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# ***FALLOW***

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# ***MASTER 9-63***

***OPERATOR'S MANUAL***

**ORTHMAN  
MANUFACTURING  
INCORPORATED**

***STILL THE STRONGEST***

**ORTHMAN MFG. INC.  
75765 RD. 435  
LEXINGTON, NE 68850**

**OM06-01-05**

# FALLOW MASTER II MODEL 9-63 MANUAL INDEX

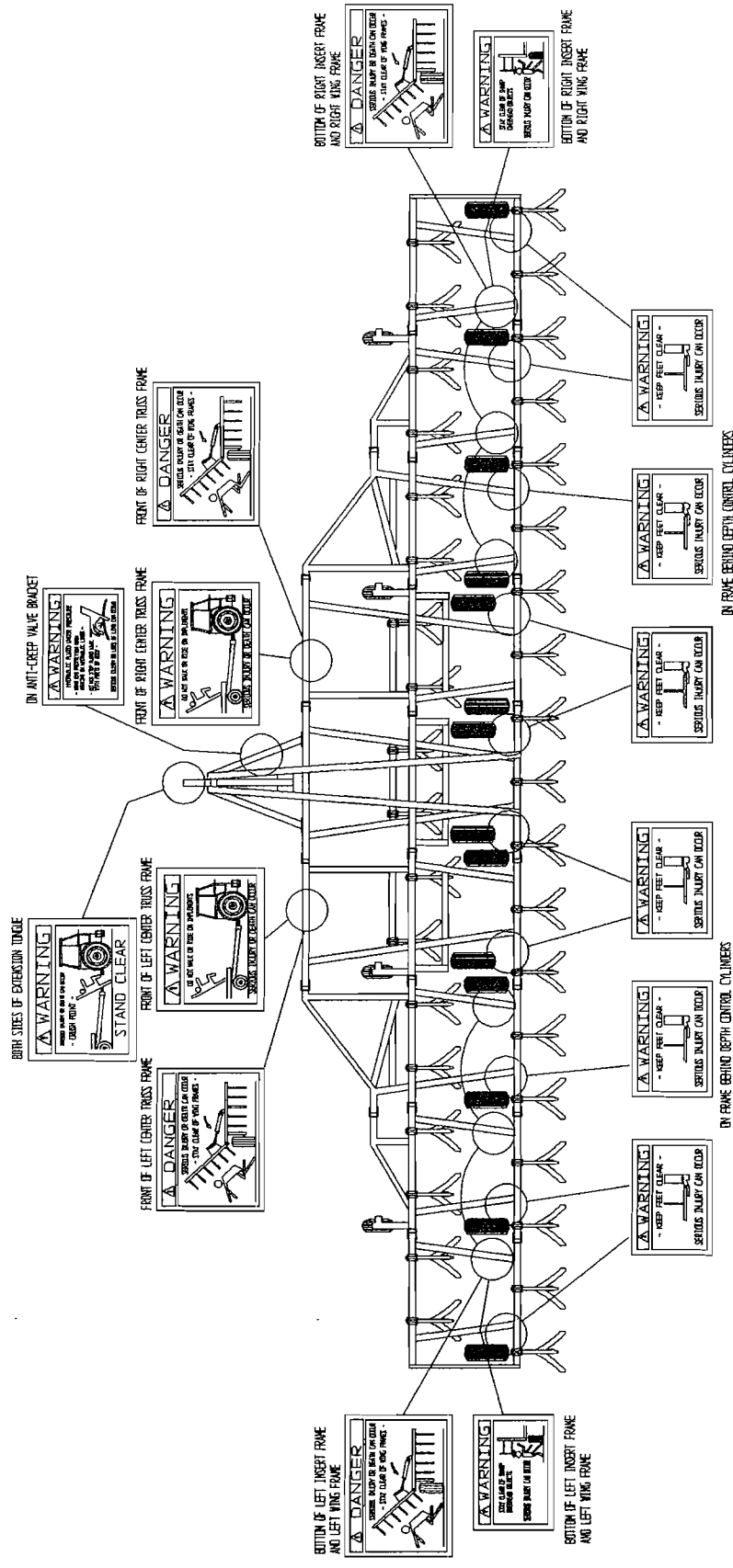
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**MOST ACCIDENTS CAN BE AVOIDED WHEN SAFETY RULES ARE FOLLOWED**

**THE FOLLOWING RULES WILL HELP KEEP MACHINE-RELATED ACCIDENTS TO A MINIMUM:**

1. READ THE INSTRUCTION AND PARTS MANUAL CAREFULLY BEFORE USING MACHINE.
2. NEVER WALK UNDER AN UNPINNED IMPLEMENT WING.
3. ALWAYS REQUIRE BYSTANDERS TO STAND CLEAR OF MACHINE WHILE FOLDING AND UNFOLDING WINGS OR WHILE RAISING OR LOWERING MACHINE.
4. NEVER ALLOW FEET TO BE UNDER SHOVELS.
5. DO NOT WALK ON FRAMES.
6. DO NOT ADJUST, LUBRICATE OR CLEAN MACHINE WITH TRACTOR RUNNING.
7. ALWAYS USE LOCK-UP PINS WHEN WINGS ARE IN FOLDED POSITION.
8. ALWAYS USE ROAD LOCK-OUT BRACKETS WHEN ROADING.
9. COMPLY WITH ALL STATE AND LOCAL TRANSPORTATION LAWS.
10. CHECK WHEEL BOLTS EVERY 100 HOURS.
11. DO NOT TRANSPORT MACHINE OVER 15 MILES PER HOUR.
12. NEVER ALLOW RIDERS ON IMPLEMENT.
13. DO NOT STAND OVER TONGUE WHEN HITCHING OR UNHITCHING.
14. NEVER REMOVE ANY LOCKING PINS UNLESS HYDRAULIC CYLINDERS AND LINES ARE FREE OF AIR AND FULL OF HYDRAULIC OIL.
15. CHECK TIRE PRESSURE, AND INSPECT TIRES FOR CUTS OR WEAR DAILY. (USE RECOMMENDED PRESSURES ON TIRES.)
16. DO NOT REMOVE OR TAMPER WITH SAFETY DEVICES - HYDRAULIC RESTRICTORS, LOCK-OUT BRACKETS, LOCK-UP ARMS, AND HYDRAULIC WING FOLD PROTECTION VALVES.
17. WATCH FOR AND AVOID PROTRUDING OBJECTS - SHARP TEETH, SHARP BLADES.
18. STAY CLEAR OF CRUSH POINTS - HITCH AREA, TINES, SHOVELS, HINGE AREAS.
19. FOLD AND UNFOLD WINGS ON LEVEL GROUND.
20. INSPECT PINS FOR WEAR - REPLACE WORN PARTS.
21. INSPECT HYDRAULIC SYSTEM FOR WEAR - REPLACE WORN OR BROKEN PARTS, FRAYED HOSES AND LEAKY FITTINGS.

**SAFETY PRECAUTIONS**

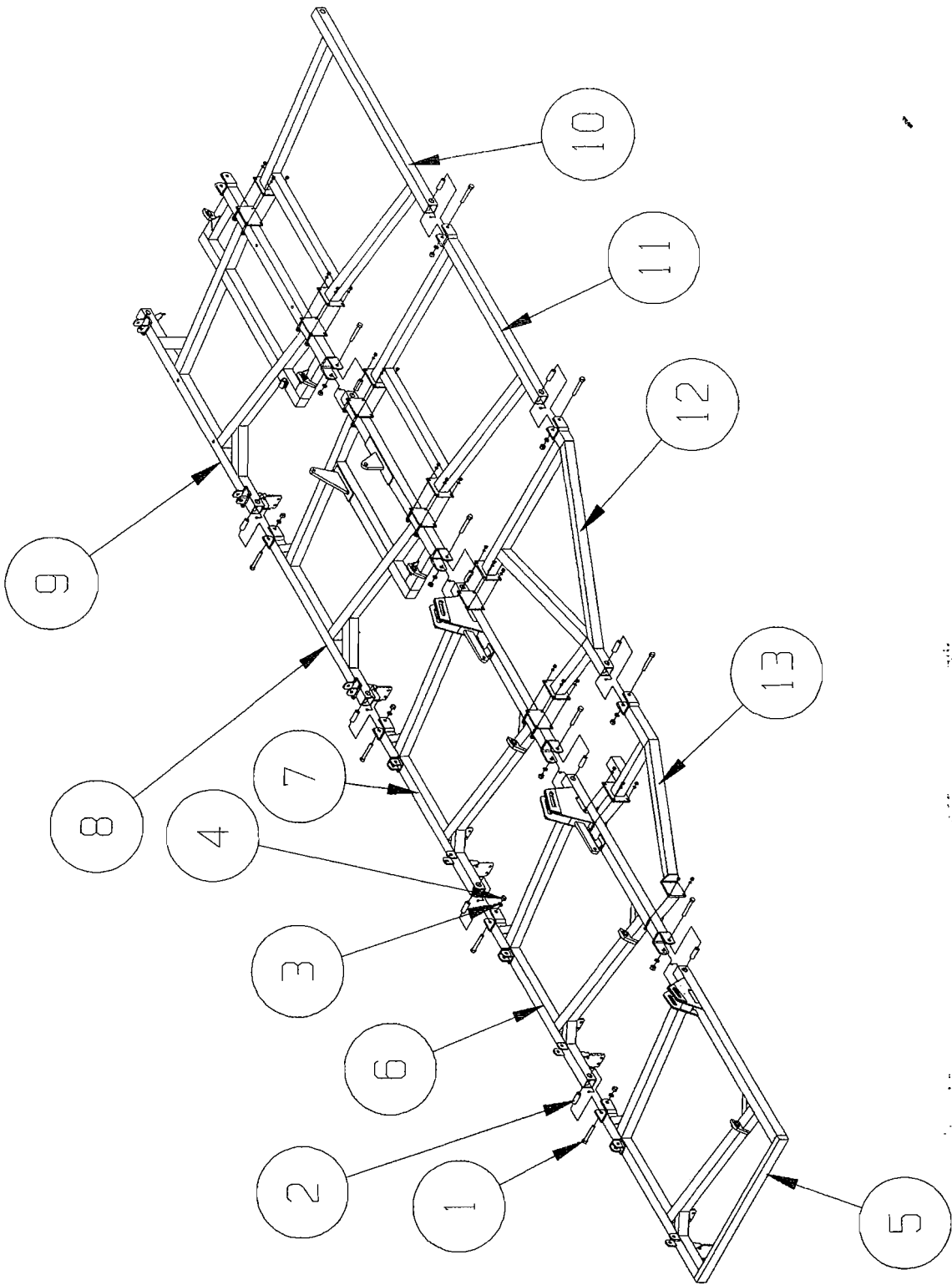


FM9-63. SAFETY DECAL PLACEMENT

# PARTS LIST

## FM9-63 FRAME ASSEMBLY

REF.	PART #	QTY	DESCRIPTION
1	150200	24	1" X 7 BOLT GR.5
2	504263	22	LOOSE HINGE BUSHING
3	150033	24	1" LOCK WASHER
4	150034	24	1" NUT
5	703021	1	RIGHT WING FRAME
6	703027	1	RIGHT INSERT WING
7	703409	1	RIGHT INSERT CENTER FRAME
8	703408	1	RIGHT CENTER FRAME
9	703406	1	CENTER FRAME
10	703400	1	CENTER TRUSS
11	703403	2	CENTER ADJACENT TRUSS
12	703405	2	INSERT CENTER TRUSS
13	703156	2	FRONT EXTENSION TRUSS



FRAME ASSEMBLY

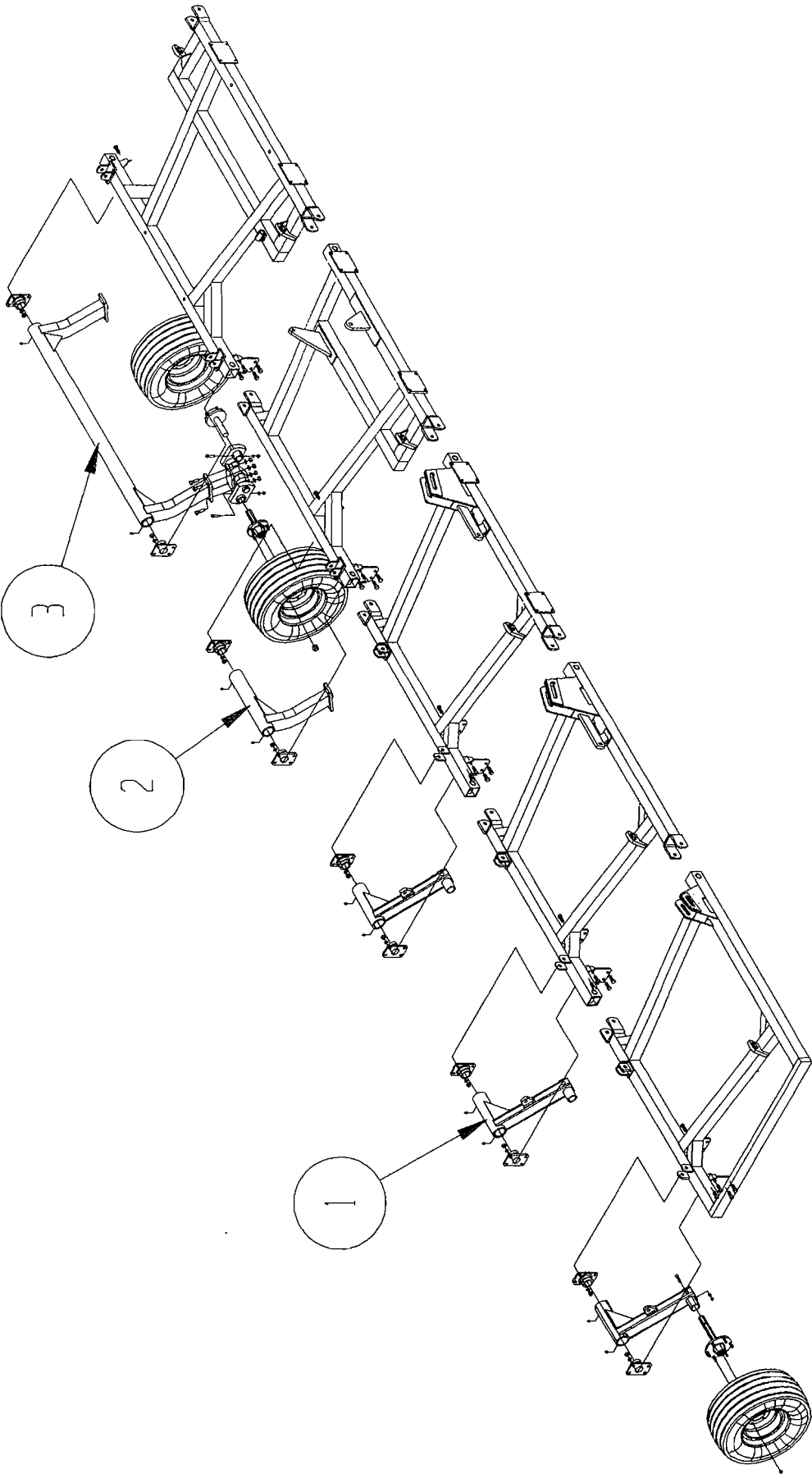
# PARTS LIST

## ROCKSHAFT DETAIL AND PLACEMENT

REF. | PART # | QTY | DESCRIPTION

1	703012	3	RIGHT WING ROCKSHAFT
2	703232	1	RIGHT INSERT CENTER ROCKSHAFT
3	703210	1	CENTER SECTION ROCKSHAFT
	703011	3	LEFT WING ROCKSHAFT
	703231	1	LEFT INSERT CENTER ROCKSHAFT

ROCKSHAFT PLACEMENT

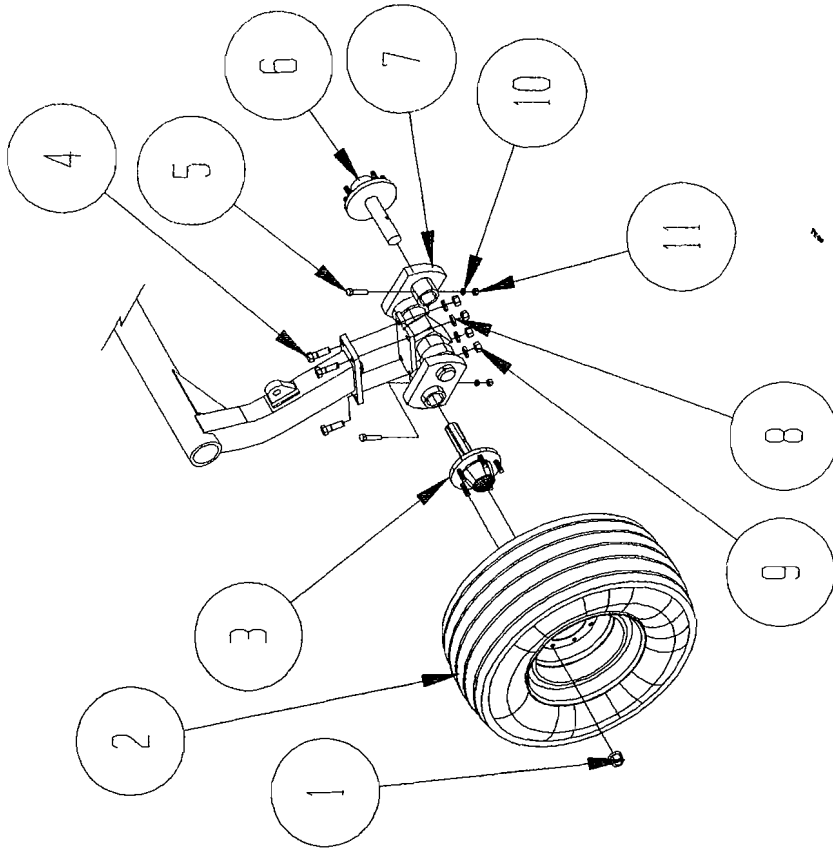
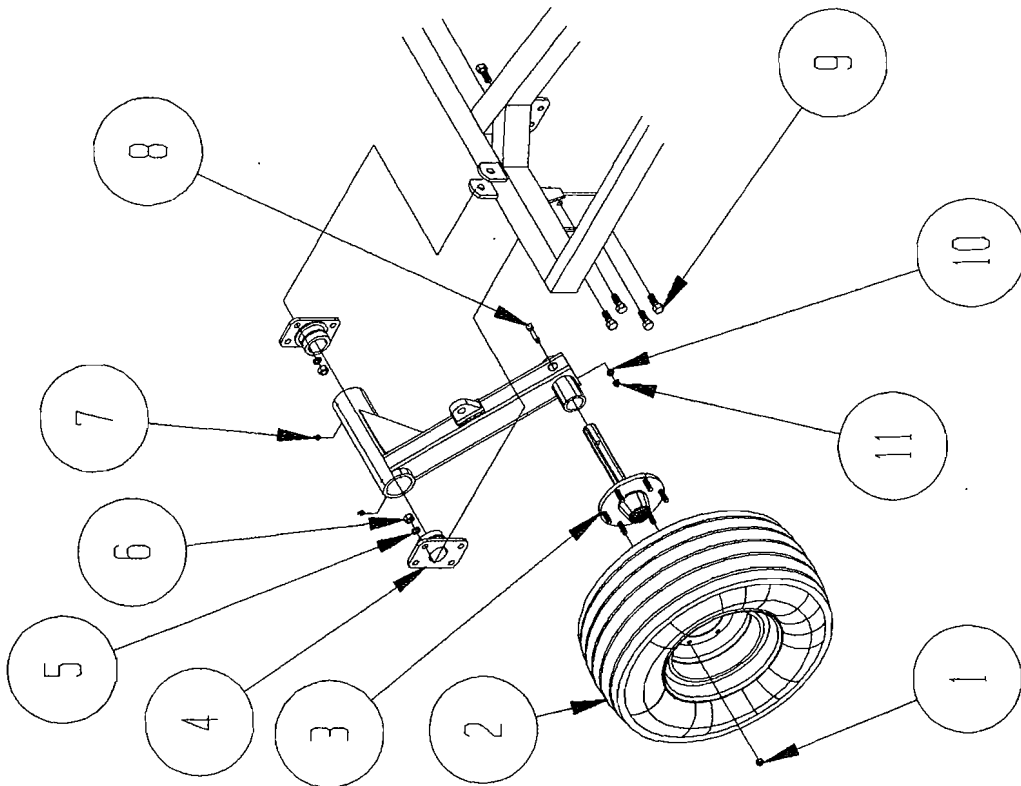




# PARTS LIST

## ROCKSHAFT DETAIL

REF.	PART #	QTY	DESCRIPTION	REF.	PART #	QTY	DESCRIPTION
1	340110	36	LUG NUT (6-BOLT HUB)	1	340110	48	LUG NUT
2	802107	6	11L X 15-8 PLY TIRE & WHEEL ASSEMBLY	2	800525	8	11L X 15-12 PLY TIRE & WHEEL ASSEMBLY
	340242	6	11L X 15-8 PLY TIRE		340194		11L X 15-12 PLY TUBELESS
	340079	6	6-BOLT 15 X 10 WHEEL		340079		6-BOLT 15 X 10 WHEEL
	800525		11L X 15-12 PLY TIRE & WHEEL ASSEMBLY	3			SPINDLE
	340194		11L X 15-12 PLY TUBELESS	4	150149	16	3/4 X 2-1/2 BOLT GR5
	340079		6-BOLT 15 X 10 WHEEL	5	150184	8	1/2 X 4 BOLT GR5
3	802410	6	6-BOLT HUB AND SPINDLE ASSEMBLY	6	802404	4	6-BOLT SPINDLE(LONG)
4	300043	18	ROCKSHAFT BEARING	7	703642	4	WALKING DUAL AXLE
5	150037	72	3/4 SPLIT LOCKWASHER	8	150037	16	3/4 SPLIT LOCKWASHER
6	150038	72	3/4 HEX FINISH NUT	9	150038	16	3/4 HEX NUT
7	150049	18	1/8" NPT GREASE ZERK	10	150030	8	1/2 SPLIT LOCKWASHER
8	150183	6	1/2 X 3-1/2 BOLT GR5	11	150031	8	1/2 HEX NUT
9	150057	72	3/4 X 2 BOLT GR2				
10	150030	6	1/2 SPLIT LOCKWASHER				
11	150031	6	1/2 HEX FINISH NUT				



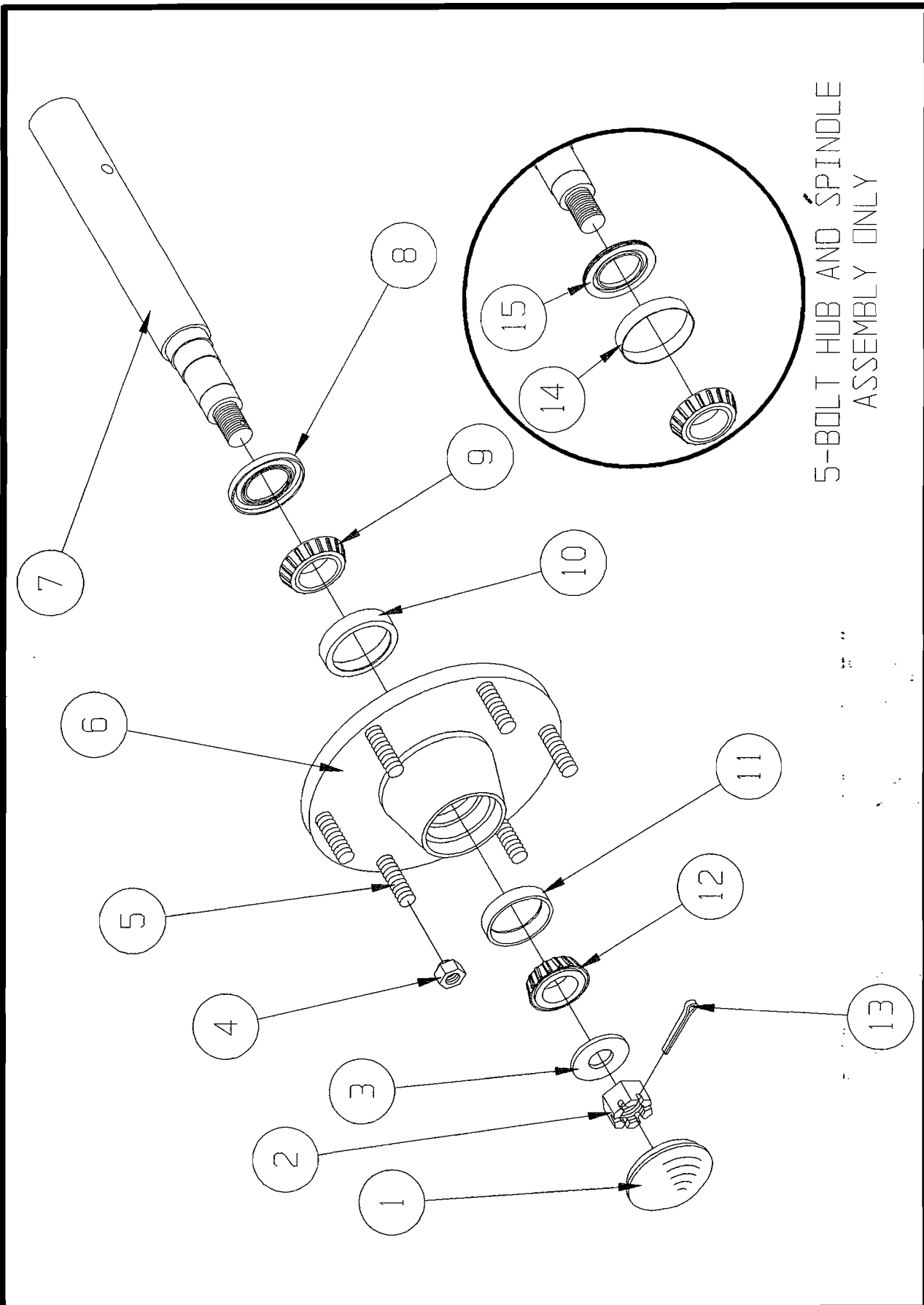
# PARTS LIST

## HUB AND SPINDLE ASSEMBLY

### REF. | PART # | QTY | DESCRIPTION

	802149	4	5-BOLT HUB AND SPINDLE ASSEMBLY
	802403	4	6-BOLT HUB AND SPINDLE ASSEMBLY (SHORT)
	802404	4	6-BOLT HUB AND SPINDLE ASSEMBLY (LONG)
	800410	6	6-BOLT HUB AND SPINDLE ASSEMBLY
1	340053	1	2.449" O.D. HUB CAP
2	340065	1	3/4-16 SAE SPINDLE NUT
3	340112	1	3/4 RETAINING WASHER
4	340110	6	LUG NUT (6-BOLT)
5	340111	6	WHEEL STUD (6-BOLT)
6	340105	1	6-BOLT HUB W/CUPS
7	340187	1	SPINDLE (6-BOLT)
8	310050	1	SEAL (6-BOLT)
9	310051	1	INNER CONE (6-BOLT)
10	310052	1	INNER CUP (6-BOLT)
11	310035	1	OUTER CUP
12	310036	1	OUTER CONE
13	150022	1	5/32 X 1 1/4 COTTER PIN

14	310045	1	WEAR RING
15	310044	1	TRIPLE LIP SEAL



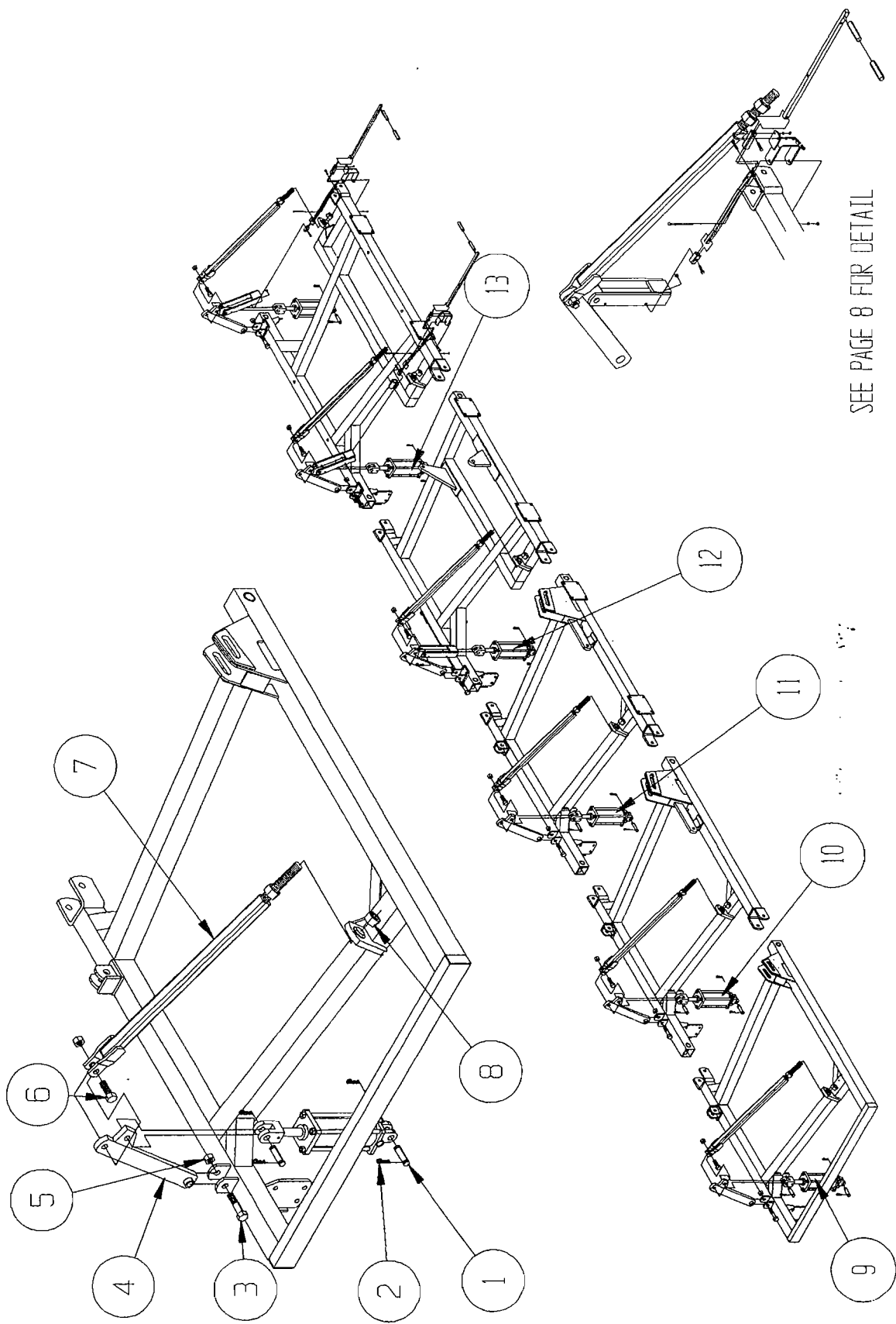
5-BOLT HUB AND SPINDLE ASSEMBLY ONLY

# PARTS LIST

## DEPTH CONTROL DETAIL AND ASSEMBLY

### REF. | PART # | QTY | DESCRIPTION

1		20	CYLINDER PIN
2	330672	20	COTTER PIN
3	150182	10	1" X 4-1/2 BOLT GR5
4	703017	10	ANCHOR LINKAGE
5	150035	10	1" HEX NUT
6	150413	10	1" X 3 BOLT GR5
7	703016	10	DEPTH LINKAGE
8	150008	10	1-1/2" HEX NUT
9	330381	2	3 X 10 REPHASING CYLINDER
10	330382	2	3-1/4 X 10 REPHASING CYLINDER
11	330434	2	3-1/2 X 10 REPHASING CYLINDER
12	330435	2	3-3/4 X 10 REPHASING CYLINDER
13	330495	2	4 X 10 REPHASING CYLINDER

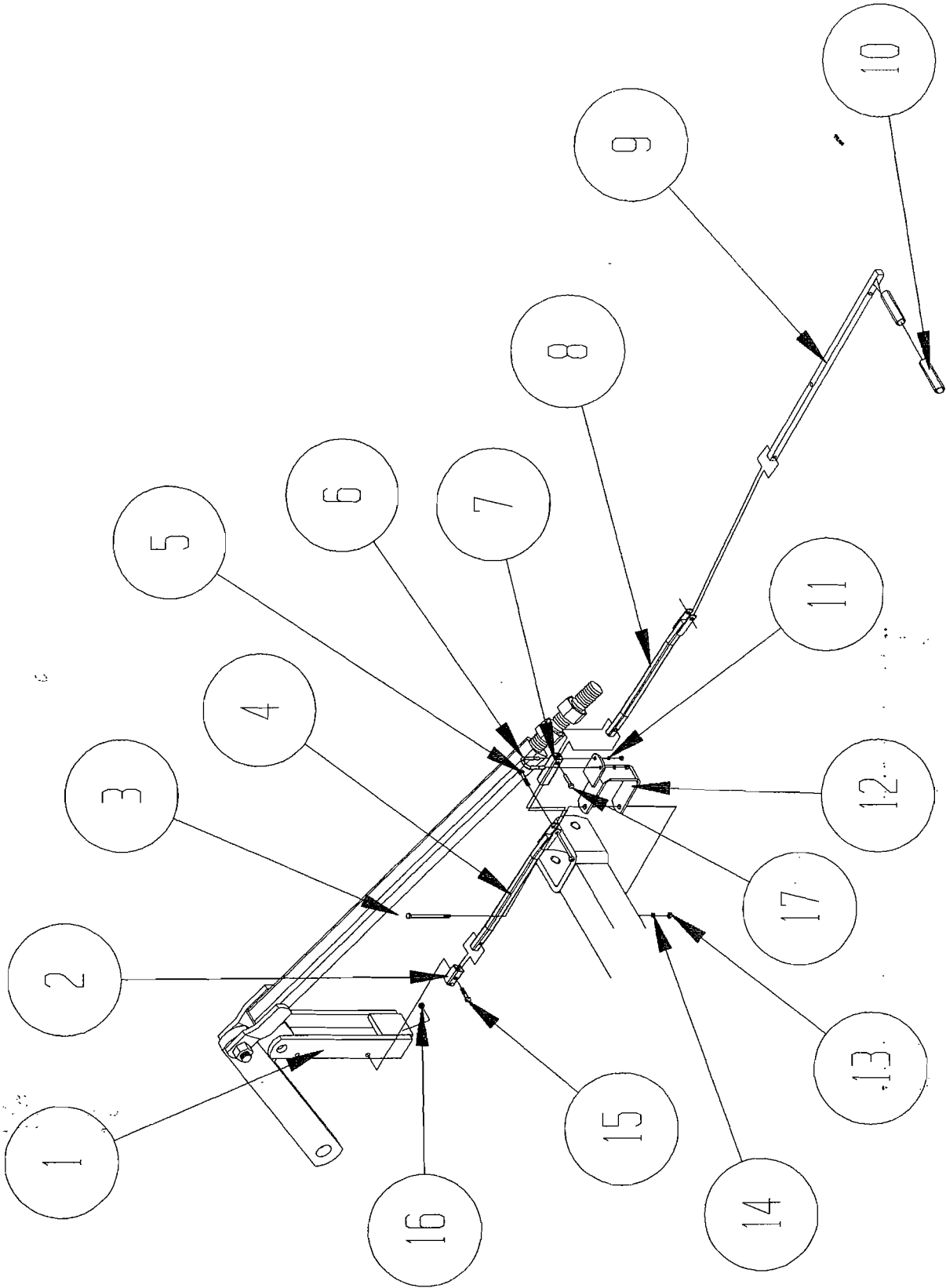


SEE PAGE 8 FOR DETAIL

# PARTS LIST

## REMOTE ROAD LOCKOUT DETAIL

REF.	PART #	QTY	DESCRIPTION
1	703533	1	ROAD LOCK-OUT
2	504769	1	SHEATH
3	150065	2	1/2 X 5 BOLT GR2
4	703634	1	LINKAGE
5	150266	2	3/8 X 2 BOLT GR2
6	150449	1	5/16 U-BOLT
7	504770	2	SLIDER TUBE
8			
9	703634	1	HANDLE
10	350578	1	GRIP
11	505506	4	5/16 NYLON INSERT LOCKNUT
12	703265	2	LT FRAME BRACKET
	703264		RT FRAME BRACKET
13	150031	2	1/2 HEX NUT
14	150030	1	1/2 SPLIT LOCKWASHER
15	150083	1	3/8 X 2-1/2 BOLT GR2
16	150505	3	3/8 NYLON INSERT LOCKNUT
17	150108	1	5/16 PTO PIN



REMOTE ROAD LOCKOUT DETAIL



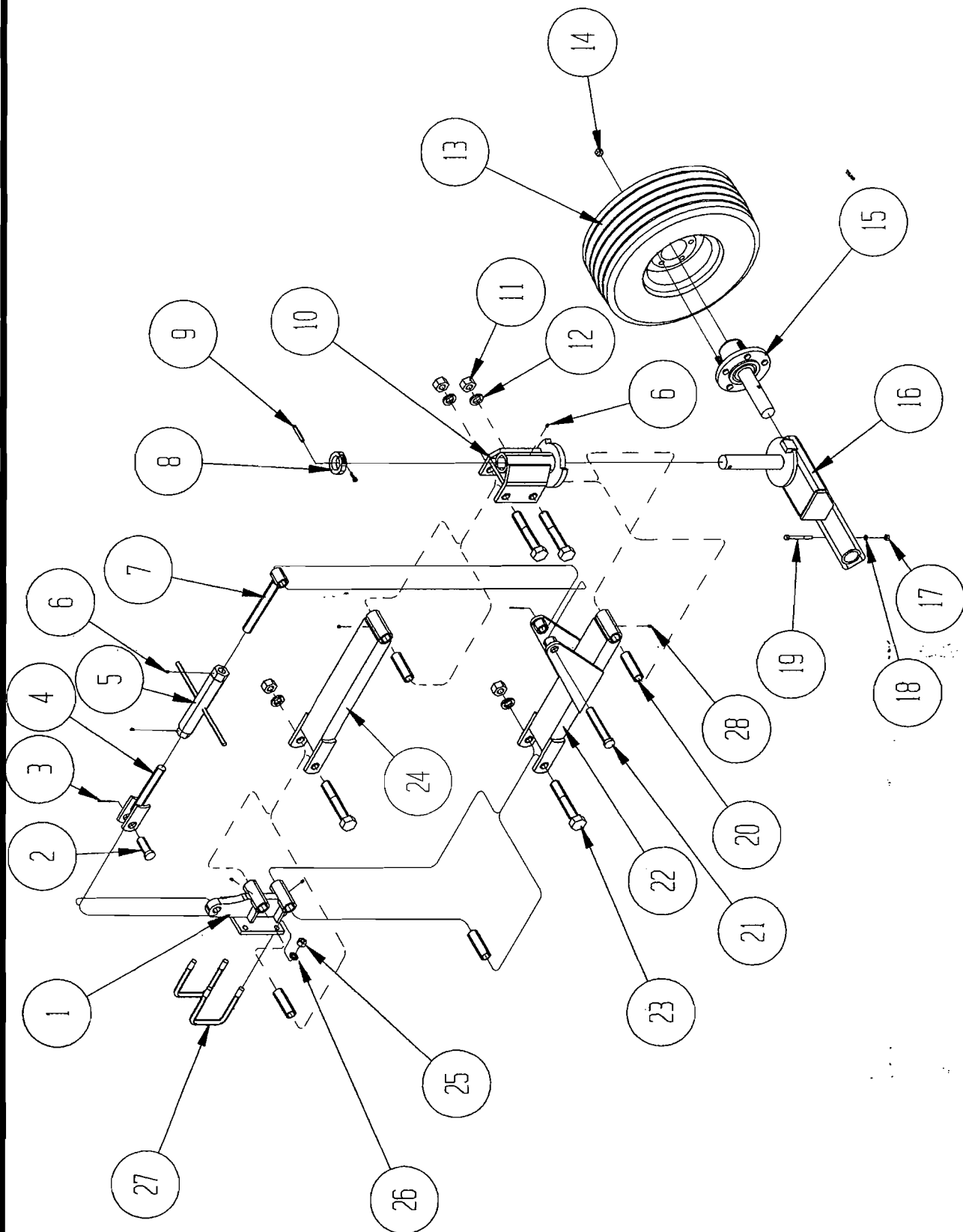
# PARTS LIST

## FM9-63 GAUGE WHEEL DETAIL

REF. | PART # | QTY | DESCRIPTION

1	703775	1	REAR MOUNT
2	150676	1	1 x 2 1/2 CLEVIS PIN
3	150478	2	3/16 x 2 COTTER PIN
4	703781	1	SCREW TAB
5	703782	1	HANDLE ASSEMBLY
6	150050	3	1/4-28 STRAIGHT ZERK
7	703780	1	SCREW BUSHING
8	150561	1	1 3/4 SINGLE SPLIT COLLAR
9	150443	1	3/8 x 2 1/2 ROLL PIN
10	703773	1	INNER ADJUSTMENT TUBE
11	150034	4	1" HEX NUT
12	150033	4	1" SPLIT LOCKWASHER
13	340251	1	WHEEL & TIRE ASSEMBLY-10"
14	340050	5	LUG NUT
15	802149	1	HUB & SPINDLE ASSEMBLY
16	703046	1	CASTER AXLE

17	150078	1	3/8 HEX NUT
18	150077	1	3/8 SPLIT LOCKWASHER
19	150217	1	3/8 x 3 HHCS, GRADE 5
20	506641	4	LOOSE HINGE BUSHING
21	150675	1	1" x 5 1/2 CLEVIS PIN
22	703776	1	LOWER PARALLEL TUBE
23	150071	4	1" x 6 1/2 HHCS, GRADE 5
24	703774	1	UPPER PARALLEL TUBE
25	150041	4	5/8 HEX NUT
26	150040	4	5/8 SPLIT LOCKWASHER
27	150100	2	5/8 x 4 U-BOLT
28	150049	4	1/8 NPT STRAIGHT ZERK

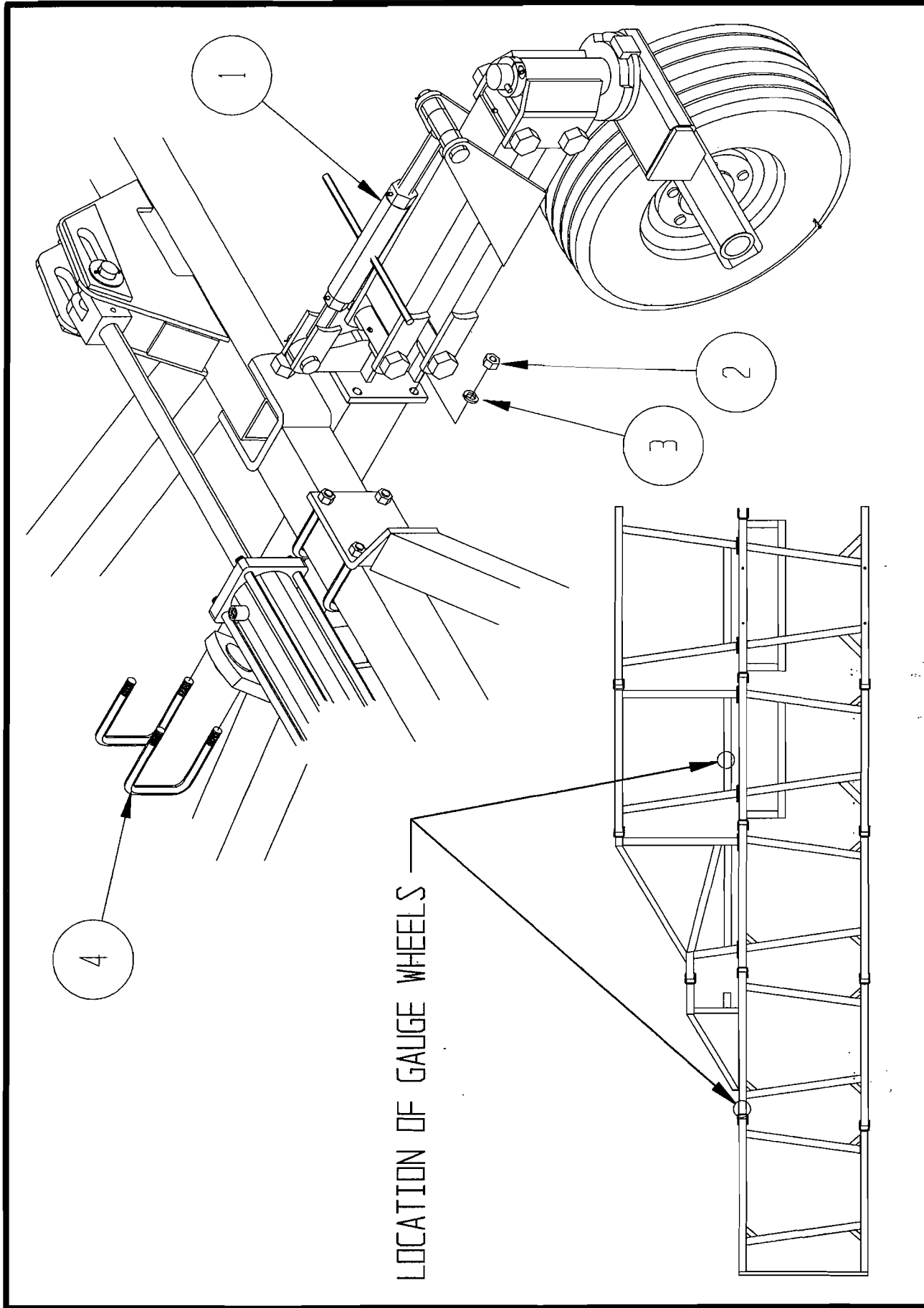


FM9-63 GAUGE WHEEL DETAIL 09

# PARTS LIST

## FM9-63 GAUGE WHEEL PLACEMENT

REF.	PART #	QTY	DESCRIPTION
1	910079	4	FM GAUGE WHEEL ASSEMBLY
2	150041	4	5/8 HEX NUT
3	150040	4	5/8 SPLIT LOCKWASHER
4	150100	2	5/8 x 4 U-BOLT



LOCATION OF GAUGE WHEELS

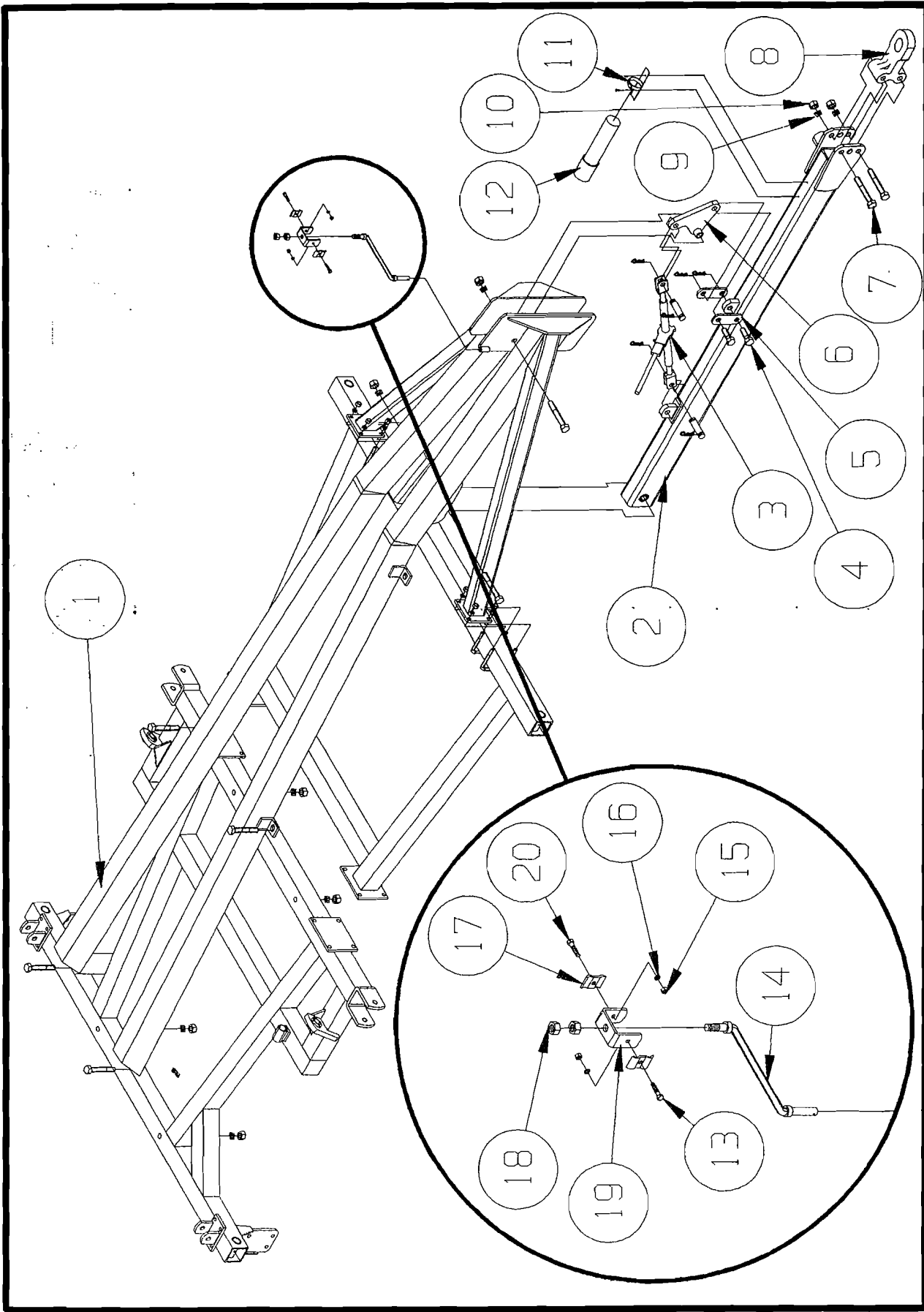
# PARTS LIST

## TONGUE ASSEMBLY DETAIL

### REF. | PART # | QTY | DESCRIPTION

1	703402	1	TONGUE
2	703355	1	EXTENSION TONGUE
3	330568	1	RATCHET JACK
4	150546	2	1" X 2-1/4 PIN
5	504973	2	BELLCRANK LINK
6	703360	1	BELLCRANK LEVER
7	150200	2	1" X 7 BOLT GR5
8	300044	1	CAST HITCH
9	150033	2	1" SPLIT LOCKWASHER
10	150034	2	1" HEX NUT
11	350941	1	MANUAL HOLDER CLAMP
12	350941	1	MANUAL HOLDER
13	150083	2	3/8" X 1-3/4 BOLT GR2
14	702400	1	HOSE STAND
15	150078	2	3/8 HEX NUT
16	150077	2	3/8 SPLIT LOCKWASHER
17	500696	2	PIPE CLAMP
18	150037	2	3/4 HEX NUT
19	504335	1	HOSE CLEVIS

20	150176	1	3/8 X 2-1/2 BOLT GR2
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TONGUE ASSEMBLY DETAIL

# PARTS LIST

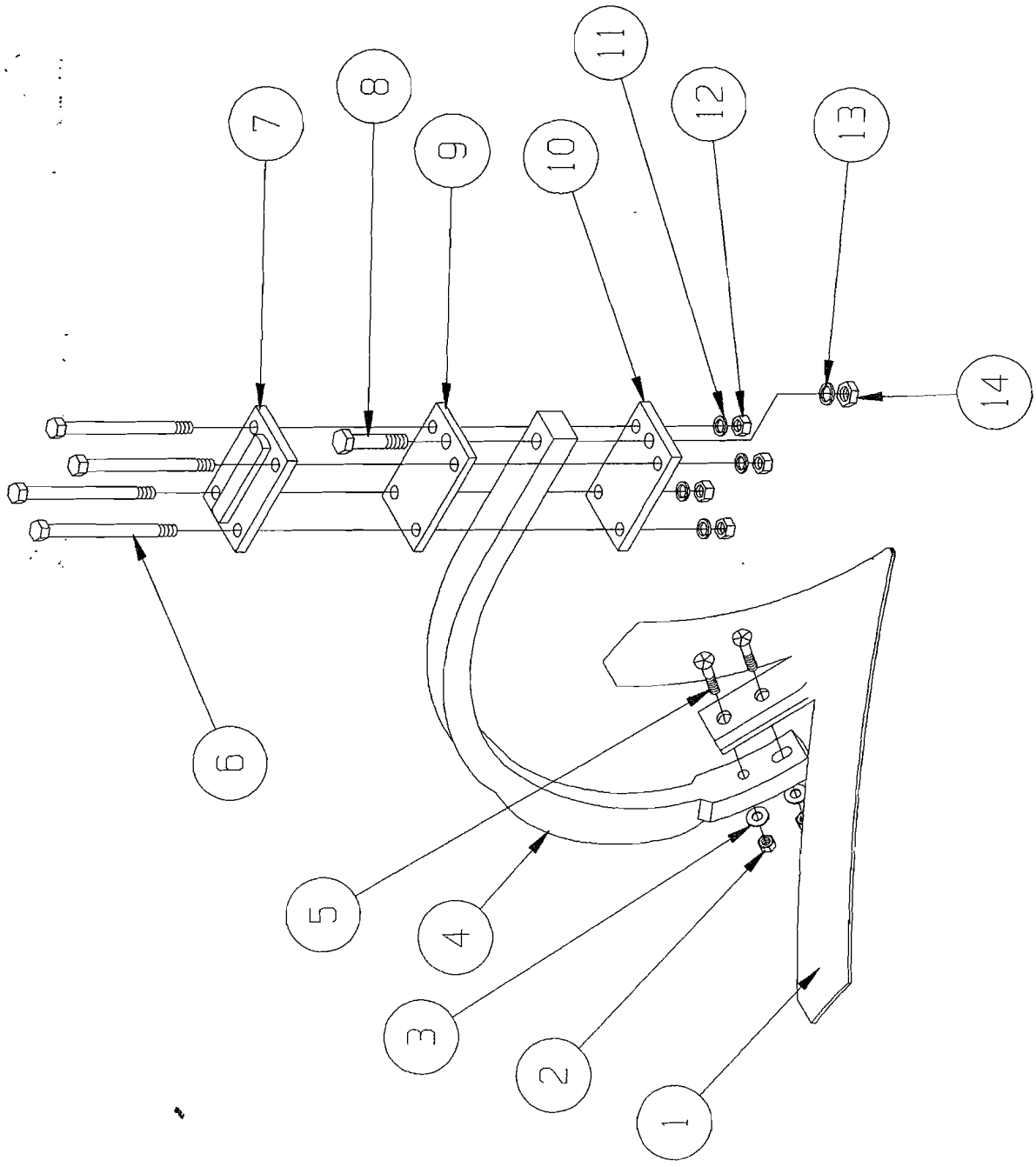
## "EDGE ON" CHISEL SHANK ASSEMBLY

**REF. | PART # | QTY | DESCRIPTION**

1	320701	1	PIPER DURAFACE HST 5/16 X 26
	320702	1	PIPER DURAFACE HSB 5/16 X 26
	320707	1	NICHOLS HSB 5/16 X 26
2	150418	2	1/2 NYLON INSERT LOCKNUT
3	150417	2	1/2 A325 FLATWASHER
4	320700	1	1-1/2 "EDGE ON" CHISEL SHANK
5	150416	2	1/2 - 13 X 2-3/4 PLOW SCREW GR8
6	150089	4	5/8 X 8 HEX SCREW GR5
7	703431	1	2" TOP SHANK PLATE
8	150017	1	3/4 X 3 BOLT GR2
9	502445	1	CENTER SHANK PLATE
10	505326	1	BOTTOM SHANK PLATE
11	150040	4	5/8 SPLIT LOCKWASHER
12	150041	4	5/8 HEX NUT

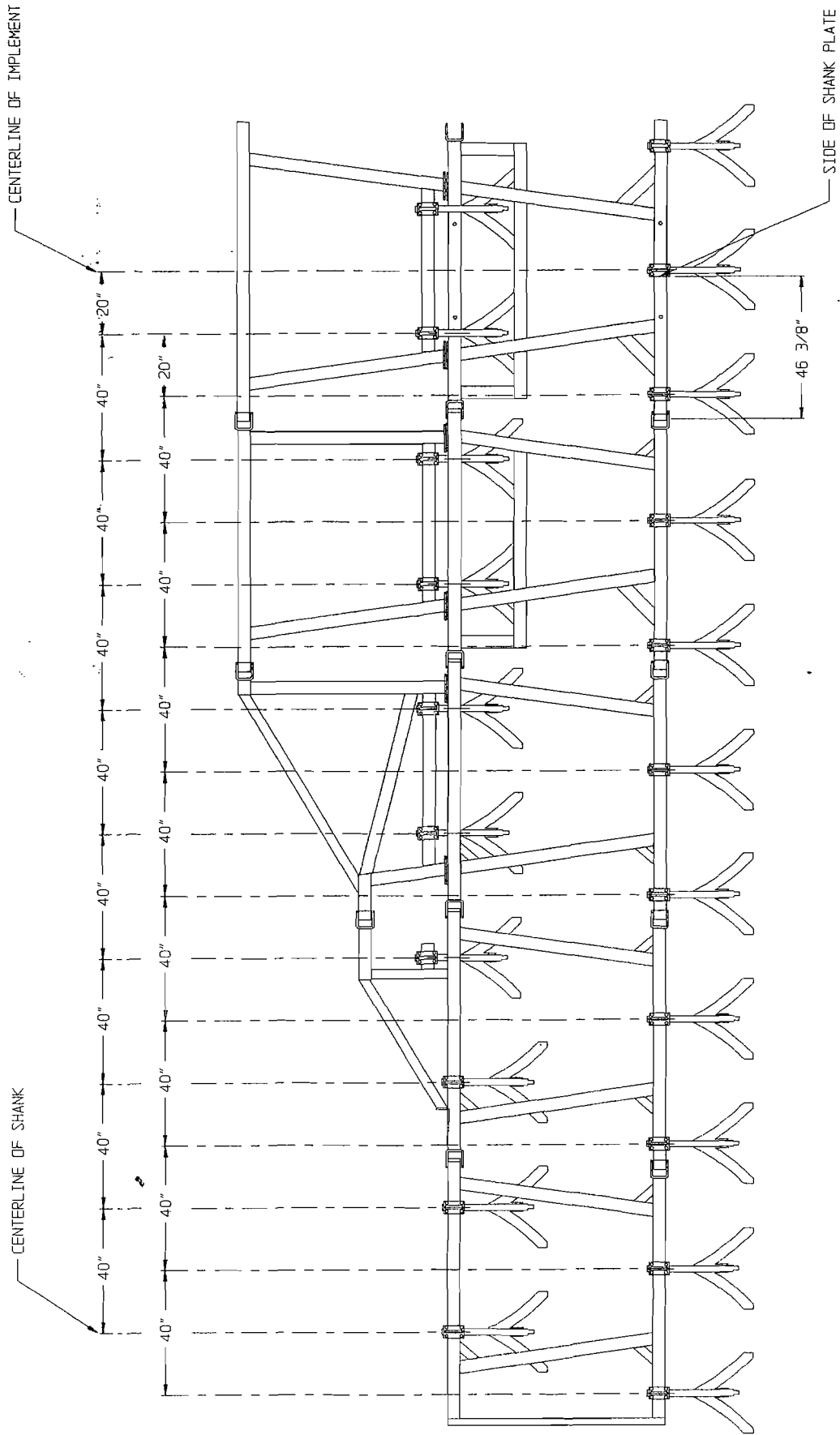
13	150037	1	3/4 SPLIT LOCKWASHER
14	150038	1	3/4 HEX FINISH NUT

1555

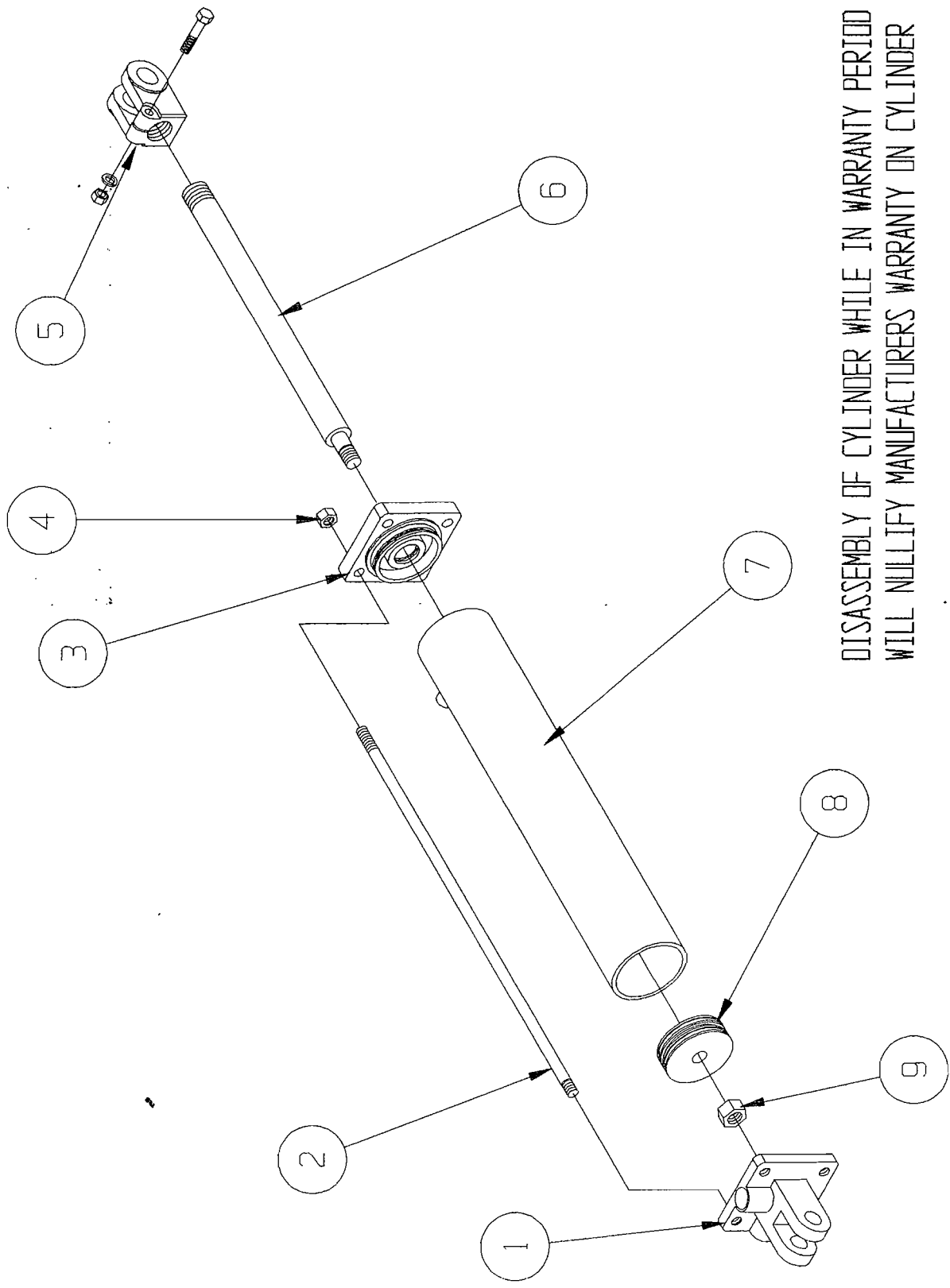


"EDGE ON" CHISEL SHANK ASSEMBLY.





SHANK PLACEMENT



DISASSEMBLY OF CYLINDER WHILE IN WARRANTY PERIOD  
WILL NULLIFY MANUFACTURERS WARRANTY ON CYLINDER

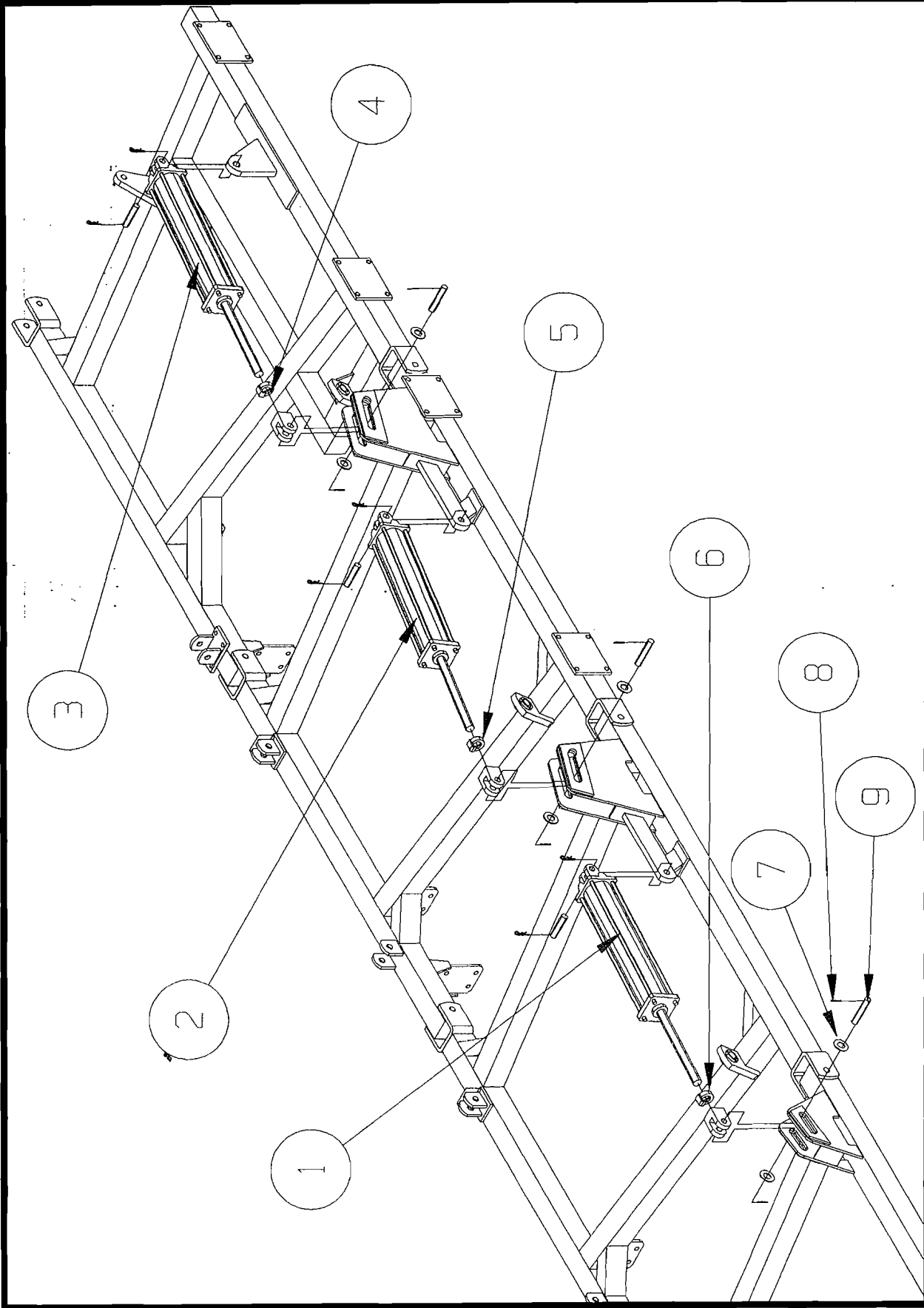
# PARTS LIST

## WINGFOLD CYLINDER BREAKDOWN

REF. PART # QTY DESCRIPTION

	330539	2	3-1/2 X 24 WINGFOLD CYLINDER
1	330598	1	BUTT
2	330595	4	TIE ROD ASSEMBLY
3	330601	1	GLAND ASSEMBLY
4		4	1/2 TIE ROD HEX NUT
5	330607	1	CLEVIS ASSEMBLY
6	330589	1	PISTON ROD
7	330592	1	TUBE ASSEMBLY
8	330604	1	PISTON
9	330610	1	LOCKNUT
	330634	1	PACKING KIT
	330540	2	4 X 24 WINGFOLD CYLINDER
1	330599	1	BUTT
2	330596	4	TIE ROD ASSEMBLY
3	330602	1	GLAND ASSEMBLY
4		4	1/2 TIE ROD HEX NUT
5	330608	1	CLEVIS ASSEMBLY
6	330590	1	PISTON ROD
7	330593	1	TUBE ASSEMBLY

8	330605	1	PISTON
9	330611	1	LOCKNUT
	330635	1	PACKING KIT
	330523	2	4-1/2 X 24 WINGFOLD CYLINDER
1	330600	1	BUTT
2	330597	4	TIE ROD ASSEMBLY
3	330603	1	GLAND ASSEMBLY
4		4	1/2 TIE ROD HEX NUT
5	330609	1	CLEVIS ASSEMBLY
6	330591	1	PISTON ROD
7	33594	1	TUBE ASSEMBLY
8	330606	1	PISTON
9	330611	1	LOCKNUT
	330636	1	PACKING KIT



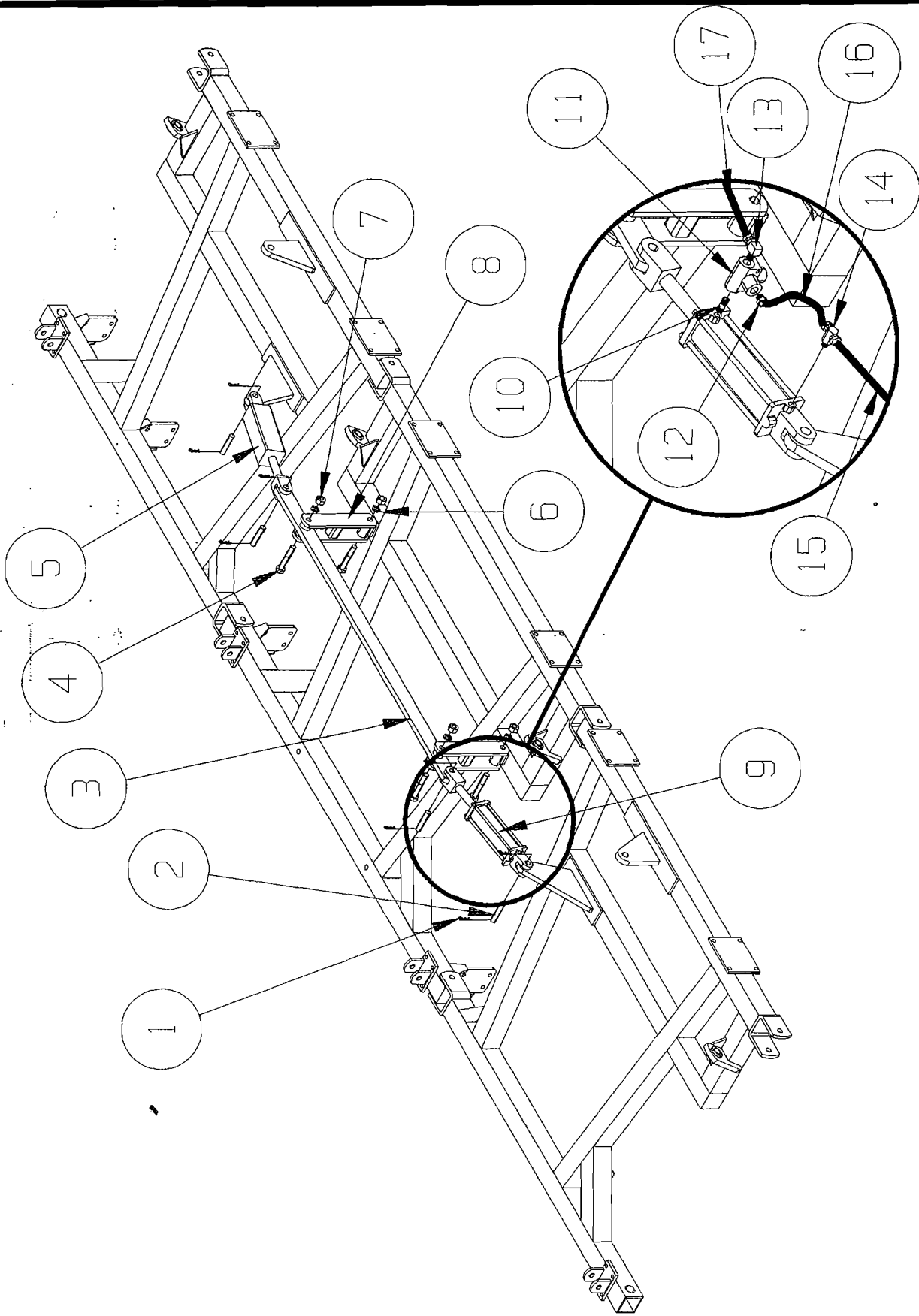
WINGFOLD DETAIL

# PARTS LIST

## WINGFOLD DETAIL

REF. | PART # | QTY | DESCRIPTION

1	330539	2	3-1/2 X 24 CYLINDER
2	330540	2	4 X 24 CYLINDER
3	330523	2	4-1/2 X 24 CYLINDER
4	703493	2	1-1/2 CYLINDER STOP
5	703491	2	1" CYLINDER STOP
6	703522	2	3-1/4 CYLINDER STOP
7	350861	3	1-1/4 X 6 CYLINDER PIN
8	150172	6	1-1/4 SAE WASHER
9	150166	6	3/16 X 2 ROLL PIN



STIFFENER LINK ASSEMBLY

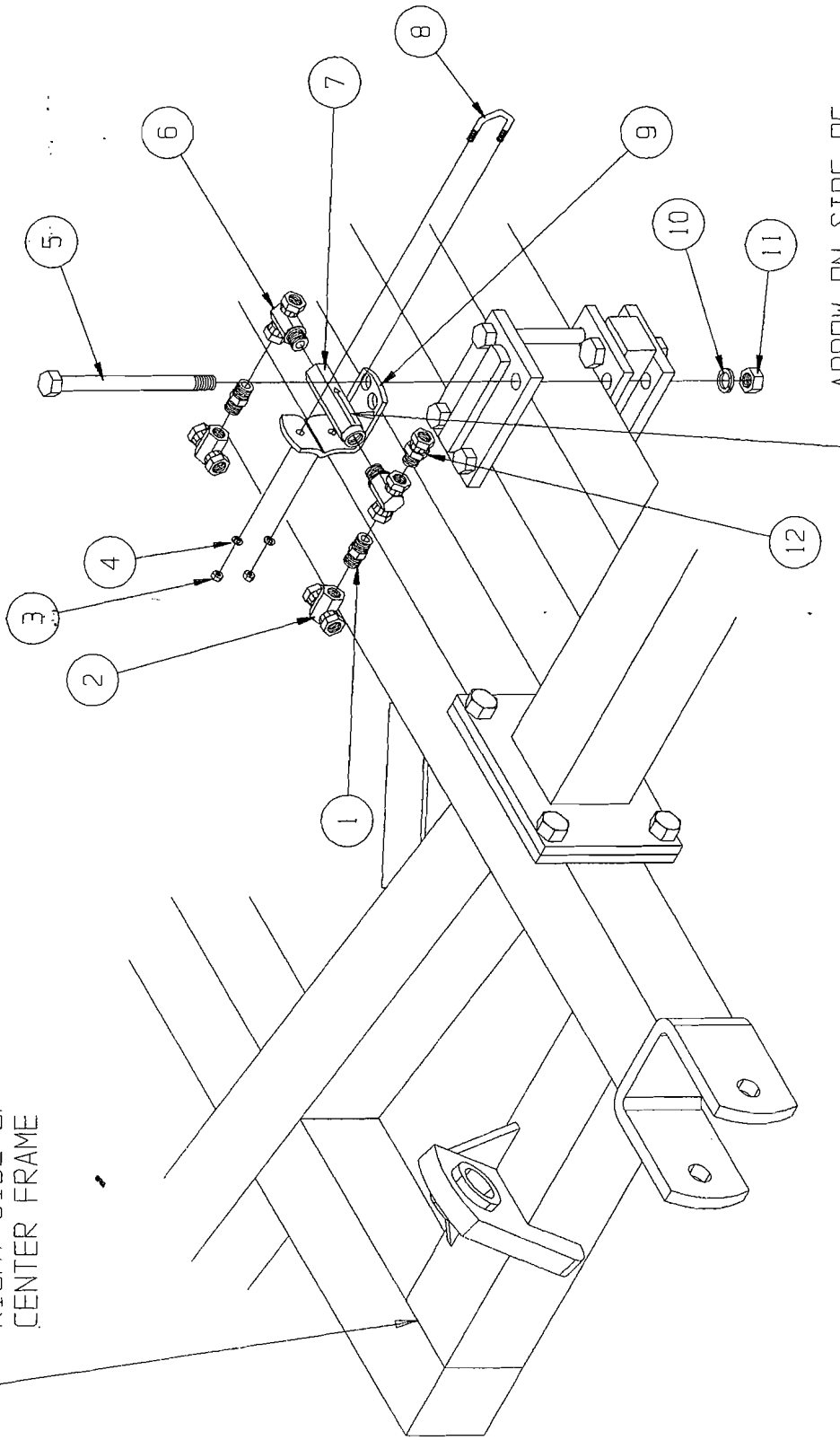
# PARTS LIST

## STIFFENER LINK ASSEMBLY

REF. | PART # | QTY | DESCRIPTION

1		8	COTTER PIN
2		4	CLEVIS PIN
3	700411	1	STIFFENER LINK
4	150168	4	1 X 5-1/2 BOLT GR2
5	700795	1	STIFFENER CYLINDER
6	150033	4	1" SPLIT LOCKWASHER
7	150034	4	1" HEX NUT
8	703412	2	RIVOT ARM
9	330248	1	3-1/2 X 8 CYLINDER
10	330284	1	1/2 NIPPLE
11	330569	1	VALVE
12	330173	2	REDUCER
13	330035	1	ELBOW 1/2 MALE 3/8 FEMALE
14	330367	1	
15	800776	1	255" HYDRAULIC HOSE ASSEMBLY
16	800350	1	26" HYDRAULIC HOSE ASSEMBLY
17	800369	1	247" HYDRAULIC HOSE ASSEMBLY

RIGHT SIDE OF  
CENTER  
FRAME



ARROW ON SIDE OF  
330524 POINTS TOWARDS  
LEFT SIDE OF MACHINE

UNFOLD PROTECTION VALVE

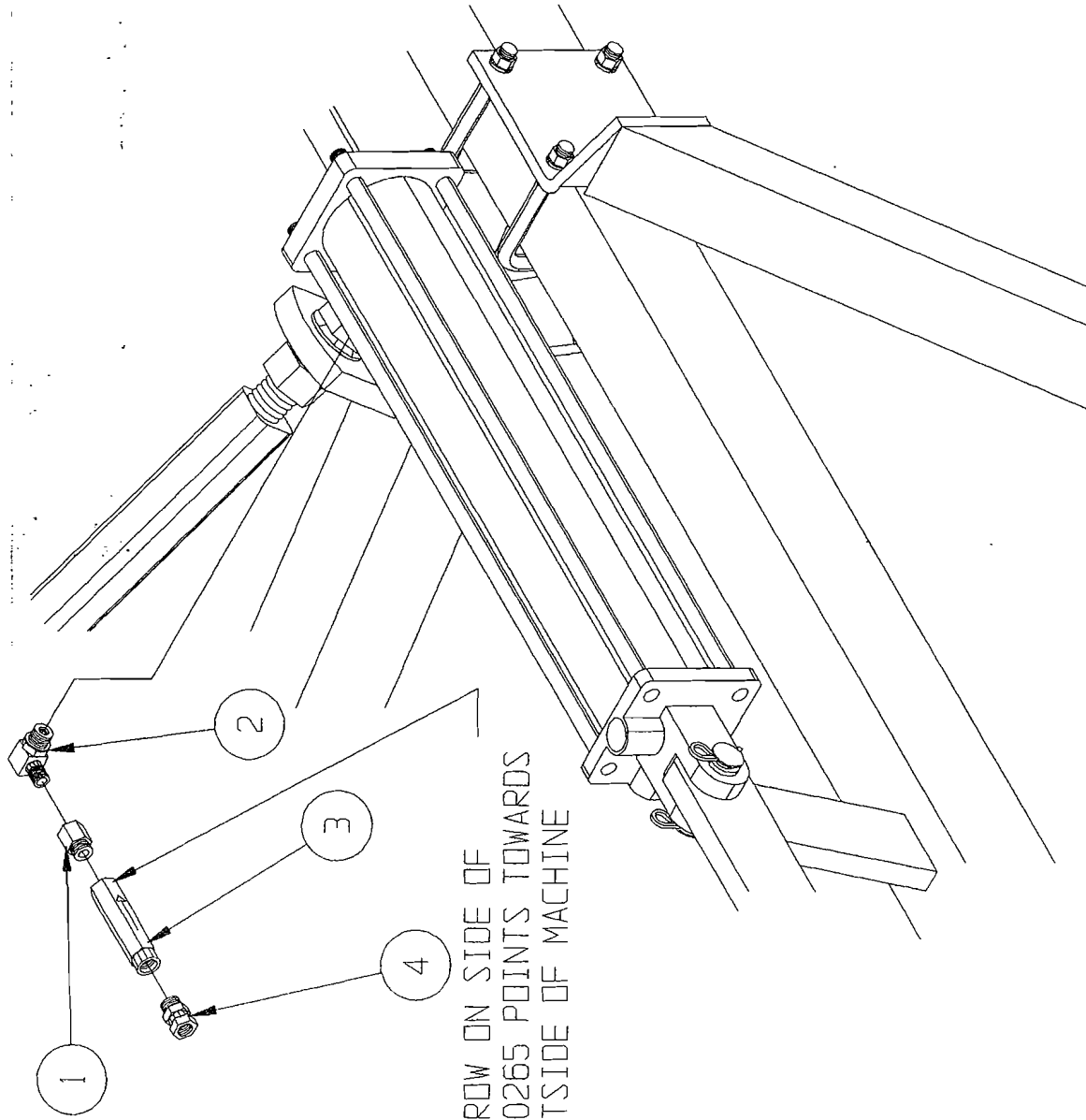


# PARTS LIST

## UNFOLD PROTECTION VALVE

REF. | PART # | QTY | DESCRIPTION

1	330292	2	3/8 MALE PIPE NIPPLE
2	330201	2	3/8 FEMALE TEE
3	150131	2	1/4 HEX FINISH NUT
4	150130	2	1/4 SPLIT LOCKWASHER
5	150448	1	5/8 X 8-1/2 BOLT GR5
6	330278	2	3/4 MALE X 3/8 FEMALE TEE
7	330524	1	RELIEF VALVE
8	150439	1	1/4 X 1-5/16 X 1-1/2 V-BOLT
9	504759	1	VALVE BRACKET
10	150040	1	5/8 SPLIT LOCKWASHER
11	150041	1	5/8 HEX FINISH NUT
12	330179	1	1/16 X 3/8 RESTRICTOR



ARROW ON SIDE OF  
330265 POINTS TOWARDS  
OUTSIDE OF MACHINE

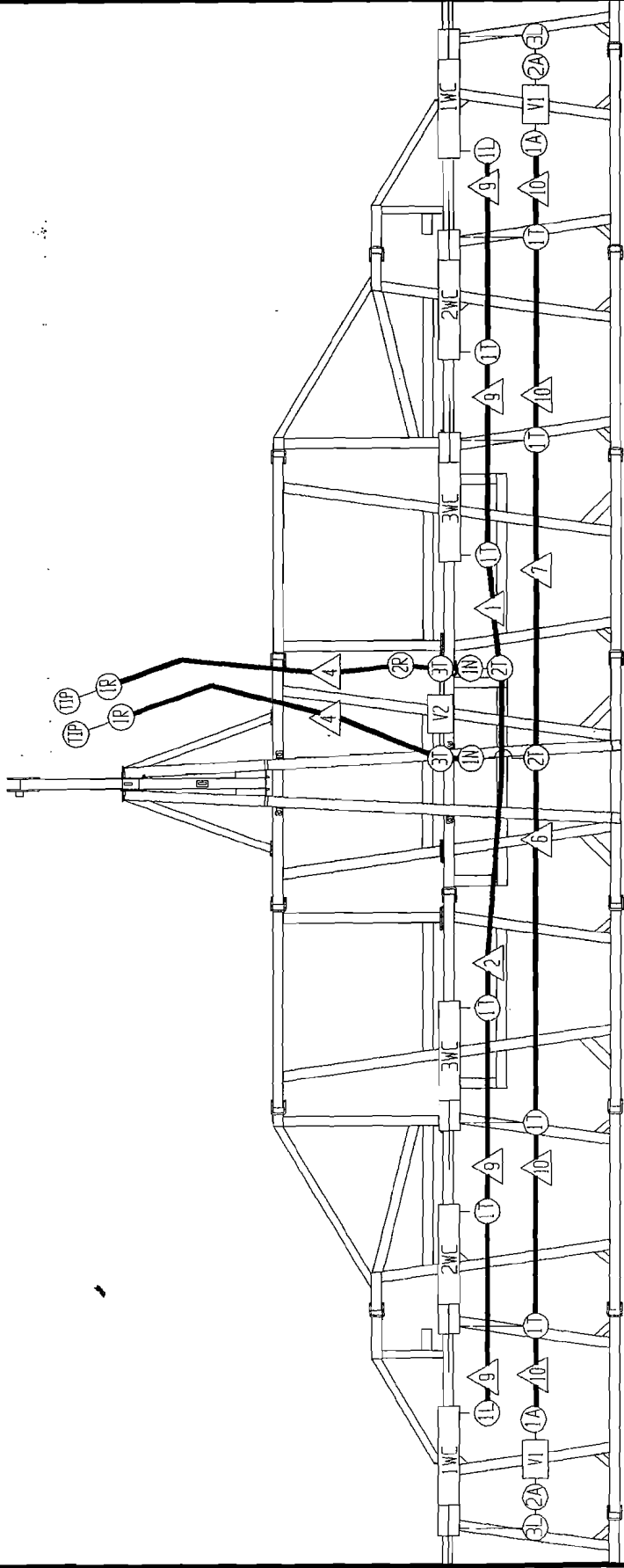
# PARTS LIST

## WINGFOLD VALVE

REF. | PART # | QTY | DESCRIPTION

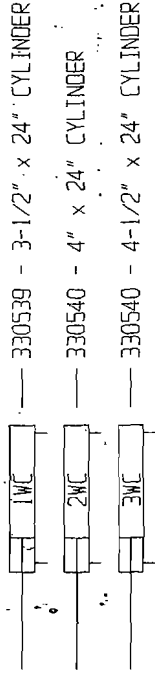
1	330272	1	SOLID O-RING ADAPTER 3/4 MALE X 3/8 FEMALE
2	330526	1	90° ADAPTER WITH 1/16 RESTRICTOR
3	330265	1	VONBERG VALVE
4	330274	1	SWIVEL ADAPTER 3/4 MALE X 3/8 FEMALE

15  
14

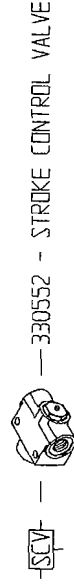


WINGFOLD HYDRAULICS SCHEMATIC

- 1DC — 330381 - 3" x 10 REPHASING CYLINDER
- 2DC — 330382 - 3 1/4" x 10 REPHASING CYLINDER
- 3DC — 330434 - 3 1/2" x 10" REPHASING CYLINDER
- 4DC — 330435 - 3 3/4" x 10" REPHASING CYLINDER
- 5DC — 330495 - 4" x 10" REPHASING CYLINDER
- 1 — 800363 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 136 INCHES.
- 2 — 800358 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 100 INCHES.
- 3 — 802100 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 78 INCHES.
- 4 — 800301 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 62 INCHES.
- 5 — 802169 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 327 INCHES.
- 6 — 800958 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 126 INCHES.
- 7 — 802190 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 40 INCHES.
- 8 — 800808 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 47 1/2 INCHES.
- 9 — 800422 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 64 INCHES.
- 10 — 802309 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 14 INCHES.
- 11 — 802229 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 124 INCHES.
- 12 — 800603 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 98 INCHES.



- 1L — 330275 - 90 DEGREE ELBOW 3/4" - 16 MALE x 3/8" NPT FEMALE W/RESTRICT
- 2L — 330276 - 90 DEGREE ELBOW 3/4" - 16 MALE x 3/8" NPT FEMALE
- 2T — 330201 - 3/8" FEMALE TEE
- 3T — 330278 - TEE 3/4" - 16 MALE x 3/8" NPT FEMALE
- 1T — 330277 - TEE 3/4" - 16 MALE x 3/8" NPT FEMALE W/RESTRICTOR
- 1R — 330173 - 1/2" x 3/8" REDUCER BUSHING
- 2R — 330179 - 1/16" x 3/8" RESTRICTOR
- 1N — 330292 - 3/8" MALE PIPE NIPPLE
- 1P — 330563 - 3/4" UNF HEX O-RING PLUG
- 1A — 330274 - SWIVEL ADAPTER 3/4" - 16 MALE x 3/8" NPT FEMALE
- 1TP — 330311 - HYDRAULIC MALE TIP - 8010-4

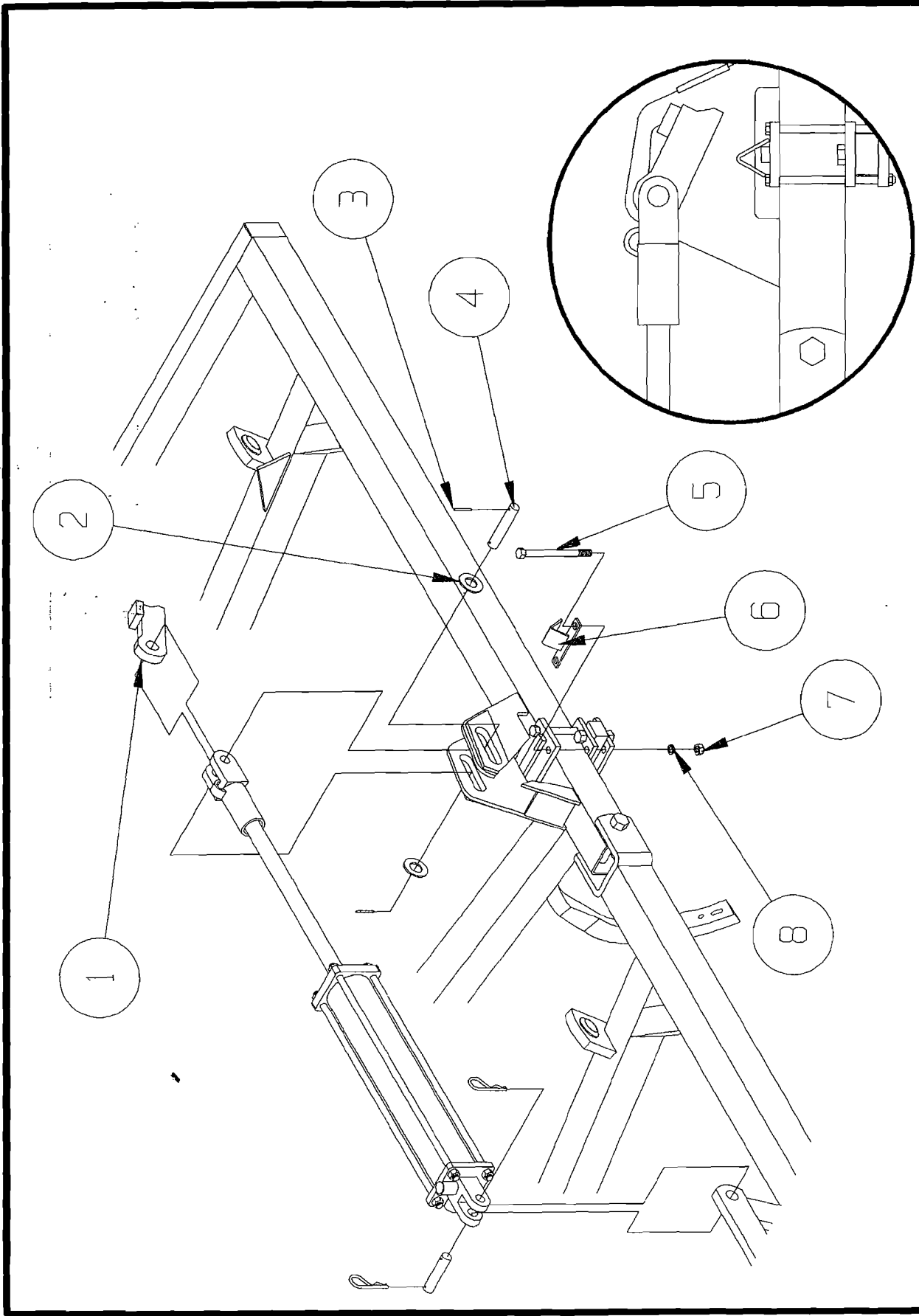


# PARTS LIST

## GRAVITY TAB DETAIL

REF. | PART # | QTY | DESCRIPTION

1	703567	2	GRAVITY TAB
2	150172	4	1-1/4 SAE FLAT WASHER
3	150166	4	3/16 X 2 ROLL PIN
4	350861	2	1-1/4 X 6 CLEVIS PIN
5	150448	4	5/8 X 8-1/2 BOLT GR5
6	703432	2	GRAVITY LOCK STOP TAB
7	150041	4	5/8 HEX NUT
8	150040	4	5/8 SPLIT LOCK WASHER



GRAVITY TAB DETAIL

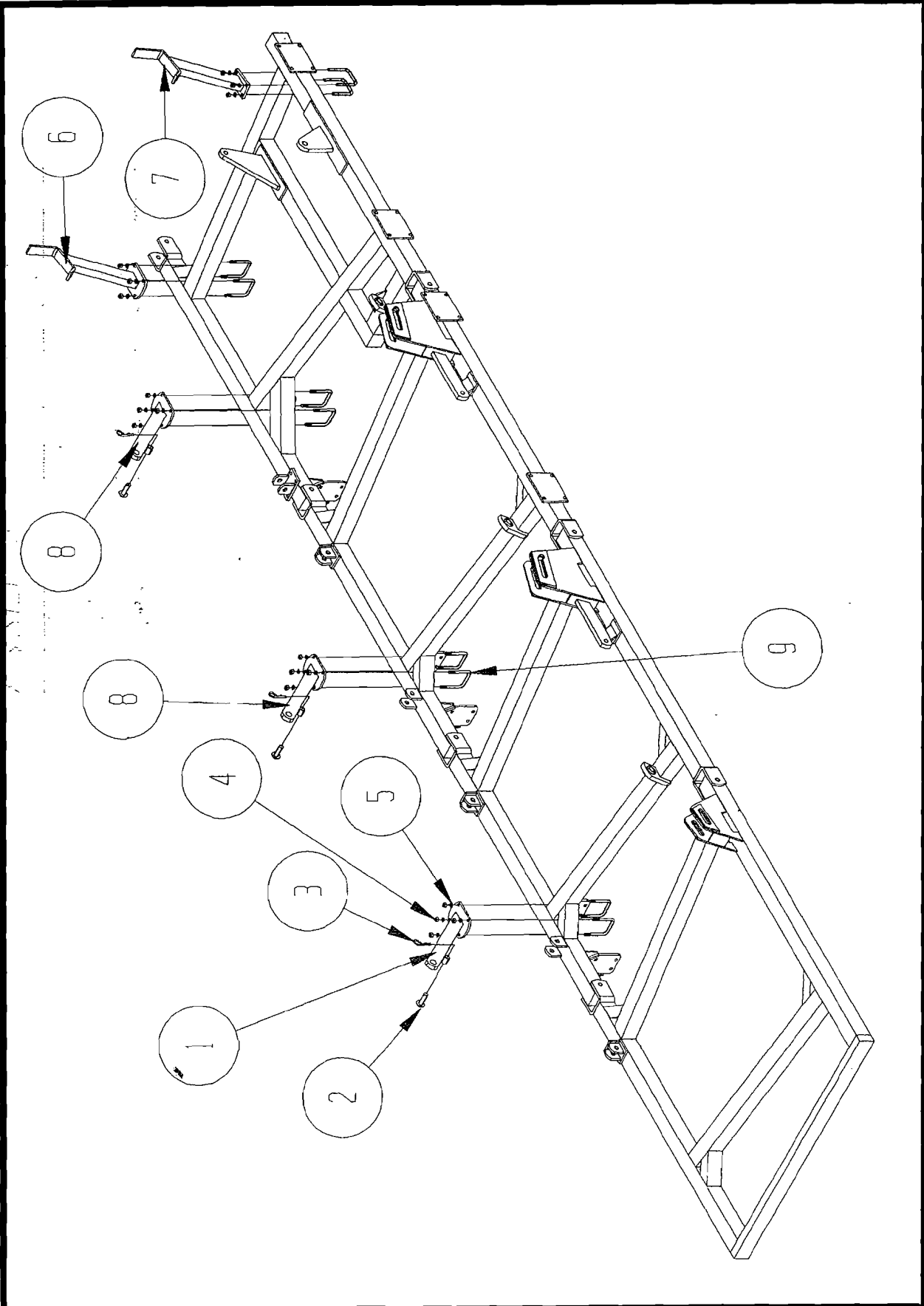
# PARTS LIST

## WING LOCK-UP AND REST ASSEMBLY

REF. | PART # | QTY | DESCRIPTION

1	703216	1	LEFT WING LOCK-UP ARM
2	150056	3	1" X 2-1/2 CLEVIS PIN
3	150048	3	LARGE HAIRPIN
4	150041	20	5/8 HEX NUT
5	150040	20	5/8 SPLIT LOCKWASHER
6	703428	2	REAR WING REST ARM
7	703426	1	LEFT FRONT WING REST ARM
	703427	1	RIGHT FRONT WING REST ARM
8		2	LOCK-UP ARMS
9	150100	10	5/8 X 4 U-BOLT





WING LOCK-UP AND REST ASSEMBLY 21

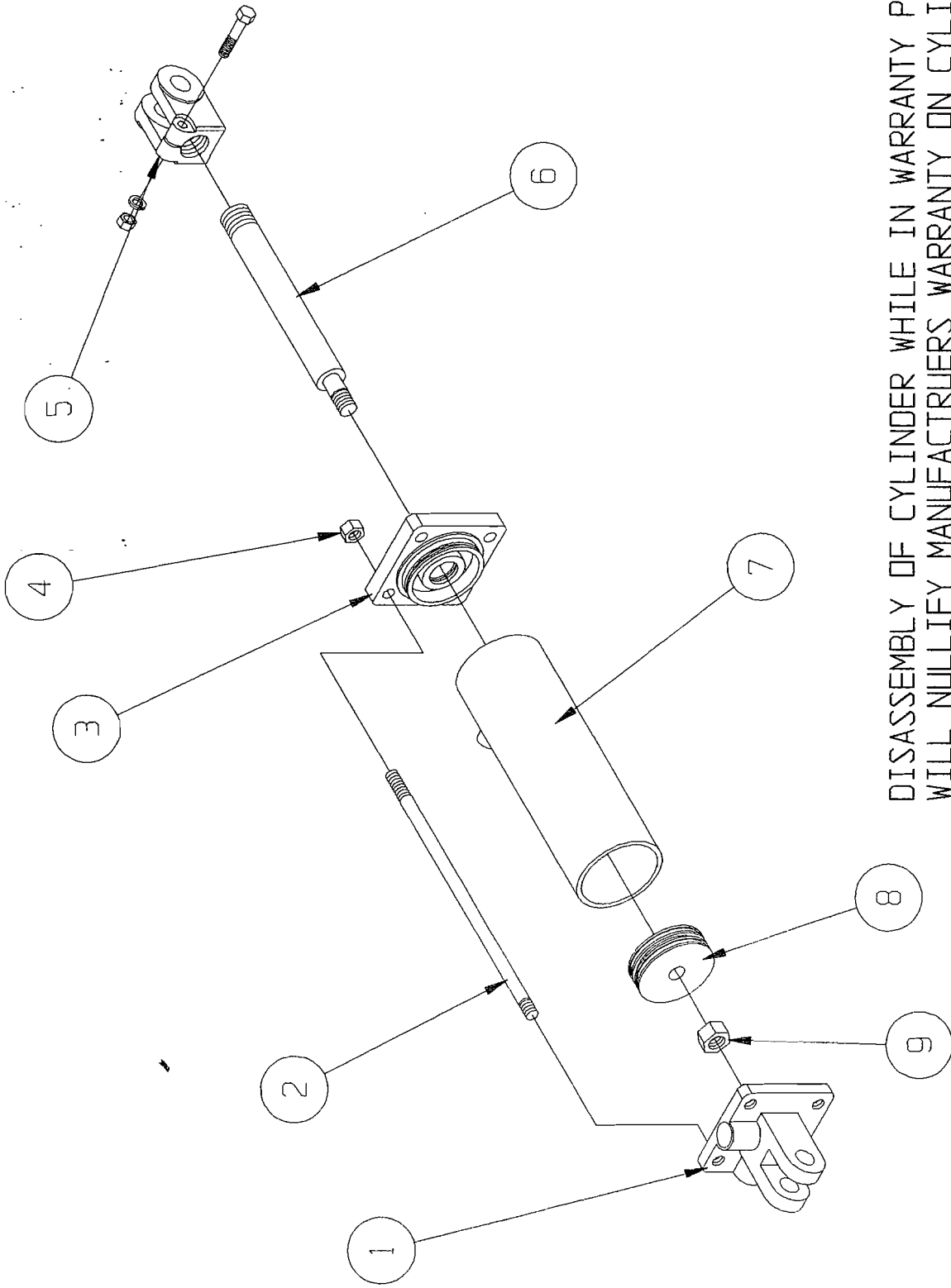
# PARTS LIST

## DEPTH CONTROL CYLINDER BREAKDOWN

### REF. | PART # | QTY | DESCRIPTION

	330381	1	3 x 10 REPHASING CYLINDER
1		1	BASE CASTING
2		4	TIE ROD BOLT
3		1	HEAD CASTING
4		4	1/2 TIE ROD HEX NUT
5	330666	1	CLEVIS
6	330638	1	1-1/4 PRINCE CYLINDER ROD
7		1	BARREL
8		1	3-1/2 PISTON
9		1	CYLINDER NUT
10	330719	1	PACKING KIT
			3-1/4 X 10 REPHASING CYLINDER
1		1	BASE CASTING
2		4	TIE ROD BOLT
3		1	HEAD CASTING
4		4	1/2 TIE ROD HEX NUT
5	330666	1	CLEVIS
6	330638	1	1-1/4 PRINCE CYLINDER ROD
7		1	BARREL
8		1	3-1/2 PISTON
9		1	CYLINDER NUT
10	330720	1	PACKING KIT
			3-1/2 x 10 REPHASING CYLINDER
1		1	BASE CASTING
2		4	TIE ROD BOLT
3		1	HEAD CASTING
4		4	1/2 TIE ROD HEX NUT
5	330666	1	CLEVIS

6	330638	1	1-1/4 PRINCE CYLINDER ROD
7		1	BARREL
8		1	3-1/2 PISTON
9		1	CYLINDER NUT
10	330721	1	PACKING KIT
			3-3/4 X 10 REPHASING CYLINDER
1	330435	1	BASE CASTING
2		4	TIE ROD BOLT
3		1	HEAD CASTING
4		4	1/2 TIE ROD HEX NUT
5	330667	1	CLEVIS
6	330639	1	1-3/8 PRINCE CYLINDER ROD
7		1	ROD
8		1	3-3/4 PISTON
9		1	CYLINDER ROD NUT
			PACKING KIT
	330722	1	PACKING KIT
			4 X 10 REPHASING CYLINDER
1	330495	1	BASE CASTING
2		4	TIE ROD BOLT
3		1	HEAD CASTING
4		4	1/2 TIE ROD HEX NUT
5	330667	1	CLEVIS
6	330639	1	1-3/8 PRINCE CYLINDER ROD
7		1	BARREL
8		1	4" PISTON
9		1	CYLINDER NUT
10	330723	1	PACKING KIT



DISASSEMBLY OF CYLINDER WHILE IN WARRANTY PERIOD  
 WILL NULLIFY MANUFACTURERS WARRANTY ON CYLINDER

DEPTH CONTROL CYLINDER BREAKDOWN

# PARTS LIST

## SINGLE POINT DEPTH CONTROL DETAIL

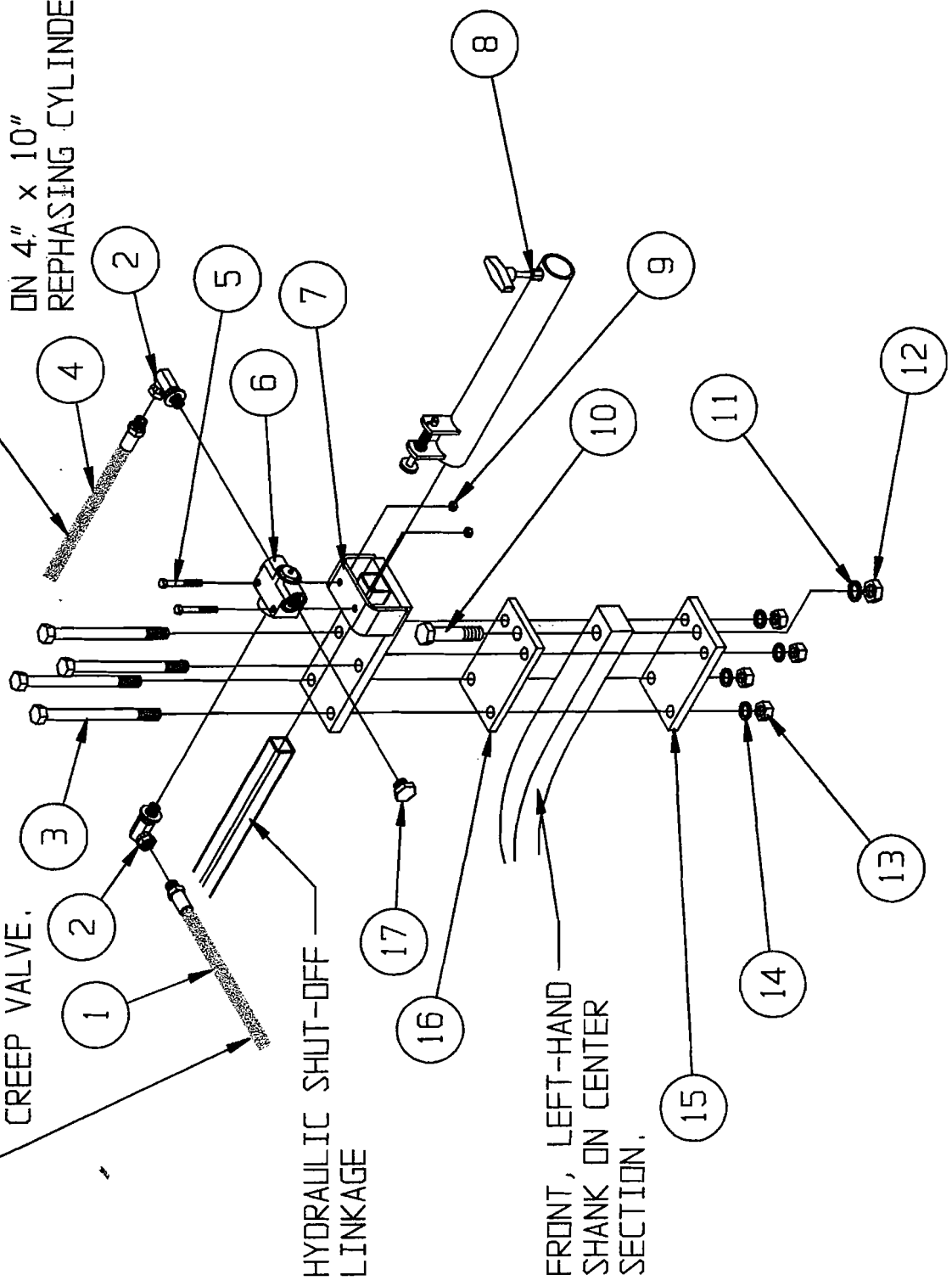
### REF. PART # QTY DESCRIPTION

1	800367	1	3/8 WIRE HYD HOSE ASSEMBLY 126"
2	330276	2	90° ELBOW 3/4 MALE X 3/8 FEMALE
3	150089	4	5/8 X 8 BOLT GR5
4	802100	1	3/8 WIRE HYD. HOSE ASSEMBLY 78"
5	150350	2	5/16 X 2-1/2 BOLT GR2
6	330552	1	STROKE CONTROL VALVE
7	703358	1	HYD. SHUT OFF HOLDER
8	802329	1	DEPTH ADJUSTER ASSEMBLY
9	150506	2	5/16 NYLON INSERT LOCKNUT
10	150017	1	3/4 X 3-1/2 BOLT GR5
11	150037	1	3/4 SPLIT LOCKWASHER
12	150038	1	3/4 HEX FINISH NUT
13	150041	4	5/8 HEX FINISH NUT
14	150040	4	5/8 SPLIT LOCKWASHER

15	505326	1	BOTTOM SHANK PLATE
16	502445	1	CENTER SHANK PLATE
17	330563	1	3/4 UNF O-RING PLUG

TO PORT MARKED  
C1 ON ANTI-  
CREEP VALVE.

TO TEE FITTING THEN  
TO THE BOTTOM PORT  
ON 4" x 10"  
REPHASING CYLINDER.



HYDRAULIC SHUT-OFF  
LINKAGE

FRONT, LEFT-HAND  
SHANK ON CENTER  
SECTION.

# SINGLE POINT DEPTH CONTROL DETAIL

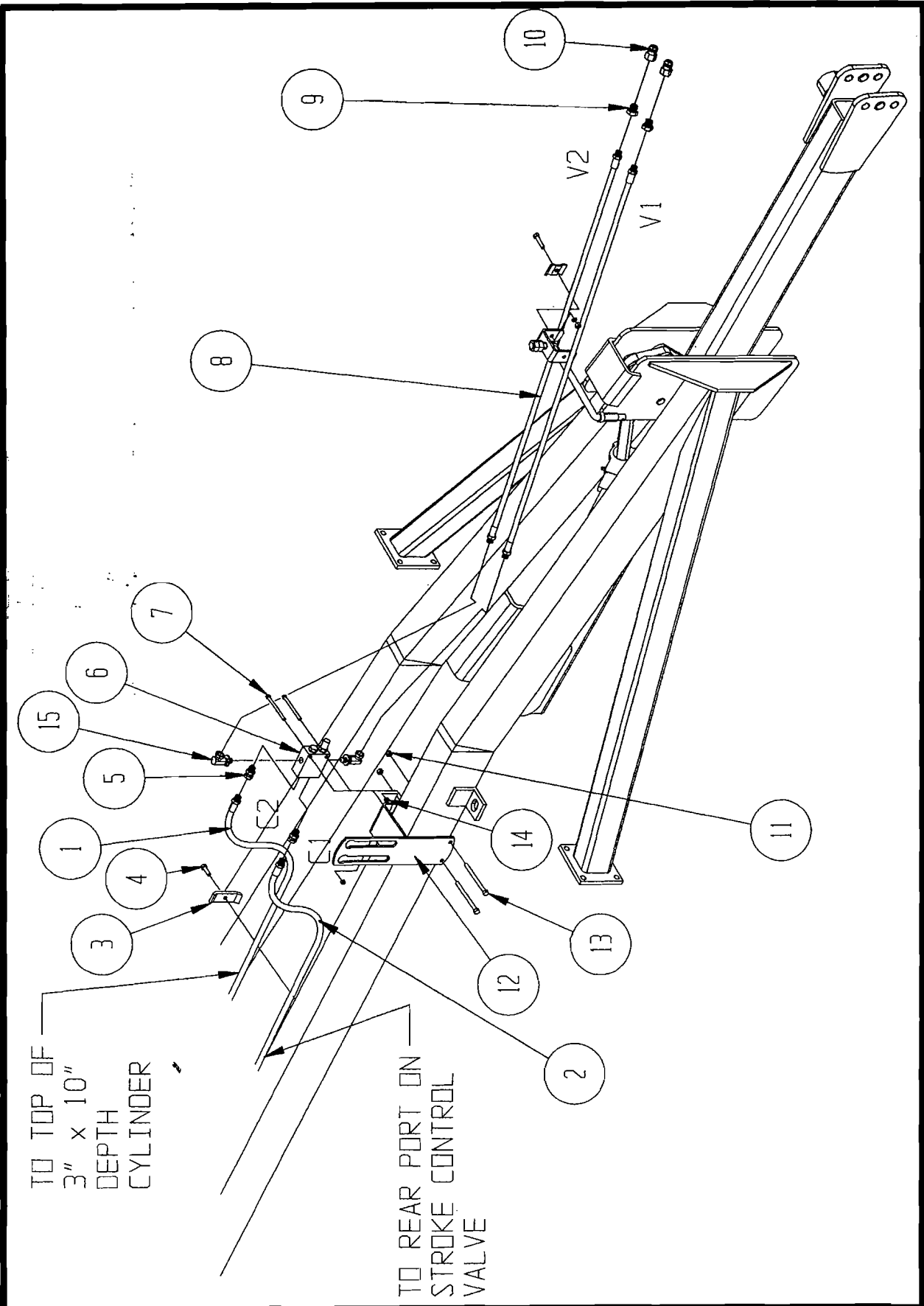
# PARTS LIST

## FM9-63 ANTI-CREEP VALVE ASSEMBLY

**REF. | PART # | QTY | DESCRIPTION**

1	800371	1	3/8 WIRE HYD. HOSE ASSEMBLY 319"
2	800367	1	3/8 WIRE HYD. HOSE ASSEMBLY 207"
3	503795	1	HOSE CLAMP
4	150224	1	3/8 X 1-1/2 SELF TAPING SCREW
5	330274	2	SWIVEL ADAPTER 3/4 MALE X 3/8 FEMALE
6	330553	1	ANTI-CREEP VALVE
7	150350	2	5/16 X 2 1/2 BOLT, GR2
8	800958	2	3/8 WIRE HYD. HOSE ASSEMBLY 126"
9	330173	2	1/2 X 3/8 REDUCER BUSHING
10	330311	2	MALE HYDRAULIC NIPPLE
11	150505	2	3/8 NYLON INSERT LOCKNUT
12	703422	1	VALVE BRACKET
13	150221	2	3/8 X 5 BOLT GR2
14	150506	2	5/16 NYLON INSERT LOCKNUT

15	330276	2	90° ELBOW-3/4-16 MALE x 3/8NPT FEMALE
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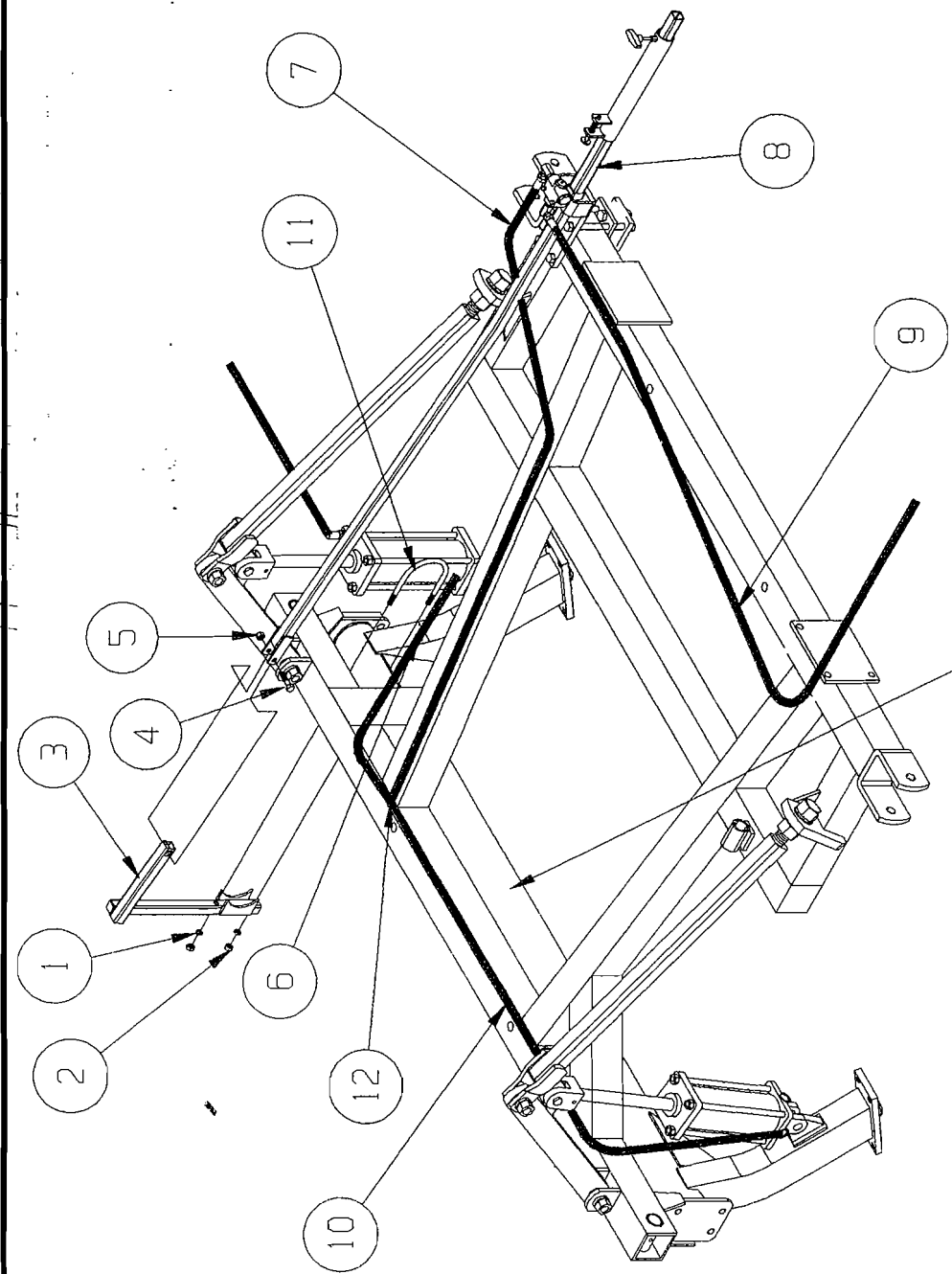


# PARTS LIST

## SINGLE POINT DEPTH CONTROL ASSEMBLY

REF.	PART #	QTY	DESCRIPTION
1	150030	2	1/2" SPLIT LOCKWASHER
2	150031	2	1/2" HEX FINISH NUT
3	703357	1	HYDRAULIC SHUT OFF LEVER
4	150313	1	1/2 X 2-1/2 BOLT GR2
5	150418	1	1/2 NYLON INSERT LOCKNUT
6		1	HYDRAULIC HOSE ASSEMBLY
7			HYDRAULIC HOSE ASSEMBLY
8	703418	1	HYDRAULIC SHUT OFF LINKAGE
9		1	HYDRAULIC HOSE ASSEMBLY
10			HYDRAULIC HOSE ASSEMBLY
11	150530	1	1/2 X 4-1/2 ROUND U-BOLT





CENTER  
SECTION  
ROCKSHAFT

1DCB — 330381 - 3" x 10 REPHASING CYLINDER

2DCB — 330382 - 3 1/4" x 10 REPHASING CYLINDER

3DCB — 330434 - 3 1/2" x 10" REPHASING CYLINDER

4DCB — 330435 - 3 3/4" x 10" REPHASING CYLINDER

5DCB — 330495 - 4" x 10" REPHASING CYLINDER

1 — 800363 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 136 INCHES.

2 — 800358 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 100 INCHES.

3 — 802100 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 78 INCHES.

4 — 800301 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 62 INCHES.

5 — 802169 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 327 INCHES.

6 — 800958 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 126 INCHES.

7 — 802190 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 40 INCHES.

8 — 800808 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 47 1/2 INCHES.

9 — 800422 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 64 INCHES.

10 — 802309 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 14 INCHES.

11 — 802229 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 124 INCHES.

12 — 800803 - 3/8" WIRE HYDRAULIC HOSE ASSEMBLY - 98 INCHES.

1WC — 330539 - 3-1/2" x 24" CYLINDER

2WC — 330540 - 4" x 24" CYLINDER

3WC — 330540 - 4-1/2" x 24" CYLINDER

1L — 330275 - 90 DEGREE ELBOW 3/4" - 16 MALE x 3/8" NPT FEMALE W/RESTRICTOR

2L — 330276 - 90 DEGREE ELBOW 3/4" - 16 MALE x 3/8" NPT FEMALE

2T — 330201 - 3/8" FEMALE TEE

3T — 330278 - TEE 3/4" - 16 MALE x 3/8" NPT FEMALE

1T — 330277 - TEE 3/4" - 16 MALE x 3/8" NPT FEMALE W/RESTRICTOR

1R — 330173 - 1/2" x 3/8" REDUCER BUSHING

2R — 330179 - 1/16" x 3/8" RESTRICTOR

1N — 330292 - 3/8" MALE PIPE NIPPLE

1P — 330563 - 3/4" UNF HEX O-RING PLUG

1A — 330274 - SWIVEL ADAPTER 3/4" - 16 MALE x 3/8" NPT FEMALE

1TP — 330311 - HYDRAULIC MALE TIP - 8010-4



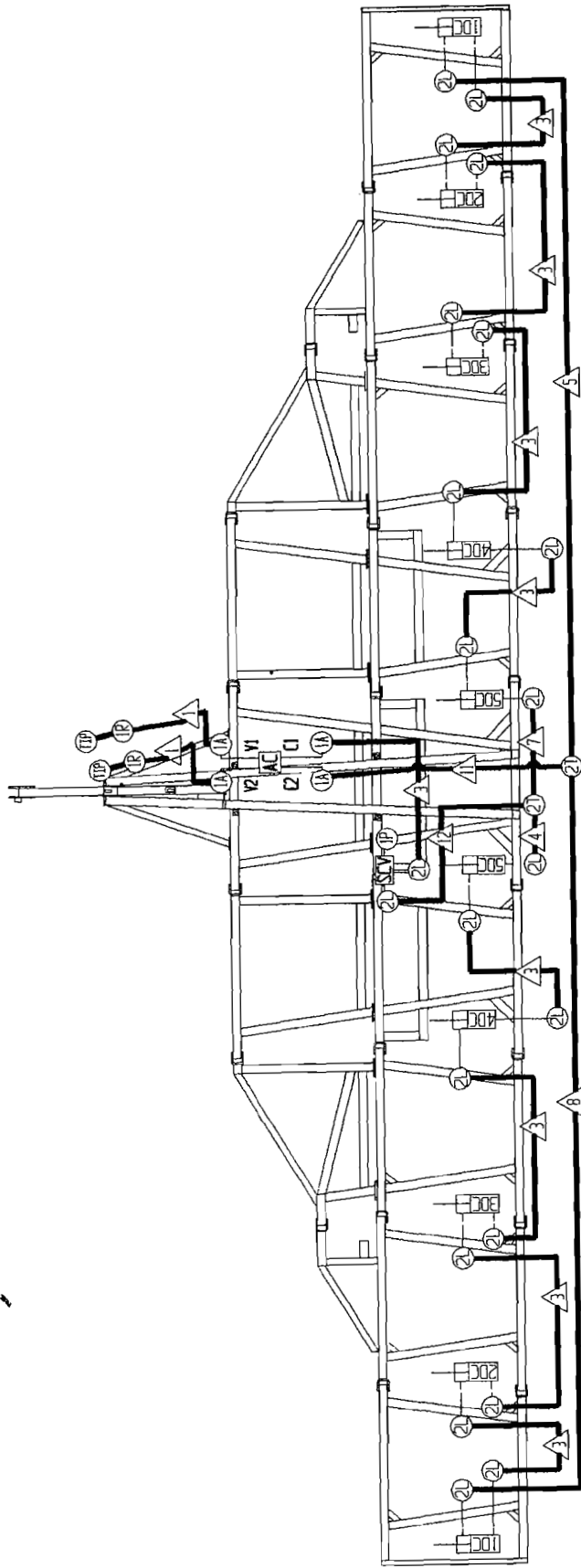
330553 - ANTI-CREEP VALVE



330552 - STROKE CONTROL VALVE



330524 - RELIEF VALVE (VONBERG 90163-1700)



DEPTH CONTROL HYDRAULICS SCHEMATIC 26

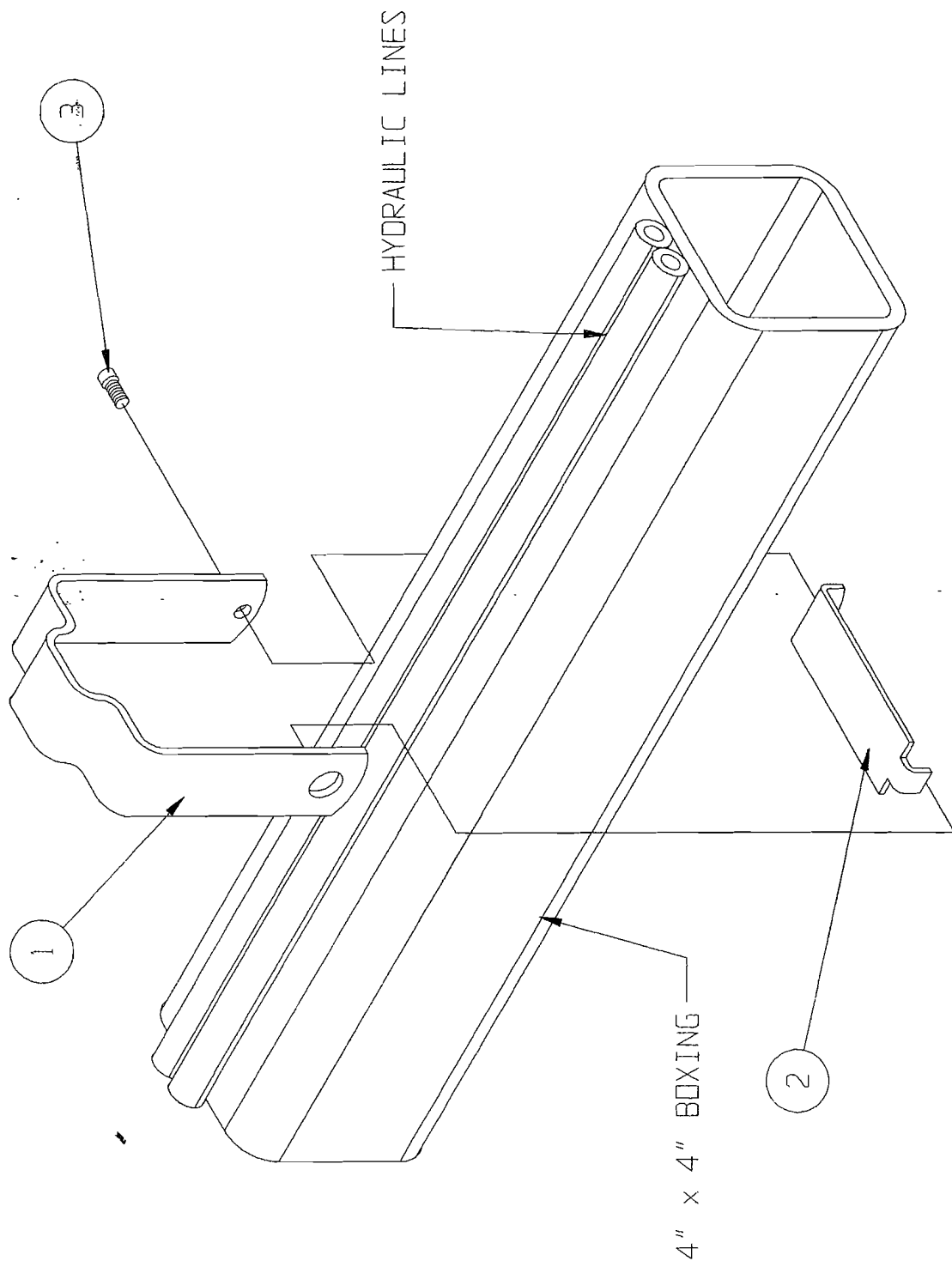
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# PARTS LIST

## HYDRAULIC HOSE CLAMP

REF. | PART # | QTY | DESCRIPTION

1	350946	01	HYDRAULIC HOSE CLAMP
2	506046	1	HYDRAULIC HOSE CLIP
3	150492	1	1/4 X 1/2 TYPE F THREAD CUTTING SCREW



HYDRAULIC HOSE CLAMP

# ASSEMBLY INSTRUCTIONS FOR FM9-63

1. BEGIN BY PUTTING ANGLE ZERKS IN ALL HINGE POINTS AND STRAIGHT ZERKS IN ALL ROCKSHAFTS.
2. SET CENTER FRAME ON STANDS SO THAT IT CAN BE SAFELY WORKED ON, UNDER AND AROUND. ATTACH RIGHT AND LEFT CENTER FRAMES USING LOOSE BUSHING, 1" X 7" GRADE 5 HEX SCREWS, LOCKWASHERS AND NUTS. POSITION STANDS UNDER INSERT CENTER FRAMES AND REPEAT PROCEDURE FOR INSERT WING FRAMES AND WING FRAMES. TIGHTEN ALL BOLTS.
3. LAYOUT ROCKSHAFTS IN PROPER LOCATIONS UNDER EACH FRAME. PLACE BEARINGS #300044 ON EACH END OF ROCKSHAFT AND ALIGN ROCKSHAFTS BETWEEN MOUNTING PLATES LOCATED UNDERNEATH OF FRAMES. SECURE WITH 3/4" X 2" BOLTS. MOUNT ALL ROCKSHAFTS IN LIKE MANNER. TIGHTEN ALL BOLTS.
4. INSERT 6-BOLT HUB AND SPINDLE ASSEMBLIES INTO SPINDLE TUBE ON INSERT WING & WING AXLE ARMS. ALIGN HOLE IN SPINDLE WITH HOLE IN TUBE AND SECURE WITH 1/2" X 3-1/2", GRADE 5 HEX SCREW.
5. INSERT WALKING DUAL AXLE HUB AND SPINDLE ASSEMBLIES ON PILOT PIN ON END OF CENTER, LEFT AND RIGHT INSERT CENTER ROCKSHAFT AND SECURE WITH 3/4" X 2-1/2", GRADE 5 HEX SCREW. TIGHTEN ALL BOLTS.
6. MOUNT WHEELS USING 11L-12 PLY TIRES ON CENTER, AND RIGHT INSERT CENTER SECTIONS. MOUNT WHEELS USING 11L-8 PLY ON REMAINING SECTIONS. BE SURE TO TIGHTEN ALL LUG NUTS SECURELY.
7. SCREW 1-1/2" NUT ONTO EACH DEPTH LINKAGE, LEAVING APPROXIMATELY 5" OF THE THREAD SHOWING. SLP THE THREADED SHAFT THROUGH THE WELDED BUSHING, LOCATED AT THE FRONT OF EACH FRAME SECTION. SCREW ON THE OTHER 1-1/2" NUT AND POSITION TO MIDDLE OF ADJUSTMENT FOR A PRELIMINARY SETTING. LOCATE ANCHOR LINKAGE ON BACK OF FRAME AND SECURE WITH 1" X 4-1/2", GRADE 5 HEX SCREW AND 1" LOCKNUT. CONTINUE SAME PROCEDURE ON ALL FRAMES. TIGHTEN LOCKNUTS, STILL ALLOWING ARM TO PIVOT.
8. ATTACH CENTER TRUSS TO THE CENTER FRAME USING 3/4" X 2" HEX SCREWS. PLACE LOOSE BUSHING IN HINGE HOLES.
9. PLACE TONGUE ASSEMBLY UNDER CENTER FRAME AND TRUSS AND ATTACH TO THE FRONT TWO (2) HOLES IN THE CENTER TRUSS CORNERS WITH 1" X 8" GRADE 5 HEX SCREWS. (NOTE: THIS PROCEDURE ALLOWS EASIER CONNECTION OF ANY MISALIGNMENT OF TONGUE MOUNTING HOLES TO FRAME.) ATTACH REAR OF TONGUE TO FRAME WITH 1" X 7", GRADE 5 HEX SCREWS. TIGHTEN TRUSS SCREWS FIRST THEN TIGHTEN TONGUE SCREWS.
10. ASSEMBLE RIGHT AND LEFT INSERT TRUSSES TO RIGHT AND LEFT INSERT CENTER FRAMES USING 3/4" X 2" HEX SCREWS. (NOTE: BE SURE TO PLACE LOOSE HINGE BUSHING IN HINGE HOLES.) ATTACH HINGES TO CENTER TRUSS WITH 1" X 7" GRADE 5 HEX SCREWS.
11. ASSEMBLE RIGHT AND LEFT EXTENSION TRUSSES TO RIGHT AND LEFT INSERT WING FRAMES USING 5/8" X 4" U-BOLTS. ATTACH HINGES TO INSERT TRUSSES WITH 1" X 7" GRADE 5 HEX SCREWS.
12. REFERRING TO TONGUE ASSEMBLY DETAIL PAGE, THREAD ONE 1-1/4" HEX NUT TO CENTER OF THREADED LENGTH ON THE TONGUE ADJUSTMENT SCREW. INSERT THE TONGUE ADJUSTMENT SCREW UPWARDS INTO BALL JOINT ON THE FRONT OF THE TONGUE AND SECURE WITH THE OTHER 1-1/4" HEX NUT. ADJUST TO TRACTOR BAR HEIGHT.
13. INSERT EXTENSION TONGUE INTO TONGUE AND ATTACH 1-1/4" X 7" HEX SCREW. ATTACH EITHER CAST HITCH USING 1" X 7", GRADE 5 HEX SCREWS; OR OPTIONAL WELDED PIVOT HITCH WITH BUSHING AND 1-1/4" X 7" GRADE 5, HEX SCREW TO EXTENSION TONGUE.
14. ASSEMBLE HOSE STAND AS PER DRAWING LEAVING SIDE HOSE CLAMPS LOOSE UNTIL PLACEMENT OF HOSES. INSERT HOSE STAND INTO RECEIVER BUSHING ON THE SIDE OF TONGUE PLACE. ATTACH TONGUE JACK AND WRENCH TO TONGUE AS SHOWN ON FRAME DRAWING.
15. NOTE SCHEMATICS OF HYDRAULIC SYSTEM: LOOSEN PLASTIC PLUGS IN CYLINDER PORTS TO ALLOW THEM TO BE CONNECTED TO THE ROCKSHAFTS AND ANCHOR LINKAGES. (NOTE: BE SURE TO PLACE ROAD LOCK-OUTS AS SHOWN TO RAM END WITH 1" X 3-7/8" CLEVIS PIN TO THE ANCHOR LINKAGE.) PIN ROAD LOCK-OUT IN UP POSITION WITH 3/8" X 4-1/2" HITCH PINS AND CLIPS PROVIDED. PIN BASE END OF 24" WINGFOLD CYLINDERS TO ANCHORS. (NOTE: BE SURE TO ATTACH PIVOT ANCHOR TO CENTER FRAME WITH 1" X 2-1/2" CYLINDER PIN THEN ATTACH 4" X 24" CYLINDER AND STIFFENER LINKAGE WITH 1-1/4" X 4-9/16" CLEVIS PIN. PROP UP RAM END OF CYLINDERS UNTIL HYDRAULIC SYSTEM IS CHARGED WITH OIL. INSTALL ALL HYDRAULIC FITTINGS IN PROPER LOCATIONS AND TIGHTEN. (NOTE: RESTRICTED FITTINGS ON BOTH ENDS ON WINGFOLD CYLINDERS.) ASSEMBLE ALL HYDRAULIC HOSES ACCORDING TO DIAGRAM. CONNECT HOSES TO TRACTOR OR HYDRAULIC UNIT. ACTIVATE THE HYDRAULICS EXTENDING AND RETRACTING THE WINGFOLD CYLINDERS TO REMOVE AIR FROM THE SYSTEM. AFTER AIR HAS BEEN REMOVED FROM THE HYDRAULIC SYSTEM,

# ASSEMBLY INSTRUCTIONS FOR FM9-63

CYLINDERS CAN BE PINNED UP TO THE WINGFOLD PLATES WITH 1-1/4" X 4-1/2" CLEVIS PINS, FLATWASHER, AND 3/16" X 2" ROLL PINS. (NOTE: GRAVITY LOCKS MUST BE ASSEMBLED ON BOTH WINGS AS SHOWN IN DIAGRAM.) NOW ACTIVATE HYDRAULICS TO DEPTH CONTROL CYLINDERS EXTENDING THEM TO REPHASING POSITION. HOLD THIS POSITION FOR APPROXIMATELY 5 MINUTES. THIS WILL PURGE AIR FROM THE SYSTEM. RETRACT AND THEN EXTEND THE CYLINDERS TO ENSURE THAT THEY ARE STROKING EVENLY AND IN PHASE WITH EACH OTHER.

**16.** MACHINE SHOULD BE LEFT IN UP POSITION AND BARRELS OR STANDS MAY BE REMOVED. MARK OUT SHANK PLACEMENT AS SHOWN ON SHANK PLACEMENT DIAGRAM, STARTING IN REAR AT CENTER. ASSEMBLE SHANKS (SEE DRAWING) ON MACHINE USING 5/8" X 8", GRADE 5 HEX SCREWS, LOCKWASHERS, AND NUTS.

**17.** SECURE 26 INCH SHOVELS ON SHANKS USING 1/2" X 2-3/4" PLOW SCREWS, LOCKWASHERS, AND H.D. NUTS. SHOVEL POINTS CAN BE ALIGNED UP OR DOWN BY INSERTING A 1/2" FLATWASHER UNDER BOTTOM SIDE OF BLADE. TIGHTEN BOLTS.

**18.** POSITION LOCK-UP ARMS IN PROPER LOCATIONS AND SECURE WITH 5/8" X 4" U-BOLTS, LOCKWASHER, AND HEX NUTS AS SHOWN ON WING LOCK-UP ASSEMBLY DIAGRAM.

**19.** FM9-63 USES 4 GAUGE WHEEL ASSEMBLIES. MOUNT ONE ON RIGHT AND LEFT INSERT WING, AND ONE ON RIGHT AND LEFT CENTER FRAME IN POSITION AS SHOWN USING CLAMP PLATES, 5/8" X 6" HEX SCREWS, LOCKWASHERS, AND HEX NUTS. TIGHTEN SECURELY.  
LEVELING MACHINE

**20.** LEVELING THE MACHINE CAN BE DONE IN THE FIELD OR ON THE LOT. IN EITHER CASE, THERE SHOULD BE WEIGHT

ON THE TIRES. IF IN THE FIELD, THE SHOVELS SHOULD BE PULLED ONTO THE GROUND TO A WORKING DEPTH. IF ADJUSTMENTS ARE MADE WHILE ON THE LOT, EQUAL LENGTH DONUT SPACERS SHOULD BE PLACED ON LARGEST AND SMALLEST CYLINDERS. THESE SPACERS SHOULD ALLOW THE MACHINE TO BE LOWERED TO WITHIN 1" OF THE GROUND. MEASURE THE SPINDLE HEIGHTS ON EACH SECTION AND NOTE MEASUREMENTS. (MEASURE FROM THE TOP OF THE SPINDLE TO A STRAIGHT EDGE PLACED ACROSS THE TOP OF THE FRAME.) (NOTE: WHEN LEVELING THE WALKING DUAL BEAM MEASURE FROM CENTER PIVOT AXLE.) ALL MEASUREMENTS SHOULD BE THE SAME. IF A DIFFERENCE IS FOUND, LOOSEN THE 1-1/2" NUTS ON THE DEPTH LINKAGE AND ADJUST EITHER IN OR OUT UNTIL THE DIMENSIONS ARE EQUAL (ALL ADJUSTMENTS MUST BE MADE WITH THE WEIGHT ON THE TIRES.) AFTER ADJUSTING, TIGHTEN THE 1-1/2" NUTS.

# PROBLEM IDENTIFICATION & SOLUTION FOR SERIES CYLINDERS

## CYLINDER ROD MEASUREMENT TEST:

1. EXTEND CYLINDERS TO THE RÉPHASING POSITION AND LOWER HYDRAULICS APPROXIMATELY 2" (51 mm).
2. THEN IMMEDIATELY DISCONNECT THE HYDRAULICS FROM THE TRACTOR.
3. MEASURE THE LENGTH OF THE EXTENDED CYLINDER ROD ON EACH CYLINDER.
4. LEAVE IMPLEMENT TO STAND FOR SOME HOURS, i.e. 3 HOURS.
5. REMEASURE LENGTH OF RODS AGAIN AND COMPARE BEFORE AND AFTER MEASUREMENTS.

NOTE: SOME VARIATION CAN BE EXPECTED IF IMPLEMENT IS LEFT FOR SOME TIME, i.e. OVERNIGHT, DUE TO CHANGE IN TEMPERATURE. TYPICALLY AN IMPLEMENT SET UP IN THE WARMTH OF THE AFTERNOON RESULTS IN CYLINDER CONTRACTION OF 5/8" (16 mm) BY THE NEXT MORNING DUE TO TEMPERATURE CHANGE ALONE. THEREFORE, WHEN REPORTING SUSPECTED LEAKING CYLINDERS, THE MEASUREMENTS MUST BE AT SIMILAR TEMPERATURES TO GIVE SENSIBLE RESULTS.

6. BY ANALYZING THE MEASUREMENTS OBTAINED IT CAN USUALLY BE ESTABLISHED WHICH IS THE SUSPECT CYLINDER OR CYLINDERS. PLEASE NOTE THAT IT IS QUITE LIKELY THAT SOME CYLINDERS WILL RETRACT WHILE OTHERS WILL EXTEND.

7. WHEN THE "SUSPECT" CYLINDER HAS BEEN IDENTIFIED, IT IS IMPORTANT THAT DISASSEMBLY IS CARRIED OUT IN A CLEAN ENVIRONMENT.

8. WHEN DISASSEMBLING THE LEAKING CYLINDER FOR SEAL REPLACEMENT, EXTREME CARE MUST BE TAKEN NOT TO DAMAGE THE ROD. FIRST LOOSEN SET SCREW ON SIDE OF CLEVIS. EXTEND THE CYLINDER TO ITS FURTHEST POSITION, USING HYDRAULIC PRESSURE. THIS SHOULD CREATE ENOUGH FRICTION TO ALLOW REMOVAL OF CLEVIS. NOTE: DO NOT UNDER ANY CIRCUMSTANCE PLACE A PIPE WRENCH, VISE-GRIPS OR ANY OTHER GRIPPING DEVICE ON THE ROD TO GAIN ADDITIONAL GRIP. THIS WILL SCAR THE SURFACE OF THE ROD AND WILL CAUSE CYLINDER TO LEAK AND WILL VOID WARRANTY ON THE CYLINDER. IF FURTHER ASSISTANCE IS NECESSARY, CONTACT YOUR NEAREST QUINSTAR DEALER.

## PURGING OF AIR

AFTER REPASING, IF ONE OR MORE CYLINDERS CREEPS DOWN MORE THAN THE OTHERS OR THE SYSTEM IS "SPONGY", IT IS POSSIBLE THAT AIR IS PRESENT IN THE CIRCUIT. CHECK FOR AIR BUBBLES BY REMOVING THE RETURN LINE AND CATCHING OIL IN A CLEAN CONTAINER. WITH THE ROD CLEVISES DISCONNECTED AND THE CYLINDERS IN A NEAR AS POSSIBLE TO VERTICAL POSITION, HOLD IN THE REPASING POSITION UNTIL NO AERATED OIL FLOWS. THE TRACTOR SHOULD BE RUN AT LOW IDLING SPEED TO MINIMIZE HEAT BUILD UP DURING THE PURGING OPERATION. (CHECK TRACTOR OIL LEVELS WHEN CARRYING OUT THIS EXERCISE). ONCE AIR HAS BEEN PURGED FROM THE SYSTEM IT CAN ONLY RE-ENTER THE SYSTEM IF THE LINES ARE CRACKED, REMOVED, REPLACED, OR IF THE TRACTOR OIL LEVEL BECOMES VERY LOW.

## UNEVEN WORKING DEPTH:

OVER A PERIOD OF TIME (i.e. 2 HOURS WORKING) THE PHASING CYLINDERS MAY BECOME UNBALANCED DUE TO SMALL AMOUNTS OF SEAL BY-PASS. TO REPASING THE CYLINDERS IT IS NECESSARY TO EXTEND THEM TO THE REPASING POSITION FOR APPROXIMATELY THIRTY (30) SECONDS TO A MINUTE. DURING TURNS AT CORNERS OF THE FIELD OR TURN-ROW TURNS, THE REPASING CAN BE DONE BY HOLDING THE TRACTOR LEVER IN THE UP POSITION FOR THE DURATION OF THE TURN. RETRACT AND THEN EXTEND THE CYLINDERS TO ENSURE THAT THEY ARE STROKING EVENLY AND IN PHASE WITH EACH OTHER.



# OPERATION & MAINTENANCE INSTRUCTIONS

## OPERATION OF MACHINE

- SPECIAL NOTE: DO NOT BACK UP OR TURN SHARP WITH MACHINE IN THE GROUND. THIS WILL CAUSE DAMAGE TO SHOVELS. IF TIGHT TURNS ARE NECESSARY, LIFT MACHINE.
- CHECK ALL HARDWARE FOR TIGHTNESS DURING BREAK-IN USE OF A NEW MACHINE.
- VISUALLY CHECK TIRE INFLATION EACH DAY.
- CHECK SHOVEL MOUNTING BOLTS FOR TIGHTNESS EACH DAY.
- OVER A PERIOD OF TIME (i.e. 2 HOURS WORKING) THE PHASING CYLINDERS MAY BECOME UNBALANCED DUE TO SMALL AMOUNTS OF SEAL BY-PASS. TO REPHASE THE CYLINDERS IT IS NECESSARY TO EXTEND THEM TO THE REPHASING POSITION FOR APPROXIMATELY THIRTY (30) SECONDS TO A MINUTE. DURING TURNS AT CORNERS OF THE FIELD OR TURN-ROW TURNS, THE REPHASING CAN BE DONE BY HOLDING THE TRACTOR LEVER IN THE UP POSITION FOR THE DURATION OF THE TURN. RETRACT AND THEN EXTEND THE CYLINDERS TO ENSURE THAT THEY ARE STROKING EVENLY AND IN PHASE WITH EACH OTHER.

## LUBRICATION

- WHEEL HUBS ARE PROVIDED WITH PLUGGED GREASE ZERK HOLES TO ACCOMMODATE THOSE OWNERS WHO PREFER TO ADD GREASE TO HUBS BETWEEN REPACKINGS. FACTORY RECOMMENDED LUBRICATION IS TO ANNUALLY REPACK THE HUB BEARINGS.

GREASE POINTS	DAILY	WEEKLY	6-MONTH
HINGE POINTS		✓	
ROCKSHAFT BEARINGS	✓		
COULTERS	✓		
WALKING DUALS		✓	
RATCHET JACK			✓

## WINTERIZING MACHINE

- WHEN FINISHED USING MACHINE FOR THE SEASON OR STORING MACHINE FOR AN EXTENDED PERIOD OF TIME, THESE MEASURES WILL HELP ENSURE THAT YOUR MACHINE WILL BE IN GOOD OPERATING CONDITION FOR THE NEXT SEASON.
- LUBRICATE ALL GREASE POINTS.
  - UNFOLD MACHINE AND REST MACHINE ON SHOVELS TO RELIEVE HYDRAULIC PRESSURE. (AS THE SUN WARMS THE MACHINE, THE HYDRAULIC OIL IN THE SYSTEM EXPANDS 100 PSI FOR EVERY DEGREE OF INCREASE IN TEMPERATURE. UNDER CERTAIN CONDITIONS, THE OIL COULD EXPAND ENOUGH TO BLOW OUT THE ROD SEALS.)
  - PUT A LIGHT COATING OF GREASE ON THE EXPOSED CYLINDER RODS. THIS WILL PREVENT EXPOSURE TO THE ELEMENTS FROM CORRODING THE ROD.



## ***COULTERS - FALLOW MASTER***

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### INSTALLATION MANUAL

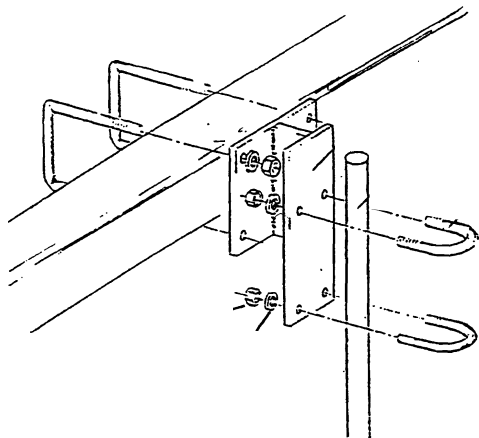
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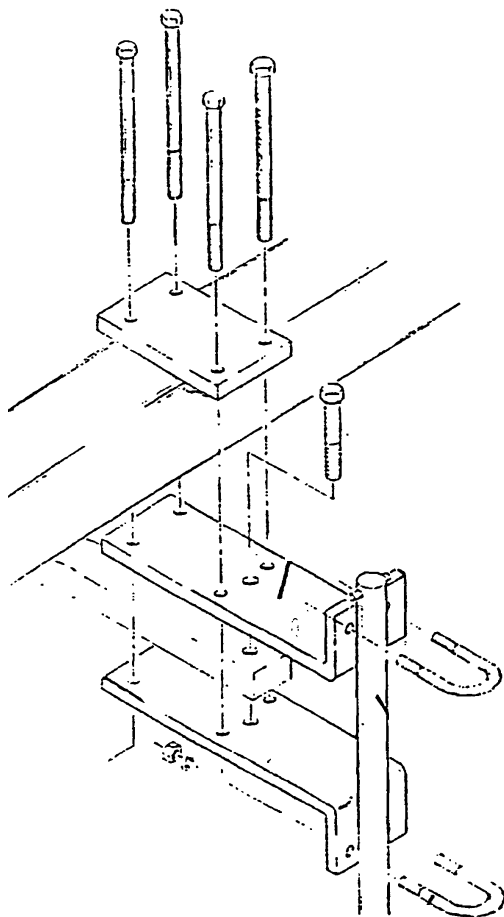
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COULTER DESCRIPTIONS AND SHANK MOUNT ILLUSTRATIONS

**1.**

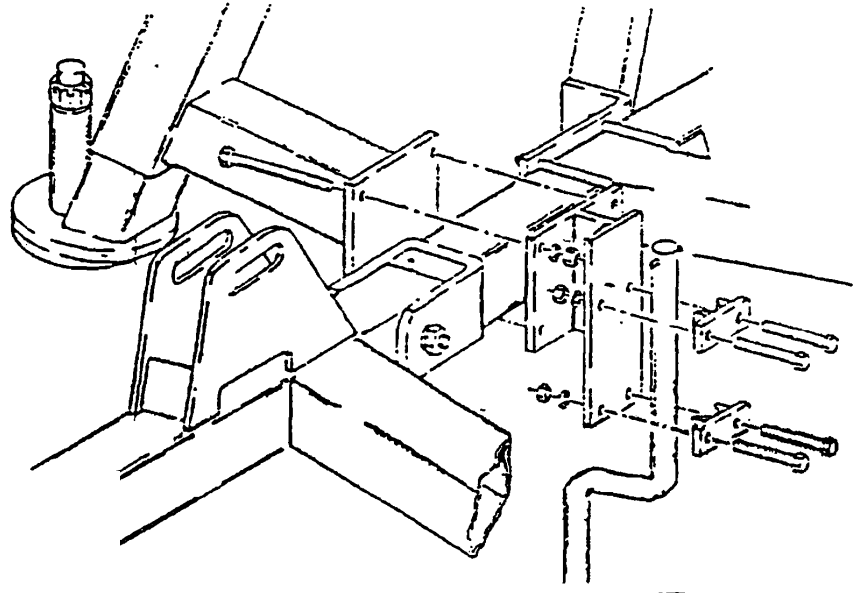


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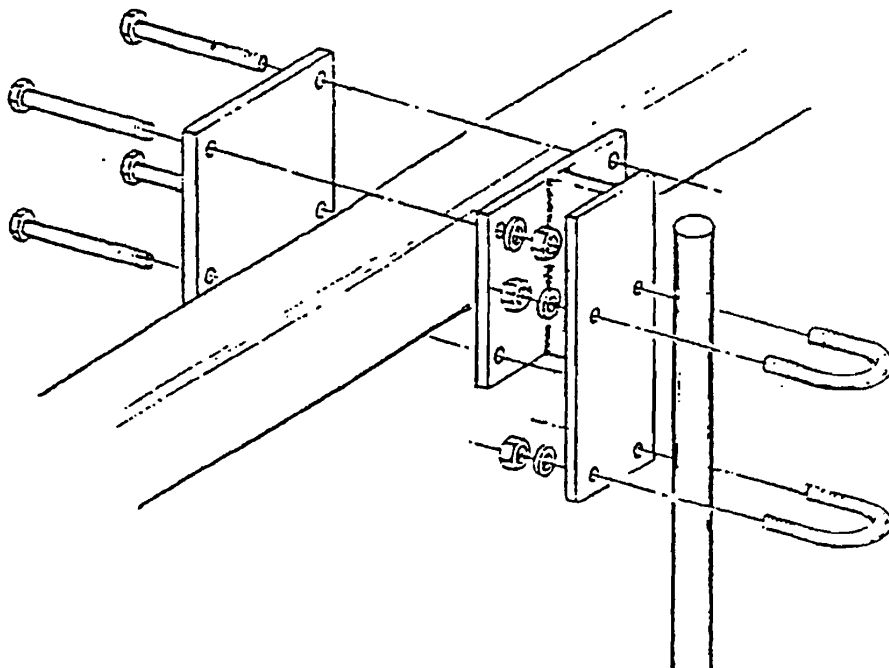


COULTER DESCRIPTIONS AND SHANK MOUNT ILLUSTRATIONS

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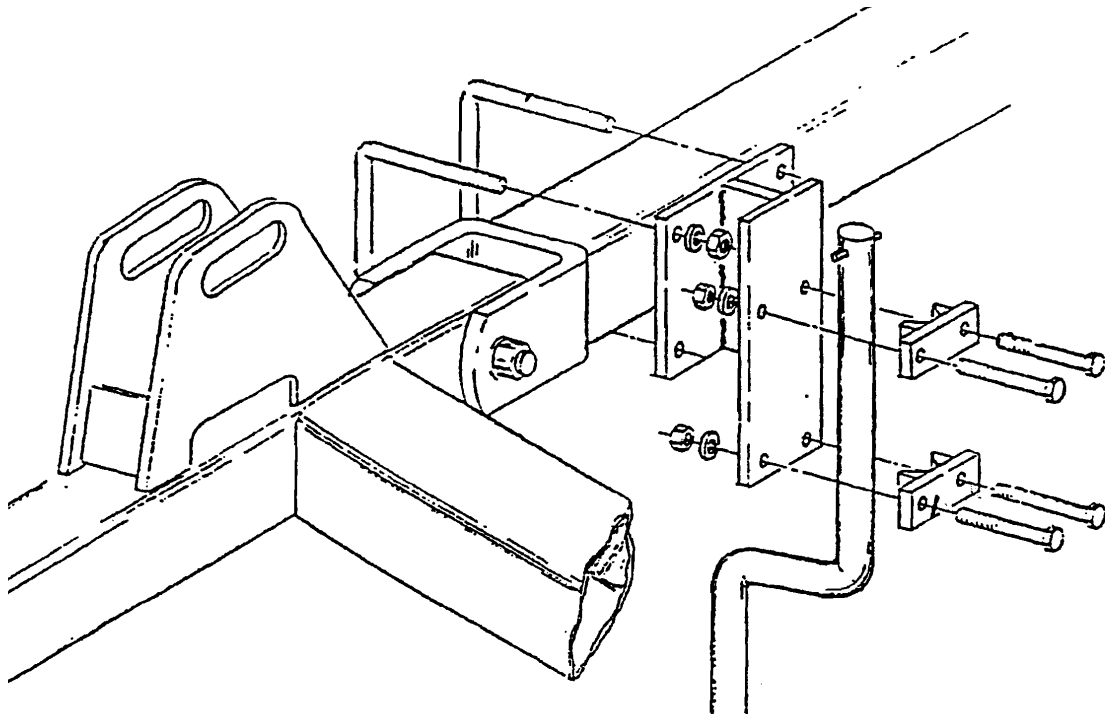


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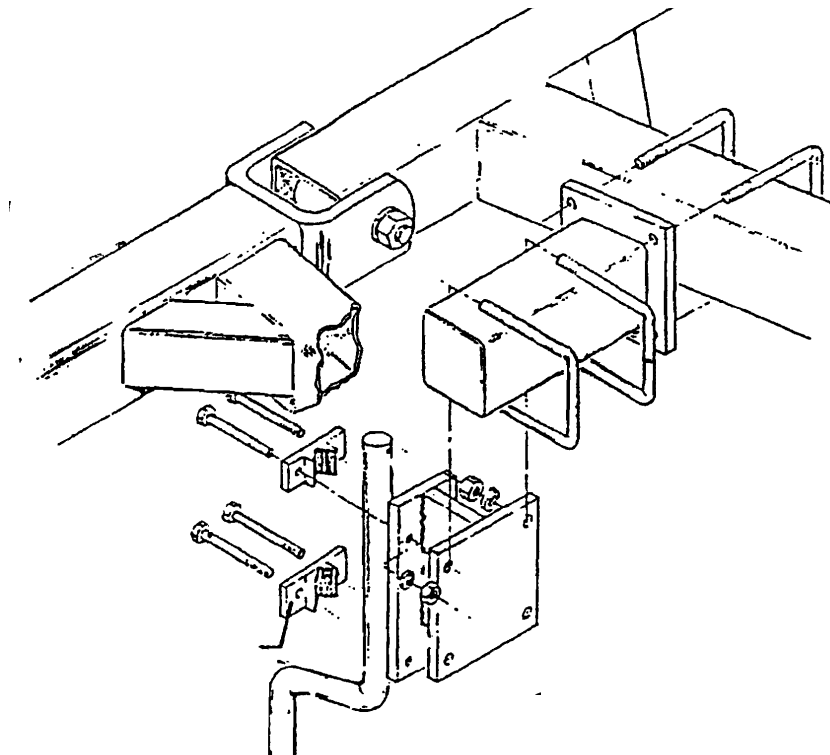


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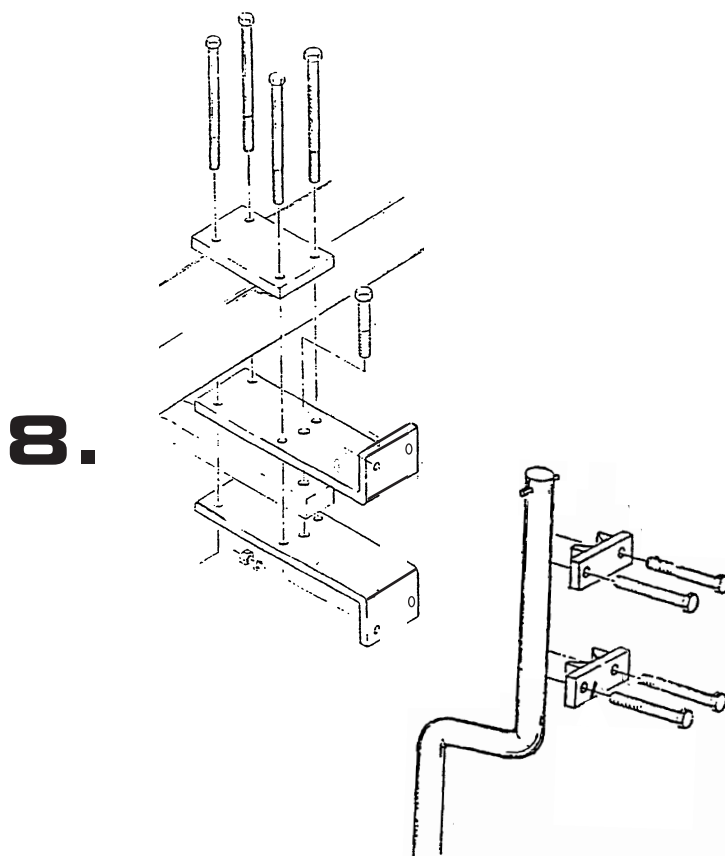
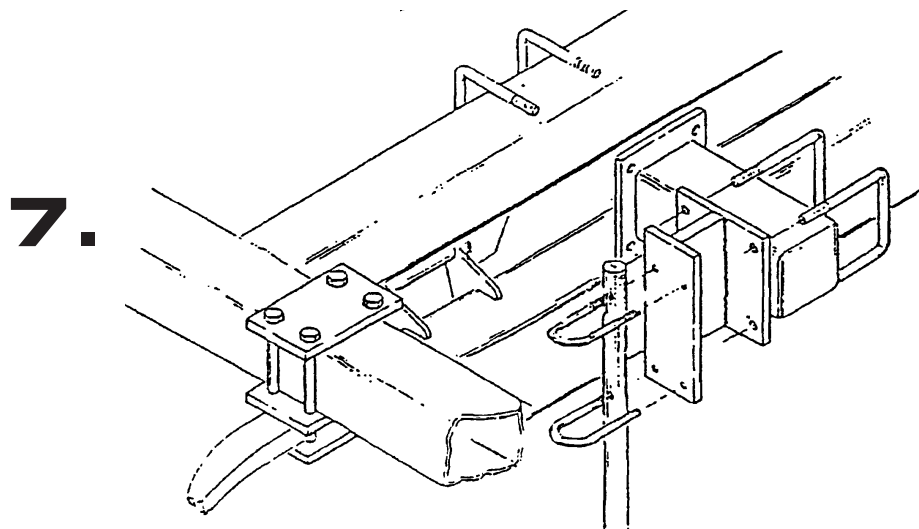
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**6.**



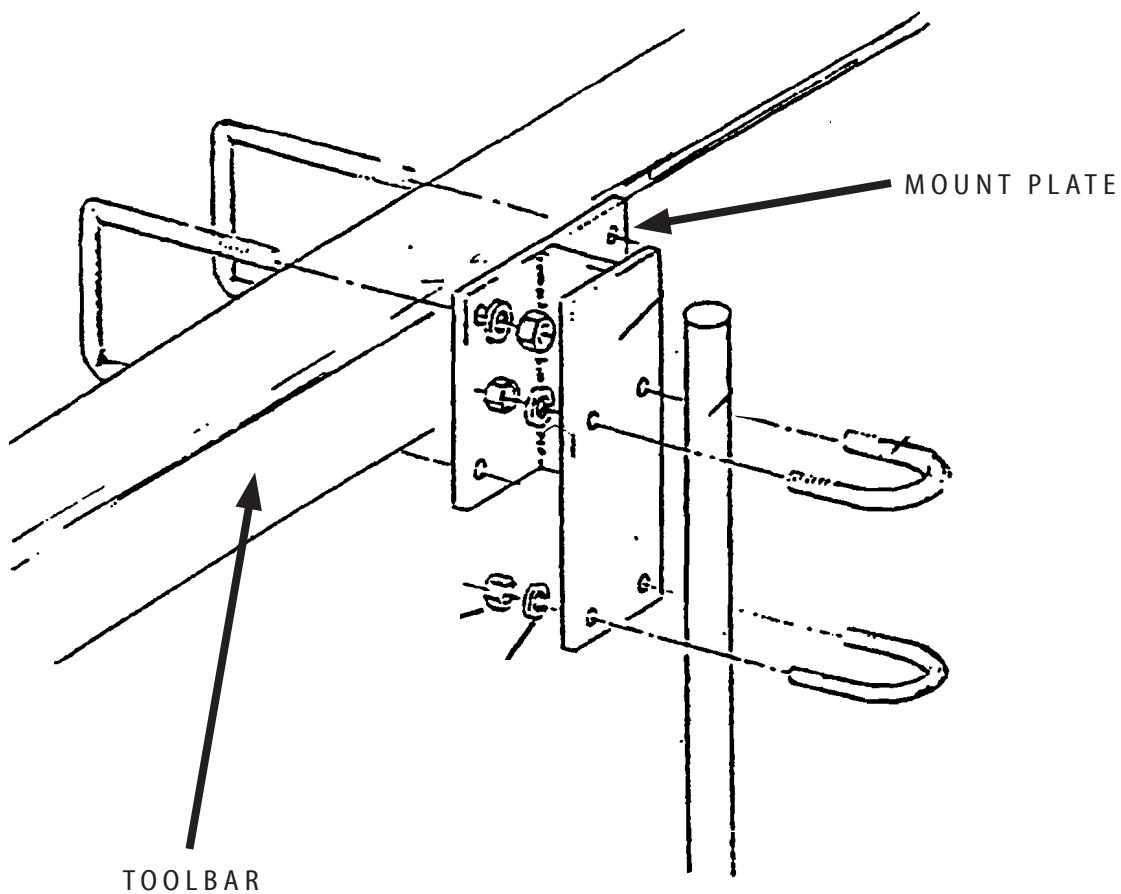
COULTER DESCRIPTIONS AND SHANK MOUNT ILLUSTRATIONS



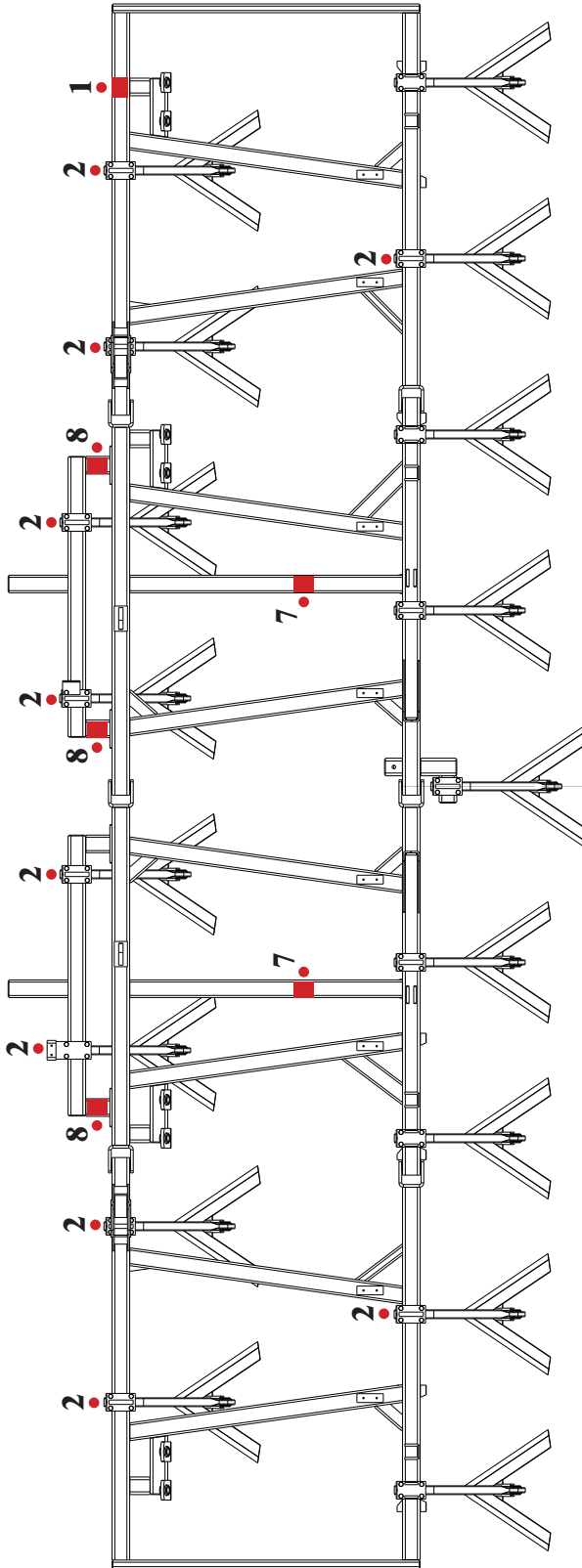
COULTER DESCRIPTIONS AND SHANK MOUNT ILLUSTRATIONS

SPACER PLATE IS PLACED BETWEEN THE MOUNT PLATE AND TOOLBAR  
(USE LONGER U-BOLTS WHEN MOUNTING A #9)

**9.**



4 section 28 foot Fallow Master Coulters mounting locations:



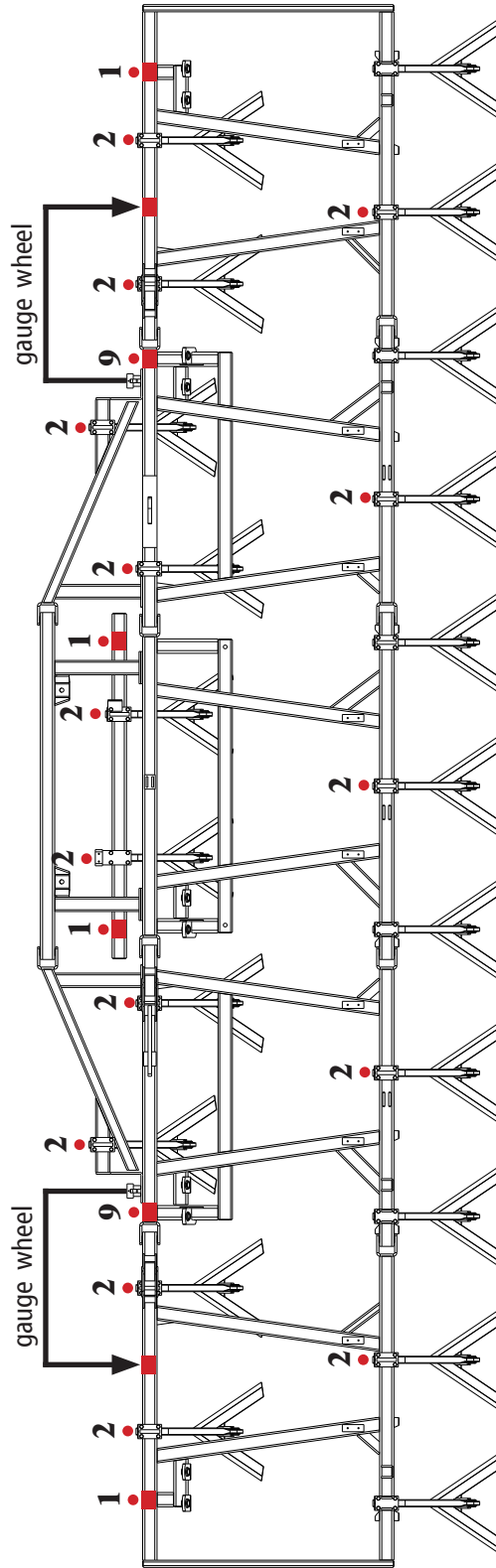
The 4 section 28 foot Fallow Master Coulters package consists of:

- three - #8's (offset shanks)
- two - #1's (straight shanks)
- two - #7's (straight shanks)
- ten - #2's (straight shanks)

- 1** = SHANK MOUNT STYLE
- = COULTER POSITION
- = MOUNT POSITION



5 section 35 foot Fallow Master Coulters mounting locations:



The 5 section 35 foot Fallow Master Coulters package consists of:

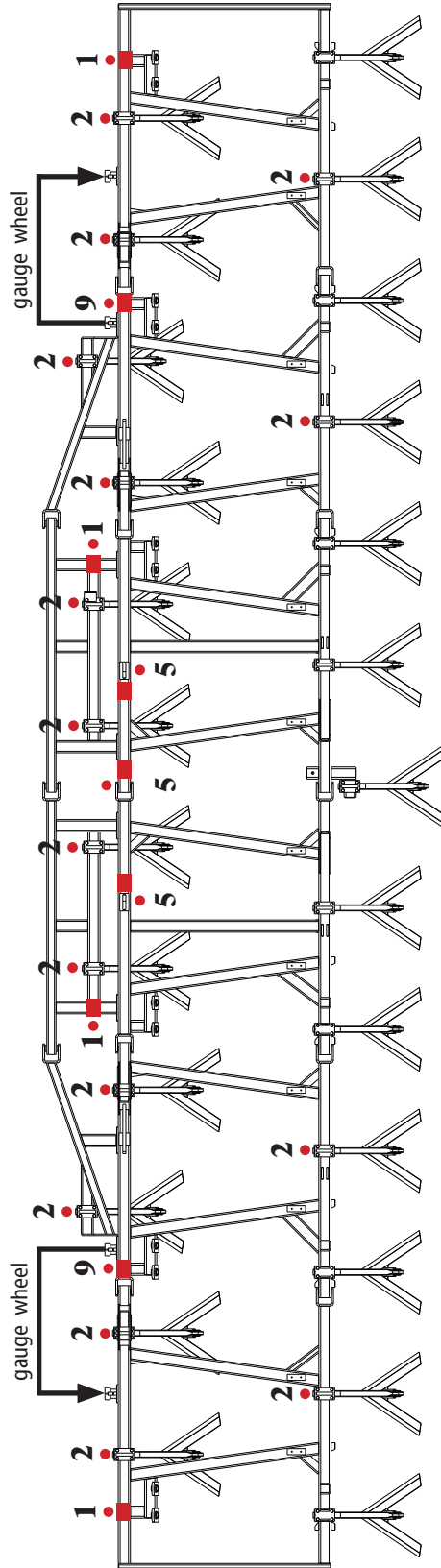
- two - #9's (straight shanks)
- fifteen - #2's (straight shanks)
- four - #1's (straight shanks)

**1** = SHANK MOUNT STYLE

**●** = COULTER POSITION

**■** = MOUNT POSITION

6 section 42 foot Fallow Master Coulters mounting locations:



The 6 section 42 foot Fallow Master Coulters package consists of:

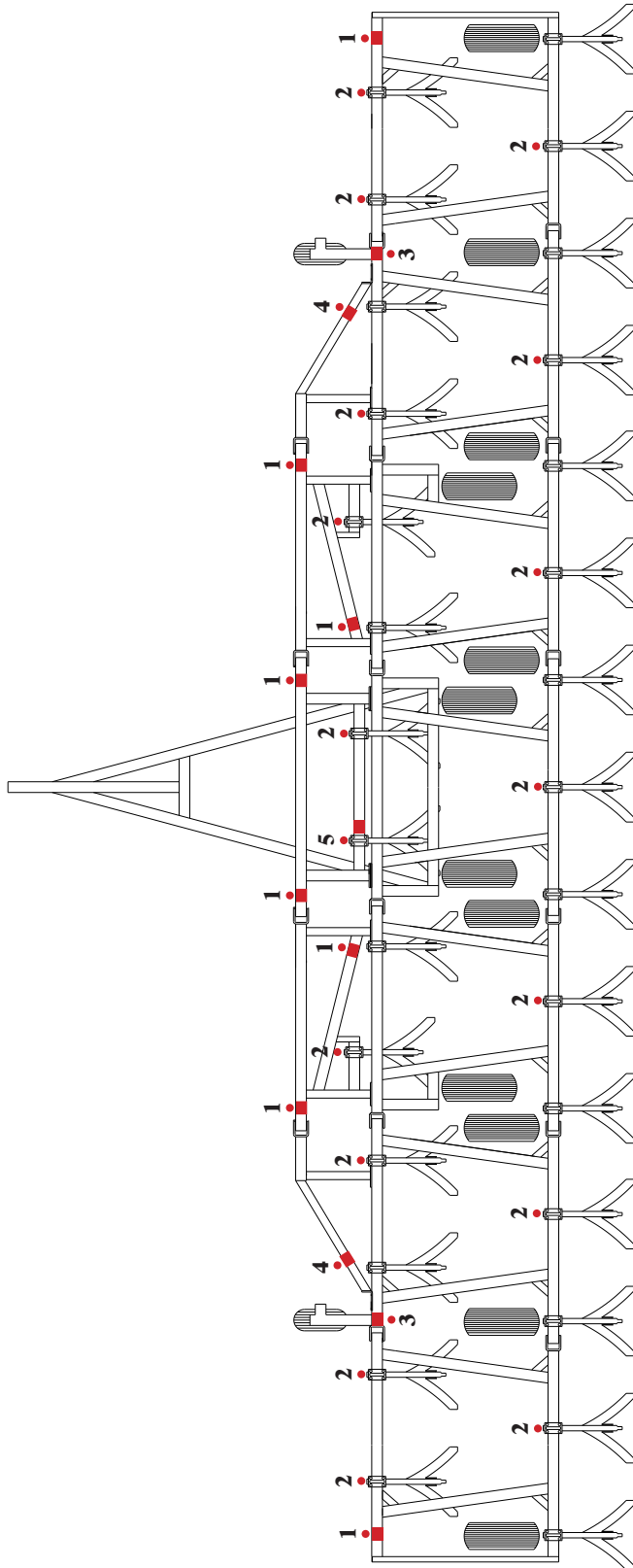
- two - #9's (straight shanks)
- three - #5's (offset shanks)
- four - #1's (straight shanks)
- sixteen - #2's (straight shanks)

**1** = SHANK MOUNT STYLE

**●** = COULTERS POSITION

**■** = MOUNT POSITION

7 section 49 foot Fallow Master Coulters mounting locations:



The 7 section 49 foot Fallow Master Coulters package consists of:

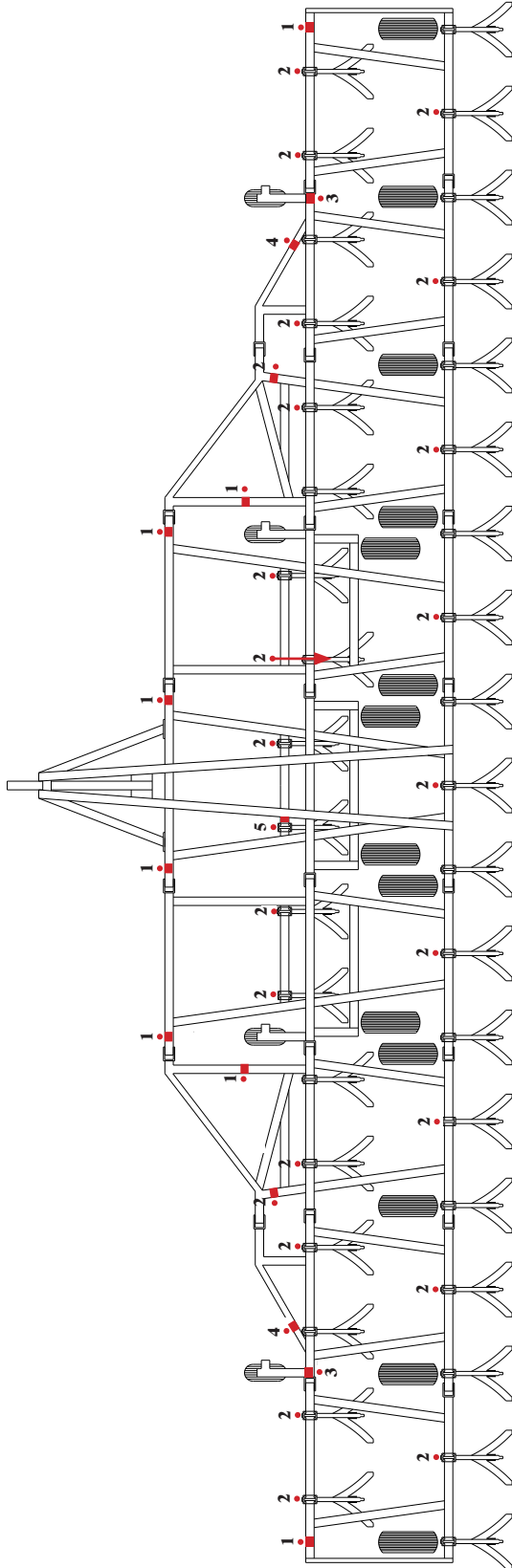
- eight - #1's (straight shanks)
- sixteen - #2's (straight shanks)
- two - #3's (offset shanks)
- two - #4's (straight shanks)
- one - #5 (offset shank)

**1** = SHANK MOUNT STYLE

**●** = COULTER POSITION

**■** = MOUNT POSITION

9 section 63 foot Fallow Master Coulters mounting locations:



The 9 section 63 foot Fallow Master Coulters package consists of:

- twenty four - #2's (straight shanks)
  - two - #3's (offset shanks)
  - eight - #1's (straight shanks)
  - two - #4's (straight shanks)
  - one - #5 (offset shank)

- 1** = SHANK MOUNT STYLE
- = COULTER POSITION
- = MOUNT POSITION