

MASSEY FERGUSON

MF 4000

Series Disc Ripper

Model: 4412



OPERATOR'S MANUAL

FROM MASSEY FERGUSON

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SAFETY SIGN PLACEMENT

The safety sign placements are on the following pages.

FIG. 23: (7) 997661

Reflector, red

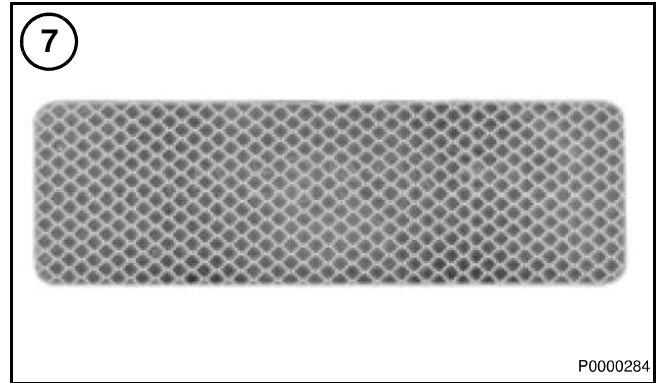


FIG. 23

FIG. 24: (8) 997662

Reflector, amber

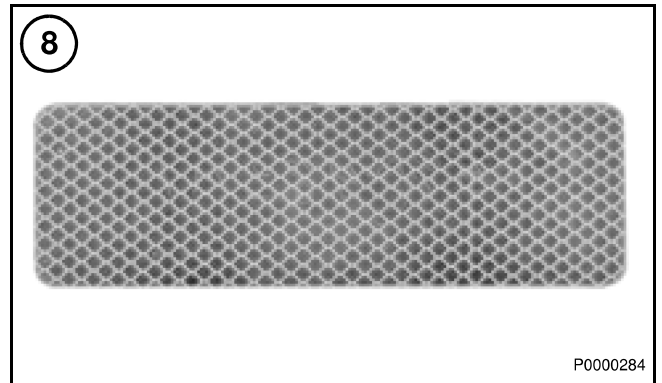


FIG. 24

FIG. 25: (9) 997869

Do not exceed the maximum speed of 40 kilometers/hour.



FIG. 25

FIG. 26: (10) 7001

SMV Emblem

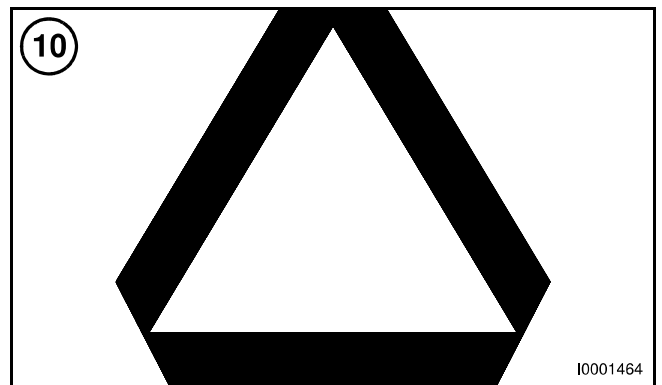


FIG. 26

PROPER DISPOSAL OF WASTE

Improper disposal of waste can pollute the environment and ecology. A few examples of potentially harmful waste from AGCO equipment include, but not limited to, items such as oil, fuel, coolant, brake fluid, filters, battery chemicals, tires, etc.

Use leak proof containers when draining fluids. Do not use food or beverage containers to collect waste fluids, as food or beverage container(s) may mislead someone into drinking from them.

Do not pour or spill waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire with local environmental or recycling center on the proper way to recycle or dispose waste.

AUTO-RESET SHANK MAINTENANCE

The auto-reset shank is equipped with hardened wear pins and bushings to provide maximum service life. Spring rods are protected by plastic wear bushings that reduce friction, corrosion, galling, and are not adversely effected by contaminants such as dirt and sand, and require no maintenance. Following a regular maintenance schedule will significantly extend the life of the shank. The auto-reset shank bolts should be checked regularly for tightness. The bolts should be checked particularly after the first hour and first day of initial use due to settling and loosening of paint.

NOTE: The ripper shanks are made from alloy steel and specifically heat treated to produce a strong, durable and high wear-resistant shank. Hard surfacing is NOT recommended, as this destroys the heat treatment process and generally produces surface cracks which can lead to shank breakage.

The auto-reset shank has two points of lubrication, the spring rod and the shank holder. The shank should be greased initially and after every 24 hours of normal operation, as shown in the lubrication section. In rocky or severe conditions where the shank is frequently tripping, the shank should be greased every 8 hours of operation.

RIPPER POINTS

The 4412 disc ripper uses a 1 x 2 1/2 inch x 12 inch dorsal fin point (2).

The dorsal fin provides additional fracturing to minimize the surface disturbance.

The ripper points are held in place by a 1/2 x 2 1/2 inch grooved pin (1). To remove the point, drive the pin (1) from the shank and then slide the point (2) forward. To install the point, slide the point over the end of the shank and drive in the grooved pin.

RIGID SCRAPER ADJUSTMENT

FIG. 6: In most conditions the scraper should be positioned with approximately 3.2 mm (1/8 in) clearance between the scraper and the disc blade as shown. This will resist residue build up between the scraper and disc blade, and still prevent excessive wear. Under some residue conditions the scrapers will perform more satisfactorily if they are set 12.5 mm (1/2 in) away from the disc blade.

The scraper is adjusted by loosening the 1/2 x 3 1/2 inch carriage bolt at the top of the scraper arm. The scraper bar allows adjustment for each individual scraper. Scraper adjustment can also be made for the entire gang by moving the scraper bar at the scraper bar anchors

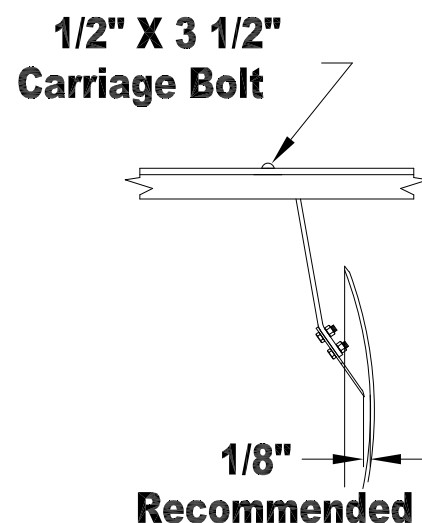


FIG. 6

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LUBRICATION AND MAINTENANCE

FIG. 4: Auto Reset Shank Pivot

Grease every 24 hours during normal use.

Grease every eight hours during severe use.

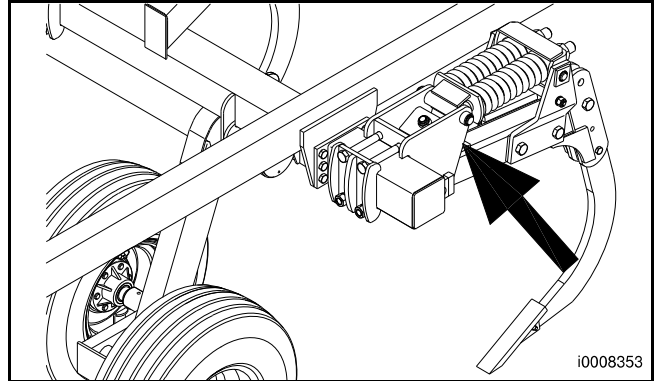


FIG. 4

FIG. 5: Wheel Bearings

Grease every 50 hours during normal use.

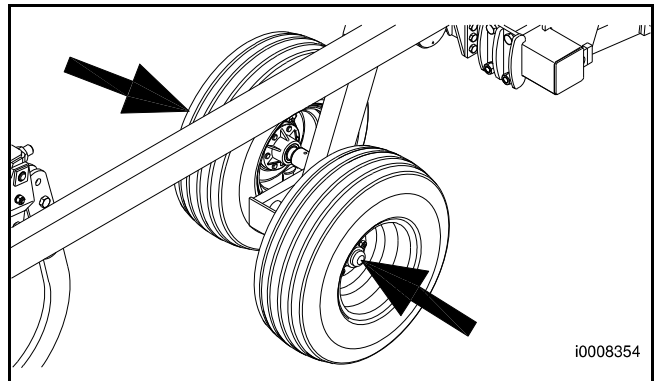


FIG. 5

FIG. 6: Walking Tandem Bearing

Grease every 50 hours during normal use.

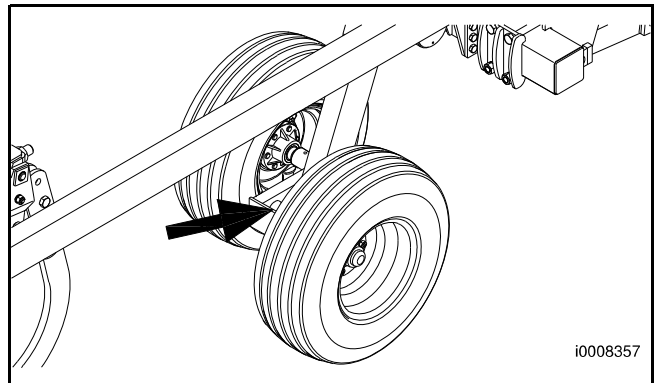


FIG. 6

FIG. 7: Wheel Bearings

Pack wheel bearings at the beginning of each season.

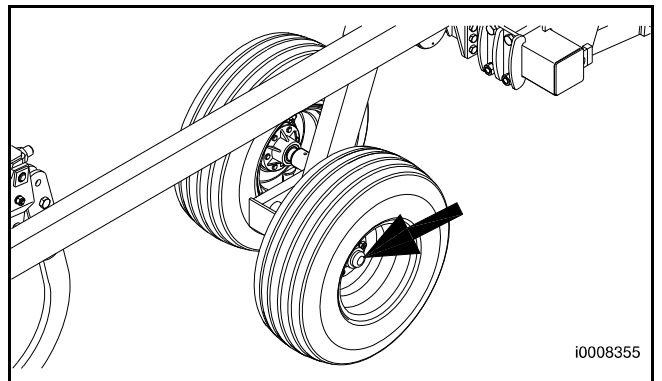


FIG. 7

BEFORE BEGINNING ASSEMBLY

Before beginning any actual assembly, this entire section must be read carefully and fully understood. Refer to the Assembly Identification section for additional component breakdowns when assembling the machine.

It is important that all the bolts and nuts are used in the proper locations in which they were designed, to prevent damage to the disc ripper.

IMPORTANT: When two or more bolts are used to install a part, always insert the bolts and loosely tighten the nuts. Once the correct placement has been achieved, tighten the nuts evenly to prevent misalignment or distortion of the parts. When u-bolts are used, tighten both nuts evenly to prevent misalignment or distortion.

For the proper torque values, refer to the torque values section of the Lubrication and Maintenance section.

The right hand and left hand side is determined by facing the direction the machine will travel in operation.

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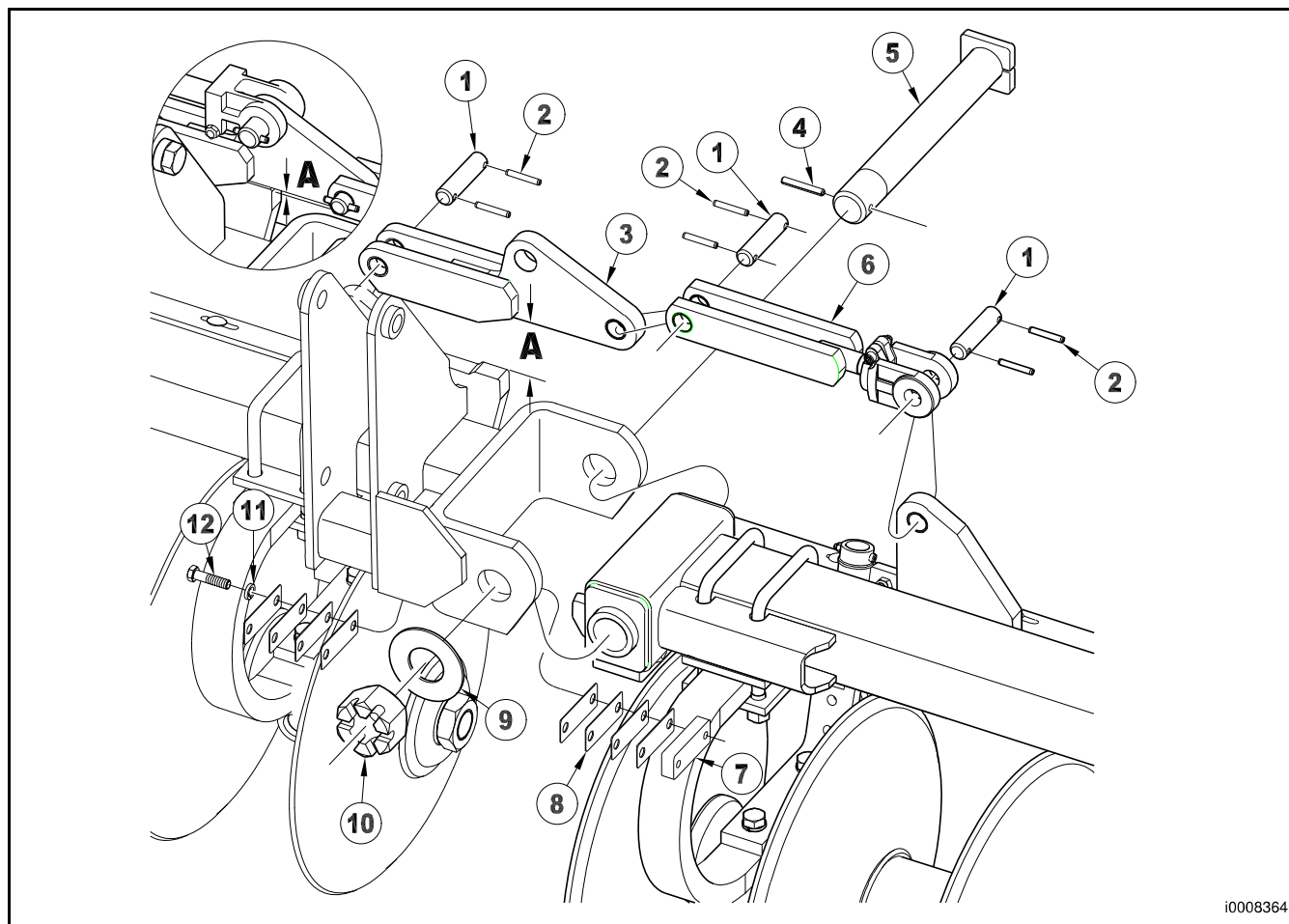
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REAR GANG CYLINDER FOLD ANCHOR



i0008364

FIG. 13

FIG. 13: Align the rear gangs and pin together using a square headed pin (5), flat washer (9), hex nut (10), and pin (1) and roll pin (4).

NOTE: Use one or two flat washers (9) as necessary for the roll pin (4).

Assemble the fold link (3) and the adjustable fold link (6) to the gangs as shown using 1 x 4 1/16 inch pins (1) and roll pins (2).

Bolt the fold block (7) and the shims (8) to the gang bar as shown using 1/2 x 2 inch hex bolts (12) and lock washers (11). The gang bar is leveled by adjusting the number of shims from one side of the clevis to the other.

NOTE: Cycle the gang fold cylinders with the hydraulics several times prior to connecting the rod end of the fold cylinders. This is to remove air from the fold system prior to folding the gangs.

NOTE: Adjust the clevis by loosening the bolt and turning the clevis so that there is 6 1/2 mm (1/4 in) inch of clearance (Dimension A) without the cylinder installed after leveling the folding gang with the shim pack as shown.

FIG. 21: Gang lift hydraulic components

Item Number	Reference Number	Description
1	4455	90 DEG STR THD ELBOW, 3/4"-16 MF
2	5339	PIN, 1" X 4 1/16" (3"), Y/D
3	3164	ROLL PIN, 5/16" X 2" SPIRAL MEDIUM
4	12065R	CYLINDER, 3 1/4" X 8" SLAVE (20 1/4"CPC) ORB CROSS, 3000 PSI
5	12061R	CYLINDER, 3 1/2" X 8" SLAVE (20 1/4"CPC) ORB CROSS, 3000 PSI
6	4113002	HOSE, 3/8" X 113" L, FEMALE ENDS
7	4409002	HOSE, 3/8" X 409" L, FEMALE ENDS
8	4420002	HOSE, 3/8" X 420" L, FEMALE ENDS
9	4463	STRAIGHT THD.CONNECTOR, 3/4"-16
10	16903P	COUPLER, MALE HALF, 3/4"-16 ORB
11	4216002	HOSE, 3/8" X 216" L, FEMALE ENDS
12	4204002	HOSE, 3/8" X 204" L, FEMALE ENDS
13	4115002	HOSE, 3/8" X 115" L, FEMALE ENDS
14	5302	PIPE CLAMP, 3/8" BOLT HOLE, Y/D
15	3565	HEX BOLT, 3/8"-16 X 3 1/2",GR 5, Y/D
16	176	LOCK WASHER,3/8" SPLIT TYPE MED,Y/D

Refer to the drawing and component table for the parts identification when assembling the gang lift hydraulics. The cylinders are not filled with oil and must be purged of air before initial field operation.



CAUTION: Escaping hydraulic fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure. Keep hands and body parts away from pinholes and nozzles which eject fluids under high pressure. Wear proper hand and eye protection when searching for leaks. Use a piece of cardboard or paper instead of your hand. If any fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury, or gangrene may result.

ASSEMBLY IDENTIFICATION

FIG. 2: Main lift components

Item Number	Reference Number	Description
1	106	HEX NUT, 3/4"-10 FULL, GR 5, Y/D
2	1040	LOCK WASHER,3/4" SPLIT TYPE MED,Y/D
3	7325	BEARING, LIFT (SPLIT) 6" WIDE
4	7335	BEARING CAP
5	1220	HEX BOLT, 3/4"-10 X 2", GR 5 Y/D
6	13736R	LIFT, MAIN LEFT 4412-05 & 07
7	3062	WALKING BEAM RACE (332)
8	3061	WALKING BEAM BEARING (342A)
9	3063	WALKING BEAM SEAL (ESP P/N: VBHY-229731480359-NCO
10	245	FLAT WASHER, 1" WIDE RIM, Y/D
11	2992	HEX NUT,1"-14 FULL SLOTTED GR 2, Y/D
12	12452R	TANDEM PIVOT
13	3066	COTTER PIN, 7/32" X 1 1/2", Y/D
14	3669	SPINDLE, 2" X 10 15/16" L TANDEM
15	7329R	BEARING CAP
16	5028	HEX BOLT, 1"-8 X 4 1/4", 1 5/8 THD
17	7828R	CONNECTING LINK SCREW, LH THDS
18	2088	JAM NUT, 1 3/4"-5 HEX, GR 2, Y/D
19	12692R	LINK, CONNECTING (Version 1, serial number 4412107017 and earlier)
20	HCL 1-8	LOCK NUT, 1"-8 UNC HEX CENTER, GR 2, Y/D
21	13735R	LIFT, MAIN RIGHT 4412-05 & 07
22	7827R	CONNECTING LINK SCREW, RH THDS
23	16136R	SCREW, CONNECTING LINK (Version 2, serial number 4412107018 and later)

ASSEMBLY IDENTIFICATION

FIG. 7: Main lift hydraulic components

Item Number	Reference Number	Description
1	4033005	HOSE, 1/2" X 33" L, FEMALE ENDS
2	4462	STRAIGHT THD. BRANCH TEE, 7/8"-14
3	4041005	HOSE, 1/2" X 41" L, FEMALE ENDS
4	4478	90 DEG SWIVEL ELBOW, 7/8"- 14 MF
5	12043R	CYLINDER, 3 1/2" X 16" LIFT W/O STR
6	4464	STRAIGHT THD.CONNECTOR, 7/8"-14
7	4457	90 DEG STRAIGHT THD ELBOW, 7/8"-14
8	4458	PLUG, 3/4"-16 MOR
9	5340	PIN, 1 1/4" X 4 1/16" (3"), Y/D
10	3164	ROLL PIN, 5/16" X 2" SPIRAL MEDIUM
11	4332005	HOSE, 1/2" X 332" L, FEMALE ENDS
12	4348005	HOSE, 1/2" X 348" L, FEMALE ENDS
13	5302	PIPE CLAMP, 3/8" BOLT HOLE, Y/D
14	16903P	COUPLER, MALE HALF, 3/4"-16 ORB
15	7741	90° STRAIGHT THREAD ELBOW, 3/4 MOR
16	16791P	IN LINE RESTRICTOR, 3/4 FOR, WITH 5/32 RESTRICTOR
A	VERSION 1	

ASSEMBLY IDENTIFICATION

FIG. 12: Hydraulic cylinder components

Item Number	Reference Number	Description
1	8610-1	CLEVIS, 1 1/4" THREADS, 1" PIN W/BUSHING, CROSS
2	8671-1	HEX NUT, 3/8"-16 UNC-2B FULL, GR B,PLAIN
3	12062	ROD, 1 1/4" DIA, 8" REPHASING CROSS
4	8631-1	SCREW, SOCKET HEAD CAP 3/8"-16 UNC-2A
5	8775-1	SEAL KIT, 3 1/2", 1 1/4" ROD, REPHASING CROSS
6	8657-10	HEAD, 3 1/2", 1 1/4" ROD REPHASING,CROSS (ORB)
7	8863-1	TIE ROD NUT, 9/16" THREADS CROSS
8	16846P	SO UNITIZED PISTON, 3 1/2" W/1" HOLE REPH, CROSS
9	8683-1	PISTON NUT, 1" CROSS
10	12063	TUBE, 3 1/2" X 8" REPHASING CROSS
11	12064	TIE ROD BOLT, 3 1/2" X 8" CROSS
12	8927-10	BASE, 3 1/2" (ORB 1" PIN) REPHASING, CROSS
13	*	WIPER
14	*	U-CUP
15	*	BACKUP
16	*	O-RING
17	*	O-RING
18	*	TEFLON RING
19	997052	SYSTEMS MUST BE BLED OF AIR
20	4458	PLUG, 3/4"-16 MOR
	*	AVAILABLE IN THE SEAL KIT ONLY

ASSEMBLY IDENTIFICATION

FIG. 17: Seven shank rear gang components

Item Number	Reference Number	Description
1	9008	U-BOLT, 3/4"-10 X 7 1/4" X 5 13/16" W, Y/D
2	13713	GANG BAR, 66 13/32" LEFT REAR INNER
	13712	GANG BAR, 66 13/32" RIGHT REAR INNER
3	330	HEX BOLT, 1/2"-13 X 2" GR 5, Y/D
4	113	LOCK WASHER, 1/2" SPLIT TYPE MED,Y/D
5	12766	SHIM, FOLD BLOCK, STAINLESS STEEL
6	3989	HEX NUT, 2"-4 1/2 FULL SLOTTED, GR 2, Y/D
7	6286	MACHINE BUSHING, 2 1/8" ID X 3 1/8"
8	12767YD	BLOCK, FOLD, Y/D
9	12753R	LINK, FOLD
10	5339	PIN, 1" X 4 1/16" (3"), Y/D
11	3164	ROLL PIN, 5/16" X 2" SPIRAL MEDIUM
12	12769YD	ROLL PIN, 3/8" X 2 1/2" L, Y/D
13	12737YD	PIN, HINGE 2" X 15 13/16" (14 3/16")
14	12752R	LINK, FOLD ADJUSTABLE
15	13714R	GANG BAR, 57 1/4" RIGHT REAR OUTER
	13715R	GANG BAR, 57 1/4" LEFT REAR OUTER
16	6148B	C-FLEX MOUNTING PLATE, TOP
17	5975B	SHANK, C-FLEX, 1 1/4" X 2 1/2" RIGHT
18	6147B	C-FLEX MOUNTING PLATE
19	1040	LOCK WASHER,3/4" SPLIT TYPE MED,Y/D
20	18663B	GANG WRENCH, 2 3/4"
21	106	HEX NUT, 3/4"-10 FULL, GR 5, Y/D
22	7141B	SCRAPER BAR ANCHOR, RIGID
23	6307	HEX BOLT, 3/4"-10 X 3" GR 8, Y/D
24	9691B	TRUNNION BEARING MOUNT
25	3095	FLAT WASHER, 1 1/2" ID X 2 1/4" OD,10 GA, Y/D
26	3283	BLADE, 18", 1 3/4" BORE, 4 GA, 1 3/4" CONCAVITY
27	2723B	SPRING END COLLAR, 1 3/4" BORE
28	2037	FLAT WASHER, 1 13/16" ID X 2 13/16"
29	2036	HEX NUT, 1 3/4"-5 SLOTTED HEAVY
30	108	COTTER PIN, 5/16" X 2 1/2", Y/D
31	7423	SPOOL, LONG BEARING, 10 1/2" SP
32	2756	FLAT WASHER, 1 13/16" ID X 2 13/16"
33	3090	TRUNNION BEARING COMPLETE
34	7863	TRUNNION BEARING SHIELD
35	2819	SPOOL, BEARING, 1 3/4" BORE, 9 1/2" SP
36	3271	BLADE, 20", 1 3/4" BORE, 4 GA, 2" CONCAVITY
37	7346	SPOOL, FULL, 10 1/2"
38	2686	BLADE 22", 1 3/4" BORE 4 GA, 2 1/2" CONCAVITY
39	5558	SHAFT, 59", 1 3/4" DIA
40	3944	SHAFT, 58 3/4", 1 3/4" DIA
41	2096	LOCK NUT, 1/2"-13 HEX NYLON INSERT,GR 8, Y/D
42	9035B	DUAL SCRAPER, 10 1/2" SP, REG CON
43	486	FLAT WASHER, 1/2", Y/D
44	330	HEX BOLT, 1/2"-13 X 2" GR 5, Y/D
45	2098-1	GREASE ZERK, 1/8" NPTF, 5/8" L

ASSEMBLY IDENTIFICATION

FIG. 22: Auto reset shank components (version 1)

Item Number	Reference Number	Description
1	6839R	SPRING ROD
2	5419R	SPRING, 4.375" OD X 2.625" ID X 17.59" L COMPRESSION
3	6842R	SPRING BARREL, DUAL
4	2079	JAM NUT, 1 1/2"-6 HEX, GR 2, Y/D
5	12655YD	HEX FLANGE NUT, 1 1/2"-6 UNC Y/D
6	6837YD	BUSHING, 1.500"OD X.813"ID, 10 5/8"L, Y/D
7	6836R	SPRING PLATE
8	6838	BOLT, 3/4"-10 X 14" (11") SPCL Y/D
9	1040	LOCK WASHER,3/4" SPLIT TYPE MED,Y/D
10	106	HEX NUT, 3/4"-10 FULL, GR 5, Y/D
11	5202	SHANK, 1 1/4" X 4" X 40"
12	5089	PIN, 1/2" X 2 1/2" POINT
13	12764B	POINT, 1" X 2 1/2" X 12" WITH DORSAL FIN & CHROME CAP
14	1723	HEX BOLT, 5/8"-11 X 3 1/2",GR 5, Y/D
15	1753	HEX BOLT, 1"-8 X 4" GR5, Y/D
16	9740R	SHANK HOLDER, R21
17	FK361002	SPRING, 1.8125" OD X 1.062"ID,2 5/8"
18	1678	HEX BOLT, 1"-8 X 4 1/2", GR 5 Y/D
19	6841R	BOLT, 1 1/2"-6 X 10 1/2" (9 3/4") SQUARE HEAD
20	13560R	MOUNT, SHANK
	19255R	FIELD SERVICE KIT, 4412 SHANK MOUNT AUTO RESET
21	3938	LOCK NUT, 1"-8 HEX NYLON INSERT, GR2, Y/D
22	669-1	LOCK NUT, 5/8"-11 HEX NYLON INSERT, GR 5, Y/D
23	16790YD	HEX BOLT, 1"-8 X 8 1/2", GR 8, Y/D
24	1283	LOCK WASHER, 1" SPLIT TYPE MED, Y/D
25	110	HEX NUT, 1"-8 FULL, GR 5, Y/D
26	7319R	CLAMP PLATE
27	1697	HEX BOLT, 1"-8 X 7 1/2",GR 5, Y/D
28	2085	LOCK WASHER, 1 1/2" SPLIT TYPE MED,Y/D
29	2098-1	GREASE ZERK, 1/8" NPTF, 5/8" L
30	2098-5	GREASE ZERK, 1/8" NPTF, 1 1/4" L
31	5063	PIN, 1 1/4" X 9 3/4" (9 1/8"), Y/D
32	12765B	POINT, 1" X 2 1/2" X 12" W/DORSAL FIN & CHROME CAP W/PIN
33	5080	SNAP RING, 1 1/4", Y/D
34	12625B	POINT, RIPPER W/WING & CHROME CAP
35	12626B	POINT, RIPPER W/WING & CHROME CAP W/PIN
36	5273	POINT, 1" X 2 1/2" X 12"
	12762B	POINT, 1" X 2 1/2" X 12" W/CHROME CAP
37	5288	POINT, 1" X 2 1/2" X 12" W/PIN
	12763B	POINT, 1" X 2 1/2" X 12" W/CHROME CAP W/PIN
38	9557B	MOUNT, SNUB NOSE FURROWER
39	112	HEX BOLT, 1/2"-13 X 2 1/2", GR 5,Y/D
40	2096	LOCK NUT, 1/2"-13 HEX NYLON INSERT, GR 8, Y/D
41	303	HEX NUT, 7/16"-14 FULL, GR 2, Y/D
42	302	LOCKWASHER,7/16" SPLIT TYPE MED,Y/D
43	9556B	SNUB NOSE FURROWER, 1/4" X 8"
44	3050	PLOW BOLT, 7/16"-14 X 1 1/2" L, NO 3HEAD, GR 5, Y/D
45	2096	LOCK NUT, 1/2"-13 HEX NYLON INSERT,GR 8, Y/D
46	6276B	SHIN GUARD SHANK
47	6277	U-BOLT, 1/2"-13 X 5 1/2" X 1 13/16" W, GR 5, Y/D
48	6275B	CLAMP PLATE
	10744R	SHANK ASSY, AUTO RESET R21 (36"-40")

PLACEMENT
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