" SAE Flat Washer	063591	8
"	5	Hub Assembly	440818	2
"	-	Hub Casting (Q-888)	440836	-
"	-	Wheel Bolt	007000	-
"	-	7/8 Flat Washer	030620	-
"	-	7/8 NF Slotted Nut	062567	-
"	-	5/32 X 1-1/2 Cotter	063734	-
"	-	Hub Repair Kit	440825	-
"	-	Hub Cap	031010	-
"	-	Outer Cone (LM-67048)	030800	-
"	-	Inner Cone (JL-69349)	440841	-
"	-	Grease Seal (GR 256HD124)	040805	

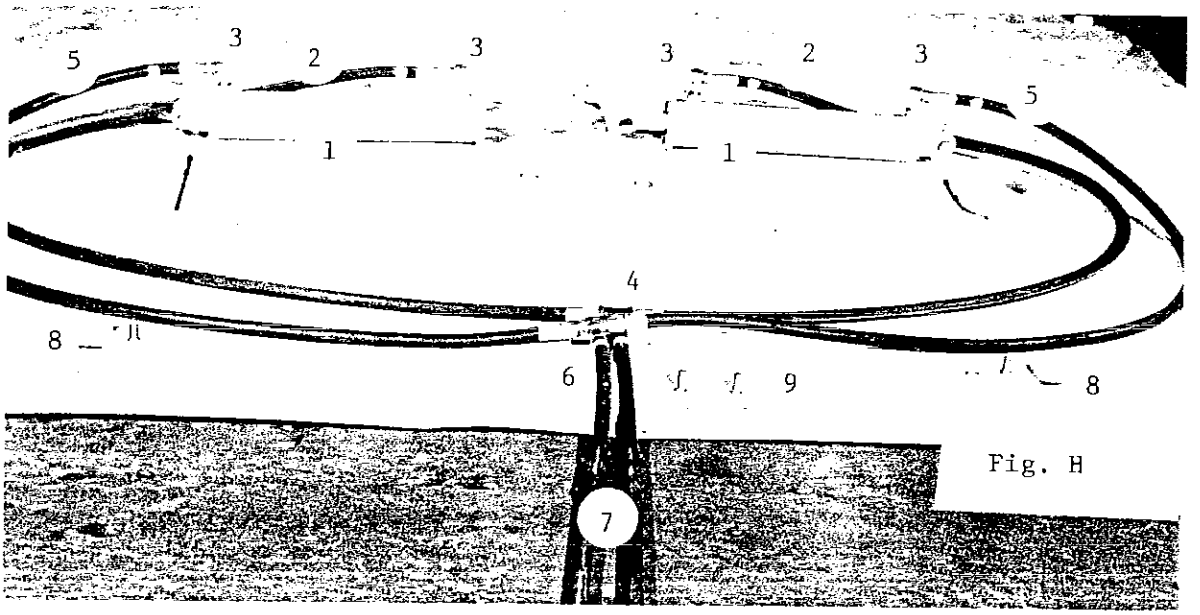
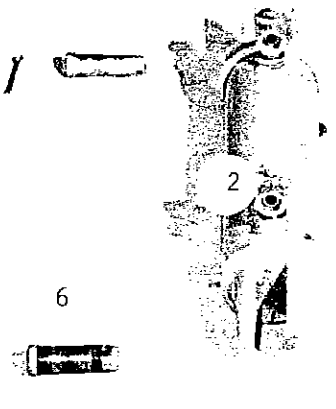
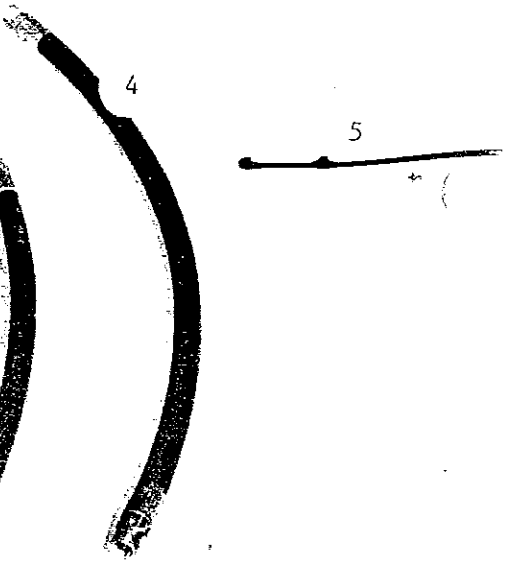


Fig. H





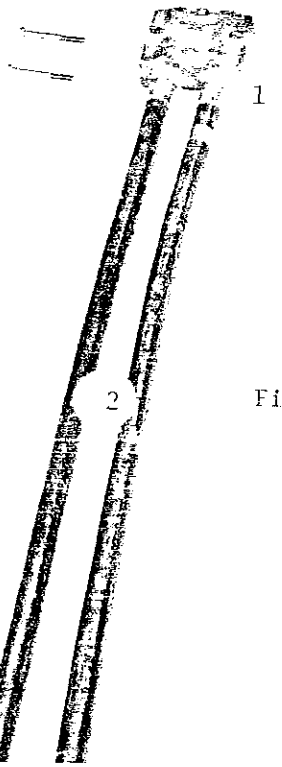


Fig. K

Fig. J

3

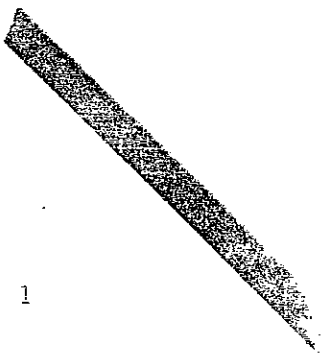
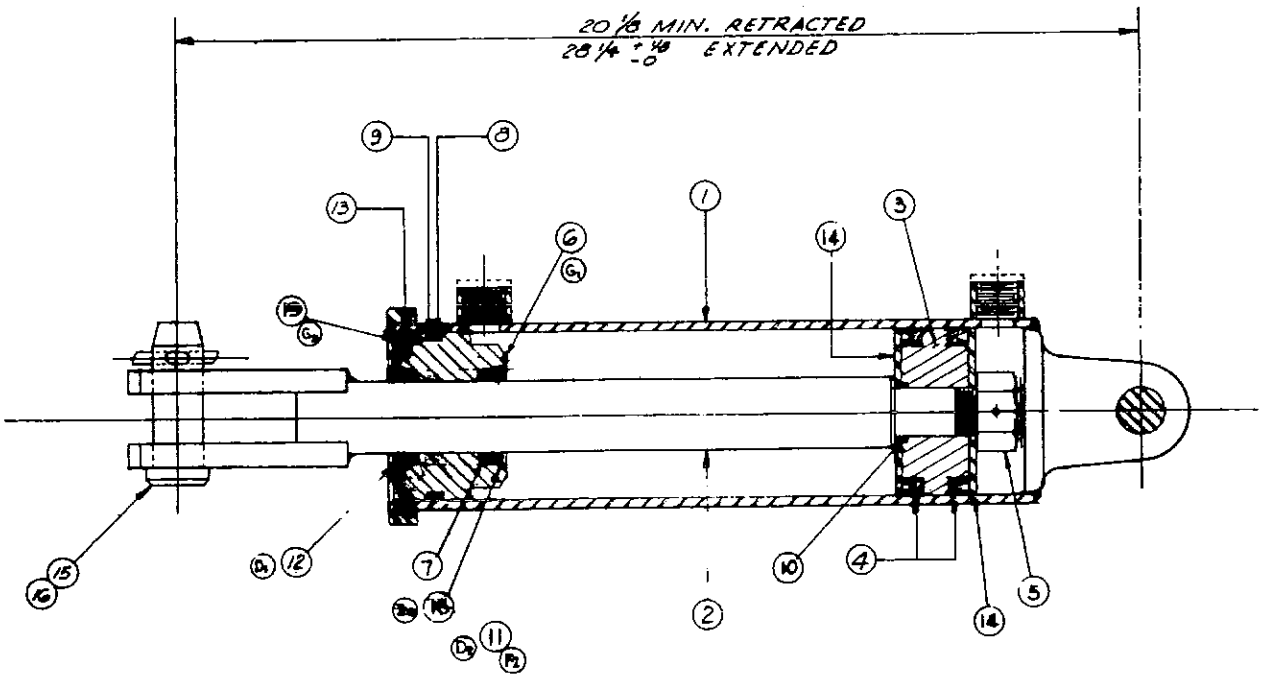


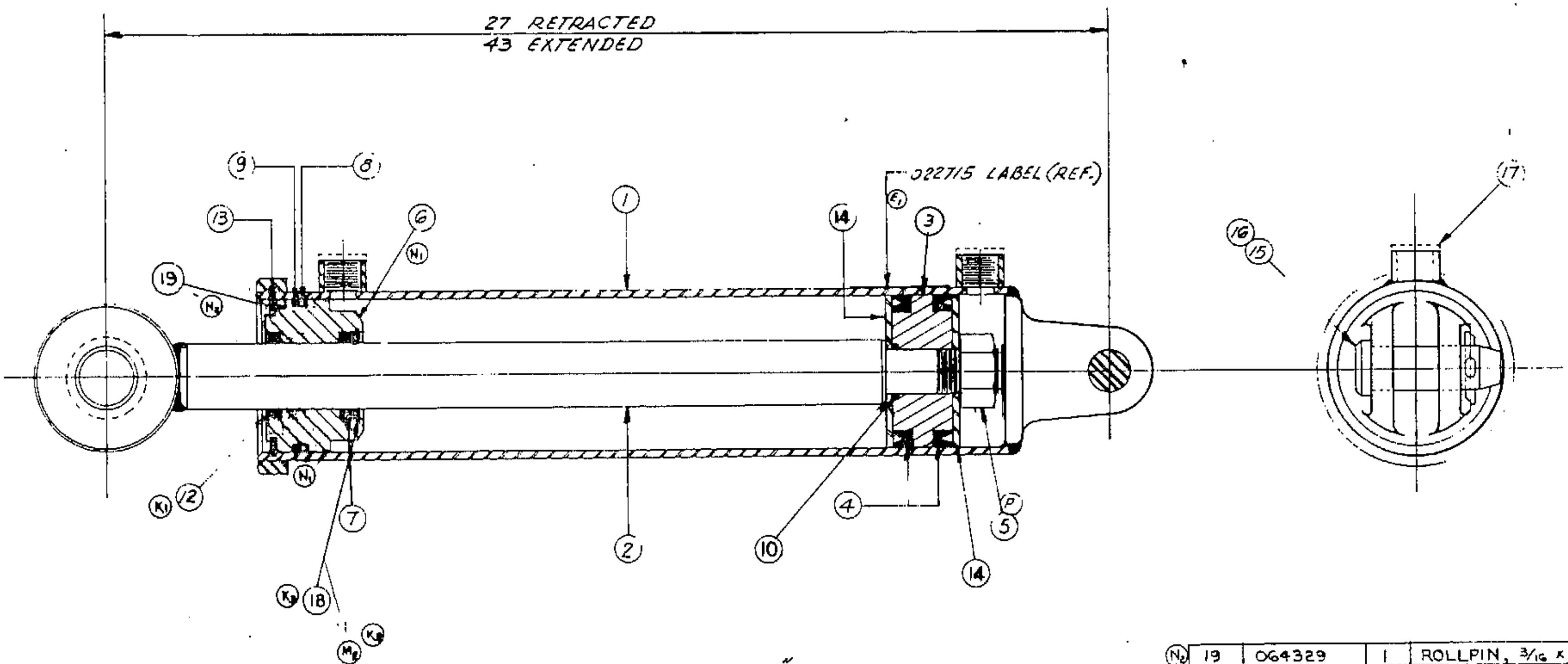
Fig. L

Fig. No.	Ref. No.	Description	Part Number	No. Req.
H	1	3-1/2 X 16" Bucket Cylinder Assembly (Refer Page P-7)	024300	2
"	2	1/2 X 100" Hose (Male-Male)	024697	2
"	3	90° Swivel Fitting	612028	4
"	4	1/2" Tee	623020	1
"	5	1/2 X 79" Hose (Male-Female)	024696	2
"	6	Special Tee	041089	1
"	7	1/2 X 120" Hose (Male-Male)	150340	2
"	8	Pipe Clip	705800	4
"	9	Front Clamp	022240	1
J	1	Cushion Valve	609550	1
"	-	5/16 X 2-1/2" Hex Bolt	055822	2
"	2	1/2 X 90" Hose (Male-Male)	024699	2
"	3	Pipe Clamp	022240	1
"	-	1/2 X 1-1/4 Hex Bolt	055212	2
K	-	Optional - Gate Hydraulic Kit	023598	1
"	-	3-1/2 X 8" Cylinder Assembly (Refer Page P-8)	311021	1
"	2	90° Swivel Fitting	612028	2
"	3	1/2 X 19" Hose	602900	1
"	4	1/2 X 30" Hose	024698	1
"	5	Hose Clamp Tie	041093	2
"	6	Clevis Pin	701026	2
"	-	1/4 X 2" Cotter	063764	2
L	1	Rail Cap	024670	2
"	2	Pipe Clip	705800	2
"	-	1/2 X 1-1/4" Hex Bolt	055212	2
		Shipping Envelope	020016	1
		450 Scraper Decal	023580	1
		Cylinder Warning Decal	022715	2
		SMV Decal	600252	1
		Eversman Decal	022710	2
		Packing List	--	1
		450 Assembly & Operation Manual	--	1

311021 CYLINDER ASSEMBLY, 3-1/2" BORE, 8" STROKE



Ref. No.	Description	Part No.	No. Req.
	Gate Cylinder - (3-1/2 X 8" Stroke)	311021	1
1	Cylinder Barrel	311016	1
2	1-1/2" Piston Rod Weldment	311022	1
3	3-1/2" Piston	041063	1
4	Piston Seal	041033	2
5	Lock Nut	064668	1
6	1-1/2" Dia. Rod Guide	041077	1
7	Rod Seal	041059	1
8	Rod Guide O-Ring	401004	1
9	Back-up Washer	030460	1
10	Piston O-Ring	701006	1
12	Rod Seal Wiper	041095	1
13	Internal Snapring	401008	1
14	Piston Washer	041064	2
15	Clevis Pin	701026	2
16	1/4 X 2" Cotter	063764	2
17	Thread Protector	610800	1
18	Snapring	531725	1
19	3/16 X 1/2 Roll Pin	064329	1
	Cylinder Seal Repair Kit	041034	1



REF: 041034 KIT, CYL REPAIR 1-½ x 3-½ DIA. (FOR ALUMINUM PISTON & ROD GUIDE)

SEE 650006 & SPEC LIST 300

024300

ITEM	DWG NO	QTY	DESCRIPTION	SIZE
19	064329	1	ROLLPIN, 3/16 x ½ PLATED	N
18	531725	1	SNAPRING	A
17	610800	2	PROTECTOR, THREAD	N
16	063764	1	COTTER, ¼ x 2	N
15	701026	1	PIN, CLEVIS	A
14	041064	2	WASHER, PISTON	B
13	401008	1	SNAPRING, INTERNAL	A
12	041095	1	WIPER, ROD-SEAL LOC	A
11				
10	701006	1	O-RING	A
9	030460	1	WSHR, BACK-UP	A
8	401004	1	O-RING, ROD GUIDE	A
7	041059	1	SEAL, ROD	A
6	041077	1	GUIDE, ROD 1½ DIA	B
5	066520	1	NUT, 1-14 NF NYLON PATCH LOCK	N
4	041033	2	SEAL, PISTON	A
3	041063	1	PISTON, HYD. CYL. 3½ ⌀	B
2	024310	1	ROD & BALL WMENT	B
1	030980	1	CYL. WMENT	B

MAT'L:

MATERIAL CODE NO. WT. 41.0 #

TOLERANCES, UNLESS NOTED. DO NOT SCALE DRAWING.

DWG SIZE C

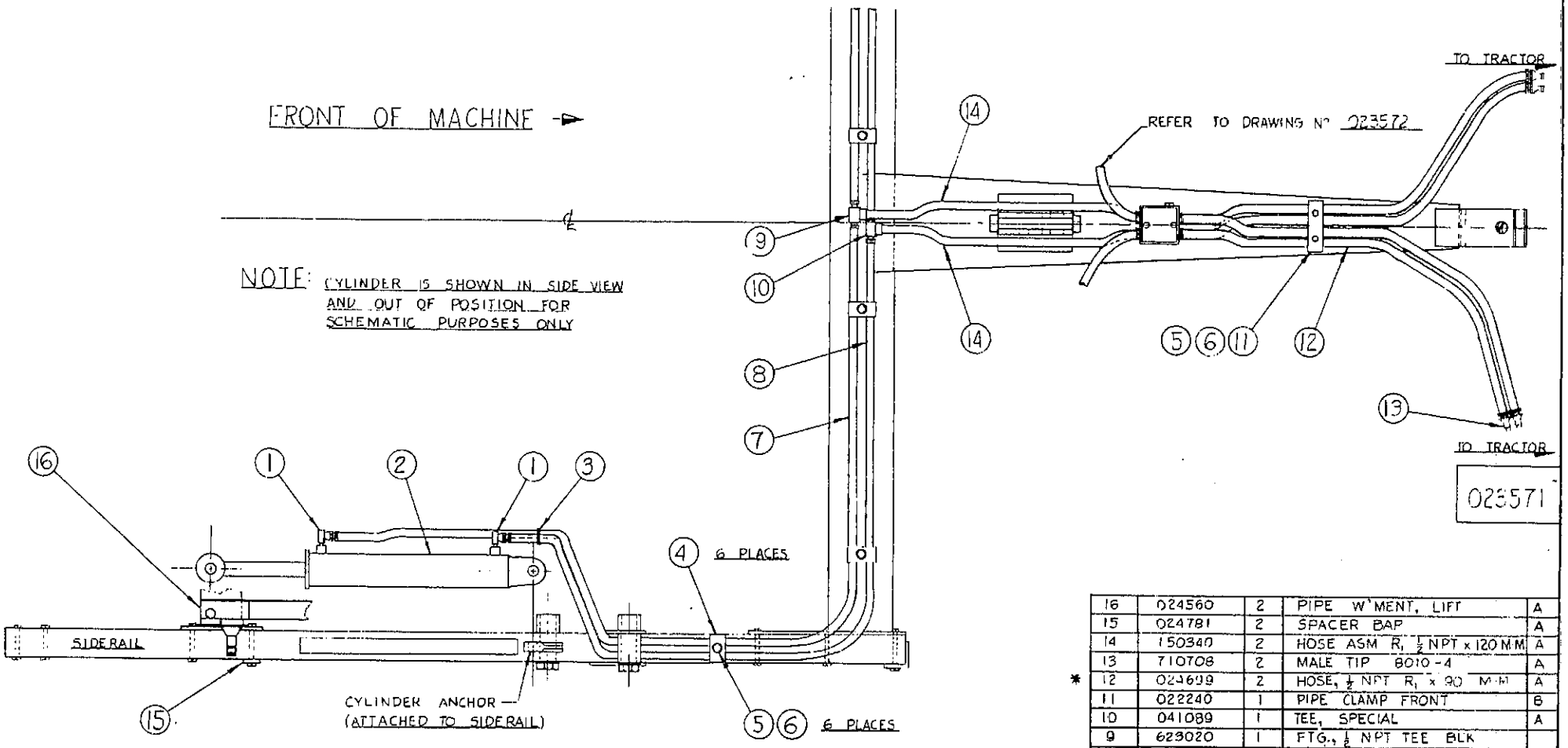
THE EVERSMAN MFG. COMPANY
DENVER, COLORADO

MACHINE: IMPLEMENTS

TITLE: CYL. ASM, 16 x 3½ x 1½

SCALE	DATE	MODEL	DRAWING NO
NTS	11-28-73		024300

LET	REVISIONS	DATE	CH'K	ECN
D	REVISED & REDRAWN.	11-28-73		
E	ADDED.	7-9-75	BAS	
F	WAS 063764 (¼ x 2)	7-21-75		
G	[illegible]			
H	[illegible]	2-12-76	BAS	1271
J	[illegible]		BAS	1279
K	[illegible]		BAS	1375
L	[illegible]			1422
M	[illegible] DRAW. 041034		BAS	
N	[illegible]		BAS	1553
P	WAS 064668.		BAS	



ITEM	DWG NO.	QTY	DESCRIPTION	SIZE
16	024560	2	PIPE W'MENT, LIFT	A
15	024781	2	SPACER BAR	A
14	150340	2	HOSE ASM R, ½ NPT x 120 M M	A
13	710708	2	MALE TIP 8010-4	A
* 12	024699	2	HOSE, ½ NPT R, x 90 M-M	A
11	022240	1	PIPE CLAMP FRONT	B
10	041089	1	TEE, SPECIAL	A
9	623020	1	FTG., ½ NPT TEE BLK	
8	024696	2	HOSE ASM R, ½ NPT x 79 M-F	A
7	024697	2	HOSE ASM R, ½ NPT x 100 M M	A
6	063138	8	WSHR, ½ STD. PL LOCK	N
5	055212	8	BOLT, ½ NC x 1½ PL. HHM	N
4	705800	6	PIPE CLIP	B
3	041093	2	TIE, DOUBLE HOSE CLAMP	A
2	024300	2	CYL. ASM, 16 x 3½ x 1½	C
1	612048	4	FTG, 90° SWIVEL	A

* NOT FURNISHED BY L.M.C

LET.	REVISIONS	DATE	CH'K	ECN

MAT'L

MATERIAL CODE NO.

TOLERANCES, UNLESS NOTED: Fractional Dimensions ± 1/32. Inch Sizes Commercial Units. Angles ± 1 Degree. Decimal Dimensions as Given. DO NOT SCALE DRAWING

DWG SIZE C

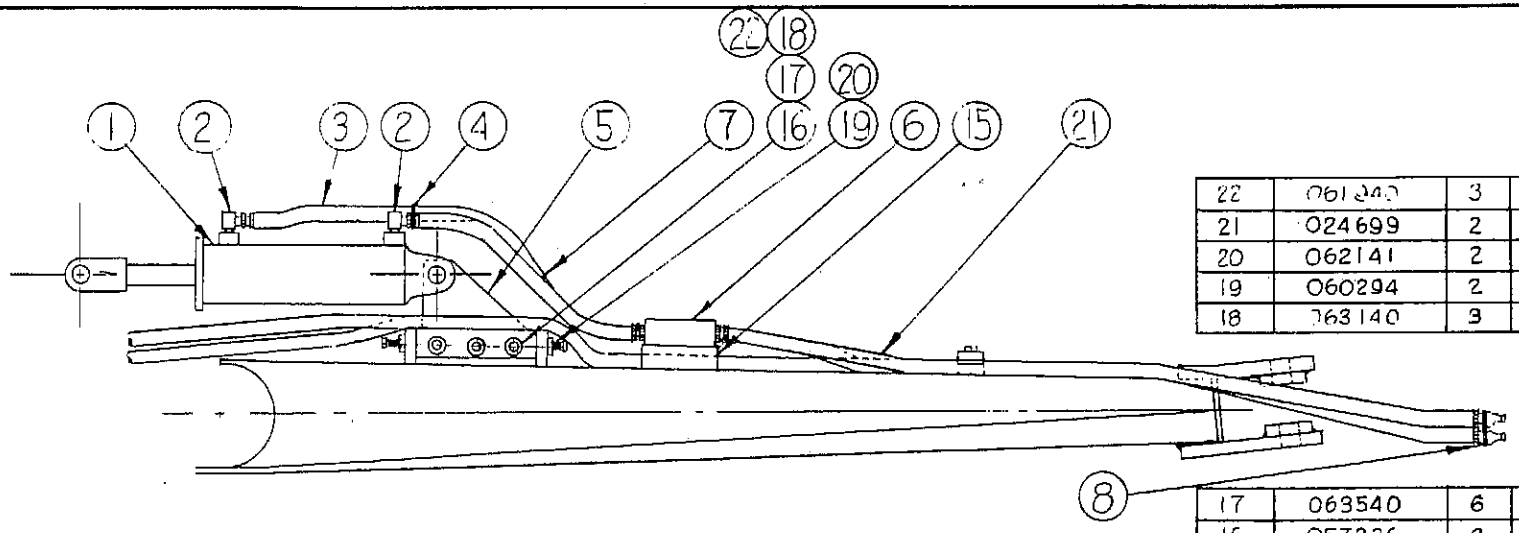
THE EVERSMAN MFG. COMPANY
DENVER, COLORADO

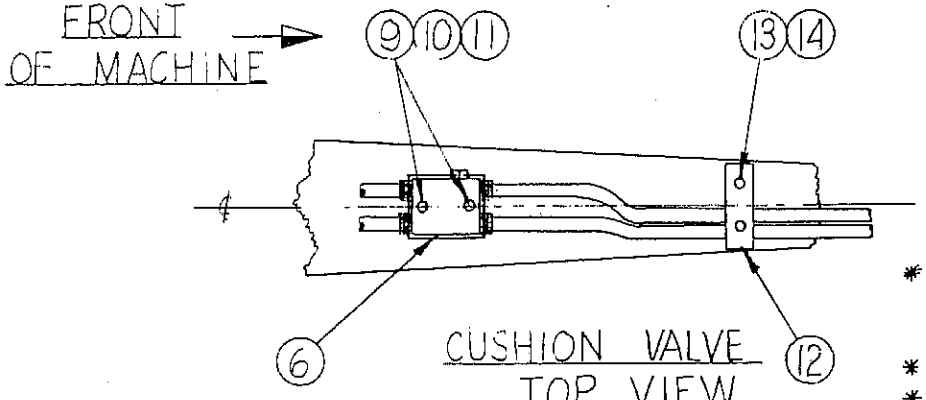
MACHINE SCRAPER

TITLE LAYOUT, BU CYL HYDRAULICS

SCALE 1/8 | DATE | DRAWING NO 023571

DR'N | CH'K | APP





22	061940	3	NUT, $\frac{5}{8}$ NC PL. HEX	N
21	024699	2	HOSE ASM R, $\frac{1}{2}$ NPT x 90 M-M	A
20	062141	2	NUT $\frac{3}{4}$ JAM PL.	N
19	060294	2	SETSCREW $\frac{3}{4}$ x $2\frac{1}{2}$ SQ. HD. PL.	N
18	063140	3	WSHR. $\frac{5}{8}$ STD PL LOCK	N
17	063540	6	WSHR $\frac{5}{8}$ FLAT PL	N
16	057326	3	BOLT, $\frac{5}{8}$ x 3 HHM GR. 5	N
15	022198	1	W'MENT, STRAIGHT TONGUE	D
14	063138	2	WSHR, $\frac{1}{2}$ STD. PL LOCK	N
13	055212	2	BOLT, $\frac{1}{2}$ NC x $1\frac{1}{4}$ PL HHM	N
12	022240	1	PIPE CLAMP FRONT	B
11	063135	2	WSHR., $\frac{5}{16}$ STD. PL. LOCK	N
10	061935	2	NUT, $\frac{5}{16}$ NC PL. HEX	N
9	055822	2	BOLT, $\frac{5}{16}$ NC x $2\frac{1}{2}$ H.S. HHM	N
* 8	710708	2	MALE TIP .8010-4	A
* * 7	602900	1	HOSE R, $\frac{1}{2}$ x 19	A
6	609550	1	VALVE ASM., CUSHION	B
5	024792	1	W'MENT - CYL. ANCHOR	A
* * 4	041093	1	TIE, DOUBLE HOSE CLAMP	A
* * 3	024698	1	HOSE R, $\frac{1}{2}$ x 30	A
* * 2	612028	2	FTG., $\frac{1}{2}$ NPT 90° SWIVEL M-F	A
* * 1	311021	1	CYL. ASM., 8 x $3\frac{1}{2}$ x $1\frac{1}{2}$	C

** OPTIONAL EQUIPMENT KIT # 023598
* NOT FURNISHED BY E.M.C.

LET.	REVISIONS	DATE	CH'K	ECN

REMARKS

MAT'L:

MATERIAL CODE NO.

TOLERANCES, UNLESS NOTED:
Fractional Dimensions ± 1/32.
Stock Sizes Commercial Limits.
Angles ± 1 Degree.
Decimal Dimensions as Given.
DO NOT SCALE DRAWINGS.

DWG SIZE B

THE EVERSMAN MFG. COMPANY
DENVER, COLORADO

MACHINE SCRAPER

TITLE LAYOUT, GATE CYL. HYDRAULICS

SCALE 1/8	DATE	MODEL	DRAWING NO.
DR'N. [illegible]	06-25-81	450	023572
CH'K. [illegible]	7-1-81		
APP.			

OTHER *Eversman* PRODUCTS

The Model 2400—plane profitability.
Covers up to 150 acres a day with a 24' wide blade at 5 to 7 miles per hour and transports with wings folded to 12' overall width. 20', 16' and 12' models also available.

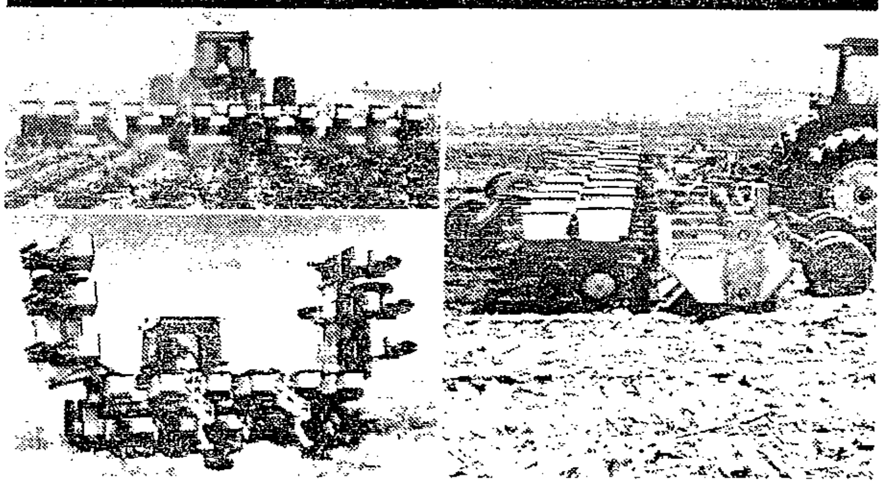
The Eversman Plane is the best investment non-irrigated growers can make to conserve fuel, save time and eliminate those extra passes to construct a seedbed.

Nothing can match the productivity of this machine. You can stay ahead of the planter while preparing an excellent seedbed and insure increased yields on smooth, well-drained fields.

Many owners have worked directly on plowed ground—thus realizing substantial savings in both fuel and time.

ONE MACHINE, ONE PASS, FOUR JOBS DONE WITH THE EVERSMAN MINIMUM TILLAGE SYSTEM.

Conserve fuel, labor, soil and water. Plant 12-30" rows or cover full 30' width.



The Model 12-30 Eversman Minimum Tillage System [illegible] the first [illegible] row rotary tillage machine with a flexible [illegible] and [illegible] wings. [illegible] for maximum production [illegible] unmatched transport [illegible] and maneuverability. Remarkably low power requirement. Call or write for full details.

200- 7/81