

OWNER'S MANUAL

Assembly • Operating • Maintenance • Repair

KWIK-WAY

HYDRAULIC DOZER BLADE

FOR

GRAVELY 8000 SERIES & G SERIES TRACTORS

54" DOZER BLADE MODEL NO. 35-17100

60" DOZER BLADE MODEL NO. 35-17101

72" DOZER BLADE MODEL NO. 35-17102

OPTIONAL: Hydraulic Angle Kit—Model No. 34-07910

Record and Retain the
Model and Serial Numbers
of your Kiwk-Way Dozer

MODEL

SERIAL

**Hydraulic Dozer Blade
Manufactured By**

**K-W MANUFACTURING CO., INC.
800 South Marion Road
Sioux Falls, South Dakota 57106
Telephone (605) 336-6032
Wats (800) 843-3720**

YOUR DOZER BLADE FEATURES

- 5 Operating Positions Manually Operated
- Replaceable High Carbon Cutting Edge
- Optional Hydraulic Angle Provides 30° Blade Angle to Right or Left
- Quick-Tach Dozer Mounting
- Trip Springs and Skid Shoes Included with All Blades

OPTIONAL ATTACHMENTS

Model	Description
34-07910	Hydraulic Angle Kit

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST.

1. The Part Number
2. The Part Description
3. The Model Number
4. The Name of Item — Dozer

LIMITED WARRANTY

K-W Manufacturing Company warrants products of its own manufacture for a period of NINETY (90) DAYS from the date of shipment to the purchaser against defective workmanship and materials. If the K-W product is used for commercial purposes by the buyer, this warranty shall be limited to a period of THIRTY (30) DAYS from the date of shipment to the purchaser. This warranty is void should the product be repaired or modified in any way not specifically authorized by K-W Manufacturing Company, nor does it cover any merchandise or component which, in the opinion of K-W Manufacturing Co., has been subjected to negligent handling, misuse or accident. All warranty claims must be submitted in writing to K-W Manufacturing Company and written approval must be obtained before any product or part is returned to the factory. K-W Manufacturing Company shall, at its sole option, repair, replace or refund an equitable portion of the purchase price of any product which it determines to have been defective.

Hydraulic components such as valves, pumps, cylinders, hoses and similar items carry ONLY their respective manufacturer's warranty, and are NOT INCLUDED within the terms of this warranty. Claims on any component not manufactured by K-W Manufacturing Company will not be approved, and credit will not be issued until such item has been returned, prepaid, to our factory and our respective suppliers have approved our warranty claims.

Neither this warranty nor any oral, written or printed statement made by K-W Manufacturing Company is a service contract or a service guarantee, nor is it any assurance that the product is perfectly designed or perfectly built, or an expression of any belief that the product cannot be improved. This warranty is not a guarantee against hazards such as wear, tear, misuse or misfortune or problems arising from incorrect set-up or servicing, nor is it a guarantee that the performance of the product will meet the expectations of the purchaser. Should K-W Manufacturing Co. accept a warranty claim and determine to replace a part or product, the part or product needed will be sent to the local distributor, who will be charged for the item at that time. When the defective part or product has been returned, prepaid, to our factory, the purchaser's account will be credited in an amount equal to the amount shown on the invoice which relates to the defective part or product returned.

The foregoing is K-W Manufacturing Company's only warranty, obligation and liability, under tort (including alleged negligence), contract, or otherwise, for or in connection with its products. In no event shall K-W Manufacturing Company be liable for consequential damages suffered by reason of any claimed defect in its product. THE FOREGOING IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES WHATSOEVER, EXPRESS, IMPLIED AND STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IT IS SPECIFICALLY UNDERSTOOD THAT K-W MANUFACTURING COMPANY'S PRICE IS BASED UPON THE FOREGOING LIMITATION OF LIABILITY AND PURCHASER'S WAIVER OF ANY AND ALL CLAIMS FOR DAMAGES. ALL SALES BY K-W MANUFACTURING COMPANY ARE MADE SUBJECT TO THE TERMS AND CONDITIONS SET FORTH ABOVE, AND NO OTHERS. NO VERBAL ARRANGEMENTS, ADVERTISING MATERIALS, TERMS AND CONDITIONS OF ANY PURCHASE ORDERS SUBMITTED BY PURCHASER, OR ANY OTHER TERM OR STATEMENT NOT CONTAINED HEREIN SHALL BE OF ANY FORCE OR EFFECT.

Whenever you see this symbol



it means:
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Serial Number Plate

MODEL NO. [REDACTED]
SERIAL NO. [REDACTED]

The serial number plate is located on the top at the front of the sub-frame. It should not be removed.

INSTRUCTIONS FOR SAFE OPERATION

Improper use of this dozer blade can injure people and damage the equipment. People using or servicing this dozer blade must read and follow the instructions in this manual.

It is important to understand that this manual and any other manual does not cover every possible danger in operating and servicing the tractor and attachment.

The instructions must be read by the people operating and maintaining the dozer blade. Eye and foot protection must be worn when operating or maintaining the dozer blade.

PROTECTION:

1. Read the tractor and attachment operator's manuals carefully.
2. Learn the location and function of all tractor and attachment controls.
3. Learn how to use the controls to stop the tractor and attachment.
4. Use caution with gasoline. Gasoline is very flammable and must be kept in a clean, tight container. Never put gasoline in the fuel tank while the engine is running or hot. Clean up spilled gasoline before starting the engine.
5. Be certain that all shields, guards, and interlock switches are in the correct positions.
6. Inspect the dozer before using and replace all damaged parts and tightened all nuts and bolts.

OPERATION

1. Wear foot and eye protection. Do not wear loose clothing.
2. Do not operate the equipment in the dark without adequate lighting.
3. Keep the tractor and the dozer blade in good operating condition. Maintain the dozer blade as directed in this manual.
4. Replace all parts that are damaged or missing and tighten all nuts and bolts that have become loose.
5. Do not overspeed the engine. Do not override the governor.
6. Keep away from all moving parts.
7. Keep people and animals away from the operating area.
8. Do not let people other than the operator ride on the tractor.
9. Use a slow speed when operating on slopes.
10. Look for and keep away from solid unyielding obstructions and other hazards.
11. Keep the PTO control in the OFF position.
12. Look behind when operating in reverse.
13. After hitting an obstruction with the tractor and dozer blade, stop the engine and check for damage. Repair any damage before continuing operation.
14. Operate the tractor only from the operator's seat.
15. Travel up and down, not across slopes.
16. Never permit children to operate the tractor.
17. Before leaving the tractor, lower the blade, lock the brake, and remove the ignition key.
18. If there is a sudden change in the sound or vibration of the tractor or attachments, stop the engine and check for damage. Repair any damage or failure before continuing operation.
19. Never run the tractor-dozers indoors except to move it outside. Exhaust fumes are dangerous.
20. Go slowly on slick surfaces.
21. Follow traffic laws when operating on or near a road.
22. Before making adjustments, mounting, dismounting, or servicing, make sure the ignition switch is off and wait until all moving parts completely stop.

OPERATING INSTRUCTIONS

1. Read the tractor operator's manual and learn the location and operation of the controls.

2. Install wheel weights and tire chains if required for traction when dozing snow.
3. A light coat of wax applied to the working surface of the blade aids in preventing ice and snow from building up on the blade.
4. Mark any hidden obstructions such as driveway markers, water and gas shutoffs, spouting, stumps, rocks, etc. prior to operating the dozer.
5. Position the blade perpendicular to the tractor frame when transporting to provide maximum ground clearance under the blade.
6. To doze snow or dirt, adjust the blade angle either manually or hydraulically. Also adjust the blade clearance by adjusting the height of the skid shoes, and the lift height by adjusting the tractor lift.

SERVICE INSTRUCTIONS

Blade Angle Adjustment

1. Raise the blade with the tractor lift.
2. Manually angle the blade to the right or left by removing the manual angle lock pin and moving the blade to the desired position. Place the lock pin back into the corresponding hole in the blade pivot.
3. Hydraulically angle the blade on dozers equipped with optional hydraulic angle kit by moving the dash mounted switch up or down to angle blade to the right or left. The switch will return to off when released.

Blade Clearance Adjustment

1. Raise the blade with the tractor lift.
2. Block the blade in the raised position.
3. Remove the Clip pin from the skid shoe shafts and arrange the bushings and washers between the skid shoe and the base of the skid shoe attaching bracket to obtain the desired blade clearance.

Trip Spring Adjustment

1. Lower the blade with the tractor lift.
2. Loosen the nuts on the eye bolts below the eye bolt bracket.
3. Tighten the nuts on the top side of the brackets until the springs are not loose.
4. Tighten the nuts on the bottom side of the brackets to lock in place.
5. The springs can be tightened to a point where unwanted tripping is not a problem.



CAUTION!



Do not adjust the tension on the trip springs too tight. To prevent damage and/or loss of control the springs must be adjusted to allow the blade to trip when a fixed object is struck.

ASSEMBLY AND INSTALLATION

Attach the Dozer Sub-Frame

1. Attach the rear axle latches to the tractor rear axle. **The rear axle latches must be purchased from your Gravelly Dealer. Axle Latch Kit Part No. 19768.** Remove the $\frac{1}{2}$ —13 x $\frac{1}{2}$ capscrews holding the hitch to the rear axle. Attach the rear axle latches and the hitch to the rear axle using two $\frac{1}{2}$ — 13 x 2 hex hd. capscrews, nuts and lock-washers. Both sides as shown in Fig. 1.

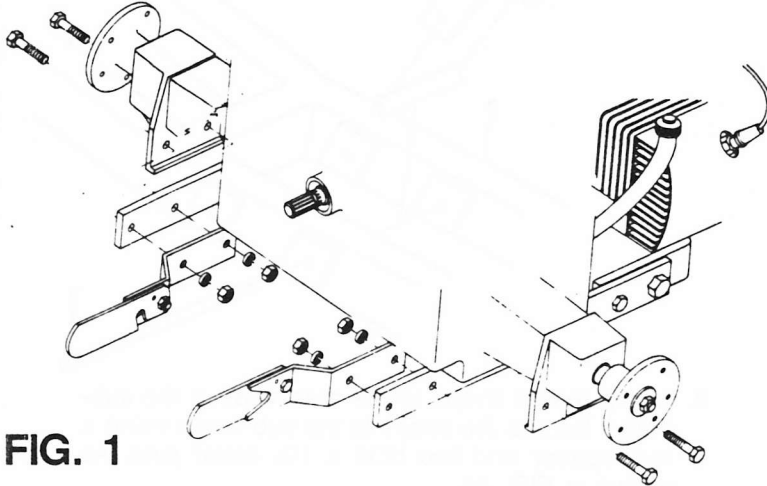


FIG. 1

2. Assemble the sub-frame. The sub-frame consists of a sub-frame weldment and two sub-frame extensions. The sub-frame can be assembled to mount on the 12-G through the 20-G and the 24-G.

For mounting on the 12-G through the 20-G secure the extensions to the sub-frame using the holes to the rear of the extensions.

For mounting on the 24-G secure the extensions to the sub-frame using the holes to the front of the extensions.

In either case the extensions go on the outside of the sub-frame and are secured to the sub-frame using (2) $\frac{1}{2}$ —13 x 3 hex hd. capscrews, re-inforce plates, lockwashers, and nuts on both sides as shown in FIG. 2.

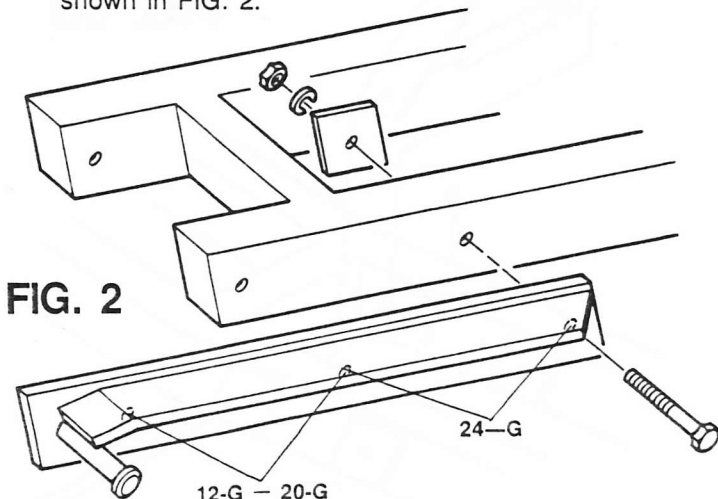


FIG. 2

3. Slide the sub-frame under the tractor and position the pins in the sub-frame extensions into the rear axle latches. Lock the subframe into the rear axle latches and secure the latches with the clip pins supplied in the latch kit.

ATTACH THE PIVOT WELDMENT TO THE SUB-FRAME

1. Raise the front of the sub-frame and block up approximately 4"—6". This will make it easier to attach the pivot to the sub-frame.
2. Slide the pivot onto the sub-frame and secure in place using a $\frac{3}{4}$ x 4 clevis pin and $\frac{5}{32}$ x $\frac{1}{2}$ cotter pin. As shown in FIG. 3.

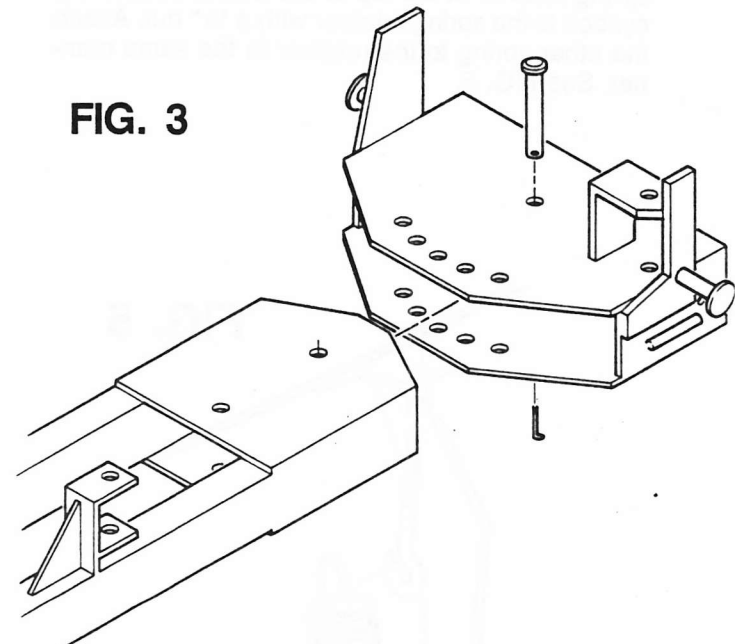


FIG. 3

ATTACH THE BLADE ASSEMBLY TO THE PIVOT

1. Slide the blade assembly up to the pivot and secure the blade assembly to the pivot using a $\frac{1}{2}$ —13 x 2 hex head capscrew and hex lock-nut on each side. As shown in FIG. 4.

NOTE: Do not overtighten. The blade must be able to move freely on the pivot so the blade will trip when striking an obstruction.

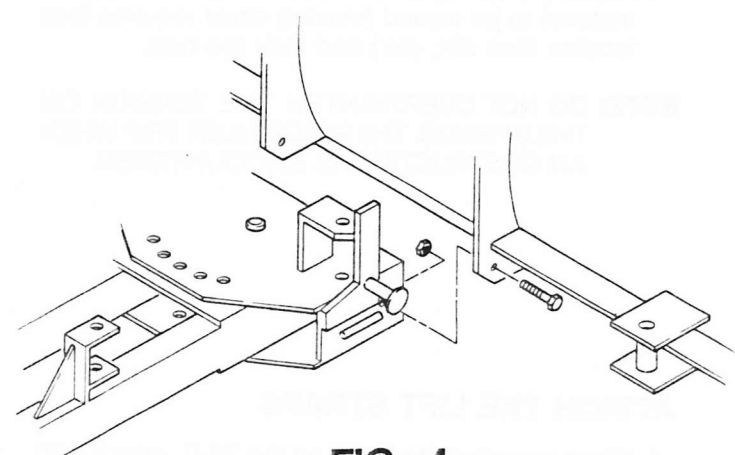
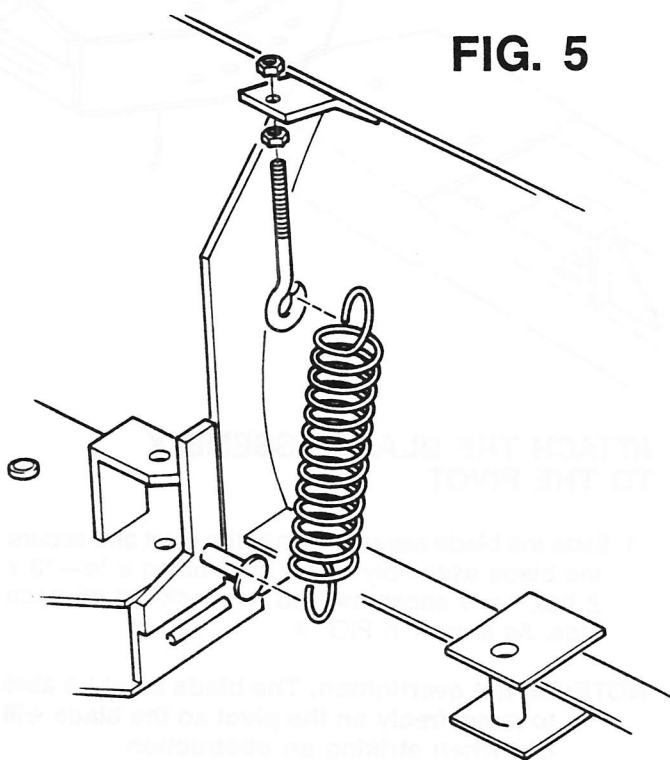


FIG. 4

ATTACH THE TRIP SPRINGS

1. Hook each spring on the spring retainers located on each side of the pivot assembly.
2. Thread a $\frac{1}{2}$ " nut on each eyebolt approximately $1\frac{1}{2}$ " down from the end.
3. Hook the eyebolts to the other end of the springs. Hold the blade in the upright position against the stops and insert one eyebolt through the hole in the spring retainer at the top of the blade. Secure the eyebolt to the spring retainer with a $\frac{1}{2}$ " nut. Attach the other spring to the retainer in the same manner. See FIG. 5.

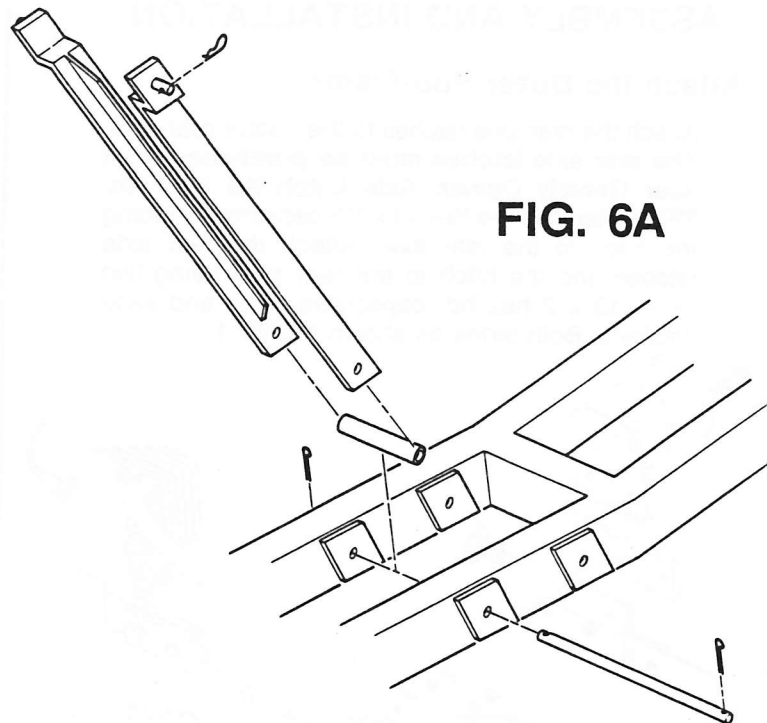


4. Adjust the spring tension according to the type of material to be moved (moving snow requires less tension than dirt, etc.) and lock the nuts.

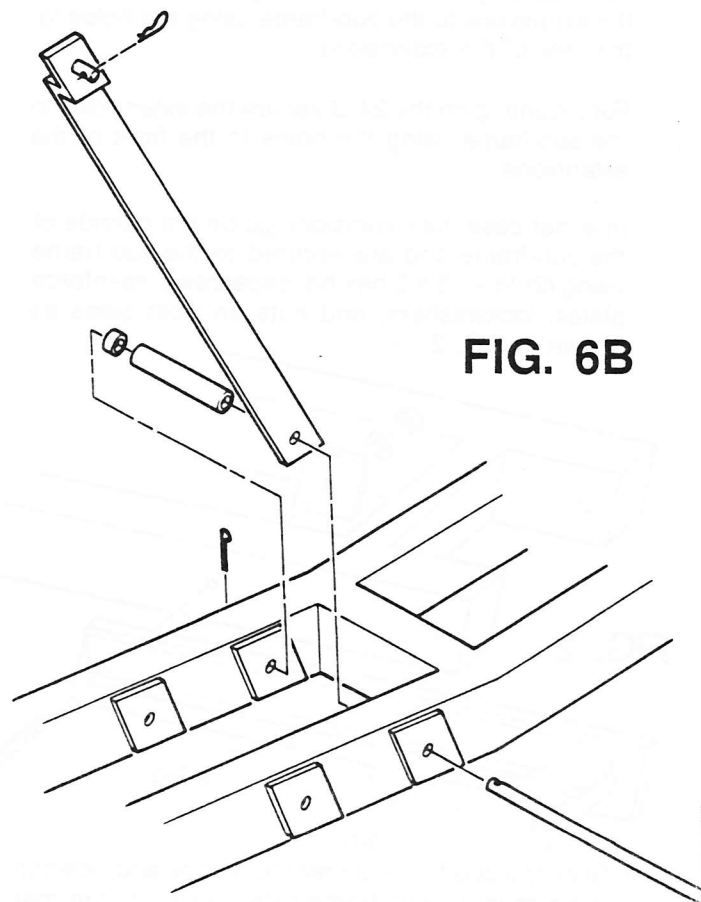
NOTE: DO NOT OVERTIGHTEN THE TENSION ON THE SPRINGS. THE BLADE MUST TRIP WHEN AN OBSTRUCTION IS ENCOUNTERED.

ATTACH THE LIFT STRAPS

1. When mounting the blade on the 24-G, attach a lift strap to each of the lift lever straps on the tractor. Secure each of the straps with a #3 clip pin. As shown in FIG. 6A.



2. Attach the lift straps to the rear holes in the sub-frame. Secure the straps to the sub-frame using a rod, spacer and two $\frac{5}{32}$ x $1\frac{1}{2}$ cotter pins. As shown in FIG. 6A.
3. When mounting on the 12-G through the 20-G, attach only one strap to the lift lever strap on the tractor. Secure the strap with a #3 clip pin. As shown in FIG. 6B.

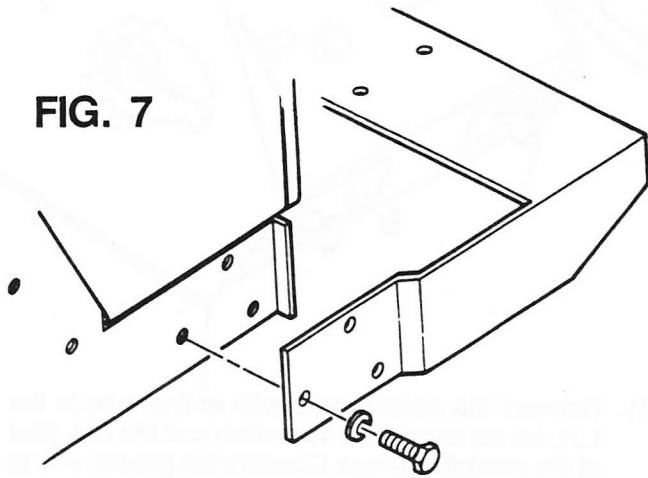


4. Attach the lift strap to the front holes in the sub-frame. Secure the strap to the sub-frame using a rod, long spacer, short spacer, and two $\frac{5}{32}$ x $1\frac{1}{2}$ cotter pins. As shown in FIG. 6B.

ATTACH (OPTIONAL) HYDRAULIC ANGLE KIT

1. Attach the mount for the hydraulic power unit to the front of the tractor frame. When mounting on the 24-G, secure the mount to the tractor using (3) $\frac{1}{2}$ -13 x $1\frac{1}{4}$ hex hd. capscrews, and lockwashers on each side as shown in FIG. 7.

FIG. 7



2. When mounting on the 12-G through 20-G, use (3) spacers, (3) $\frac{1}{2}$ -13 x $2\frac{1}{2}$ hex hd. capscrews, (2) $\frac{1}{2}$ -13 hex nuts, and (3) lockwashers on each side as shown in FIG. 8.

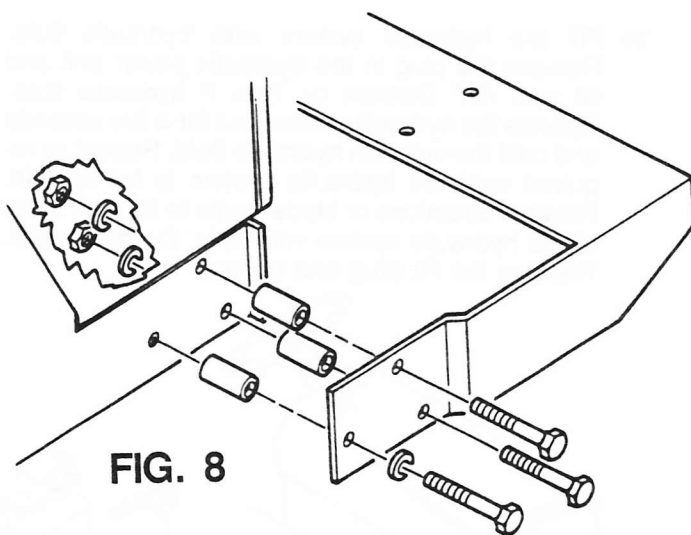


FIG. 8

3. Attach the hydraulic power unit to the mount using (2) $\frac{3}{8}$ -16 x $\frac{3}{4}$ hex hd. capscrews and lockwashers. As shown in FIG. 9.
4. Insert (2) $\frac{7}{16}$ — 20 O.R.B. male x $\frac{1}{4}$ N.P.T. female 90° S.U. into the ports of the hydraulic power unit. As shown in FIG. 9.

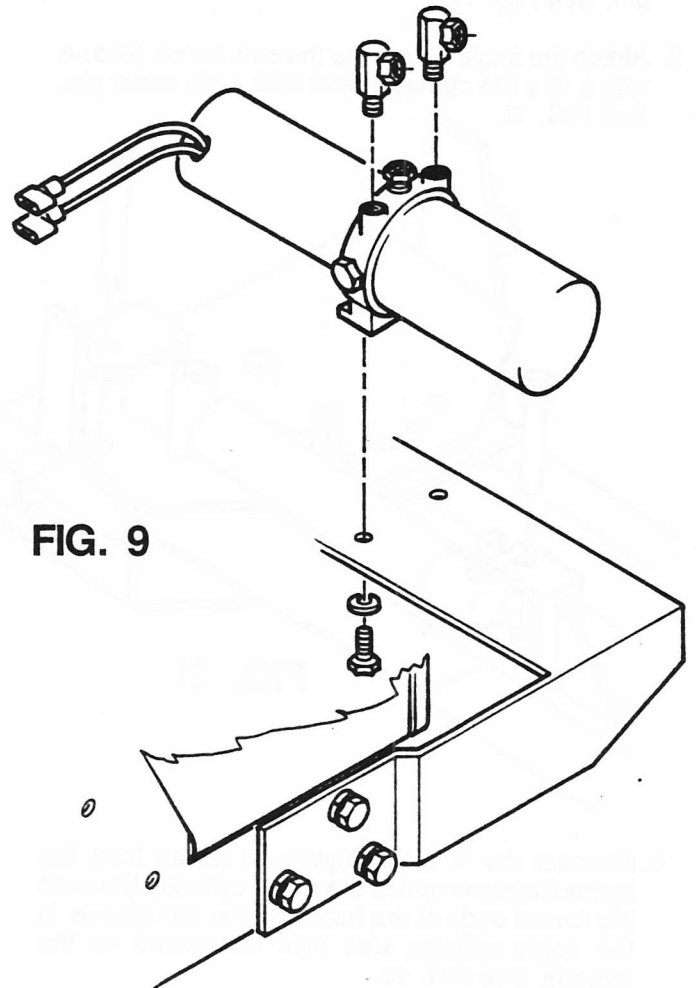


FIG. 9

5. Insert (2) $\frac{1}{4}$ x 90° steel st. elbows into the ports of the hydraulic angle cylinder. Use pipe compound on the threads. Both fittings must be positioned as shown in FIG. 10.

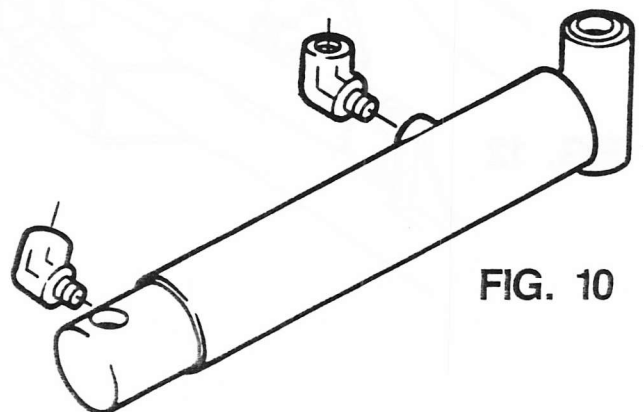


FIG. 10

6. Attach the rod of the angle cylinder to the pivot. Secure with a $\frac{3}{4}$ x 4 clevis pin and $\frac{5}{32}$ x $1\frac{1}{2}$ cotter pin. See FIG. 11.

7. Attach the angle cylinder to the sub-frame. Secure with a $\frac{3}{4}$ x $3\frac{1}{2}$ clevis pin and $\frac{5}{32}$ x $1\frac{1}{2}$ cotter pin. See FIG. 11.

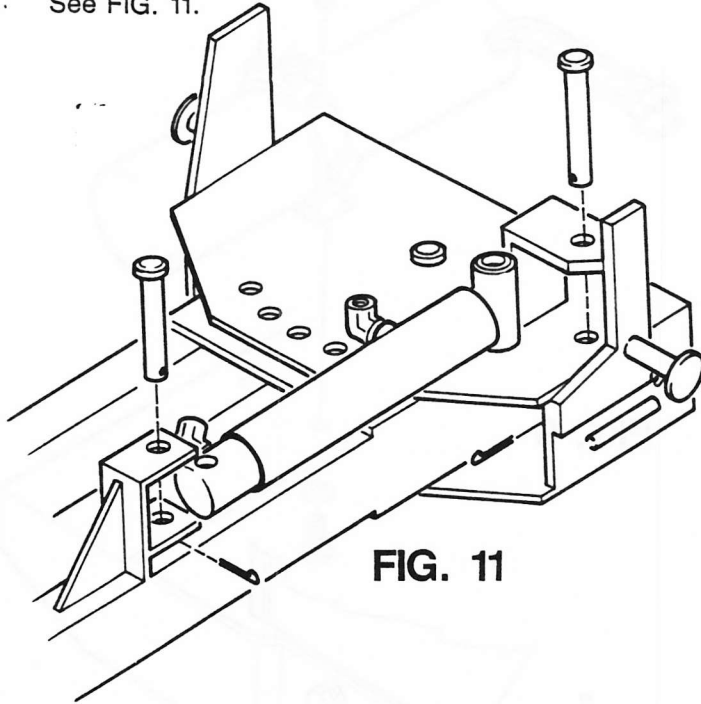


FIG. 11

8. Connect the $\frac{1}{4}$ x 29" hydraulic hoses from the hydraulic power unit to the angle cylinder. Connect the swivel ends of the hoses to the 90° elbows in the angle cylinder. Use pipe compound on the threads. See FIG. 12.

9. Connect the hose from the rear port of the angle cylinder to the S.U. in the rear port of the hydraulic power unit. Connect the hose from the front port of the angle cylinder to the S.U. in the front port of the hydraulic power unit. Use pipe compound on the threads. As shown in FIG. 12. Tighten all hydraulic fittings securely.

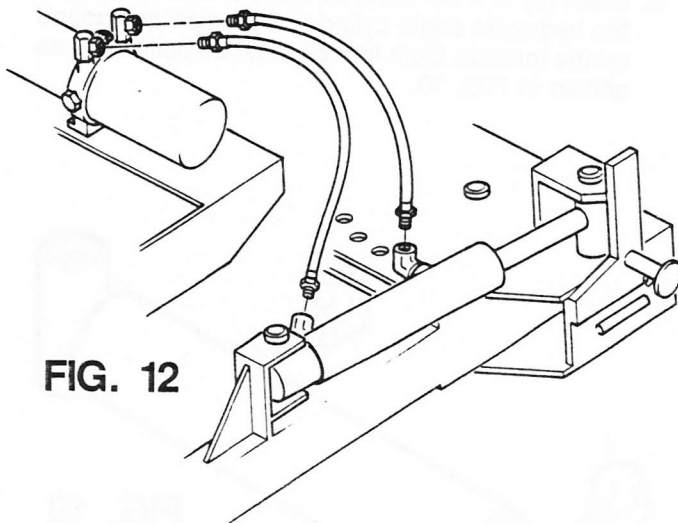


FIG. 12

10. Mount the DPDT switch to the dash of the tractor as shown in FIG. 13. Tighten the nut securely.

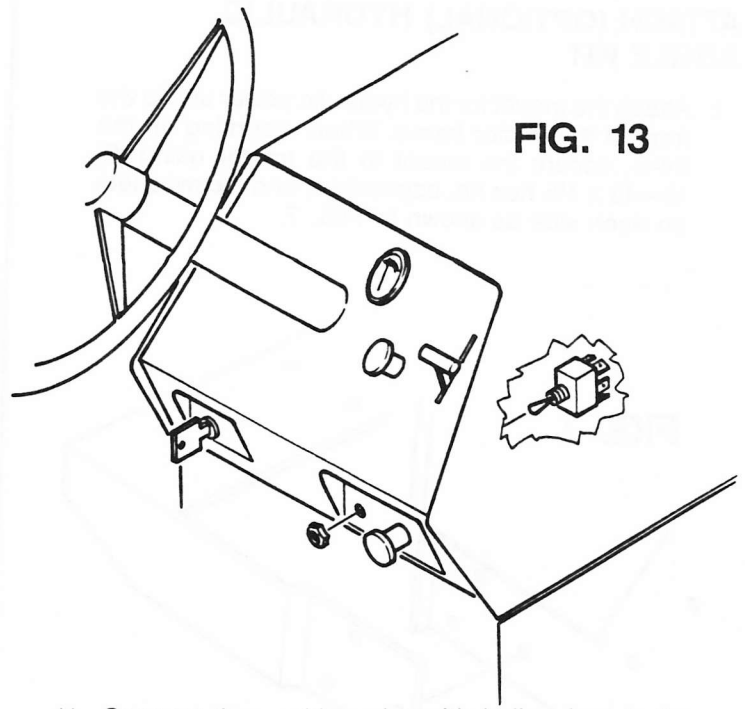


FIG. 13

11. Connect the positive wire with in-line fuse to the L.H. center terminal of the switch and the L.H. post of the ammeter gauge. Connect the ground wire to the R.H. center terminal of the switch and the tractor frame as shown in FIG. 14.

12. Route the wire assembly from the front of the tractor to the switch and connect to the switch as shown in FIG. 14.

13. Plug the ends of the wire leads on the hydraulic power unit to the ends of the wire assembly.

14. Fill the hydraulic system with hydraulic fluid. Remove the plug in the hydraulic power unit and fill with ATF Dextron or Type F hydraulic fluid. Operate the hydraulic power unit for a few seconds and refill the unit with hydraulic fluid. Repeat as required until the hydraulic system is full of fluid. Reverse directions of blade angle to fill both sides of the hydraulic system with fluid. Do not overfill. Replace the fill plug and tighten.

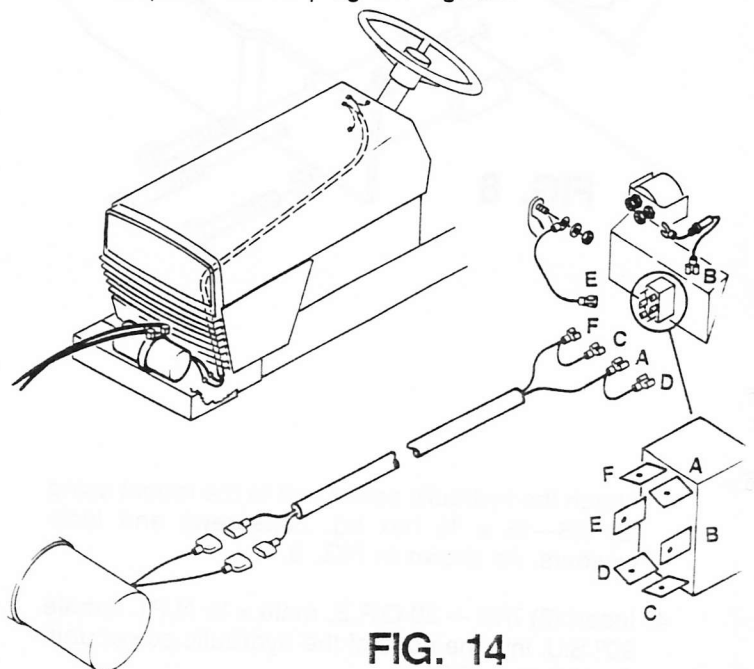


FIG. 14

Use the manual angle pin only on units not equipped with hydraulic angle kit. The pin locks the blade in any one of five positions from left to right. See FIG. 15.

DO NOT USE MANUAL ANGLE PIN ON UNITS WITH HYDRAULIC ANGLE.

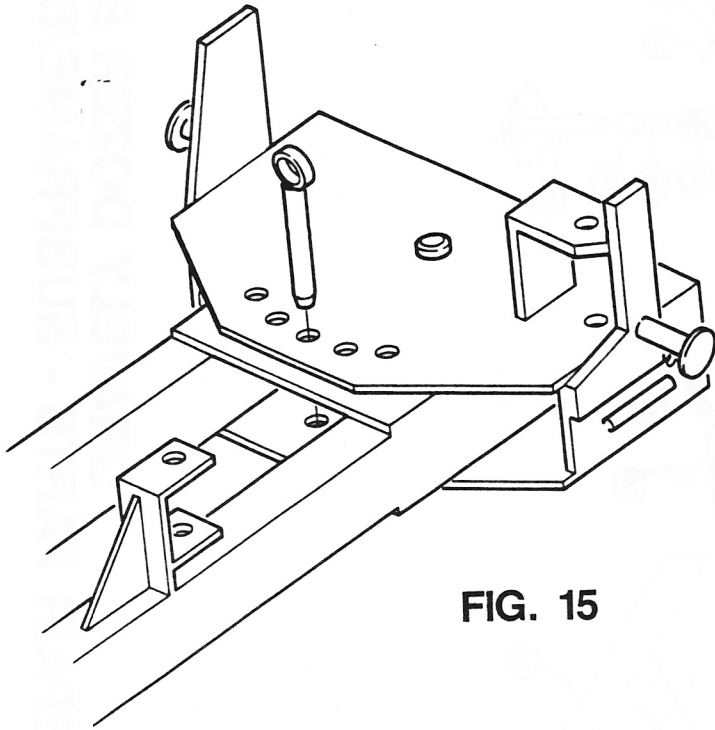


FIG. 15

- (1) Assemble the skid shoe washers and spacers on the skid shoe shaft. Arrange the washers and spacers below the skid shoe holder on the rear of the blade to allow for the desired blade clearance. Secure the skid shoes to the holders with the #11 clip pins on both sides as shown in FIG. 16.

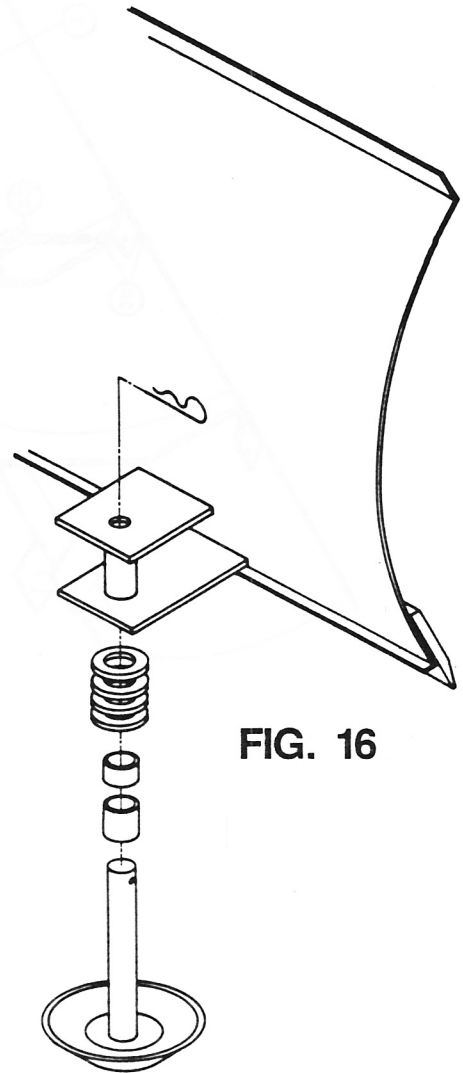
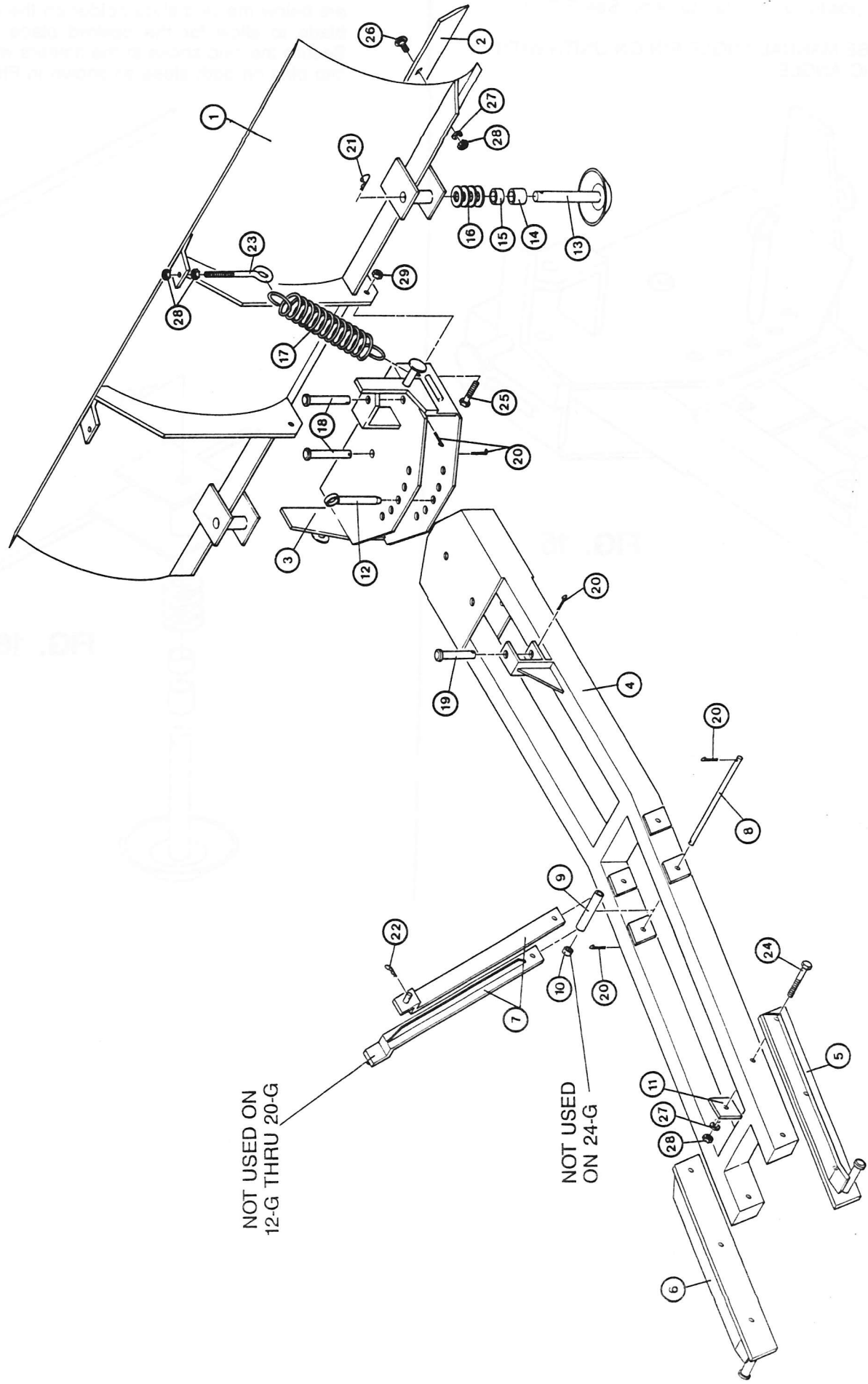


FIG. 16

GRAVELLY DOZER BLADE REPAIR PARTS - SUBFRAME/BLADE



NOT USED ON
12-G THRU 20-G

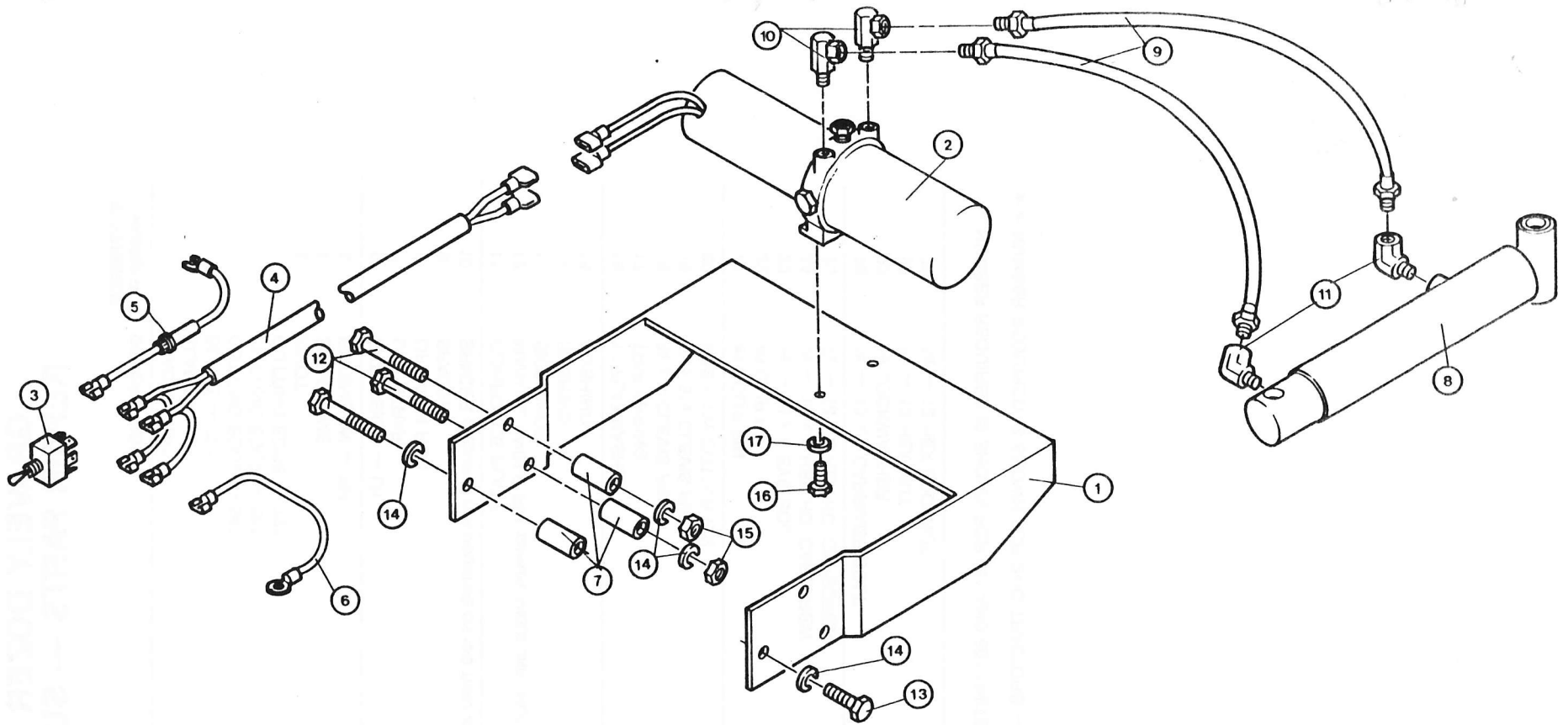
NOT USED
ON 24-G

GRAVELY DOZER BLADE REPAIR PARTS — SUB-FRAME

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
1	BLADE — 54"	16518	1
	BLADE — 60"	16457	1
	BLADE — 72"	15691	1
2	CUTTING EDGE — 54"	11893	1
	CUTTING EDGE — 60"	100226	1
	CUTTING EDGE — 72"	100227	1
3	PIVOT	16461	1
4	SUB-FRAME	16470	1
5	EXTENSION — RH	16479-1	1
6	EXTENSION — LH	16479-2	1
7	LIFT STRAP	16486	2★ ★
8	LIFT ARM ROD	16483	1
9	SPACER	16484	1
10	SPACER (REQUIRED FOR MOUNTING ON 12-G THRU 20-G TRACTORS ONLY)	16485	1
11	REINFORCE PLATE	16475	4
12	MANUAL ANGLE PIN (MANUAL ANGLE UNIT ONLY)	11898	1
13	SKID SHOE	10229	2
14	BUSHING	10272-3	2
15	BUSHING	10272-1	2
16	1" FLATWASHER	100237	8
17	TRIP SPRING	100246	2
18	3/4 x 4 CLEVIS PIN	100711	2
19	3/4 x 3 1/2 CLEVIS PIN	101060	1
20	5/32 x 1 1/2 COTTER PIN	100645	5
21	#11 CLIP PIN	100172	2
22	#3 CLIP PIN	100171	2★ ★
23	1/2 — 13 x 6 EYE BOLT	100249	2
24	1/2 — 13 x 3 HEX HD. CAPSCREW	100060	4
25	1/2 — 13 x 2 HEX HD. CAPSCREW	100173	2
26	1/2 — 13 x 1 CARRIAGE BOLT	100244	5★
27	1/2 LOCKWASHER	100076	9★
28	1/2 — 13 HEX NUT	100087	13★
29	1/2 — 13 HEX LOCKNUT	100715	2

★ NUMBER REQUIRED IS SHOWN FOR 54" AND 60" UNITS — 72" UNITS REQUIRE ONE MORE EACH.

★ ★ NUMBER REQUIRED IS SHOWN FOR 24-G TRACTORS — 12-G THRU 20-G TRACTORS REQUIRE ONLY ONE.



GRAVELLY DOZER BLADE REPAIR PARTS — HYDRAULIC ANGLE KIT (OPTIONAL)

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
1	POWER UNIT MOUNT	16493	1
2	HYDRAULIC POWER UNIT	16501	1
3	SWITCH	101931	1
4	WIRE SET	16496	1
5	POSITIVE WIRE w/AGC-20 FUSE	16498	1
6	GROUND WIRE	16499	1
7	SPACER (USED ON 12-G — 20-G ONLY)	16500	6
8	ANGLE CYLINDER	101222	1
9	1/4 x 29 HYD. HOSE 1/4m x 1/4 ms	101552	2
10	7/16 — 20 ORBM x 1/4 NPTF 90° S.U.	101930	2
11	1/4 x 90° STEEL ST. ELBOW	100539	2
12	1/2 — 13 x 2 1/2 HEX HD. CAPSCREW (USED ON 12-G—20-G ONLY)	100058	6
13	1/2 — 13 x 1 1/4 HEX HD. CAPSCREW (USED ON 24-G ONLY)	100056	6
14	1/2 LOCKWASHER	100076	6
15	1/2 — 13 HEX NUT (USED ON 12-G — 20-G ONLY)	100087	4
16	3/8 — 16 x 3/4 HEX HD. CAPSCREW	100179	2
17	3/8 LOCKWASHER	100074	2