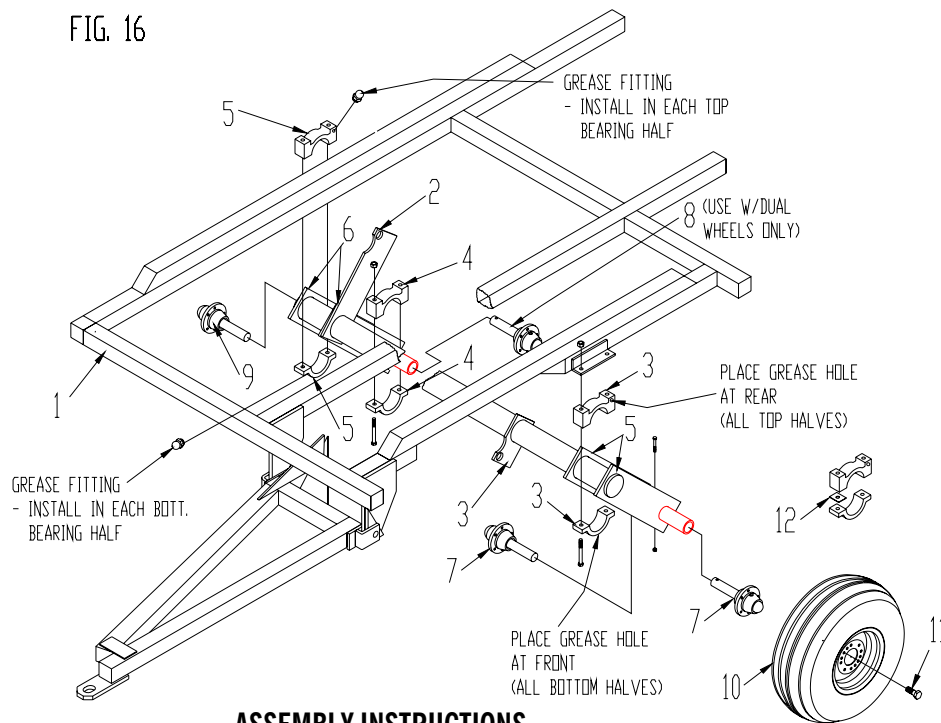


ASSEMBLY INDEX

DESCRIPTION	PAGE
Assembling Main Frame	20
Attaching Main Frame Gang Beams	20
Attaching Wing Frame and Wing Frame Gang Beams	21
Assembling Hitch and Levelling Crank	22
Attaching Wing Lift Cylinders	22
Attaching Gang Assemblies	23
Attaching Hydraulic Hoses to Rockshaft Cylinders & Wing Cylinders	28
Securing Hydraulic Hoses to Frame	29
How Main Lift Hydraulic System Works	29
Warning Light Kit Assembly (Optional)	30
Gang Beam Chart	32
Gang Patterns	33

FIG. 16



ASSEMBLY INSTRUCTIONS

1. See Fig. 16. Raise main frame, arrow 1, approximately 30" (762 mm) from ground and block securely.
2. See Fig. 16. Fasten main frame rockshaft, arrow 2, to bottom of main frame, arrow 1, using three sets of cast rockshaft bearings, arrow 3, 4 and 5. Each set of rockshaft bearings are fasten to a two (2) hole angle bracket welded to side of frame. Lubricate bearings with grease before installing rockshaft in bearings. Position rockshaft so that left hand bearing set, arrow 3, is located between inner wheel legs, arrow 5, and right hand bearing set is located between outer wheel legs, arrow 6. When installing rockshaft bearings, be sure grease hole of top half is **facing rear** and grease hole for bottom half is **facing front**. Fasten each set of rockshaft bearings with two (2) 3/4" x 6-1/2" (19 mm x 165 mm) hex bolts c/w nuts and lockwashers.

NOTE: *If rockshaft bearings are too tight and don't allow rockshaft to turn freely, place necessary shim(s) 2" x 3" (50.8 mm x 76.2 mm) Shim(s), arrow 12, between bearing halves. Shims are packed in hydraulic hose and fitting box.*

3. See Fig. 16. Install one grease fitting in top and bottom halves of rockshaft bearings, arrows 3, 4 and 5.
4. See Fig. 16. Install one (1) hub assembly, arrow 7, in each end of mount tube welded to inner wheel legs, arrow 5. Secure each hub and spindle assembly with one (1) 1/2" x 3-1/2" (12.7 mm x 88.9 mm) hex bolt and nylon locknut.
5. ATTACHING HUB ASSEMBLIES TO OUTSIDE WHEEL LEG:

NOTE: *To determine if your machine is equipped with single or dual outer wheels, see tire chart on page 5.*

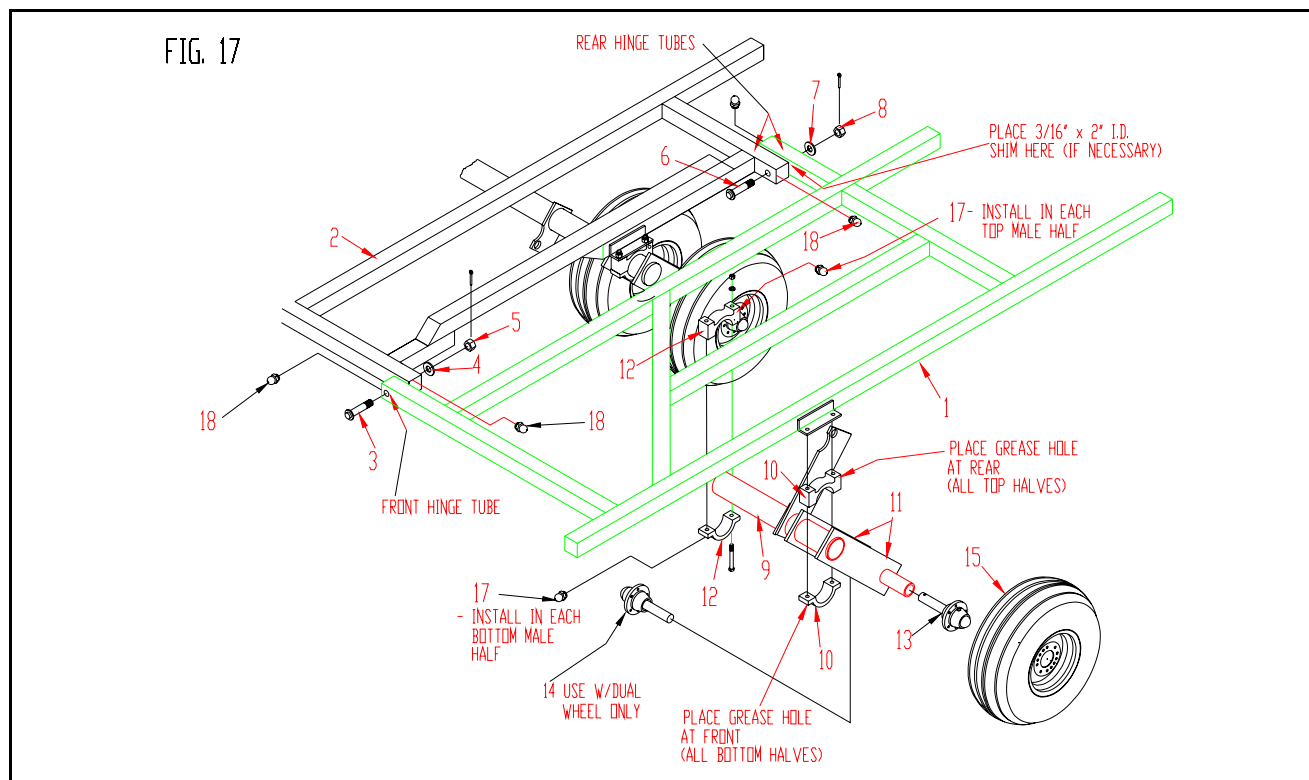
- (a) DUAL WHEELS: See Fig. 16. Install one (1) 6 bolt hub and spindle assembly, arrow 8 and 9, in each end of mount tube welded to outer wheel leg, arrow 6. Secure each assembly with one (1) 1/2" x 3-1/2" (12.7 mm x 88.9 mm) hex bolt and nylon locknut.
- (b) SINGLE WHEELS: See Fig. 16. Install one (1) **only** 6 bolt hub and spindle assembly, arrow 9, in outside end of mount tube weld to outer wheel leg, arrow 6. Secure assembly with one (1) 1/2" x 3-1/2" (12.7 mm x 88.9 mm) hex bolt c/w nylon locknut.
6. See Fig. 16. Install one (1) wheel and tire assembly, arrow 10, to each hub assembly. Secure with six (6) 9/16" x 1-1/8" (14.4mm x 28.6mm) wheel bolts, arrow 11. Tighten wheel bolts to 130 ft. lbs. (18 m. kgs.) To determine load range size of main frame tires for your machine, refer to tire chart on page 5.



CAUTION: SUPPORT MAIN FRAME SECURELY BEFORE ASSEMBLING COMPONENTS. INADEQUATE SUPPORT MAY RESULT IN THE HEAVY COMPONENTS FALLING AND CAUSING SERIOUS INJURY TO YOU OR PERSON(S) NEARBY.



CAUTION: WHEN ASSEMBLING DISC USE ALIGNING PUNCH TO LINE UP HOLES. KEEP FINGERS OUT OF HOLES.



IMPORTANT: WHEEL BOLTS MUST BE KEPT TIGHT. IF BOLTS ARE NOT TIGHT THEY WILL LOOSEN CAUSING SEVERE DAMAGE TO HUBS, WHEELS AND TIRES. CHECK WHEEL BOLTS PERIODICALLY ESPECIALLY THE FIRST FEW HOURS OF OPERATION, EITHER TRANSPORT OR FIELD OPERATION.

7. See Fig. 17. Attach wing frame, arrow 1, to LH side of main frame, arrow 2, as shown. Fasten front hinge tubes with one (1) 2" (50.8 mm) diameter bolts, arrow 3. Bolt is installed from front. Secure front bolt with one (1) 1/2" (12.7 mm) thick flatwasher, arrow 4, and one (1) 2" (50.8 mm) slotted nut, arrow 5. Tighten front hinge bolt taking up the clearance between wing and main frame. DO NOT over tighten front hinge bolt, wing must be free to pivot.

Place one (1) 3/16" x 2" (4.6 mm x 50.8 mm) I.D. shim washer (if shim is required) between rear hinge tubes of wing frame and main frame. Fasten rear hinge tubes with one (1) 2" (50.8 mm) dia. bolt, arrow 6. Bolt is installed from front. Secure rear bolt with one (1) 1/2" (12.7 mm) thick flatwasher, arrow 7, and one (1) 2" (50.8 mm) slotted nut, arrow 8. Tighten rear hinge bolt. DO NOT over tighten bolt. Wing frame must be free to pivot.

Next, install 3/8" x 3-1/2" (9.4 mm x 88.9 mm) cotter pin in slotted nut of both front and rear bolts.

8. See Fig. 17. Fasten wing frame rockshaft, arrow 9, to bottom of wing frame, arrow 1, with 2 sets of cast rockshaft bearings, arrow 10 and 12. Each set of rockshaft bearings are fastened to a two (2) hole angle bracket welded to outside and centre of frame. Lubricate bearing with grease before installing rockshaft in bearings. Position rockshaft so that left hand bearing, arrow 10, is located between wheel legs, arrow 11. When installing rockshaft bearings, be sure grease hole of top half is **facing rear** and grease hole of bottom half is **facing front**. Fasten each set of rockshaft bearings with two (2) 3/4" x 6-1/2" (19 mm x 165 mm) hex bolts with nuts and lockwashers.

NOTE: If rockshaft bearings are too tight and don't allow rockshaft to turn freely, place necessary shim(s) 2" x 3" (50.8 mm x 76.2 mm) with one hole between bearing halves. Shim(s) are packed in hydraulic hose and fitting box.

9. See Fig. 17. Install one grease fitting, arrow 18, in top and bottom halves of rockshaft bearings, arrows 10 and 12.
10. See Fig. 17. Install one grease fitting, arrow 17, in pivot bushing welded in front and rear hinge tube of wing frame and main frame (four points).

11. ATTACHING HUB ASSEMBLIES TO WING ROCKSHAFT

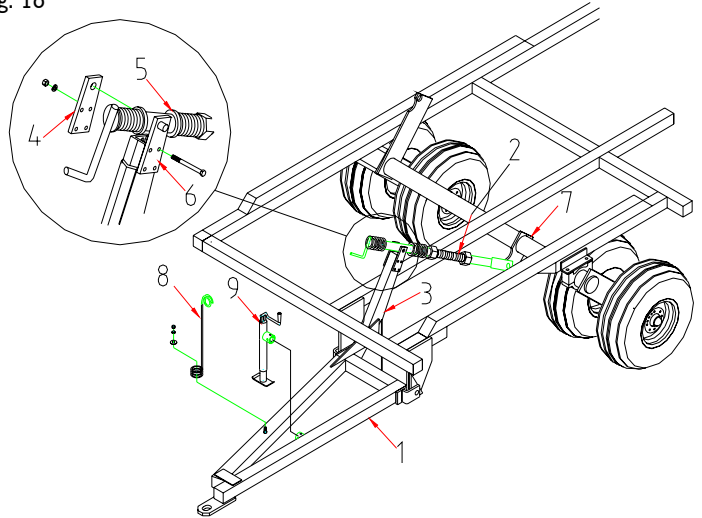
NOTE: To determine if your machine is equipped with single or dual outer wheels, see tire chart on page 5.

- a) DUAL WHEELS - See Fig. 17. Install one (1) 6 bolt hub and spindle assembly, arrows 13 and 14, in each end of mount tube welded to wheel legs, arrow 11. Secure each spindle with one (1) 1/2" x 3-1/2" (12.7 mm x 88.9 mm) hex bolt c/w nylon locknut.
 - b) SINGLE WHEELS - See Fig. 17. Install one (1) **only** 6 bolt hub and spindle assembly, arrow 13, in outside end of mount tube welded to wheel legs, arrow 11. Secure spindle with one (1) 1/2" x 3-1/2" (12.7 mm x 88.9 mm) hex bolt c/w nylon locknut.
12. See Fig. 17. Install one (1) wheel and tire assembly, arrow 15, to each hub assembly. Secure with six (6) 9/16" x 1-1/8" (14.3mm x 28.6mm) wheel bolts, arrow 20. Tighten wheel bolts to 130 ft. lbs. (18 m. kgs.) To determine load range size of wing frame tires for your machine, refer to tire chart on page 5.

13. See Fig. 18. Fasten hitch assembly, arrow 1, to hitch lugs on main frame with (2) two 1-1/4" (31.7 mm) dia. pins. Secure each pin with (2) two 5/16" x 1-1/2" (7.87 mm x 38.1 mm) cotter pins.

14. See Fig. 18. To attach levelling crank assembly, arrow 2, to hitch arm, arrow 3, remove bolt-on lug, arrow 4. Next, install 1" (25.4 mm) diameter pin of bearing tube, arrow 5, into weld-on lug, arrow 6, of hitch arm. Position bearing tube so grease fitting is facing up. Place bolt-on lug, arrow 4, over outside of hitch arm. Install 1" (25.4 mm) diameter pin of bearing tube into bolt-on lug. Fasten the bolt-on lug, arrow 4, to hitch arm with four (4) 1/2" x 5" (12.7 mm x 127 mm) N.C. hex bolts c/w nuts and lockwashers. Install bolts through removable lug so that nuts are on weld-on lug side. Tighten bolts.

Fig. 18



15. See Fig. 18. Attach clevis end of levelling crank, arrow 2, to arm, arrow 7, on rockshaft. Fasten with one 1-1/4" x 4-3/4" (31.7 mm x 120.6 mm) bolt c/w nut and lockwasher. Tighten bolt to 840 ft. lbs. (1138.2 N.m.)

NOTE: The 1-1/4" x 4-3/4" (31.7 mm x 120.6 mm) bolt must be tightened so that the clevis is drawn up tight against the ball joint in arm, arrow 7. Tighten bolt to 840 ft. lbs. (1138.2 N.m.) Ball must also be free to pivot in socket. Lubricate ball with oil and turn in socket to make sure ball is free to pivot.

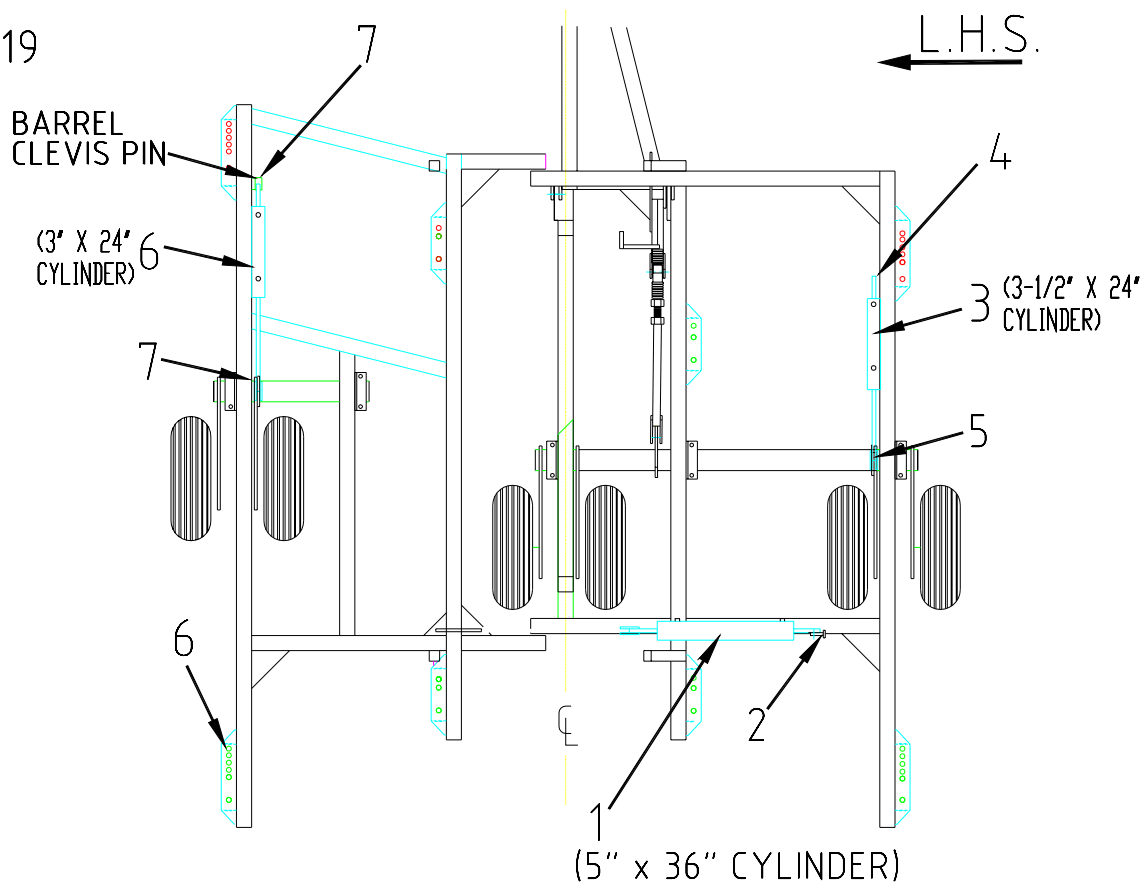


CAUTION: USE ADEQUATE MANPOWER OR A HOIST TO LIFT HEAVY COMPONENTS INTO PLACE. ATTEMPTING TO LIFT HEAVY COMPONENTS BY YOURSELF COULD CAUSE SERIOUS INJURY.

16. See Fig. 18. Fasten hose support, arrow 8, to a bolt welded to top of hitch. Secure with (1) 5/8" (15.7 mm) nut, (1) 11/16" (17.2 mm) I.D. flatwasher, and (1) 5/8" (15.7 mm) lockwasher.
17. See Fig. 18. Mount hitch jack, arrow 9, on round tube welded to inside of hitch. Jack pivots on mounting tube and can be placed in vertical position for supporting disc hitch or horizontal position while disc is in motion. Lock jack in desired position with pin.

IMPORTANT: JACK MUST BE IN HORIZONTAL POSITION WHEN DISC IS IN MOTION. IF JACK IS IN VERTICAL POSITION WHEN DISC IS IN MOTION, JACK MAY STRIKE GROUND OR OBSTRUCTION ON GROUND, CAUSING SEVERE DAMAGE TO JACK, BE SURE CRANK OF JACK IS NOT HANGING BELOW HITCH WHEN JACK IS IN HORIZONTAL POSITION. PLACE CRANK ON TOP OF HITCH TO AVOID DAMAGE.

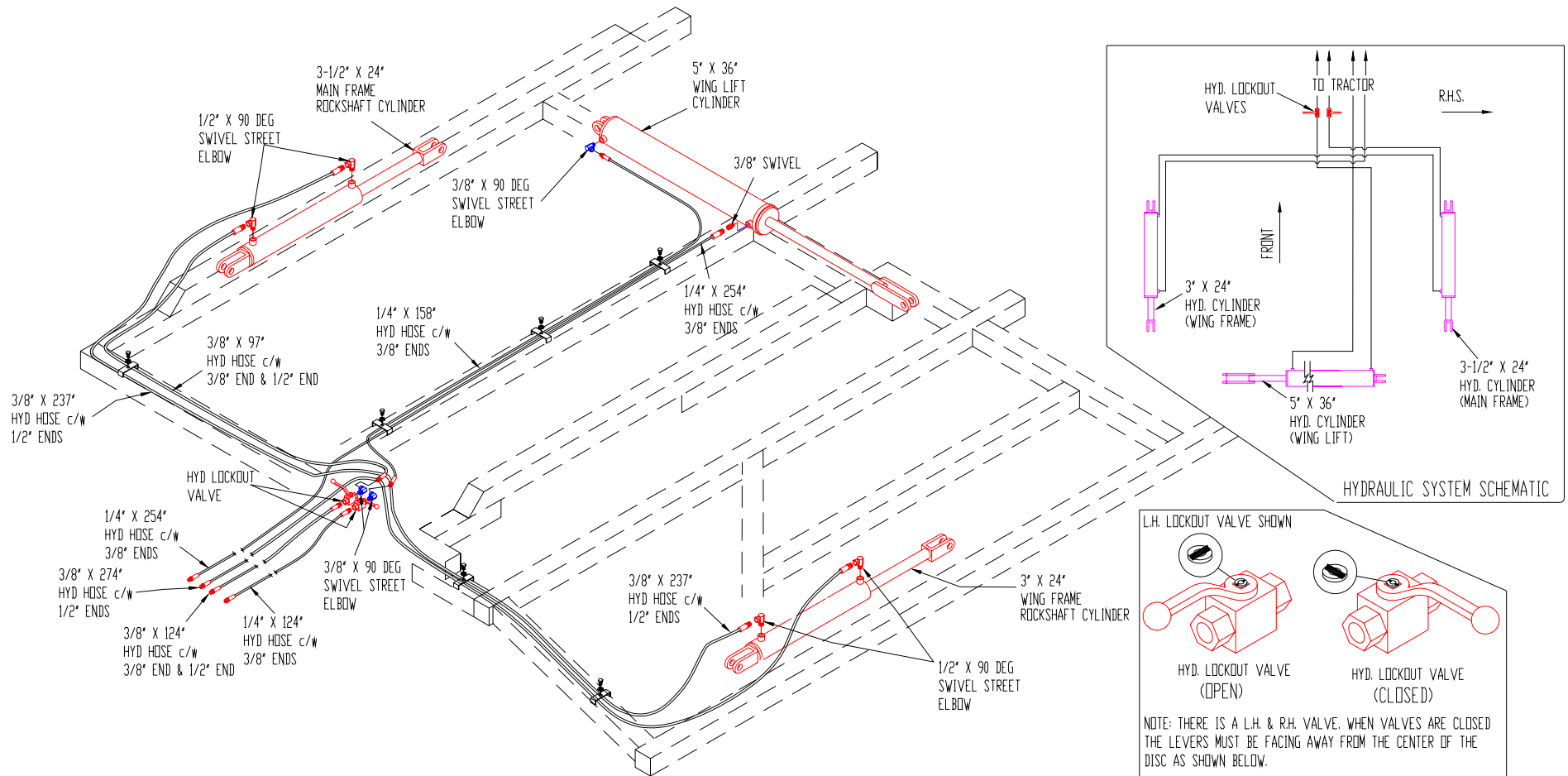
ILL. 19



18. See Fig. 19. Attach one 5" (127 mm) wing lift cylinder, arrow 1, to rear of frame. This cylinder will have a stroke of either 34-3/4" (882.65 mm) or 36" (914 mm) depending on the size of your disc. For cylinder size for your disc refer to specification chart on page 5. Cylinders that have a 34-3/4" (882.6 mm) stroke will have this length stencilled on the barrel. Fasten tube end of cylinder to lug, arrow 2, on main frame with one (1) 1-1/4" x 4-3/4" (31.7 mm x 120.6 mm) pin. Secure pin with two (2) 5/16" x 2" (7.87 mm x 50.8 mm) cotter pins. Ports on cylinder must be facing towards front of disc. Do not attach shaft end of centre until after cylinder has been filled with oil.
19. See Fig. 19. Fasten one (1) 3-1/2" x 24" (88.9 mm x 609.6 mm) rephasing hydraulic cylinder, arrow 3, to main frame. Fasten barrel end to lug, arrow 4, position so ports face up. Fasten shaft end to cylinder arm, arrow 5, on rockshaft. Fasten each end of cylinder with one (1) 1-1/4" x 4-3/4" (31.7 mm x 120.6 mm) pin. Secure each cylinder pin with two (2) 5/16" x 2" (7.87 mm x 50.8 mm) cotter pins.
20. See Fig. 19. Fasten one (1) 3" x 24" (76.2 mm x 609.6 mm) rephasing hydraulic cylinder, arrow 6, to wing frame. Fasten barrel end to 1-1/4" x 8" (31.7 mm x 203 mm) I-bolt, arrow 7, position so ports face up. Fasten shaft end to cylinder arm, arrow 8, on wing rockshaft. Fasten each end of cylinder with one (1) 1-1/4" x 4-3/4" (31.7 mm x 120.6 mm) pin. Secure each cylinder pin with two (2) 5/16" x 2" (7.87 mm x 50.8 mm) cotter pins.

IMPORTANT: BE SURE BARREL CLEVIS PIN OF 3" x 24" (76.2 mm x 610 mm) CYLINDER IS HORIZONTAL WITH CYLINDER PORTS FACING UP. IF CLEVIS PIN IS NOT HORIZONTAL THE 3" x 24" (76.2 mm x 610 mm) ROCKSHAFT CYLINDER WILL NOT BE FREE TO PIVOT UP AND DOWN WHEN IT IS EXTENDED OR CONTRACTED CAUSING SERIOUS DAMAGE.

FIG 20

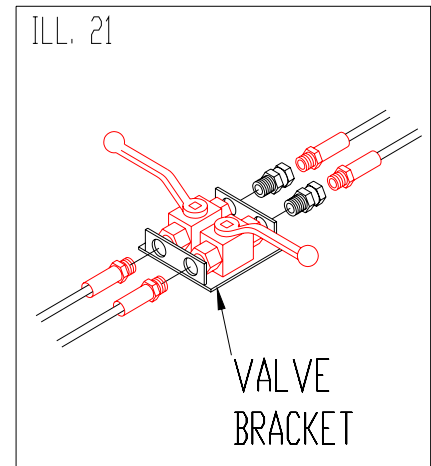


MODEL 4290 - 4300 HYDRAULIC SYSTEM

21. See Fig. 21. Place two (2) hydraulic lock up valves in brackets welded to top R.H.S. of main frame. Each valve is held in place with incoming hose and fittings.

22. **ATTACHING HYDRAULIC HOSES TO ROCKSHAFT CYLINDERS AND WING LIFT CYLINDER:**

IMPORTANT: DO NOT USE TEFLON TAPE TO SEAL HYDRAULIC HOSES AND FITTINGS. IF PIECES OF TAPE GET INTO THE HYDRAULIC SYSTEM THEY MAY PLUG SMALL ORIFICES.



NOTE: To ensure the hydraulic system does not leak, seal fittings and hoses with sealing liquid.

- a) See Fig. 20. Install one (1) 1/2" (12.7 mm) N.P.T. x 90 degree swivel street elbow in the shaft end port of 3-1/2" x 24" (88.9 mm x 610 mm) main frame rockshaft cylinder. Connect a 3/8" x 237" (9.39 mm x 6020 mm) hydraulic hose to same swivel elbow. Then run same hose to front of main frame and across wing frame to 3" x 24" (76.2 mm x 610 mm) wing rockshaft cylinder. Install one (1) 1/2" (12.7 mm) N.P.T. x 90 degree swivel steel elbow in piston end port of 3" x 24" (76.2 mm x 610 mm) wing rockshaft cylinder and fasten the 3/8" x 237" (9.39 mm x 6020 mm) hose to same elbow.
- b) See Fig. 20. Install one (1) 1/2" (12.7 mm) N.P.T. x 90 degree swivel steel elbow in piston end port of 3-1/2" x 24" (88.9 mm x 610 mm) main frame rockshaft cylinder. Connect a 3/8" x 97" (9.39 mm x 2464 mm) hydraulic hose in same swivel elbow. Run same hose to front of main frame. Install one (1) 3/8" (9.39 mm) N.P.T. x 90 degree swivel street elbow in rear port of R.H. lock out valve and fasten the 3/8" x 97" (9.39 mm x 2464 mm) hose to same swivel elbow.
- c) See Fig. 20. Fasten a 3/8" x 124" (9.39 mm x 3150 mm) hydraulic hose in front port of R.H. lock out valve. Run hose to front of hitch.
- d) See Fig. 20. Install one (1) 1/2" (12.7 mm) N.P.T. x 90 degree swivel street elbow in shaft end port of 3" x 24" (76.2 mm x 610 mm) wing rockshaft cylinder. Connect a 3/8" x 274" (9.39 mm x 6960 mm) hydraulic hose to same swivel elbow. Run hose across front of wing frame to front L.H. side of main frame, then run hose to front of hitch.
- e) See Fig. 20. Install one (1) 3/8" (9.39 mm) N.P.T. x 90 degree swivel street elbow in piston end port of 5" x 36" (127 mm x 914 mm) wing lift cylinder. Connect one (1) 1/4" x 158" (6.35 mm x 4013 mm) hydraulic hose in same swivel elbow. Next, run hose to front of main frame. Install one (1) 3/8" (9.39 mm) N.P.T. x 90 degree swivel adapter on rear port of L.H. lock out valve and fasten the 1/4" x 158" (6.35 mm x 4013 mm) hose to same swivel adapter.
- f) See Fig. 20. Fasten one (1) 3/8" x 124" (9.39 mm x 3150 mm) hydraulic hose in front port of L.H. lock out valve. Run hose to front of hitch.
- g) See Fig. 20. Install one (1) 3/8" (9.39 mm) N.P.T. male x 3/8" (9.39 mm) N.P.T. female swivel adaptor in piston end port of 5" x 36" (127 mm x 914 mm) wing lift cylinder. Connect one (1) 1/4" x 254" (6.35 mm x 6452 mm) hyd. hose in same swivel elbow. Next run hose to front of hitch.
- h) See Fig. 20. Install male coupler tips (not supplied by Ezee-On) to the four hoses that are at front of hitch.



CAUTION: DO NOT DISCONNECT HYDRAULICALLY OPERATED COMPONENTS WHEN THERE IS PRESSURE WITHIN THOSE COMPONENTS. HYDRAULIC COMPONENTS UNDER PRESSURE MAY CAUSE PART AND HYDRAULIC FLUID TO FLY OUT AT A HIGH VELOCITY WHICH COULD CAUSE SERIOUS INJURY.

23. **SECURE HYDRAULIC HOSES TO FRAME** - See Fig. 20.

Fasten hoses to frame with one U-shaped hose clamp at each hold down point. Each hold down point has a 1/2" (12.7 mm) hex nut welded to the top of frame. Place hose clamp over two (2) hoses at each point and fasten clamp to weld-on nut with one (1) 1/2" x 3/4" (12.7 mm x 19.0 mm) bolt c/w lockwasher.

24. HOW MAIN LIFT (ROCKSHAFT) HYDRAULIC SYSTEM WORKS - See Fig. 20.

When raising the disc, oil is pumped into the piston end port of 3-1/2" x 24" (88.9 mm x 610 mm) main frame cylinder causing it to extend. Oil is then forced from the shaft end port of same cylinder into the piston end port of the 3" x 24" (76.2 mm x 610 mm) wing cylinder causing it to also extend. The oil from shaft end port of 3" x 24" (76.2 mm x 610 mm) wing cylinder is returned to tractor.

When lowering disc, oil is pumped into shaft end port of 3" x 24" (76.2 mm x 610 mm) wing cylinder causing it to contract. Oil forced from piston end port of same cylinder flows to shaft end port of the 3-1/2" x 24" (88.9 mm x 610 mm) main frame cylinder causing it to also contract. The oil from the piston end port of the 3-1/2" x 24" (88.9 mm x 610 mm) cylinder is returned to the tractor.

NOTE: *Lockup valve must be opened to allow oil to flow to and from lift cylinder.*

Both cylinders extend and contract at the same rate because the amount of oil flowing between the shaft end ports and the piston end ports are equal in volume. For example; the 3-1/2" x 24" (88.9 mm x 610 mm) main frame cylinder has a 1-3/4" (44.4 mm) diameter piston shaft which displaces enough oil from the shaft side to fully extend the 3" x 24" (76.2 mm x 610 mm) wing cylinder.

Each lift (rockshaft) cylinder contains a by-pass to allow oil to flow past piston when each cylinder is fully extended. If both cylinders are not fully extended when disc is raised, continue to pump oil into lift cylinders until all cylinders are fully extended.

25. See Fig. 20. To fill rockshaft cylinders with oil, remove depth control stops to allow cylinders to work full length of stroke. Next, pump oil into the cylinders working shafts in and out. After cylinders have been filled with oil, synchronize cylinders by fully extending them. After the first cylinder is fully extended continue to hold hydraulic lever until the other cylinder is also fully extended.

NOTE: *Before filling wing cylinder with oil, support cylinder so shaft passes over cylinder lug on wing.*

26. See Fig. 20. Pump oil into 5" (127 mm) wing lift cylinder. Extend and contract cylinder shaft until cylinder is completely filled with oil. After cylinder is full of oil fully extend it. Next, attach shaft end to a slotted hole in cylinder lug on wing frame with one (1) 1-1/4" x 4-3/4" (31.7 mm x 120.6 mm) pin. Secure pin with two (2) 5/16" x 1-3/4" (7.87 mm x 44.4 mm) cotter pins.



CAUTION: IF HYDRAULIC CYLINDER SHAFTS ARE UNPINNED AND CYCLED TO THE CYLINDERS WITH OIL, THEY CAN BE SERIOUSLY DAMAGED IF CLEVIS OF SHAFT STRIKES ROCKSHAFT ARM OR WING CYLINDER LUG.



CAUTION: HYDRAULIC OIL ESCAPING UNDER PRESSURE HAS SUFFICIENT FORCE TO CAUSE SERIOUS INJURY. IF INJURED BY ESCAPING FLUID, OBTAIN MEDICAL TREATMENT IMMEDIATELY.

CHECK HYDRAULIC HOSES PERIODICALLY FOR SIGNS OF RUPTURE AND LEAKS. USE A CARD BOARD AS A BACKSTOP TO CHECK FOR ESCAPING HIGH PRESSURE OR HOT FLUID.



CAUTION: WING WILL FREE FALL IF WING CYLINDER IS NOT FULL OF OIL CAUSING SERIOUS DAMAGE TO MACHINE OR SERIOUS INJURY OR DEATH TO PERSON(S) NEARBY.



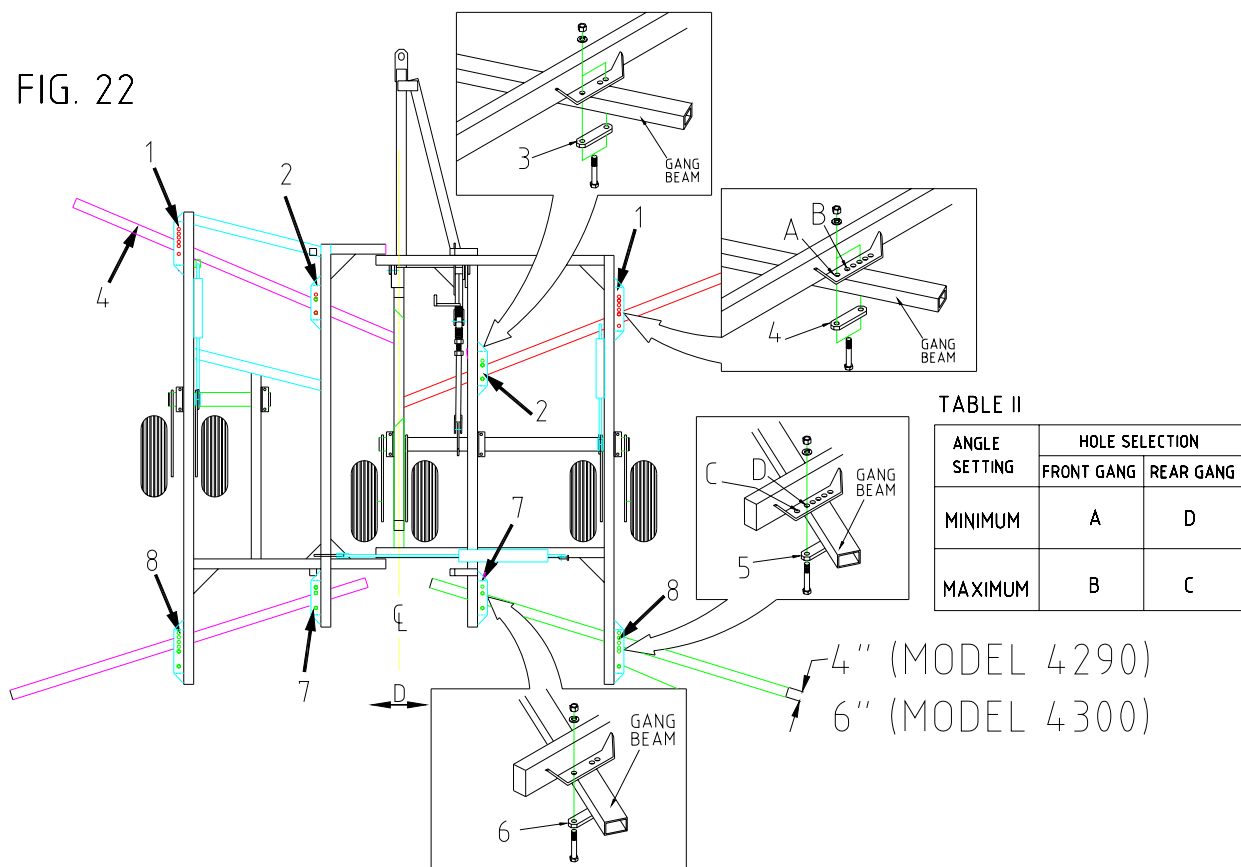
CAUTION: TO ASSEMBLE BALANCE OF DISC, EXTEND MAIN LIFT CYLINDERS RAISING FRAME. BE SURE MAIN LIFT CYLINDERS ARE COMPLETELY FILLED WITH OIL. THEN PLACE ADEQUATE SUPPORT UNDER EACH MAIN FRAME AND WING FRAMES.

DO NOT USE LOCK OUT VALVE AS SAFETY DEVICE TO PREVENT FRAME FROM FALLING. IF HYDRAULIC HOSE(S) OR FITTINGS FAILED DISC COULD DROP CAUSING SERIOUS INJURY OR DEATH TO THOSE NEARBY.



WARNING: DO NOT STAND UNDER WING WHILE WING IS BEING RAISED OR LOWERED. IF ANY COMPONENTS OF HYDRAULIC SYSTEM SHOULD FAIL OR IF HYDRAULIC LEVER SHOULD ACCIDENTALLY BE OPERATED, WING COULD DROP CAUSING SERIOUS INJURY OR DEATH.

FIG. 22



27. ATTACHING GANG BEAMS - See Fig. 22.

NOTE: See gang beam chart on Page 33 to determine gang beam lengths for the size of your disc.

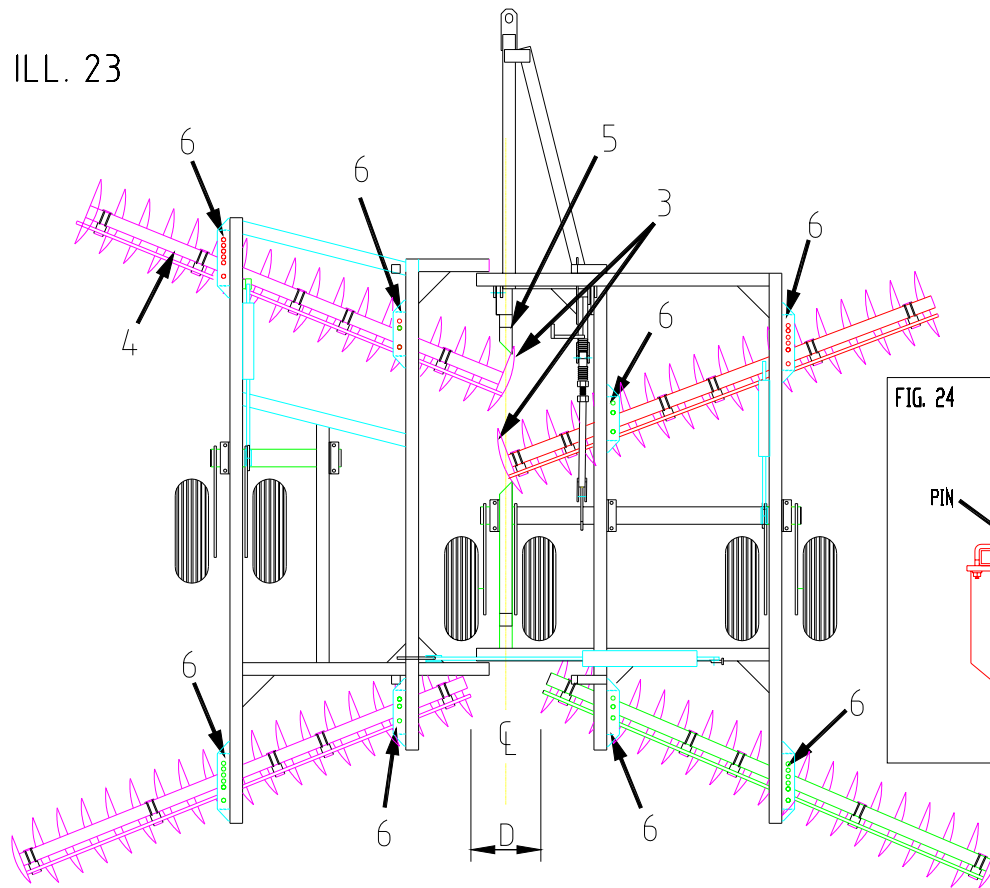
NOTE: The Model 4290 uses a 4" x 4" (102 mm x 102 mm) gang beams. The Model 4300 uses 6" x 4" (152 mm x 102 mm) gang beams.

NOTE: The beam clamp plates for Model 4290 are different than those for the Model 4300. Clamp plates for Model 4290 are 9-3/8" (237.9 mm) long and 11-3/8" (288.7 mm) long for the Model 4300.

- a) Before installing gang beams, read Section 1 of adjustments on page 10. To start with, it is recommended to set gangs at minimum angle.
- b) **FRONT GANGS:** Clamp each gang beam to two (2) brackets, arrows 1 and 2, that are welded to sides of frame. To start with select holes in outer brackets, arrow 1, that will give the minimum angle, see Table II. Next, using clamp plates, arrows 3 and 4, fasten gang beams to brackets, arrows 1 and 2, using (2) 1-1/4" x 7-1/2" (31.7 mm x 100.5 mm) hex bolts for each bracket. Install rear bolt in hole "A" of outer bracket to obtain a minimum angle. Secure bolts with nut and flatwasher. DO NOT tighten bolts at this time.
- c) **REAR GANGS:** Clamp each gang beam to two (2) brackets, arrow 7 and 8, that are welded to side of frame. To start with select holes in outer bracket, arrow 5, that will give minimum angle, see Table II. Next, using clamp plates, arrows 5 and 6, fasten gang beam to brackets, arrow 7 and 8, using (2) 1-1/4" x 7-1/2" (31.7 mm x 100.5 mm) hex bolts for each bracket. Install rear bolt in hole "D" of outer bracket to obtain minimum angle. Position gang beam ahead of hole "D". Secure bolts with nut and flatwasher. DO NOT tighten bolts at this time.

NOTE: Be sure front wing frame and front main frame gang beams are set at the same angle. Also set rear wing frame and rear main frame gang beams are at the same angle.

ILL. 23



28. **ATTACHING GANG ASSEMBLIES** - See Fig. 23.

NOTE: See gang patterns on pages 34 to 32 to determine gang pattern for your disc.

NOTE: The Model 4290 uses a 4" x 4" (102 mm x 102 mm) gang beam and Model 4300 uses a 6" x 4" (152 mm x 102 mm) gang beam.

- a) **REAR GANGS** - Roll rear gang assemblies in place under rear gang beams. Position rear gangs so that the scrapers are at the rear. The gang assemblies with leveller blades (small diameter blades) must be positioned at the outside. See Fig. 23 for the direction rear gangs face.

Attach bearing hangers to gang beams with two U-bolts per bearing hanger. Leave U-bolt loose. If disc is equipped with optional stone flex hanger, see paragraph "C" below.

- b) **FRONT GANGS** - Roll front gang assemblies in place under front gang beams. Position gang assemblies so that the scrapers are at the rear. See Fig. 232 for the direction the front gangs face.

Attach bearing hangers to gang beams with two (2) U-bolts per bearing hanger. Leave U-bolts loose. If disc is equipped with optional stone flex hanger, see paragraph "C" below.

- c) **OPTIONAL STONE FLEX BEARING HANGERS** - See Fig. 24. Fasten each hanger assembly, arrow 1, to bottom of gang beam, with one (1) backing plate, arrow 2, and two U-bolts c/w nuts and lockwashers. Be sure the pin which is welded to backing plate, arrow 2, is installed in slot of shank. For Model 4290 discs only, place (1) 1/4" thick two hole bearing plate between top of spring shank and bottom of gang beam. Shim is held in place by installed rear leg of each U-bolt through holes in plate. Leave U-bolt loose.



CAUTION: WHEN ATTACHING GANG ASSEMBLIES, WEAR PROTECTIVE GLOVES TO HELP PREVENT INJURY FROM CUTTING EDGES OF BLADES.

- D) See Fig. 23. Set front gangs so that the leading edge of the inside blades, arrow 3, are approximately 2-1/2" (63.5 mm) past centre of disc frame. (Centre of disc is same as centre of hitch)

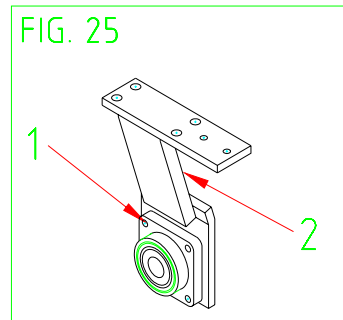
IMPORTANT: THE FRONT GANG BEAM, ARROW 4, ON WING FRAME MUST NOT BE EXTENDED PAST INNER PORTION OF OUTSIDE BEAM, ARROW 5, OF MAIN FRAME. IF WING GANG BEAM IS LOCATED UNDER THIS PORTION OF MAIN FRAME, WING GANG BEAM WILL HIT MAIN FRAME WHEN WING FLEXES DOWN IN NORMAL FIELD USE.

IMPORTANT: BE SURE EXCESS GANG BEAM OF FRONT GANG IS EXTENDED TO OUTSIDE OF DISC TO PREVENT ANY INTERFERENCE WITH FRAME AND ROCKSHAFT.

- E) See Fig. 23. Set rear gangs so that the distance between the rear edge of the two inside blades, dimension "D", is equal to 2" (50.8 mm) less than the blade diameter. For example, if your disc is equipped with 26" (660 mm) diameter blades dimension "D" would be set at 24" (610 mm). Be sure the rear gangs are centred on the frame. See section 2 of adjustments page 11.
- F) See Fig. 23. If your disc has split gangs, adjust the blade to blade distance between gang assemblies. This distance should be the same as the blade spacing of your disc..
- F) Before tightening bearing hanger U-bolts, loosen U-bolts which fasten scraper bar to bearing hanger. Next, check each bearing hanger to make sure hanger is sitting square under gang beam. Also be sure hanger is not turned to one side.
- H) Next tighten U-bolts as follows:
- | | |
|------------|--|
| Model 4290 | - 150 ft. lbs. (203.25 N.m) - for 5/8" (15.7 mm) U-bolts |
| | - 260 ft. lbs. (352.3 N.m) - for 3/4" (19.0 mm) U-bolts |
| Model 4300 | - 430 ft. lbs. (582.65 N.m) - for 7/8" (22.0 mm) U-bolts |

IMPORTANT: IF BEARING HANGERS ARE NOT SITTING SQUARE BEFORE TIGHTENING U-BOLTS, THRUST WILL BE BUILT INTO THE BEARINGS AND THE LIFE OF BEARINGS WILL BE SHORTENED.

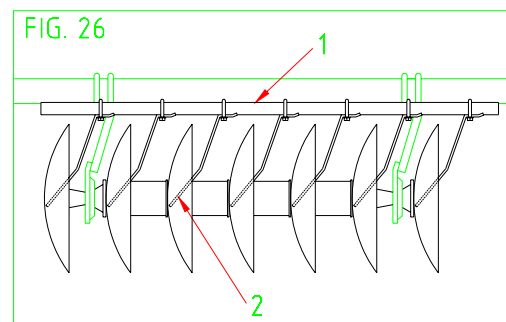
29. **TIGHTENING GANG BEAM CLAMP PLATES** - See Fig. 23. Position gang beams so they are tight against rear bolt of each gang beam clamp plate, arrow 6. Tighten beam clamp plate bolts to 840 ft. lbs. (116 m. kgs.)

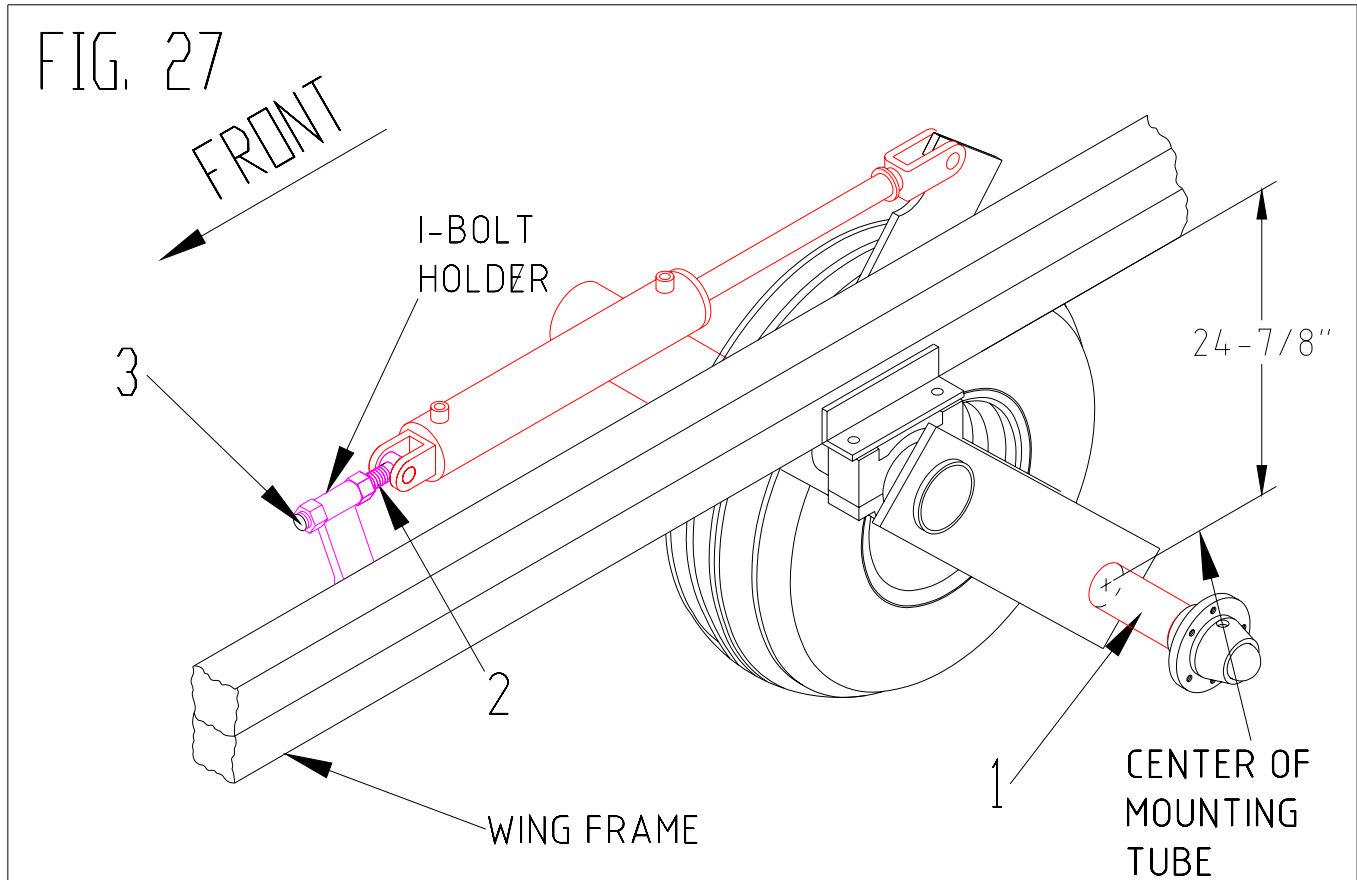


30. See Fig. 25. For Models equipped with 211 and 410 bearings. Loosen all the bolts, arrow 1, which fastens the bearings to the hangers, arrow 2. Then turn the disc blades to allow the bearings to align themselves. Next tighten all the bolts. This will ensure proper bearing alignment, increasing bearing life.

31. See Fig. 26. Adjust scraper bar, arrow 1, and scrapers, arrow 2, of each gang so that each scraper is in contact with disc blade.

IMPORTANT: DISC WILL REQUIRE LESS HORSEPOWER TO PULL IF SCRAPERS ARE ADJUSTED PROPERLY.



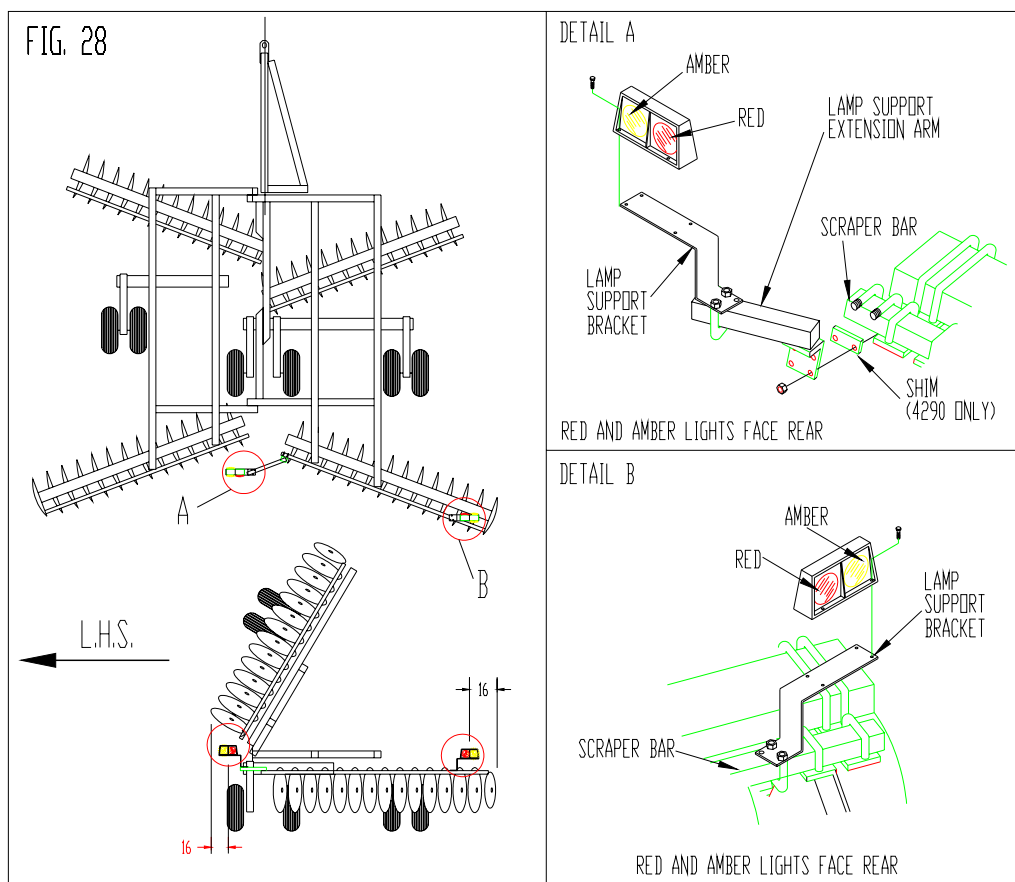


32. See Fig. 27. Level Wing Frame with Main Frame as follows:

- a) Raise disc by extending rockshaft cylinders. Besure wing rockshaft cylinder is fully extended.
- b) Check the distance the spindle mounting tube, arrow 1, (welded to bottom of rockshaft wheel leg) is from the bottom of wing frame. This distance should be 24-7/8".
- c) If spindle mounting tube location is not correct, adjust length of wing cylinder I-Bolt, arrow 2. Extending I-Bolt will move spindle mounting tube further away from bottom of frame while contracting I-Bolt will move it closer.
- d) After adjustment is complete, lock I-Bolt by tightening front nut, arrow 3, against I-Bolt holder.

NOTE: *The above wheel leg setting is an initial setting only. If wing gangs do not cut at same depth as the main frame gangs, further wing cylinder adjustment will be required.*

IMPORTANT: BESURE AXIS OF BARREL END, PIN IS HORIZONTAL AND CYLINDER PORTS ARE FACING UP. IF CYLINDER AND I-BOLT ARE NOT POSITIONED PROPERLY CYLINDER WILL NOT BE FREE TO PIVOT WHEN ACTIVATED CAUSING SERIOUS DAMAGE.



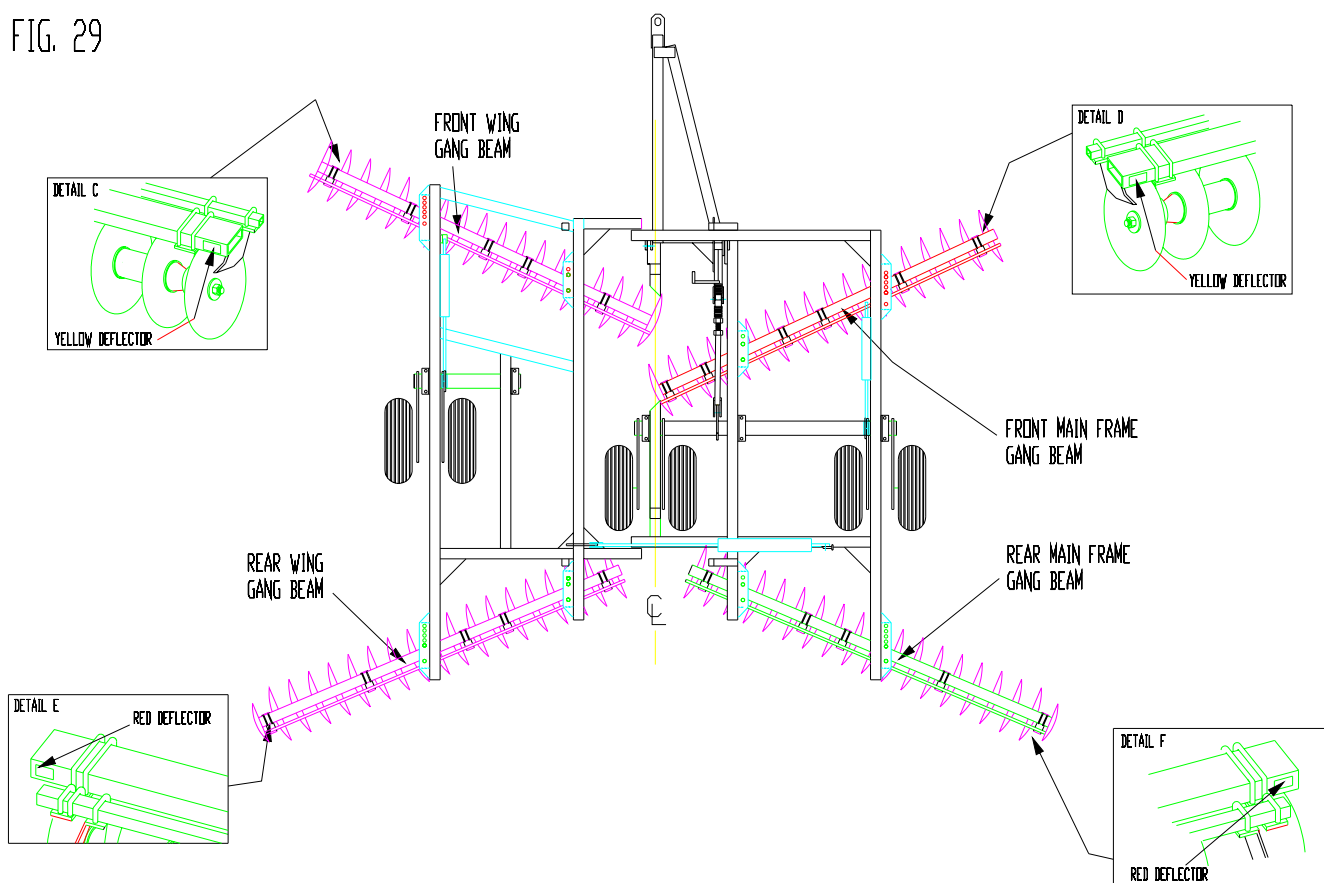
33. WARNING LIGHT KIT MOUNT INSTRUCTIONS (OPTIONAL) - See Fig. 28

- See detail "A". Fasten lamp support extension arm to L.H. end of scraper bar on rear main frame gang. For Model 4290 series discs place a shim over the 2 bottom holes of extension arm's mount plated. This shim will bring extension arm back to a horizontal position. Fasten with two (2) 1/2" x 2" (12.7 mm x 50.8 mm) U-bolts c/w nuts and lockwashers. Do not tighten U-bolts at this time.
- See detail "A". Fasten lamp support bracket to top of extension arm with one (1) 1/2" x 2" (12.7 mm x 50.8 mm) U-bolt c/w nuts and lockwashers. Position bracket as shown. Do not tighten U-bolts at this time.
- See detail "A". Fasten L.H. warning lamp to top of lamp support with four (4) 1/4" x 1-1/4" (6.35 mm x 31.7 mm) hex bolts c/w nuts and lockwashers. To determine which is a L.H. lamp, choose unit that has amber light on L.H.S. when side with amber and red lights are facing rear.
- See detail "B". Fasten lamp support bracket to top R.H. end of scraper bar on rear main frame gang with one (1) 1/2" x 2" (12.7 mm x 50.8 mm) U-bolt c/w nuts and lockwashers. Position as shown. Do not tighten U-bolt at this time.

WARNING LIGHT KIT CONTINUED:

- e) See detail "B". Fasten R.H. warning lamp to top of lamp support with four (4) 1/4" x 1-1/4" (6.35 mm x 31.7 mm) hex bolts c/w nuts and lockwashers. To determine which is R.H. lamp, choose unit that has amber light on R.H.S. when side with amber and red lights are facing rear.
- f) See Fig. 28. With disc folded for transport, position each lamp so it is no more than 16" (406 mm) from centre of lamp to widest point of machine. Lamps are positioned inside of this widest point **not** outside of the widest point. Tighten all U-bolts and bolts.
- g) Run electrical harness along top of frame and along gang beam up to lamps. Plug ends of harness into each lamp. Tie harness to the frame (with supplied ties) as required. Be sure harness clears all moving parts such as disc blades, tires, and rockshaft components. Make sure harness isn't tight anywhere along frame.
- h) Plug front end of electrical harness into receptacle at rear of tractor. If tractor is not equipped with a receptacle, then a receptacle must be wired into the tractor electrical system.

FIG. 29



34. REFLECTOR DECAL INSTALLATION - See Fig. 29.

NOTE: Before installing decals, clean the area they will be placed on.

- a) Place one (1) 1-1/2" x 3" (38.1 mm x 76.2 mm) red reflector decal on rear side of each rear gang beam. Locate decals approximately 1" (25 mm) from end of gang beam. See detail "E" and "F".
- b) Place one (1) 1-1/2" x 3" (38.1 mm x 76.2 mm) yellow reflector decal on front side of each front gang beam. Locate decals approximately 1" (25 mm) from end of gang beam. See detail "C" and "D".

GANG BEAM CHART

4290 - 4300 DISC

MODEL	GANG BEAM SIZE
4290 -	4" x 4" x 1/4" (102 mm x 102 mm x 6.3 mm)
4300 -	6" x 4" x 3/8" (152 mm x 102 mm x 9.4 mm)

8" (203 mm) SPACING - 4290 ONLY

DISC	L.H. & R.H. FRONT GANG	FRONT GANG BEAM LENGTH	L.H. & R.H. REAR GANG	REAR GANG BEAM LENGTH
50 Blade	12 Blade	105" (2667 mm)	13 Blade	105" (2667 mm)
54 Blade	13 Blade	112" (2845 mm)	14 Blade	112" (2845 mm)
58 Blade	14 Blade	112" (2845 mm)	15 Blade	120" (3048 mm)
62 Blade	6 & 9 Blade	120" (3048 mm)	7 & 9 Blade	128" (3250.8 mm)
66 Blade	7 & 9 Blade	126" (3200 mm)	7 & 10 Blade	136" (3454 mm)
70 Blade	8 & 9 Blade	136" (3454 mm)	7 & 11 Blade	144" (3658 mm)
74 Blade	8 & 10 Blade	144" (3658 mm)	7 & 12 Blade	152" (3861 mm)

9" (229 mm) SPACING - 4290 - 4300

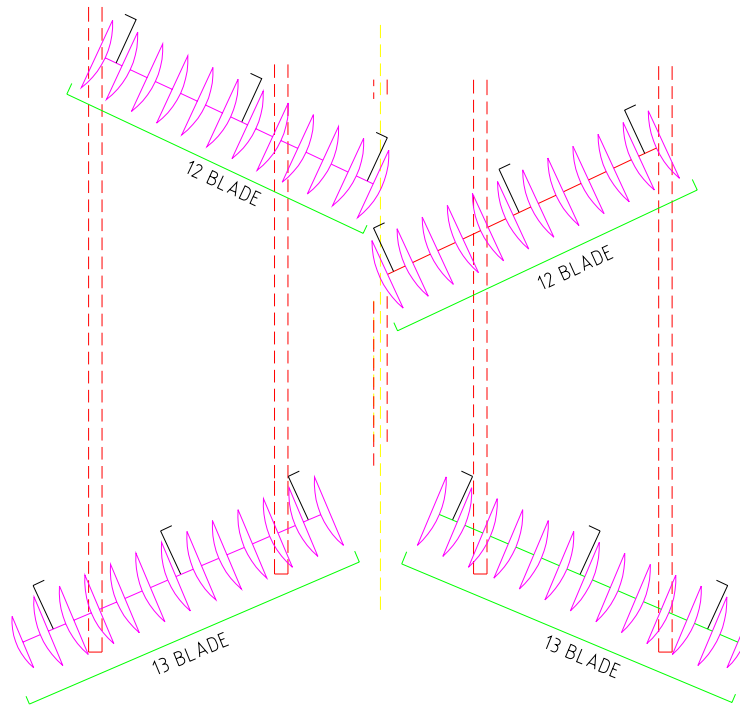
DISC	L.H. & R.H. FRONT GANG	FRONT GANG BEAM LENGTH	L.H. & R.H. REAR GANG	REAR GANG BEAM LENGTH
46 Blade	11 Blade	105" (2667 mm)	12 Blade	105" (2667 mm)
50 Blade	12 Blade	112" (2845 mm)	13 Blade	116" (2946 mm)
54 Blade	13 Blade	116" (2946 mm)	14 Blade	126" (3200 mm)
58 Blade	6 & 8 Blade	126" (3200 mm)	6 & 9 Blade	136" (3454 mm)
62 Blade	7 & 8 Blade	136" (3454 mm)	6 & 10 Blade	144" (3658 mm)
66 Blade	8 & 8 Blade	144" (3658 mm)	6 & 11 Blade	152" (3861 mm)

10-1/2" (267 mm) SPACING - 4300 ONLY

DISC	L.H. & R.H. FRONT GANG	FRONT GANG BEAM LENGTH	L.H. & R.H. REAR GANG	REAR GANG BEAM LENGTH
42 Blade	10 Blade	112" (2845 mm)	11 Blade	112" (2845 mm)
46 Blade	11 Blade	112" (2845 mm)	12 Blade	126" (3200 mm)
50 Blade	12 Blade	120" (3048 mm)	13 Blade	136" (3454 mm)
54 Blade	13 Blade	136" (3454 mm)	14 Blade	144" (3658 mm)
58 Blade	14 Blade	144" (3658 mm)	5 & 10 Blade	155" (3937 mm)

MODEL 4290
DISC GANG PATTERN - 8" (203 mm) SPACING
FRONT
50 BLADE

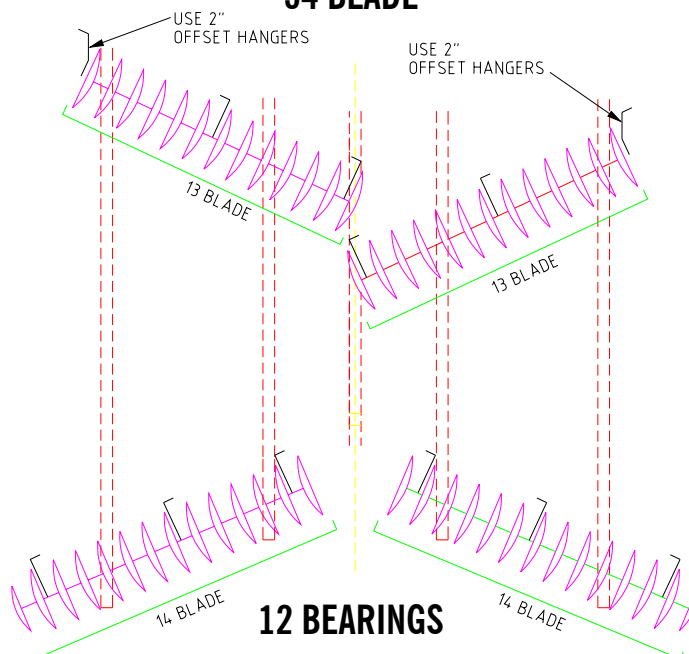
APPROX. WIDTH
17 ft. (5.18 m.)



12 BEARINGS

MODEL 4290
DISC GANG PATTERN - 8" (203 mm) SPACING
FRONT
54 BLADE

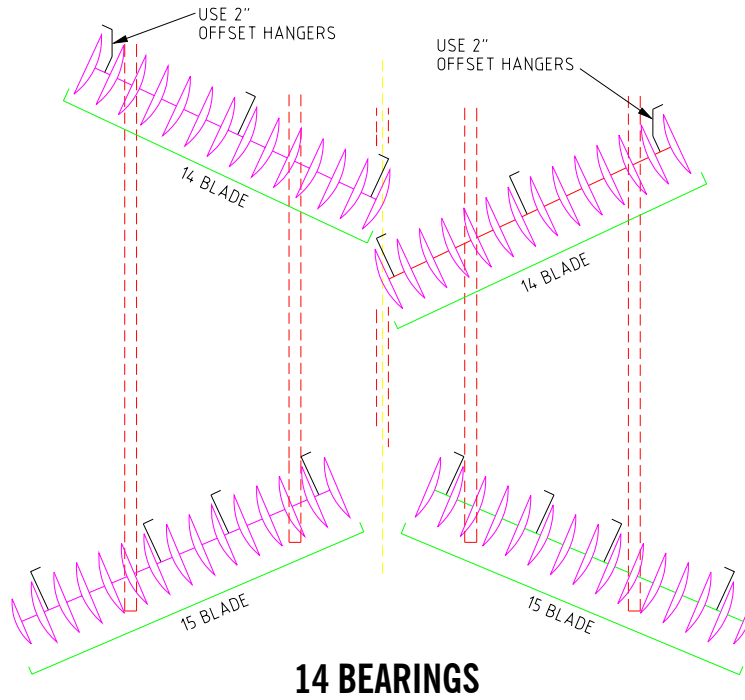
APPROX. WIDTH
18-1/2 ft. (5.63 m.)



12 BEARINGS

MODEL 4290
DISC GANG PATTERN - 8" (203 mm) SPACING
FRONT
58 BLADE

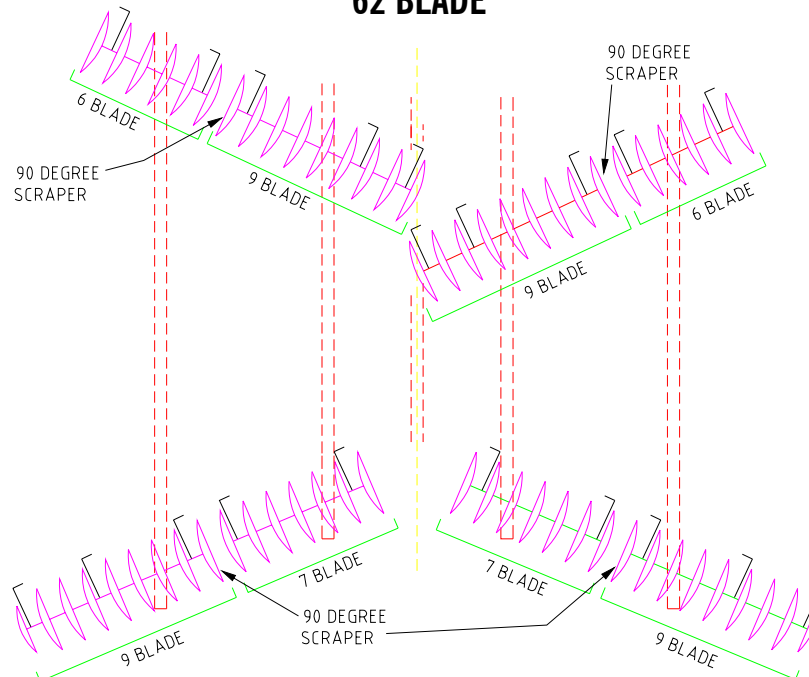
APPROX. WIDTH
20 ft. (6.09 m.)



14 BEARINGS

MODEL 4290
DISC GANG PATTERN - 8" (203 mm) SPACING
FRONT
62 BLADE

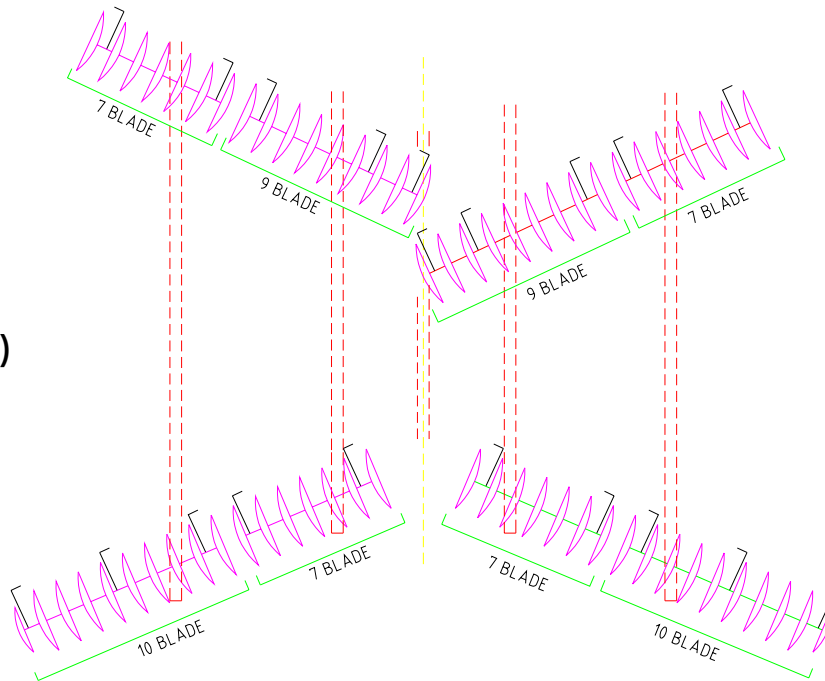
APPROX. WIDTH
21 ft. (6.40 m.)



20 BEARINGS

MODEL 4290
DISC GANG PATTERN - 8" (203 mm) SPACING
FRONT
66 BLADE

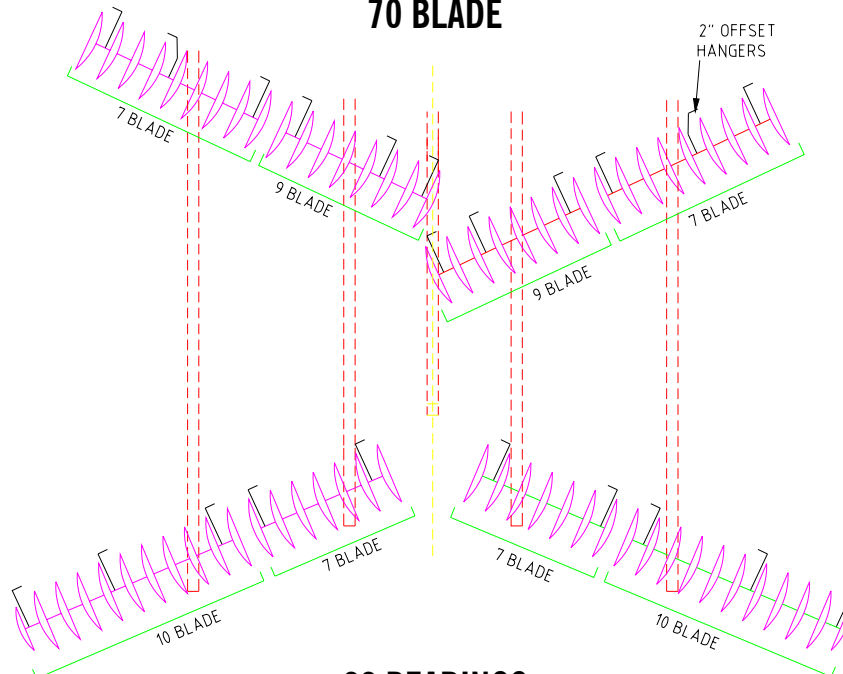
APPROX. WIDTH
22-1/2 ft. (6.85 m.)



22 BEARINGS

MODEL 4290
DISC GANG PATTERN - 8" (203 mm) SPACING
FRONT
70 BLADE

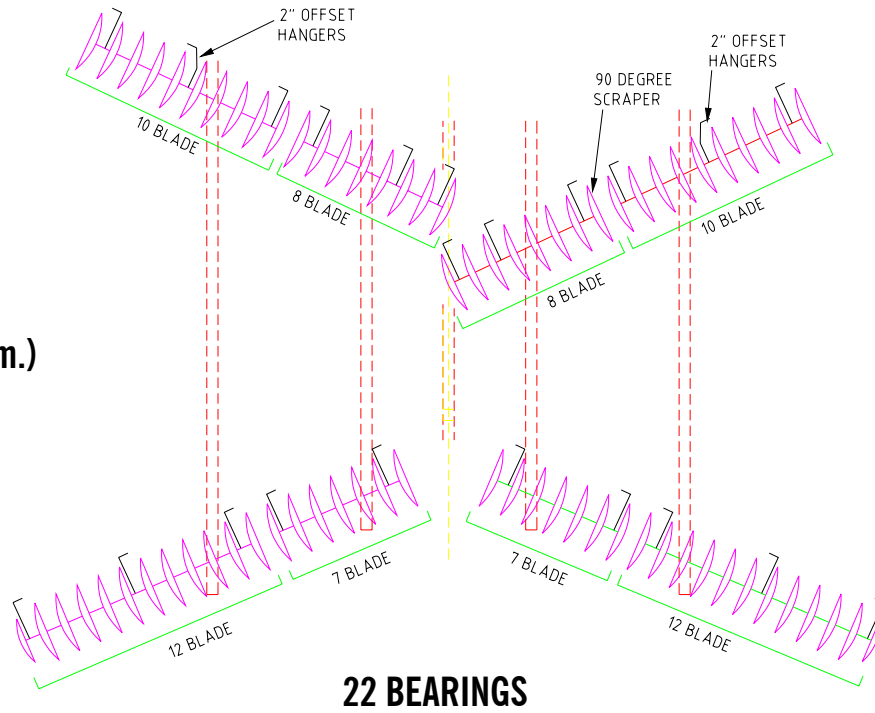
APPROX. WIDTH
24 ft. (7.31 m.)



22 BEARINGS

MODEL 4290
DISC GANG PATTERN - 8" (203 mm) SPACING
FRONT
74 BLADE

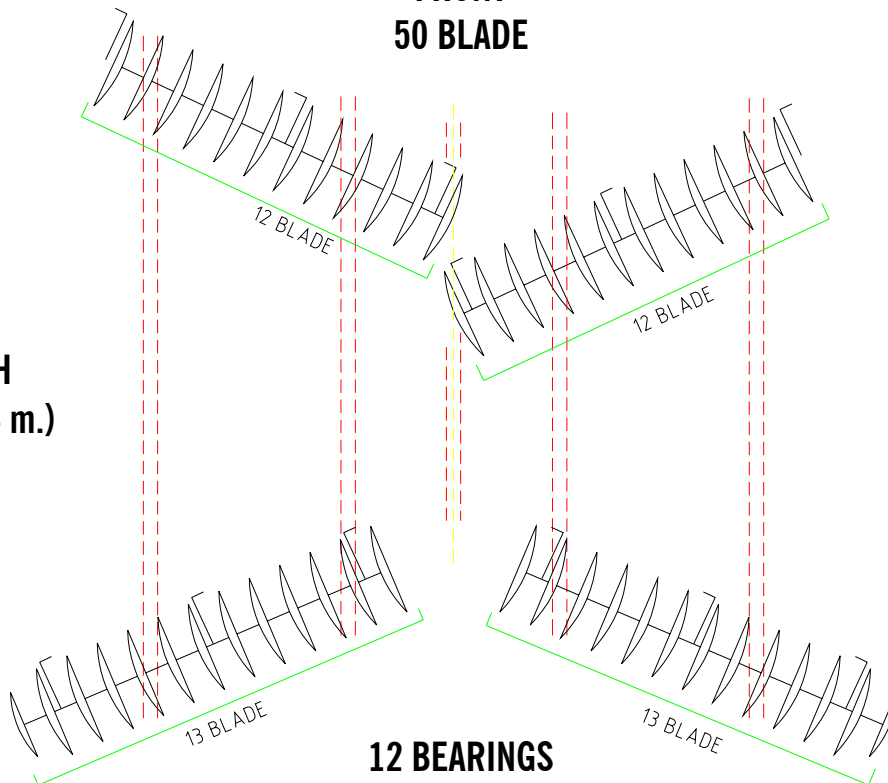
APPROX. WIDTH
25-1/2 ft. (7.77 m.)



22 BEARINGS

MODEL 4290 - 4300
DISC GANG PATTERN - 9" (229 mm) SPACING
FRONT
50 BLADE

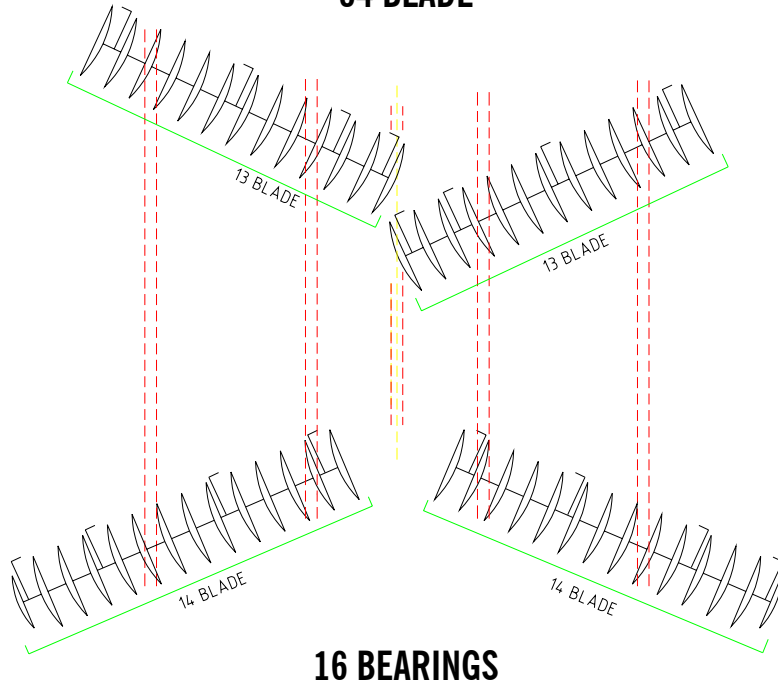
APPROX. WIDTH
19-1/2 ft. (5.94 m.)



12 BEARINGS

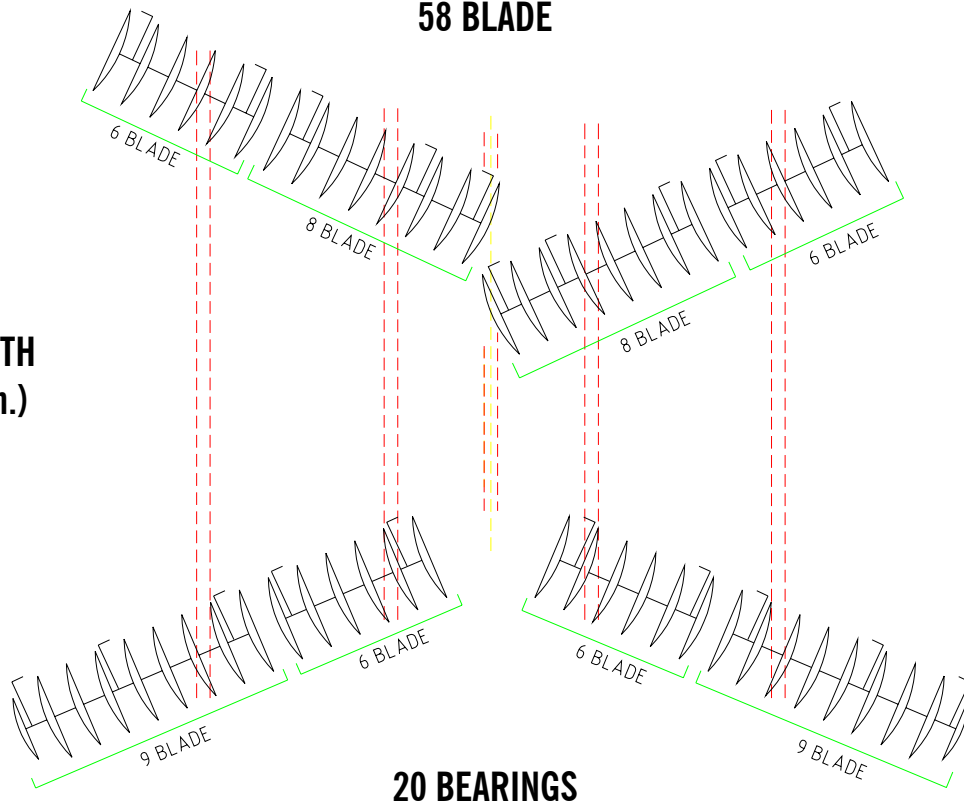
MODEL 4290 - 4300
DISC GANG PATTERN - 9" (229 mm) SPACING
FRONT
54 BLADE

APPROX. WIDTH
21 ft. (6.40 m.)



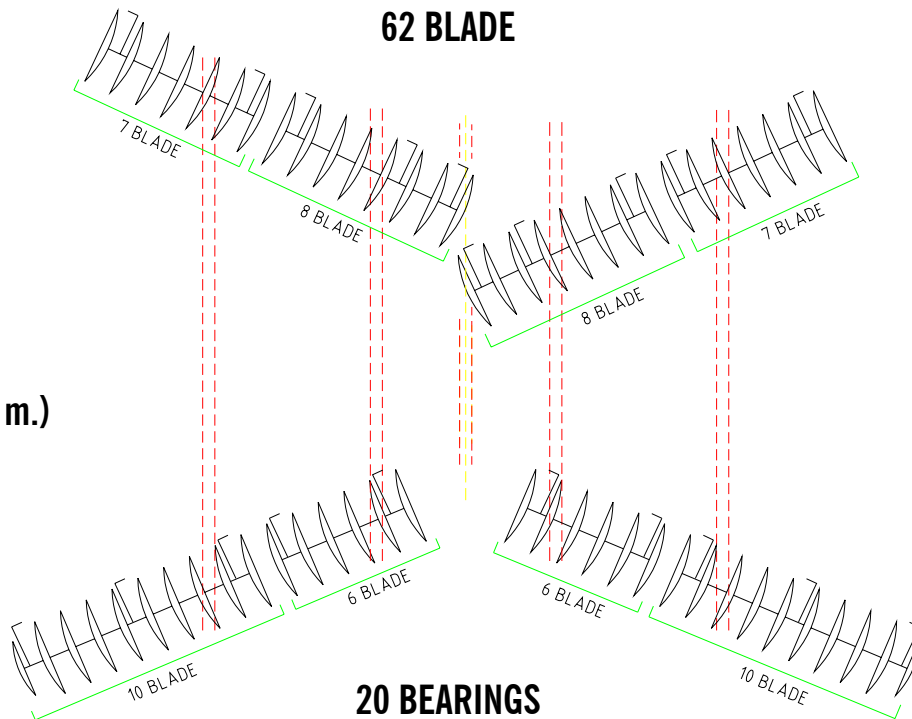
MODEL 4290 - 4300
DISC GANG PATTERN - 9" (229 mm) SPACING
FRONT
58 BLADE

APPROX. WIDTH
22 ft. (6.70 m.)



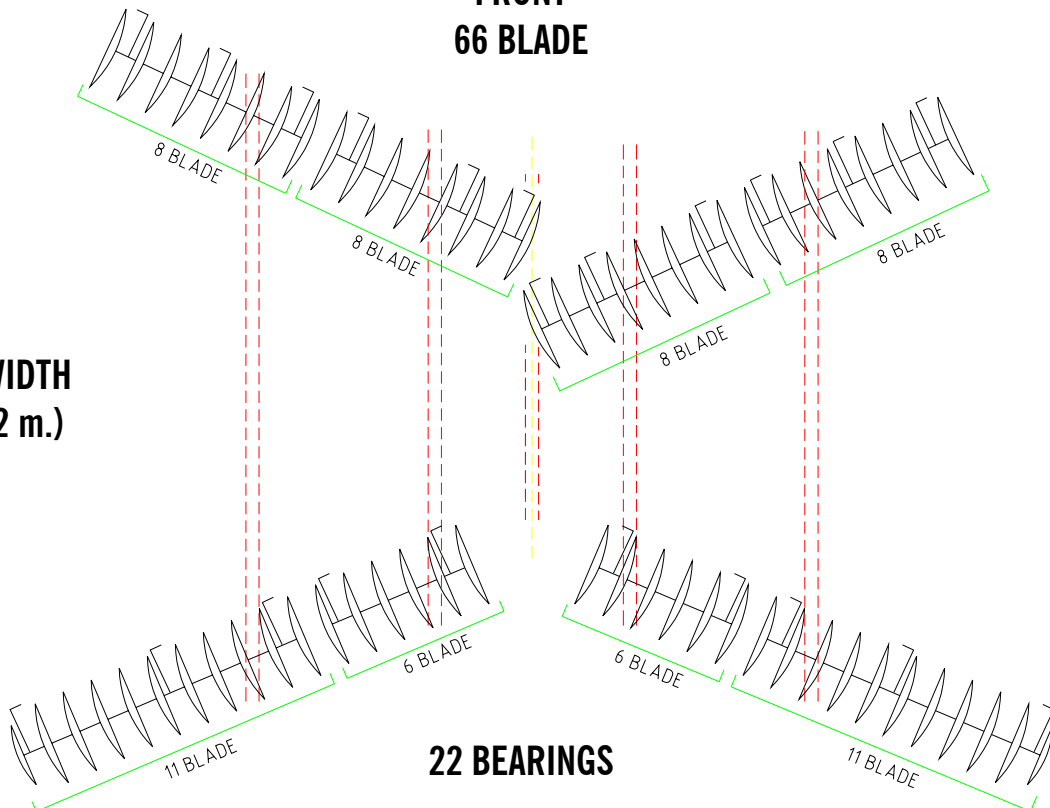
MODEL 4290 - 4300
DISC GANG PATTERN - 9" (229 mm) SPACING
FRONT
62 BLADE

APPROX. WIDTH
23-1/2 ft. (7.16 m.)



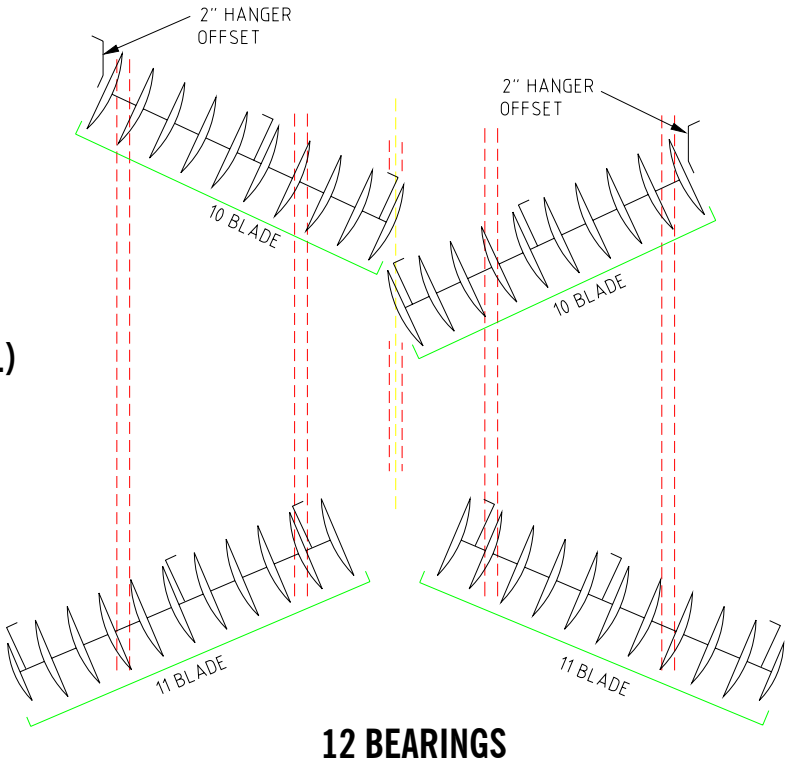
MODEL 4290 - 4300
DISC GANG PATTERN - 9" (229 mm) SPACING
FRONT
66 BLADE

APPROX. WIDTH
25 ft. (7.62 m.)



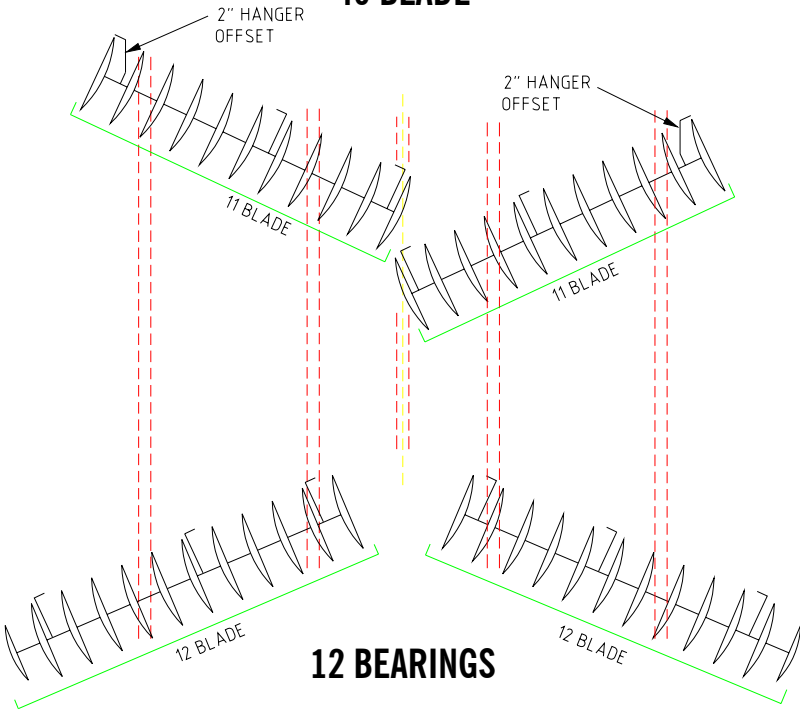
MODEL 4300
DISC GANG PATTERN - 10-1/2" (267 mm) SPACING
FRONT
42 BLADE

APPROX. WIDTH
18-1/2 ft. (5.63 m.)



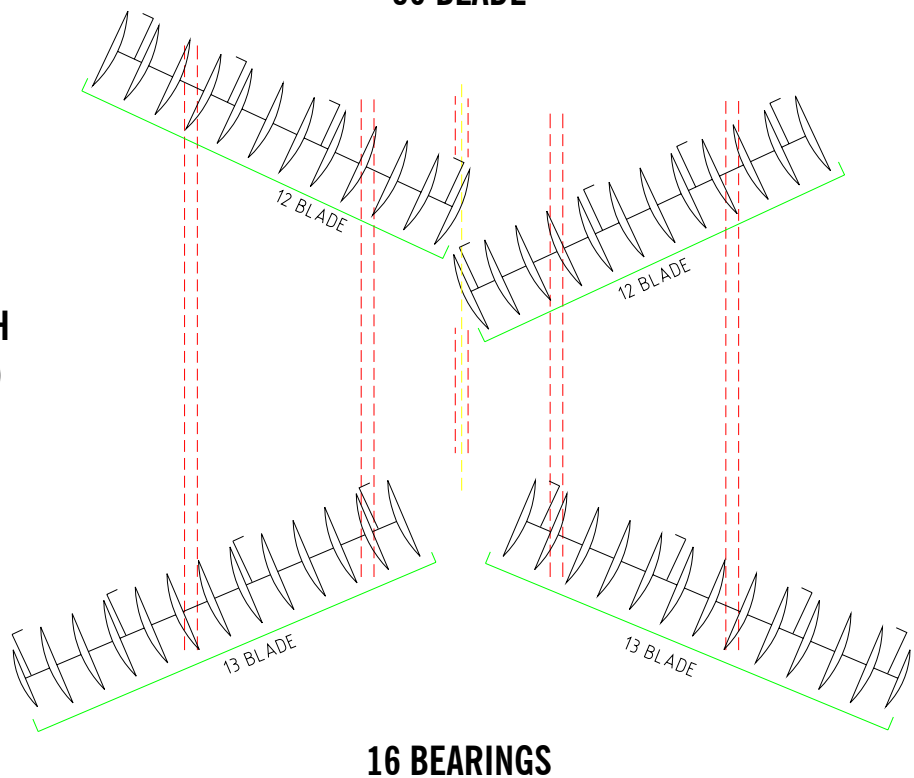
MODEL 4300
DISC GANG PATTERN - 10-1/2" (267 mm) SPACING
FRONT
46 BLADE

APPROX. WIDTH
20 ft. (6.09 m.)



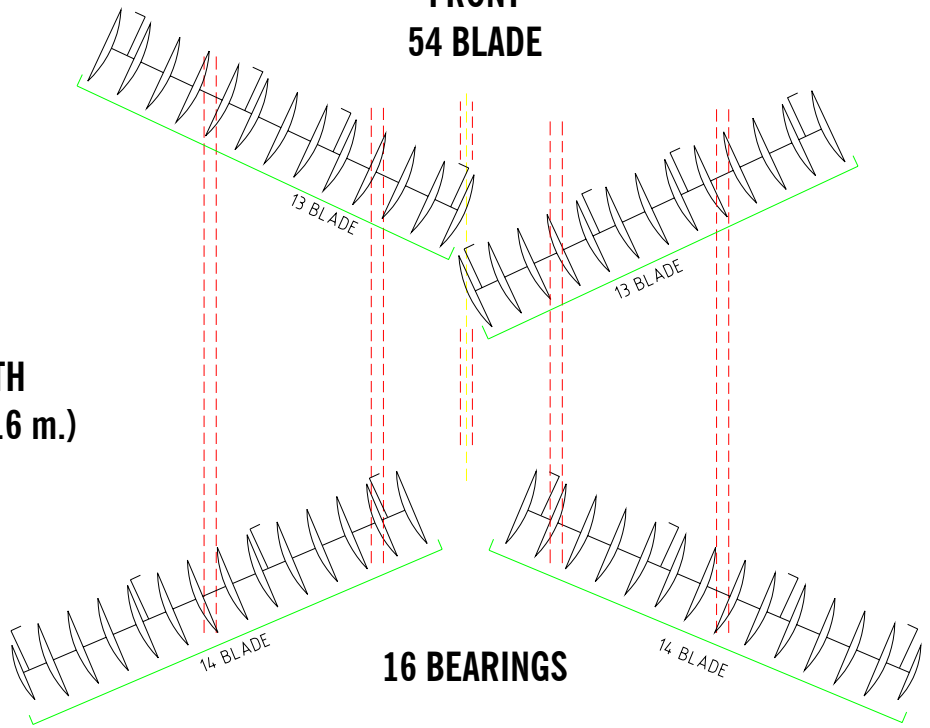
MODEL 4300
DISC GANG PATTERN - 10-1/2" (267 mm) SPACING
FRONT
50 BLADE

APPROX. WIDTH
22 ft. (6.70 m.)



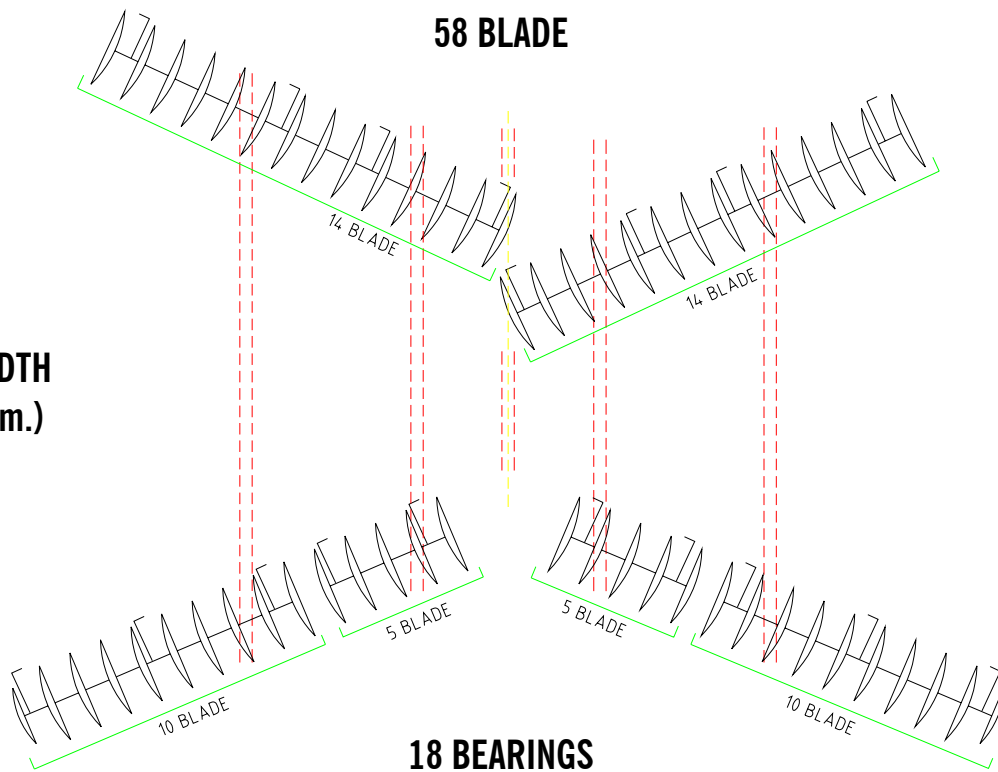
MODEL 4300
DISC GANG PATTERN - 10-1/2" (267 mm) SPACING
FRONT
54 BLADE

APPROX. WIDTH
23-1/2 ft. (7.16 m.)



MODEL 4300
DISC GANG PATTERN - 10-1/2" (267 mm) SPACING
FRONT
58 BLADE

APPROX. WIDTH
25 ft. (7.62 m.)



MODEL 4290 - 4300
DISC GANG PATTERN 10-1/2" SPACING

MODEL 4290 - 4300
DISC GANG PATTERN 10-1/2" SPACING