

Farm King

OPERATOR AND PARTS MANUAL

Tandem Disc

Model 6650NT



WARRANTY REGISTRATION FORM

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer Name:

Dealer Name:

Customer Address:

Dealer Address:

City:

Prov / State:

City:

Prov / State:

Postal / Zip Code:

Phone:

Postal / Zip Code:

Phone:

Tandem Disc Model:

Serial Number:

Delivery Date:

I have thoroughly instructed the buyer on the above described equipment which review included the Operator and Parts Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Dealer Inspection Report

- ☐ Scrapers Adjusted Properly
- ☐ Lubricate Machine Level Machine
- ☐ Hydraulic Lockout Valves Function Properly
- ☐ Correct # Of Depth Stops
- ☐ Wheel Bolt / Lug Nut Torque
- ☐ Fasteners Tight
- ☐ Front And Rear Gangs Set At Medium Angle
- ☐ Adjust Mounted Harrows As Required (if equipped)
- ☐ Check Overlap Measurement Of Front Gangs
- ☐ Check Opening Measurement Between Two Inner Blades Of Rear Main Frame Gangs
- ☐ Hydraulic Cylinders / Hoses
- ☐ Electrical Harness
- ☐ Tire Pressure

Safety

- ☐ All Lights And Reflectors Installed
- ☐ All Lights And Reflectors Cleaned And Working
- ☐ Safety Chain On Hitch
- ☐ All Decals Installed
- ☐ Guards And Shields Installed And Secure
- ☐ Review Operating And Safety Instructions
- ☐ General Adjustment And Set-up Procedures
- ☐ Transportation Requirements And Regulations

Date:

Dealer Rep. Signature:

The above equipment and Operator And Parts Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date:

Customer / Owner Signature:

Remove this Warranty Registration Form from the Operator And Parts Manual. Make two copies of the form. Send original Warranty Registration Form to Farm King. Give one copy to the customer and the dealer will keep one copy.

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Manufacturer's Statement: For technical reasons, Buhler Industries Inc. reserves the right to modify machinery design and specifications provided herein without any preliminary notice. Information provided herein is of descriptive nature. Performance quality may depend on ground type, applied techniques, weather conditions and other factors.

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Farm King



INTRODUCTION

This Operator's Manual was written to give the owner / operator instructions on the safe operation, maintenance and part identification of the Farm King equipment. READ AND UNDERSTAND THIS OPERATOR'S MANUAL BEFORE OPERATING YOUR FARM KING EQUIPMENT. If you have any questions, see your Farm King dealer. This manual may illustrate options and accessories not installed on your Farm King equipment.

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OWNER'S INFORMATION

Thank you for your decision to purchase a Farm King 6650NT Tandem Disc. To ensure maximum performance of your equipment, it is mandatory that you thoroughly study the Operator's Manual and follow the recommendations. Proper operation and maintenance are essential to maximize equipment life and prevent personal injury.

Operate and maintain this equipment in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and / or laws. Follow all on-product labeling and instructions.

Make sure that all personnel have read this Operator's Manual and thoroughly understand safe and correct operating, installation and maintenance procedures.

Farm King is continually working to improve its products. Farm King reserves the right to make any improvements or changes as deemed practical and possible without incurring any responsibility or obligation to make any changes or additions to equipment sold previously.

Although great care has been taken to ensure the accuracy of this publication, Farm King makes no warranty or guarantee of any kind, written or expressed, implied or otherwise with regard to the information contained within this manual. Farm King assumes no responsibility for any errors that may appear in **this** manual and shall not be liable under any circumstances for incidental, consequential or punitive damages in connection with, or arising from the use of this manual.

Keep this manual available for frequent reference. All new operators or owners must review the manual before using the equipment and annually thereafter. Contact your Farm King Dealer if you need assistance, information, or additional copies of the manual. Visit our website at www.farm-king.com for a complete list of dealers in your area.

The directions left, right, front and rear, as mentioned throughout this manual, are as seen facing in the direction of travel of the **implement**.

Serial Number Location

Please enter the model and serial number in the space provided for easy reference.

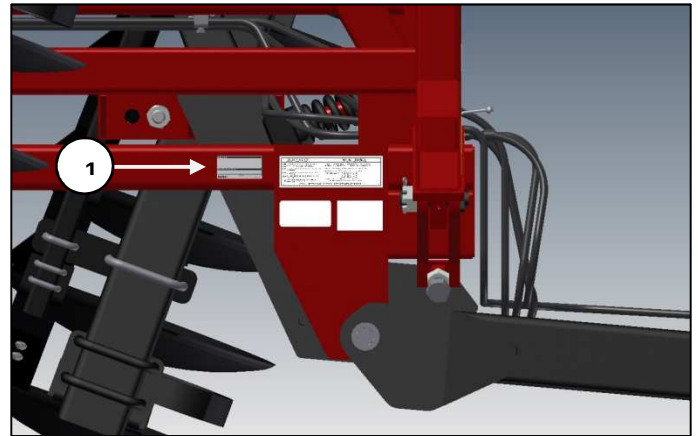


Figure 1

Model Number: _____

Serial Number: _____

The serial number plate (Item 1, Figure 1) is located on the front right side of main frame.

Always use your serial number when requesting information or when ordering parts.

Manual Storage

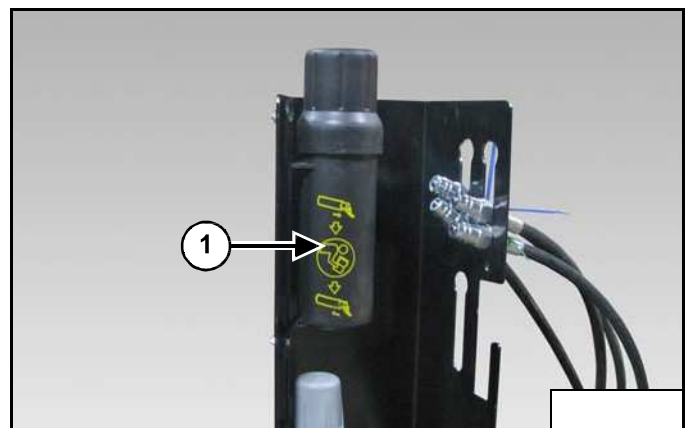


Figure 2

The Operator's Manual and other documents can be stored in the canister (Item 1, Figure 2) located on the hitch.

EQUIPMENT IDENTIFICATION

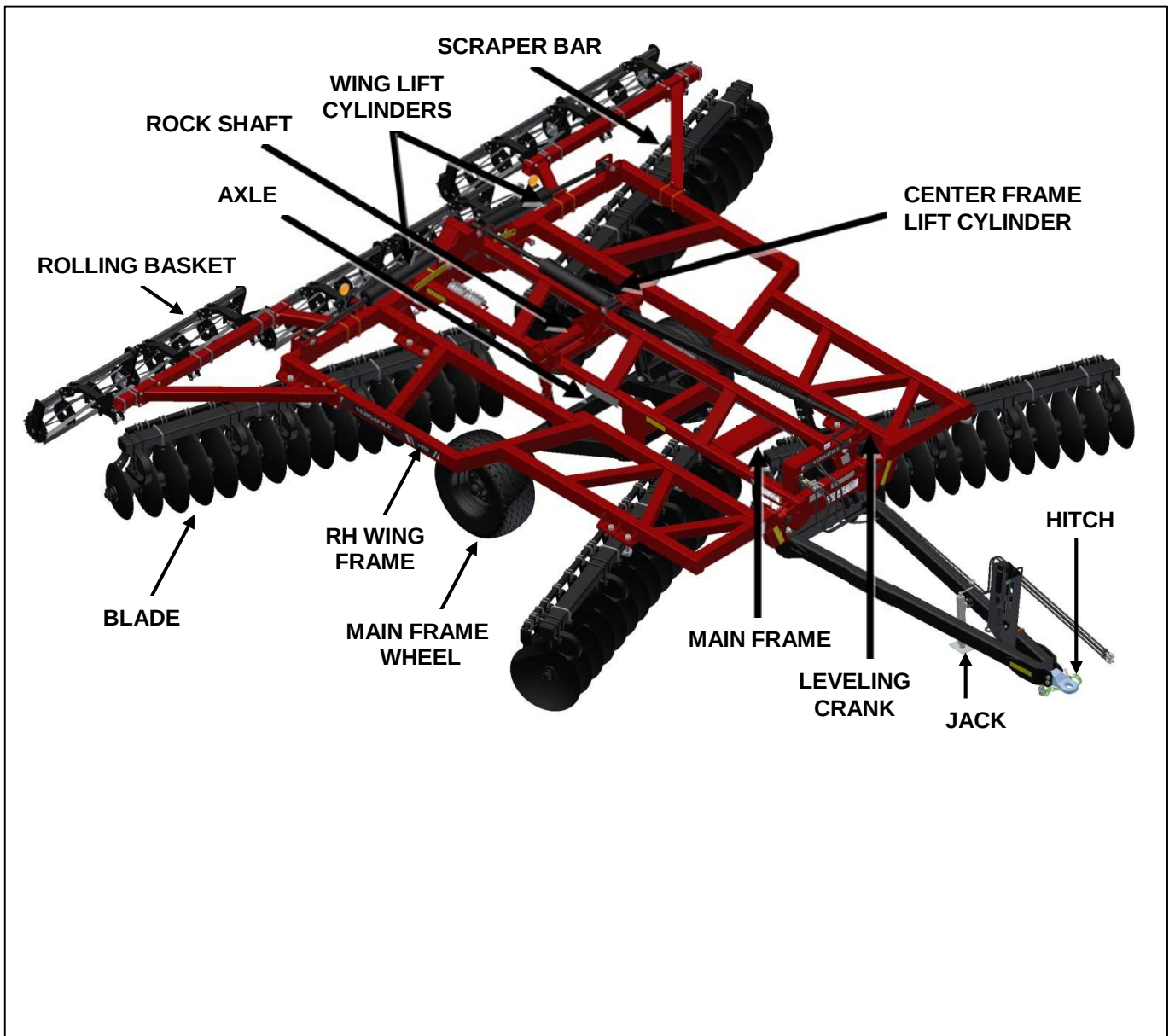


Figure 3 Component Location

SAFETY

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Farm King



SAFETY INSTRUCTIONS

Safe Operation Is the Operator's Responsibility



The signal word **CAUTION** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



The signal word **DANGER** on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.



The signal word **WARNING** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



This notice identifies procedures which must be followed to avoid damage to the machine.

Safe Operation Needs a Qualified Operator



Operators must have instructions before operating the machine. Untrained operators can cause injury or death.

For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the equipment.

A Qualified Operator Must Do The Following:

Understand the Written Instructions, Rules and Regulations

- The written instructions from Farm King include the Warranty Registration, Dealer Inspection Report, Operator's Manual and machine signs (decals).
- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.

Have Training with Actual Operation

- Operator training must consist of a demonstration and verbal instruction. This training is given by the machine owner prior to operation.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine safely under all conditions of the work area. Always fasten seat belt before operating.

Know the Work Conditions

- Clear working area of all bystanders, especially small children and all obstacles that might be hooked or snagged, causing injury or damage.
- Know the location of any overhead or underground power lines. Call local utilities and have all underground power lines marked prior to operation.
- Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service.

SAFETY INSTRUCTIONS (CONT'D)

Use Safety Rules

- Read and follow instructions in this manual and the tractor's Operators Manual before operating.
- Under no circumstances should young children be allowed to work with this equipment.
- This equipment is dangerous to children and persons unfamiliar with its operation.
- If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
- Stay clear of overhead power lines when raising or lowering the wings. Electrocution can occur without direct contact.
- Check for overhead and / or underground lines before operating equipment (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.
- Check that the equipment is securely fastened to the tractor.
- Make sure all the machine controls are in the NEUTRAL position before starting the machine.
- Operate the equipment only from the operator's position.
- Operate the equipment according to the Operator's Manual.
- When learning to operate the equipment, do it at a slow rate in an area clear of bystanders, especially small children.
- DO NOT permit personnel to be in the work area when operating the equipment.
- The equipment must be used ONLY on approved tractors.
- DO NOT modify the equipment in any way. Unauthorized modification may impair the function and / or safety and could affect the life of the equipment.
- DO NOT make any adjustments or repairs on the equipment while the machine is running.
- Keep shields and guards in place. Replace if damaged.

- Always relieve the pressure in hydraulic system and close both hydraulic lockup valves when the disc is not being operated.
- Always stay clear of the folding wing when it is being raised, lowered or placed in the folded position.
- When operating on hillsides, use extreme care. The tractor may tip over if it strikes a hole, ditch or other irregularity.

Transport Safety

- Do not exceed 10 mph (16 kph). Reduce speed on rough roads and surfaces.
- Comply with state and local laws governing highway safety and movement of machinery on public roads.
- Use the SMV emblem and warning light. Local laws should be checked for all highway lighting and marking requirements.
- Check all reflectors for visibility and cleanliness before transporting the disc.
- Always place both hydraulic lock up valves in "closed" position before transporting.
- Always install the complete package of depth control stops (17 in. long) on shaft of main frame cylinder for long distances and also lock the wings manually as shown in fig. 91.
- Always lock wings with wing locking pin.
- Always attach a safety chain to the tractor drawbar and the disc hitch before transporting the disc.
- Always yield to oncoming traffic in all situations and move to the side of the road so any following traffic may pass.
- Always enter curves or drive up or down hills at a low speed and at a gradual steering angle.
- Never allow riders on either tractor or equipment.
- Keep tractor in a lower gear at all times when traveling down steep grades.
- Maintain proper brake settings at all times (if equipped).
- Stay clear of overhead power lines when raising or lowering the wings. Electrocution can occur without direct contact.

Machine Requirements and Capabilities

- Fasten seat belt securely. If equipped with a foldable Roll-Over Protective Structure (ROPS), only fasten seat belt when ROPS is up and locked. DO NOT wear seat belt if ROPS is down.
 - Stop the machine and engage the parking brake. Install blocks in front of and behind the rear tires of the machine. Install blocks underneath and support the equipment securely before working under raised equipment.
 - Keep bystanders clear of moving parts and the work area. Keep children away.
 - Use increased caution on slopes and near banks and ditches to prevent overturn.
 - Make certain that the Slow Moving Vehicle (SMV) emblem is installed so that it is visible and legible. When transporting the equipment, use the flashing warning lights (if equipped) and follow all local regulations.
 - Operate this equipment with a machine equipped with an approved Roll-Over Protective Structure (ROPS). Always wear seat belt when the ROPS is up. Serious injury or death could result from falling off the machine.
- Before leaving the operator's position:
 1. Always park on a flat level surface.
 2. Place all controls in neutral.
 3. Engage the parking brake.
 4. Stop engine.
 5. Wait for all moving parts to stop.
 - Carry passengers only in designated seating areas. Never allow riders on the machine or equipment. Falling off can result in serious injury or death.
 - Start the equipment only when properly seated in the operator's seat. Starting a machine in gear can result in serious injury or death.
 - Operate the machine and equipment from the operator's position only.
 - The parking brake must be engaged before leaving the operator's seat. Rollaway can occur because the transmission may not prevent machine movement.

FIRE PREVENTION



Maintenance

The machine and some equipment have components that are at high temperatures under normal operating conditions. The primary source of high temperatures is the engine and exhaust system. The electrical system, if damaged or incorrectly maintained, can be a source of arcs or sparks.

Flammable debris (leaves, straw, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it can cause a fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential fire hazard.

The operator's area, engine compartment and engine cooling system must be inspected every day and cleaned if necessary to prevent fire hazards and overheating.

All fuels, most lubricants and some coolant mixtures are flammable. Flammable fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire.

Operation

The Farm King machine must be in good operating condition before use.

Check all of the items listed on the service schedule under the 8 hour column (see "SERVICE SCHEDULE" on page 99).

Do not use the machine where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.

Starting

Do not use ether or starting fluids on any engine that has glow plugs. These starting aids can cause explosion and injure you or bystanders.

Use the procedure in the tractor's operator's manual for connecting the battery and for jump starting.

Electrical



Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part or wires that are loose or frayed.

Battery gas can explode and cause serious injury. Do not jump start or charge a frozen or damaged battery. Keep any open flames or sparks away from batteries. Do not smoke in battery charging area.

Hydraulic System

Check hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.

Always clean fluid spills. Do not use gasoline or diesel fuel for cleaning parts. Use commercial nonflammable solvents.

Fueling



Stop the engine and let it cool before adding fuel. No smoking! Do not refuel a machine near open flames or sparks. Fill the fuel tank outdoors.

FIRE PREVENTION (CONT'D)

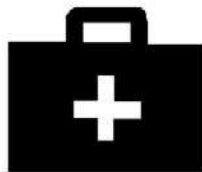
Welding and Grinding

Always clean the machine and equipment, disconnect the battery, and disconnect the wiring from the machine controls before welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding.

Have good ventilation when grinding or welding painted parts. Wear dust mask when grinding painted parts. Toxic dust or gas can be produced.

Dust generated from repairing nonmetallic parts such as hoods, fenders or covers can be flammable or explosive. Repair such components in a well ventilated area away from open flames or sparks.

Fire Extinguishers



Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

SAFETY SIGNS (DECALS)

Follow the instructions on all the Signs (Decals) that are on the equipment. Replace any damaged signs (decals) and be sure they are in the correct locations. Equipment signs are available from your Farm King equipment dealer.

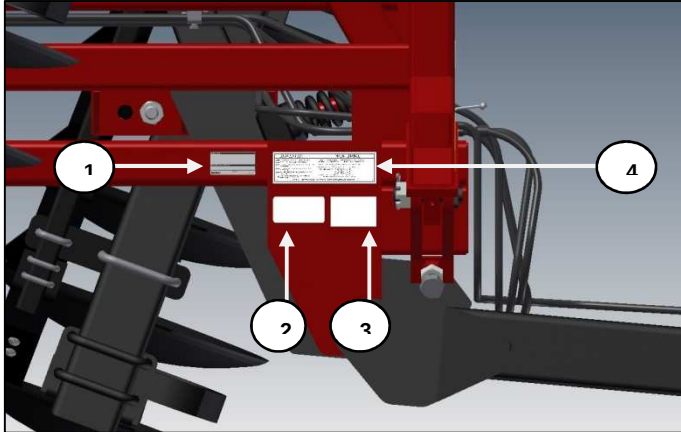


Figure 1 Main Frame (Front Right Side)



P/N. EZA75764

Put Buhler S/N decal (1), Warning operation decal (2), Important decal (3) and Maintenance decal (4) on right front side of the main frame of disc as shown in Figure 1.

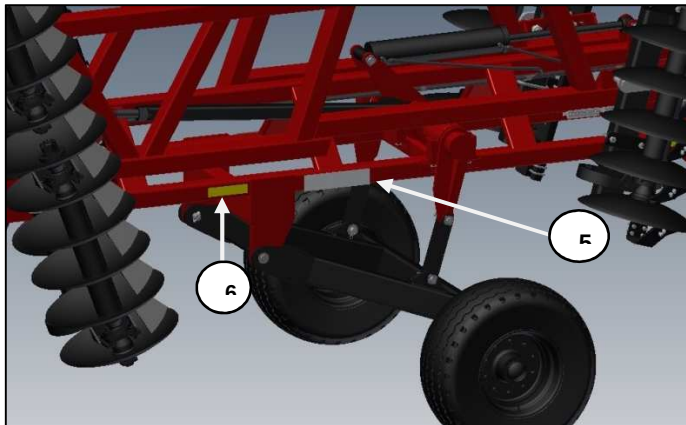


Figure 2 Outside of Left & Right Main Frame

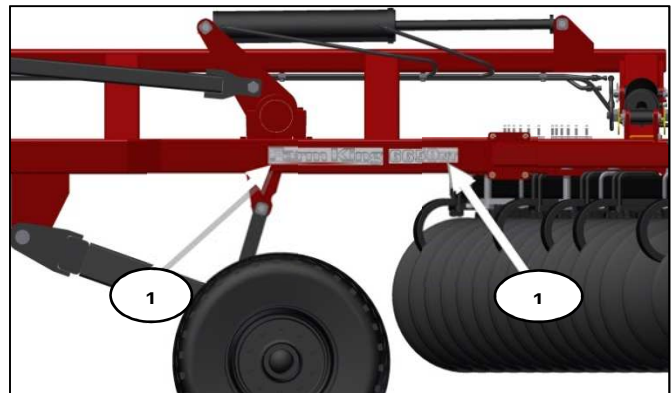


Figure 3

Put Danger decal (5) and Yellow reflector (6) on each side of main frame Figure 2.

5



P/N. EZDF9507

2



P/N. EZDF10061

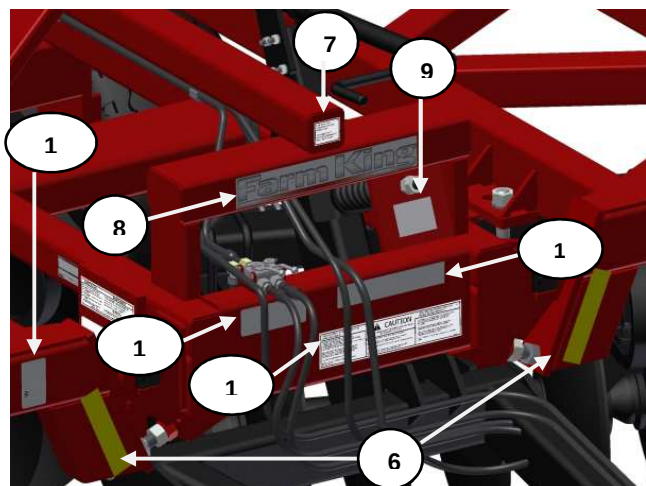


Figure 4 Front of Main Frame

1

IMPORTANT	⚠ WARNING
TRANSPORT LOCKUP VALVES LIFT CLOSED (TRANSPORT OR PARK) WINGS CLOSED (TRANSPORT OR PARK) OPEN (FIELD POSITION) OPEN (FIELD POSITION)	• TO PREVENT ACCIDENTAL OPERATION OF HYDRAULIC SYSTEM WHILE TRANSPORTING MACHINE ALWAYS PLACE LOCKUP VALVES IN CLOSED POSITION. • ALWAYS RELEASE HYDRAULIC PRESSURE IN ALL CYLINDERS AND CLOSE HYDRAULIC LOCKUP VALVES BEFORE UNHITCHING FROM TRACTOR OR WHEN PARKING WITH TRACTOR. THIS WILL PREVENT WING(S) FROM UNFOLDING AND FALLING DUE TO THERMAL EXPANSION OF HYDRAULIC OIL CAUSING MACHINE DAMAGE, PROPERTY DAMAGE OR INJURY OR DEATH TO PERSONS NEARBY. • ALWAYS BLOCK UP FRAME OR LOWER MACHINE TO GROUND WHEN SERVICING OR REPAIRING MACHINE. DO NOT RELY ON LOCKUP VALVE AS A SAFETY DEVICE WHEN WORKING ON MACHINE. EZDF13001

P/N. EZDF13001

Put decals Crank assembly (7), wings transport (9), Danger caution (10), Caution (11), Yellow reflectors (6), Important warning hydraulic (12), Farm King (8) and Warning safety lock pin (13) on front side of the main frame (**Figure 4**).

1

OBSERVE SAFETY RECOMMENDATIONS IN OPERATOR'S MANUAL.	⚠ CAUTION	READ AND UNDERSTAND OPERATOR'S MANUAL BEFORE OPERATING.
WHEN TRANSPORTING THIS MACHINE, LOCK ROCKSHAFT BY ENGAGING LOCK-UP DEVICES. WHEN TRANSPORTING THIS MACHINE OVER PUBLIC ROADS, USE THE S.M.V. EMBLEM AND WARNING LIGHTS FOR PROTECTION OF TRACTOR AND OTHER MOTOR VEHICLE OPERATORS. CHECK LOCAL LAWS FOR WIDTH AND WEIGHT MAXIMUMS. TRANSPORT THIS MACHINE WITH A TRACTOR ONLY. NEVER ALLOW ANYONE TO RIDE ON DRAW BAR OF TRACTOR OR ON THIS MACHINE. DO NOT SERVICE OR ADJUST THIS MACHINE WHILE IT IS IN MOTION.	FAILING TO OBSERVE SAFETY RECOMMENDATIONS MAY RESULT IN SERIOUS INJURY OR DEATH. NEVER STAND BETWEEN TRACTOR AND THIS MACHINE WHEN HITCHING UNLESS ALL CONTROLS ARE IN NEUTRAL AND BRAKES LOCKED. PARK OR BLOCK THIS MACHINE SO IT WILL NOT ROLL WHEN DISCONNECTED FROM TRACTOR. DO NOT EXCEED 10 MPH (16KM/H) WHEN TRANSPORTING THIS MACHINE ON SMOOTH SURFACES. REDUCE SPEED ON ROUGH SURFACES.	WHEN WORKING ON, UNDER OR AROUND THIS MACHINE, ALWAYS PLACE SAFETY SUPPORTS UNDER FRAME. IF SUPPORTS ARE NOT AVAILABLE, UNFOLD WINGS AND LOWER MACHINE TO GROUND. DO NOT DISASSEMBLE OR LOOSEN HYDRAULIC COMPONENTS WHEN THERE IS PRESSURE WITHIN THOSE COMPONENTS. CHECK HYDRAULIC HOSES PERIODICALLY FOR SIGNS OF RUPTURE AND LEAKS. USE A CARDBOARD AS BACKSTOP TO CHECK FOR ESCAPING HIGH PRESSURE OR HOT FLUID. WHEN TRANSPORTING THIS MACHINE, USE A HITCH SAFETY CHAIN. EZDF9510

P/N. EZDF9510

1

⚠ DANGER SERIOUS INJURY OR DEATH CAN RESULT FROM CONTACT WITH ELECTRICAL LINES. USE CARE TO AVOID CONTACT WITH ELECTRICAL LINES WHEN MOVING OR OPERATING THIS MACHINE.	⚠ CAUTION WATCH FOR OVERHEAD OBSTRUCTIONS WHEN TRANSPORTING THIS MACHINE WHEN TRANSPORTING THIS MACHINE WITH WINGS FOLDED (UP), BE SURE THERE IS SUFFICIENT CLEARANCE UNDER ALL POWER LINES AND OTHER OVERHEAD OBSTRUCTIONS.
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P/N. EZDF9506

EQUIPMENT DECALS AND SIGNS

NOTE: Safety related decals are shown page 14;

P/N. EZDF13120

9



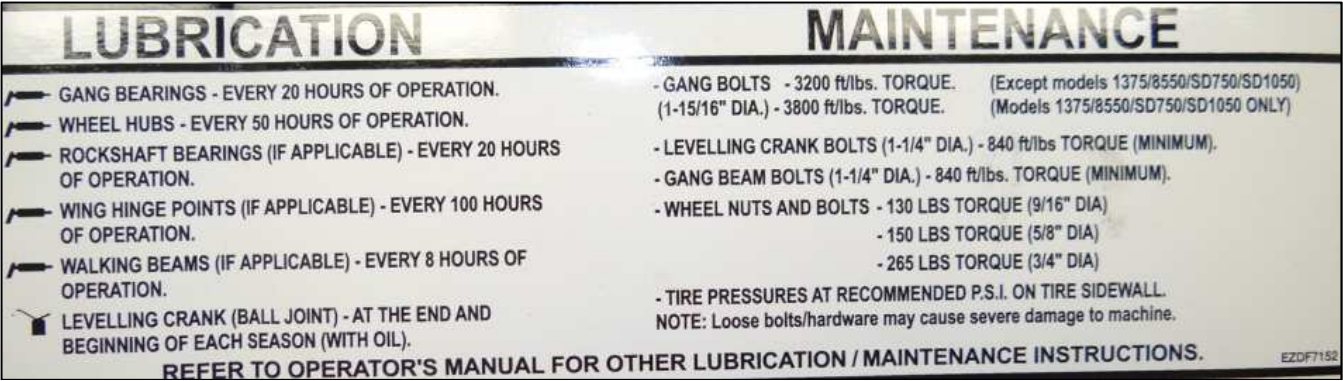
P/N. EZA75759

3



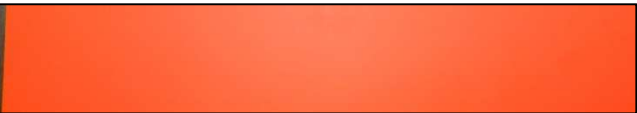
P/N. EZDF7152

4



P/N. 86026768 (Fluorescent)

1



P/N. EZDF10060 (Red)

1



P/N. 88717472

1



P/N. EZDF13357

1



Rear of Main Frame

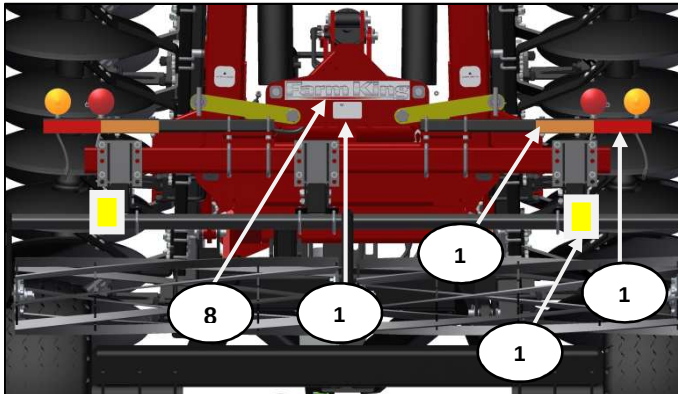
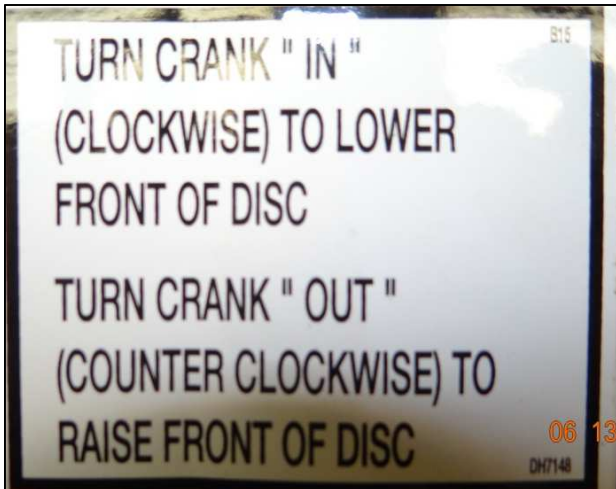


Figure 5

Put the decals Farm King (item 8, Figure 5), Warning safety lock pin (item 16), Flourescent tape (item 18) and red reflector (item 19) on rear of the main frame.

P/N. EZDH7148



P/N. 88715891



P/N. 88715832



SAFETY SIGN-OFF FORM



Instructions are necessary before operating or servicing equipment. Read and understand the Operator's Manual and safety signs (decals) on equipment. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

Farm King follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and / or maintaining the 6650NT Tandem Disc must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Annually review this information before the season start-up and make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. An untrained operator is unqualified to operate this machine.

The following sign-off sheet is provided for your record and to show that all personnel who will be working with the equipment have read and understand the information in this Operator's Manual and have been instructed in the operation of the equipment.

[illegible]

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ASSEMBLY

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GENERAL ASSEMBLY INFORMATION

Component Unloading and Identification



ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

- Be aware of overhead power lines.
 - Keep away from power lines when unloading and assembling the auger.
 - Electrocution can occur without direct contact.
-



- DO NOT permit bystanders to be in the work area when unloading and assembling the auger components.
 - DO NOT work under suspended parts.
 - Keep away from moving parts.
 - Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling the auger components.
-

Unload the crate(s) and components on a flat level area of adequate size to assemble the 6650NT Tandem Disc.



Unload crate(s) and other components carefully to prevent damage to any of the components.

NOTE:

Assemble the 6650NT Tandem Disc in the following order:

1. Main Frame (see “Main Frame Assembly” on page 21).
2. Wings (see “Installing the Wing Frames” on page 30).
3. Hydraulics (see “HYDRAULICS” on page 32).
4. Gang sections (see “GANG SECTIONS” on page 45).

BASE GROUP

Main Frame Assembly

Assemble the main frame on a flat level surface.

WARNING



- DO NOT permit bystanders to be in the work area when lowering, raising or folding wing.
- DO NOT work under suspended parts.
- Keep away from moving parts.
- Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling the tandem disc components.

WARNING



AVOID INJURY OR DEATH

Keep fingers and hands out of pinch points when assembling the equipment.

NOTE: The following images throughout the assembly section of this manual may not show your exact tandem disc components as they appear but the procedure is correct for all 6650NT Tandem Discs.

IMPORTANT

Always use chains, straps and lifting devices that are in good condition and of adequate size to lift the tandem disc components.

NOTE: Support stands approximately 36 inches (914.4 mm) high equipped with rotating casters / wheels are recommended when assembling the main frame of the tandem disc.



Figure 1

Locate main frame section (Item 1, Figure 1).
Install straps around the main frame section.

Connect the straps to an approved lifting device.

Raise and move the main frame section to the assembly area. Lower the main frame section onto support stands and remove straps.

Locate the main frame rockshaft (Item 2).
Install straps around the main frame rockshaft.

Connect the straps to an approved lifting device.

Raise and move the main frame rockshaft to the assembly area.

Installing the Main Frame Rockshaft

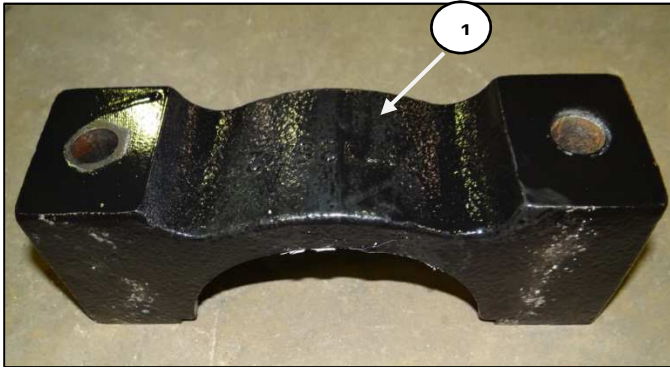


Figure 2

Locate the lower rockshaft bearings (Item 1, Figure 2).

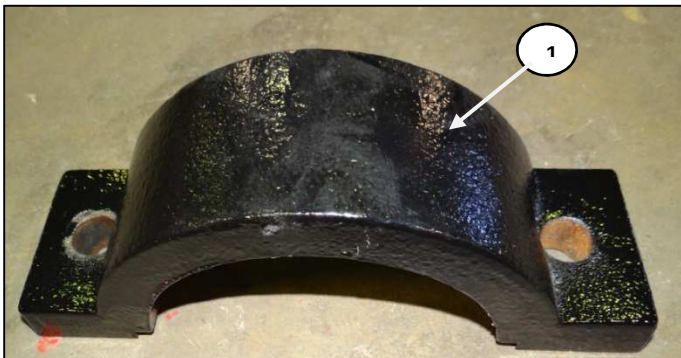


Figure 3

Locate the upper rockshaft bearings (Item 1, Figure 3).

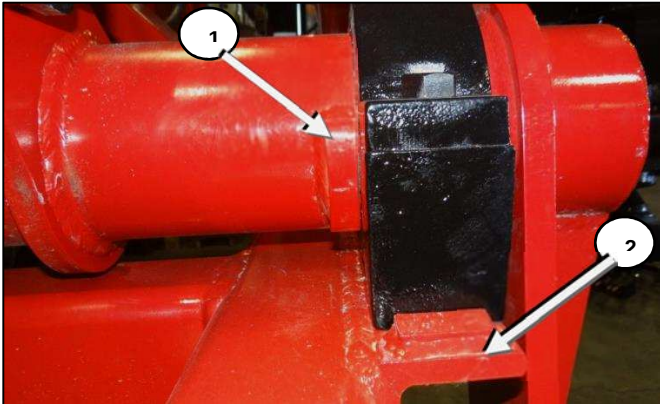


Figure 4

Raise the main frame rockshaft (Do not contact main frame sections).

Align / center the two tabs (Item 1, Figure 4) above the rockshaft bearing mount (Item 2) on the main frame

First install the rockshaft bearing- plastic liner as shown in small image in Figure 5, around the rockshaft before putting the rockshaft housing, then put rockshaft bearing housing over rockshaft bearing between the two tabs and then place upper and lower rockshaft bearing housings (Items 1 and 2, Figure 5) and place this lower housing between the tabs on the main frame bearing mountings

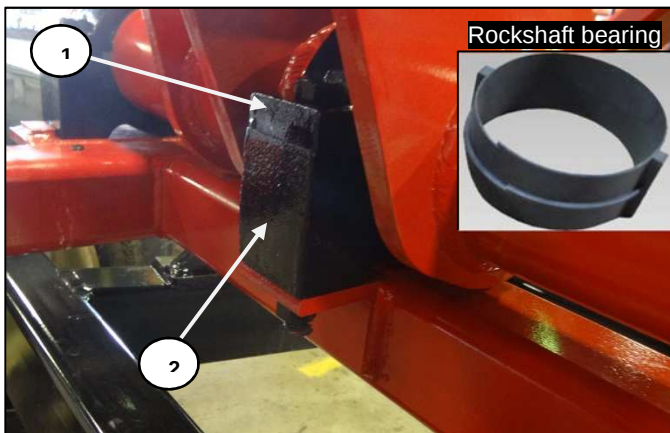


Figure 5

Raise rockshaft slightly, allowing adequate space between the rockshaft and center rockshaft bearing housing (Item 2) to install lower rockshaft housings for other two locations as well, as shown in figure.

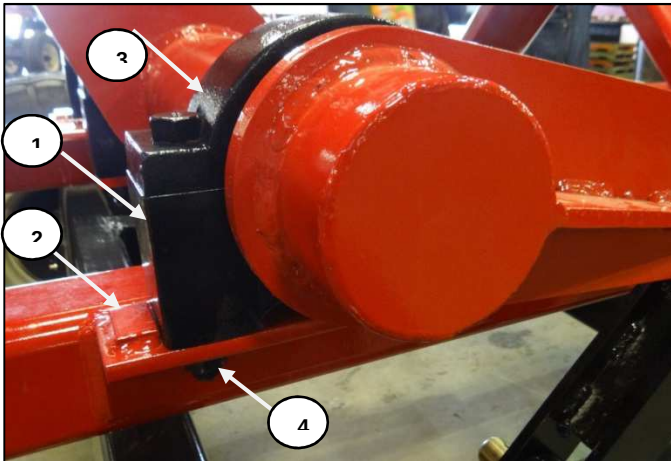


Figure 6

NOTE: Verify that center rockshaft bearing tabs are still in line with the center rockshaft bearing mount.

Install two 3/4" x 7" Grade 5 bolts (Item 4, Figure 6) down through the upper, lower rockshaft housings and mount. Install one 3/4 lock washer and 3/4" nut onto each bolt.

Repeat procedure for LH upper and lower bearing.

Tighten the rockshaft bearings.

Slowly lower the main frame rockshaft.

NOTE: Rockshaft must move / rotate freely inside the upper & lower rockshaft bearings.

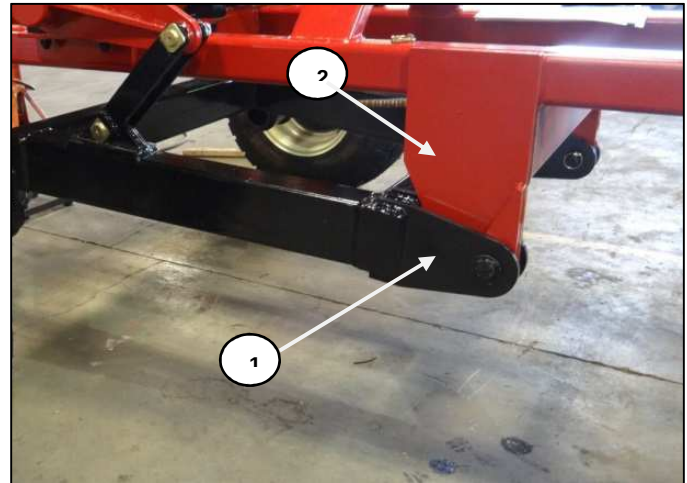


Figure 7

Use the fork lift to bring the Axle (item 1, Figure 7) in assembly area. Put one side of axle on the support stand and lift the other side with fork lift to connect with Hitch plate (item 2).

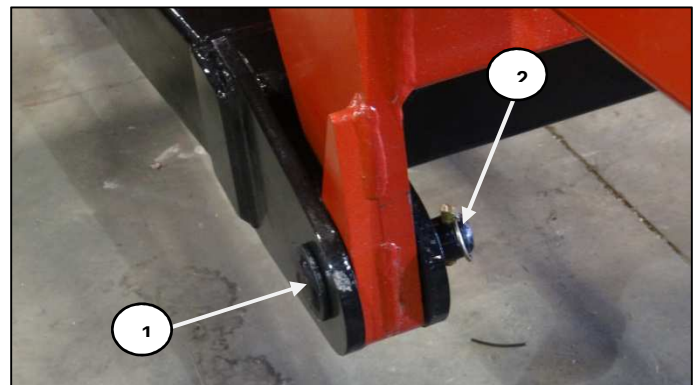


Figure 8

Use two hitch pins (Item1, Figure 8) and pin hitch lock (item 2) to attach axle front side end to the hitch plates.

Installing the Main Frame Spindles and Wheels

NOTE: The following procedure shows the spindles and wheels for FS24-440 tires with 10 bolt hub (Spindle-H1010) on the RH side of the main frame. Also offering FS24-380 with 8 bolt hub (Spindle-817)

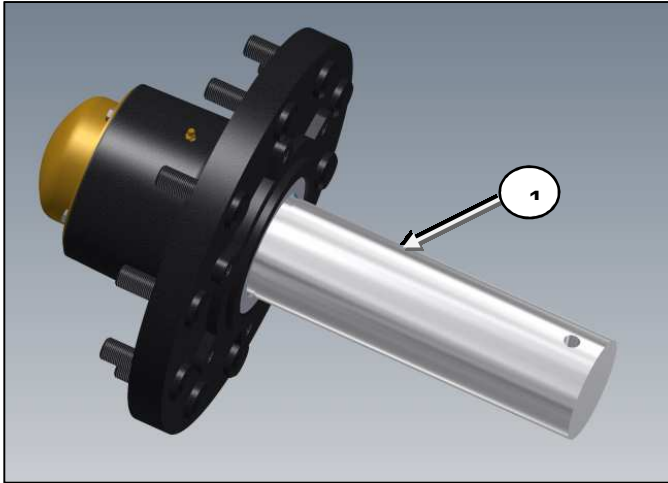
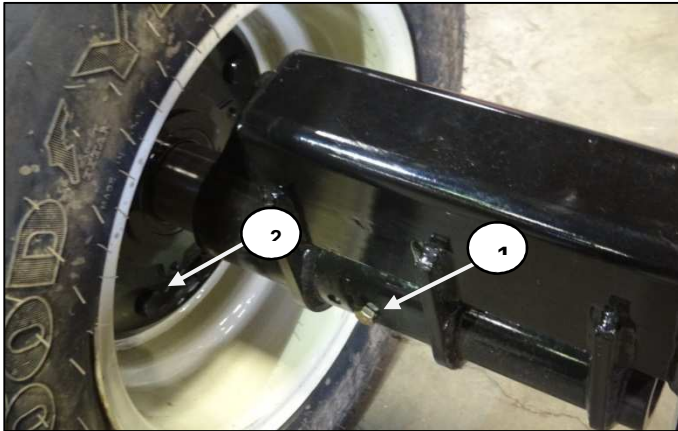


Figure 9

Locate two hub assemblies with spindles (Item 1, Figure 9).

Figure 10



Align spindle mounting hole with the inner mounting hole (Item 1, Figure 10) (both sides).

Locate ten nut hex flange 3/4 NF (Item 2).

Install the hub assembly and let the bolts on hub go through wheel rim (both sides). Install 3/4" nut hex flange on the bolt and tighten (both sides).

NOTE: HUB IS MOUNTED TO AXLE BUSHING AT THE INNER HOLE (Item 1, FIGURE 10)



Figure 11

Tire Size FS24 440/55R18 10 bolts

Align wheel (Item 1, Figure 11) with the spindle. Install the ten 3/4" NF wheel bolt nuts (Item 2)

Tighten wheel bolt nuts in a criss-cross pattern to 130 ft.-lb. (176.3 N•m) torque.

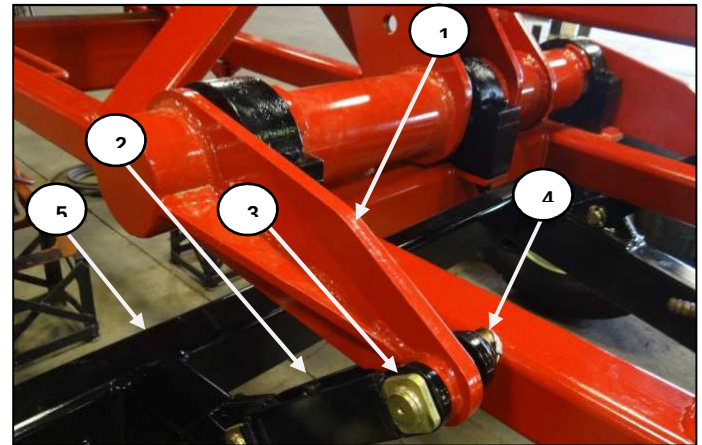


Figure 12

Now connect the rock shaft axle link lug (Item 1, Figure 12) with axle (Item 5) through Depth control link (Item 2). Use two of Link pins (Item 3), cotter pins and 1-1/4" flat washers (Item 4) on both sides.

Installing the Hitch



Figure 13

Locate the hitch assembly (Item 1, Figure 13). Use the fork lift to move or Install straps around the hitch assembly.

Connect the straps to an approved lifting device.

Raise and move the hitch assembly to the assembly area.

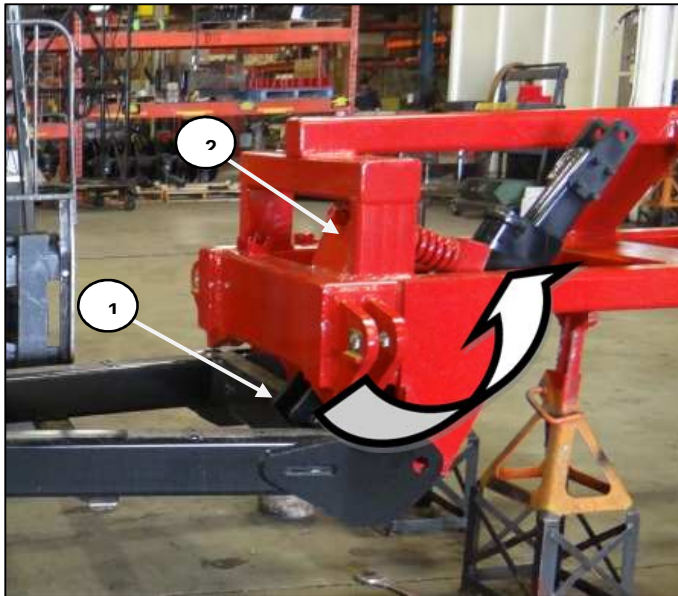


Figure 14

Lower and guide the hitch assembly (Item 1, Figure 14) under the front of the main frame assembly, below the compression spring mounting plate (Item 2).

Raise the hitch assembly, aligning the hitch mounts with the mounting brackets on the main frame.

Place floor jack under the RH side hitch mount (to stabilize hitch) or in the middle as shown in figure. Raise the floor jack and lifting device at the same time until the hitch mounts are in line with the main frame mounting brackets.

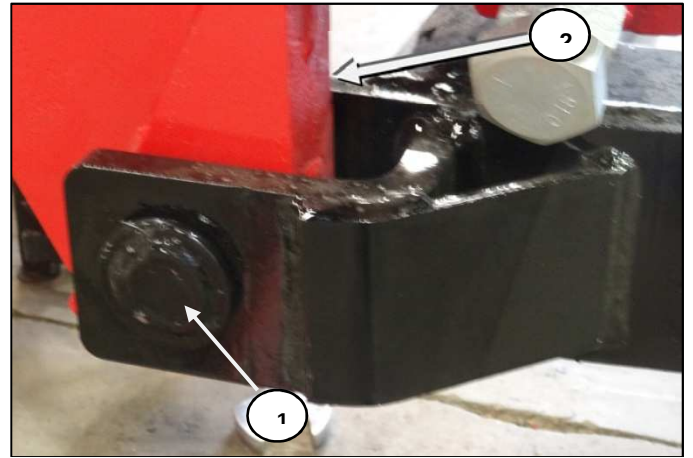


Figure 15

Locate the two hitch mounting pins (Item 1, Figure 15).

Install the hitch mounting pin through the outer hitch mount, main frame mounting bracket and inner hitch mount (both sides).

Install one locking hitch pin (Item 2) on inner hitch mount side to secure the hitch to the main frame.

Installing the Leveling Crank Assembly

Locate the leveling crank assembly (1, Figure 16).

Install straps around the leveling crank assembly.

Connect the straps to an approved lifting device. Raise and move the leveling crank assembly to the assembly area

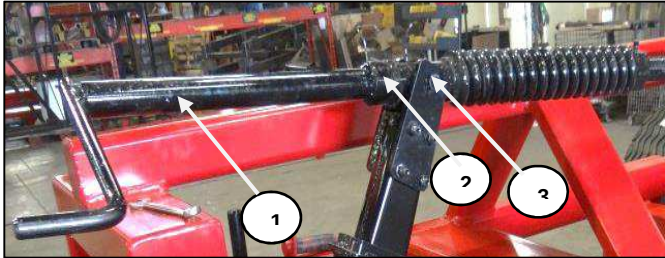


Figure 16

Lower the leveling crank assembly (Item 1, Figure 16) so that lugs (Item 2) on trunnion tube can be installed in hitch leveling arm lugs (Item 3).

NOTE: Be sure grease fitting on trunnion tube is facing up.

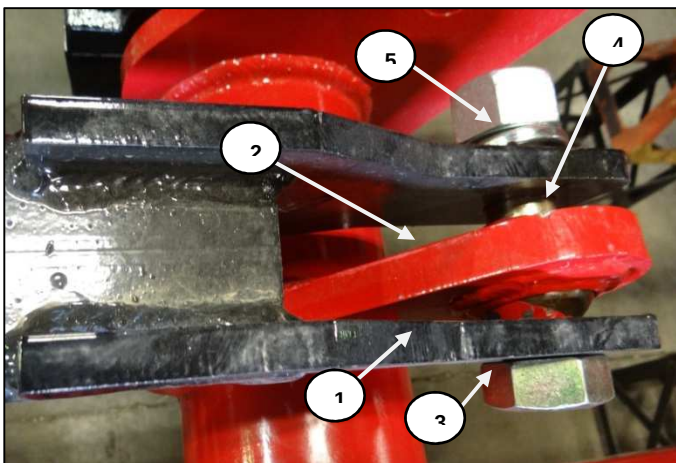


Figure 17

Position the clevis end (Item 1, Figure 17) of the leveling crank assembly over the connecting link (Item 2) on the rockshaft (just left of center).

Lubricate ball in ball joint (Item 4) so it can rotate freely.

Install one 1-1/4" x 4-3/4" bolt (Item 3) through the clevis and connecting link. Install one 1-1/4" lock washer and nut (item 5) on the bolt and tighten.

NOTE: Tighten bolt (Item 3, Figure 17) so it is tight against ball joint (Item 4).

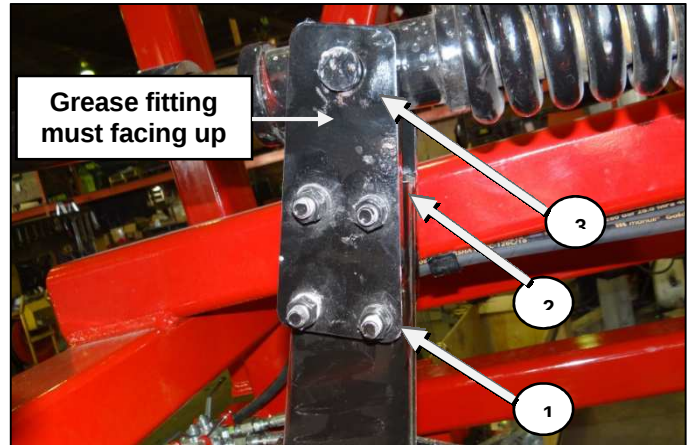


Figure 18

Locate four 1/2" x 5" Grade 5 bolts (Item 1, Figure 18), four 1/2" lock washers, four 1/2" nuts and the leveling lug hitch plate (Item 2).

Install the leveling lug hitch plate onto the peg (Item 3) of the leveling crank.

Install the four 1/2" x 5" Grade 5 bolts through the leveling lug hitch plate and leveling crank assembly. Install one 1/2" lock washer and 1/2" nut on each bolt and tighten.

Remove straps.

Installing the Wing Frames

NOTE: Support stands approximately 36 inches (914.4 mm) high equipped with rotating casters / wheels are recommended when installing the wing frames onto the main frame.

NOTE: The following procedure shows the RH wing frame installation. The procedure is the same for the LH wing frame.



Figure 19

Locate RH wing frame (**Item 1, Figure 19**) Use fork lift or install straps around the RH main frame section. Connect the straps to an approved lifting device. Raise and move the RH wing frame to the assembly area.

Lower the RH wing frame onto support stands and remove straps.

Repeat procedure for LH wing frame.



Figure 20

Move the RH wing frame towards the main frame.

Install four 1-1/4x3-1/2" long wing stop pins (Item 1, Figure 20) on all four sides of main frame before installing the wing frames.

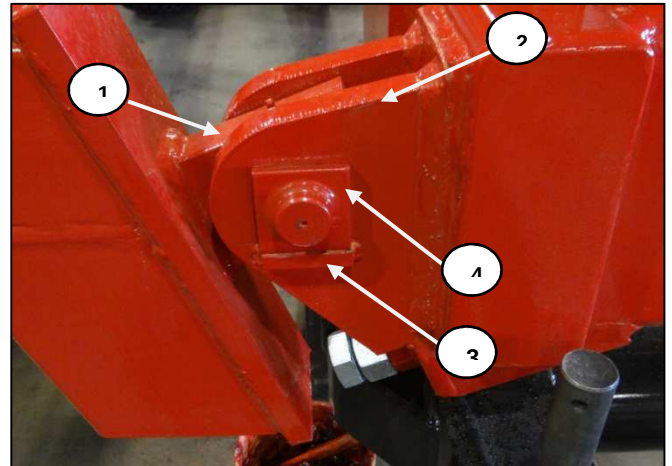


Figure 21

Position the wing connecting link (Item 1, Figure 21) inside the main frame wing mounts (Item 2).

Apply thin layer of grease to bushing.

Locate two 1-1/2" wing hinge pins (Item 1).

Install the wing hinge pin with cotter pin hole up & down (both locations).

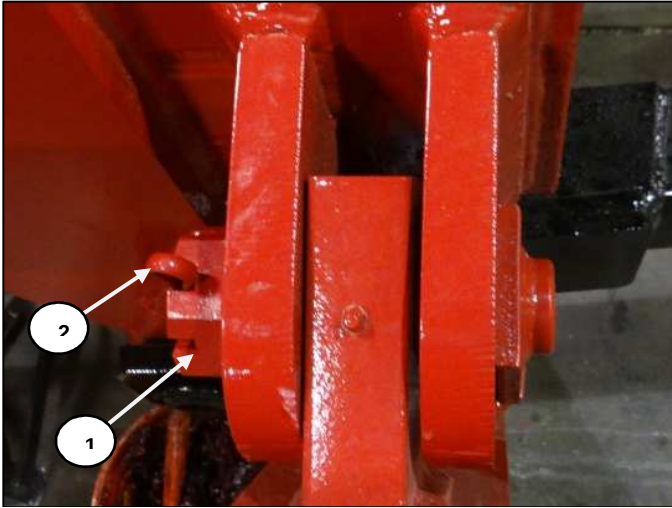


Figure 22

The wing hinge pin's square collar (Item 4, Figure 21) must be above the tab (Item 3) to secure the wing hinge pin in position (both locations).

Install and tighten one 1-1/2" Grade 2 slotted nut (Item 1, Figure 22) against the main frame wing mount. Adjust slotted nut as needed to install the 5/16" x 2-1/4" cotter pin (Item 3) (both locations).

HYDRAULICS

Installing Main Frame Rockshaft Hydraulic Cylinder



AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.



Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

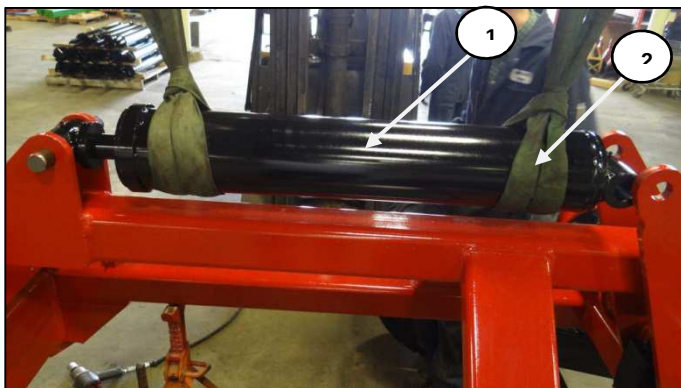


Figure 23

Locate one 5" x 24" hydraulic cylinder (Item 1, Figure 23).

Install a strap (Item 2) around the hydraulic cylinder.

Connect the strap to an approved lifting device.

Raise and move the hydraulic cylinder to the assembly area.

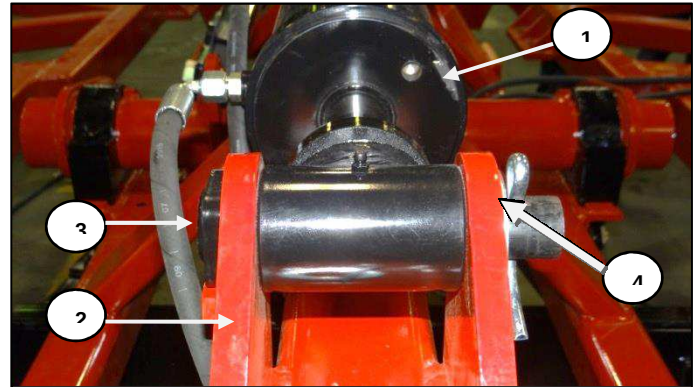


Figure 24

Align the 5" x 24" hydraulic cylinder (Item 1, Figure 24) with the mount (Item 2) (ports facing left) at the front of the main frame.

Apply thin coat of grease to mount hole.

Locate and install one cylinder pin (Item 3) through the hydraulic cylinder and mount. Install one 3/8" x 2-1/2" cotter pin and 1-1/4" flat washer (Item 4).

Lower the 5" x 24" hydraulic cylinder (Item 1) onto a block.
Remove strap.

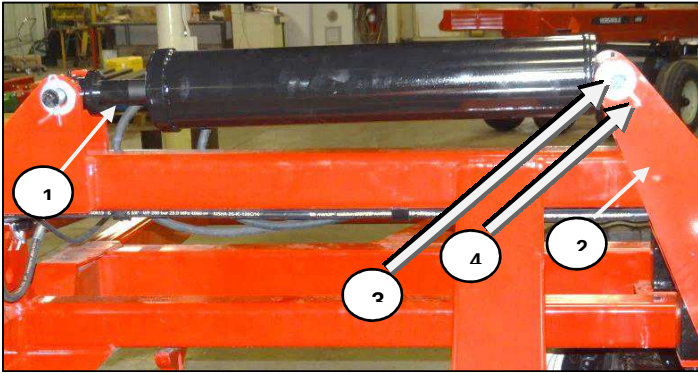


Figure 25

Loosen port plugs to allow the cylinder rod to be extended.

Raise the main frame rockshaft, extend the hydraulic cylinder rod (Item 1, Figure 25) towards the rockshaft cylinder lug (Item 2).

Align cylinder with the hole in the rockshaft cylinder lug. Install cylinder pin (Item 3) through the cylinder hole and rockshaft cylinder lug. Install one 3/8" x 2-1/2" cotter pin and 1-1/4" flat washer (Item 4).

Remove block, lower main frame rockshaft until wheels contact the ground. Remove the strap.

Apply thin layer of grease to spring bushing in rockshaft arm.

Installing Wing Lift Cylinders



Figure 26

Locate the two 5x24" wing lift hydraulic cylinders (Item 1, Figure 26).

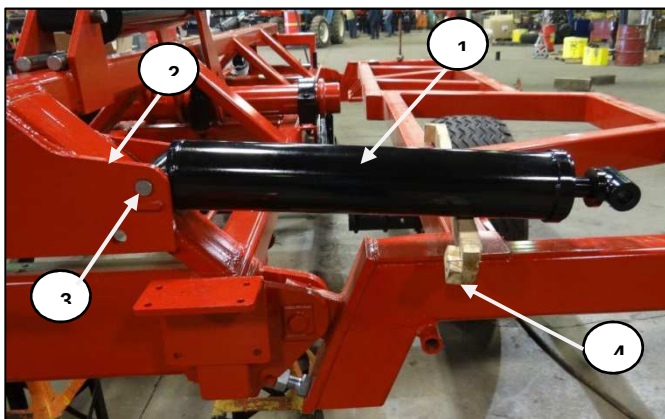


Figure 27

Align RH wing lift cylinder (Item 1, Figure 27) (ports facing forward) With the right hole on the mounting plate (Item 2) located at the rear of the main frame.

Install one cylinder pin (Item 3) through the RH wing lift cylinder and mounting plate.

Install one 3/8" x 2-1/2" cotter pin and 1-1/4" flat washer.

Place a block (Item 4) under the RH wing lift Cylinder (Item 1). Lower RH wing lift Cylinder onto the block and remove strap
Repeat procedure for LH wing lift cylinder.

Installing Hydraulic Control Valves

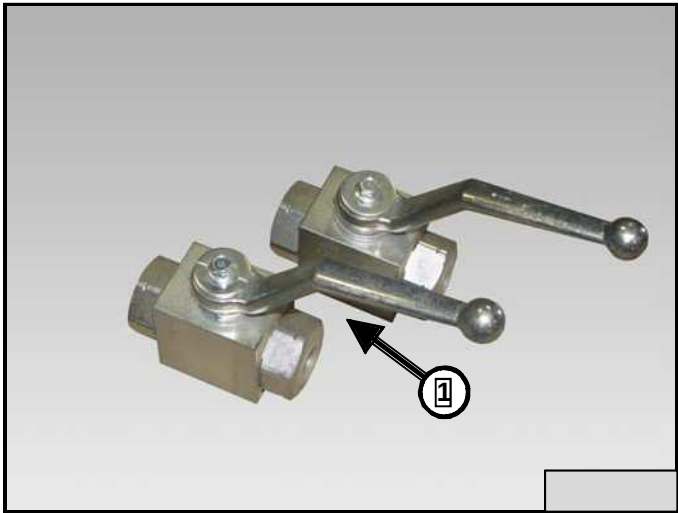


Figure 28

Locate the two 3/8" 2-way ball valves (Item 1, Figure 28), two 5/16" x 4" Grade 5 bolts and two 5/16" lock nuts.

Rotate each ball valve lever 1/4 turn.

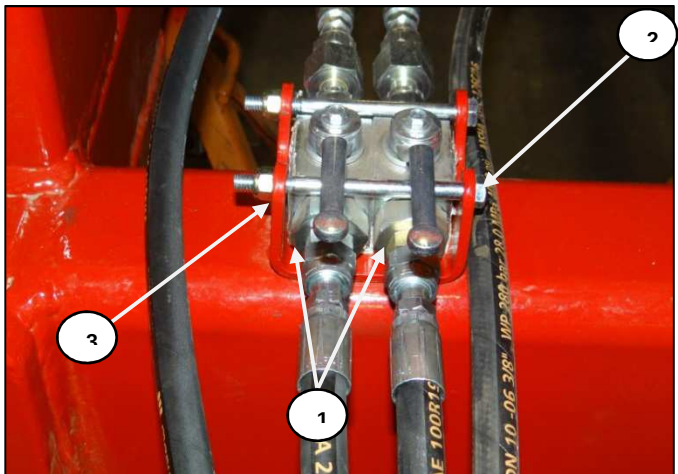


Figure 29

Position the two balls valves (Item 1, Figure 29) (levers facing forward) between the two mounting brackets on the front of main frame.

Install the two 5/16" x 4" Grade 5 bolts (Item 2) through the mounting brackets (over the ball valves). Install one 5/16" lock nut (Item 3) on each bolt and tighten. Do not over tighten.

Installing Hydraulic Fittings

Control Valve Fittings

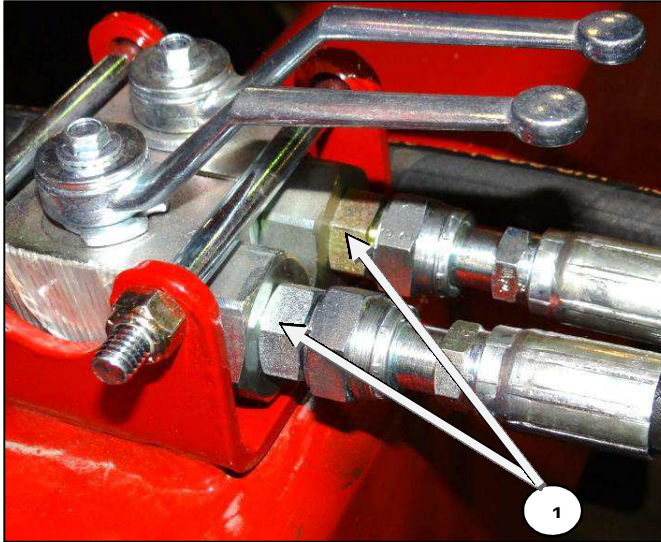


Figure 30

Locate two Connectors 11/16 ORFSx9/16(6F5OLO)
(Item 1, Figure 30).

Apply thread sealant to the two fittings.

NOTE: Do not use Teflon tape.

Install the two fittings (facing the rear of the disc) into the
ball valves.

Wing Lift Cylinder Fittings

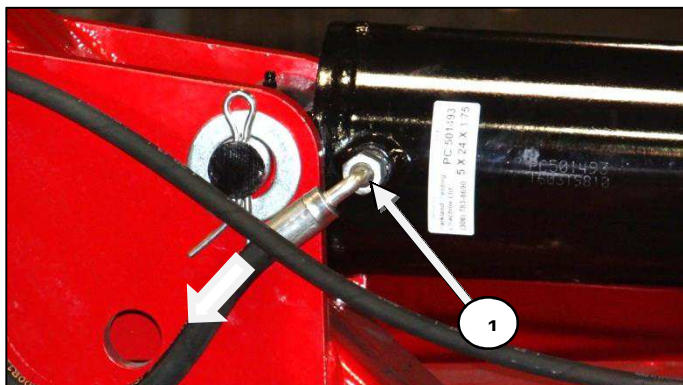


Figure 31 LH Wing Lift Cylinder

Locate one Connector 11/16 ORFSx9/16 (6F5OLO) to connect the hose with LH wing lift cylinder port (Item 1, Figure 31).

Apply thread sealant to the fitting.

Install the rear fitting and tighten until the fitting is facing down as shown in figure above.

Repeat for RH wing lift cylinder.

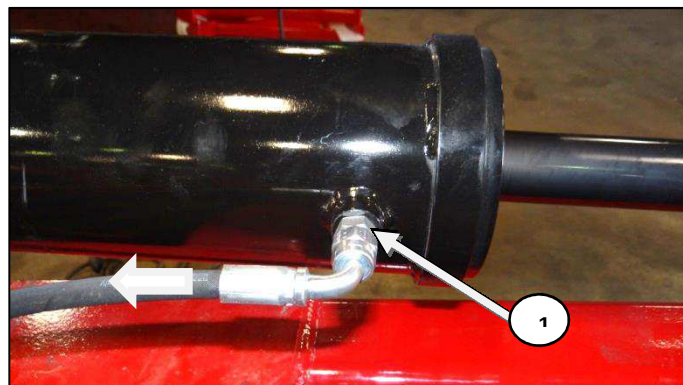


Figure 32

Locate two Connectors 11/16 ORFSx9/16 (6F5OLO) to connect the hose with cylinder port (Item 1, Figure 32).

Apply thread sealant to the two fittings.

Install one Connector 11/16 ORFSx9/16 (6F5OLO) to connect the hose with cylinder port (Item 1) into the rod end of the LH wing lift cylinder, and then tighten until the fitting is facing the center.

Repeat for RH wing lift cylinder.

Main Frame Rockshaft Lift Cylinder Fittings

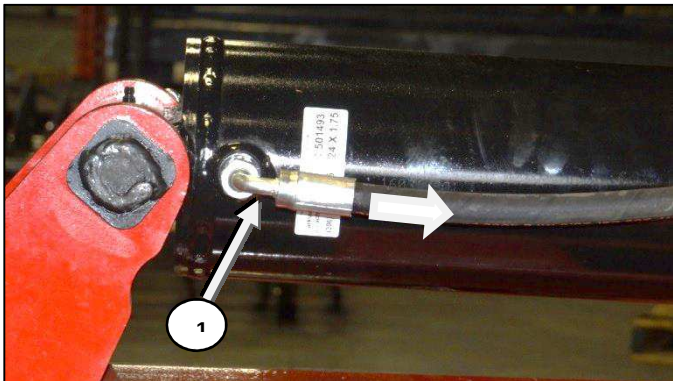


Figure 33

Locate one Connector 11/16 ORFSx9/16 (6F5OLO) (Item 1, Figure 33).

Apply thread sealant to the fitting.

Install Connector 11/16 ORFSx9/16(6FOLO) (Item 1) into the base end of the main frame rockshaft lift cylinder port, and then tighten until the fitting is facing rear (slightly up).

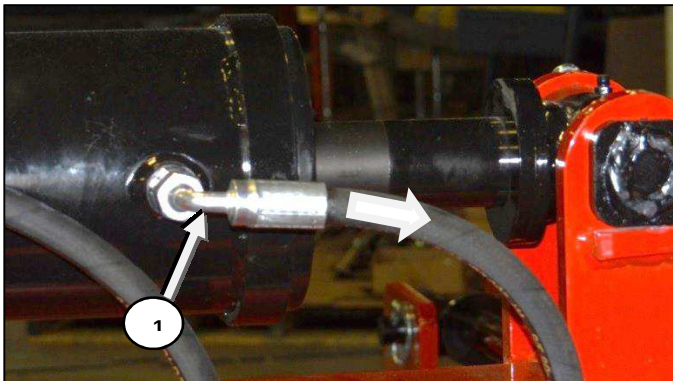


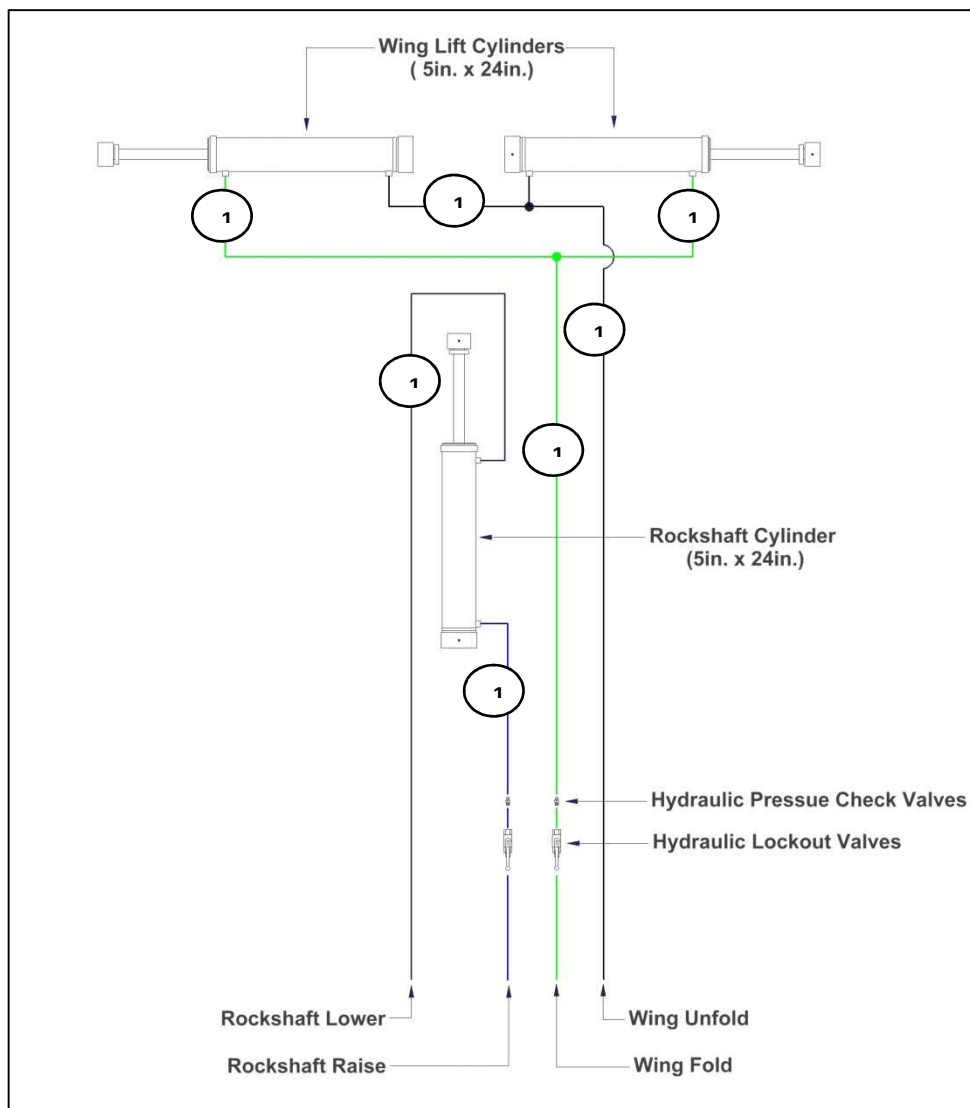
Figure 34

Locate one Connector 11/16 ORFSx9/16 (6F5OLO) (Item 1, Figure 34).

Apply thread sealant to the fitting.

Install the Connector 11/16 ORFSx9/16(6F5OLO) (Item 1) into the rod end of the main frame rockshaft lift cylinder port, and then tighten until the fitting is facing to the rear.

Hydraulic Hose Identification



ITEM	DESCRIPTION	HOSE ROUTING	QTY
1	HOSE-ASSY 3/8x176SWF OFSSTR-SWFOFSSTR	FROM SHUT OFF VALVE TO 6MORT TEE (WING CYLINDER ROD END)	1
2	HOSE-ASSY 1/4X41SWF OFSSTR-SWFOFS90	FROM 6MORT TEE TO LH AND RH WING CYLINDER (ROD END)	2
3	HOSE-ASSY 3/8x26SWF OFSSTR-SWFOFS90	FROM 6MORT TEE TO RH AND LG WING CYLINDER (BASE END)	2
4	HOSE-ASSY 3/8x361SWF OFSSTR-SWFOFSSTR	FROM TRACTOR TO 6MORT TEE ON WING CYINDER (BASE END)	1
5	HOSE-ASSY 3/8x192SWF OFS90-SWFOFSSTR	FROM ROCKSHAFT CYLINDER (BASE END) TO SHUTT OFF VALVE	1
6	HOSE-ASSY 3/8x364SWF OFS90-SWFOFSSTR	FROM MAIN ROCKSHAFT CYLINDER (ROD END) TO TRACTOR	1
7	HOSE-ASSY 3/8x179SWF OFSSTR-SWFOFSSTR	FROM TRACTOR TO SHUT OFF VALVE	2

Hydraulic Hose Installation and Routing



WARNING

AVOID INJURY OR DEATH

Of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.



IMPORTANT

Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.



IMPORTANT

Apply thread sealant to the threads of all hydraulic hose fittings before installing.

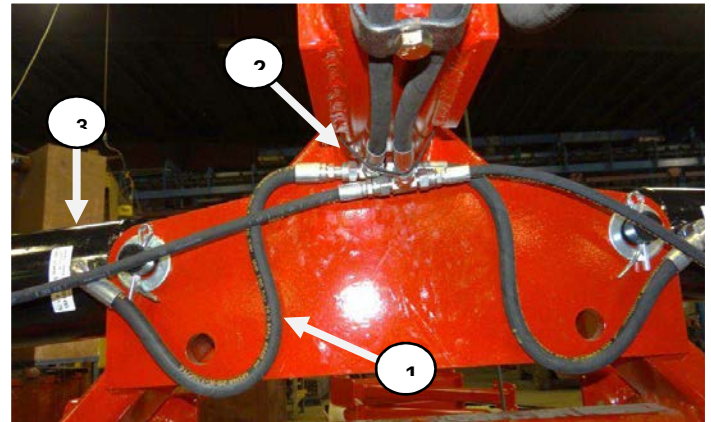


Figure 35

Install the hydraulic hose 3/8 x 26" SSTR-S90 (Item 1, Figure 35) from to 6MORT tee (Item 2) to RH wing cylinder (Item 3) at the base end of the RH wing cylinder.

Repeat the process for LH wing cylinder.

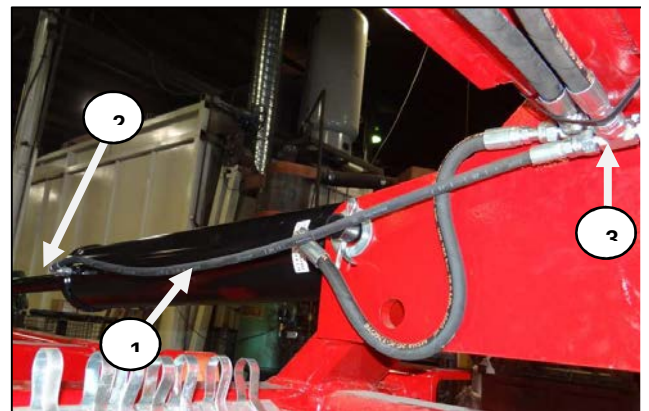


Figure 36

Install one 1/4x41" hydraulic hose (Item 1, Figure 36) SSTR-S90 from RH wing cylinder (Rod end) (Item 2) to 6MORT Tee (item 3)

Repeat the process for LH wing cylinder.

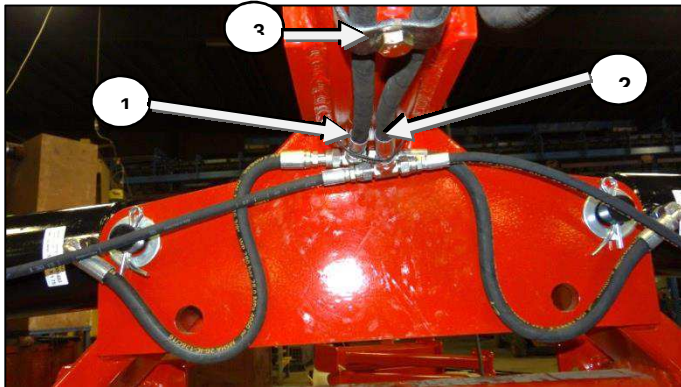


Figure 37

Install the 3/8x361" hydraulic hose (Item 1, Figure 37) into 6MORT tee connecting LH and RH wing cylinders. Route the hose down the main frame top rail of disc and to the hitch / tractor.

Install the 3/8x176" hydraulic hose (Item 2) into 6MORT tee (connected to the rod ends of the LH & RH wing cylinders). Route the hose down the main frame top rail of disc and to the shut-off valves.

Locate one 4-line hose clamp (Item 3) and one 1/2" x 3/4" bolt.

Install the bolt through the 4-line hose retainer, position the two hoses inside the 4-line hose clamp, align bolt with the weld nut on the frame (as shown), install and tighten the bolt into the weld nut.

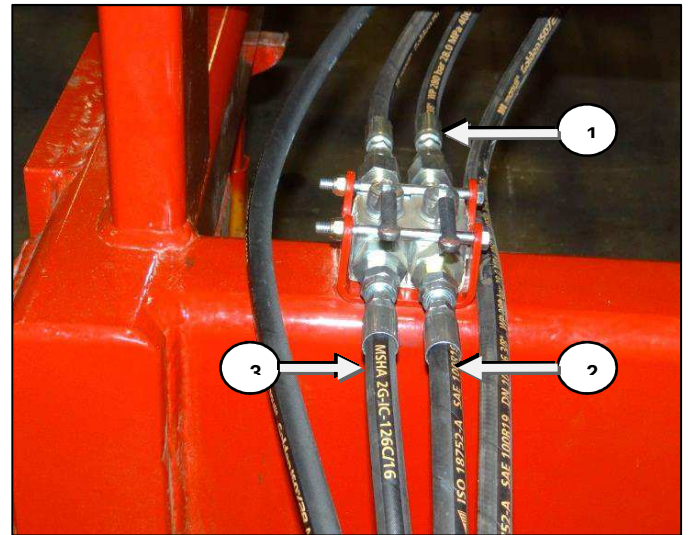


Figure 38

Install the 176" hydraulic hose (Item 1, Figure 38) (from 6MORT tee into the LH shut-off valve).

Install the one 179" hydraulic hose (Item 2) into the front side of the LH shut-off valve. Route the hose to the hitch / tractor (Blue tie strap).

Install the one 179" hydraulic hose (Item 3) into the front side of the RH shut-off valve. Route the hose to the hitch / tractor (Green tie strap).

Pressure and Return Hose Fittings

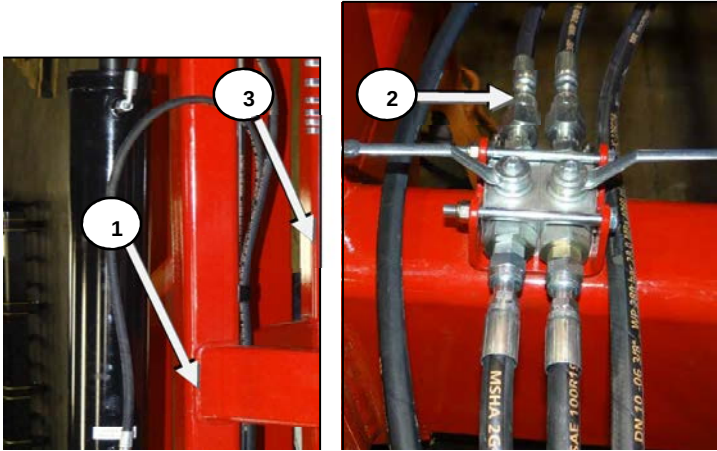


Figure 39

Install the 3/8x192" hydraulic hose (Item 1, Figure 39) into the connector at the base end of the main rockshaft cylinder. Route and install the hose to the RH shut-off valve (Item 2).

Locate one 4-line hose retainer (Item 3) with one 1/2" x 3/4" bolt

Place 1/2" bolt, Install the bolt through the 4-line hose retainer, position the two hoses from main rockshaft cylinder and two hoses from wing cylinders inside the 4-line hose retainer, align bolt with the weld nut on the frame (as shown), install and tighten the bolt into the weld nut.

Locate the remaining 2 and 4-line hose retainers with 1/2" x 3/4" bolts. Install the correct hose retainers at all weld nut locations to secure all hydraulic hoses to the machines frame.

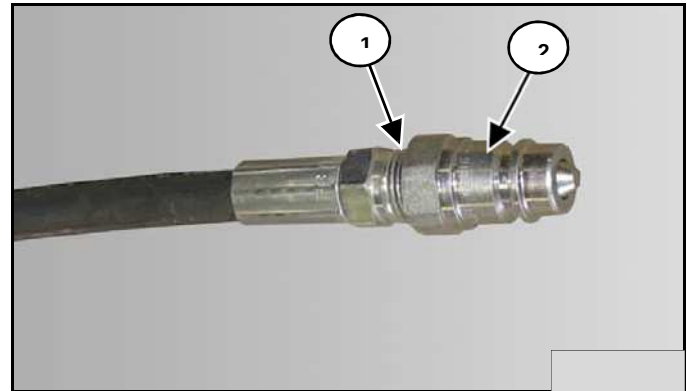


Figure 40

Apply thread sealant to the threads (Item 1, Figure 40) of the hydraulic hose fitting, then install and tighten the male quick coupler fitting (Item 2) on each set of hydraulic hoses: wing fold hoses (Blue tie straps) and raise/lower hoses (Green tie straps).

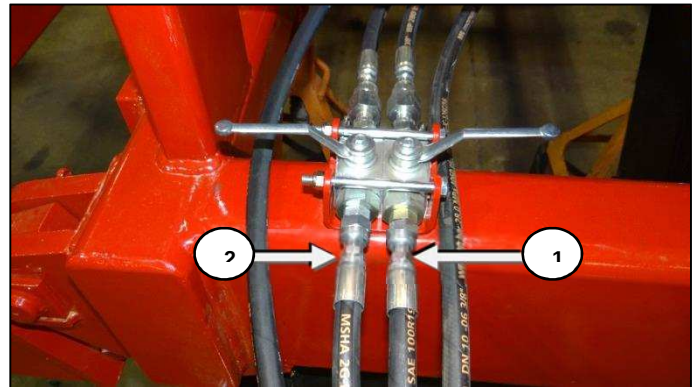


Figure 41

After installing the male quick coupler fittings, install the Blue and Green tie straps to identify the hydraulic circuits.

Blue Tie Straps (Wing Fold)

Install one Blue tie strap onto the hydraulic hose connected to the LH shut-off valve (Item 1, Figure 40).

Install one Blue tie strap onto the hydraulic hose connected to the tee at the base end of the LH wing cylinder.

Green Tie Straps (Raise / Lower)

Install one Green tie strap onto the hydraulic hose connected to the RH shut-off valve (Item 2, Figure 41).

Install one Green tie strap onto the hydraulic hose connected to the rod end of the main rockshaft cylinders.

Enter the tractor, start the engine and move the tractor in front of the tandem disc hitch.

Engage parking brake and exit the tractor.

Connect the hydraulic hoses to the tractor's auxiliary hydraulics.

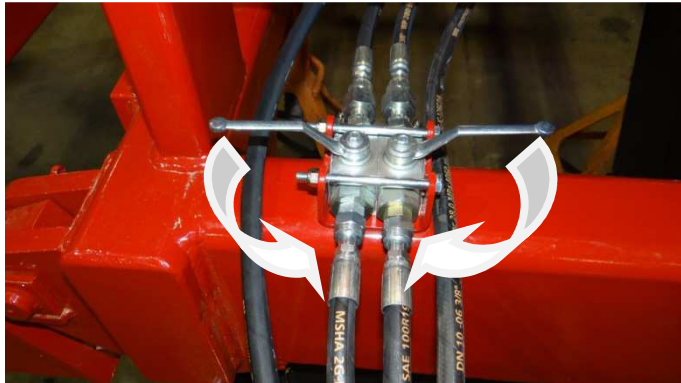


Figure 42

Open the two shut-off valves (see Figure 42).

Enter the tractor and engage tractor auxiliary hydraulics. Using the tractor's auxiliary controls, cycle the hydraulic cylinders on the tandem disc to remove all air from the system.

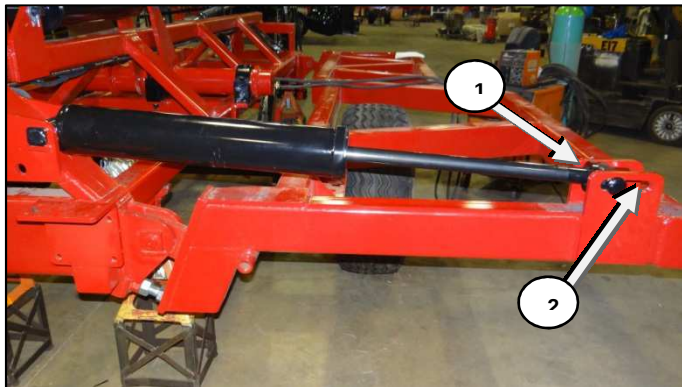


Figure 43

Fully extend both wing lift cylinders. Turn tractor engine off and exit the tractor.

Align the clevis (Item 1, Figure 43) with the mounting bracket (Item 2) on both wings.

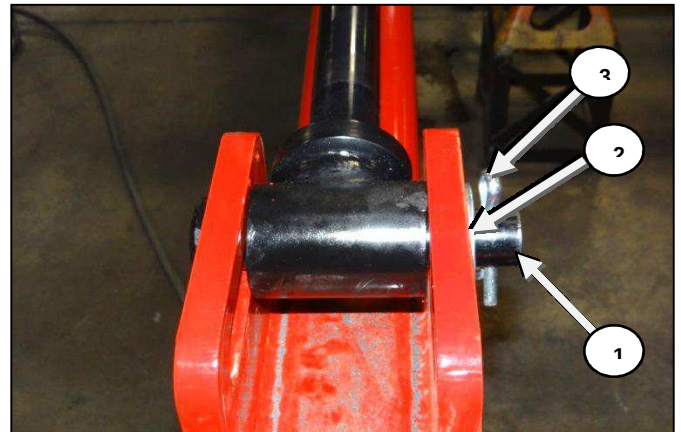


Figure 44

Locate one 1-1/4" x 7" wing lift pin (Item 1, Figure 44), one 1-1/4" flat washer (Item 2), and one 3/8" x 2-1/2" cotter pin (Item 3).

Install one washer onto the end of the cylinder pin between mount bracket and cotter pin. Push the pin through the first bracket of the cylinder mount, the cylinder clevis and outer mount bracket.

Repeat for LH wing cylinder.

Enter the tractor and start the engine.

Using the tractor's auxiliary controls, cycle the hydraulic cylinders on the tandem disc to test for correct operation.

Fully raise the tandem disc frame and fully unfold RH & LH wings.

Turn tractor engine off and exit the tractor.

Close shut-off valves.

PURGING HYDRAULIC SYSTEM



IMPORTANT

Failure to purge hydraulic system of air, could result in uneven working depth across the width of the machine, as one or more cylinders may creep, “bounce” or move erratically.

Purging Hydraulic System

Following assembly and prior to placing the tandem disc into field service, it is important the single depth control cylinder be purged of air that has been trapped in the system.

Use the following procedure to purge trapped air from the hydraulic system:

1. Connect the tandem disc hydraulics to tractor and remove all depth control stops.
2. Raise tandem disc to extend lift cylinder fully and hold hydraulic lever in the UP position for one minute.
3. Lower tandem disc to retract lift cylinder fully.
4. Raise tandem disc again and hold hydraulic lever in the UP position for another one minute.

GANG SECTIONS Chart

9 INCH SPACING					
WIDTH (Per ASABE)	# OF FRONT BLADES	# OF REAR BLADES	# OF BEARINGS	TRANSPORT HEIGHT (Approx.)	Approx. DBHP (6-8/FT)
15'11"	20	22	12	12'1"	99-132
18'10"	26	24	14	13'10"	117-156
21'10"	28	30	20	14'11"	132-176
23'3"	30	32	20	15'8"	141-188

10.5 INCH SPACING					
WIDTH (Per ASABE)	# OF FRONT BLADES	# OF REAR BLADES	# OF BEARINGS	TRANSPORT HEIGHT (Approx.)	Approx. DBHP (6-8/FT)
16'4"	20	18	12	12'1"	99-132
18'10"	22	24	12	13'10"	117-156
21'6"	24	26	16	14'10"	132-176
23'3"	26	28	16	15'8"	141-188

General Information

WARNING



- **DO NOT** permit bystanders to be in the work area when unloading and assembling the tandem disc components.
- **DO NOT** work under suspended parts.
- Keep away from moving parts.
- Always use lifting devices / vehicles, chains or straps of adequate size and strength when unloading and assembling the tandem disc components.

WARNING

AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

WARNING



AVOID INJURY OR DEATH

Keep fingers and hands out of pinch points when assembling the equipment.

CAUTION

Always wear protective gloves when installing, removing or servicing gang sections to help prevent injury from cutting edges of blades.

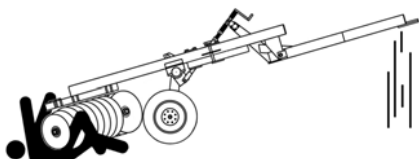
Identify the front / rear and left / right gang sections.

For additional gang section information (see "GANG PATTERNS" on page 60).

Installing the Gang Sections

Installing the Gang Sections

NOTE: The following procedure shows installing the left front gang sections. The procedure is correct for all gang sections.



AVOID SERIOUS INJURY OR DEATH

- Always install front gang sections first.
 - When installing or removing gang sections, always securely block / support the main frame to avoid tipping.
 - DO NOT work under suspended parts.
 - Always use lifting devices / supports of adequate size and strength to securely support the tandem disc.
-



Figure 45

Locate the front left, gang section.

Install straps around the gang section or use fork lift (Item 1, Figure 45) to move the gang.

Connect the straps to an approved lifting device.

Raise and move the gang section to the assembly area.

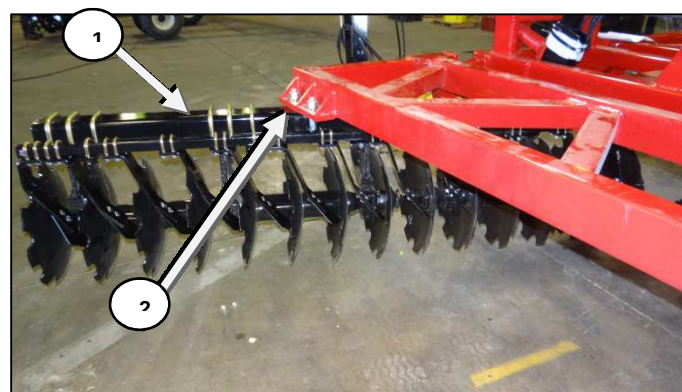


Figure 46

Move the gang section (Item 1, Figure 46) in front of the left main frame.

Align the gang beams under the gang mount brackets (Item 2) to install the bolts.

Stone Flex Hangers

NOTE: The following images may not show your gang section exactly as it appears but the procedure is correct.

! IMPORTANT

Hanger bracket must be sitting square with gang beam before tightening u-bolts.

! IMPORTANT



STONE FLEX HANGERS

If the disc is equipped with stone flex hangers:
Always install the gang sections with open end of the spring shank facing the rear of the tandem disc.

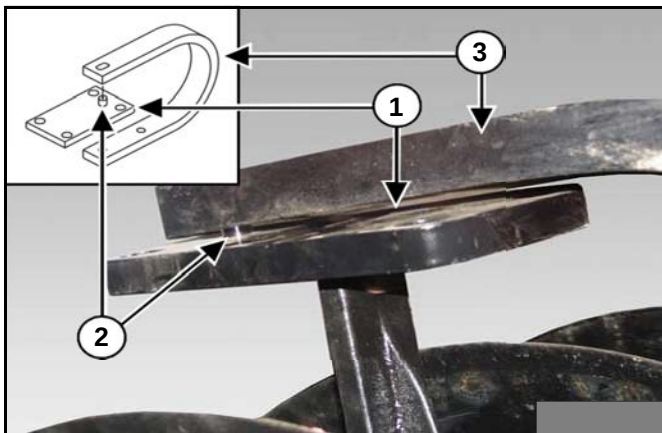


Figure 46

Locate one backing plate (Item 1, Figure 47) per bearing hanger (each gang section).

Insert the peg (Item 2) into the slot at the end of the spring shank (Item 3, Figure 47).

Rotate the backing plate 180° under the spring shank.

Rotate spring shank and backing plate up, under the gang beam.

! IMPORTANT

All bearing hangers must be positioned square under gang beam.

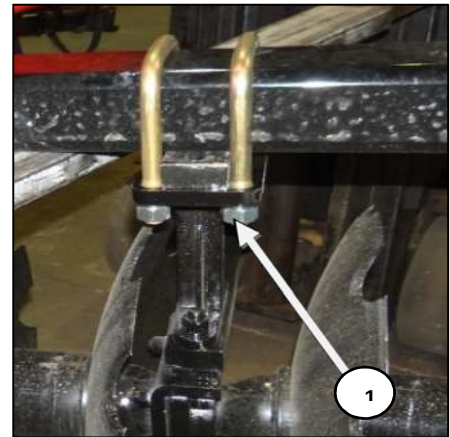


Figure 47

Locate two 7/8" x 6" x 7-1/8" U-bolts and four 7/8" lock washers and four 7/8" nuts per bearing hanger (each gang section).

Raise the gang section until the spring shank contacts the bottom of the gang beam.

Install two 7/8" x 7-1/8" U-bolts (Item 1, Figure 48) over the gang beam and down through the backing plate holes.



Figure 49

Install 7/8" lock washers (Item 1, Figure 49) and 7/8" nuts (Item 2) onto the U-bolts. Do not tighten at this time.

Repeat steps shown in Figure 47 to Figure 49 for remaining hanger bearings on the gang section.

Positioning Front Left Gang Section

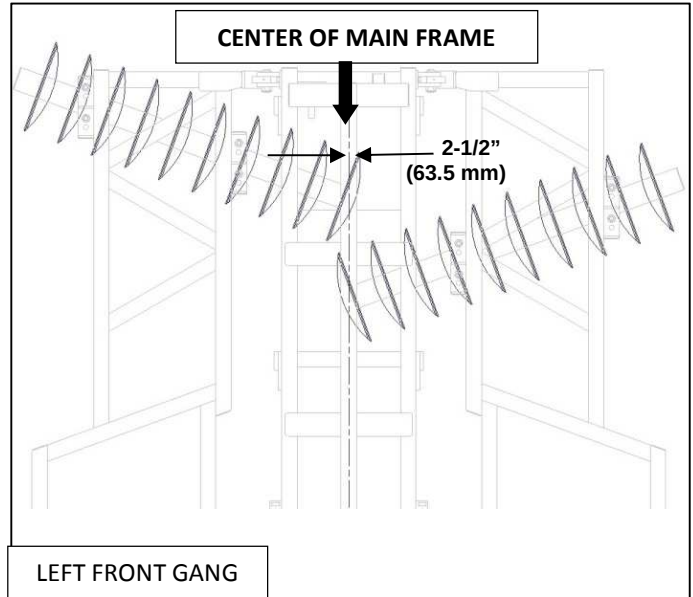


Figure 50

Locate and mark the center of the main frame.

Position the front inside gang section, so that the leading edge of inside blade is approximately 2-1/2" (63.5 mm) past center of main frame (see Figure 50).

! IMPORTANT

Always tighten inside hanger bearing u-bolts first, while maintaining the 2-1/2" (63.5 mm) spacing past center of main frame. Tighten all bearing hanger u-bolts to 430 ft.-lb. (583 N•m) torque.

! IMPORTANT

Verify that all bearing hangers are positioned square under gang beam before tightening the u-bolts.

Tighten inside hanger bearing u-bolts, then tighten remaining hanger bearing u-bolts on the inside gang section.

Positioning Front Right Gang Section

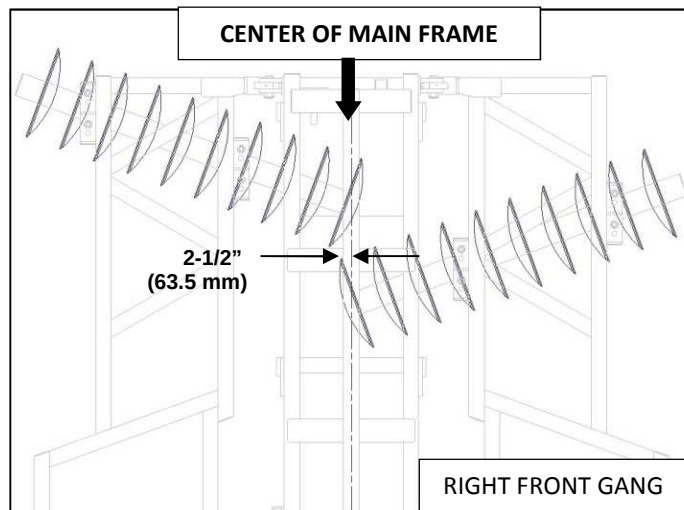


Figure 51

Position the front right inside gang section, so that the leading edge of inside blade is approximately 2-1/2" (63.5 mm) past center of main frame (see Figure 51).

! IMPORTANT

Always tighten inside hanger bearing u-bolts first, while maintaining the 2-1/2" (63.5 mm) spacing past center of main frame. Tighten all bearing hanger u-bolts to 430 ft.-lb. (583 N•m) torque.

! IMPORTANT

Verify that all bearing hangers are positioned square under gang beam before tightening the u-bolts.

Tighten inside hanger bearing u-bolts, then tighten remaining hanger bearing u-bolts on the inside gang section.

Positioning Rear Gang Sections

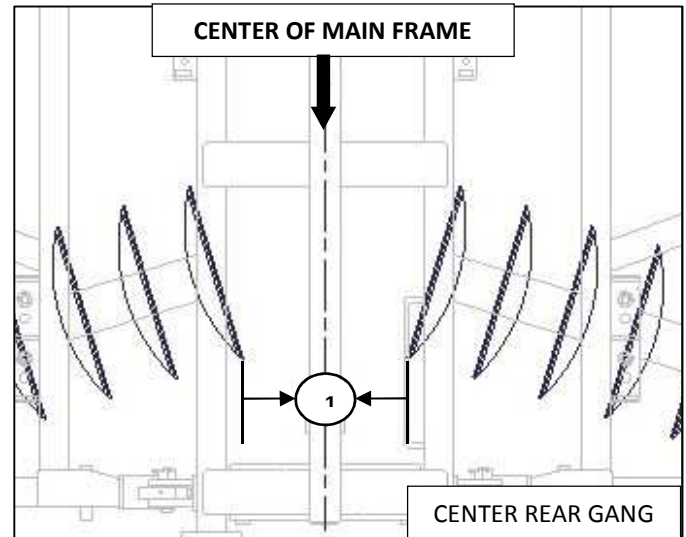


Figure 52

Center rear gang sections, so that the distance between the rear edge of the two inside blades (Item 1, Figure 52), is equal to 2" (50.8 mm) less than diameter of blades with a maximum of 24" (610 mm).

EXAMPLE - if the disc is equipped with 24" (610 mm) diameter blades, (Item 1) would be set at 22" (559 mm).

NOTE: If the disc is equipped with 26" (660 mm) diameter blades, (Item 1, Figure 52) would be set at a maximum of 24" (610 mm).

! IMPORTANT

Always tighten inside hanger bearing u-bolts first, while maintaining the desired spacing between the rear edges of the two inside blades. Tighten all bearing hanger u-bolts to 430 ft.-lb. (583 N•m) torque.

! IMPORTANT

Verify that all bearing hangers are positioned square under gang beam before tightening the u-bolts.

Tighten inside hanger bearing u-bolts, then tighten remaining hanger bearing u-bolts on the rear gang.

Installing the Scraper Bar and Scrapers

Standard Scraper Bar Mounting

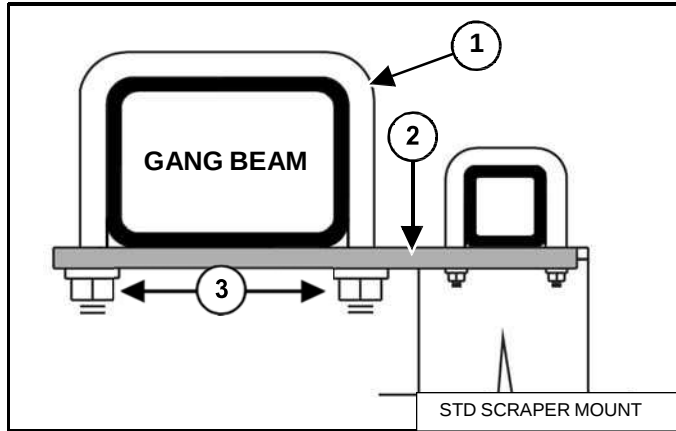


Figure 53

Install one 3/4" x 6-7/8" U-bolt (Item 1, Figure 52) over the gang beam and down through the scraper bar mount (Item 2). Install two 3/4" lock washers and two 3/4" nuts (Item 3) on the U-bolt. Do not tighten at this time.

Continue installing the remaining scraper bar mounts as required.

NOTE: Mount (Item 2, Figure 53) is positioned so scraper bar is located at rear of gangs.

NOTE: Each disc model is supplied with one scraper mount bracket per hanger.

In general, locate the outside bracket for each scraper bar as close to the end as possible. Try to avoid having the outer brackets located behind two scrapers. Locate the inner brackets next to bearing hangers.

Locate each gang section, corresponding scraper assemblies and hardware that were removed before installing gang sections.

! IMPORTANT

Each gang section and corresponding scraper assembly must be installed together

Installing the Scraper Bars



Figure 54

Place the corresponding scraper bar onto the mounts (see Figure 54).

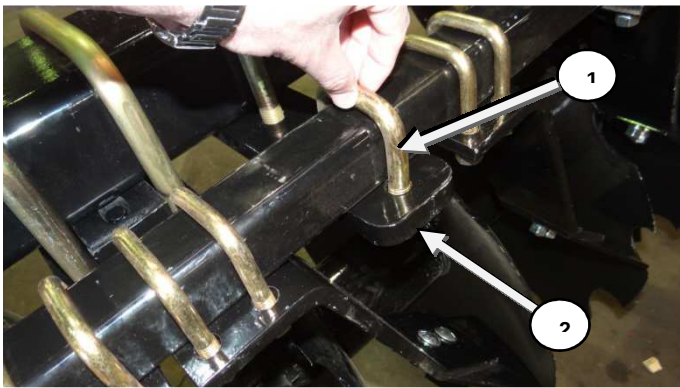


Figure 55

Install 5/8" x 2" U-bolts (Item 1, Figure 55) down, over the scraper bar and into the mounts.
Install 5/8" lock washers and 5/8" nuts (item 2) onto each U-bolt. Do not tighten at this time.

Continue installing the remaining corresponding scraper bars.

Wide Pan Scrapers

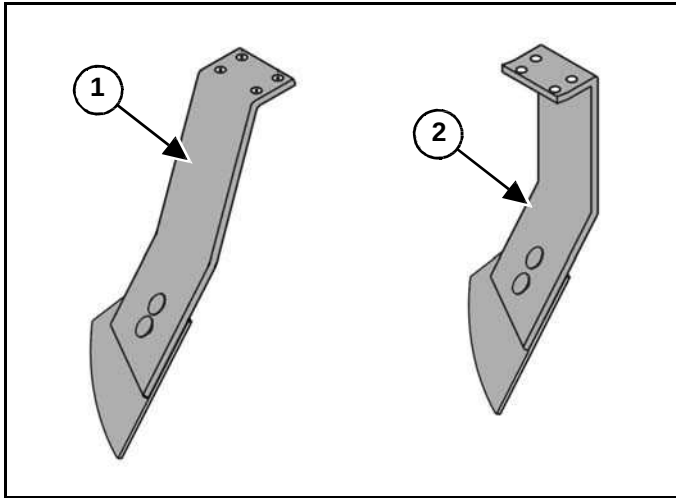


Figure 56

Front LH / rear RH wide pan scraper (Item 1, Figure 56) and front LH / rear RH wide pan 90° scraper (Item 2).

NOTE: Front RH and rear LH scrapers are opposite of the scrapers shown in Figure 56.

Installing Hydraulic Hose Bracket

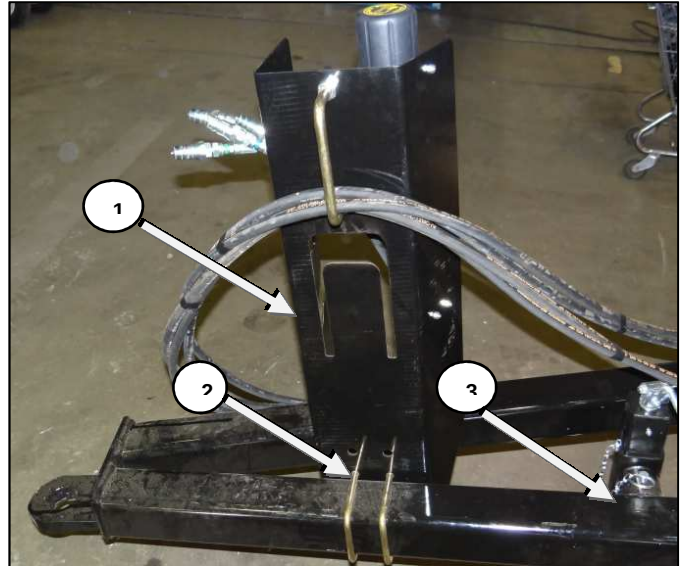


Figure 57

Locate the hydraulic hose bracket (Item 1, Figure 57), two 5/8" x 5.5" U-bolts, four 5/8" lock washers and four 5/8" nuts.

Align the hydraulic hose bracket on the same side as the hitch jack (3). Position the bracket on tube approximately 16" from the end of the tube.

Install the two 5/8" x 5.5" U-bolts around the hitch and through the hydraulic hose bracket (Item 1). Install the four 5/8" lock washers and 5/8" nuts on inner side (Item 2) on the U-bolts. Tighten nuts to secure the hydraulic hose bracket.

Installing Manual Storage Container

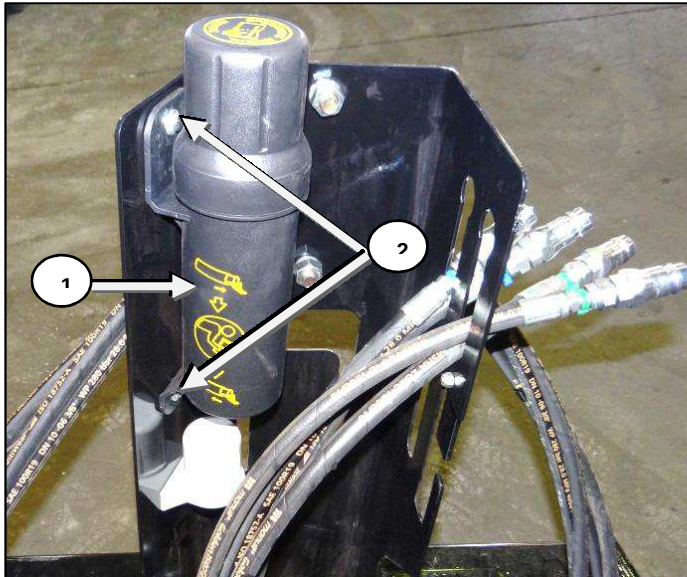


Figure 58

Locate the manual storage container (Item 1, Figure 58), two 5/8" x 2" bolts (item 2), two 5/16" lock washers and two 5/16" nuts

Align the manual storage container with the mounting bracket on the hitch.

Install the two 5/8" x 2" bolts (Item 2) through the manual storage container (Item 1) and mounting bracket. Install one 5/16" lock washer and 5/16" nut on each bolt. Tighten bolts and nut to secure the manual storage container to the mounting bracket.

Install manual storage container cap.

Installing Wing fold Lock

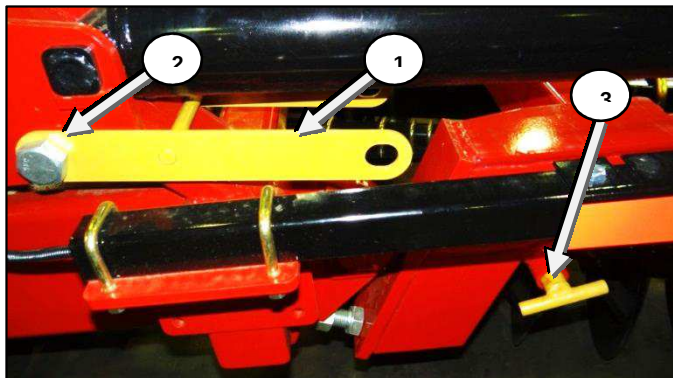


Figure 59

Install wing locks on both rear side of the main frame. Install a wing lock link (Item 1, Figure 59) using 1-1/4"x10" long bolt (Item 2) as shown in the figure. While wing down position, place the Wing lock pin (Item 3) in wing bushing.



Figure 60

After winging up for transport, use wing locking link to lock both wings to main frame with wing locking pin (see Figure 60).

Installing SMV Bracket

Install a slow moving bracket at rear of main frame

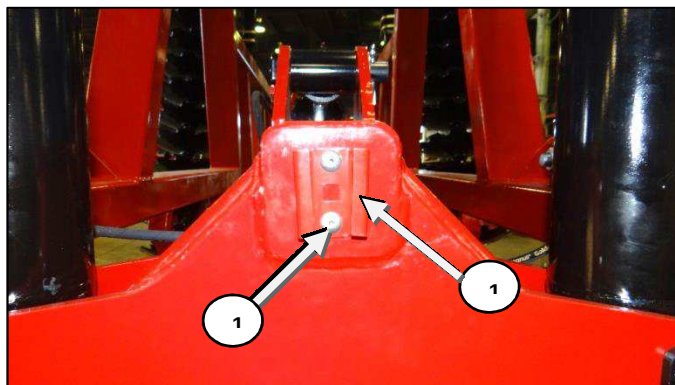


Figure 61

Drill two holes for installing mounting socket for SMV sign (Item 1, Figure 61), Hole size should be 0.257"/ 0.261" and use two rivets 1/4 " x 3/4" flat head (item 2).

LIGHT KIT Installation

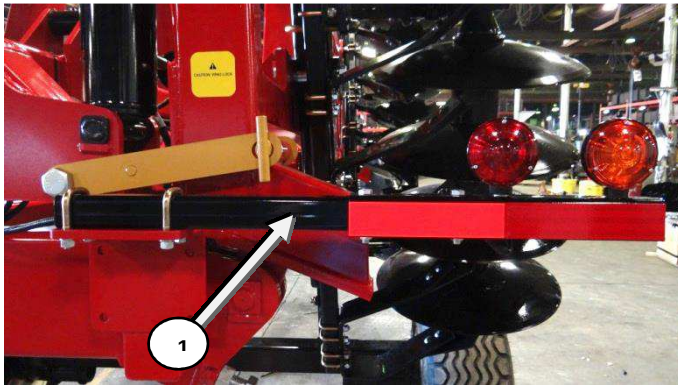


Figure 62

Locate one light bracket (Item 1, Figure 62) one for each side of main frame.

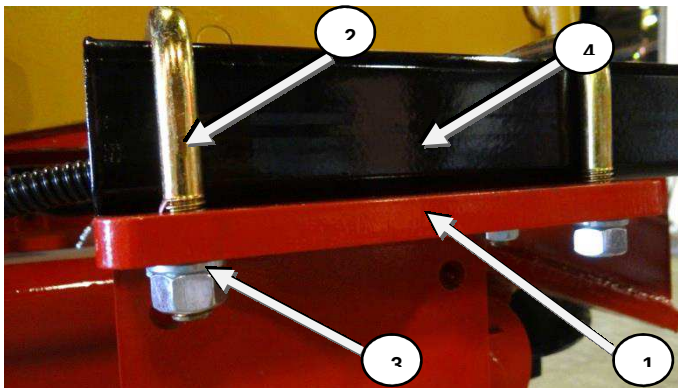


Figure 63

Light bracket tube (Item 4, Figure 63) should be sitting flat on mounting bracket (item 1) on main frame, two 1/2"- 1 3 x 2 -1/2" U-bolts, two 1/2" lock washers and two 1/2" nuts.

Position the light bracket towards the rear on the outside of the center frame. Lower the light bracket inside the frame, align the backing plate and install the two 1/2" U-bolts (Item 2), through the mounting plate (item 1) and light bracket. Install 1/2" lock washers and nuts on the bolts. Visually inspect that the light bracket is straight with the main frame.

NOTE: Verify that the light bracket is positioned in a location where the RH wing will not damage the light bracket when folded.

Tighten the 1/2" U-bolts and nuts to secure the light bracket to the mounting bracket on main frame. Repeat for installing opposite light bracket.

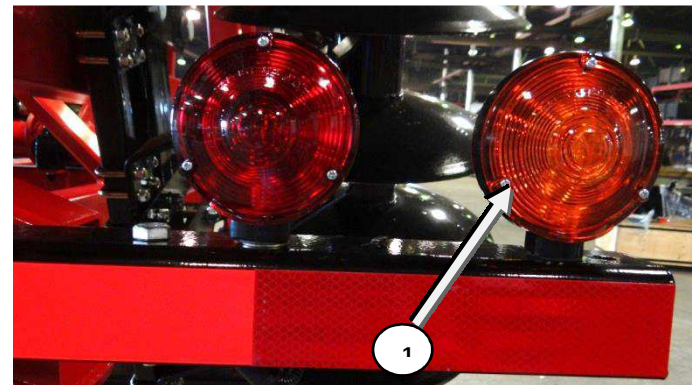


Figure 64

Locate one amber light (Item 1, Figure 64).

Install the amber light assembly into the outer slot of the light bracket. Position the amber light facing front / rear of the machine. Tighten nut (Item 2, Figure 66) on next page. Repeat for opposite amber light assembly.



Figure 65

Locate one red light assembly (Item 1, Figure 65).

Install the red light assembly into the inner slot of the light bracket. Position the red light facing the rear of the machine.

Tighten nut (Item 3, Figure 66).

Repeat for opposite red light assembly.

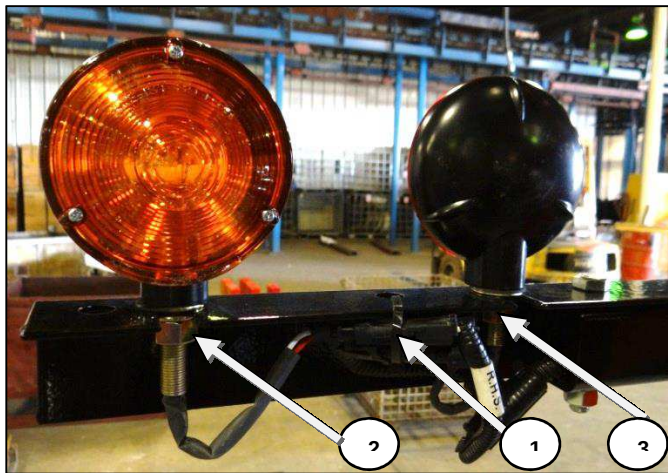


Figure 66

Locate the wire harness (Item 1, Figure 66).

Connect the wire harness to each of the amber and red lights (both sides).

NOTE: Harness plugs are marked with either LH or RH. Make sure lamp plugs are connected to the correct side.

Route the wire harness (Item 1, Figure 67) down the center tube of the main frame (along hydraulic hoses) and the front of the hitch.

Using cable ties, secure wire harness to the light brackets and hydraulic hoses.

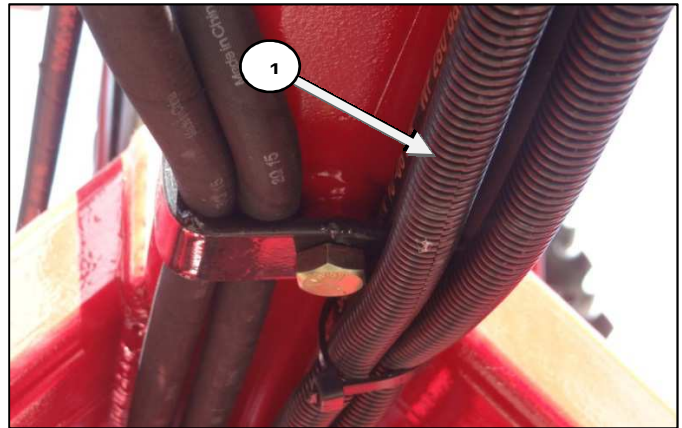


Figure 67

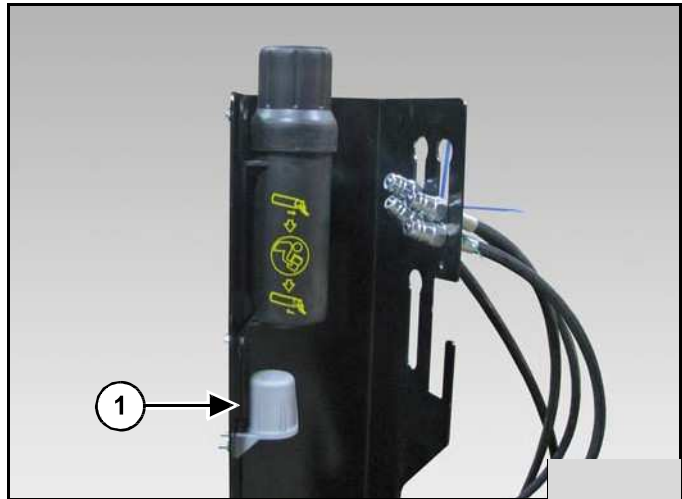


Figure 68

Install storage electrical plug holder below manual holder using one 1/4" x 5/8" bolt, 1/4" lockwasher, and 1/4" nut.

Install the wire harness 7-pin connector in the storage cup (Item 1, Figure 68) on the hydraulic hose bracket.

DEPTH STOPS



Figure 69

Locate the two sets of depth stops (see Figure 69).

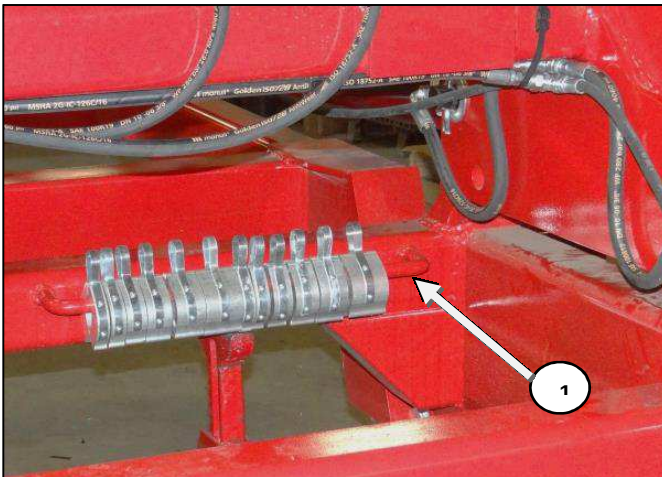


Figure 70

Store unused depth stops on the rod (Item 1, Figure 70) just on the segment holder rod at the main frame.



Figure 71

Install depth stops (Item 1, Figure 71) on the main rockshaft cylinder as needed for transport or to maintain working depth.

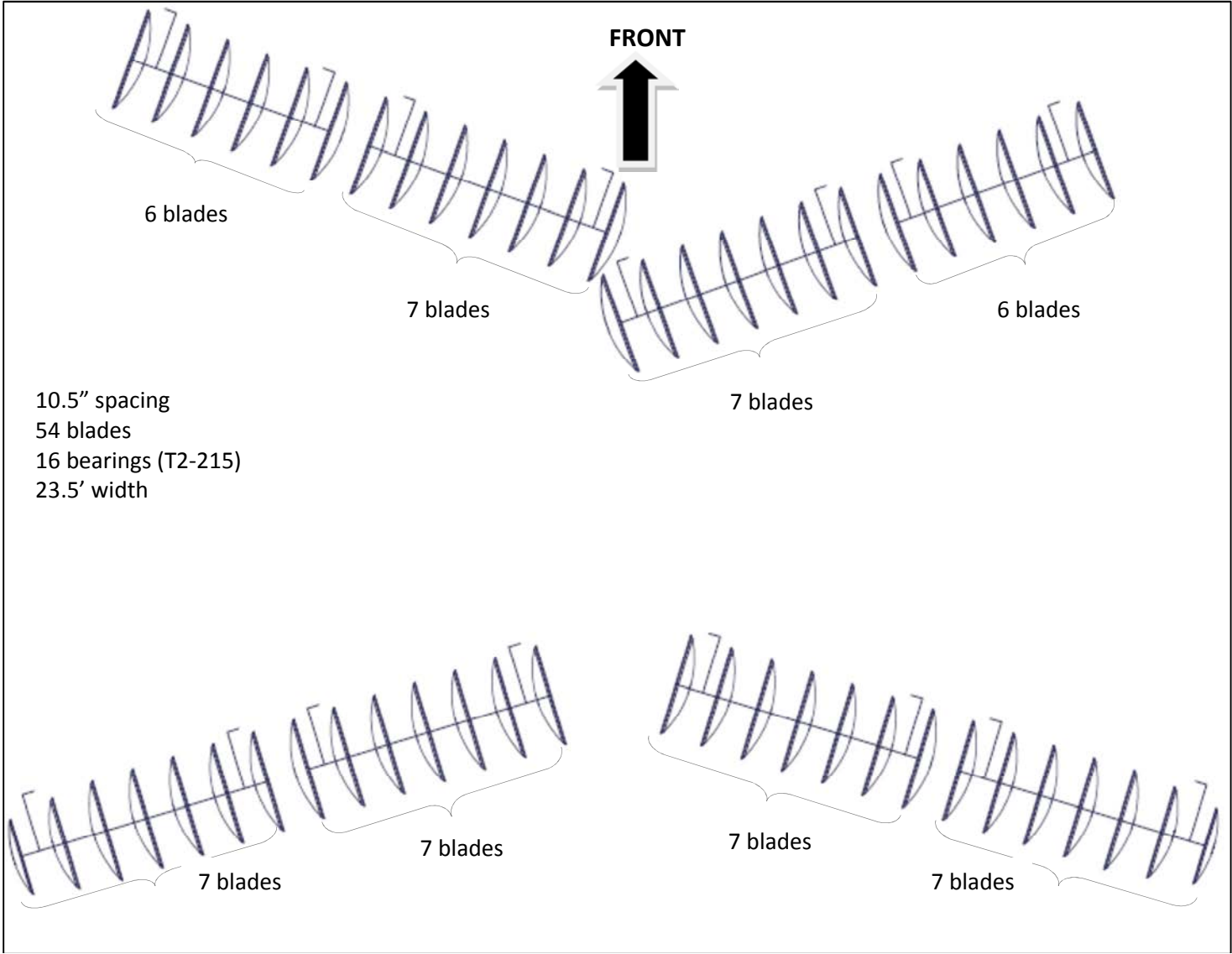
! IMPORTANT

ALL depth stops must be installed on main frame rockshaft cylinder when transporting disc.

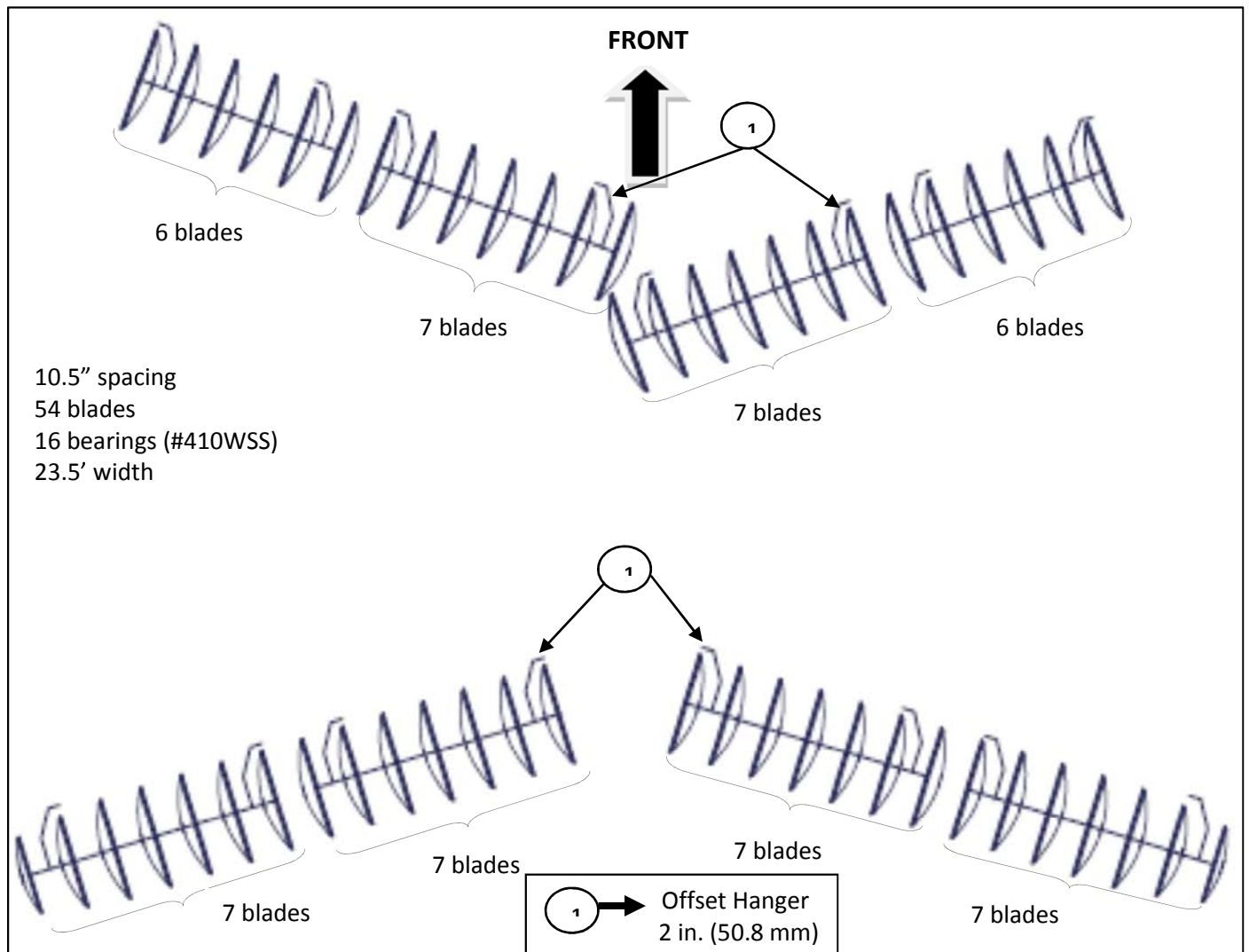
The depth stops will have a total length of 17 inches (431.8 mm).

GANG PATTERNS

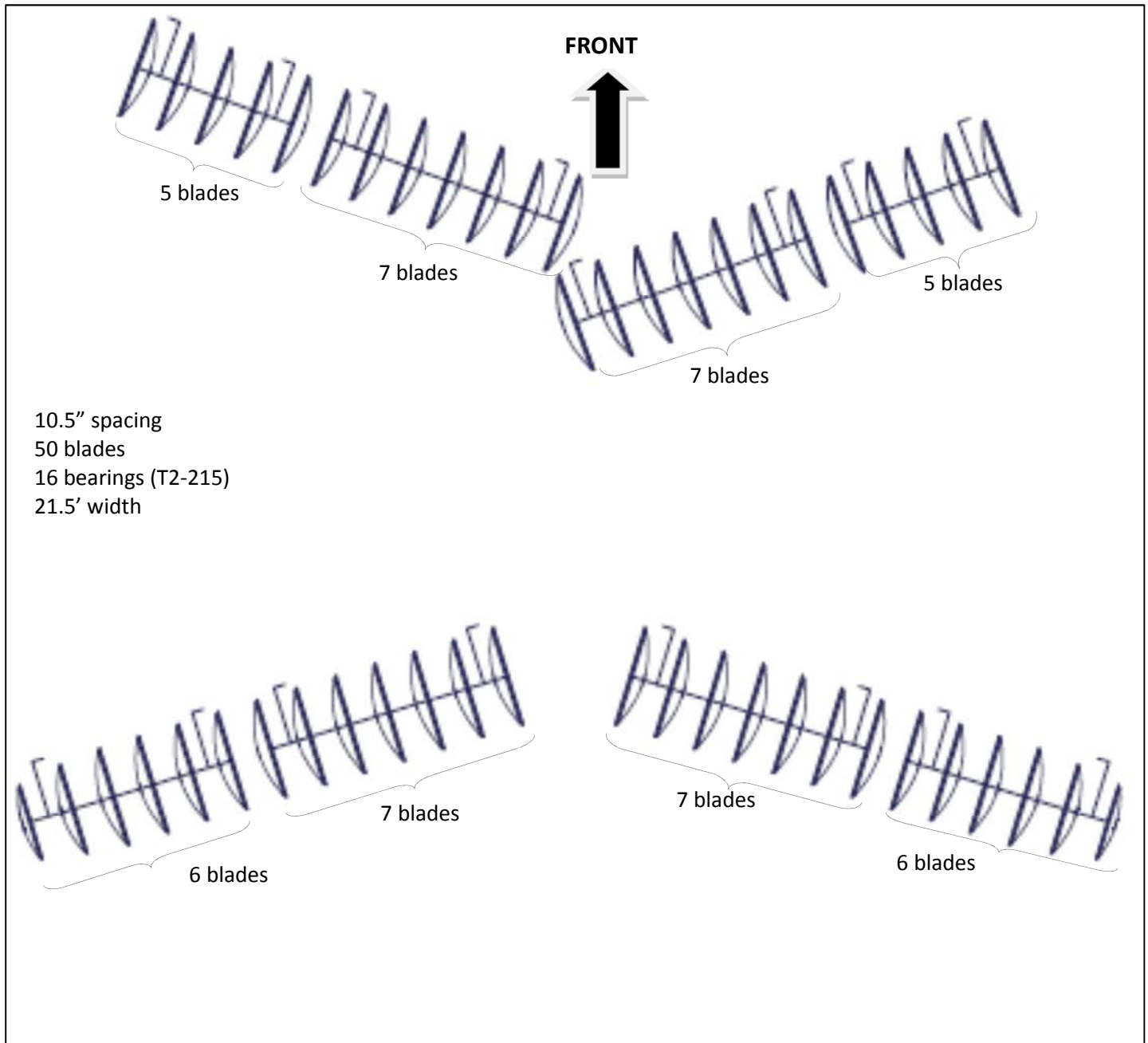
10-1/2 inch spacing – 54 blades / 16 bearings (T2-215)



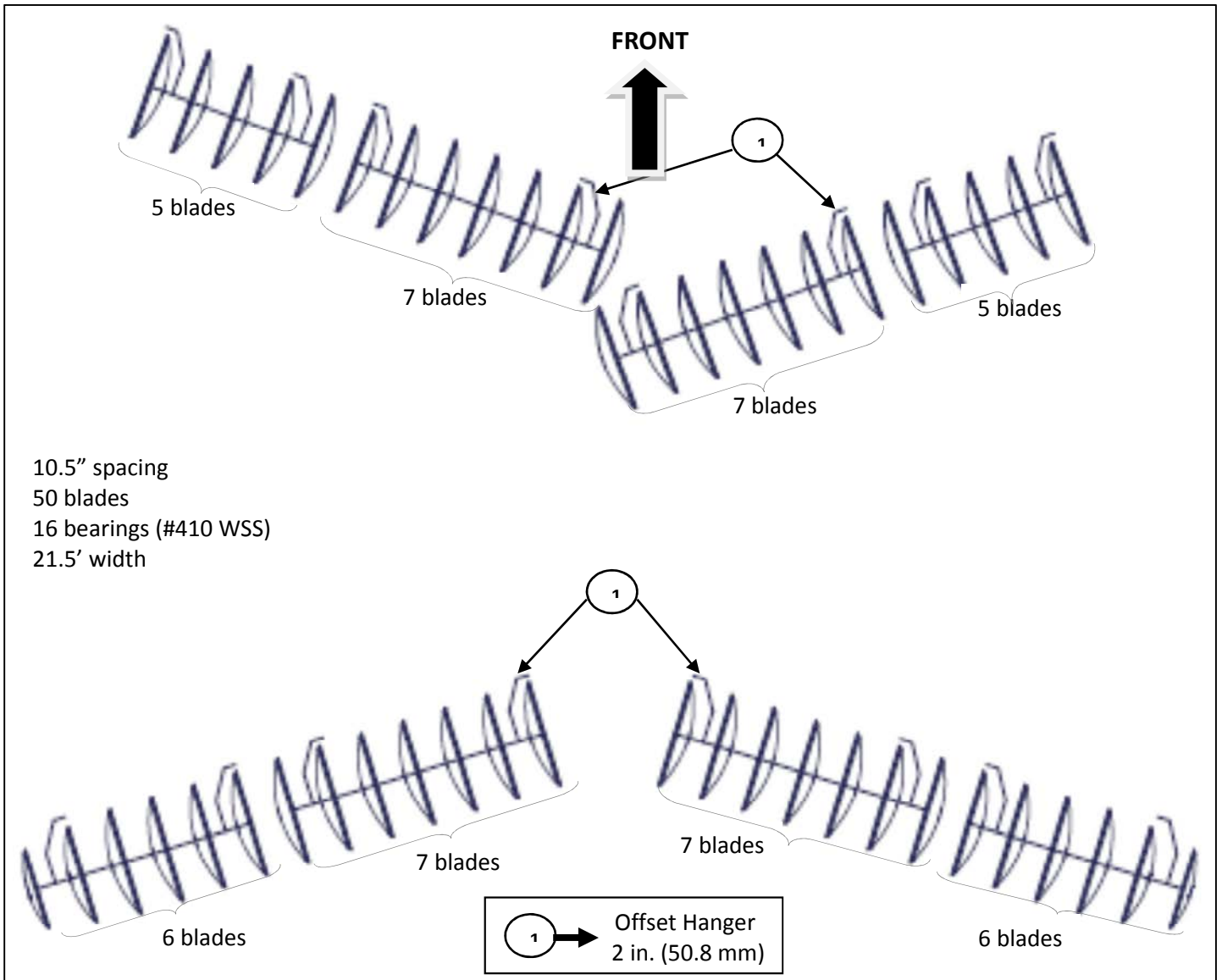
10-1/2 inch spacing – 54 blades / 16 bearings (#410 WSS)



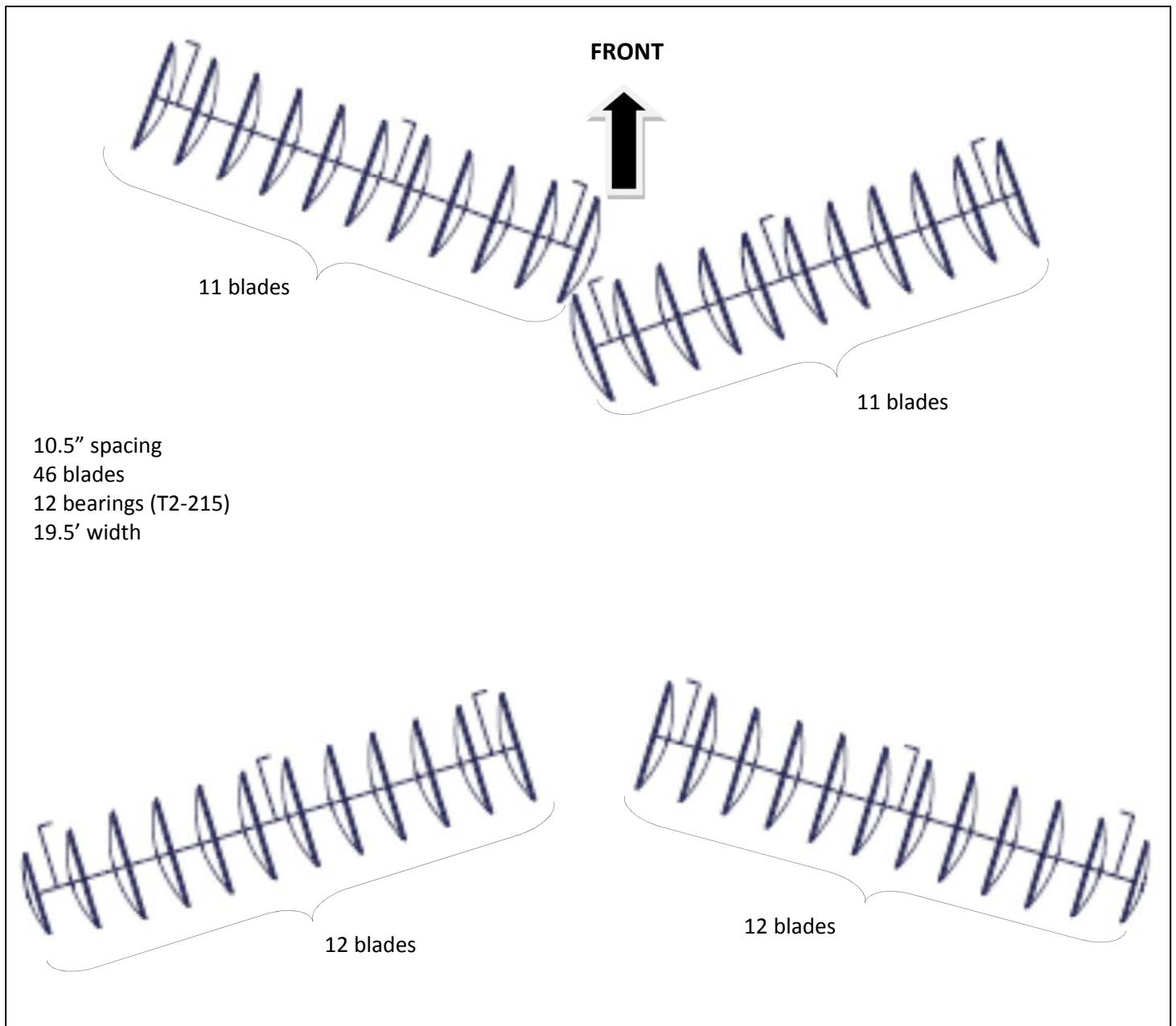
10-1/2 inch spacing – 50 blades / 16 bearings (T2-215)



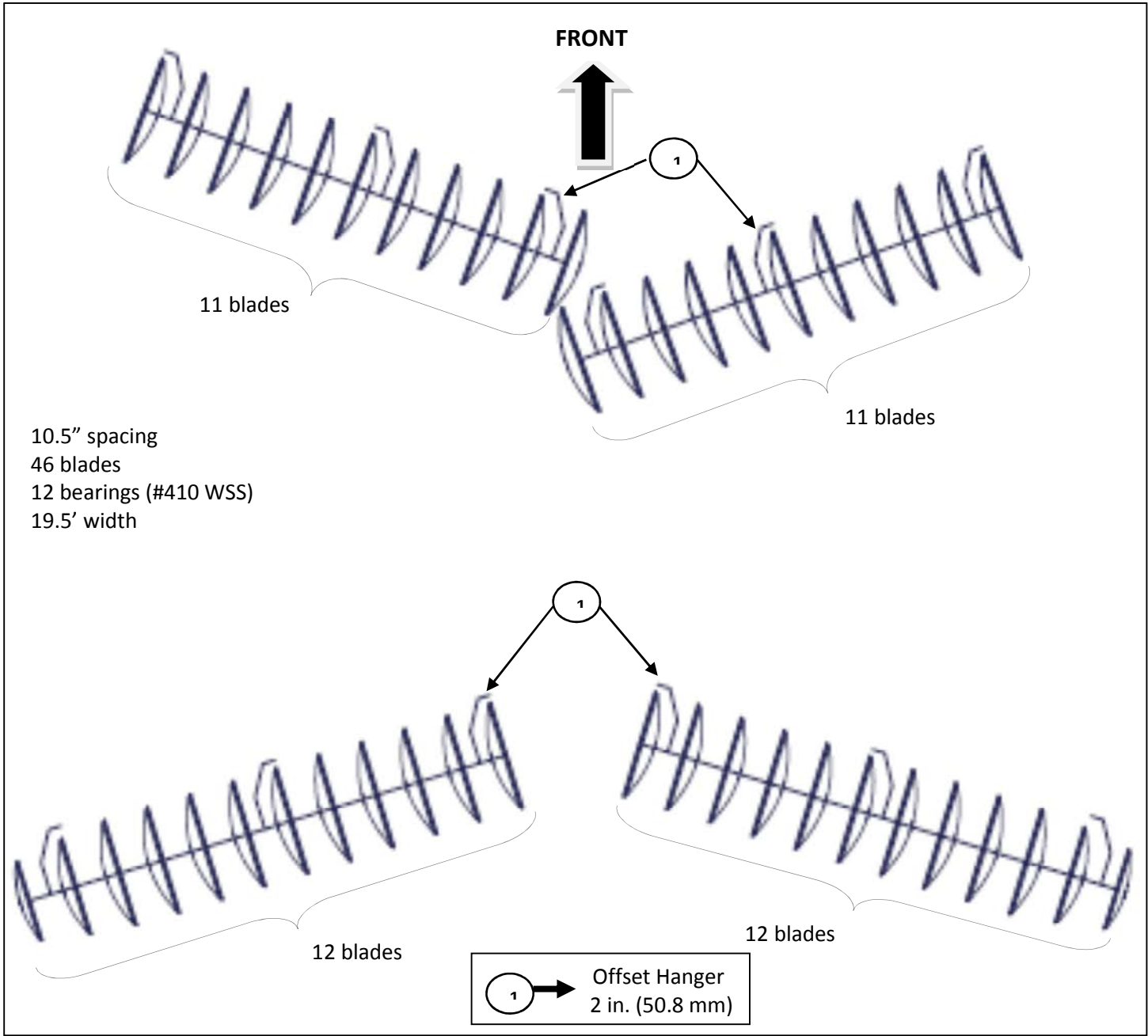
10-1/2 inch spacing – 50 blades / 16 bearings (#410 WSS)



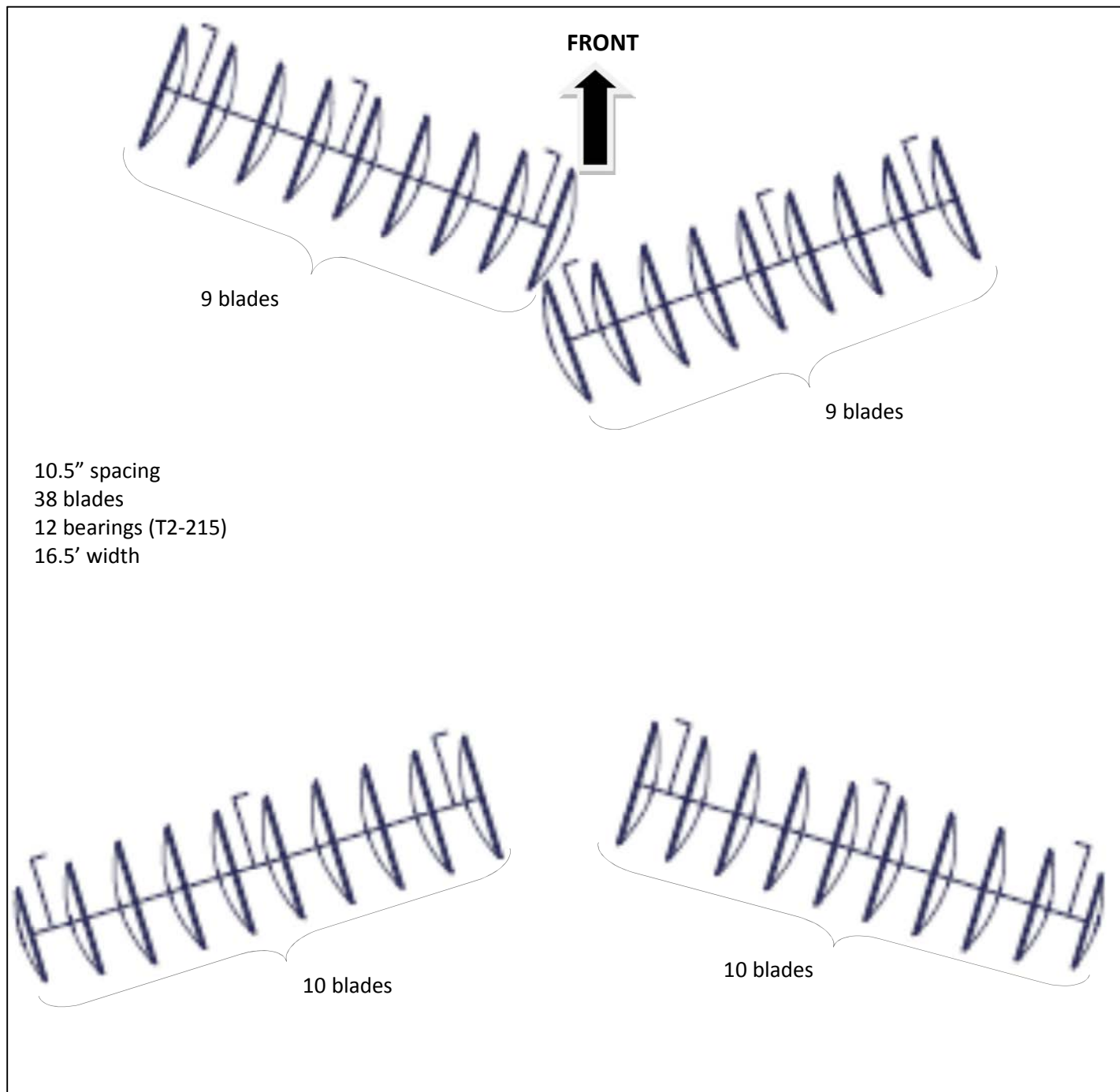
10-1/2 inch spacing – 46 blades / 12 bearings (T2-215)



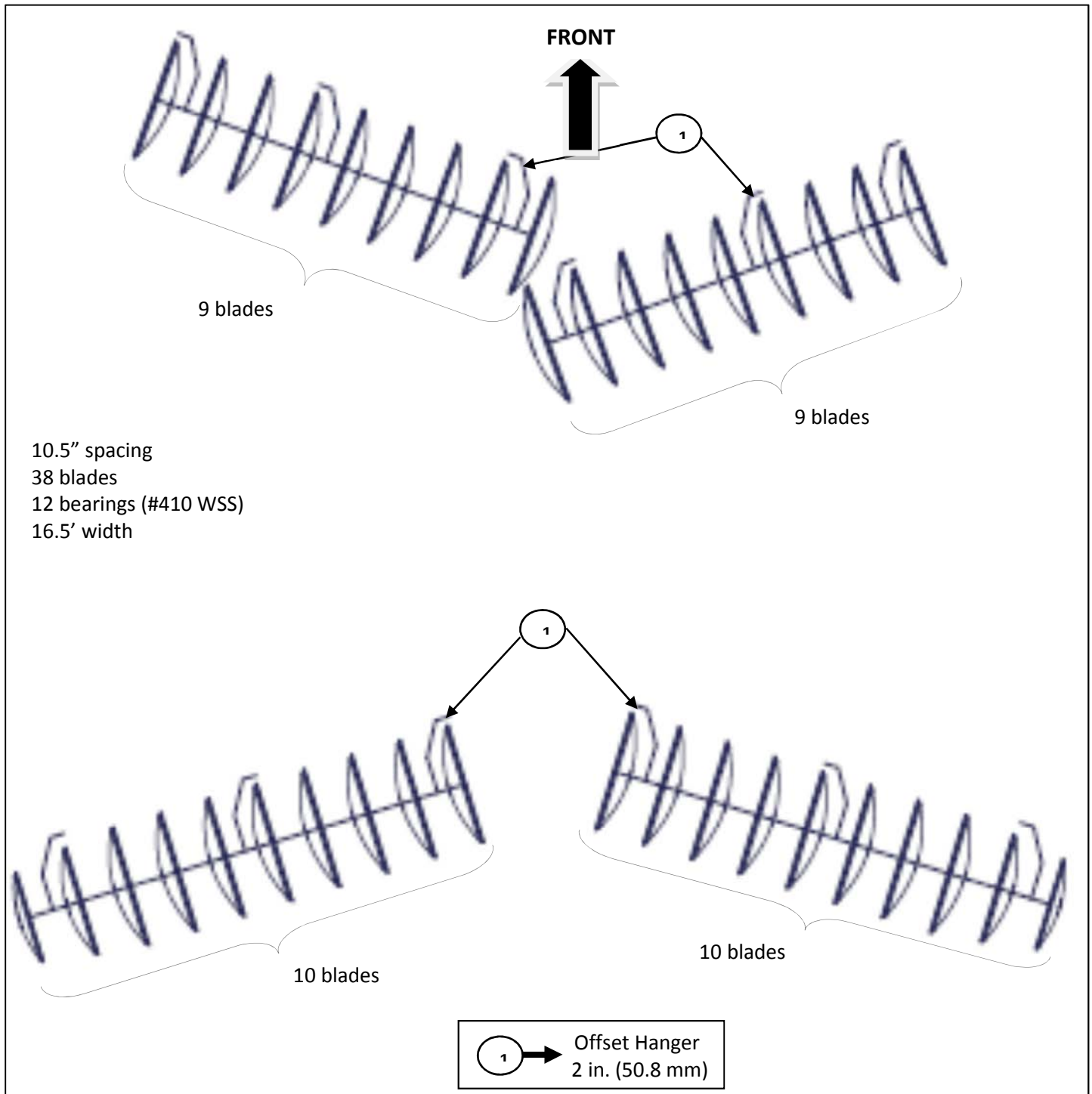
10-1/2 inch spacing – 46 blades / 12 bearings (#410 WSS)



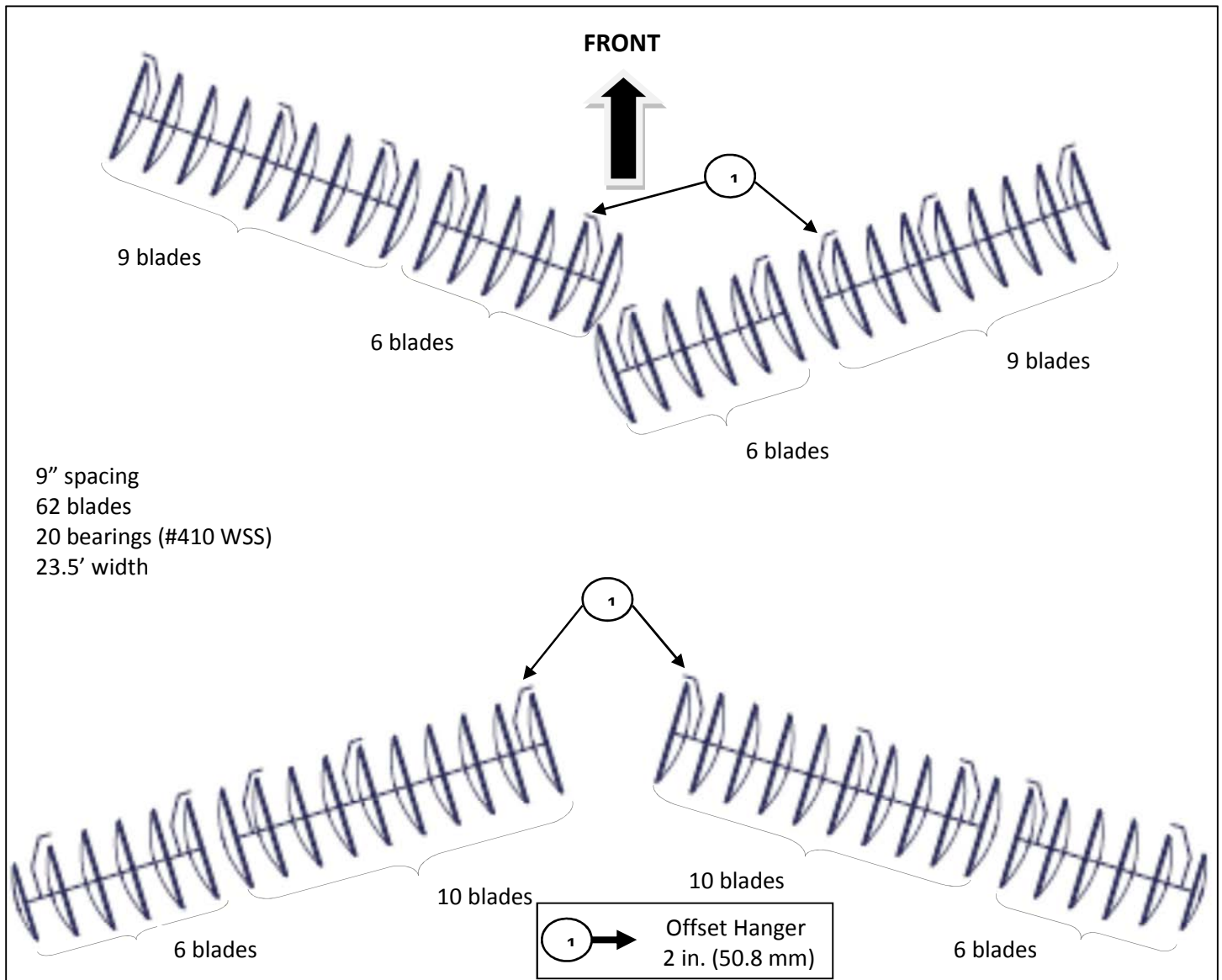
10-1/2 inch spacing – 38 blades / 12 bearings (T2-215)



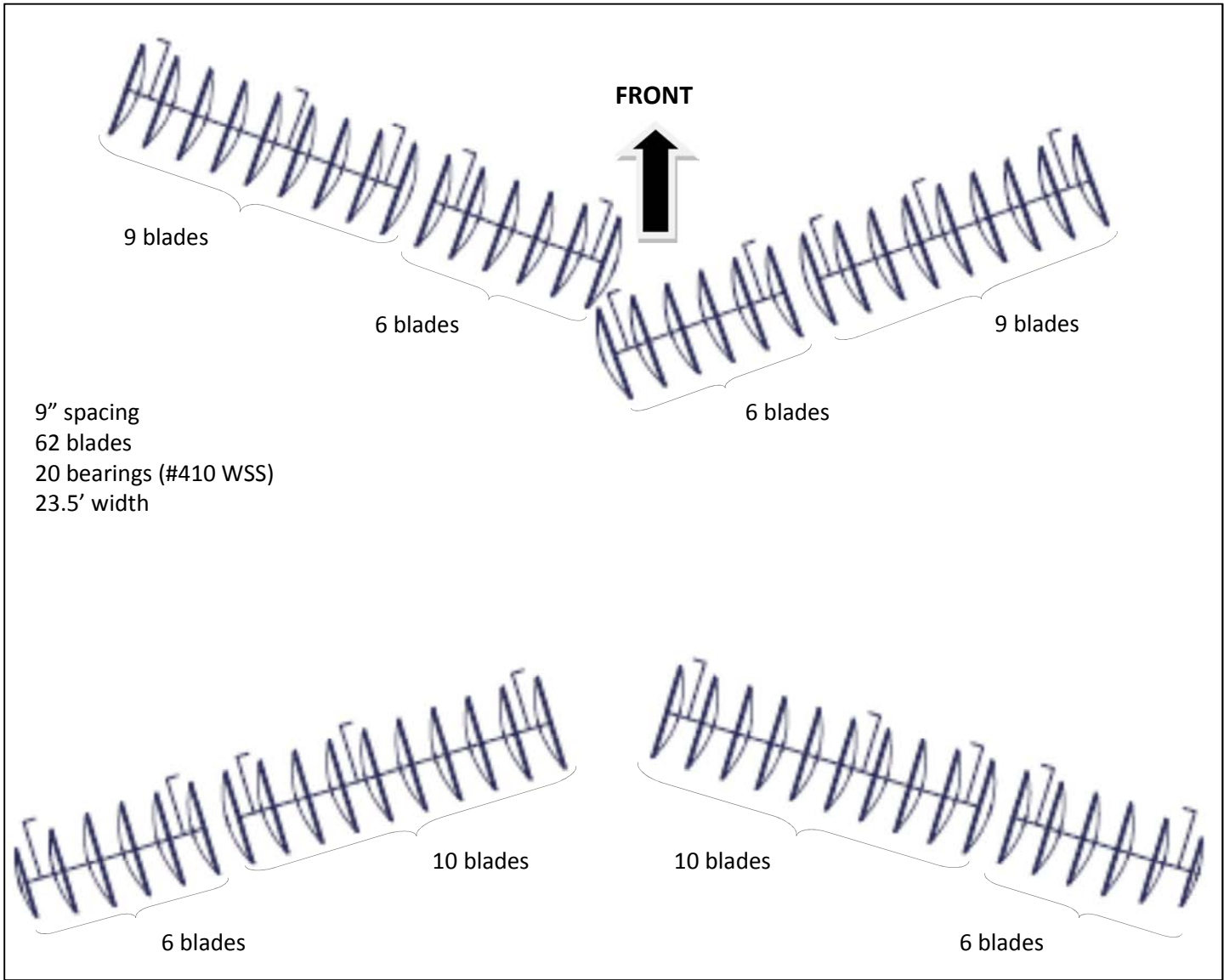
10-1/2 inch spacing – 38 blades / 12 bearings (#410 WSS)



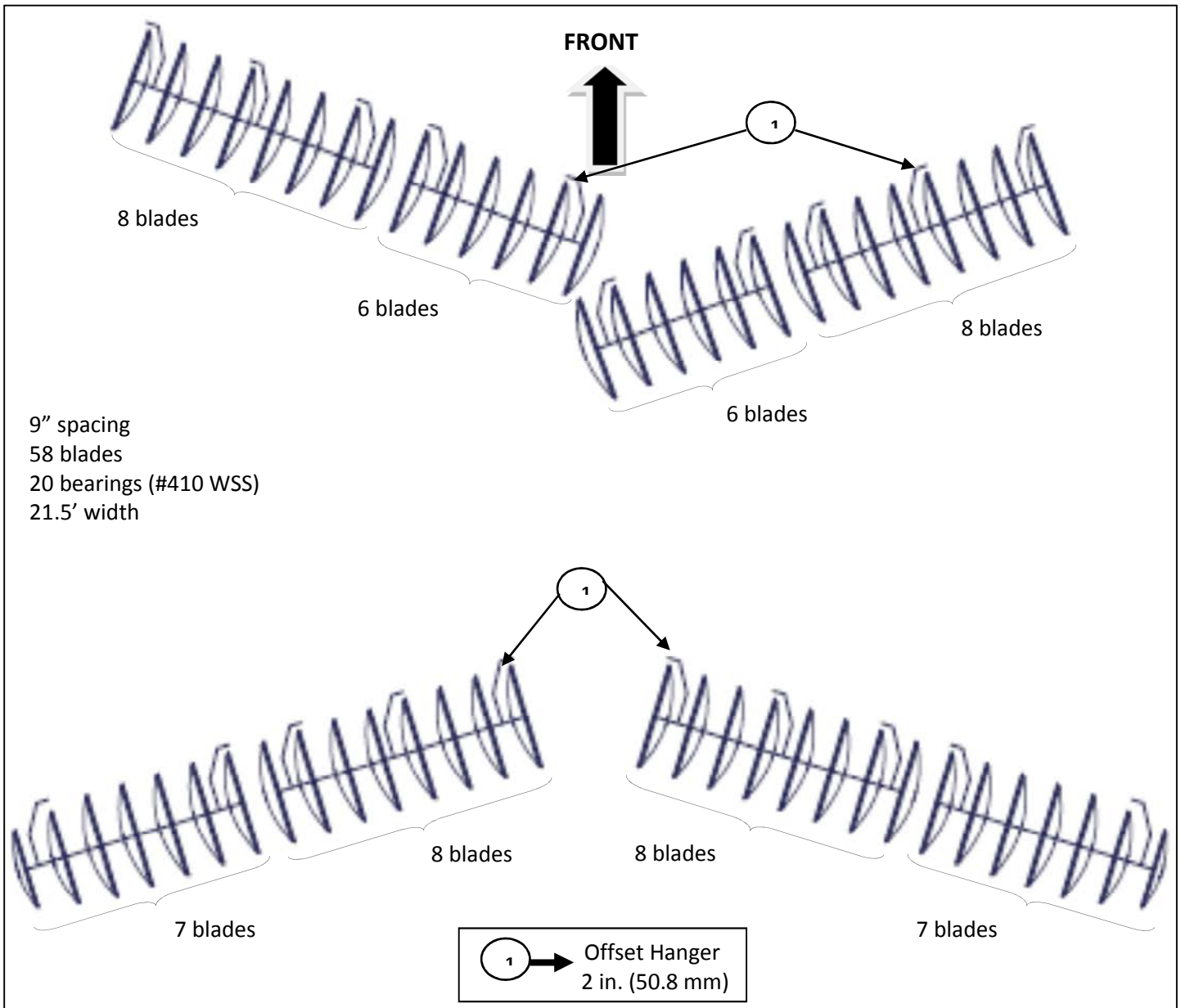
9 inch spacing – 62 blades / 20 bearings (#410 WSS) - Offset Hangers



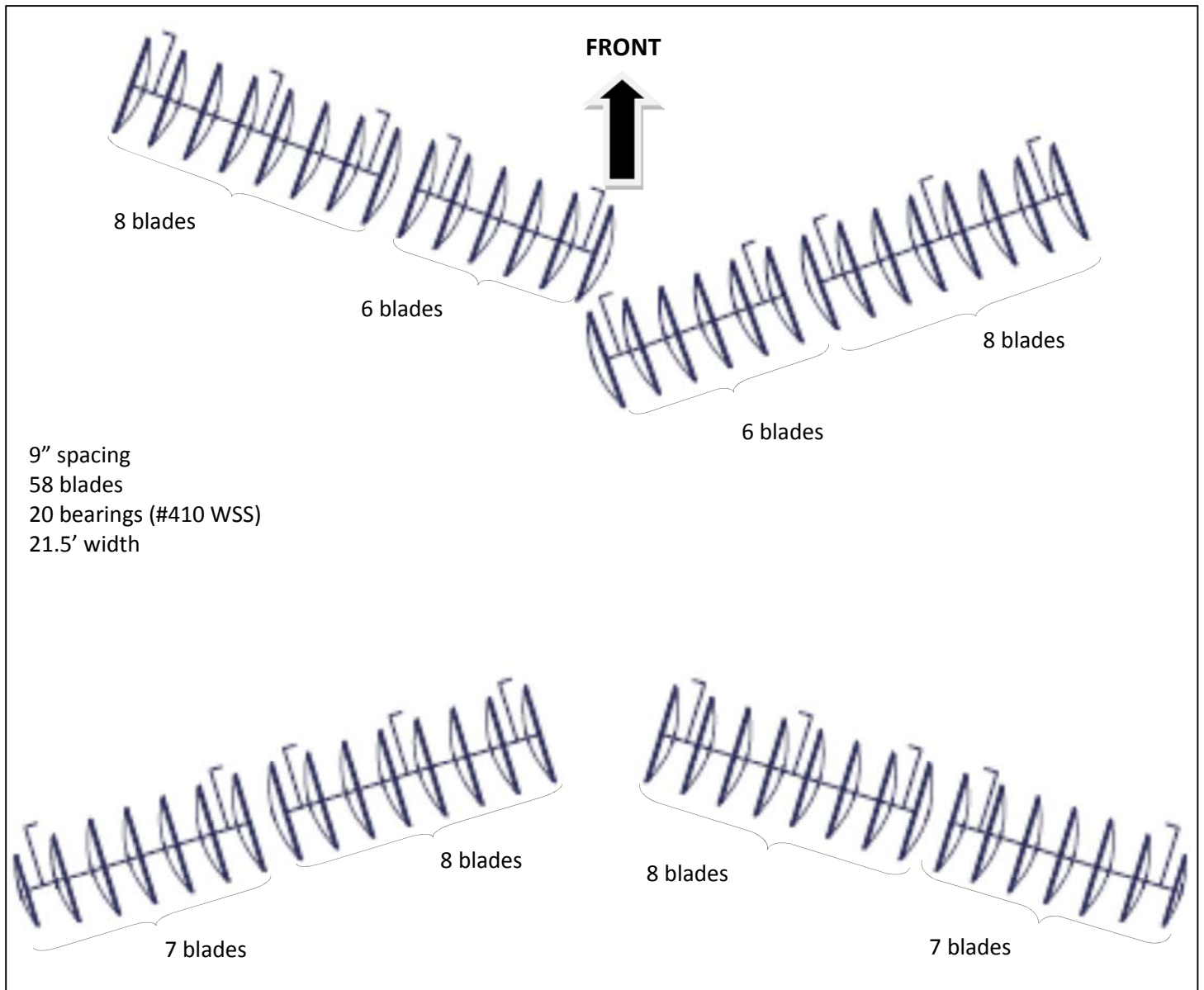
9 inch spacing – 62 blades / 20 bearings (#410 WSS) - Std. Hangers



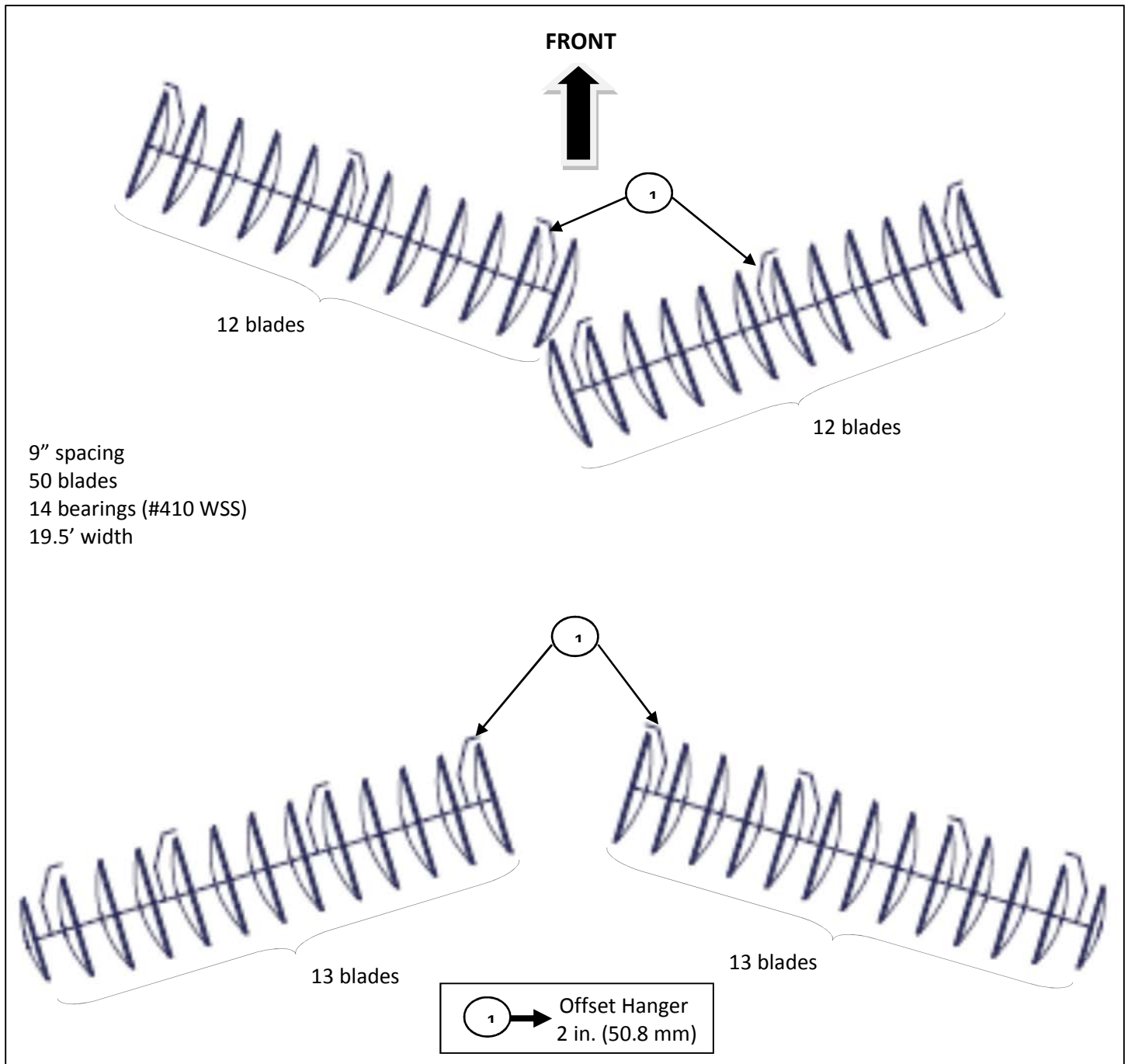
9 inch spacing – 58 blades / 20 bearings (#410 WSS) - Offset Hangers



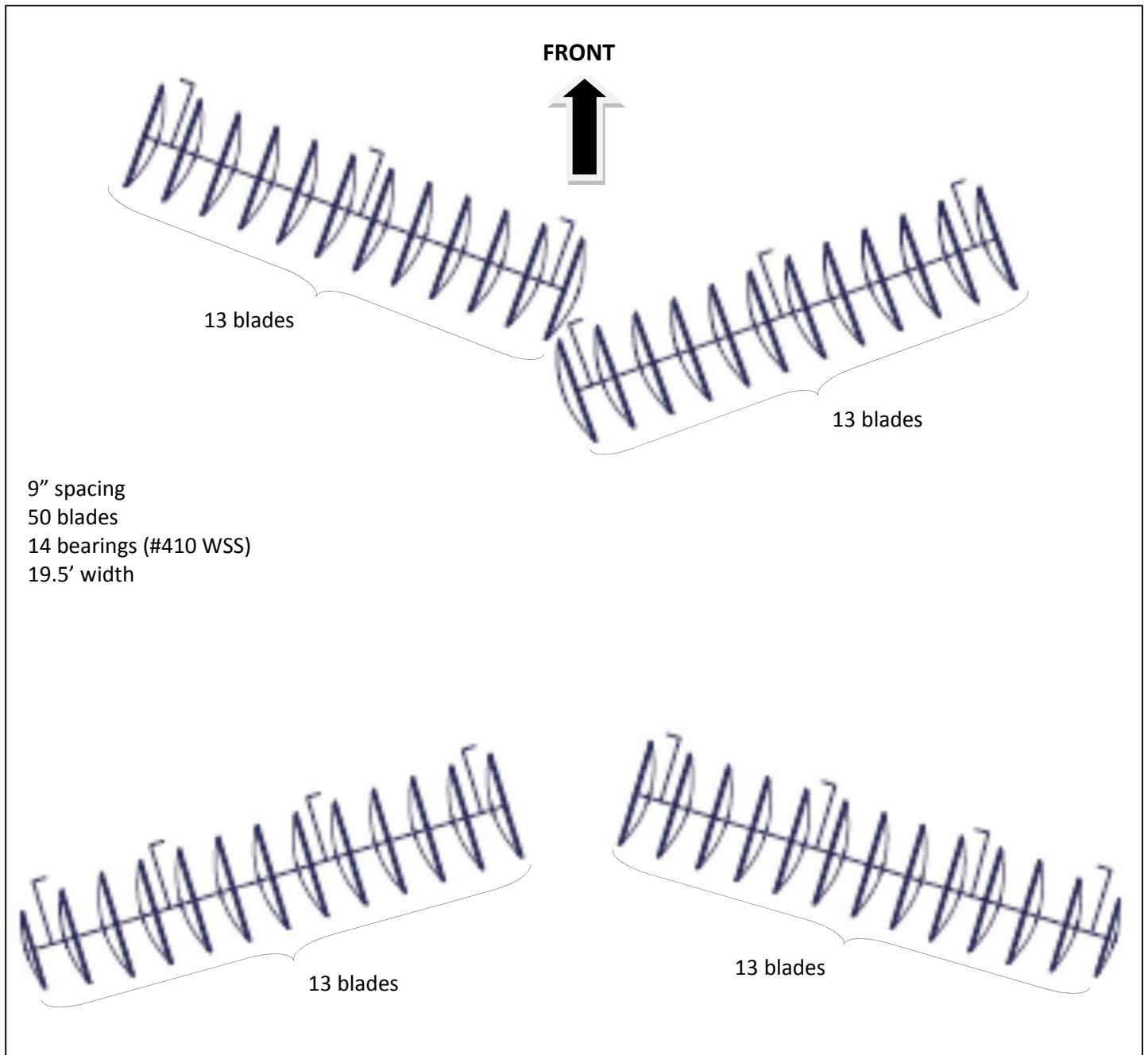
9 inch spacing – 58 blades / 20 bearings (#410 WSS) - Std. Hangers



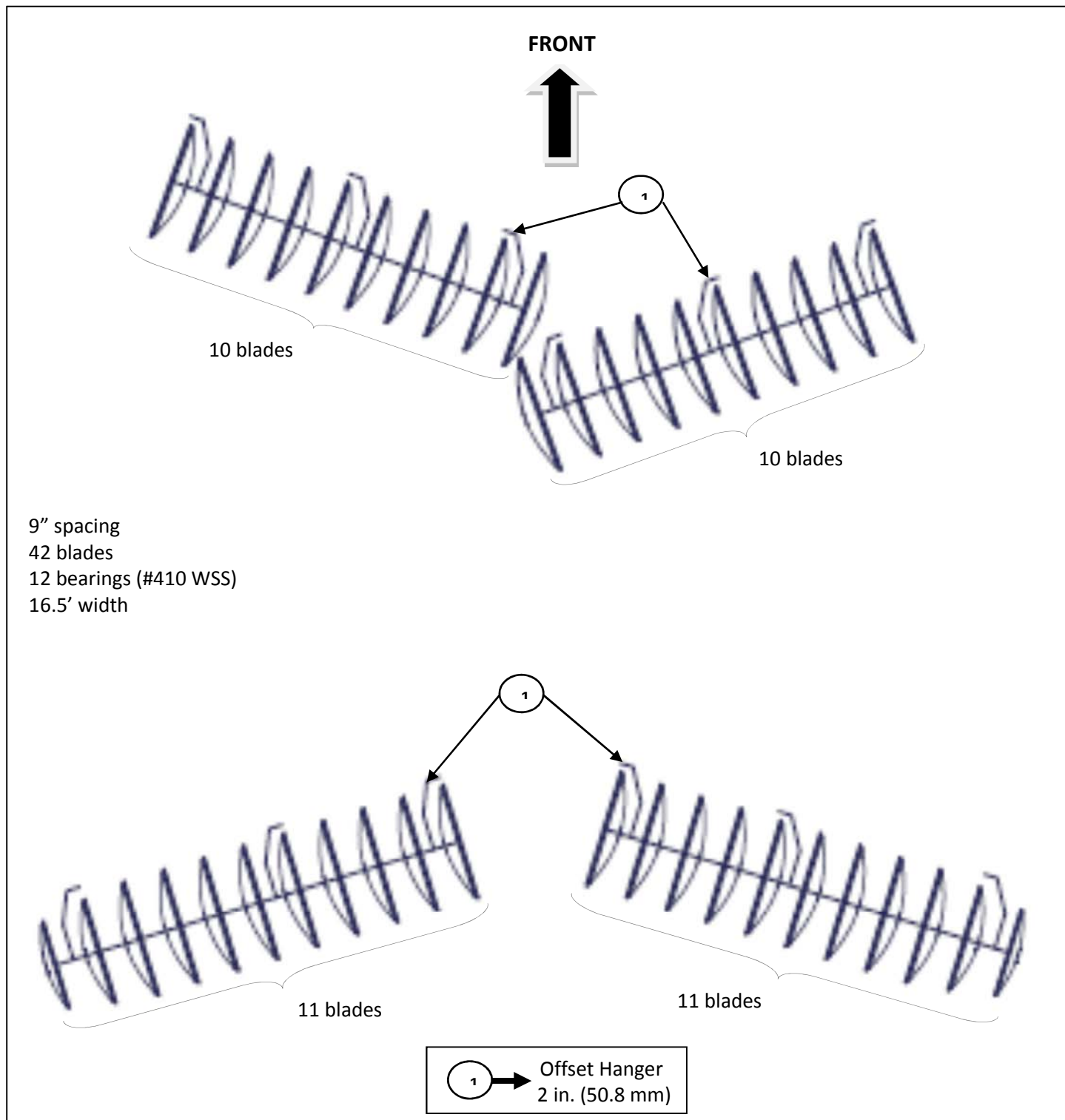
9 inch spacing – 50 blades / 14 bearings (#410 WSS) - Offset Hangers



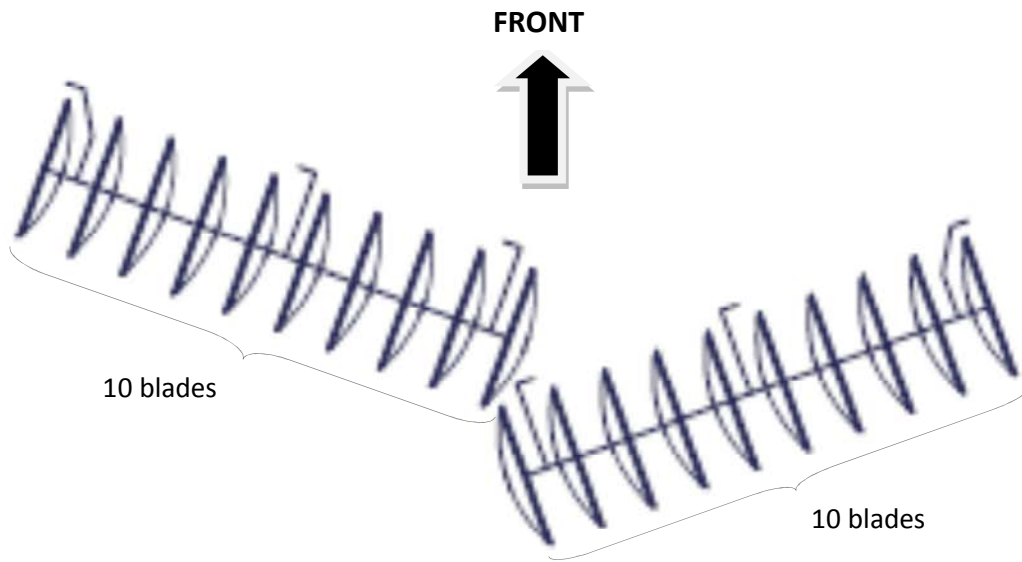
9 inch spacing – 50 blades / 14 bearings (#410 WSS) - Std. Hangers



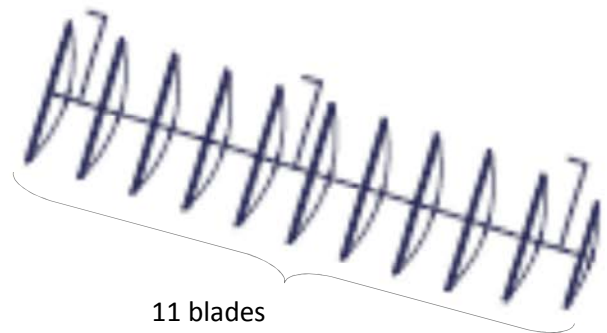
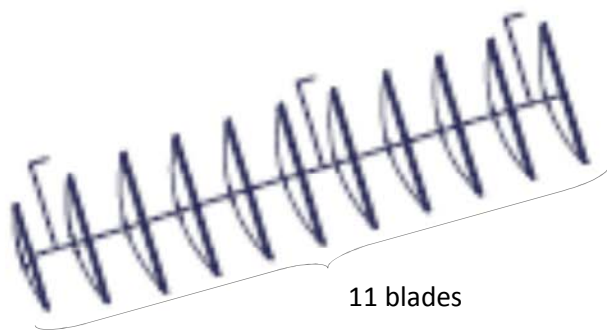
9 inch spacing – 42 blades / 12 bearings (#410 WSS) - Offset Hangers



9 inch spacing – 42 blades / 12 bearings (#410 WSS) – Std. Hangers



9" spacing
42 blades
12 bearings (#410 WSS)
16.5' width



Farm King



OPERATION

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GENERAL INFORMATION

Pre - Operation Checklist

Before operating the Tandem Disc for the first time and each time thereafter, check the following items:

WARNING



MOVING PART HAZARD

To prevent serious injury or death from moving parts:

- Clear area of all bystanders before starting or moving the tractor and disc.
- Keep hands, feet, hair and clothing away from moving parts.
- Disconnect and lockout power source before adjusting or servicing.
- Do not stand or climb on machine when operating.

WARNING

AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any Of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

1. Lubricate the equipment per the schedule outlined in the Maintenance Section (see "SERVICE SCHEDULE" on page 99).
2. Check the Tandem Disc hitch for damaged, loose or missing parts. Repair as needed before operation.

3. Check that center frame tire pressure is 73 psi (503 kpa).
4. Check that wheel bolt torque is 420 ft-lb (569 N•m).
5. Fully clean the equipment (see "CLEANING THE TANDEM DISC" on page 107).
6. Check tandem disc for damaged or loose components and hardware. Replace damaged components (if required) and tighten all hardware before operating the tandem disc.
7. Check wings for proper operation. Adjust wings as needed before operating the tandem disc.
8. Inspect all electrical connections to ensure proper function of the machine.
9. Inspect all safety reflective decals, slow moving vehicle decals and lights where applicable.

WARNING



Leaking fluids under pressure can enter the skin and cause serious injury or death. Immediate medical attention is required. Wear goggles. Use cardboard to check for leaks.

11. Check condition of all hydraulic components for leaks. Repair as required.

NOTE: Do not operate with hydraulic leaks.

12. Verify that the tandem disc is properly connected to the tractor with the safety chain.

Break - In Checklist

Check the following mechanical items after 1 hour of operation and again after 10 hours of operation:

1. Check condition of all hydraulic components for leaks. Tighten fittings to correct leaks or replace components. Do not operate with hydraulic leaks.

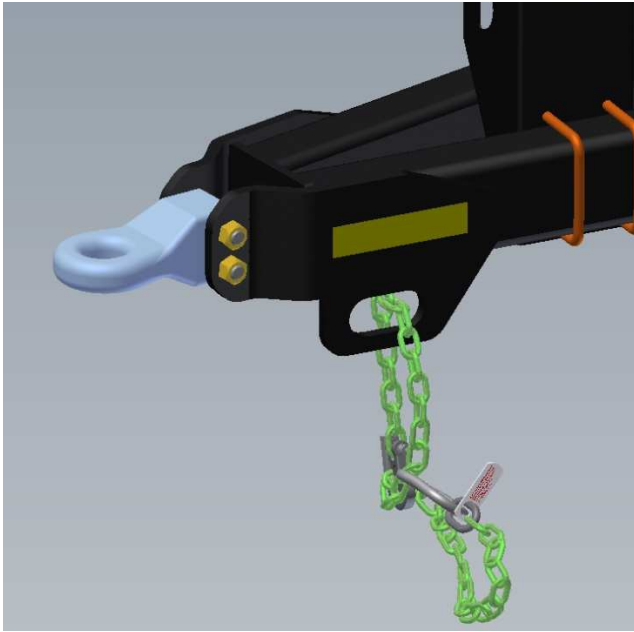


Figure 1

2. Check the tandem disc hitch for damaged, loose or missing parts (see Figure 1). Repair as needed before operation. The maximum static vertical force exerted on the towing vehicle is 1104 lbs. (500 kg).
3. Check for loose fasteners and hardware. Tighten as required.
4. Check that center frame tire (FS24 440) pressure is 73 psi (503 kpa).
5. Check that wheel bolt nuts torque is 420 ft-lb (569 N•m).



IMPORTANT

Wheel bolts must be kept tight. If bolts are not tight, bolts will loosen causing severe damage to hub, wheel and tire. Check wheel bolts periodically, especially the first few hours of either transport or field work.

Tractor Requirements

WARNING

AVOID SERIOUS INJURY OR DEATH

The tractor must be equipped with an approved Roll over Protection Structure (ROPS) and safety belts to help prevent personal injury or death caused by tractor roll over.

WARNING



- Keep shields and all guards in place.
- Keep away from moving parts.
- Keep bystanders away.

NOTE: The following information will depend on working depth, soil type, field speed, etc.

9 in. (230 mm) Spacing

The 6650NT Tandem Disc with 9 in. (230 mm) spacing will require a tractor with minimum 6.0 to 8.0 DBHP/foot (4.5 to 6.0 kW per 305 mm).

10.5 in. (267 mm) Spacing

The 6650NT Tandem Disc with 10.5 in. (267 mm) spacing Will require a tractor with minimum 6.0 to 8.0 DBHP/foot (4.5 to 6.0 kW per 305 mm).

CAUTION

Using a tractor with greater HP than the recommended range may cause severe damage to frame and / or gang components of implement and thereby void warranty.

Drawbar Adjustment

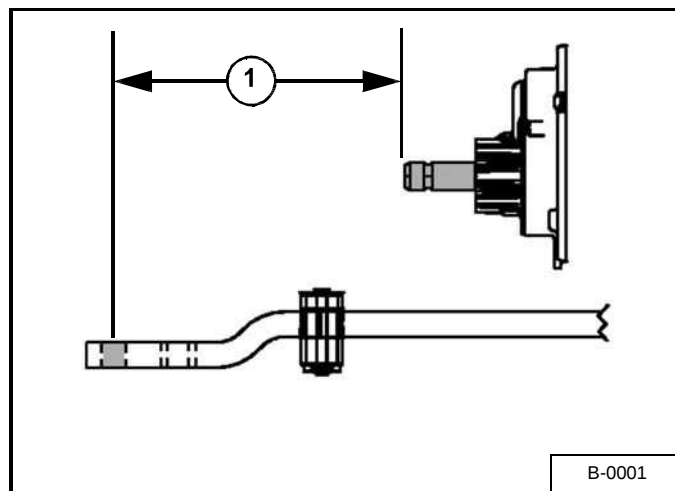
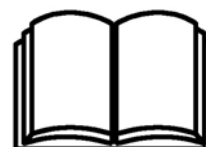


Figure 2

Adjust the tractor's drawbar in / out, until the center of the hitch pin hole (Item 1, Figure 2) is 16 inches (407 mm) from the end of the tractor's PTO shaft. See your tractor's owner's manual for correct adjustment procedures.

Entering And Leaving the Operator's Position

IMPORTANT



Follow the instructions in your tractor's operation manual for the correct procedure.

Entering The Operator's Position

Move to the operator's position, start the engine and release the parking brake.



AVOID INJURY OR DEATH

Before you leave the operator's position:

- **Always park on a flat level surface.**
- **Place all controls in NEUTRAL.**
- **Engage the park brake.**
- **Stop the engine and remove the key.**
- **Wait for all moving parts to stop.**

Park the tractor / equipment on a flat level surface.

Place all controls in neutral, engage the park brake, stop the engine and wait for all moving parts to stop. Leave the operator's position.

INITIAL SET-UP

Connecting the Tandem Disc to the Tractor

Always inspect the tractor's drawbar and tandem disc hitch before connecting. See the tractor's owner's manual.

Verify that the tractor's drawbar is adjusted correctly for use with the Tandem Disc (see "Drawbar Adjustment" on page 81).

Enter the operator's position (see "Entering The Operator's Position" on page 81).

Move the tractor into position in front of the Tandem Disc.



AVOID INJURY OR DEATH

Before moving the tractor, look in all directions and make sure no bystanders, especially small children are in the work area. Do not allow anyone between the tractor and the equipment when backing up to the equipment for connecting.

Move the tractor backwards, aligning the drawbar with the tandem disc hitch.

NOTE: The jack may need to be lowered or raised for proper alignment of the drawbar and hitch.

If the tandem disc hitch needs to be adjusted, stop the tractor when drawbar is just in front of the Tandem Disc hitch.

Leave the operator's position (see "Leaving The Operator's Position" on page 82).

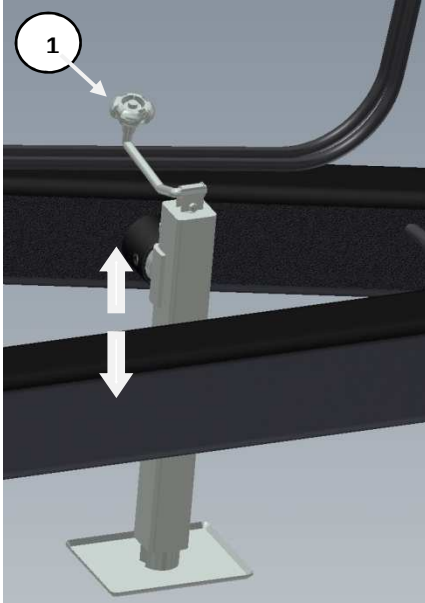


Figure 3

Turn the handle (Item 1, Figure 3) clockwise to raise the hitch or counterclockwise to lower the hitch.

Lower or raise the Tandem Disc hitch until aligned with the tractor's drawbar.

Move to the operator's seat, start the engine and release the parking brake.

Move the tractor backwards, aligning the drawbar hitch pin hole with the Tandem Disc hitch pin hole(s).

Stop the tractor and leave operator's position.

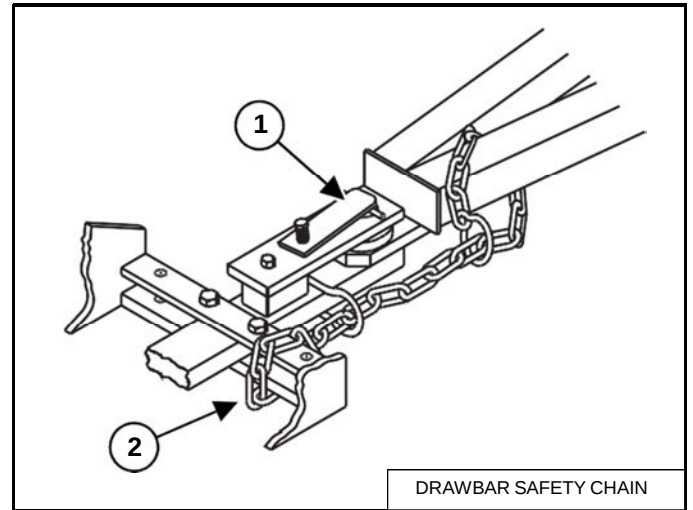


Figure 4

Install the hitch pin (Item 1, Figure 4) and retaining pin to securely fasten the Tandem Disc hitch to the tractor drawbar.

Attach the safety chain (Item 2) around the drawbar mount.

NOTE: Always use a safety chain with a strength rating greater than the gross weight of the towed machine.



AVOID INJURY OR DEATH

Keep fingers and hands out of pinch points when connecting and disconnecting equipment.

NOTE: Always use a hitch pin of adequate size and strength and a retaining pin with a locking device.

Connecting Hydraulic Lines

WARNING



HIGH PRESSURE FLUID HAZARD

To prevent serious injury or death from high pressure fluid:

- Relieve pressure on system before repairing or adjusting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

IMPORTANT

- Contain and dispose of any oil leakage in an environmentally safe manner.
- Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.

NOTE: Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and type.

To Connect:

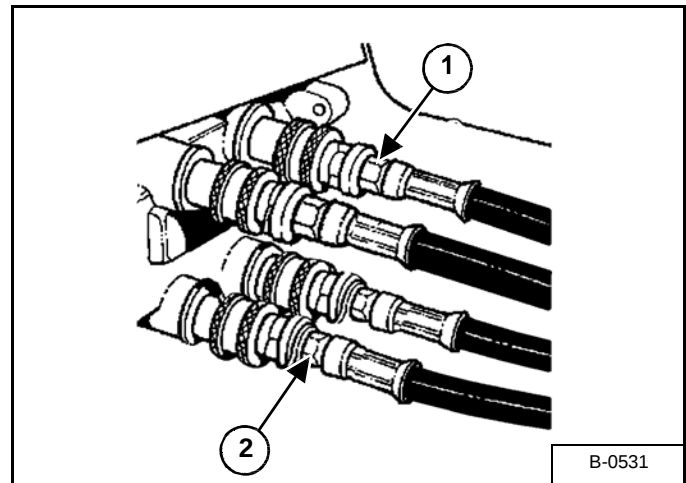


Figure 5

Connect the hydraulic lines to the tractor (see Figure 5).

1. Raise / Lower (Green Ties).
2. Fold / Unfold (Blue Ties).

To Disconnect:

WARNING

AVOID BURNS

Hydraulic fluid, tubes, fittings and quick couplers can get hot when running equipment. Be careful when connecting and disconnecting quick couplers.

Pull on the hydraulic lines to disconnect.

Connect Electrical Harness

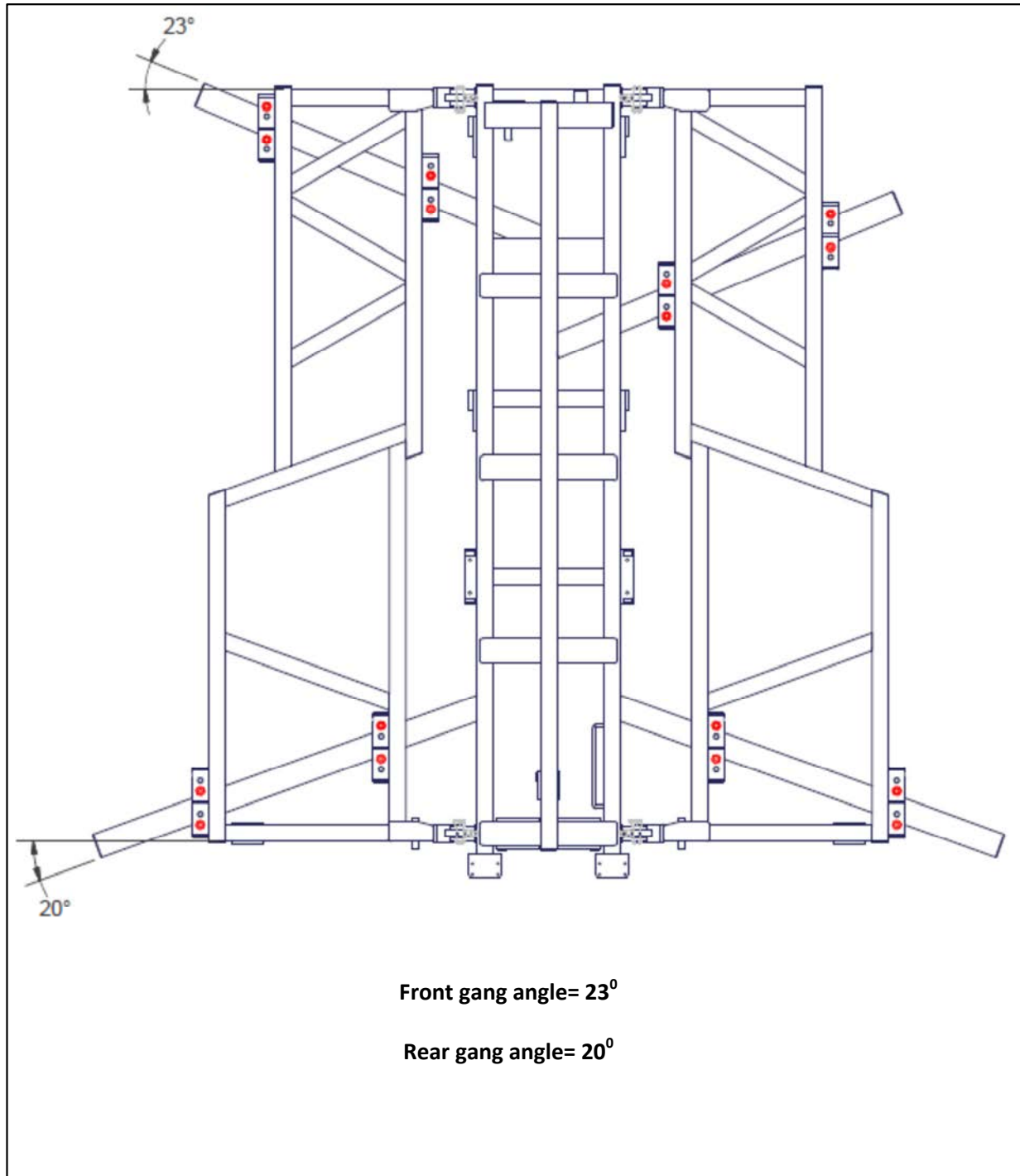
Connect the tandem disc's lighting harness to the tractor's electrical system.

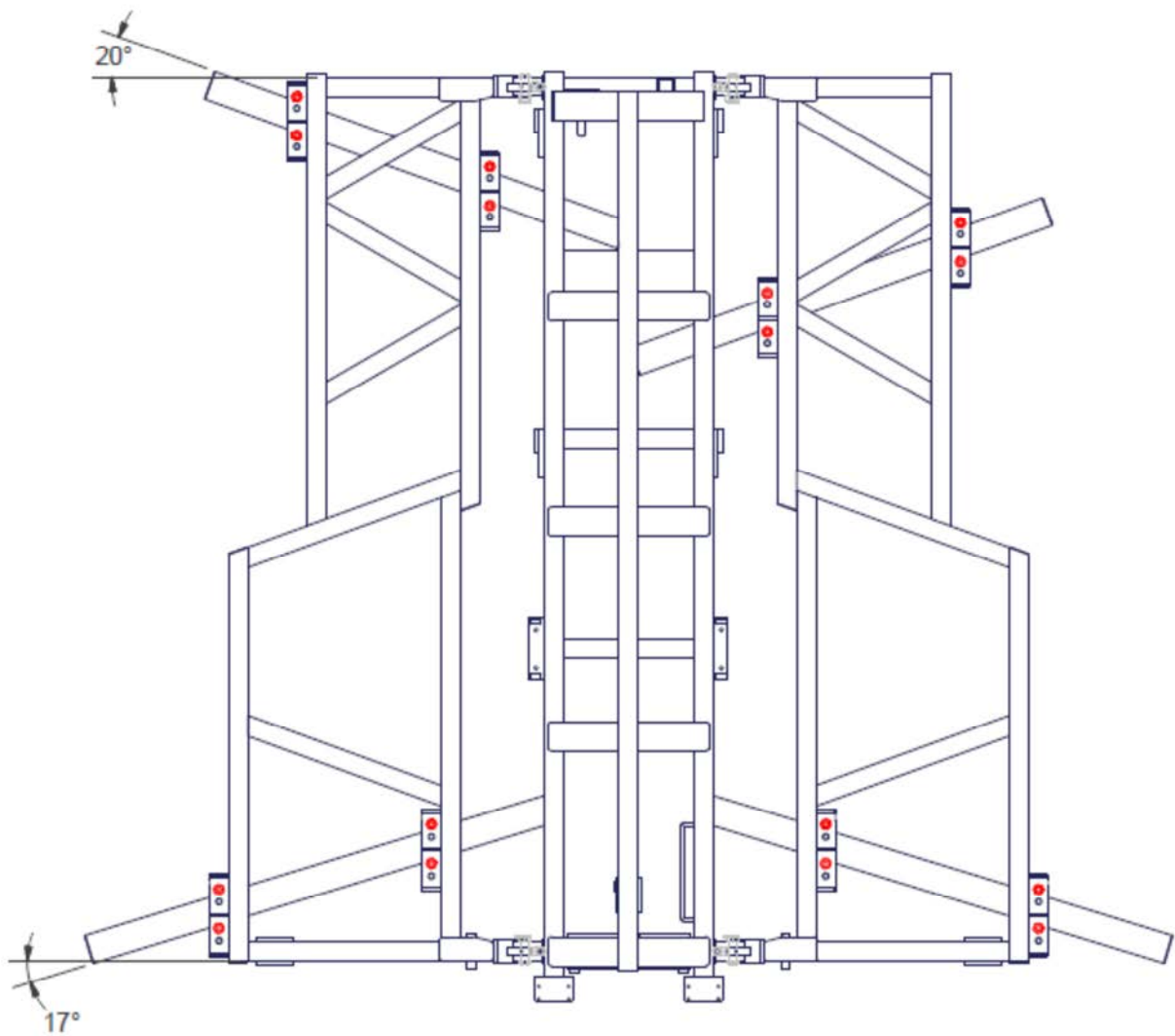
GANG ADJUSTMENTS

1- GANG ANGLE ADJUSTMENTS

The front gangs can be set at three different angles 23° , 20° and 17° , and the rear gangs can be set at 20° , 17° and 14° .

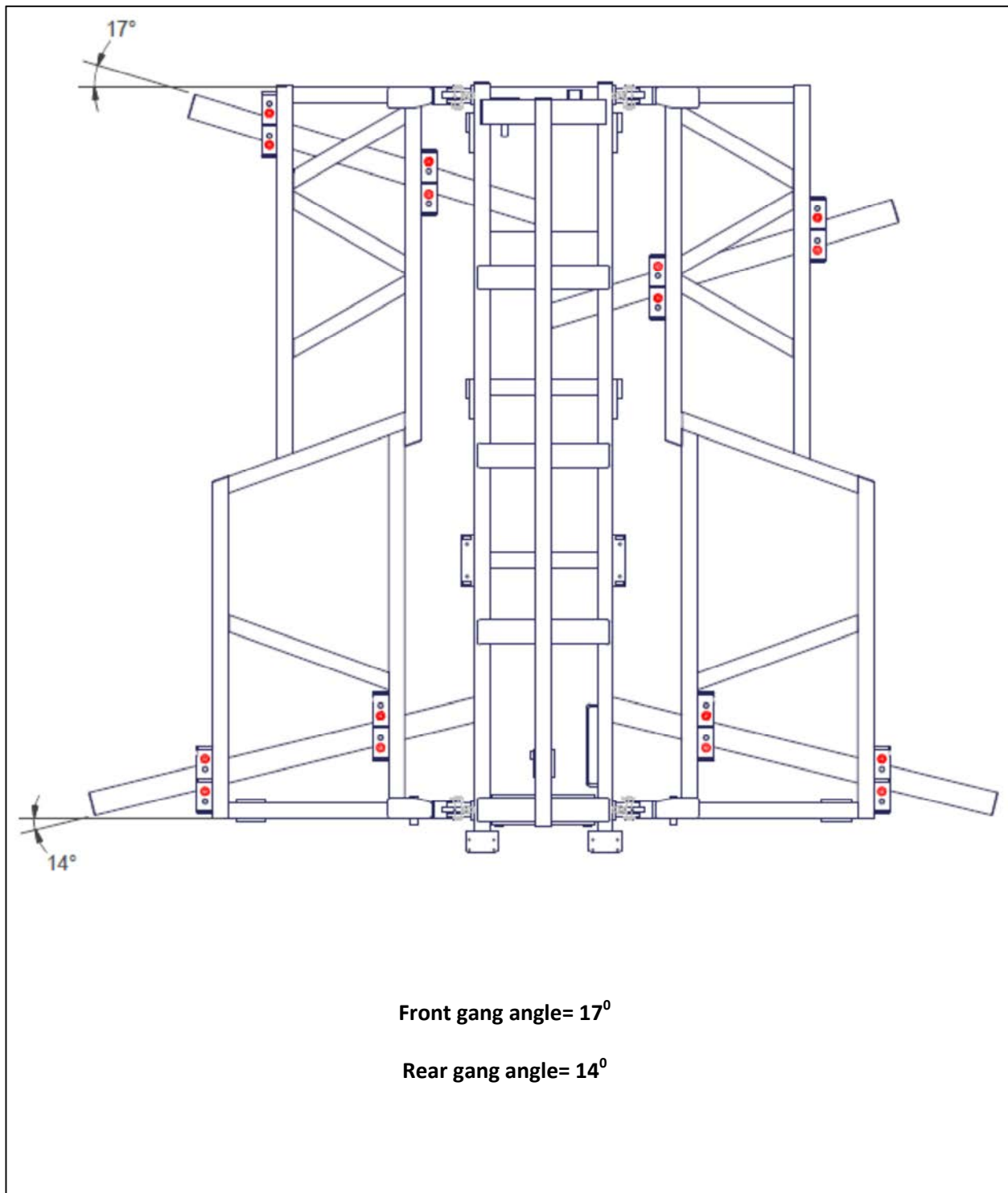
The angle the gangs are set at is determined by soil conditions. A field with hard soil will require more cutting angle to penetrate soil than a field with soft soil. If disc pushes dirt instead of cutting through, less cutting angle is required.





Front gang angle= 20°

Rear gang angle= 17°



Gang angle is set by loosening beam bolts 1.25" x 705" and through the desired holes as shown in figures above.

! IMPORTANT

To start, 20° front and 17° rear gang angle recommended

2- Lateral Adjustment

! IMPORTANT

The tandem disc frame must be leveled front to rear & side to side until the tandem disc is parallel with the ground prior to operation.

! IMPORTANT

Before winging down from transport, release wing locking link from both wings. Store wing locking pin in wing bushing.

! WARNING

AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any Of the following conditions exist

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running
- Tools are being used.

Move to the operator's position, start the engine and release the parking brake (see "Entering the Operator's Position" on page 81).

Park the tractor / equipment on a flat level surface.

Stop the tractor, place all controls in neutral, and engage the park brake, stop the engine and wait for all moving parts to stop. Leave the operator's position (see "Leaving the Operator's Position" on page 82).

Front Gangs

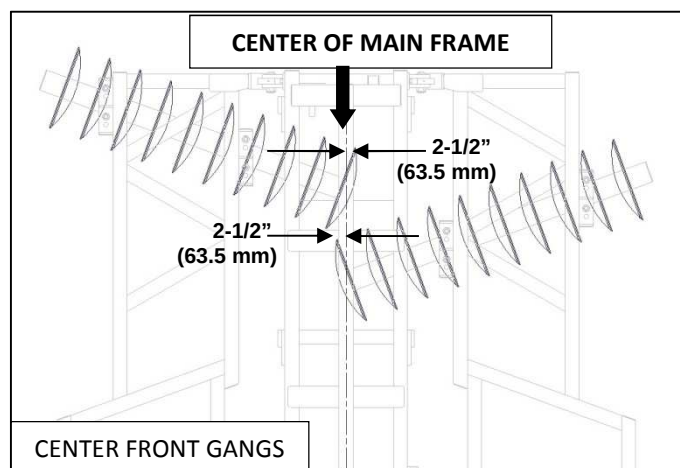


Figure 6

Loosen bearing hanger U-bolts and position the front inside gang sections, so that the leading edge of inside blade is approximately 2-1/2" (63.5 mm) past center of main frame (Figure 6).

! IMPORTANT

Always tighten inside hanger bearing U-bolts first, While maintaining the 2-1/2" (63.5 mm) spacing past Center of main frame. Tighten all bearing hanger u-bolts to 430 ft.-lb. (583 N•m) torque.

! IMPORTANT

Hanger bracket must be sitting square with gang beam before tightening U-bolts.

Rear Gangs

! IMPORTANT

The opening between the rear gang must be set at a distance that will allow furrow left by the front gangs to be filled evenly.

NOTE: The distance the rear gangs are set apart is determined by the discing speed, discing depth, gang angle and soil conditions. If the rear gangs are set too close together, the rear gangs will leave a ridge at center. If rear gangs are set too far apart, the furrow at center left by the front gangs will not be filled.

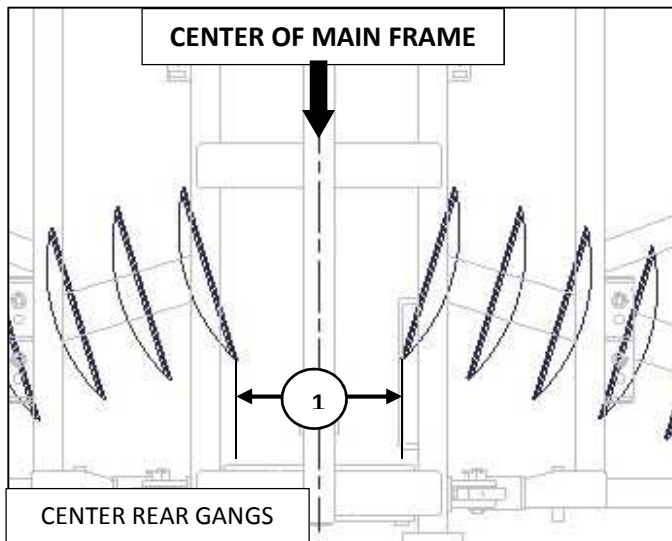


Figure 7

Center rear inside gang sections, so that the distance between the rear edge of the two inside blades (Item 1, Figure 7), is equal to 2" (50.8 mm) less than diameter of blades with a maximum of 24" (610 mm).

EXAMPLE - if the disc is equipped with 24" (610 mm) diameter blades, the distance between the rear edges of the two inside blades (Item 1) would be set at 22" (559 mm).

NOTE: If the disc is equipped with 26" (660 mm) diameter blades, the distance between the rear edges of the two inside blades (Item 1, Figure 7) would be set at a maximum of 24" (610 mm).

To adjust the distance between the rear gangs, loosen the bearing hanger u-bolts and reposition the gang sections.

NOTE: It may be necessary to increase distance between rear gangs in order to collect enough soil to fill furrow.

An increase in discing speed may require rear gangs to be set further apart. A decrease in discing speed may require rear gangs to be set closer together.

! IMPORTANT

Be sure the blade to blade distance between individual gangs are adjusted to match discs blade spacing.

Front and Rear Gang Adjustments Completed

! IMPORTANT

Always tighten inside hanger bearing u-bolts first, while maintaining the desired spacing between the rear edges of the two inside blades. Tighten all bearing hanger u-bolts to 430 ft.-lb. (583 N•m) torque.

NOTE: Before tightening bearing hanger U-bolts, ensure that each bearing hanger is positioned flat under the gang beam to avoid preloading bearings and / or other gang components.

Tighten bearing hanger u-bolts.

Front to Rear Adjustment

Move to the operator's position (see "Entering The Operator's Position" on page 81).

Park the tractor / equipment on a flat level surface.

Stop the tractor and leave the operator's position (see "Leaving the Operator's Position" on page 82).

Lowering / Raising the Front Gangs

! IMPORTANT

Always keep disc level from front to rear. Discing with front gangs lower than rear gangs will cause ridging at outside and may cause damage to disc components.

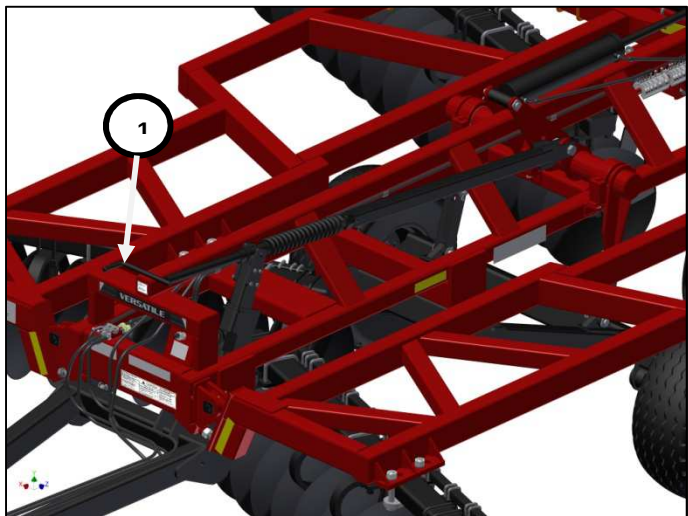


Figure 8

Lowering Front Gangs - Turn crank, (Item 1, Figure 8), IN (clockwise)

Raising Front Gangs - Turn crank, (Item 1, Figure 8), OUT (counter clockwise)

Setting Discing Depth

Move to the operator's position (see "Entering The Operator's Position" on page 83).

While moving forward, lower disc into the ground until disc reaches desired discing depth.

Stop the tractor and leave the operator's position (see "Leaving the Operator's Position" on page 84).

! IMPORTANT

To keep disc level, transport wheels must be riding on ground gauging desired discing depth.

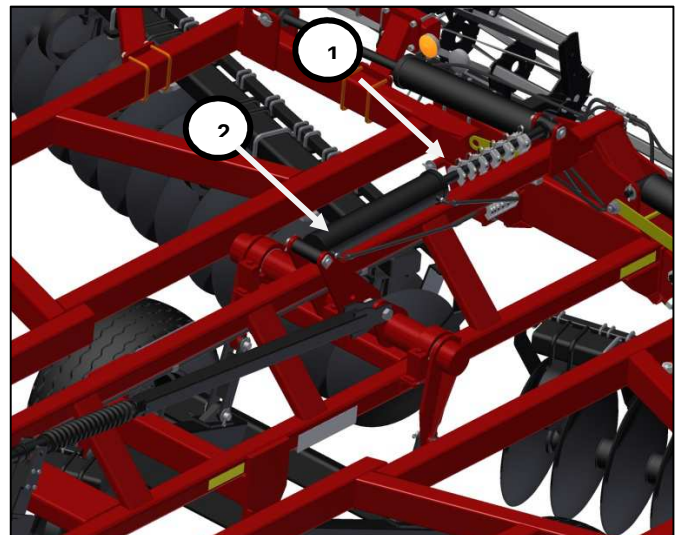


Figure 9

Install the necessary depth control stops (Item 1, Figure 9) on center frame cylinder (Item 2) to maintain the desired cutting depth.

Leveling Wing Frames

Move to the operator's position (see "Entering The Operator's Position" on page 83).

Move the tractor / equipment to a flat level surface.

Stop the tractor and leave the operator's position (see "Leaving the Operator's Position" on page 82).

! IMPORTANT

Before leveling wing frames, verify center frame is level from left to right side.

! IMPORTANT

For even blade penetration, outside of wing frames must be level with center frame or even 1/2 in. (12.7 mm) higher than center frame depending on the ground conditions.

Raising Outside Wing Frame



Figure 10

Loosen rear bolt (Item 1, Figure 11) of wing frame depending how much we need to raise the wing for levelling with main frame.

After adjustments are complete, lock the 1-1/4" nut (item 2) as shown in Figure 11.

Lowering Outside Wing Frame

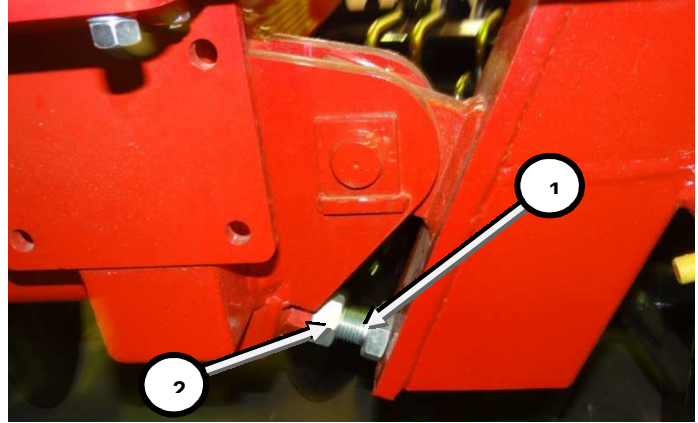


Figure 11

Screw in the bolt (Item 1, Figure 11) depending on amount, the wing needs to be lowered for levelling.

After adjustments are complete, lock the 1-1/4" nut (item 2) by tightening properly.

OPERATING THE TANDEM DISC

Field Operation

Move to the operator's position, start the engine and release the parking brake (see "Entering the Operator's Position" on page 81).

Move the tractor / equipment to the starting point of the work area.

Stop the tractor and engage the parking brake.



ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

- Be aware of overhead / underground powerlines.
- Keep away from powerlines when transporting or folding / unfolding wings.
- Electrocution can occur without direct contact.



AVOID SERIOUS INJURY OR DEATH

- Do not stand under wings when folding / unfolding.
- Keep bystanders away.

NOTE: When extending wing lift cylinders, there will be a short pause before cylinders fully extend.

Using the tractor controls, lower wings until the wing wheels make contact with the ground. Continue to hold the tractor control until the wing lift cylinders are fully extended, placing the wings in the field position.

Stop the tractor and leave the operator's position (see "Leaving the Operator's Position" on page 82).

Level wing frames (if required) (see "Leveling Wing Frames" on page 88).

Set discing depth (if required) (see "Setting Discing Depth" on page 87).



AVOID SEVERE EQUIPMENT DAMAGE

When operating the tandem disc:

- Always keep disc level when operating.
- Do not make sharp turns with the disc in ground.
- Always lift the disc out of ground before making sharp turns.
- Do not disc with front gangs cutting deeper than rear gangs.
- Always place the hitch jack in the horizontal / transport position when operating.
- Always keep transport wheels in contact with the ground.
- Always operate the disc with the tractor drawbar pinned at center of tractor.



MACHINE TIPPING OR ROLL OVER CAN CAUSE SERIOUS INJURY OR DEATH

- Turn on level ground. Slow down when turning.
- Go up and down slopes, not across them.
- Check for adequate traction.

Move to the operator's position, start the engine and release the parking brake (see "Entering the Operator's Position" on page 81).

Recommended operating speed is 5 to 7 mph (8 to 11 km/h).

Move tractor and tandem disc forward, slowly lower tandem disc into the ground until the transport wheels make contact with the ground and the disc reaches desired discing depth.

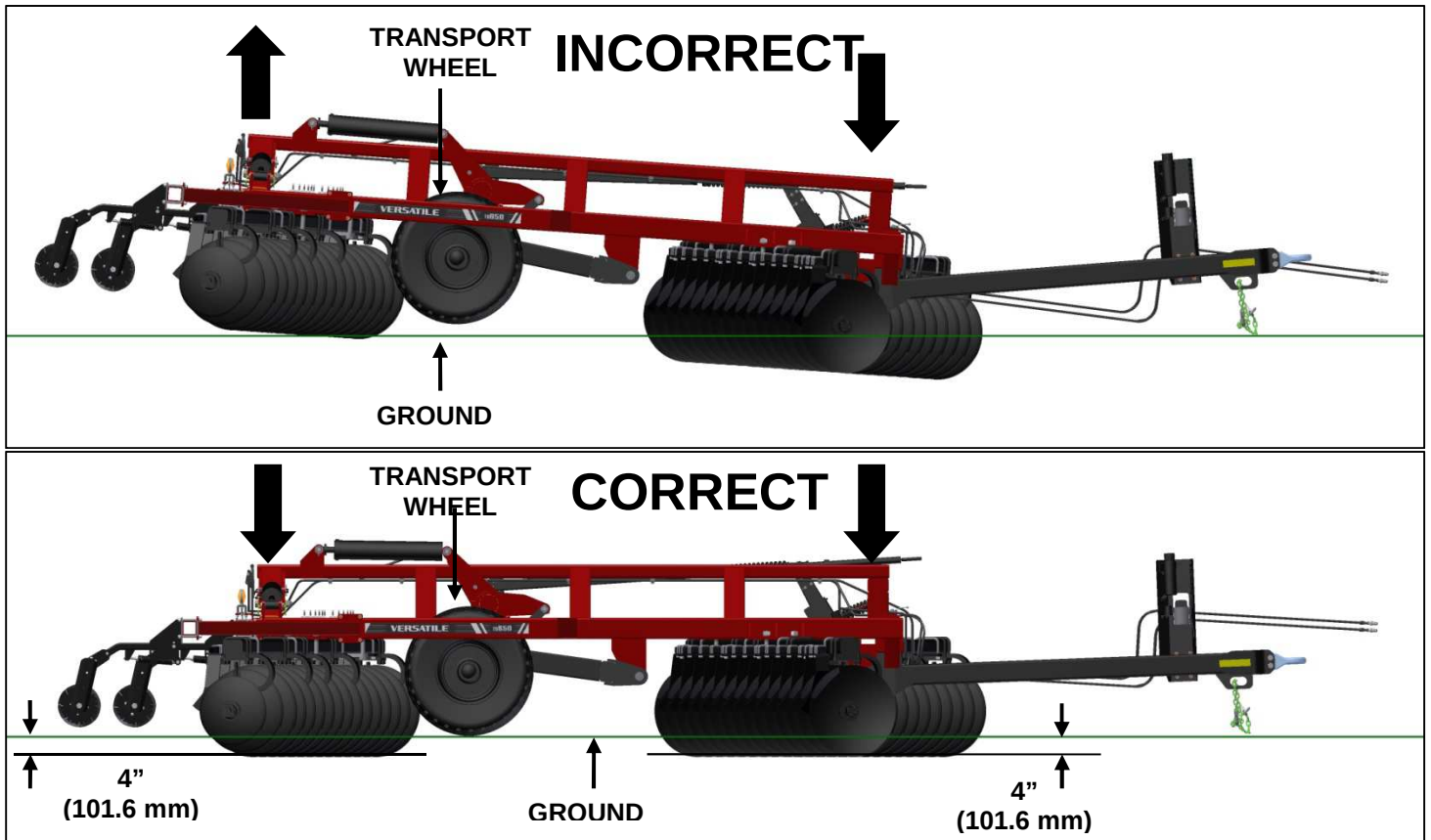


Figure 12

To keep the tandem disc level, transport wheels must be contacting the ground gauging desired discing depth (see CORRECT in Figure 12).

NOTE: If conditions are such that disc cannot penetrate to maximum depth, Do Not raise transport wheels off ground (see INCORRECT in Figure 12). Raised transport wheels may cause front of disc to drop causing front gangs to cut deeper than rear gangs.

Uneven and Deep Front Gang Penetration

- Front of disc may drop because rockshaft and hitch leveling arm is linked. As the wheels are raised, the hitch leveling arm is pulled back allowing hitch to float. If hitch is allowed to float it will not support front of disc allowing front gang to drop.
- With front of disc lower than the rear, the front outside blades will cut much deeper than the front inside blades. This means that more of the disc's weight is placed on the front outside blades, forcing them deeper into the ground.
- Uneven and deep front gang penetration in tough conditions will place excessive strain on blades, gang bearings, frame and hitch, and will lead to a premature failure of parts especially outside blades and bearings of front gangs.



AVOID EQUIPMENT DAMAGE

Operating disc with transport wheels off ground will cause uneven discing and place undue strain on machine which could lead to parts failure. Always operate disc with transport wheels on ground even if soil conditions will not allow disc to penetrate to maximum depth.

ADDITIONAL OPERATING RECOMMENDATIONS

Remove Ridge at Center Of Disc

Make one or more of the following adjustments:

- Level disc from front to rear using leveling crank.
- Increase discing speeds.
- Increase distance between rear gangs.

Remove Furrow at Center Of Disc

Make one or more of the following adjustments:

- Level disc from front to rear using leveling crank.
- Reduce discing speeds.
- Decrease distance between rear gangs.

Remove Unbroken Ground Left by Front Gangs

Make the following adjustment:

- Adjust leading edge of inside blade of each front gang so it is 2-1/2 in. (63.5 mm) past center of disc.

Reduce Gang Plugging

Make the following adjustment:

- Adjust scrapers so they contact blades.

TRANSPORTING

Requirements

Comply with federal, state, local and provincial laws regarding the transport of farm equipment on public roadways.



AVOID SERIOUS INJURY OR DEATH

Use of an unapproved hitch or tractor can result in

Tractor and hitch must have the rated capacity to tow equipment.



AVOID SERIOUS INJURY OR DEATH

Excess weight will greatly increase tractor stopping distance and may cause the operator to lose control of the tractor.



Tractor must have adequate braking capacity to safely control tandem disc GVW (Gross Vehicle Weight) trailing load. Do not tow over 20 mph (32 kph). Tractor unit should weigh approximately 67% of GVW.

Verify that the tractor is approved for transporting the equipment and that the equipment is securely attached to the tractor.

Verify safety chain is installed and properly connected before transporting equipment.

Verify that the SMV (Slow Moving Vehicle) emblem, all lights and reflectors are clean and visible.



Figure 13

While transporting disc, always place the complete depth control package 17 in. (431.80 mm) long on shaft of 5 in. x 24 in. (127 mm x 610 mm) main frame lift cylinder (Item 1, Figure 13).

Transport Position

Wings fully raised, depth control package in place and lockup valves in closed position. The wings should also be locked using lock pins.



Disc must always be fully raised for winging up or winging down to make sure, the blades should not be contacting tires while winging down. All depth stops must be installed' lock up valves closed when transporting disc and the wings should be locked with lock pins provided.

MAINTENANCE

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TROUBLESHOOTING

General Chart



WARNING

Instructions are necessary before operating or servicing equipment. Read and understand the Operator's Manual and safety signs (decals) on equipment. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

NOTE: If a problem is encountered that is difficult to solve, even after having read through this troubleshooting section, please call your local distributor or dealer. Before you call, please have this Operator's Manual and the serial number of your machine at hand.

PROBLEM	CAUSE	CORRECTION
Outside blades of front wings are cutting too deep causing disc to ridge at outside.	Wheels raised off ground causing front disc to drop.	Lower wheels to ground to gauge discing depth.
	Tire pressure is low on outer wheels causing disc to cut deep at outside.	Inflate tire, (see "Tire Pressure" on page 106).
	Disc is lower at front than at rear.	Using leveling crank, raise front of disc.
Outside blades of front wings are not cutting deep enough.	Disc is higher at front than rear.	Using leveling crank, raise front of disc.
Outside blades on front and rear gangs are cutting too deep.		Check tire inflation for all wheels. (see "Tire Pressure" on page 106).
	Outside of wing frame is lower than main frame.	Raise outside of wing by unscrewing the wing stopper bolt
Outside blades on front and rear gangs are not cutting deep enough.	Tire pressure is lower on center section wheels causing center section to cut deeper	Check tire inflation for all wheels (see "Tire Pressure" on page 106).
	Outside of wing frame(s) is higher than main frame.	Lower outside of wing with wing stopper bolts

PROBLEM	CAUSE	CORRECTION
Disc is leaving a ridge at center of discing	Rear gangs are cutting deeper than front gangs.	Level disc.
	High discing speed is causing disc to throw dirt further resulting in a pile at center.	Decrease discing speed.
	Rear gangs are too close together.	Increase distance between rear gangs.
Rear gangs are not filling furrow left by front gangs at center of disc.	Front gangs are cutting deeper than rear gangs.	Level disc.
	A low discing speed is causing disc to not throw dirt far enough to fill furrow left by front center blades.	Increase discing speed.
	Rear gangs are too far apart.	Decrease distance between rear gangs.
Front gangs are leaving unbroken ground at center of disc.	Front gangs are either overlapped too much or not enough.	Adjust overlap of front gangs.
Disc gangs are plugging.	Scrapers are too far from blades.	Adjust scrapers so they are contacting blades.
	Thrash conditions too heavy for your machine cylinder(s).	Contact your dealer.
When raising disc out of ground, main frame comes out of ground while outside of wing(s) lags behind or does not come out of ground.		
Outer wing blades will not penetrate soil.	Soil condition too hard for your machine.	Add weights to outside of wing frame. Contact your Dealer for available weights.
All section of disc will not penetrate soil.	Soil condition too hard for your machine.	Contact your Dealer.

SERVICE SCHEDULE

Maintenance Intervals

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The service schedule is a guide for correct maintenance of the 6650NT Tandem Disc.



WARNING

Maintenance work must be carried out with the implement fully lowered with blades resting on the ground. If the maintenance needs to be done with the implement in the raised position, make sure that hydraulic valves are shut off, depth control package is installed, and wing locking pins are installed.

Instructions are necessary before operating or servicing equipment. Read and understand the Operator's Manual and safety signs (decals) on equipment. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

#	DESCRIPTION	SERVICE PROCEDURES						
		Check	Clean	Lube	Change	Adjust	Drain	Locations
Daily Maintenance (or every 8 hours)								
1	Tire Pressure	•						pg. 106
2	Wheel Bolts	•						pg. 106
3	Hydraulic Cylinders	•						-
4	Gang Bolts	•						Pg. 104
5	Bearing Bolts	•						pg. 103
6	Bearing Hanger U-Bolts	•						pg. 103
Every 2 Days (or every 20 hours)								
7	Gang Bearings			•				pg. 100
8	Rockshaft Bearings (not applicable)							
Weekly (or every 50 hours)								
9	Axle Bearing	•		•				Pg. 99
10	Walking Axles (not applicable)							
11	Rockshaft Hydraulic Cylinder Pins	•		•				Pg. 99
Monthly (or every 100 hours)								
12	Leveling Crank	•		•				pg. 102
13	Wing Hinge Points	•		•				pg. 102
Annually (or every 500 hours)								
14	Leveling Crank Ball Joint	•		•				pg. 102
15	Wheel Bearings	•		•				pg. 106

LUBRICATION

Recommendations

Always use good quality multi-purpose / lithium base grease when lubricating the equipment.

! IMPORTANT

If 410WSS series bearings are over lubricated, there is a possibility the seals can be pushed out. T2-215 series bearings have internal seals that can not be over lubricated.

- Always use a hand-held grease gun.
- Clean fitting before greasing, to avoid injecting dirt and grit.
- Replace and repair broken fittings immediately.
- If fittings will not take grease, remove and clean thoroughly. Replace fitting if necessary.

Locations

! IMPORTANT

Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

Lubricate the following grease locations **EVERY 20 HOURS:**

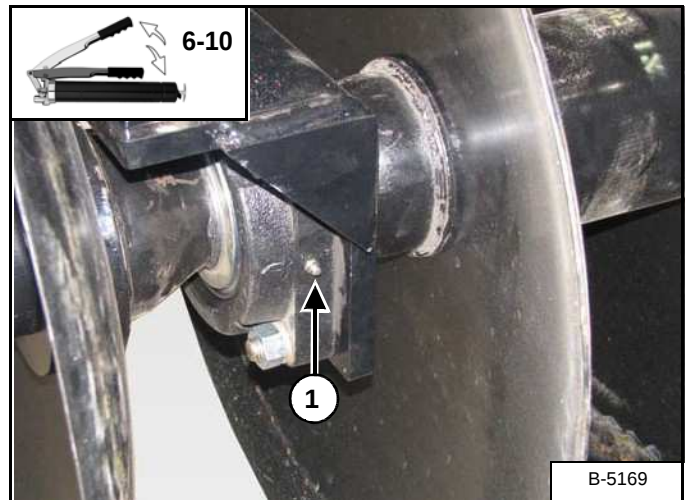


Figure 1

Apply six - ten pumps of grease to the gang bearings (Item 1, Figure 1) (all locations).

Lubricate the following grease locations EVERY 50 HOURS:

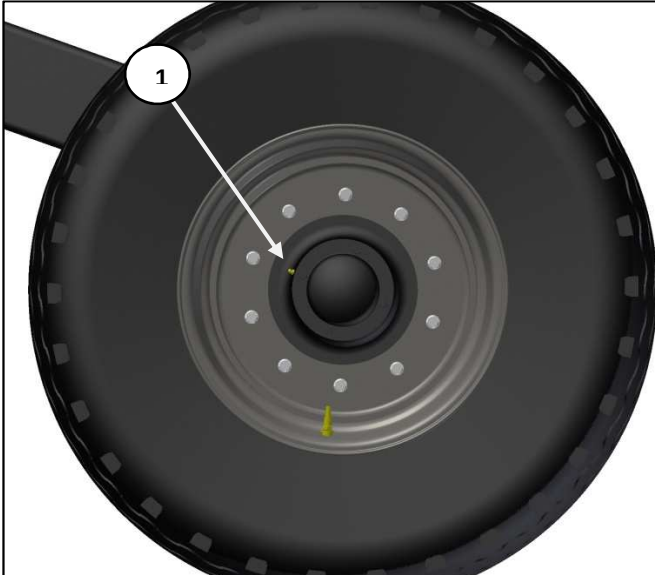


Figure 2

Apply two - three pumps of grease to the axle bearings hub (Item 1, Figure 2) (all locations).

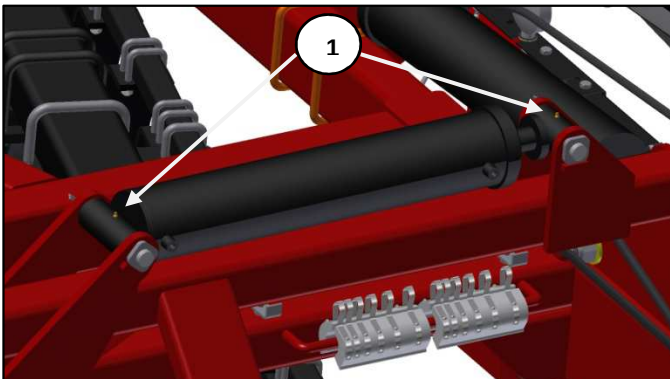


Figure 3

Apply oil to the rockshaft hydraulic cylinder pins (Item 1, Figure 3) (all locations).

Lubricate the following grease locations EVERY 100 HOURS:

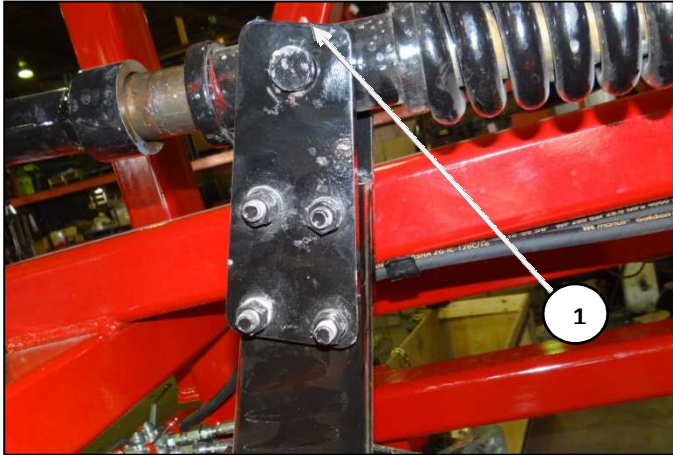


Figure 4

Apply two – three pumps of grease to the leveling crank 1/4" zerk fitting (Item 1, Figure 4).

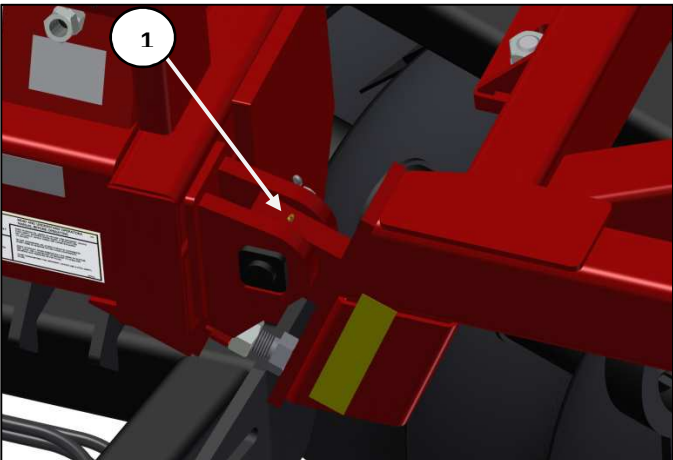


Figure 5

Apply two - three pumps of grease to the wing hinge points (Item 1, Figure 5) (all locations top & bottom).

Lubricate the following grease locations EVERY 500 HOURS:

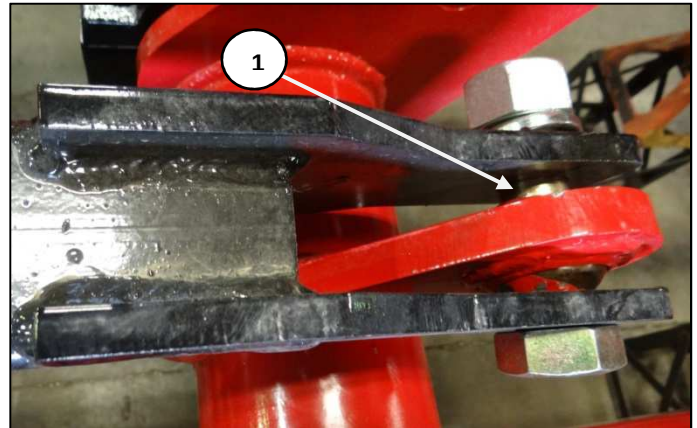


Figure 6

Apply oil to the leveling crank ball joint (Item 1, Figure 6).

BEARING HANGERS

Inspection

Inspect and tighten all bearing hanger u-bolts after the first 10 hours of operation and daily thereafter.

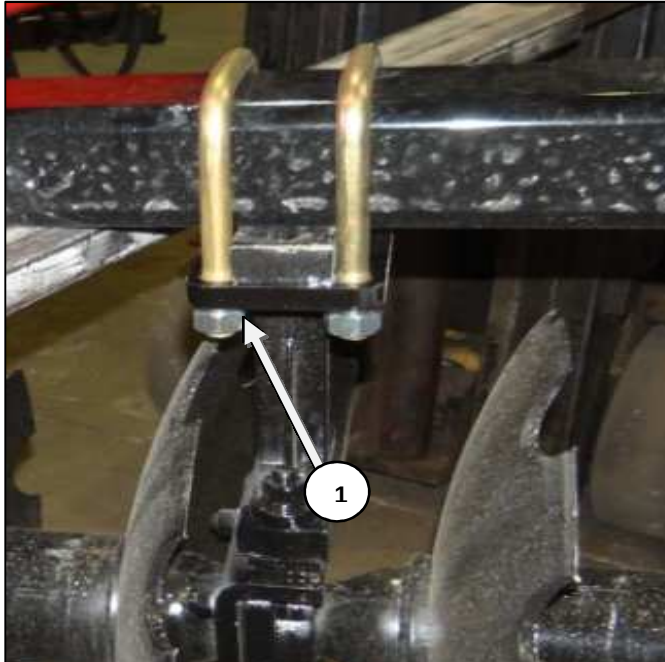


Figure 7

Tighten all bearing hanger U-bolts (Item 1, Figure 7).

Torque bearing hanger u-bolts to 430 ft. - lb. (583.0 N•m)

LEVELING CRANK

Inspection

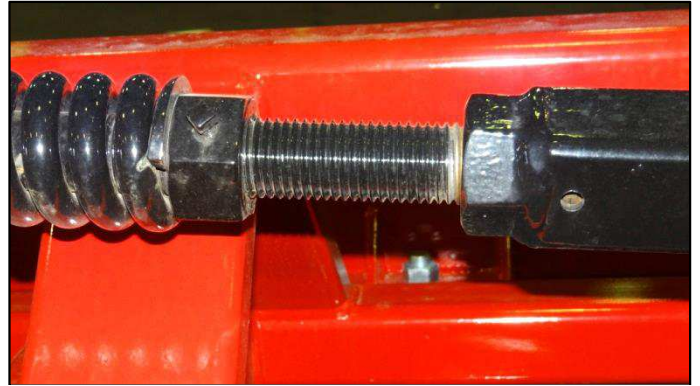


Figure 8

Torque leveling crank bolt - 1-1/4 in. (31.7 mm) diameter - 840 ft. - lb. (1139 N•m) (see Figure 8).



IMPORTANT

Leveling crank spring tension should not be changed from factory setting.

GANG SECTION

Gang Bolt Inspection



Always lower the disc to the ground when servicing or making adjustments. If disc must be serviced or adjusted in the raised position, place blocks under

Safety device.

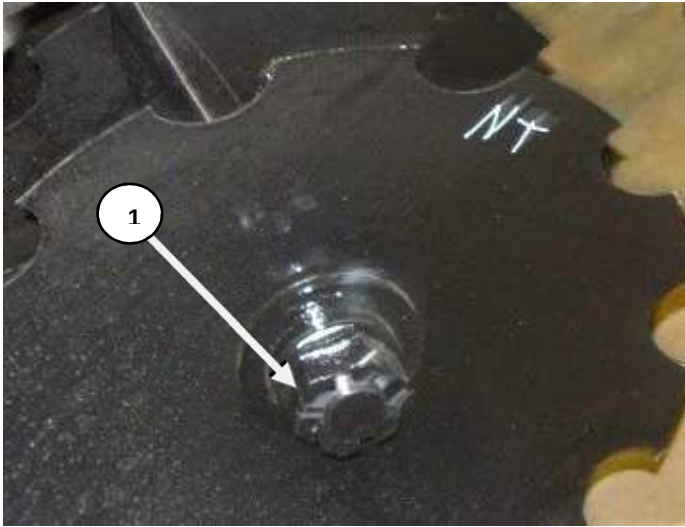


Figure 9

Visually inspect the gang bolt (Item 1, Figure 9) daily.

Tightening Gang Bolt

Tighten 1-15/16" gang bolts to 3200 ft. - lb. (4339 N•m) torque.

NOTE: Visually inspect gang bolts daily.

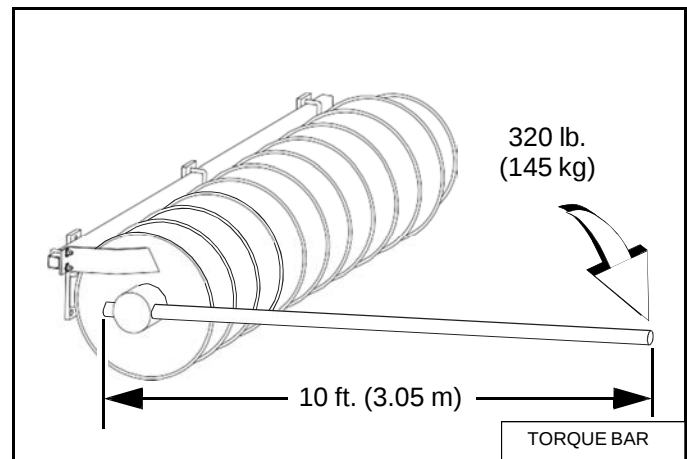


Figure 10

Install a 10 ft. bar of adequate size (see Figure 10) and strength in socket wrench. Apply 320 lb. (145 kg) of force to end of bar and tighten gang bolt to 3200 ft. - lb. (4339 N•m).



After repairing a gang, the gang bolt should be re-tightened after 2 hours of operation.

NOTE: Severe damage will occur if gang bolts are loose.

AXLES

Wheel Bolts Torque

IMPORTANT

CHECK WHEEL BOLTS AFTER:

1. First 5 (five) hours of field operation.
2. First 25 (twenty-five) hours of field operation.
3. First 50 (fifty) hours of field operation.
4. Every 200 (two hundred) hours of operation.

REPEAT PROCEDURE IF A WHEEL IS REMOVED OR REINSTALLED

Torque wheel bolt nuts to 420 ft.-lb. (569 N•m).

Tire / Wheel Replacement

Periodically check tires for cuts, bulges and damaged rims.

WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

- Always park on a flat level surface.
 - Place all controls in NEUTRAL.
 - Engage the park brake.
 - Stop the engine and remove the key.
 - Wait for all moving parts to stop.
-

Park the tractor / equipment on a flat level surface.

Place all controls in neutral, engage the park brake, stop the engine and wait for all moving parts to stop. Leave the operator's position.

Fully raise wings into transport position and secure with safety chain.

WARNING

If wings are folded into transport position, always lock the wings to prevent wings from falling.

WARNING

AVOID INJURY OR DEATH

- Always chock tires before performing any maintenance or service.
-

Remove the ten wheel bolt nuts and remove the tire / wheel.

Place chock blocks behind and in front of the opposite tire to be removed.

Raise axle frame with jack until the tire / wheel is slightly off the ground.

NOTE: Place blocks / stands under the frame to secure the tandem disc when tire / wheel are raised off the ground.

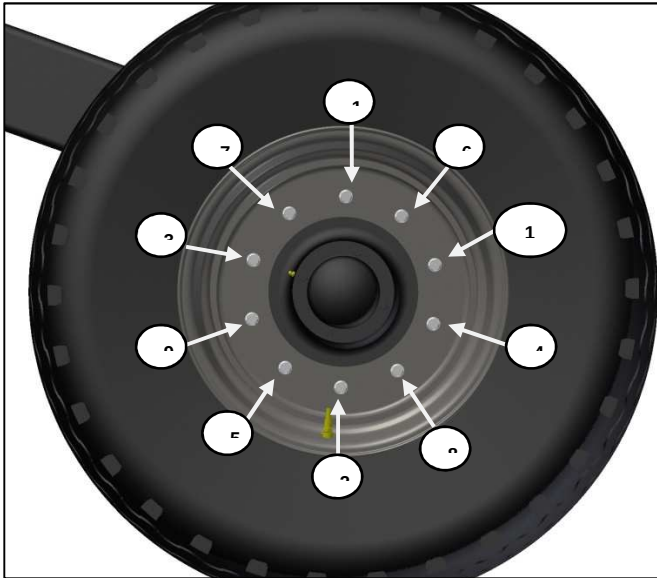


Figure 11

Install the new tire with the valve stem facing out.

Reinstall ten wheel bolt nuts (Item 1 -10, Figure 11).

Tighten wheel nuts in a criss-cross pattern (see Figure 11).

Torque wheel nuts to 420 ft. - lb. (569 N•m).

Center Frame Tires

Install ten 3/4" NF nuts on the wheel bolt threads that extend past the back side of the hub. Tighten nuts against the hub.

Wheel Bearings

Inspect and re-pack the wheel bearings annually with quality SAE multi-purpose type grease.

Tire Pressure



When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly.

Center Frame Tires

Check tire pressure daily. Fill tires to 73 psi (503 kpa).

CLEANING THE TANDEM DISC

Fully Clean the Tandem Disc EVERY 50 HOURS:

Keep the Tandem Disc free of any debris.

SERVICING T2-215 BEARINGS (IMPORTANT NOTES)

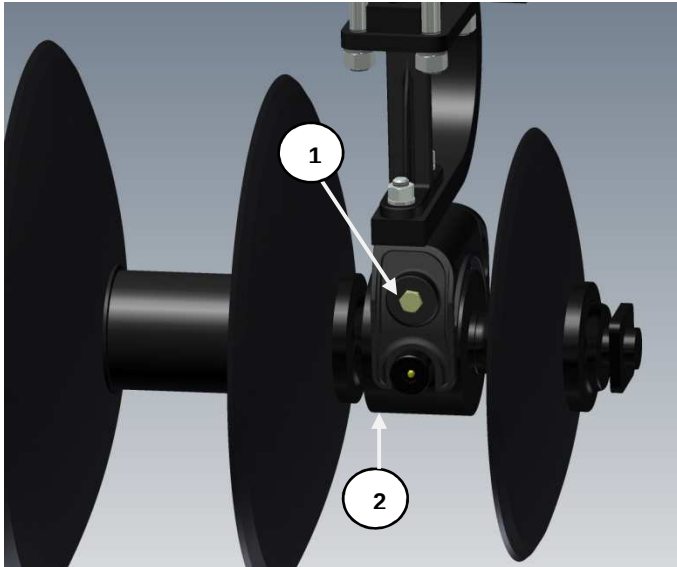


Figure 12

1. If T2-215 bearing must be dismantled, double set screws (Item 2, Figure 12) must be removed from bottom of housing to remove seal cap.
2. When replacing grease seals in T2-215 bearing, ensure they are installed correctly. The I.D. of the outer shield is larger on one side than the other. Be sure the side with the larger I.D. of both seals is facing out. The rubber seal may be damaged if grease seal is not installed correctly.
3. When reinstalling bearing hanger on T2-215 bearing (if gangs are dismantled) do not over tighten the 5/8" x 10" bolts (Item 1, Figure 12). Snug / tighten the inner nut against bearing hanger. Tighten outer jam nut against inner nut to secure in position.

NOTE: The bolt may break during field operations if it is over tightened.

NOTE: Bolt (Item 1, Figure 12) is 5/8" x 11" if equipped with wear plates.

WING LIFT CYLINDER

Removal And Installation



AVOID SERIOUS INJURY OR DEATH

If wing cylinders or wing lift hydraulic hoses are removed when wings are folded into transport position, always lock the wings to prevent wings from falling (Item 1, Figure 13).

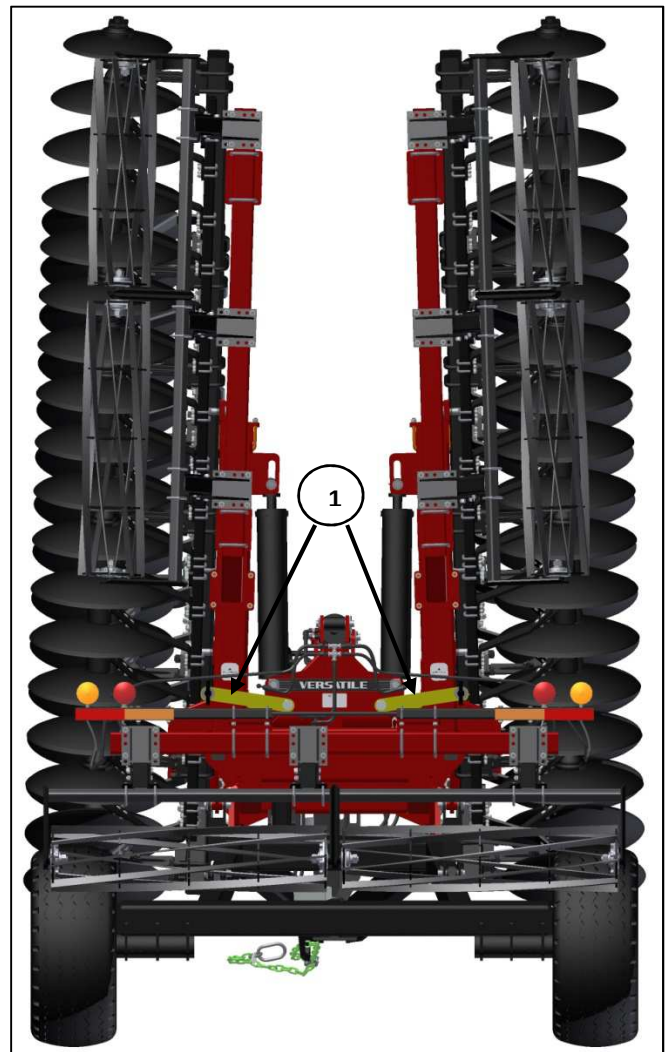


Figure 13

When wing lift cylinder hydraulic system must be serviced or repaired with wings in folded position, lock the wings using wing lock (Item 1, Figure 13), between each wing frame and main frame to prevent wings from falling.

IMPORTANT

Always wing lock both wings even if only one cylinder is being worked on.

HITCH COMPRESSION SPRING

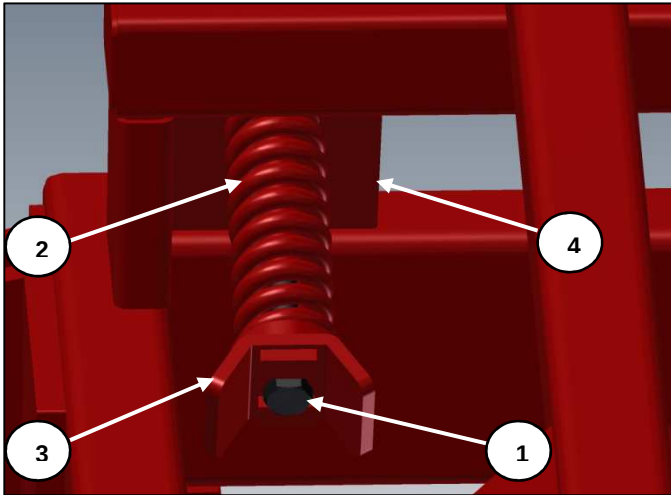


Figure 14

Install the 1" x 14" bolt (Item 1, Figure 14), through the compression spring (Item 2), spring cushion plate (Item 3).

Install the threaded bolt end through the mounting plate (Item 4) on the main frame.

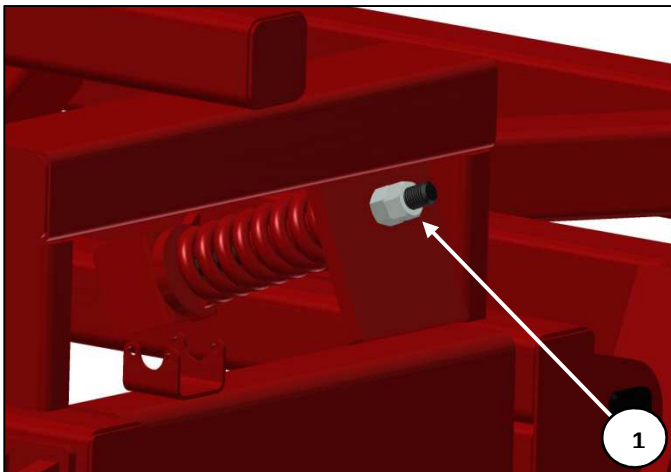


Figure 15

Install two 1" nuts (Item 1, Figure 15) onto the 1" x 14" bolt.

Tighten the inside nut so the spring is compressed by 1 inch, then tighten outside nut against the inside securing the compression spring assembly to the main frame.

FRAME SPRING BUSHINGS

Removal And Installation

Removal

Using a pin / punch, gently tap the spring bushing until removed from the wing connecting link.

Installation

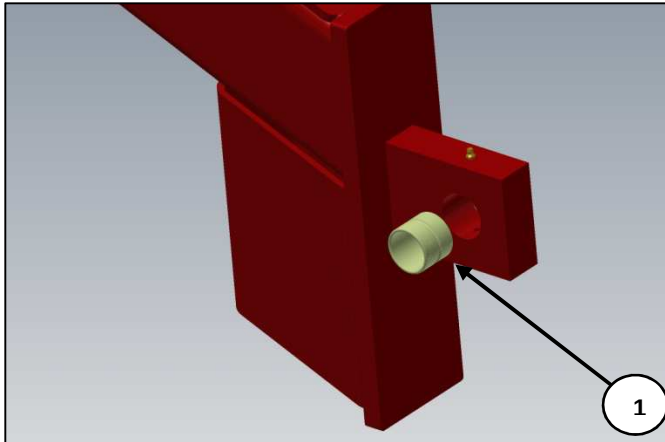


Figure 16

Using an adjustable plier, align the spring bushing (Item 1, Figure 17) with the wing connecting link, compress / squeeze the spring bushing and lightly tap into position with hammer.

NOTE: Spring bushing must be fully seated inside the wing connecting link. Spring bushing must be flush with the wing connecting link.

ROCKSHAFT SPRING BUSHINGS

Removal And Installation

Removal

Using a pin / punch, gently tap the spring bushing until removed from the rockshaft mount.

Installation



Figure 17

Using an adjustable pliers, align the 1.25 ID x 1.50 OD spring bushing (Item 1, Figure 17) with the rockshaft axle link, compress / squeeze the spring bushing and lightly tap into position with hammer.

NOTE: Spring bushing must be fully seated inside the rockshaft mount. Spring bushing must be flush with the rockshaft mount.

SCRAPER BARS

Removal And Installation

Removal

Remove u-bolts from the scraper being replaced (as required).

Installation

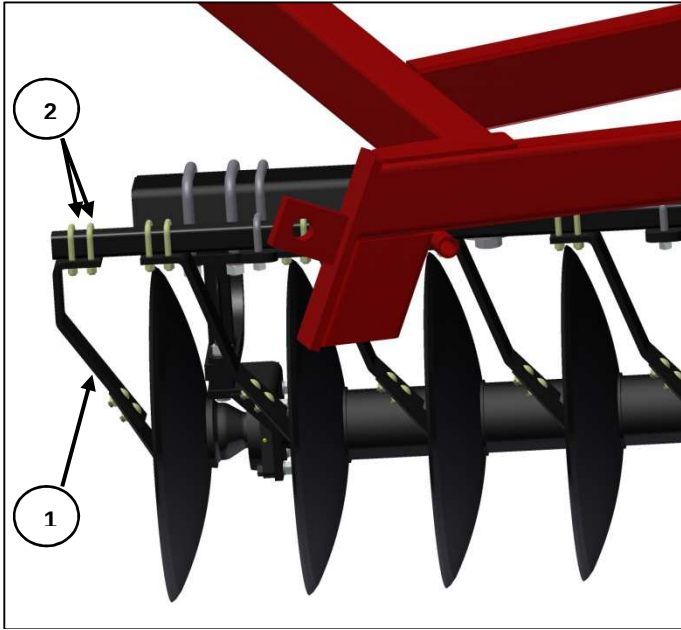


Figure 18

NOTE: Install inside scraper (Item 1, Figure 18) first. Place the inside scraper approximately 1-1/2" from the inside end of the scraper bar.

Install two 1/2" x 2-1/2" u-bolts (Item 2, Figure 18) over the scraper bar and down through the scraper. Install 1/2" lock washers and 1/2" nuts on the two u-bolts.

Tighten the two 1/2" x 2-1/2" U-bolts (Item 2) and nuts to secure the scraper to the scraper bar.

Adjust scraper bar left / right until the first scraper is approximately 1/8" from the blade.

Tighten the first scraper bar mount u-bolts. Securing the scraper bar in position while installing the remaining scrapers.

NOTE: Scraper bar mounts may need to be moved to allow adequate space for the remaining scrapers to be installed.

After all scrapers have been installed on the gang section and adjusted to 1/8" from the blades, tighten all scraper bar mount u-bolts and scraper bar u-bolts.

SAFETY SIGN (DECAL) INSTALLATION

Procedure



When replacing safety signs (decals), the temperature must be above 10° C (50° F).

- Remove all portions of the damaged safety sign (decal).
- Thoroughly clean the area with glass cleaner. Remove all adhesive residue.
- Allow the area to dry completely before installing the new safety sign (decal).
- Position the safety sign (decal) in the correct location. Remove a small portion of the backing paper on the safety sign (decal).
- Press on the safety sign (decal) where the backing paper has been removed.
- Slowly remove the remaining backing paper, pressing on the safety sign (decal) as the backing paper is removed.
- Using the backing paper, pressing firmly, move the backing paper over the entire safety sign (decal) area.

NOTE: Small air pockets can be pierced with a pin and smoothed out using the piece of the backing paper.

STORAGE AND RETURN TO SERVICE

Storage

Sometimes it may be necessary to store your Farm King Tandem Disc for an extended period of time. Below is a list of items to perform before storage.

WARNING



AVOID SERIOUS INJURY OR DEATH

Always relieve the pressure in hydraulic system and close both hydraulic lockup valves when the disc is not being operated. Wings may unfold due to thermal expansion of hydraulic oil causing damage to disc, property or severe injury or death to person(s) nearby.

IMPORTANT

Do not leave cylinders under hydraulic pressure, especially if cylinders are activated during cool temperatures. The expansion of oil which takes place when machine is in a warmer environment may cause serious damage to cylinder, lines or hoses. Always release hydraulic pressure and close lockup valves before unhitching from tractor.

IMPORTANT

DO NOT permit children to play on or around the stored machine.

- Set planks under each wheel.
- Lower transport wheels to lift disc blades above the ground.
- Relieve pressure in all hydraulic cylinders.
- Disconnect hydraulic hoses from tractor and cap.
- Thoroughly clean the equipment.
- Lubricate the equipment.
- Inspect the hitch and all welds on the equipment for wear and damage.
- Check for loose hardware, missing guards, or damaged parts.
- Check for damaged or missing safety signs (decals). Replace if necessary.
- Replace worn or damaged parts.
- Touch up all paint nicks and scratches to prevent rusting.
- Store the tandem disc in a clean, dry, sheltered area.
- Place the equipment flat on the ground.
- Storing Outdoors - coat all exposed cylinder shafts with grease.

Return To Service

After the Farm King tandem disc has been in storage, it is necessary to follow a list of items to return the equipment to service.

IMPORTANT

Do not attempt to lift disc out of frozen ground by lowering transport wheels causing serious damage to disc components.

- Lubricate the equipment.
- Clean and inspect tandem disc.
- Tighten loose hardware and replace any damaged parts.
- Inspect and repack wheel bearings with a SAE multi purpose type grease.
- Check that tires are properly inflated.
- Connect to a tractor and operate equipment, verify all functions operate correctly.
- Check for leaks. Repair as needed.
- Review the Operator's Manual.

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Farm King



SPECIFICATIONS

Dimensions

Order Code	BLADE SPACING	APPROX. CUTTING WIDTH	# OF BLADES	# OF GANG BEARINGS	GANG BEARING		APPROX. TRANSPORT WIDTH	APPROX. TRANSPORT HEIGHT
					STD	OPT		
EZ6659-42NT	9 in. (230 mm)	15 ft. 11 in. (5.03 m)	42	12	410 WSS	-	9 ft. 6 in. (2.9 m)	12 ft. 1 in. (3.66 m)
EZ6659-50NT	9 in. (230 mm)	18 ft. 10 in. (5.94 m)	50	14	410 WSS	-	9 ft. 6 in. (2.9 m)	13 ft. 10 in. (4.11 m)
EZ6659-58NT	9 in. (230 mm)	21 ft. 10 in. (6.65 m)	58	20	410 WSS	-	9 ft. 6 in. (2.9 m)	14 ft. 11 in. (4.55 m)
EZ6659-62NT	9 in. (230 mm)	23 ft. 3 in. (7.16 m)	62	20	410 WSS	-	9 ft. 6 in. (2.9 m)	15 ft. 8 in. (4.72 m)
EZ6650-38NT	10-1/2 in. (267)	16 ft. 4 in. (4.85 m)	38	12	410 WSS	T2 - 215	9 ft. 6 in. (2.9 m)	12 ft. 1 in. (3.68 m)
EZ6650-46NT	10-1/2 in. (267)	18 ft. 10 in. (5.75 m)	46	12	410 WSS	T2 - 215	9 ft. 6 in. (2.9 m)	13 ft. 10 in. (4.22 m)
EZ6650-50NT	10-1/2 in. (267)	21 ft. 6 in. (6.54 m)	50	16	410 WSS	T2 - 215	9 ft. 6 in. (2.9 m)	14 ft. 10 in. (4.52 m)
EZ6650-54NT	10-1/2 in. (267)	23 ft. 3 in. (7.07 m)	54	16	410 WSS	T2 - 215	9 ft. 6 in. (2.9 m)	15 ft. 8 in. (4.78 m)

Performance

DESCRIPTION	6650NT	
	9 IN. SPACING	10-1/2 IN. SPACING
Weight*	650 lb. / ft. Class (810 kg/m)	550 lb. / ft. Class (810 kg/m)
Horsepower Required	6.0 to 8.0 DBHP / Foot (4.5 to 6.0 kW per 305 mm)†	
Frame	Welded, 4" x 4" and 6" x 4" (102 x 102 mm and 152 x 102 mm) structural Steel Frame members	
Bearings	410 WSS, single row bearing C/W Triple Lip Seals – Greasable (T2-215 Optional for 10.5" spacing)	
Gang Angle	Front: 23°/ 20°/ 17° Rear: 23°/ 20°/ 17°	
Gang Shaft	1-15/16 in. (49 mm) High Carbon Steel, Factory Torqued to 3200 ft. - lb. (4339 N•m)	
Blades	24 in. x 5/16 in. (610 x 8 mm)	26 in. x 5/16 in. (660 x 8 mm)
	26 in. x 5/16 in. (660 x 8 mm)	26 in. x 3/8 in. (660 x 9 mm)
Depth Control	Single Cylinder System C/W Depth Stop Segments	Single Cylinder System C/W Depth Stop Segments
	Auto-Leveling, Full Floating Hitch	Auto-Leveling, Full Floating Hitch
Tires (Center Frame)	- 2- FS24 380/55R16.5 radial- 16' and 19' sizes (5.03 and 5.94 m) - 2- FS24 440/55R18 radial – 22' and 23' sizes (6.65 and 7.16 m)	- 2- FS24 380/55R16.5 radial- 16' and 19' sizes (5.03 and 5.94 m) - 2- FS24 440/55R18 radial – 21.6' and 23' sizes (6.54 and 7.07 m)

* W/24 in. Blades

† Depends on working depth, soil type, field speed, etc.

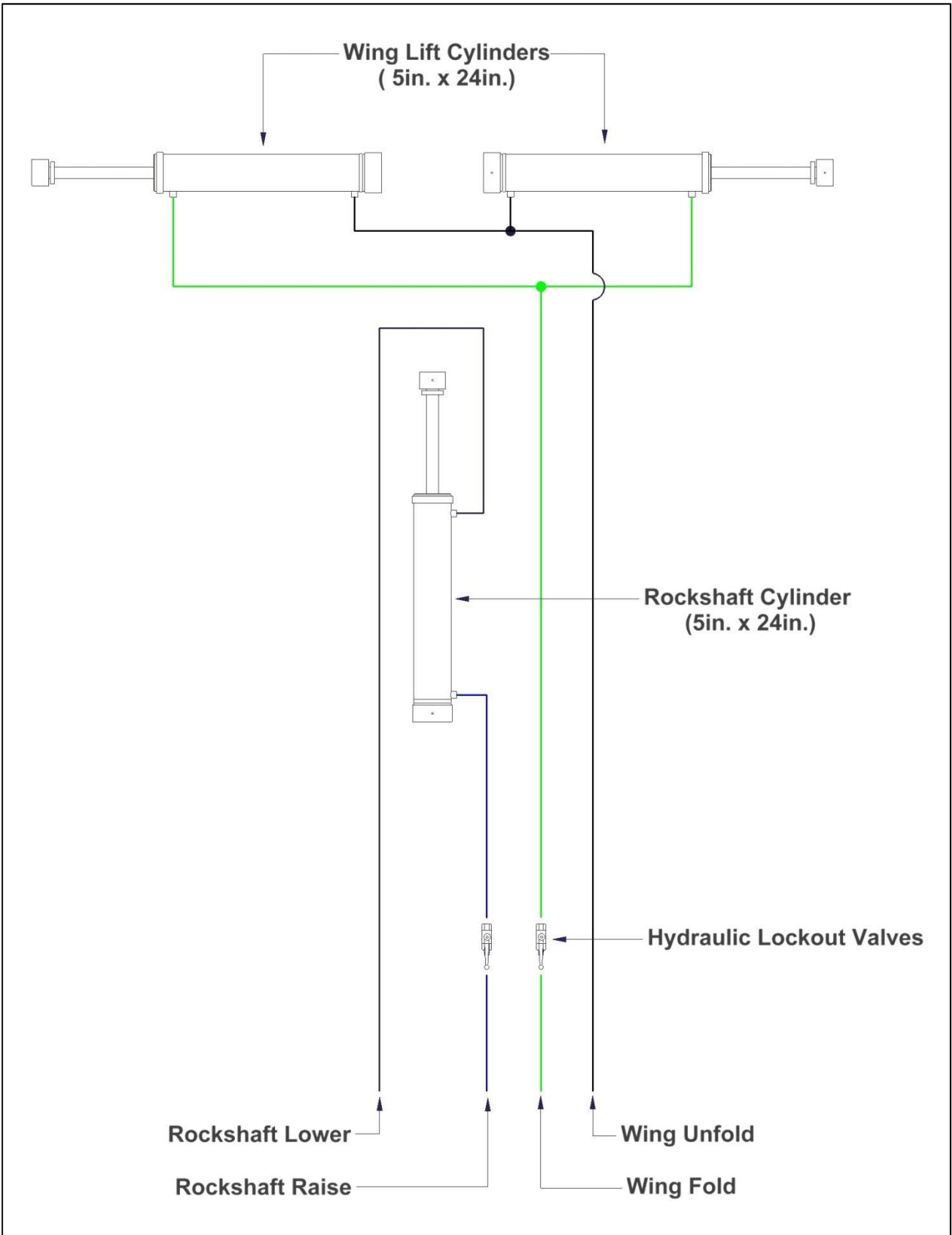
Hydraulic Cylinders

APPLICATION	SIZE	# REQUIRED
Center Frame Lift	5 in. x 24 in.	1
Wing Lift	5 in. x 24 in.	2

Bolt Torques

DESCRIPTION	TORQUE
Gang Bolts (1-15/16 in. (49 mm) diameter)	3200 ft. - lb. (4339 N•m)
Gang Beam Bolts (1-1/4 in. (31 mm) diameter)	840 ft. - lb. (1139.2 N•m)
Leveling Crank Bolts (1-1/4 in. (31 mm) diameter)	840 ft. - lb. (1139.2 N•m)
Wheel Bolt (3/4 in. Flange nuts (14 mm) diameter)	420 ft. - lb. (569 N•m)
Bearing Hanger U-bolts - 7/8 in. (15 mm) diameter)	430 ft. - lb. (583 N•m) (Solid Hangers)

HYDRAULIC SCHEMATIC



HARDWARE TORQUE VALUES

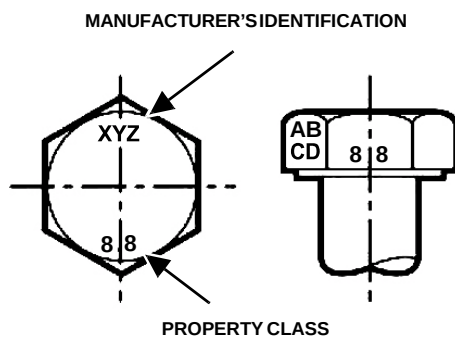
Metric Chart

NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.

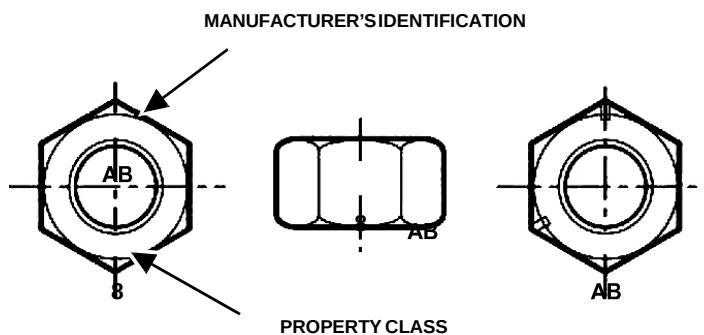
Use the following charts to determine the correct torque when checking, adjusting or replacing hardware. **Torque values are listed in newton-meters (inch* or foot pounds) for normal assembly applications.**

Nominal Size	Class 5.8		Class 8.8		Class 10.9		Lock nuts
	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	Unplated	Plated W / ZnCr	CL.8 w/ CL. 8.8 Bolt
M4	1.7 (15*)	2.2 (19*)	2.6 (23*)	3.4 (30*)	3.7 (33*)	4.8 (42*)	1.8 (16*)
M6	5.8 (51*)	7.6 (67*)	8.9 (79*)	12 (102*)	13 (115*)	17 (150*)	6.3 (56*)
M8	14 (124*)	18 (159*)	22 (195*)	28 (248*)	31 (274*)	40 (354*)	15 (133*)
M10	28 (21)	36 (27)	43 (32)	56 (41)	61 (45)	79 (58)	30 (22)
M12	49 (36)	63 (46)	75 (55)	97 (72)	107 (79)	138 (102)	53 (39)
M16	121 (89)	158 (117)	186 (137)	240 (177)	266 (196)	344 (254)	131 (97)
M20	237 (175)	307 (226)	375 (277)	485 (358)	519 (383)	671 (495)	265 (195)
M24	411 (303)	531 (392)	648 (478)	839 (619)	897 (662)	1160 (855)	458 (338)
NOTE: Torque values shown with * are inch pounds.							

Identification of Hex Cap Screws and Carriage Bolts - Classes 5 and up



Identification of Hex Nuts and Lock Nuts - Classes 5 and up



HARDWARE TORQUE VALUES (CONT'D)

Imperial Chart

NOTE: Do not use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.

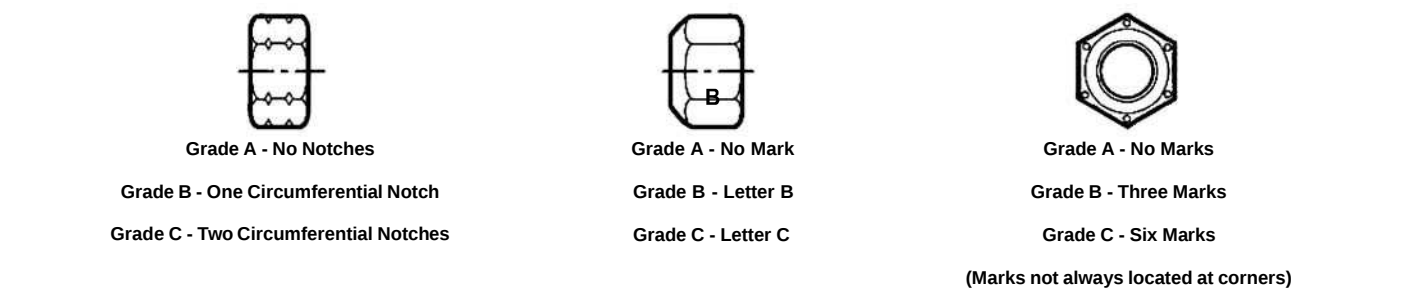
Use the following charts to determine the correct torque when checking, adjusting or replacing hardware. **Torque values are listed in newton-meters (inch* or foot pounds) for normal assembly applications.**

Nominal Size	SAE Grade 5		SAE Grade 8		LOCK NUTS			
	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Grade W / Gr. 5 Bolt	Grade W / Gr. 8 Bolt
1/4	6.2 (55*)	8.1 (72*)	9.7 (86*)	12.6 (112*)	13.6 (121*)	17.7 (157*)	6.9 (61*)	9.8 (86*)
5/16	13 (115*)	17 (149*)	20 (178*)	26 (229*)	28 (250*)	37 (324*)	14 (125*)	20 (176*)
3/8	23 (17)	30 (22)	35 (26)	46 (34)	50 (37)	65 (48)	26 (19)	35 (26)
7/16	37 (27)	47 (35)	57 (42)	73 (54)	80 (59)	104 (77)	41 (30)	57 (42)
1/2	57 (42)	73 (54)	87 (64)	113 (83)	123 (91)	159 (117)	61 (45)	88 (64)
9/16	81 (60)	104 (77)	125 (92)	163 (120)	176 (130)	229 (169)	88 (65)	125 (92)
5/8	112 (83)	145 (107)	174 (128)	224 (165)	244 (180)	316 (233)	122 (90)	172 (127)
3/4	198 (146)	256 (189)	306 (226)	397 (293)	432 (319)	560 (413)	217 (160)	306 (226)
7/8	193 (142)	248 (183)	495 (365)	641 (473)	698 (515)	904 (667)	350 (258)	494 (364)
1	289 (213)	373 (275)	742 (547)	960 (708)	1048 (773)	1356 (1000)	523 (386)	739 (545)
NOTE: Torque values shown with * are inch pounds.								

Identification of Hex Cap Screws and Carriage Bolts



Identification of Hex Nuts and Lock Nuts



HYDRAULIC CONNECTION SPECIFICATIONS

O-Ring Fitting (Straight Thread)

Lubricate the O-ring before installing the fitting. Loosen the jam nut and install the fitting. Tighten the jam nut until the washer is tight against the surface.

Table 1 O-ring Face Seal Tightening Torque		
Tubeline O.D.	Thread Size	N•m (ft-lb)
1/4"	9/16" - 18	13 (18)
3/8"	11/16" - 16	22 (30)
1/2"	13/16" - 16	40 (54)
5/8"	1" - 14	60 (81)
3/4"	1-3/16" - 12	84 (114)
7/8"	1-3/16" - 12	98 (133)
1"	1-7/16" - 12	118 (160)
1-1/4"	1-11/16" - 12	154 (209)
1-1/2"	2" - 12	163 (221)

When the fitting is tightened, you can feel when the fitting is tight to eliminate leakage caused by under or over torqued fittings. Use petroleum jelly to hold the O-ring in position until the fittings are assembled.

Table 2 Flare Fitting Tightening Torque		
Tubeline O.D.	Thread Size	N•m (ft-lb)
1/4"	7/16" - 20	13 (18)
5/16"	1/2" - 20	17 (23)
3/8"	9/16" - 18	22 (30)
1/2"	3/4" - 16	40 (54)
5/8"	7/8" - 14	60 (81)
3/4"	1-1/16" - 12	84 (114)
7/8"	1-3/16" - 12	98 (133)
1"	1-5/16" - 12	118 (160)
1-1/4"	1-5/8" - 12	154 (209)
1-1/2"	1-7/8" - 12	163 (221)
2"	2-1/2" - 12	252 (342)

Tighten until the nut makes contact with the seat. Use the chart Table 2 to find the correct torque.

NOTE: If the fitting leaks, disconnect and inspect the seat area for damage.

Table 3 Port Seal And O-ring Boss Tightening Torque		
Tubeline O.D.	Thread Size	N•m (ft-lb)
1/4"	7/16" - 20	13 (18)
3/8"	9/16" - 18	22 (30)
1/2"	3/4" - 16	40 (54)
5/8"	7/8" - 14	60 (81)
3/4"	1-1/16" - 12	84 (114)
7/8"	1-3/16" - 12	98 (133)
1"	1-5/16" - 12	118 (160)
1-1/8"	1-7/16" - 12	154 (209)
1-1/4"	1-5/8" - 12	163 (221)

NOTE: Port seal, nut, washer and O-ring Boss fittings use the same tightening torque value (see Table 3).

If a torque wrench cannot be used, use the following method.

Tighten the nut until it just makes metal to metal contact, you can feel the resistance.

Tighten the nut with a wrench no more than one hex flat maximum.

Do not over tighten the port seal fitting.

NOTE: If a torque wrench cannot be used, use the hex flat tightening method as an approximate guideline.

NOTE: Port seal fittings are not recommended in all applications. Use O-ring boss fittings in these applications.

Tubelines And Hoses

Replace any tubelines that are bent or flattened. They will restrict flow, which will slow hydraulic action and cause heat.

Replace hoses which show signs of wear, damage or weather cracked rubber.

Always use two wrenches when loosening and tightening hose or tubeline fittings.

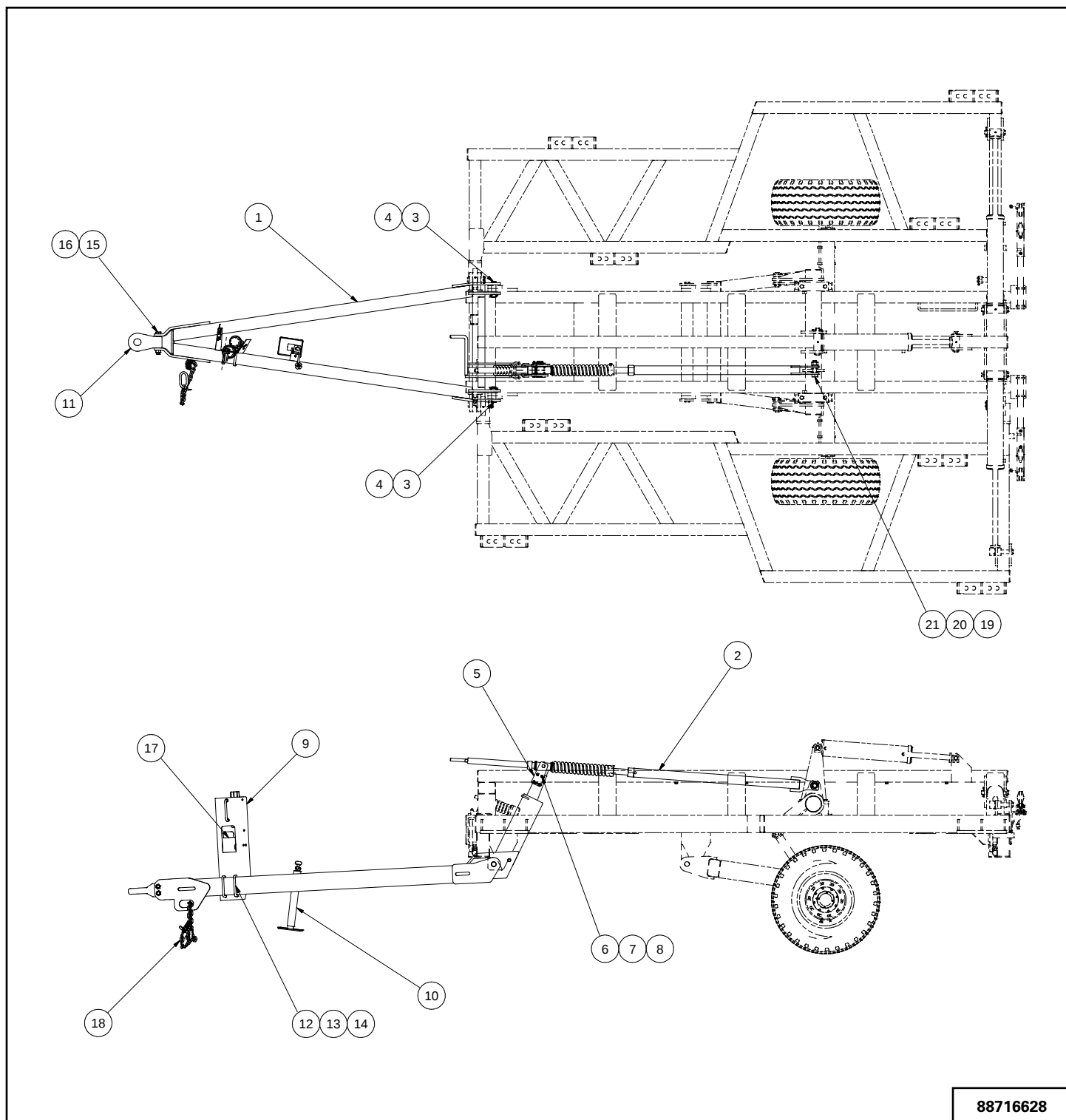
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GENERAL PARTS INFORMATION

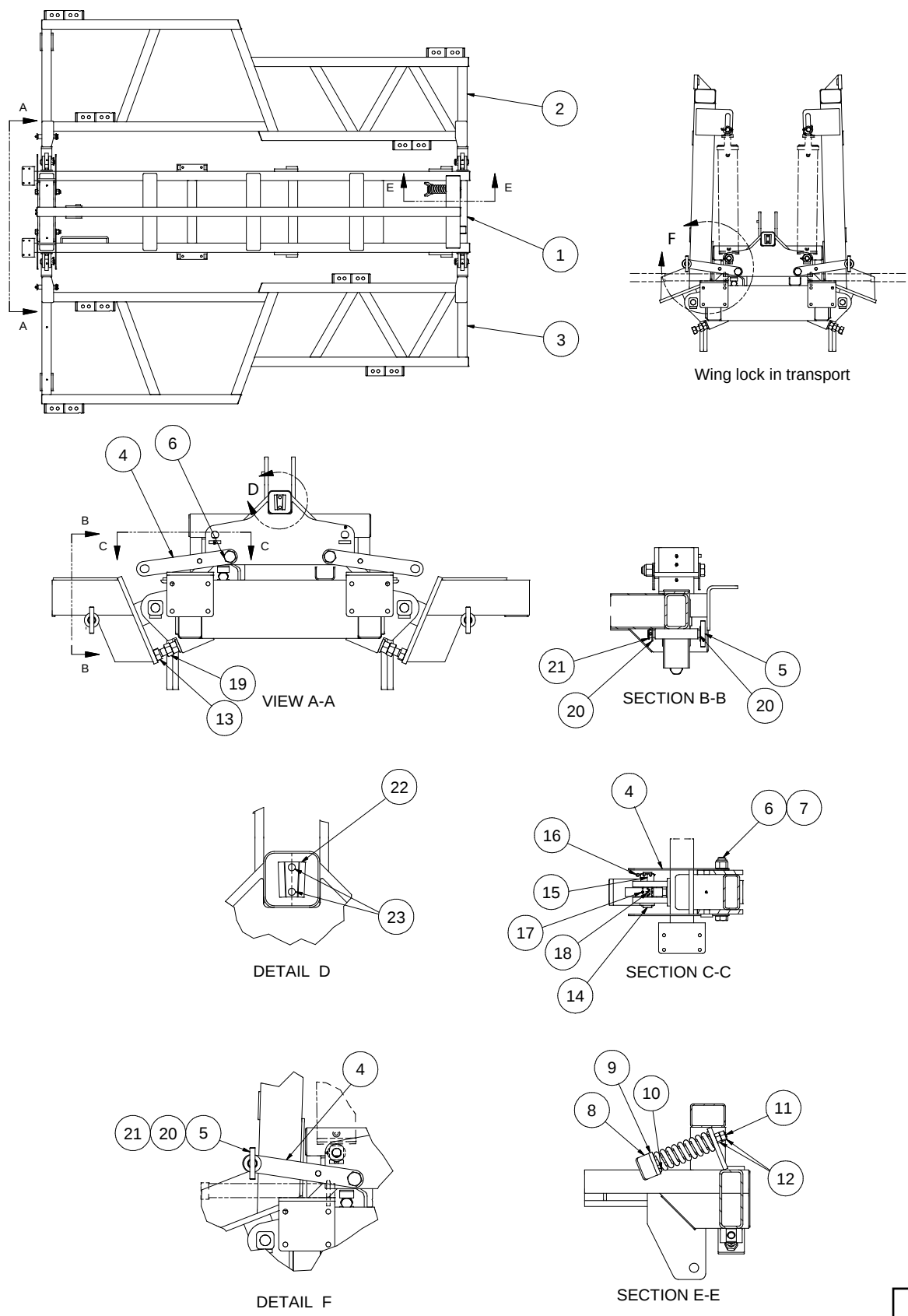
The parts identification section list descriptions, part numbers and quantities for all North America Base Model 1410 fertilizer applicators. Contact your Farm King dealer for additional fertilizer applicator parts information.

HITCH, LEVELING CRANK



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88715120	HITCH - WATANDEM DISC	1
2	88717046	LEVELLING CRANK-ASSYTD650	1
3	EZDH9605	PIN 1-1/2" DIA - DISC HITCH	2
4	EZDH12517	PIN HITCH LOCK	2
5	EZDH5146	PLATE-LEVELING LUG HITCH	1
6	EZB050050	BOLT HEX CAP 1/2NCX5 GR5 ZNCR	4
7	EZBW050L	WASHER LOCK 1/2X7/8X1/8 ZNCR	4
8	EZBN050	NUT HEX 1/2 NC ZNCR	4
9	88708500	HYD HOSE - BRACKET	1
10	88715180	JACK - ASSY W / WELD COLLAR	1
11	EZA76128	PINTLE - HITCH CATEGORY 4	1
12	EZPL83773	UBOLT-5/8X5.5X6.06X1.5 GR5 PL	2
13	EZBW062L	LW P 5/8 86505602	4
14	EZBN062	N G5 P 5/8 86505599	4
15	EZC60074	1" X 7" NC HEX GR. 8 PLATED	2
16	EZBN100SL	LOCKNUT 1-8TOP LOCK GRC PL	2
17	EZDGA35	SOCKET-W.A. WRENCH	1
18	EZD13090	CHAIN-SAFETY HITCH 20200 LBS	1
19	EZBN125	NUT HEX 1-1/4 NC GR2 ZNCR	1
20	EZBW125L	WASHER LOCK 1-1/4X1X5/16ZNCR	1
21	EZDR5215	BOLT HEX 1-1/4 NC X 4-3/4	1

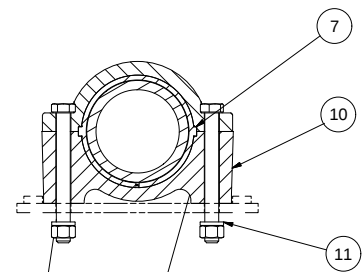
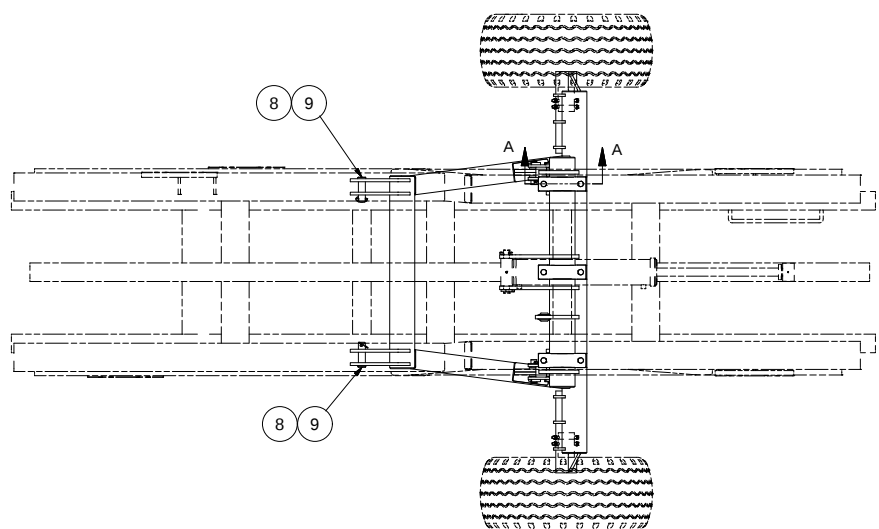
MAIN FRAME, WING FRAME



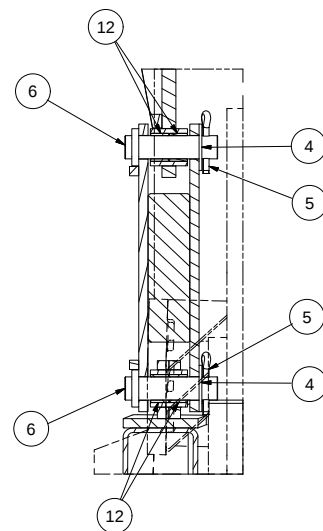
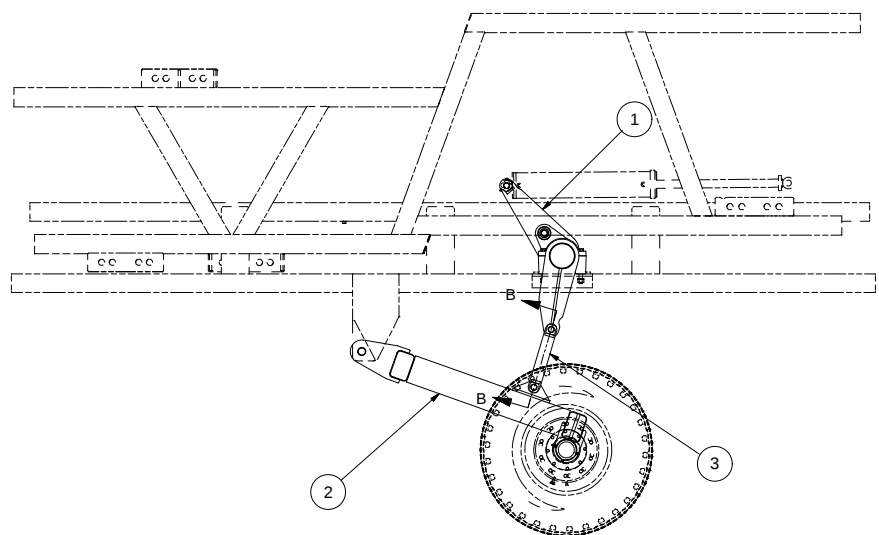
88716633

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716375	Main Frame-W.A. TD650	1
2	88716437	Wing-W.A. TD650 Left	1
3	88716438	Wing-W.A. TD650 Right	1
4	88716850	Link-W.A. Wing Lock	2
5	88716388	Pin - W.A. Wing Lock	2
6	EZB125100	1-1/4" X 10" N.C. HEX BOLT	2
7	EZBN125L	NUT HEX LOCK NYL 1-1/4NC ZNCR	2
8	EZDFA10536	PLATE-W.A. SPRING CUSHION	1
9	88706089	PLATE-WASHER MAIN FRAME	1
10	EZDC9615	SPRING-COMPRESSION	1
11	EZB100140	BOLT HEX 1-8 NC X 14	1
12	EZBN100	NUT HEX 1-8 NC GR 5 ZNCR	2
13	EZB125035	CHSS GR5 ZNCR 1-1/4" X 3-1/2" LG	4
14	EZDG1309	Pin - Wing Hinge 1-1/2	4
15	EZDH5165	NUT HEX SLOT 1-1/2 NC GR 2	4
16	EZBP31225	PIN COTTER 5/16 X 2-1/4	4
17	EZ10GN1	FITTING 1/4 UNF ST ZERK	4
18	EZDG13286	BUSHING-SPRING W/OIL GROOVE	4
19	EZBN125	NUT HEX 1-1/4 NC GR2 ZNCR	4
20	EZBW125F	Flatwasher - 1-1/4" Sae Plated	4
21	EZC55076	PIN LYNCH 7/16 X 1 3/4	2
22	35827	MTG SOCKET-SMV SIGN	1
23	813602	RIVET 1/4 X 3/4 FLATHEAD	2

ROCKSHAFT, DEPTH CONTROL



SECTION A-A

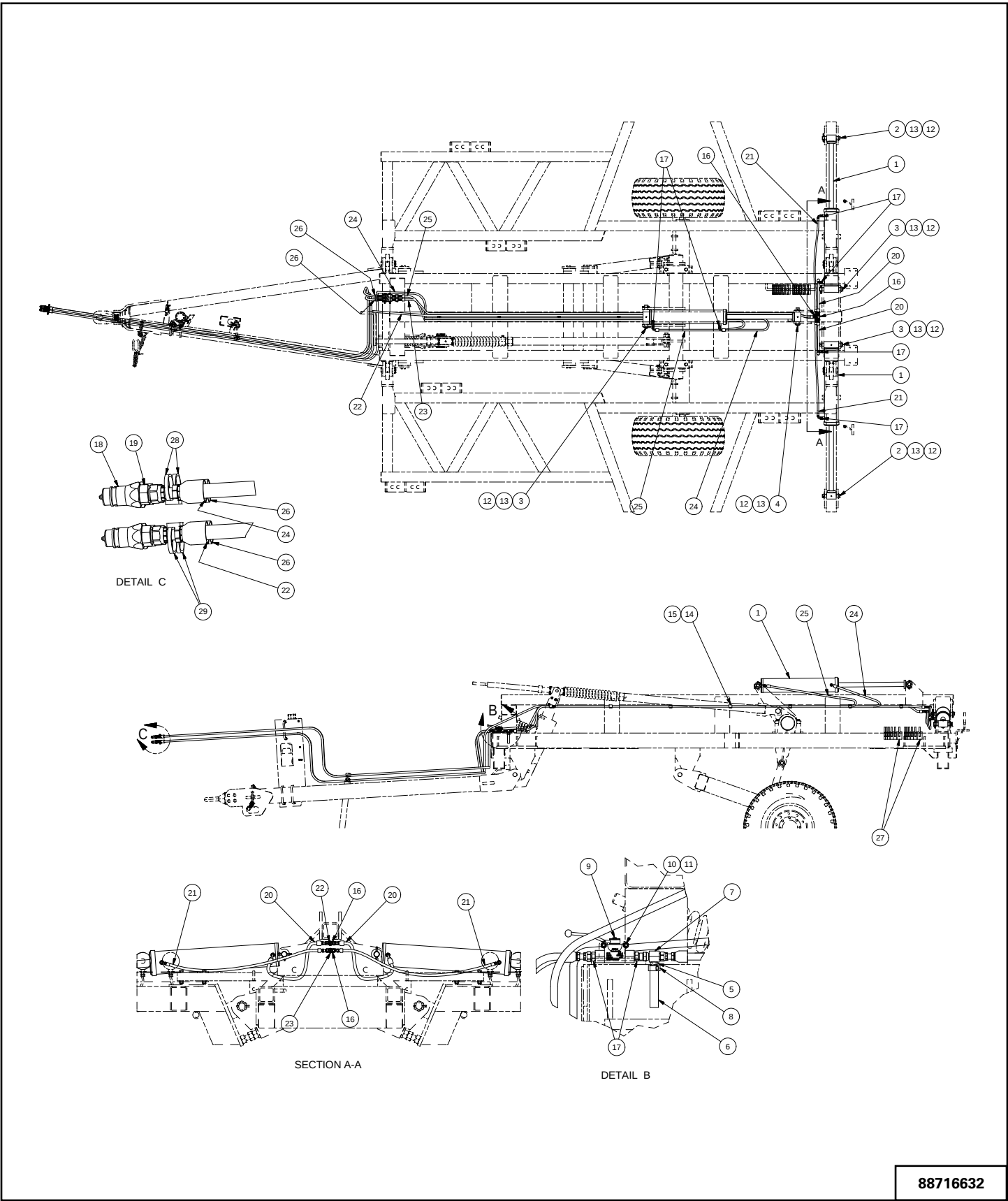


SECTION B-B

88716629

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716409	Rockshaft-W.A. TD650	1
2	88716402	Axle-W.A. TD650	1
3	88716416	Link-W.A. Depth Control	2
4	EZBW125F	Flatwasher - 1-1/4" Sae Plated	4
5	EZBP37250	COTTER PIN-3/8X2-1/2"	4
6	88716421	Pin-W.A. Depth Control Link	4
7	88713582	BEARING - ROCKSHAFT	3
8	EZDH12517	PIN HITCH LOCK	2
9	EZDH9605	Pin 1-1/2" Dia - Disc Hitch	2
10	88713586	ASSY - LIGHT ROCKSHAFT CASTING	3
11	EZBW075L	WASHER LOCK 3/4X1-1/4X3/16ZNCR	6
12	88717051	Bushing - Spring 1.25ID X 1.50OD X 1LG	8
13	86050059	STD GREASE -LITHIUM	AR

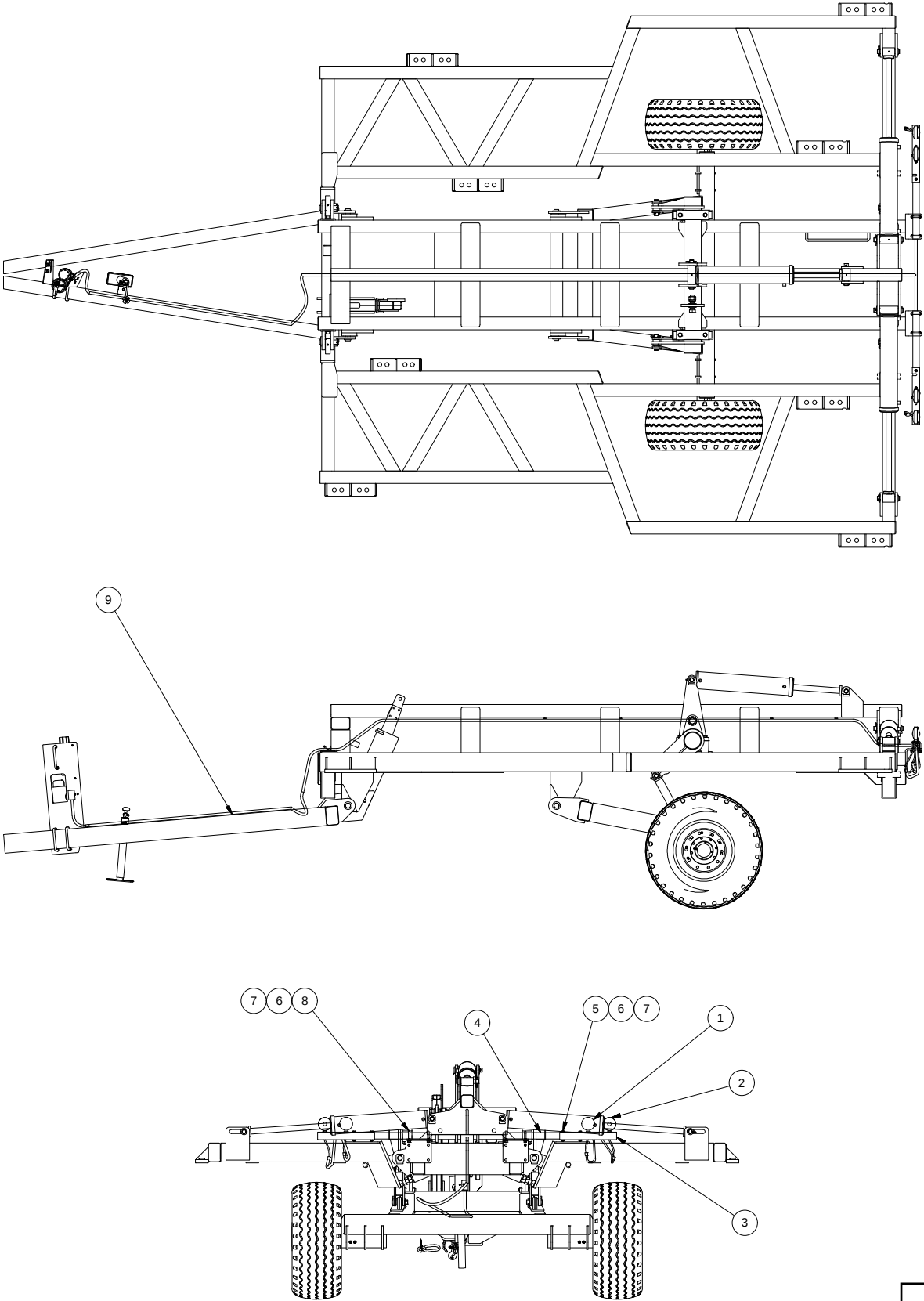
HYDRAULIC SYSTEM



88716632

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716439	CYL-ASSY 5 X 24 Crosstube	3
2	88716423	Pin - W.A. Wing Lift Top	2
3	88716365	Pin-W.A. Depth Control Cylinder Long	3
4	88716434	Pin-W.A. Depth Control Cylinder Short	1
5	88716789	CHK VLV, 4500 PSI CRK, -04MB - 1/2" HB	2
6	88716792	DRAIN HOSE, WING CYL RELIEF, VT	2
7	86060682	-6 ORFS IN-LINE TEST PORT ADAPTER	2
8	21193	CLAMP HOSE 14.2	2
9	88705116	GE2 - SAE6 BALL VLV 2 WAY	2
10	EZB031040	5/16 X 4 Nc Hex Bolt	2
11	EZBN031L	NUT LOCK NYLON 5/16 NC	2
12	EZBP37250	COTTER PIN-3/8X2-1/2"	6
13	EZBW125F	Flatwasher - 1-1/4" Sae Plated	6
14	EZDL13186	4 LINE HOSE CLAMP	7
15	EZB050007	BLT HHCS, 1/2" -13UNC 3/4" G5	7
16	9840322	6MORT(6 JLO) TEE	2
17	9993143	CONNECTOR 11/16 ORFS X 9/16(6 F5OLO)	10
18	88713042	COUPLER 1/2", MALE NIPPLE	4
19	9626421	CONNECTOR, -8MB-6MOR (6-8 F5OLO)	4
20	88716859	HOSE-ASSY 3/8X26 SWFOFSSTR-SWFOFS90	2
21	88716860	HOSE-ASSY 1/4X41 SWFOFSSTR-SWFOFS90	2
22	88716861	HOSE-ASSY 3/8X361 SWFOFSSTR-SWFOFSSTR	1
23	88716862	HOSE-ASSY 3/8X176 SWFOFSSTR-SWFOFSSTR	1
24	88716863	HOSE-ASSY 3/8X364 SWFOFS90-SWFOFSSTR	1
25	88716864	HOSE-ASSY 3/8X192 SWFOFS90-SWFOFSSTR	1
26	88716865	HOSE-ASSY 3/8X179 SWFOFSSTR-SWFOFSSTR	2
27	EZC60155	Depth Stop Package - Grip-Rite	2
28	88704516	TIE-HYD RAISE/LOWER GR	2
29	88704517	TIE-HYD WING FOLD BL	2

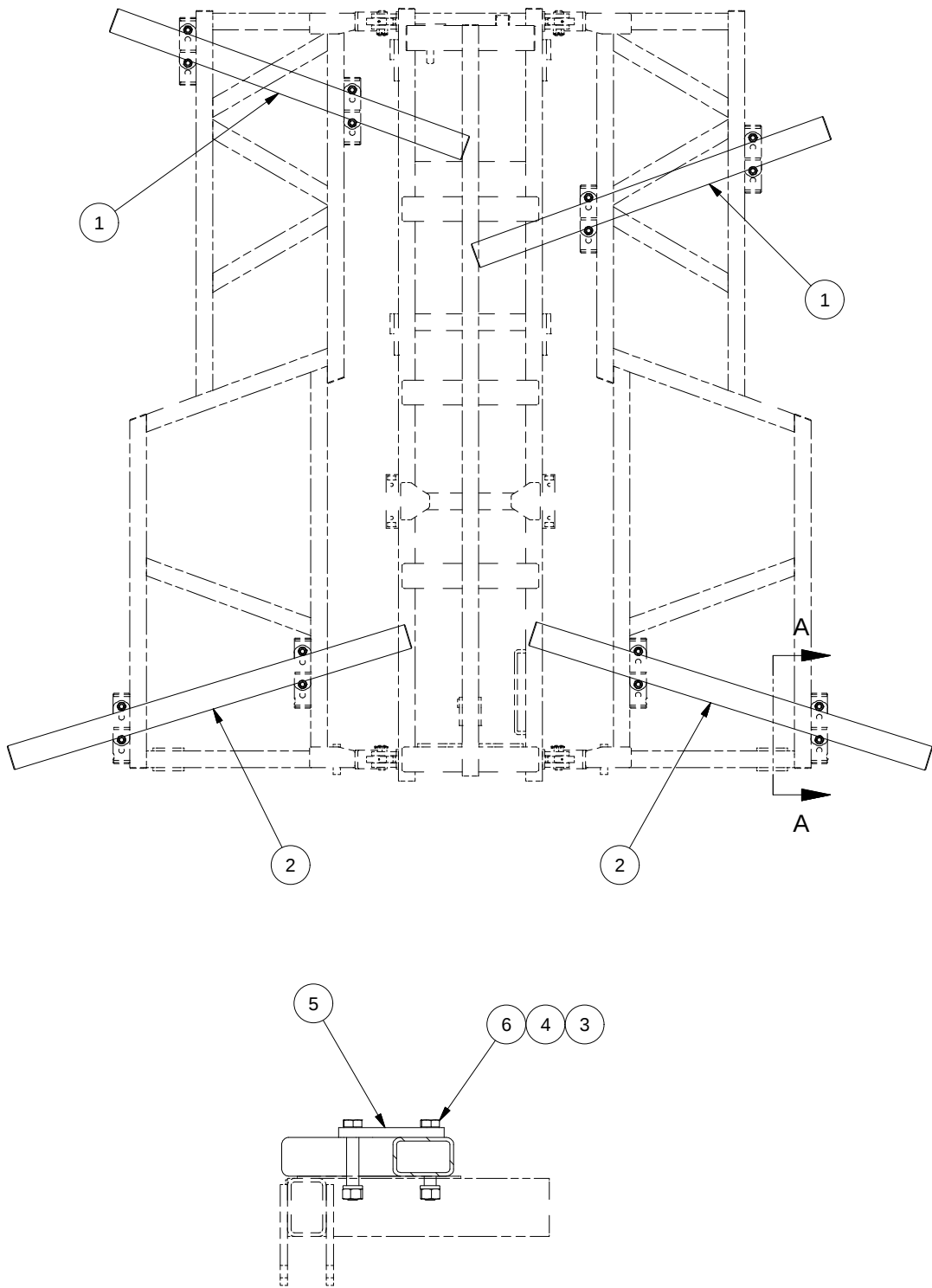
WARNING LIGHTS



88716636

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZLK6425	RED LAMP W/3 PIN PLUG	2
2	EZLK6426	AMBER LAMP W/2 PIN PLUG	2
3	88716430	Plate - Light Brkt	2
4	88716431	Tube - Light Brkt	2
5	EZB050030	BOLT HEX CAP 12NCX3 GR5 ZNCR	4
6	EZBW050L	WASHER LOCK 1/2X7/8X1/8 ZNCR	12
7	EZBN050	NUT HEX 1/2 NC ZNCR	12
8	EZDG5308	U-BOLT 1/2-13x2-1/2ZNCR	4
9	EZLK6427	HARNESS-WARNING LIGHTS	1
10	EZLK6438	CableTie 11"	AR

GANG BEAMS

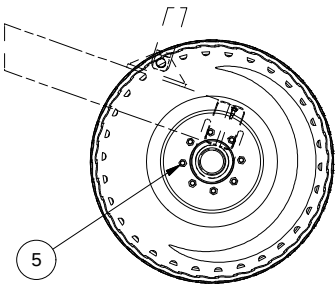
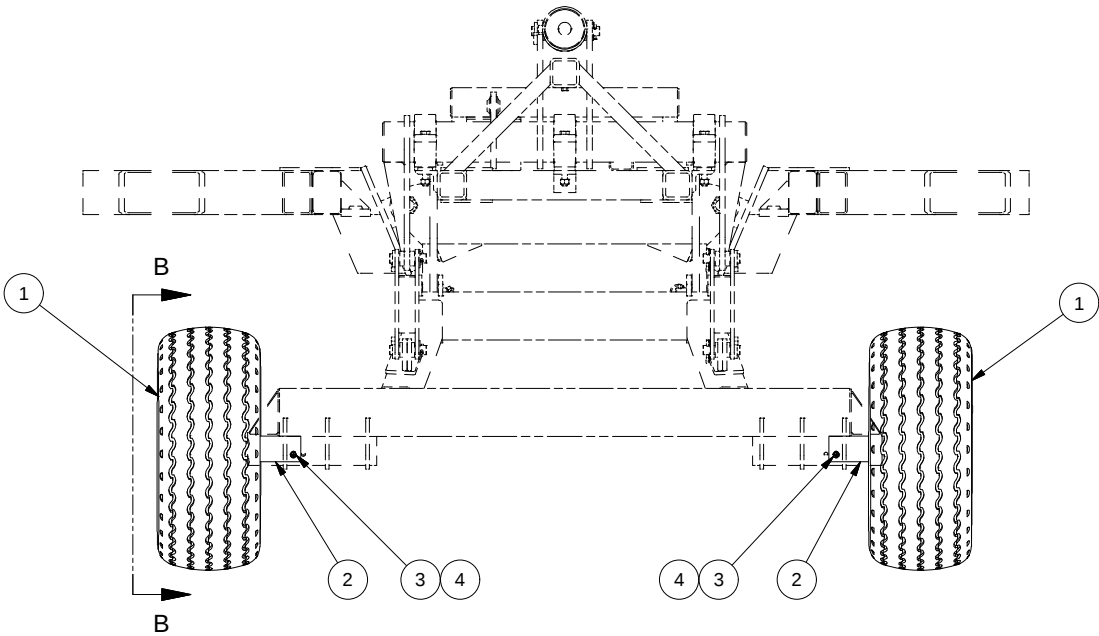


SECTION A-A

88716638

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDBS90	GANG BEAM - FRONT 90 IN.	2
	EZDBS108	GANG BEAM - FRONT 108 IN.	2
	EZDBS120	GANG BEAM - FRONT 120 IN.	2
	EZDBS130	GANG BEAM - FRONT 130 IN.	2
2	EZDBS100	GANG BEAM - REAR 100 IN.	2
	EZDBS120	GANG BEAM - REAR 120 IN.	2
	EZDBS135	GANG BEAM - REAR 135 IN.	2
	EZDBS141	GANG BEAM - REAR 141 IN.	2
3	EZBN125	NUT HEX 1-1/4 NC GR2 ZNCR	16
4	EZBW125L	WASHER LOCK 1-1/4X1X5/16ZNCR	16
5	EZDG7162	PLATE-BACKING GANG BEAM	8
6	EZB125075	BOLT-HXHD 1.25-7UNC X 7.50LG	16

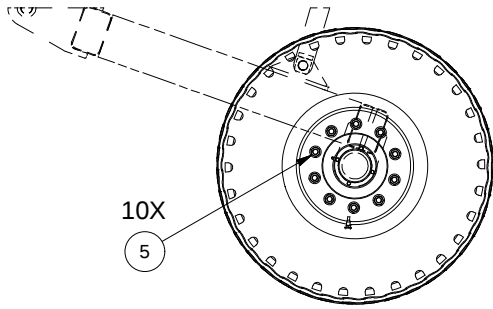
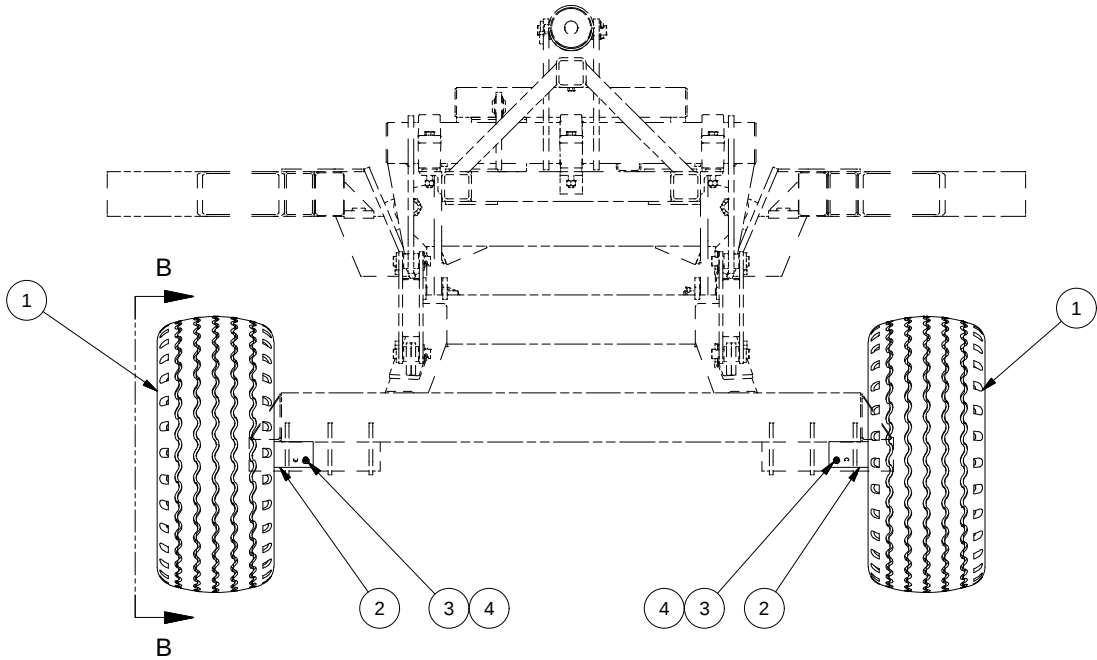
WHEEL AND TIRE FS24-380



SECTION B-B

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88712600	ASSY, FS24 - 380/55R16.5 - 8 BOLT	2
2	88712582	ASSY, HUB CTD H817	2
3	EZB050055-8	BOLT - 1/2 X 5-1/2 HEX GR8 ZN	2
4	EZBN050L	NUT HEX LOCK NYL 1/2 NC ZNCR	2
5	EZA77043	5/8" NF WHEEL NUT	16

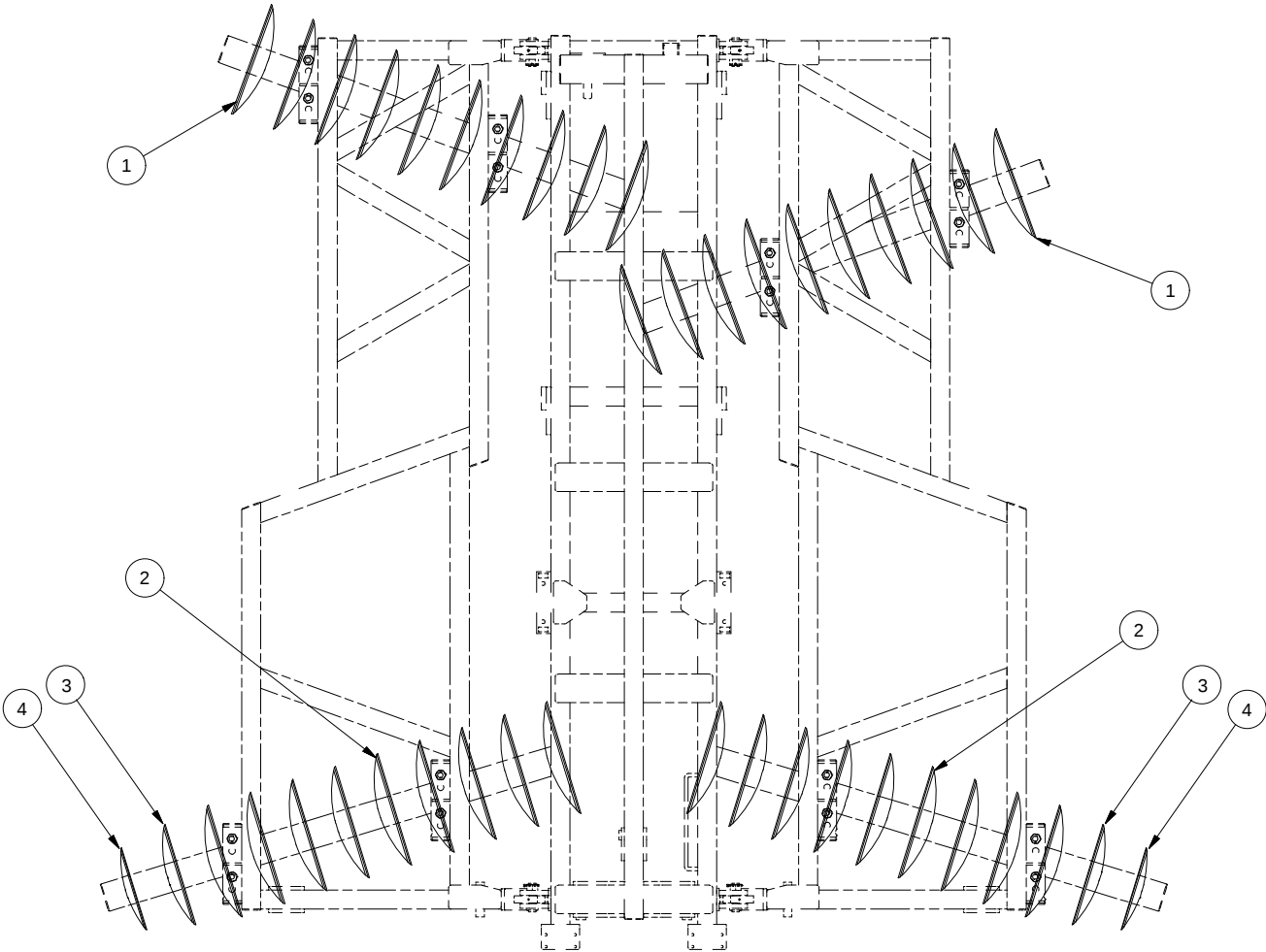
WHEEL AND TIRE FS24-440



SECTION B-B

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88712590	ASSY, FS24 440/55R18 10 BOLT	2
2	88706266	HUB-ASSY W/ SPINDLE 10 BOLT	2
3	EZB050055-8	BOLT - 1/2 X 5-1/2 HEX GR8 ZN	2
4	EZBN050L	NUT HEX LOCK NYL 1/2 NC ZNCR	2
5	EZA70545	NUT HEX FLANGE 3/4 NF	20

BLADES



88716641

9 IN. SPACING, 24 IN. BLADES

42 BLADES, 12 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG137	BLADE-PLAIN 24 X .313	20
	EZDG138	BLADE-NOTCH 24 X .313	20
2	EZDG137	BLADE-PLAIN 24 X .313	18
	EZDG138	BLADE-NOTCH 24 X .313	18
3	EZDG64	BLADE-PLAIN 22 X 1/4	2
4	EZDG133	BLADE-PLAIN 18 X 3/16	2

50 BLADES, 14 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG137	BLADE-PLAIN 24 X .313	24
	EZDG138	BLADE-NOTCH 24 X .313	24
2	EZDG137	BLADE-PLAIN 24 X .313	22
	EZDG138	BLADE-NOTCH 24 X .313	22
3	EZDG64	BLADE-PLAIN 22 X 1/4	2
4	EZDG133	BLADE-PLAIN 18 X 3/16	2

58 BLADES, 20 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG137	BLADE-PLAIN 24 X .313	28
	EZDG138	BLADE-NOTCH 24 X .313	28
2	EZDG137	BLADE-PLAIN 24 X .313	26
	EZDG138	BLADE-NOTCH 24 X .313	26
3	EZDG64	BLADE-PLAIN 22 X 1/4	2
4	EZDG133	BLADE-PLAIN 18 X 3/16	2

62 BLADES, 20 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG137	BLADE-PLAIN 24 X .313	30
	EZDG138	BLADE-NOTCH 24 X .313	30
2	EZDG137	BLADE-PLAIN 24 X .313	28
	EZDG138	BLADE-NOTCH 24 X .313	28
3	EZDG64	BLADE-PLAIN 22 X 1/4	2
4	EZDG133	BLADE-PLAIN 18 X 3/16	2

9 IN. SPACING, 26 IN. BLADES

42 BLADES, 12 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG74	BLADE-PLAIN 26 X .313	20
	EZDG75	BLADE-NOTCHED 26 X .313	20
2	EZDG74	BLADE-PLAIN 26 X .313	18
	EZDG75	BLADE-NOTCHED 26 X .313	18
3	EZDG76	BLADE-PLAIN 24 X .256	2
4	EZDG149	BLADE-PLAIN 20 X .236	2

50 BLADES, 14 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG74	BLADE-PLAIN 26 X .313	24
	EZDG75	BLADE-NOTCHED 26 X .313	24
2	EZDG74	BLADE-PLAIN 26 X .313	22
	EZDG75	BLADE-NOTCHED 26 X .313	22
3	EZDG76	BLADE-PLAIN 24 X .256	2
4	EZDG149	BLADE-PLAIN 20 X .236	2

58 BLADES, 20 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG74	BLADE-PLAIN 26 X .313	28
	EZDG75	BLADE-NOTCHED 26 X .313	28
2	EZDG74	BLADE-PLAIN 26 X .313	26
	EZDG75	BLADE-NOTCHED 26 X .313	26
3	EZDG76	BLADE-PLAIN 24 X .256	2
4	EZDG149	BLADE-PLAIN 20 X .236	2

62 BLADES, 20 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG74	BLADE-PLAIN 26 X .313	30
	EZDG75	BLADE-NOTCHED 26 X .313	30
2	EZDG74	BLADE-PLAIN 26 X .313	28
	EZDG75	BLADE-NOTCHED 26 X .313	28
3	EZDG76	BLADE-PLAIN 24 X .256	2
4	EZDG149	BLADE-PLAIN 20 X .236	2

10.5 IN. SPACING, 24 IN. BLADES

38 BLADES, 12 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG137	BLADE-PLAIN 24 X .313	18
	EZDG138	BLADE-NOTCH 24 X .313	18
2	EZDG137	BLADE-PLAIN 24 X .313	16
	EZDG138	BLADE-NOTCH 24 X .313	16
3	EZDG64	BLADE-PLAIN 22 X 1/4	2
4	EZDG133	BLADE-PLAIN 18 X 3/16	2

46 BLADES, 12 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG137	BLADE-PLAIN 24 X .313	22
	EZDG138	BLADE-NOTCH 24 X .313	22
2	EZDG137	BLADE-PLAIN 24 X .313	20
	EZDG138	BLADE-NOTCH 24 X .313	20
3	EZDG64	BLADE-PLAIN 22 X 1/4	2
4	EZDG133	BLADE-PLAIN 18 X 3/16	2

54 BLADES, 16 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG137	BLADE-PLAIN 24 X .313	26
	EZDG138	BLADE-NOTCH 24 X .313	26
2	EZDG137	BLADE-PLAIN 24 X .313	24
	EZDG138	BLADE-NOTCH 24 X .313	24
3	EZDG64	BLADE-PLAIN 22 X 1/4	2
4	EZDG133	BLADE-PLAIN 18 X 3/16	2

10.5 IN. SPACING, 26 IN. BLADES

38 BLADES, 12 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG74	BLADE-PLAIN 26 X .313	18
	EZDG75	BLADE-NOTCHED 26 X .313	18
2	EZDG74	BLADE-PLAIN 26 X .313	16
	EZDG75	BLADE-NOTCHED 26 X .313	16
3	EZDG76	BLADE-PLAIN 24 X .256	2
4	EZDG149	BLADE-PLAIN 20 X .236	2

46 BLADES, 12 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG74	BLADE-PLAIN 26 X .313	22
	EZDG75	BLADE-NOTCHED 26 X .313	22
2	EZDG74	BLADE-PLAIN 26 X .313	20
	EZDG75	BLADE-NOTCHED 26 X .313	20
3	EZDG76	BLADE-PLAIN 24 X .256	2
4	EZDG149	BLADE-PLAIN 20 X .236	2

50 BLADES, 16 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG74	BLADE-PLAIN 26 X .313	24
	EZDG75	BLADE-NOTCHED 26 X .313	24
2	EZDG74	BLADE-PLAIN 26 X .313	22
	EZDG75	BLADE-NOTCHED 26 X .313	22
3	EZDG76	BLADE-PLAIN 24 X .256	2
4	EZDG149	BLADE-PLAIN 20 X .236	2

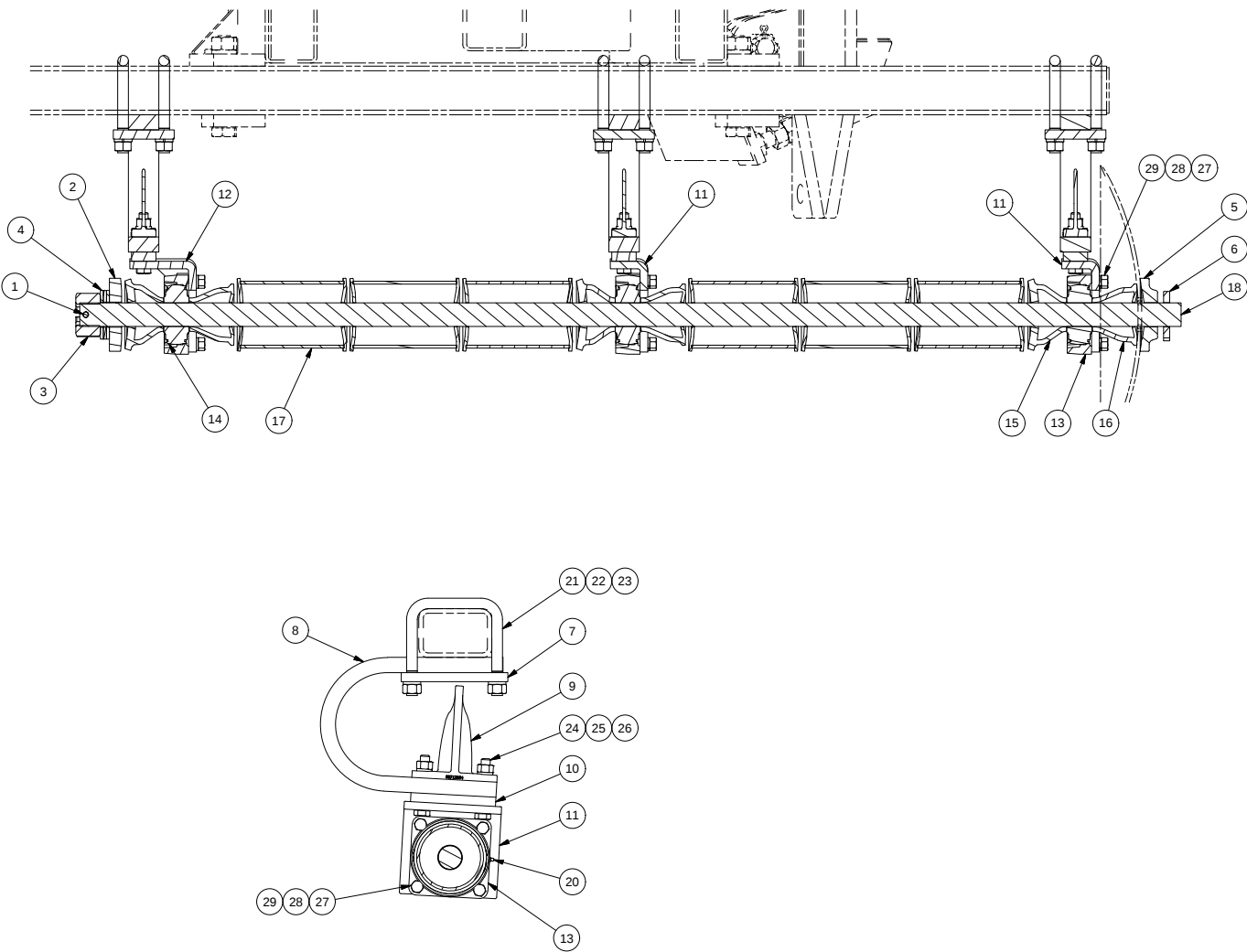
54 BLADES, 16 BEARINGS

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG74	BLADE-PLAIN 26 X .313	26
	EZDG75	BLADE-NOTCHED 26 X .313	26
2	EZDG74	BLADE-PLAIN 26 X .313	24
	EZDG75	BLADE-NOTCHED 26 X .313	24
3	EZDG76	BLADE-PLAIN 24 X .256	2
4	EZDG149	BLADE-PLAIN 20 X .236	2

Farm King



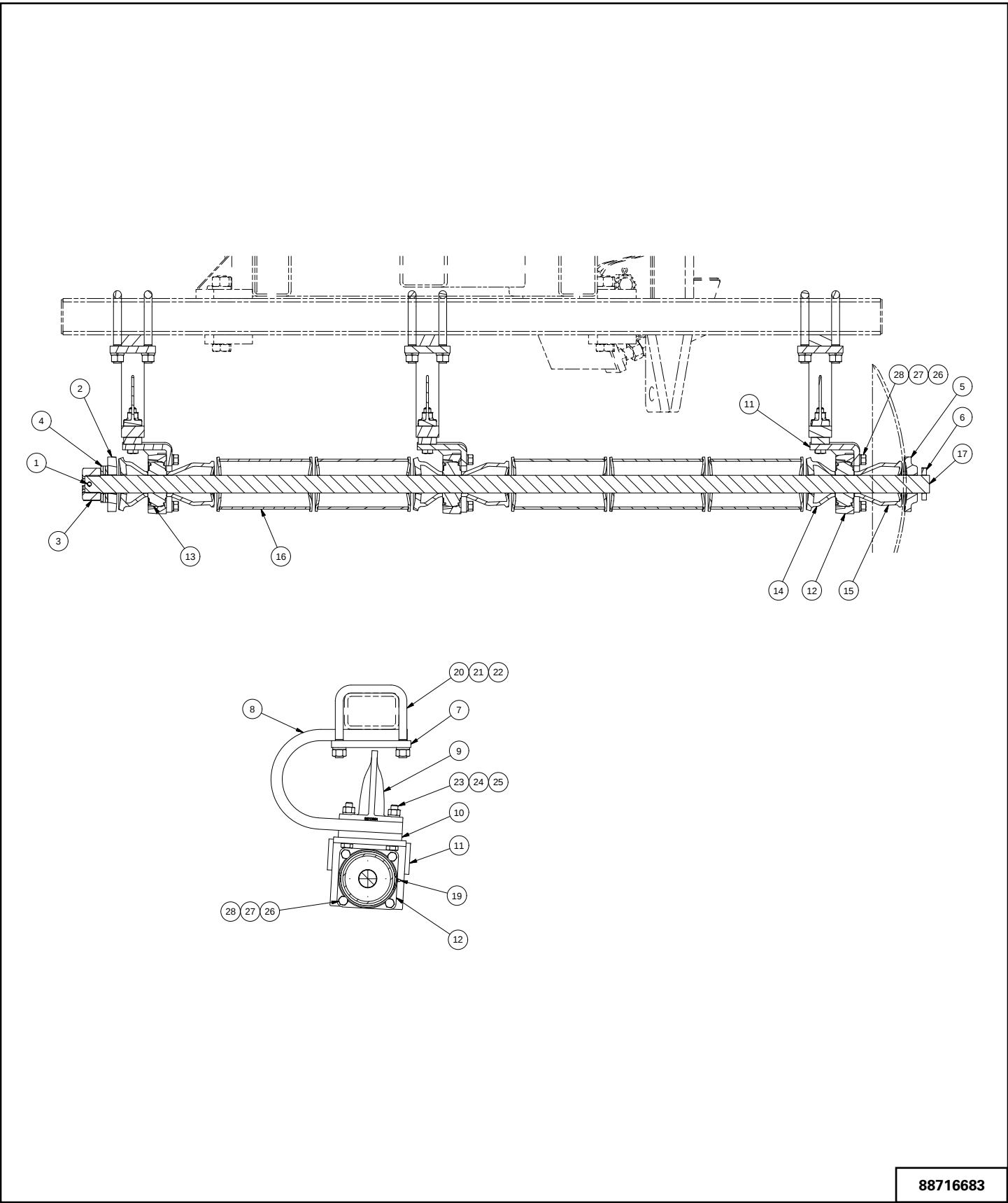
GANG COMPONENTS, 9 IN. SPACING, 410WSS BEARINGS



88716659

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG10310	PIN-LOCK DISC GANG	AR
2	EZDG13184	WASHER HD 6 X 2 X 1	AR
3	EZDG12252	NUT - HEAVY HEX SLOTTED 2 NC GR5 ZNCR	AR
4	EZDG89	WASHER-SHIM	AR
5	EZDGA5370	PLATE-END DISC GANG	AR
6	EZDG5371	PLATE-HOLDING LUG DISC GANG	AR
7	EZDGA5327	HANGER MOUNT-STONE FLEX	AR
8	EZDG5313	HANGER-STONE FLEX	AR
9	88712866	STOP - STONEFLEX HANGER	AR
10	EZDG5332	SHIM - STONE FLEX HANGER	AR
11	EZDG5324	PLATE - 410WSS BEARING STD MTG	AR
12	EZDGA5341	BRACKET - 410WSS BEARING LG STD MTG	AR
13	EZDG96	214 & 410 SERIES (HOUSING)	AR
14	EZDG108	EZ410WSS BRG-LESS	AR
15	EZDGA106	SPOOL - WA SHORT	AR
16	EZDGA136	SPOOL - WA LONG	AR
17	EZDGA100	SPOOL-W.A. FULL 9IN SPACING	AR
18	88713313	BOLT - GANG BLADE 53"	AR
	88713314	BOLT - GANG BLADE 62.75"	AR
	88713315	BOLT - GANG BLADE 72"	AR
	88713293	BOLT - GANG BLADE 81"	AR
	88713316	BOLT - GANG BLADE 90.5"	AR
	88713321	BOLT - GANG BLADE 99.75"	AR
	88713322	BOLT - GANG BLADE 109"	AR
	88713323	BOLT - GANG BLADE 118.5"	AR
20	EZ10GN1	FITTING 1/4 UNF ST ZERK	AR
21	EZDG5378	U-BOLT 7/8 X 6 X 7-1/8	AR
22	EZBW087L	WASHER LOCK 7/8X1-1/2X1/4 ZNCR	AR
23	EZBN087	NUT HEX 7/8 GR5 ZNCR	AR
24	EZB075045	BOLT HEX 3/4 NC X 4-1/2	AR
25	EZBW075L	WASHER LOCK 3/4X1-1/4X3/16ZNCR	AR
26	EZBN075	NUT HEX 3/4 NC GR5 ZNCR	AR
27	EZB062022	BOLT - HEX NC 5/8 X 2-1/4	AR
28	EZBW062L	LW P 5/8 86505602	AR
29	EZBN062	N G5 P 5/8 86505599	AR
30	86050059	STD GREASE - LITHIUM	AR

GANG COMPONENTS, 10.5 IN. SPACING, 410WSS BEARINGS



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG10310	PIN-LOCK DISC GANG	AR
2	EZDG13184	WASHER HD 6 X 2 X 1	AR
3	EZDG12252	NUT - HEAVY HEX SLOTTED 2 NC GR5 ZNCR	AR
4	EZDG89	WASHER-SHIM	AR
5	EZDGA5370	PLATE-END DISC GANG	AR
6	EZDG5371	PLATE-HOLDING LUG DISC GANG	AR
7	EZDGA5327	HANGER MOUNT-STONE FLEX	AR
8	EZDG5313	HANGER-STONE FLEX	AR
9	88712866	STOP - STONEFLEX HANGER	AR
10	EZDG5332	SHIM - STONE FLEX HANGER	AR
11	EZDGA5341	BRACKET - 410WSS BEARING LG STD MTG	AR
12	EZDG96	214 & 410 SERIES (HOUSING)	AR
13	EZDG108	EZ410WSS BRG-LESS	AR
14	EZDGA106	SPOOL - WA SHORT	AR
15	EZDGA131	LG HALF SPOOL-10-1/2(410WSS)	AR
16	EZDGA101	SPOOL-W.A. FULL 10.5IN SPACING	AR
17	88717434	BOLT - GANG BLADE 50"	AR
	88713326	BOLT - GANG BLADE 61"	AR
	88713327	BOLT - GANG BLADE 71.5"	AR
	88713329	BOLT - GANG BLADE 93"	AR
	88713330	BOLT - GANG BLADE 104"	AR
	88715644	BOLT - GANG BLADE 115.5"	AR
	88713332	BOLT - GANG BLADE 125.75"	AR
19	EZ10GN1	FITTING 1/4 UNF ST ZERK	AR
20	EZDG5378	U-BOLT 7/8 X 6 X 7-1/8	AR
21	EZBW087L	WASHER LOCK 7/8X1-1/2X1/4 ZNCR	AR
22	EZBN087	NUT HEX 7/8 GR5 ZNCR	AR
23	EZB075045	BOLT HEX 3/4 NC X 4-1/2	AR
24	EZBW075L	WASHER LOCK 3/4X1-1/4X3/16ZNCR	AR
25	EZBN075	NUT HEX 3/4 NC GR5 ZNCR	AR
26	EZB062022	BOLT - HEX NC 5/8 X 2-1/4	AR
27	EZBW062L	LW P 5/8 86505602	AR
28	EZBN062	N G5 P 5/8 86505599	AR
29	86050059	STD GREASE - LITHIUM	AR

Technical drawing of a mechanical assembly, likely a conveyor system component, showing three views and numbered callouts (1-30).

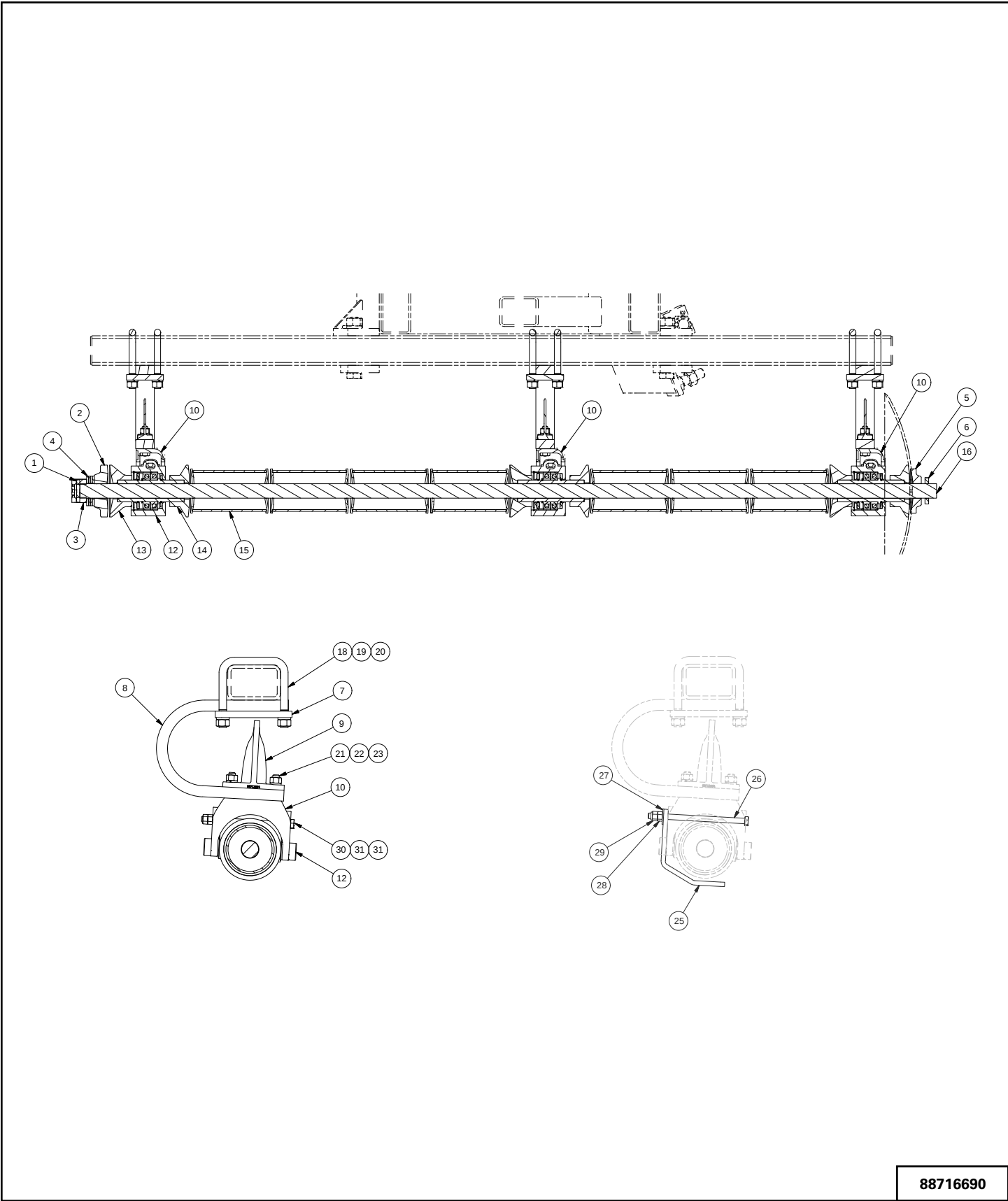
The top view shows a long horizontal assembly with three vertical support structures. Callouts include: 1, 2, 3, 4, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30.

The bottom left view is a side view of the assembly, showing the vertical support structure and the horizontal beam. Callouts include: 1, 2, 3, 4, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30.

The bottom right view is a front view of the assembly, showing the horizontal beam and the vertical support structure. Callouts include: 1, 2, 3, 4, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30.

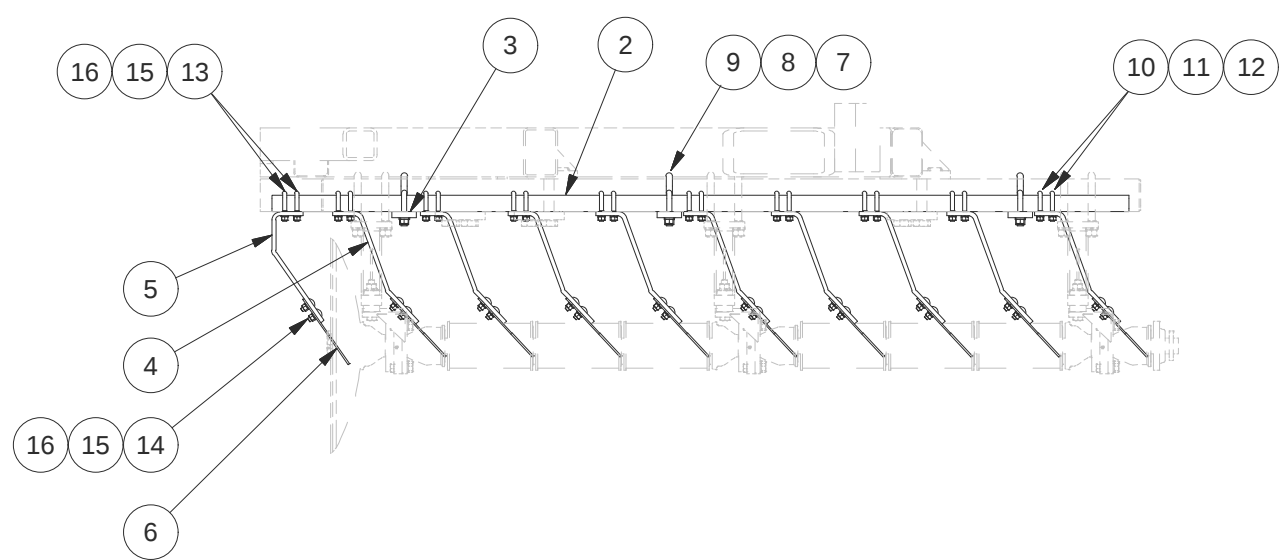
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG10310	PIN-LOCK DISC GANG	AR
2	EZDG13184	WASHER HD 6 X 2 X 1	AR
3	EZDG12252	NUT - HEAVY HEX SLOTTED 2 NC GR5 ZNCR	AR
4	EZDG89	WASHER-SHIM	AR
5	EZDGA5370	PLATE-END DISC GANG	AR
6	EZDG5371	PLATE-HOLDING LUG DISC GANG	AR
7	EZDGA5327	HANGER MOUNT-STONE FLEX	AR
8	EZDG5313	HANGER-STONE FLEX	AR
9	88712866	STOP - STONEFLEX HANGER	AR
10	88712729	BRKT- BEARING MTG STD	AR
11	EZDGB9900	BEARING-ASSY HSG DISC GANG	AR
12	EZDGA10563	WASHER-SPOOL SHORT HALF	AR
13	EZDGA103	SPOOL-HALF W.A 4.5X4-3/16	AR
14	EZDGA101	SPOOL-W.A. FULL 10.5IN SPACING	AR
15	88717434	BOLT - GANG BLADE 50"	AR
	88713326	BOLT - GANG BLADE 61"	AR
	88713327	BOLT - GANG BLADE 71.5"	AR
	88713329	BOLT - GANG BLADE 93"	AR
	88713330	BOLT - GANG BLADE 104"	AR
	88713331	BOLT - GANG BLADE 114.75"	AR
	88713332	BOLT - GANG BLADE 125.75"	AR
17	EZDG5378	U-BOLT 7/8 X 6 X 7-1/8	AR
18	EZBW087L	WASHER LOCK 7/8X1-1/2X1/4 ZNCR	AR
19	EZBN087	NUT HEX 7/8 GR5 ZNCR	AR
20	EZB075035	BOLT HEX 3/4 NC X 3-1/2	AR
21	EZBW075L	WASHER LOCK 3/4X1-1/4X3/16ZNCR	AR
22	EZBN075	NUT HEX 3/4 NC GR5 ZNCR	AR
23	86050059	STD GREASE - LITHIUM	AR
24	EZDG10590	PLATE-SAND GUARD STONE FLEX	AR
25	EZB062110	BOLT HEX CAP 5/8NCX11 GR5 ZNCR	AR
26	EZBW17506812F	WSHR FLT 11/16X1-3/4X1/8 ZNCR	AR
27	EZBN062L	NUT LOCK NYLON 5/8 NC	AR
28	EZBN062	N G5 P 5/8 86505599	AR
29	EZBN062	N G5 P 5/8 86505599	AR
30	EZB062100	BOLT HEX CAP 5/8NCX10 GR5 ZNCR	AR

GANG COMPONENTS, 10.5 IN. SPACING, T2-215 INTERLOCKING BEARINGS



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDG10310	PIN-LOCK DISC GANG	AR
2	EZDG13180	WASHER- KEYED 7 X 2	AR
3	EZDG12252	NUT - HEAVY HEX SLOTTED 2 NC GR5 ZNCR	AR
4	EZDG89	WASHER-SHIM	AR
5	EZDGA5370	PLATE-END DISC GANG	AR
6	EZDG5371	PLATE-HOLDING LUG DISC GANG	AR
7	EZDGA5327	HANGER MOUNT-STONE FLEX	AR
8	EZDG5313	HANGER-STONE FLEX	AR
9	88712866	STOP - STONEFLEX HANGER	AR
10	88712729	BRKT- BEARING MTG STD	AR
	88712731	BRKT- BEARING MTG OFFSET	AR
12	EZDGB9940	BEARING-ASSY HSG DISC GANG	AR
13	EZDG9919	SHORT HALF SPOOL 10.5 - 12 IN	AR
14	EZDG9917	SPOOLS - LG1/2 PRESS ON 10.5" SP	AR
15	EZDGA101	SPOOL-W.A. FULL 10.5IN SPACING	AR
16	88717437	BOLT-GANG BLADE KEY 51-3/4"	AR
	88714295	BOLT-GANG BLADE KEY 62-3/4"	AR
	88714296	BOLT-GANG BLADE KEY 73-1/4"	AR
	88714297	BOLT-GANG BLADE KEY 94-3/4"	AR
	88714298	BOLT-GANG BLADE KEY 105-3/4"	AR
	88714299	BOLT-GANG BLADE KEY 116-1/2"	AR
	88714300	BOLT-GANG BLADE KEY 127-1/2"	AR
18	EZDG5378	U-BOLT 7/8 X 6 X 7-1/8	AR
19	EZBW087L	WASHER LOCK 7/8X1-1/2X1/4 ZNCR	AR
20	EZBN087	NUT HEX 7/8 GR5 ZNCR	AR
21	EZB075035	BOLT HEX 3/4 NC X 3-1/2	AR
22	EZBW075L	WASHER LOCK 3/4X1-1/4X3/16ZNCR	AR
23	EZBN075	NUT HEX 3/4 NC GR5 ZNCR	AR
24	86050059	STD GREASE - LITHIUM	AR
25	EZDG10590	PLATE-SAND GUARD STONE FLEX	AR
26	EZB062110	BOLT HEX CAP 5/8NCX11 GR5 ZNCR	AR
27	EZBW17506812F	WSHR FLT 11/16X1-3/4X1/8 ZNCR	AR
28	EZBN062L	NUT LOCK NYLON 5/8 NC	AR
29	EZBN062	N G5 P 5/8 86505599	AR
30	EZBN062	N G5 P 5/8 86505599	AR
31	EZB062100	BOLT HEX CAP 5/8NCX10 GR5 ZNCR	AR

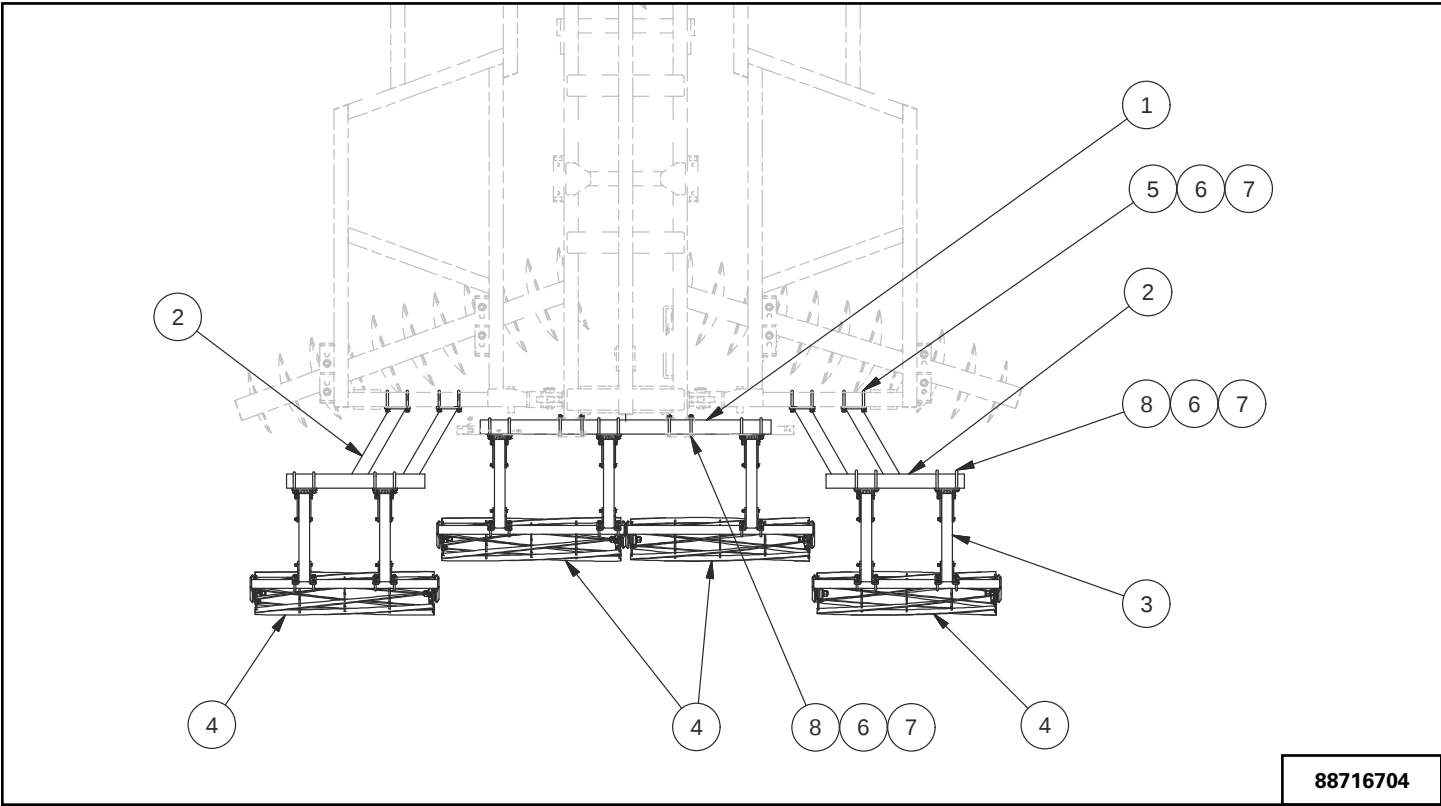
WIDE PAN SCRAPERS



88716692

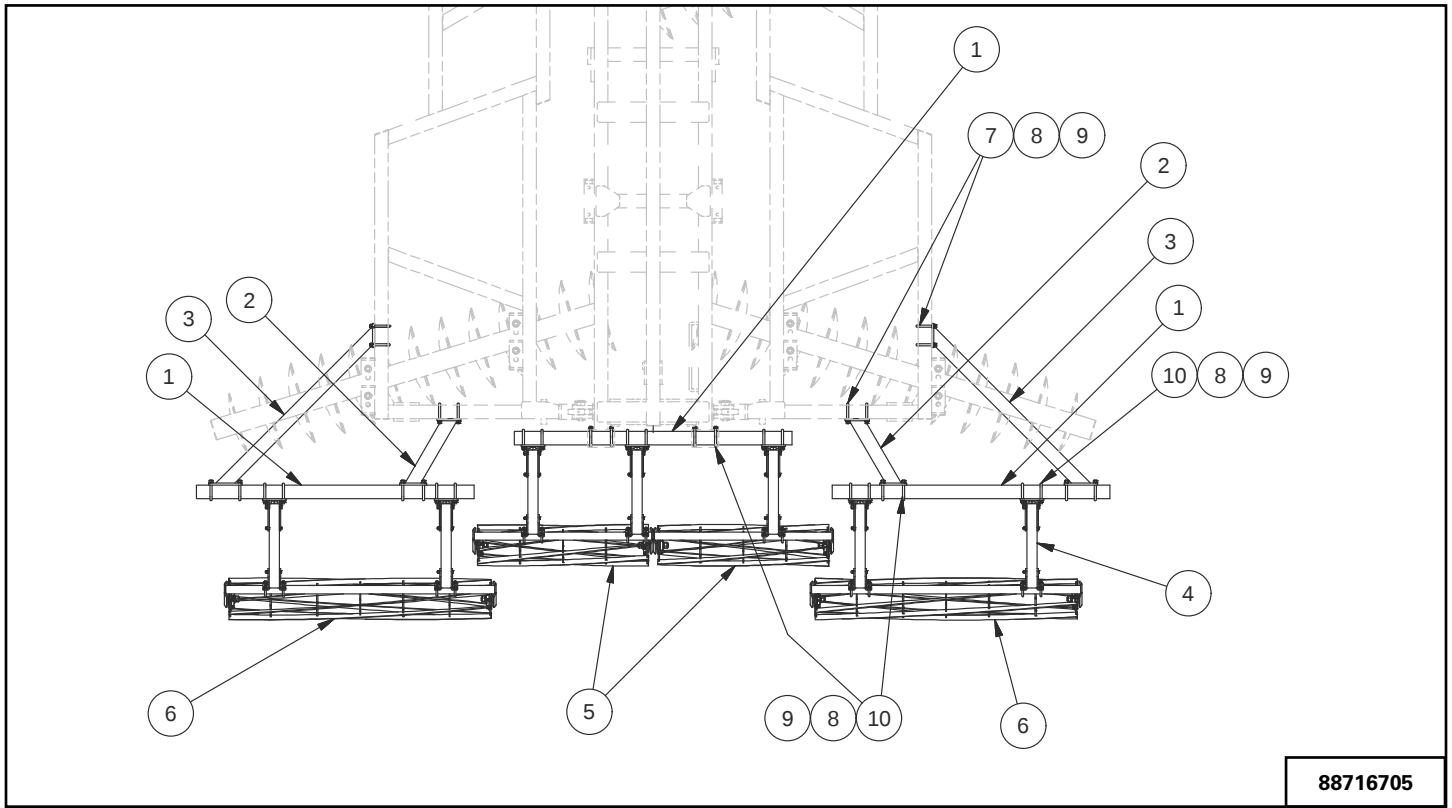
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	EZDS87	TUBE-SCRAPER BAR 87 LG	AR
	EZDS105	TUBE-SCRAPER BAR 105 LG	AR
	EZDS109	TUBE-SCRAPER BAR 109 LG	AR
	EZDS119	TUBE-SCRAPER BAR 119 LG	AR
	EZDS132	TUBE-SCRAPER BAR 132 LG	AR
	EZDS146	TUBE-SCRAPER BAR 146 LG	AR
3	EZDG5296	BRACKET - SCRAPER BAR MTG	AR
4	EZDG7194	PLATE-HOLDER WIDE PAN SCRAPER	AR
5	EZDG7195	HOLDER - WIDE PAN SCRAPER 90	AR
6	EZDG7190	PLATE-SCRAPER WIDE PANTYPE	AR
7	EZDG13145	U-BOLT 3/4-10X6-7/8ZNCR	AR
8	EZBW075L	WASHER LOCK 3/4X1-1/4X3/16ZNCR	AR
9	EZBN075	NUT HEX 3/4 NC GR5 ZNCR	AR
10	EZDG5309	U-BOLT 5/8-11x2-11/16ZNCR	AR
11	EZBW062L	LW P 5/8 86505602	AR
12	EZBN062	N G5 P 5/8 86505599	AR
13	EZDG5308	U-BOLT 1/2-13x2-1/2ZNCR	AR
14	EZB050012C	BOLT-CARRIAGE .50 UNC X 1.25	AR
15	EZBW050L	WASHER LOCK 1/2X7/8X1/8 ZNCR	AR
16	EZBN050	NUT HEX 1/2 NC ZNCR	AR

ROLLING BASKET, 16.5 FT.



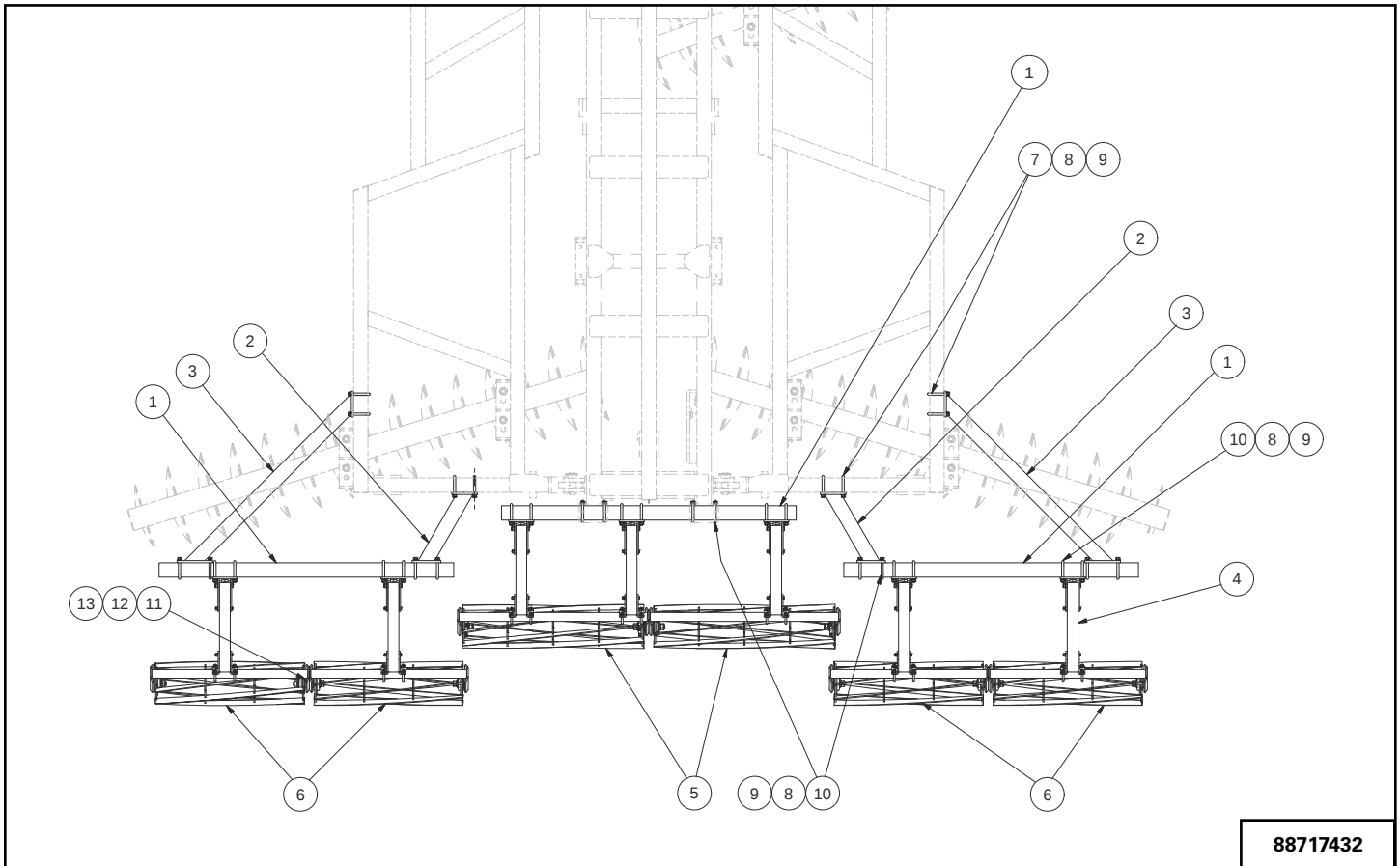
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716405	TUBE - BASKET MOUNT	1
2	88716392	BRACKET-W.A. ROLLING BASKET MOUNT	2
3	88715613	ARM-ASSY BASKET MTG	7
4	88715606	BASKET-ASSY 12 DIA X 4.25 FT	4
5	EZPL83773	UBOLT-5/8X5.5X6.06X1.5 GR5 PL	8
6	EZBW062L	LW P 5/8 86505602	52
7	EZBN062	N G5 P 5/8 86505599	52
8	EZDG6080	SQUARE BEND U-BOLT 5/8 X 4-11/16	18

ROLLING BASKET, 19.5 FT.



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716405	TUBE - BASKET MOUNT	3
2	88716379	BRACKET-W.A. ROLLING BASKET MOUNT INNER	2
3	88716440	BRACKET-W.A. ROLLING BASKET MOUNT OUTER	2
4	88715613	ARM-ASSY BASKET MTG	7
5	88715606	BASKET-ASSY 12 DIA X 4.25 FT	2
6	88715609	BASKET-ASSY 12 DIA X 6.5 FT	2
7	EZPL83773	UBOLT-5/8X5.5X6.06X1.5 GR5 PL	8
8	EZBW062L	LW P 5/8 86505602	68
9	EZBN062	N G5 P 5/8 86505599	68
10	EZDG6080	SQUARE BEND U-BOLT 5/8 X 4-11/16	26

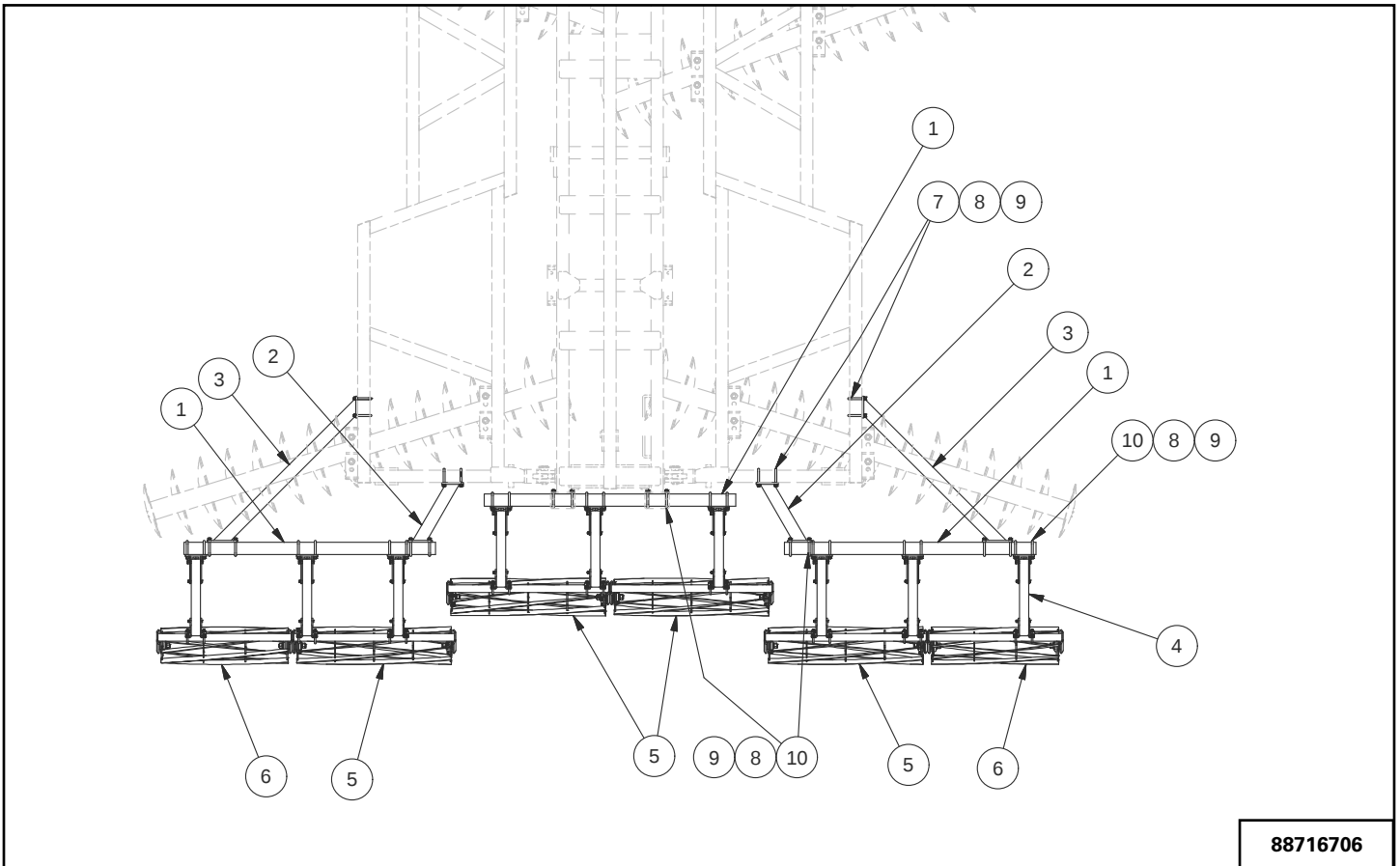
ROLLING BASKET, 21.5 FT.



88717432

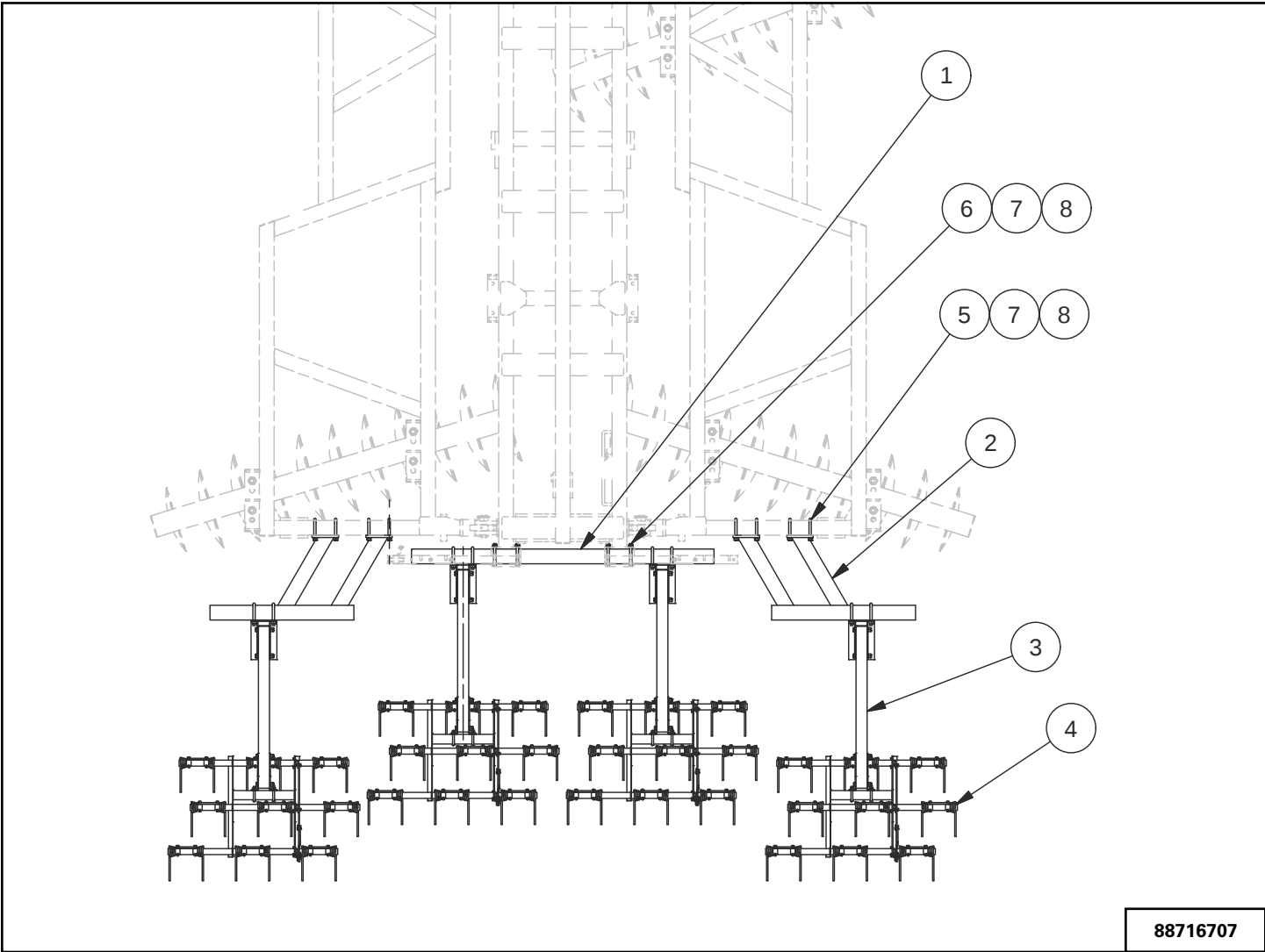
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716405	TUBE - BASKET MOUNT	3
2	88716379	BRACKET-W.A. ROLLING BASKET MOUNT INNER	2
3	88716440	BRACKET-W.A. ROLLING BASKET MOUNT OUTER	2
4	88715613	ARM-ASSY BASKET MTG	7
5	88715606	BASKET-ASSY 12 DIA X 4.25 FT	2
6	88715612	BASKET-ASSY 12 DIA X 3.5 FT	4
7	EZPL83773	UBOLT-5/8X5.5X6.06X1.5 GR5 PL	8
8	EZBW062L	LW P 5/8 86505602	68
9	EZBN062	N G5 P 5/8 86505599	68
10	EZDG6080	SQUARE BEND U-BOLT 5/8 X 4-11/16	26
11	EZB050012C	BOLT-CARRIAGE .50 UNC X 1.25	6
12	EZBW050F	FLATWASHER - 1/2" SAE PLATED	6
13	EZBN050L	NUT HEX LOCK NYL 1/2 NC ZNCR	6

ROLLING BASKET, 23.5 FT.



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716405	TUBE - BASKET MOUNT	3
2	88716379	BRACKET-W.A. ROLLING BASKET MOUNT INNER	2
3	88716440	BRACKET-W.A. ROLLING BASKET MOUNT OUTER	2
4	88715613	ARM-ASSY BASKET MTG	9
5	88715606	BASKET-ASSY 12 DIA X 4.25 FT	4
6	88715612	BASKET-ASSY 12 DIA X 3.5 FT	2
7	EZPL83773	UBOLT-5/8X5.5X6.06X1.5 GR5 PL	8
8	EZBW062L	LW P 5/8 86505602	76
9	EZBN062	N G5 P 5/8 86505599	76
10	EZDG6080	SQUARE BEND U-BOLT 5/8 X 4-11/16	30

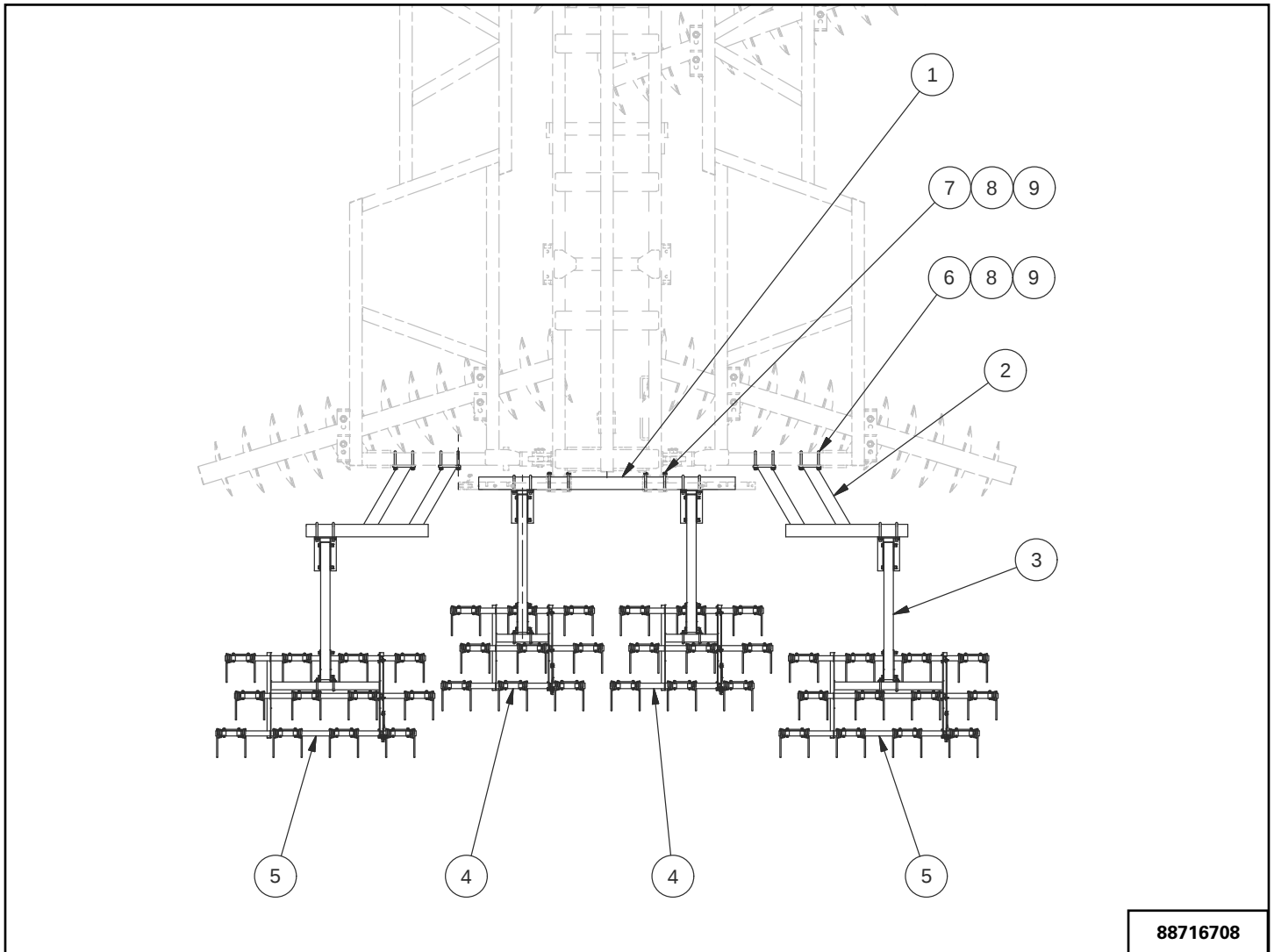
HARROW, 16.5 FT.



88716707

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716405	TUBE - BASKET MOUNT	1
2	88716392	BRACKET-W.A. ROLLING BASKET MOUNT	2
3	920082	HITCH-EZH301	4
4	88716635	HARROW - ASSY 51 3	4
5	EZPL83773	UBOLT-5/8X5.5X6.06X1.5 GR5 PL	8
6	EZDG6080	SQUARE BEND U-BOLT 5/8 X 4-11/16	4
7	EZBW062L	LW P 5/8 86505602	24
8	EZBN062	N G5 P 5/8 86505599	24

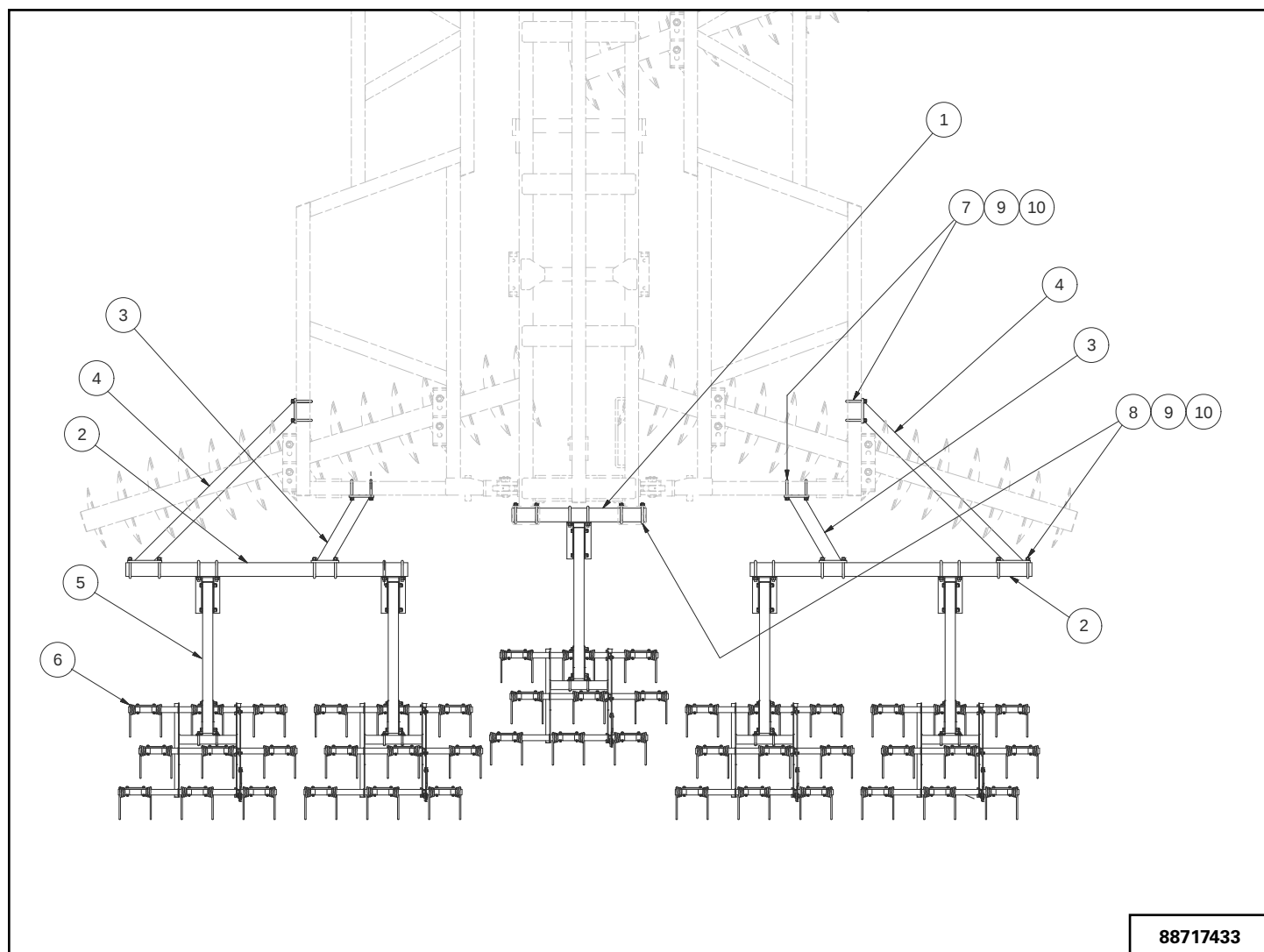
HARROW, 19.5 FT.



88716708

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716405	TUBE - BASKET MOUNT	1
2	88716392	BRACKET-W.A. ROLLING BASKET MOUNT	2
3	920082	HITCH-EZH301	4
4	88716635	HARROW - ASSY 51 3	2
5	88716665	HARROW - ASSY 69 3	2
6	EZPL83773	UBOLT-5/8X5.5X6.06X1.5 GR5 PL	8
7	EZDG6080	SQUARE BEND U-BOLT 5/8 X 4-11/16	4
8	EZBW062L	LW P 5/8 86505602	24
9	EZBN062	N G5 P 5/8 86505599	24

HARROW, 21.5 FT.



88717433

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	88716424	TUBE - BASKET MOUNT	1
2	88716405	TUBE - BASKET MOUNT	2
3	88716379	BRACKET-W.A. ROLLING BASKET MOUNT INNER	2
4	88716440	BRACKET-W.A. ROLLING BASKET MOUNT OUTER	2
5	920082	HITCH-EZH301	5
6	88716635	HARROW - ASSY 51 3	5
7	EZPL83773	UBOLT-5/8X5.5X6.06X1.5 GR5 PL	8
8	EZDG6080	SQUARE BEND U-BOLT 5/8 X 4-11/16	12
9	EZBW062L	LW P 5/8 86505602	40
10	EZBN062	N G5 P 5/8 86505599	40

This technical drawing illustrates a 12-channel cable assembly, likely for a medical device. The assembly consists of a central cable (1) branching into two main horizontal sections. Each section contains six channels, each with a cable (2) and a connector (3). The connectors are labeled 4, 5, 6, 7, 8, and 9. The cables are labeled 10 and 11. The drawing includes a detailed view of the cable assembly and a smaller, simplified view of the same assembly.

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Farm King



WARRANT

WARRANTY.....165

Farm King



WARRANTY

BASE LIMITED WARRANTY

Farm King provides this warranty only to original retail purchasers of its products. Farm King warrants to such purchasers that all Farm King manufactured parts and components used and serviced as provided for in the Operator's Manual shall be free from defects in materials and workmanship for a period following delivery to the original retail purchaser of three (3) years. This limited warranty applies only to those parts and components manufactured by Farm King. Parts and components manufactured by others are subject to their manufacturer's warranties, if any.

100 % Parts and Labor are covered for the first year.

100 % Parts only, are covered for the second year.

50 % Parts only, are covered for the third year.

Farm King will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Farm King within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Parts must be returned through the selling representative and the buyer must prepay transportation charges.

Farm King will not be responsible for repairs or replacements that are necessitated, in whole or part, by the use of parts not manufactured by or obtained from Farm King. Under no circumstances are component parts warranted against normal wear and tear. There is no warranty on product pump seals, product pump bearings, rubber product hoses, pressure gauges, or other components that require replacement as part of normal maintenance.

Farm King warrants that the following disc gang bearing parts used and serviced as provided for in the Operator's Manual shall be free from defects in materials and workmanship for an extended period following delivery to the original retail purchaser.

410WSS bearings are covered for three (3) years. Coverage for the 2nd and 3rd year (12-36 months) is limited to part replacement only. Labour is not included.

T2-215 bearings are covered for seven (7) years. Extended coverage (12-84 months) is limited to replacement of ball bearings and seals only. Labour and associated bearing parts are not included.

REPAIR PARTS LIMITED WARRANTY

Farm King warrants genuine Farm King replacement parts purchased after the expiration of the Farm King Limited Warranty, and used and serviced as provided for in the Operator's Manual, to be free from defects in materials or workmanship for a period of thirty (30) days from the invoice date for the parts. Farm King will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Farm King within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Such parts must be shipped to the Farm King factory at the purchaser's expense.

COMMERCIAL USE

Warranty for commercial (other than bona fide farmers), rental, or custom use is limited to 100% parts and labor for ninety (90) days.

WHAT IS NOT COVERED

Under no circumstances does this limited warranty cover any components or parts that have been subject to the following: negligence; alteration or modification not approved by Farm King; misuse; improper storage; lack of reasonable and proper maintenance, service, or repair; normal wear; damage from failure to follow operating instructions; accident; and/or repairs that have been made with parts other than those manufactured, supplied, and / or authorized by Farm King.

WARRANTY REQUIREMENTS

To be covered by warranty, each new product must be registered with Farm King within thirty (30) days of delivery to original retail purchaser. If the customer decides to purchase replacement components before the warranty disposition of such components is determined, Farm King will bill the customer for such components and then credit the replacement invoice for those components later determined to be covered by this limited warranty. Any such replacement components that are determined not to be covered by this limited warranty will be subject to the terms of the invoice and shall be paid for by the purchaser.

EXCLUSIVE EFFECT OF WARRANTY AND LIMITATION OF LIABILITY

TO THE EXTENT PERMITTED BY LAW, FARM KING DISCLAIMS ANY WARRANTIES, REPRESENTATIONS, OR PROMISES, EXPRESS OR IMPLIED, AS TO THE QUALITY, PERFORMANCE, OR FREEDOM FROM DEFECT OF THE COMPONENTS AND PARTS COVERED BY THIS WARRANTY AND NOT SPECIFICALLY PROVIDED FOR HEREIN.

TO THE EXTENT PERMITTED BY LAW, FARM KING DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ON ITS PRODUCTS COVERED HEREIN, AND DISCLAIMS ANY RELIANCE BY THE PURCHASER ON FARM KING'S SKILL OR JUDGMENT TO SELECT OR FURNISH GOODS FOR ANY PARTICULAR PURPOSE. THE PURCHASER'S ONLY AND EXCLUSIVE REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON FARM KING'S PRODUCTS ARE THOSE SET FORTH HEREIN. IN NO EVENT SHALL FARM KING BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BY WAY OF EXAMPLE ONLY AND NOT LIMITATION, LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE, OR COST OF REPLACEMENT OF RENTAL EQUIPMENT). IN NO EVENT SHALL FARM KING'S CONTRACT OR WARRANTY LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT. (Note that some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusion may not apply to you.) This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

Farm King neither assumes nor authorizes any person or entity, including its selling representatives, to assume any other obligations or liability in connections with the sale of covered equipment, or to make any other warranties, representations, or promises, express or implied, as to the quality, performance, or freedom from defect of the components and parts covered herein. No one is authorized to alter, modify, or enlarge this limited warranty, or its exclusions, limitations and reservations.

Corrections of defects and improper workmanship in the manner, and for the applicable time periods, provided for herein shall constitute fulfillment of all responsibilities of Farm King to the purchaser, and Farm King shall not be liable in negligence, contract, or on any other basis with respect to the subject equipment.

This limited warranty is subject to any existing conditions of supply which may directly affect Farm King's ability to obtain materials or manufacturer replacement parts.

Buhler Industries Inc. reserves the right to make improvements in design or changes in specifications to its products at anytime, without incurring any obligation to owners of units previously sold.

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