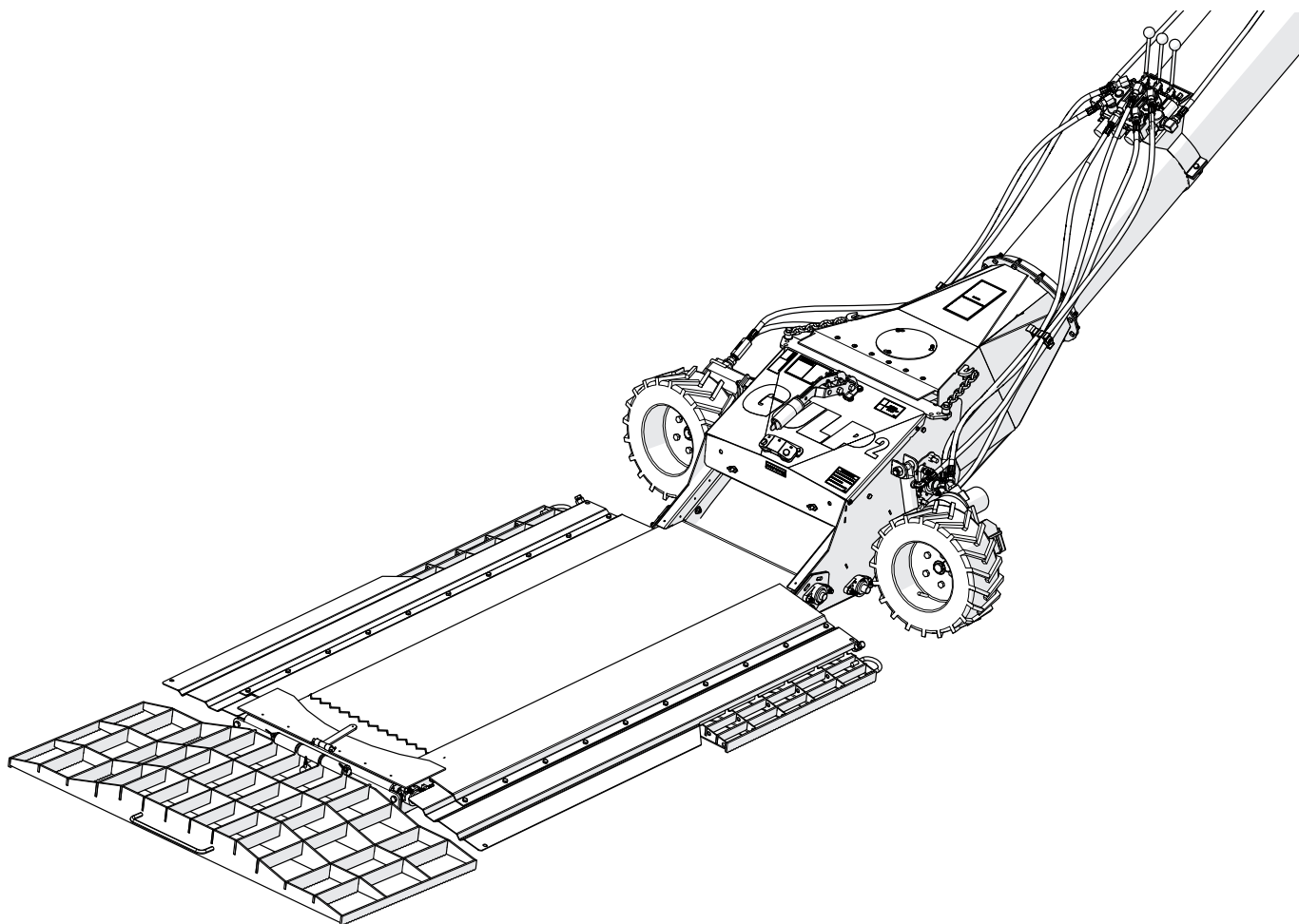




GULP2 HOPPER

MKX130 AND MKX160 MODELS

ASSEMBLY & OPERATION



Original Instructions



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: 30962 R2

Revised: 29/5/2017



This product has been designed and constructed according to general engineering standards^a. Other local regulations may apply and must be followed by the operator. We strongly recommend that all personnel associated with this equipment be trained in the correct operational and safety procedures required for this product. Periodic reviews of this manual with all employees should be standard practice. For your convenience, we include this sign-off sheet so you can record your periodic reviews.

[illegible]

- a. Standards include organizations such as the American Society of Agricultural and Biological Engineers, American National Standards Institute, Canadian Standards Association, International Organization for Standardization, EN Standards, and/or others.

New in this Manual

The following changes have been made in this release of the manual:

- Section 3.4.7. Attach the End Ramp (130/160) on page 31 and Figure 4.1 on page 38 have been updated with a new end pin orientation.
- Section 8. Troubleshooting on page 57 has been updated with additional information for grain leaking from the transition.
- Table 9.1. on page 59 has been updated for 130 auger models.

Engineering has also made design changes to the flashings, end ramp, GULP frame structure, and end plate. Although these particular design changes do not affect the assembly or operation instructions shown in this manual, they do improve the functional performance of the equipment.



TABLE OF CONTENTS

1. Introduction	7
2. Safety	9
2.1. Safety Alert Symbol and Signal Words	9
2.2. General Safety	9
2.3. Additional Safety Information	10
2.4. Rotating Flighting Safety	10
2.5. Moving Conveyor Belt Safety	10
2.6. Rotating Parts Safety	10
2.7. Guards Safety	11
2.8. Hand Winch Safety.....	11
2.9. Work Area Safety	11
2.10. Drives and Lockout Safety	12
2.10.1. Hydraulic Power Safety	12
2.11. Personal Protective Equipment (Required to be Worn)	13
2.11.1. Safety Equipment Required.....	14
2.12. Safety Decals	14
2.12.1. Decal Installation/Replacement	14
2.12.2. Safety Decal Locations and Details	14
3. Assembly	19
3.1. Assembly Safety.....	19
3.2. General Assembly	19
3.3. Verify Auger Assembly	20
3.3.1. Replace the Short Truss Brace (130/160)	20
3.3.2. Install the GULP2 Hopper Lift Arm (130/160).....	22
3.4. GULP2 Hopper Assembly	23
3.4.1. Replace the Swing Tube Flight (130)	23
3.4.2. Remove the Transition (160)	23
3.4.3. Connect the GULP2 Transition to the Swing Tube (130)	23
3.4.4. Connect the GULP2 Transition to the Swing Tube (160)	25
3.4.5. Attach the GULP2 Hopper to the Transition (130/160).....	29
3.4.6. Install the 3-Spool Valve (130/160)	30
3.4.7. Attach the End Ramp (130/160)	31
3.4.8. Connect the Hydraulic Hoses to the 3-Spool Valve (130/160)	32
3.5. Install the Hydraulic Winch (130/160).....	34
4. Transport.....	37
4.1. Transport Safety	37
4.2. Transport Procedure	37
5. Placement	41
5.1. Placement Safety	41
5.2. Placement	41



TABLE OF CONTENTS

6. Operation	43
6.1. Operating Safety.....	43
6.2. Start-up and Break-in	43
6.3. Operator Controls	44
6.4. Operation - Hydraulic Drive	45
6.5. Set GULP2 Belt Speed	45
6.6. Emergency Shutdown	45
6.7. Restarting with a Full Tube	46
6.8. Shutdown.....	46
6.9. Clean Out	46
7. Maintenance.....	47
7.1. Maintenance Safety	47
7.2. Maintenance Intervals	47
7.3. Fluids and Lubricants	48
7.4. Maintenance Procedures.....	48
7.4.1. Visual Inspection.....	48
7.4.2. Hydraulic Hose and Coupler Inspection	48
7.4.3. Machine Greasing.....	48
7.4.4. Conveyor Belt Tension	49
7.4.5. Conveyor Belt Alignment	51
7.4.6. Inspect Belt Lacing	52
7.4.7. Conveyor Belt Replacement	53
8. Troubleshooting	57
9. Appendix	59
9.1. Specifications	59
9.2. Open/Closed-Center Valve Conversion	59
9.3. Tightening O-Ring Fittings.....	60
9.4. Bolt Torque Values	61
Warranty	63

1. Introduction

Thank you for purchasing a Westfield GULP2 Hopper. This equipment will allow safe and efficient operation when you read and follow all of the instructions contained in this manual. With proper care, your GULP2 Hopper will provide you with many years of trouble-free operation.

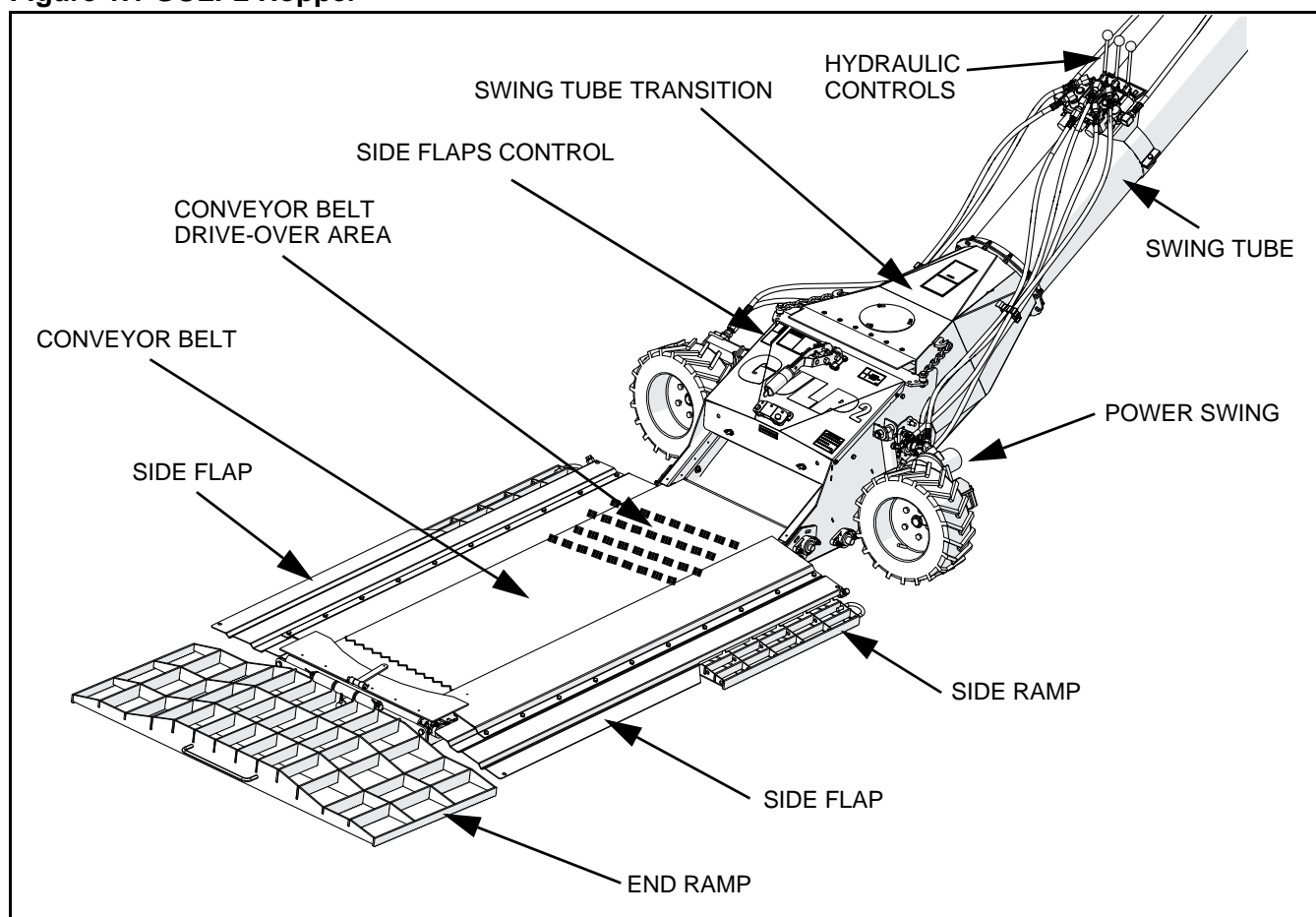
Keep this manual handy for frequent reference and to review with new personnel. A sign-off form is provided on the inside front cover for your convenience. If any information in this manual is not understood or if you need additional information, please contact your local distributor or dealer for assistance.

This manual should be regarded as part of the equipment. Suppliers of both new and second-hand equipment are advised to retain documentary evidence that this manual was provided with the equipment.

This manual describes the assembly and operation of the GULP2 Hopper, used as an accessory on MKX130 and MKX160 grain augers, and is intended as a supplement to your MKX Series Auger Operator Manual. Refer to the appropriate MKX Manual for additional Operating and Maintenance instructions.

Serial Number:	
*Serial number is located on the lower tube.	

Figure 1.1 GULP2 Hopper



2. Safety

2.1. Safety Alert Symbol and Signal Words



This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

SIGNAL WORDS: Note the use of the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.



DANGER Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.



WARNING Indicates a hazardous situation that, if not avoided, could result in serious injury or death.



CAUTION Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.



NOTICE Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

2.2. General Safety



The safety information found throughout this complete Safety Section of the manual applies to all safety practices. Additional instructions specific to a certain safety practice (such as Operation Safety), can be found in the appropriate section.

YOU are responsible for the **SAFE** use and maintenance of your equipment. **YOU** must ensure that you and anyone else who is going to work around the equipment understands all procedures and related **SAFETY** information contained in this manual.

Remember, **YOU** are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program. All accidents can be avoided.

- It is the equipment owner, operator, and maintenance personnel's responsibility to read and understand **ALL** safety instructions, safety decals, and manuals and follow them when assembling, operating, or maintaining the equipment.
- Equipment owners must give instructions and review the information initially and annually with all personnel before allowing them to operate this product. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- This equipment is not intended to be used by children.
- Use this equipment for its intended purposes only.
- Do not modify the equipment in any way without written permission from the manufacturer. Unauthorized modification may impair the function and/or safety, and could affect the life of the equipment. Any unauthorized modification of the equipment will void the warranty.



2.3. Additional Safety Information

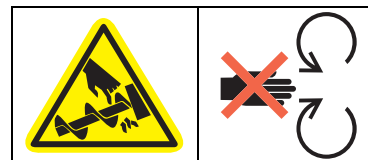


This manual is a supplement to the MKX Series Operator Manual. Please ensure that you have read and understood that manual.

2.4. Rotating Flighting Safety

DANGER

- KEEP AWAY from rotating flighting.
- DO NOT remove or modify flighting guards, doors, or covers. Keep in good working order. Have replaced if damaged.
- DO NOT operate the equipment without all guards, doors, and covers in place.
- NEVER touch the flighting. Use a stick or other tool to remove an obstruction or clean out.
- Shut off and lock out power to adjust, service, or clean.



2.5. Moving Conveyor Belt Safety

WARNING

- DO NOT step on or touch moving conveyor belt.
- Shut off and lock out power to adjust, service, or clean.



2.6. Rotating Parts Safety

WARNING

- Keep body, hair, and clothing away from rotating pulleys, belts, chains, and sprockets.
- Do not operate with any guard removed or modified. Keep guards in good working order.
- Shut off and remove key or lock out power source before inspecting or servicing machine.



2.7. Guards Safety

WARNING

- Install guards to prevent contact with moving parts.
- Do not operate equipment unless all guards are in place.
- Do not walk or step on guards.
- Lock out power before removing a guard.
- Ensure all guards are replaced after performing maintenance.

2.8. Hand Winch Safety



Where equipped:

WARNING

- Inspect lift cable before using. Replace if frayed or damaged. Make sure lift cable is seated properly in cable sheaves and cable clamps are secure.
- Tighten brake lock by turning winch handle clockwise at least two clicks after lowering equipment.
- Lower equipment fully before towing, then rotate winch handle until cable has light tension.
- Do not lubricate winch brake discs.

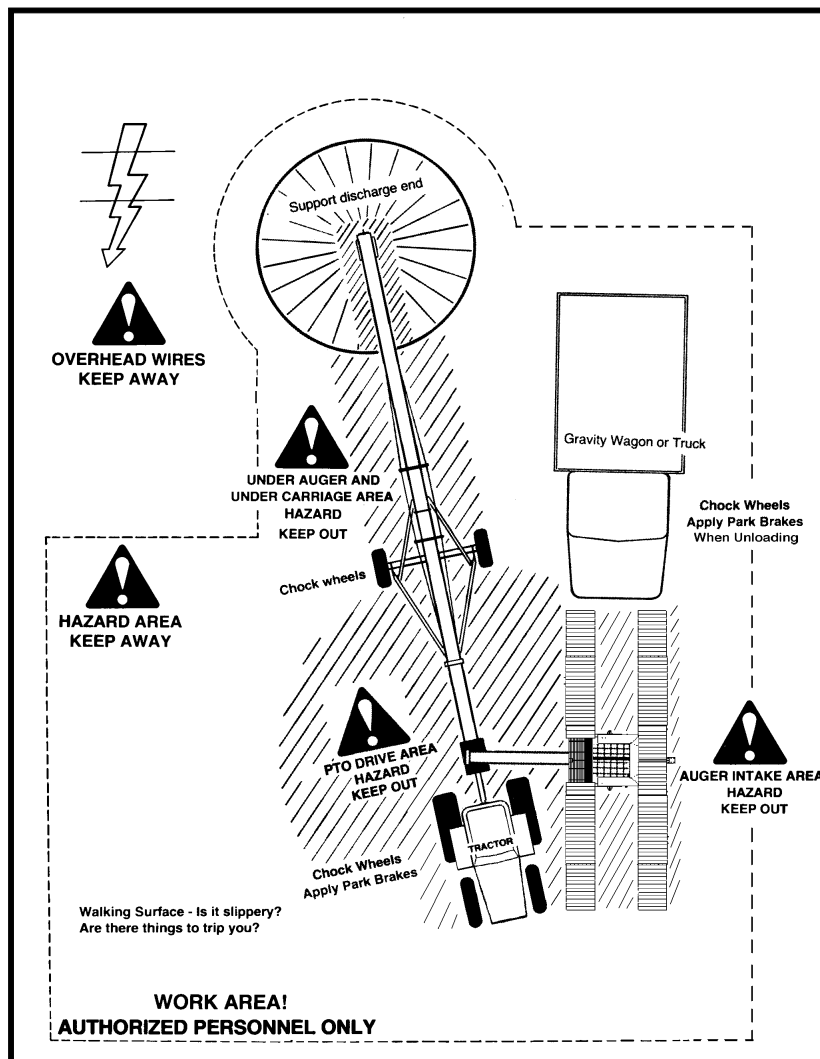
2.9. Work Area Safety

WARNING

- Have another trained person nearby who can shut down the equipment in case of accident.
- The work area should be kept clear of bystanders.
- Keep the work area clean and free of debris.



Figure 2.1



2.10. Drives and Lockout Safety

Inspect the power source(s) before using and know how to shut down in an emergency. Whenever you service or adjust your equipment, make sure you shut down and lock out your power source to prevent inadvertent start-up and hazardous energy release. Know the procedure(s) that applies to your equipment from the following power sources.

2.10.1. Hydraulic Power Safety

WARNING

Power Source

- Refer to the rules and regulations applicable to the power source operating your hydraulic drive.



- Do not connect or disconnect hydraulic lines while system is under pressure.
- Keep all hydraulic lines away from moving parts.
- Escaping hydraulic fluid under pressure will cause serious injury if it penetrates the skin surface (serious infection or toxic reaction can develop). See a doctor immediately if injured.
- Use metal or wood as a backstop when searching for hydraulic leaks and wear proper hand and eye protection.
- Check all hydraulic components are tight and in good condition. Replace any worn, cut, abraded, flattened, or crimped hoses.
- Clean the connections before connecting to equipment.
- Do not attempt any makeshift repairs to the hydraulic fittings or hoses with tape, clamps, or adhesive. The hydraulic system operates under extremely high pressure; such repairs will fail suddenly and create a hazardous and unsafe condition.

Lockout

- Always place all hydraulic controls in neutral and relieve system pressure before disconnecting or working on hydraulic system.

2.11. Personal Protective Equipment (Required to be Worn)

Ear Protection

- Wear ear protection to prevent hearing damage.



Work Gloves

- Wear work gloves to protect your hands from sharp and rough edges.



Steel-Toe Boots

- Wear steel-toe boots to protect feet from falling debris.



Safety Glasses

- Wear safety glasses at all times to protect eyes from debris.



Dust Mask

- Wear a dust mask to prevent breathing potentially harmful dust.



Hard Hat

- Wear a hard hat to help protect your head.



Coveralls

- Wear coveralls to protect skin.



2.11.1. Safety Equipment Required

First-Aid Kit

- Have a properly-stocked first-aid kit available for use should the need arise, and know how to use it.



Fire Extinguisher

- Provide a fire extinguisher for use in case of an accident. Store in a highly visible and accessible place.



2.12. Safety Decals

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available **free of charge** from your distributor, dealer, or factory.

2.12.1. Decal Installation/Replacement

1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the sign backing paper.

2.12.2. Safety Decal Locations and Details

Replicas of the safety decals that are attached to the equipment and their messages are shown in the figure(s) that follow. Safe operation of the equipment requires that you familiarize yourself with the various safety decals and the areas or particular functions that the decals apply to, as well as the safety precautions that must be taken to avoid serious injury, death, or damage.

Westfield reserves the right to update safety decals without notice. Safety decals may not be exactly as shown.

Table 2.1 Safety Decal Description, Detail, and Location Information

Number	Description	Location	Detail
20803	Missing guard hazard (Warning)	Figure 2.2	Figure 2.3
20804	Entanglement hazard (Warning)	Figure 2.2	Figure 2.4
20806	High pressure fluid hazard (Warning)	Figure 2.2	Figure 2.5
20813	Rotating flying hazard (Danger)	Figure 2.2	Figure 2.6
21838	Pinch point (Caution)	Figure 2.2	Figure 2.7

Figure 2.2 Safety Decal Locations

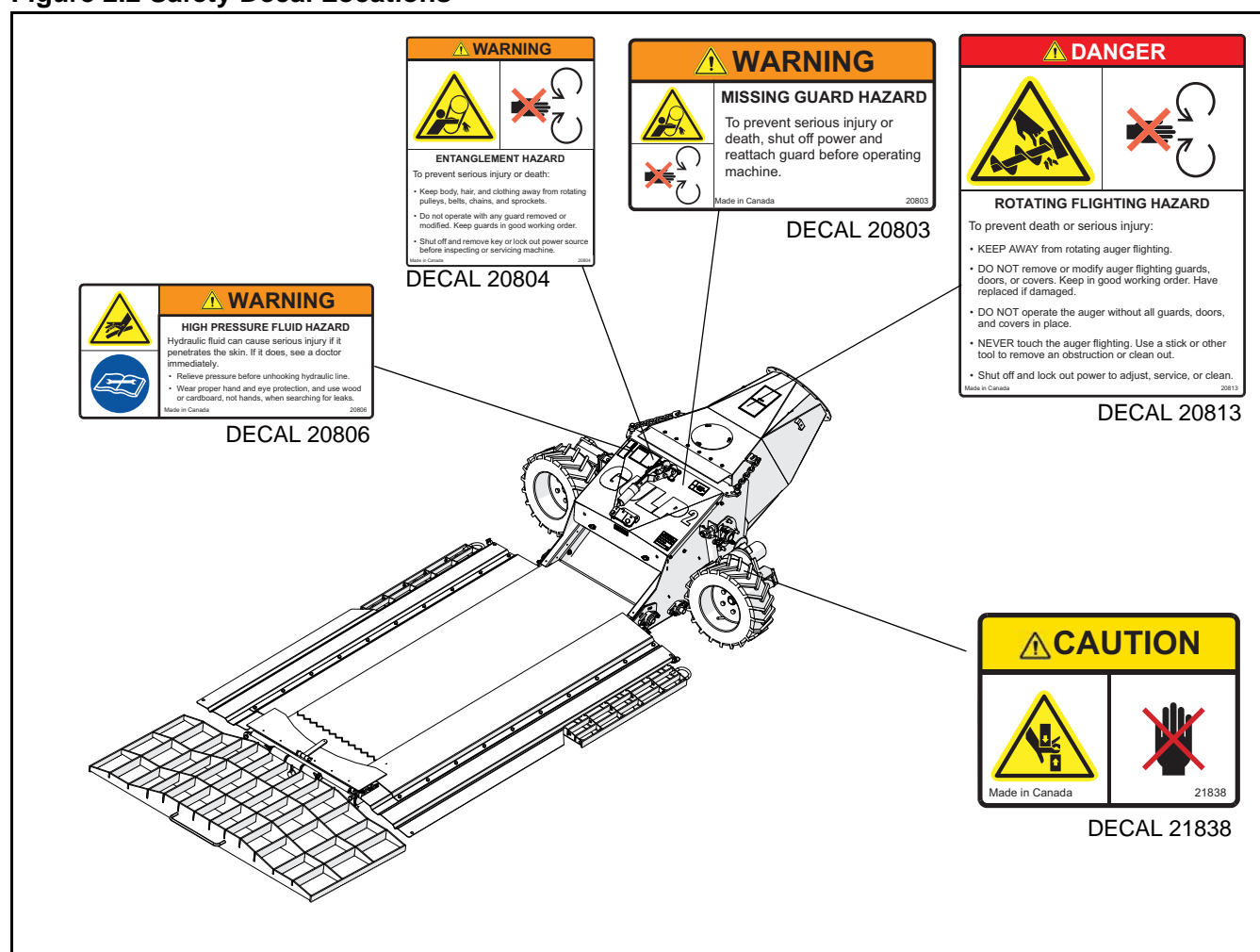


Figure 2.3 Decal #20803



Figure 2.4 Decal #20804



Figure 2.5 Decal #20806

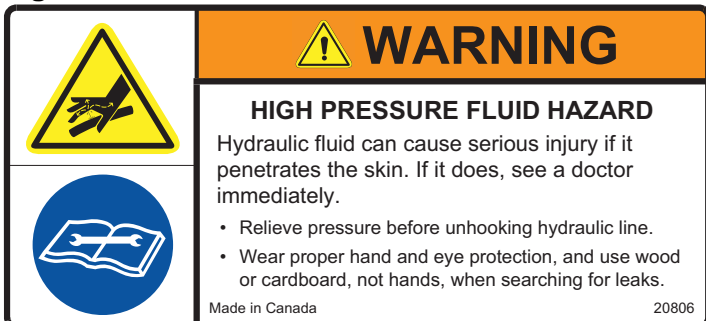


Figure 2.6 Decal #20813

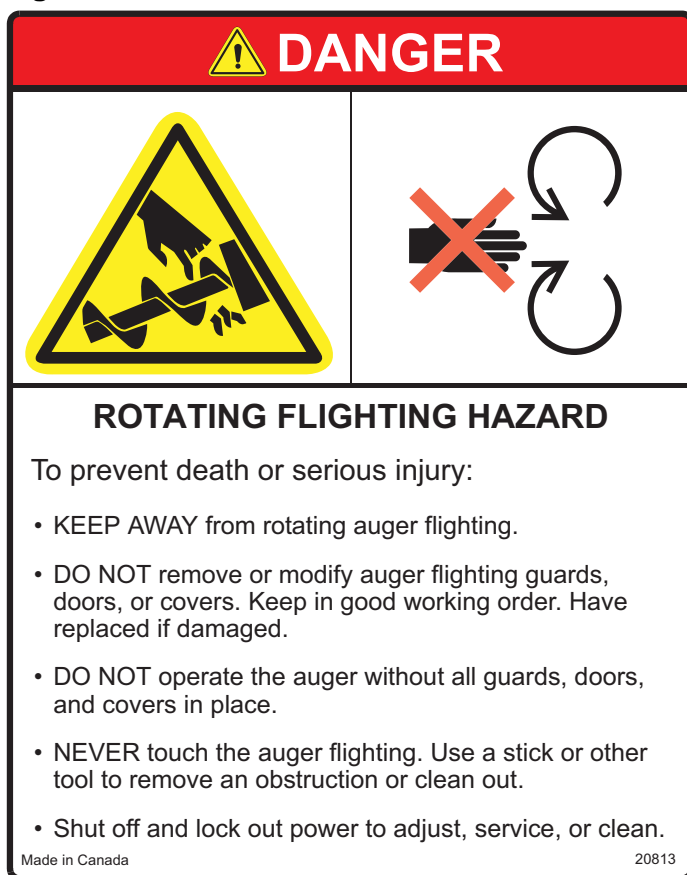


Figure 2.7 Decal #21838



3. Assembly



Before continuing, ensure you have completely read and understood this manual's Safety chapter, in addition to the safety information in the section(s) below.

3.1. Assembly Safety

WARNING

- Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
- Carry out assembly in a large open area with a level surface.
- Always have two or more people assembling the equipment.
- Make sure you have sufficient lighting for the work area.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.

3.2. General Assembly

The GULP2 hopper is available installed as part of the normal assembly of an MKX130 or MKX160 auger, as an option in place of the low profile hopper, or as a kit to replace an already-installed low-profile hopper.

Refer to the appropriate assembly manual for general assembly information, including auger assembly sequence and the standard list of tools required (installation of the GULP2 hopper replaces the installation of the Low Profile hopper in the auger assembly sequence).

See Table 3.1 for a list of assembly procedures required to assemble and install a GULP2 hopper, presented in the sequence that they should be performed.

Table 3.1 GULP2 Assembly Procedures

#	Procedures	Page
1	Verify Auger Assembly	page 20
2	Replace the Swing Tube Flight (130) ^a	page 23
3	Remove the Transition (160) ^a	page 23
4	Connect the GULP2 Transition to the Swing Tube (130) ^a	page 23
5	Connect the GULP2 Transition to the Swing Tube (160)	page 25
6	Attach the GULP2 Hopper to the Transition (130/160)	page 29
7	Install the 3-Spool Valve (130/160)	page 30
8	Attach the End Ramp (130/160)	page 31
9	Connect the Hydraulic Hoses to the 3-Spool Valve (130/160) ^b	page 32
10	Install the Hydraulic Winch (130/160)	page 34

a. Only required for GULP2 kit to replace a low-profile hopper.

b. The 3-Spool hydraulic control valve can be converted between closed center and open center by installing the appropriate conversion plug on the valve. See "Open/Closed-Center Valve Conversion" on page 59.

3.3. Verify Auger Assembly

During the assembly of the auger, the following standard parts must be replaced by parts modified to be compatible with the GULP2 hopper:

- intake-side single cross brace
- lift arm (installed with hydraulic winch)

3.3.1. Replace the Short Truss Brace (130/160)

During the assembly of the auger, ensure that the standard single truss brace tube closest to the boot is replaced by the short truss brace tube listed in Table 3.2 below.

1. Attach the GULP2 lift arm mount to lower-middle tube brackets:



a. for MKX130 use six 1/2" x 1-1/4" bolts and locknuts.



b. for MKX160 use six 1/2" x 1-1/2" bolts and locknuts.



2. MKX130 models: Position the new short truss brace tube between the truss tower and lift arm mount, and secure it with a 1/2" x 1-1/2" bolt and locknut at each end.



3. MKX160 models: Position the new short truss brace tube between the truss tower and lift arm mount. Secure to the joiner plate using a 1/2" x 1-3/4" bolt and locknut. Attach to the lift arm mount using a 3/4" locknut.

Table 3.2 Replacement Truss Brace Tube

Model	Standard Truss Brace Tube	GULP2 Short Truss Brace Tube (Replacement)
130-84	10-20078	10-21489
130-94		
130-114		
160-105	10-20778	10-22417
160-125		

Figure 3.1 MKX130 Short Truss Brace Tube

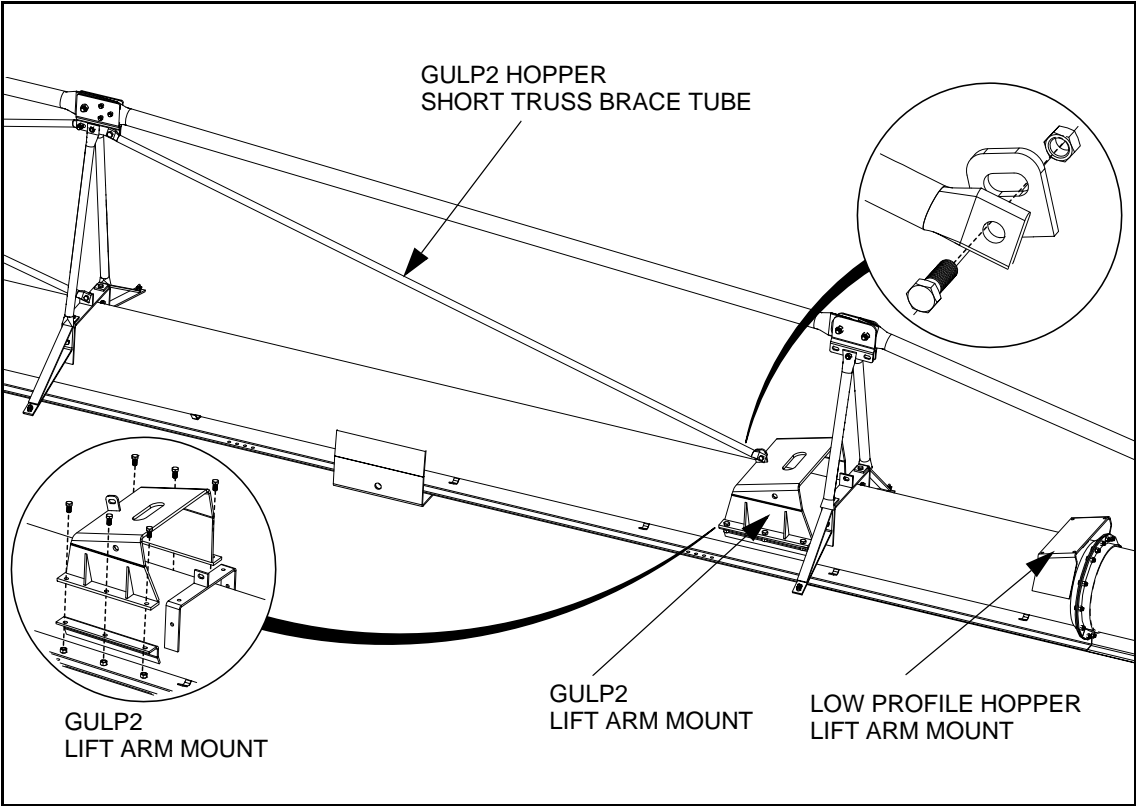
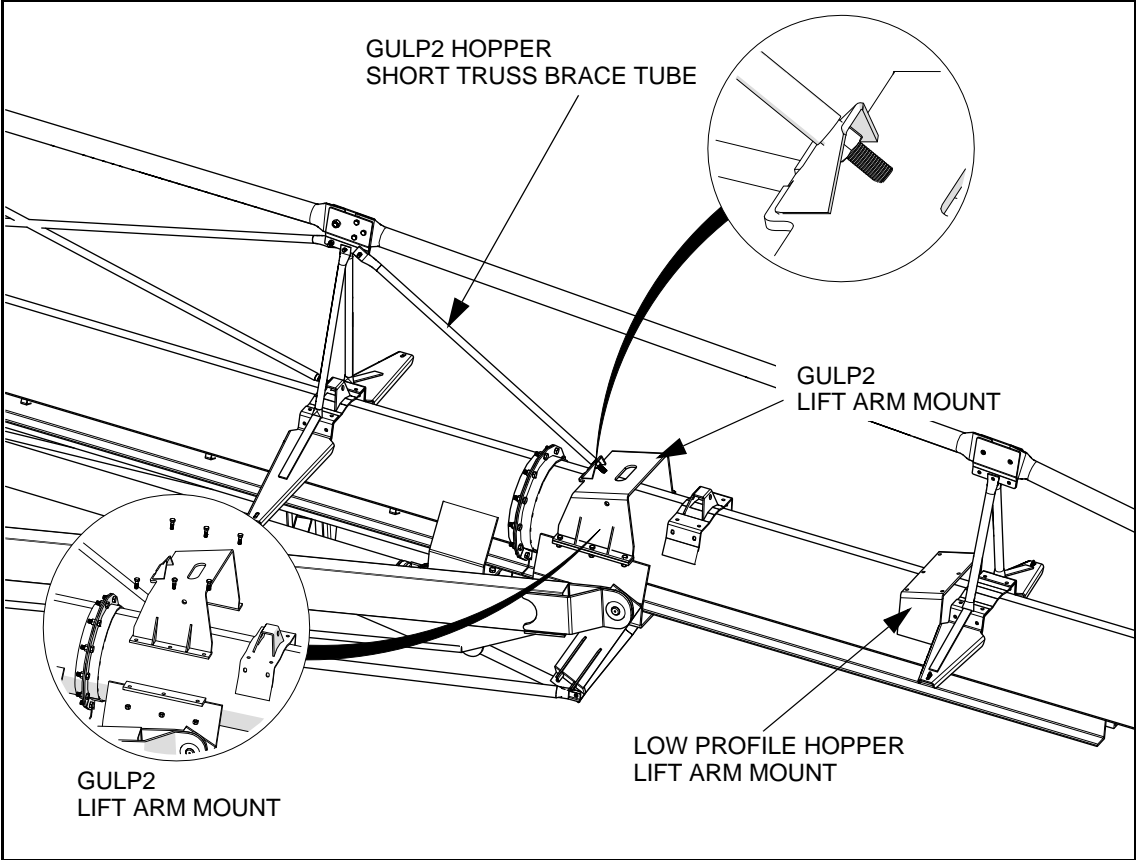


Figure 3.2 MKX160 Short Truss Brace Tube



3.3.2. Install the GULP2 Hopper Lift Arm (130/160)

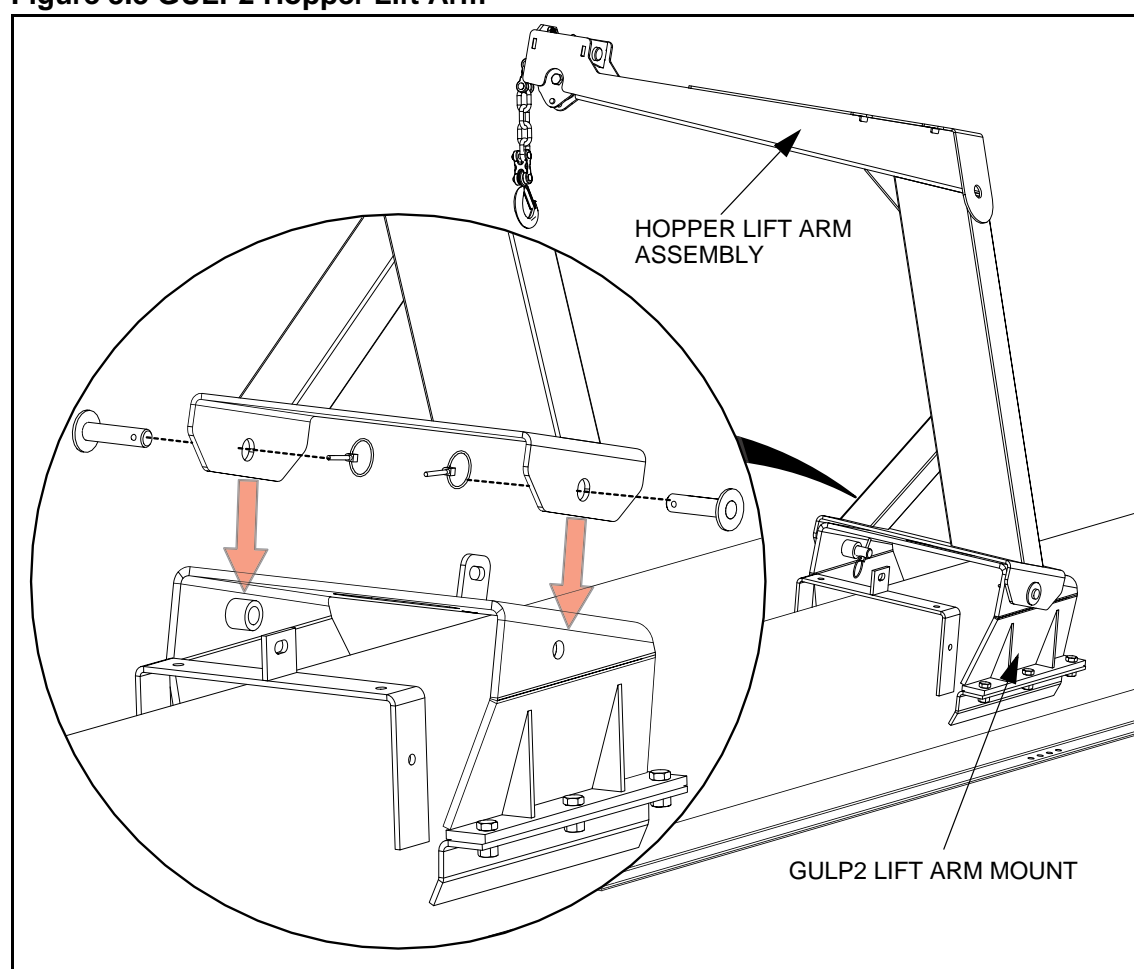
During the assembly of the auger, ensure that the standard lift arm is replaced by the lift arm listed in Table 3.3 below.

Table 3.3 Replacement Lift Arm

Model	Standard Lift Arm	GULP2 Lift Arm (Replacement)
130	10-20030	10-21538
160	10-20663	10-21538

1. Position the hopper lift arm assembly on the GULP2 lift arm mount bracket with the arm overhanging the side of the auger that the hopper will be operating on.
2. Fasten the hopper lift arm assembly to the mount bracket with two lift arm attach pins (10-21575) and linch pins (10-29998).

Figure 3.3 GULP2 Hopper Lift Arm



3.4. GULP2 Hopper Assembly

3.4.1. Replace the Swing Tube Flight (130)

Note: This procedure is required only for the GULP2 kit to replace a low-profile hopper.

1. Remove the low-profile hopper and transition.
2. Lift and support the swing tube.
3. Open the spout head lid, and disconnect the swing flight roller chain coupler.
4. Remove the existing swing flight, and replace it with the GULP2 swing flight (10-22251).
5. Reconnect the swing flight chain coupler.

3.4.2. Remove the Transition (160)

Note: This procedure is required only for the GULP2 kit to replace a low-profile hopper.

1. Remove the low-profile hopper and transition.

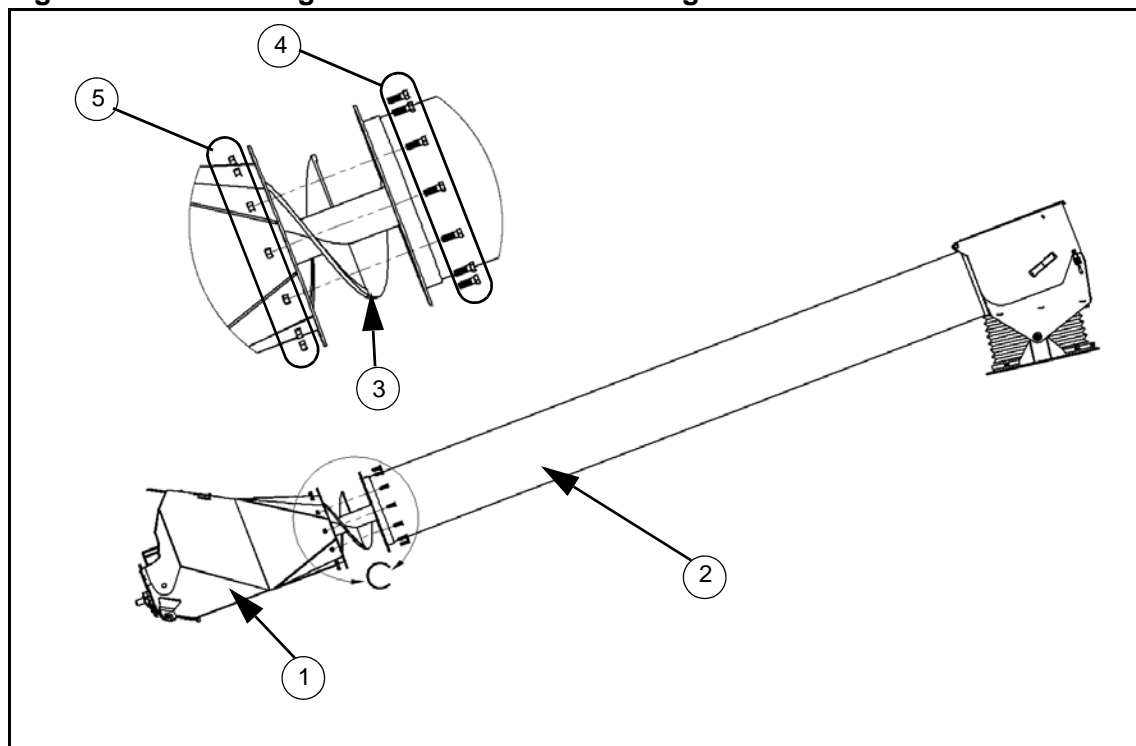
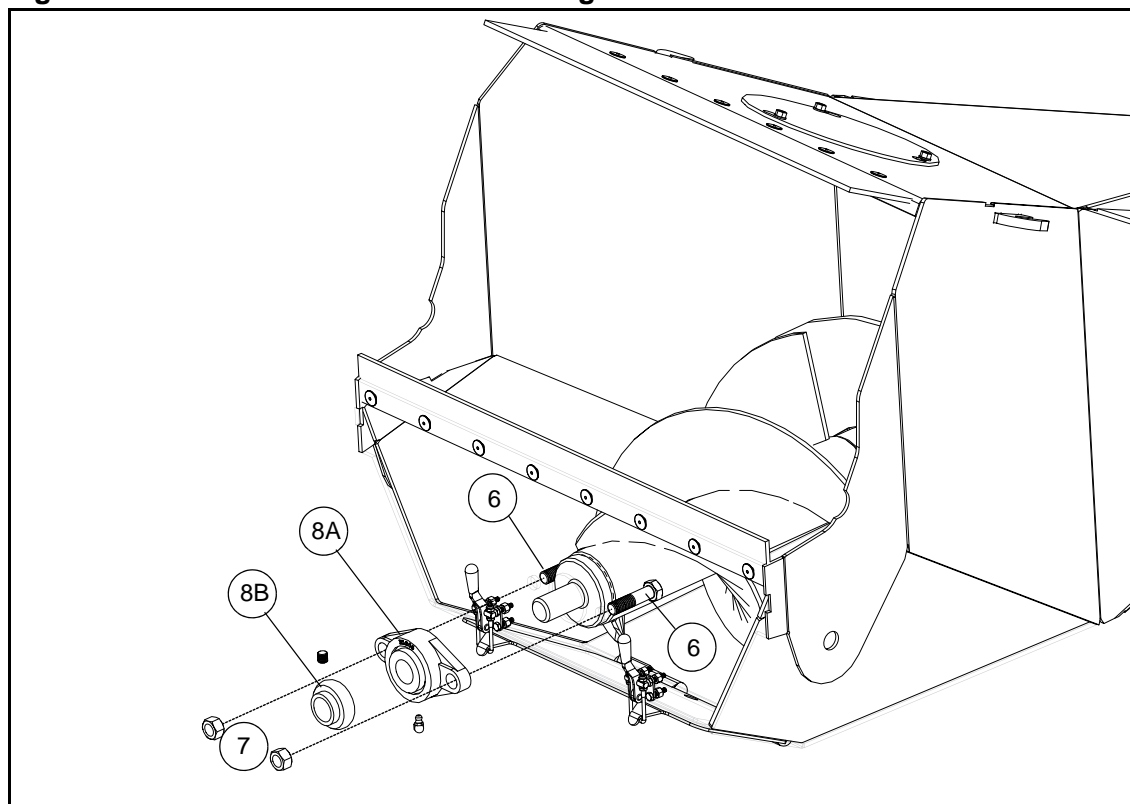
3.4.3. Connect the GULP2 Transition to the Swing Tube (130)

Note: This procedure is only required for the GULP2 kit to replace a low-profile hopper.

1. Attach the GULP2 transition to the swing tube with twelve 7/16" X 1-1/4" bolts and locknuts.
2. Slide the pillow block bearing over the GULP2 swing flight shaft end that protrudes through the transition rear end plate.
3. Secure the pillow block bearing to transition rear end plate with two 1/2" X 2" bolts and locknuts.
4. Slide the 1" eccentric collar over the transition shaft until it is pressed against the pillow block bearing, tighten the collar using a steel punch, then secure the collar with the collar set screws.

Table 3.4 Connecting the Transition to the Swing Tube

Number	Description	Part Number	Quantity
1	Transition	10-21446	1
2	Swing Tube	10-18931	1
3	Swing flight	10-22251	1
4	7/16" X 1-1/4" bolt GR 8	10-18698	12
5	7/16" locknut	10-19598	12
6	1/2" X 2" bolt	10-27816	2
7	1/2" locknut	10-19599	2
8A	Pillow block bearing	0300013	1
8B	1" collar		1

Figure 3.4 Connecting the Transition to the Swing Tube**Figure 3.5 Attach the Pillow Block Bearing to Transition**

3.4.4. Connect the GULP2 Transition to the Swing Tube (160)

1. Attach the GULP2 transition to the swing tube with twelve 5/8" X 1-1/2" bolts and locknuts.
2. Thoroughly grease two 1-3/4" flat washers, then place them fully onto the end of the swing flight shaft.
3. Place the bushing support onto the swing flight shaft and secure it in place with two 3/8" x 1" bolts, 3/8" flat washers and locknuts.
4. Insert a woodruff key into the swing flight shaft, then slide the u-joint onto the swing flight shaft.
5. Secure the u-joint to the swing flight with a 3/8" set screw, a 5/16" x 2-3/4" bolt and a locknut.
6. Slide the transition flight shaft into the u-joint.
7. Slide the pillow block bearing over the GULP2 swing flight shaft end that protrudes through the transition rear end plate.
8. Secure the pillow block bearing to transition rear end plate with two 1/2" X 2" bolts and locknuts.
9. Slide the 1" eccentric collar over the transition shaft until it is pressed against the pillow block bearing, tighten the collar using a steel punch, then secure the collar with the collar set screws.

Table 3.5 Connecting the Transition to the Swing Tube (160)

Number	Description	Part Number	Quantity
1	Transition	10-22435	1
2	Transition flight	10-22409	1
3	Bushing support	10-20589	1
4	u-joint	10-29293	1
5	1-3/4" flat washers	10-20837	2
6	3/8" x 1" bolts	10-18955	2
7	3/8" flat washers	10-17392	2
8	3/8" locknuts	10-17402	2
9	Woodruff key	10-19224	1
10	3/8" set screw	10-19225	1
11	5/16" x 2-3/4" bolt	10-19965	1
12	5/16" locknut	10-19980	1
13	5/8" X 1-1/2" bolt GR 8	10-19590	12
14	5/8" locknut	10-19600	12
15	1/2" X 2" bolt	10-27816	2
16	1/2" locknut	10-19599	2
17A	Pillow block bearing	0300013	1
17B	1" collar		1

Figure 3.6 Connecting the Swing Tube Flight to the Transition Flight (MKX160)

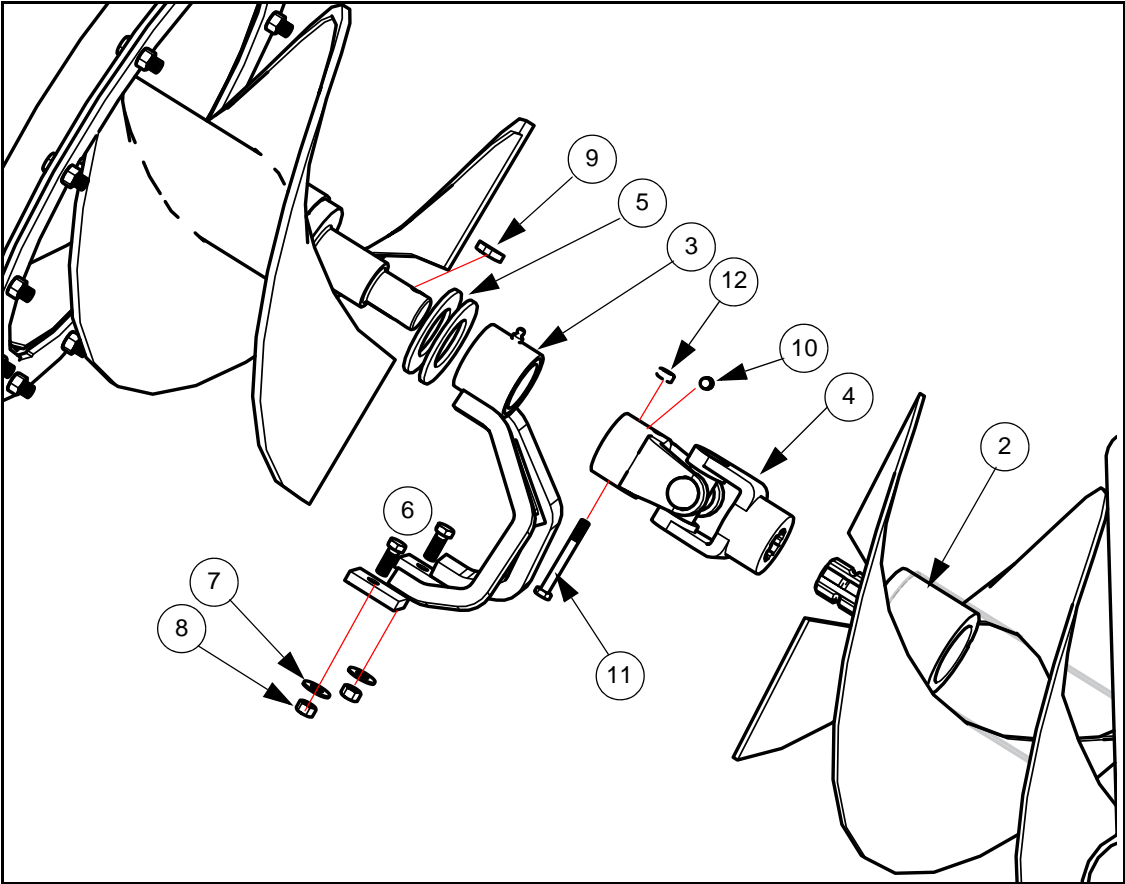
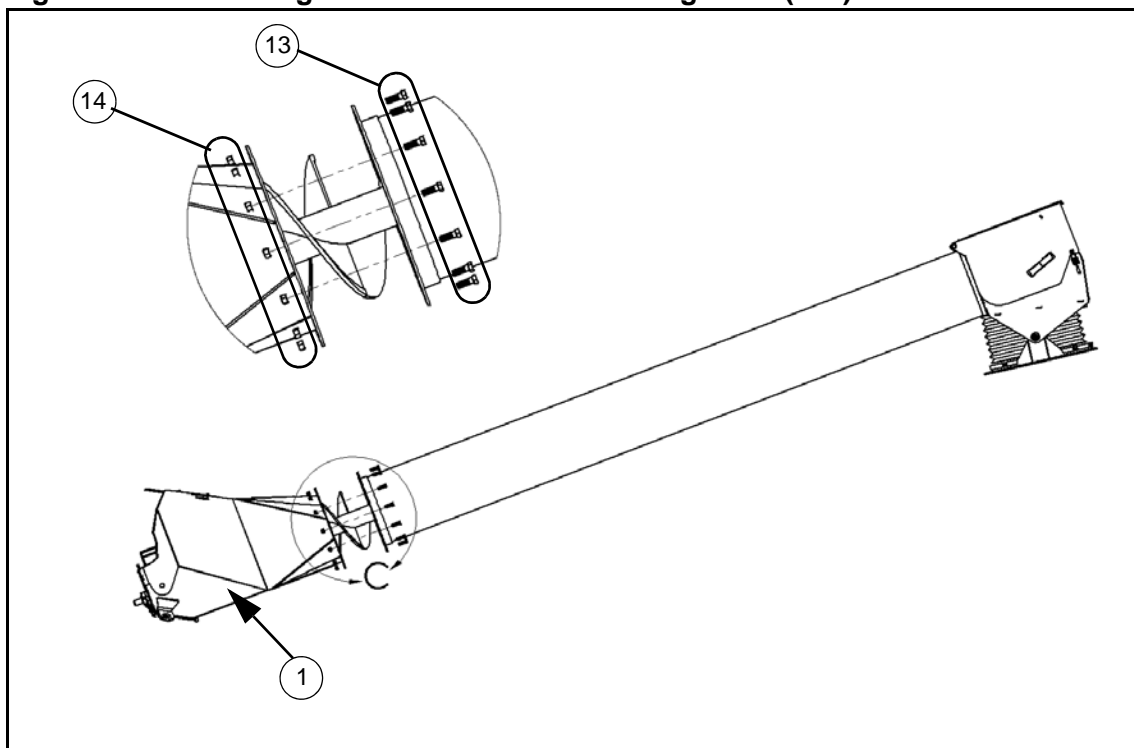
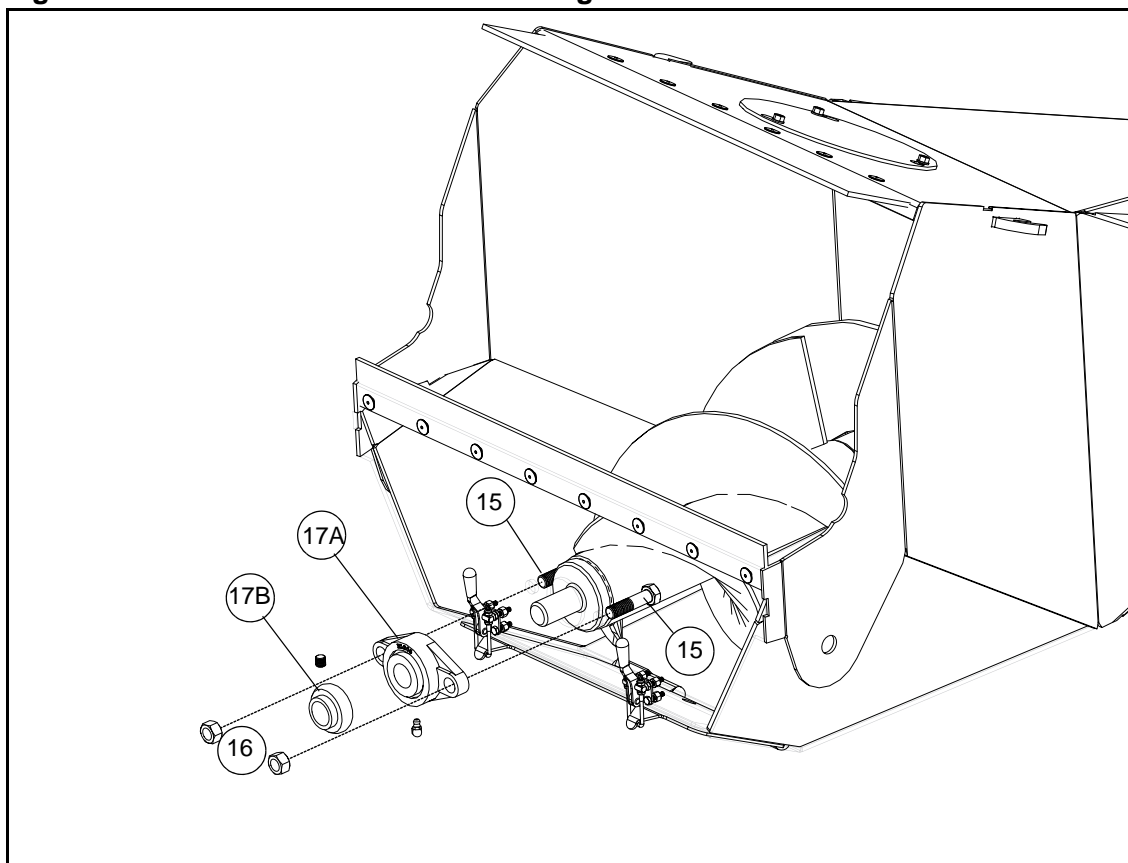


Figure 3.7 Connecting the Transition to the Swing Tube (160)**Figure 3.8 Attach the Pillow Block Bearing to Transition**

3.4.5. Attach the GULP2 Hopper to the Transition (130/160)

1. Raise and support the swing tube spout head on a stand about 50" high.
2. Attach the transition to the GULP2 Hopper with two 3/4" x 2" bolts and locknuts.
3. Raise the ramp-end of the GULP2 into the air until the transition-hopper chains can hook on the chain retainers on the transition.
4. Adjust chain positions so that the GULP2 does not drag on the ground when moving the power swing (this will vary for different bin heights).

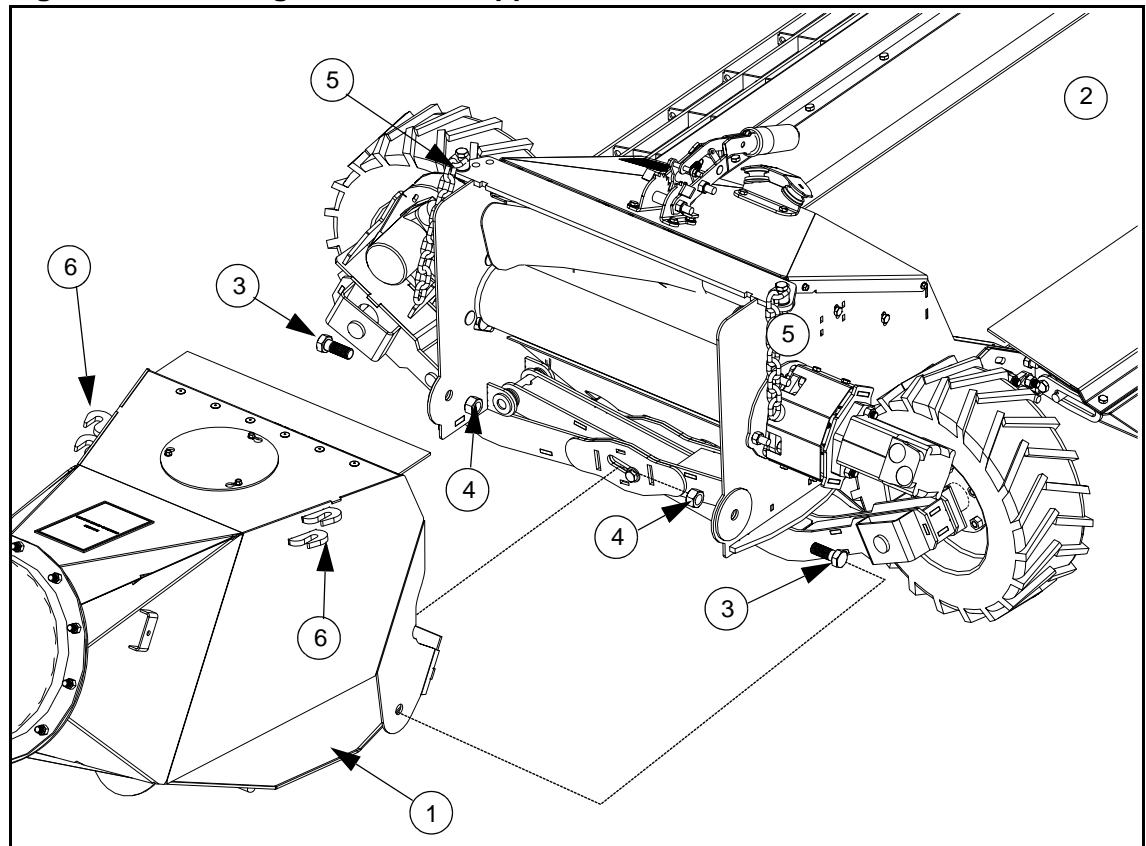
Note: Ensure the hopper sits flat on the ground before driving over.

5. Ensure that the chains lock securely into the chain retainers, and release the ramp-end of the GULP2 hopper.

Table 3.6 Attaching the GULP2 Hopper to the Transition

Number	Description	Part # (130)	Part # (160)	Quantity
1	Transition	10-21446	10-22435	1
2	GULP2 Hopper	10-21445	10-22420	1
3	3/4" X 2" bolt GR8	10-19592	10-19592	2
4	3/4" locknut	10-19601	10-19601	2
5	Transition-hopper chain	10-21488	10-21488	2
6	Chain retainers	---	---	4

Figure 3.9 Attaching the GULP2 Hopper to the Transition



3.4.6. Install the 3-Spool Valve (130/160)

The 3-spool valve mounts on the swing tube using two half-clamp bands.

1. Position the valve mount approximately 24" from transition attach plate.
2. Secure the valve mount to the swing tube:



a. for **MKX130 models**, use two 7/16" x 1-1/4" bolts and locknuts.



b. for **MKX160 models**, use four 7/16" x 1-1/4" bolts and locknuts.



3. **For MKX130 models only:** Position the line-block half clamps 24" from the spout head. Secure the half-clamps to the swing tube using two 7/16" x 1-1/4" bolts and locknuts.

Figure 3.10 Installing the 3-Spool Valve (130/160)

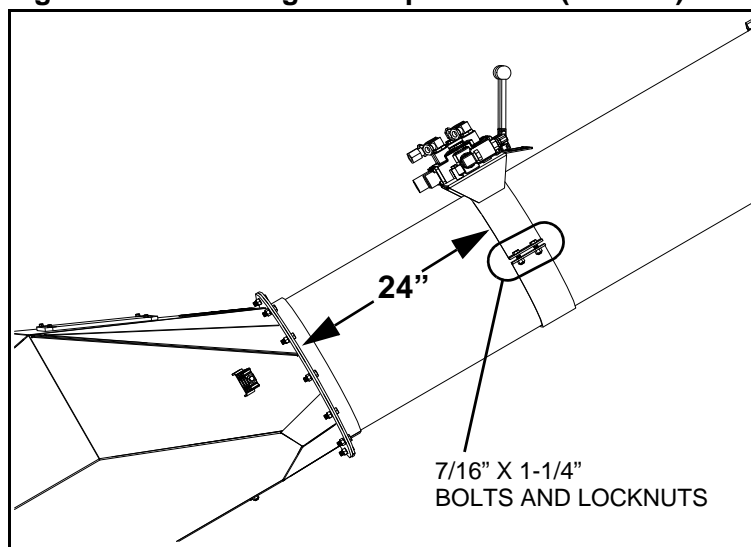
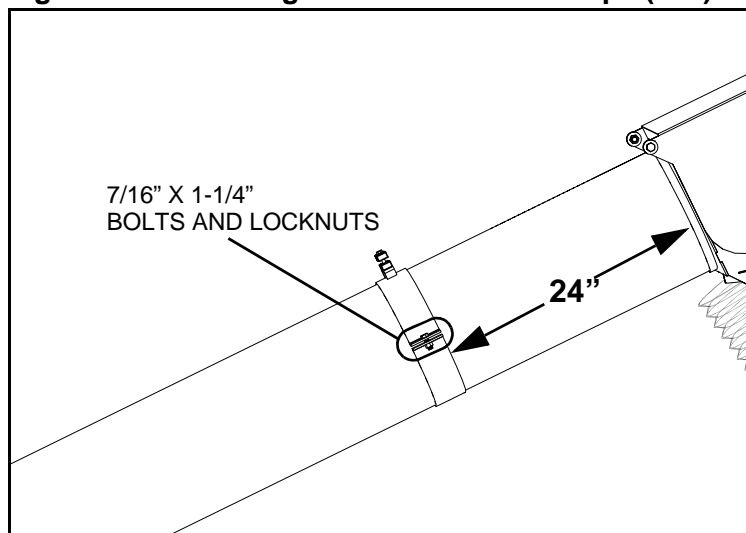


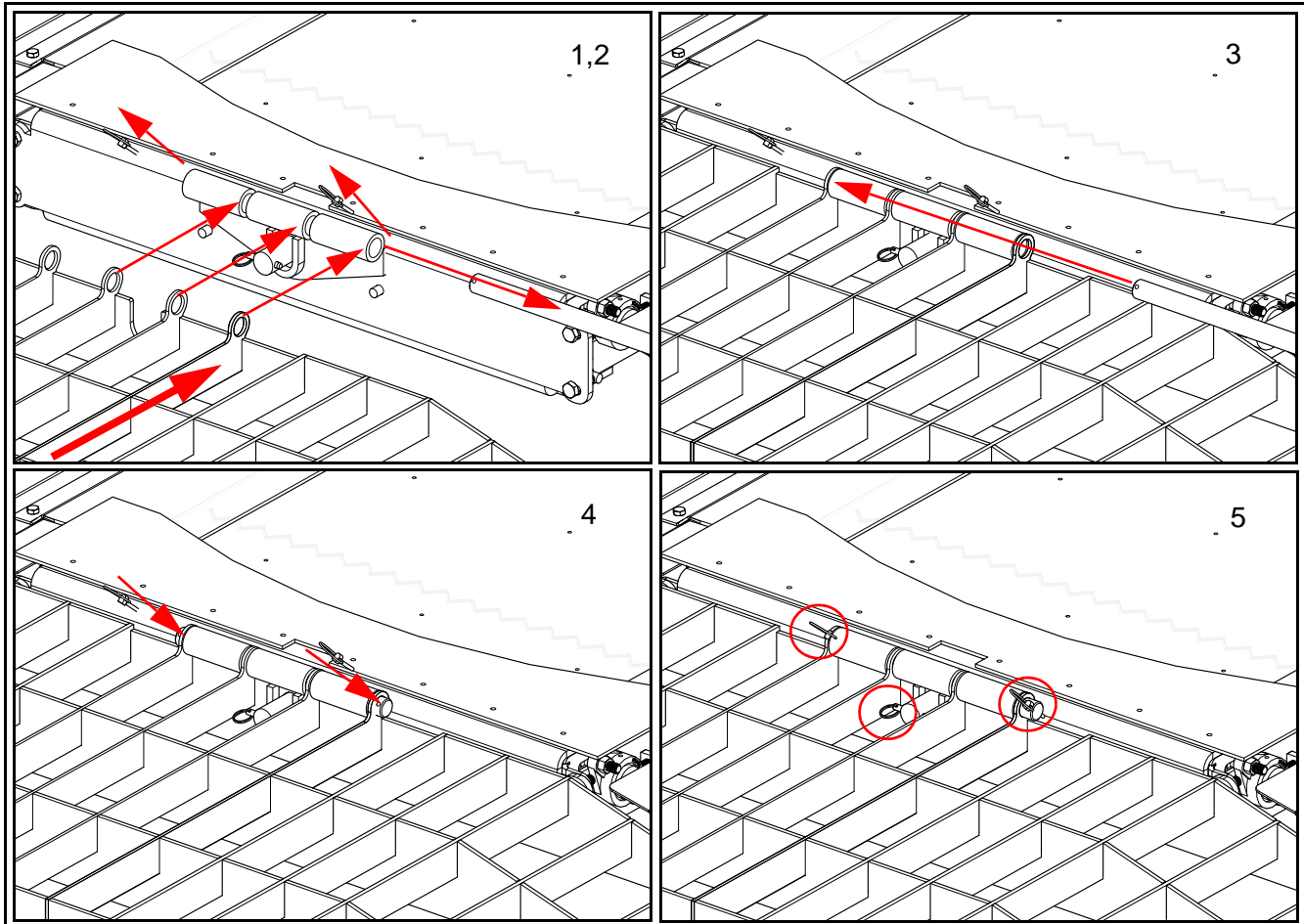
Figure 3.11 Installing Line-Block Half-Clamps (130)



3.4.7. Attach the End Ramp (130/160)

1. Remove the ramp pin from the main pivot after removing the two linchpins.
2. Push the ramp into place against the end of the conveyor, aligning the rear ramp pivot tabs in the conveyor pivot.
3. Insert the ramp pin through the pivot tabs and the conveyor pivot, forming a functional pivoting hinge.
4. Replace the ramp pin linchpins.
5. Check that all three linchpins are securely inserted, including the linchpin that secures the pivot to the conveyor body.

Figure 3.12 Attaching the End Ramp



3.4.8. Connect the Hydraulic Hoses to the 3-Spool Valve (130/160)

Note: The GULP2 Hopper 3-Spool hydraulic control valve can be converted from closed center to open center by installing the open-center conversion plug on the valve. See "Open/Closed-Center Valve Conversion" on page 59.

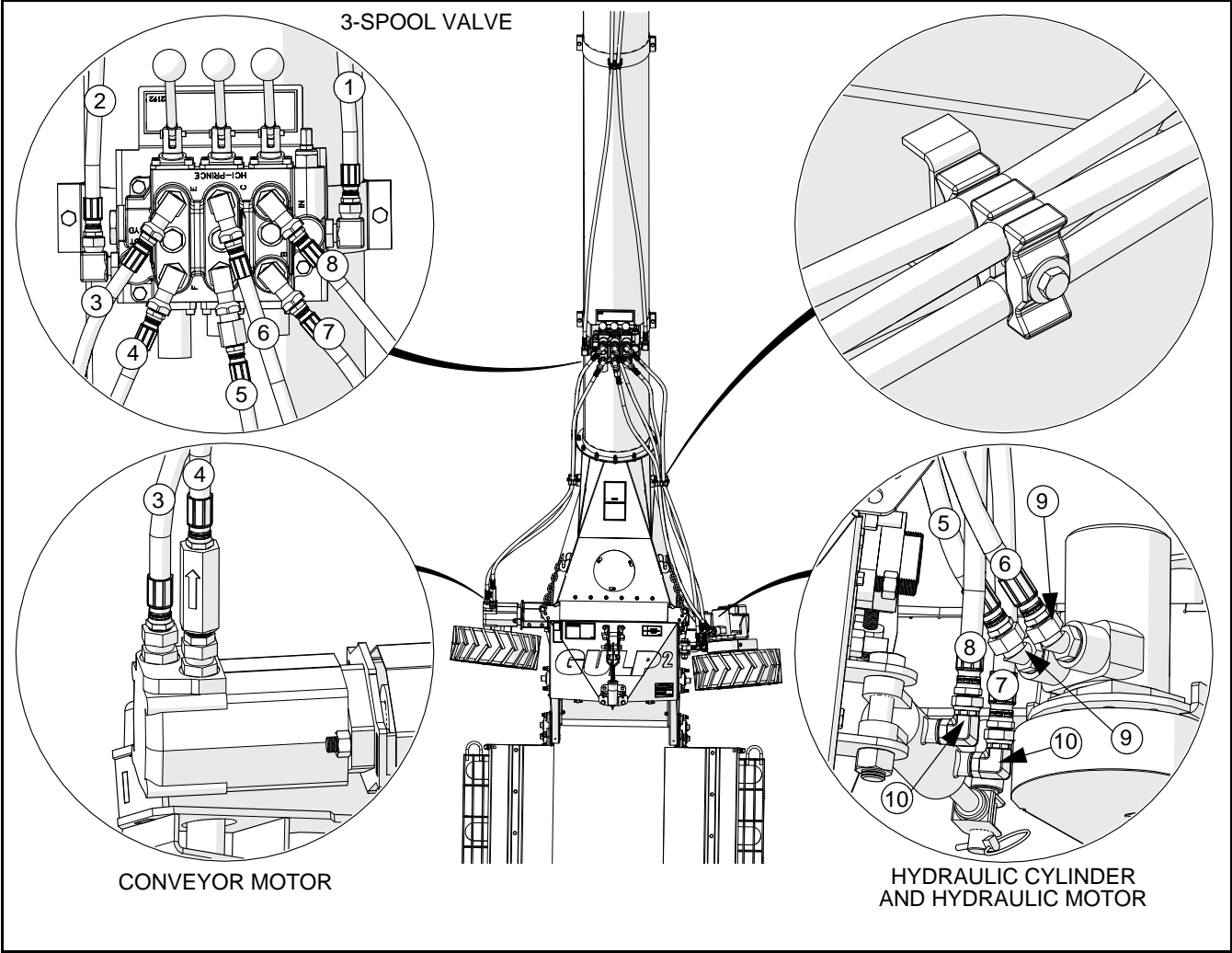
Note: Use thread sealant (not supplied) on non-swivel connections.

1. Connect the hydraulic hoses between the 3-spool valve and the conveyor hydraulic motor (see Figure 3.13).
2. Secure hoses to transition using two line blocks, a 5/16" x 2-1/2" bolt, a flat washer and a locknut.
3. Install two 45 degree fittings into the power swing motor ports. Connect hydraulic hoses between the 3-spool valve and the power swing hydraulic motor.
4. Install two elbow fittings into the power swing hydraulic cylinder ports. Connect hydraulic hoses between the 3-spool valve and the hydraulic cylinder.
5. Secure hoses to transition using three line blocks, a 5/16" x 3" bolt, a flat washer, and a locknut.
6. Connect the hydraulic supply and return hoses to the 3-spool valve, and run the hoses up the swing tube to the boot hose storage position. Secure hoses to the swing tube using two line blocks, a 5/16" x 2-1/2" bolt, a flat washer and a locknut.
7. Install 1/2" pioneer couplers onto the other end of the hydraulic supply and return hoses.

Table 3.7 Hydraulic Hoses

Number	Descriptions	Part # (130)	Part # (160)	QTY
1	1/2" X 247" hydraulic hose (supply) 3/4" x 360" hydraulic hose (supply)	10-29368 ---	--- 10-22454	1
2	1/2" X 247" hydraulic hose (return) 3/4" x 360" hydraulic hose (return)	10-29368 ---	--- 10-22454	1
3	1/2" X 72" hydraulic hose (conveyor motor)	10-29394	10-29394	1
4	1/2" X 72" hydraulic hose (conveyor motor)	10-29394	10-29394	1
5	3/8" x 78" hydraulic hose (power swing motor)	10-28835	10-28835	1
6	3/8" x 78" hydraulic hose (power swing motor)	10-28835	10-28835	1
7	3/8" x 72" hydraulic hose (power swing cylinder)	10-22188	10-22188	1
8	3/8" x 72" hydraulic hose (power swing cylinder)	10-22188	10-22188	1
9	#8 FNPTS x #10 MORB, 45 DEG FITTING	10-20256	10-20256	2
10	STEEL ELBOW 6 MORB X 3/8 NSPM	10-22191	10-22191	2

Figure 3.13 Connecting Hydraulic Hoses



3.5. Install the Hydraulic Winch (130/160)

1. Position the hydraulic winch on the winch mounting plate, and secure it using four 7/16" x 1-1/4" bolts and locknuts, as shown in Figure 3.14.
2. Feed the winch cable through the lift arm pulley, then feed the winch cable under the spool and connect it to the spool (minimum 3 wraps around the spool, feed cable through hole in side of spool, and secure with clamp and clamp hardware) as shown in Figure 3.15.
3. Connect the hydraulic hoses to the winch, and install pioneer couplings on the hose ends.
4. Thread both hoses through hydraulic hose upper catches on side of auger lower tube and boot. Tighten hydraulic hose upper catches slightly to hold hoses in place.

Figure 3.14 Installing the Hydraulic Winch

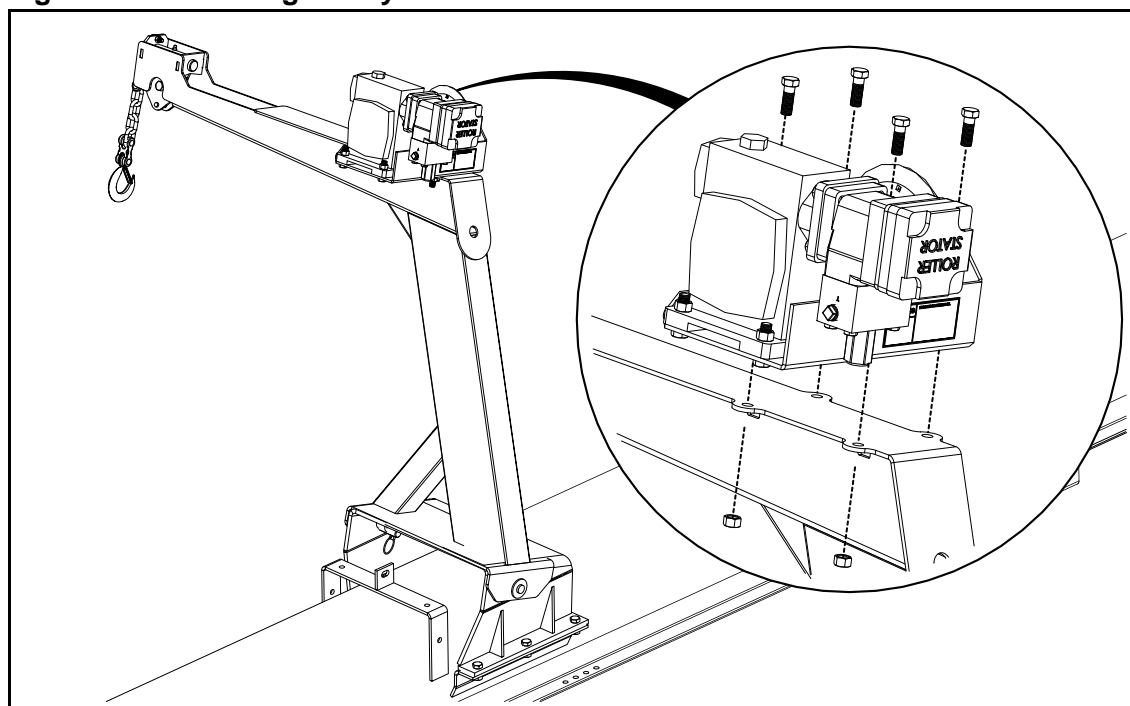


Figure 3.15 Installing the Winch Lift Arm Cable

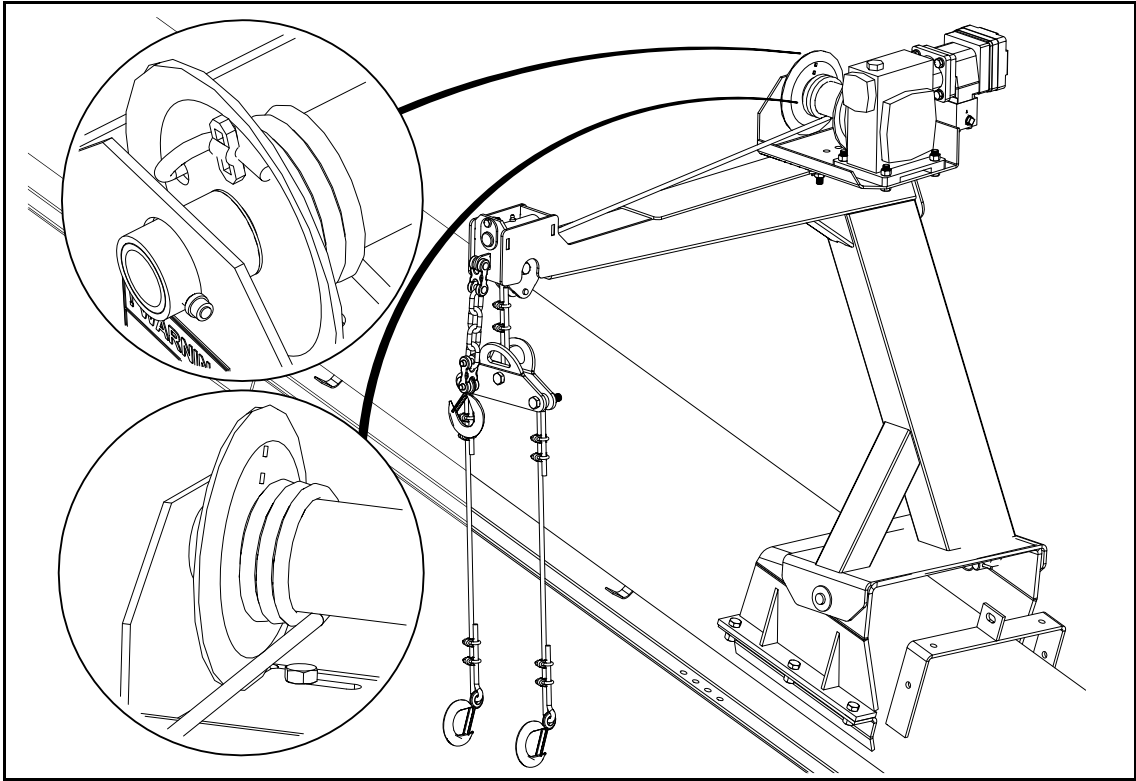


Figure 3.16 Installing the Hydraulic Winch Hose

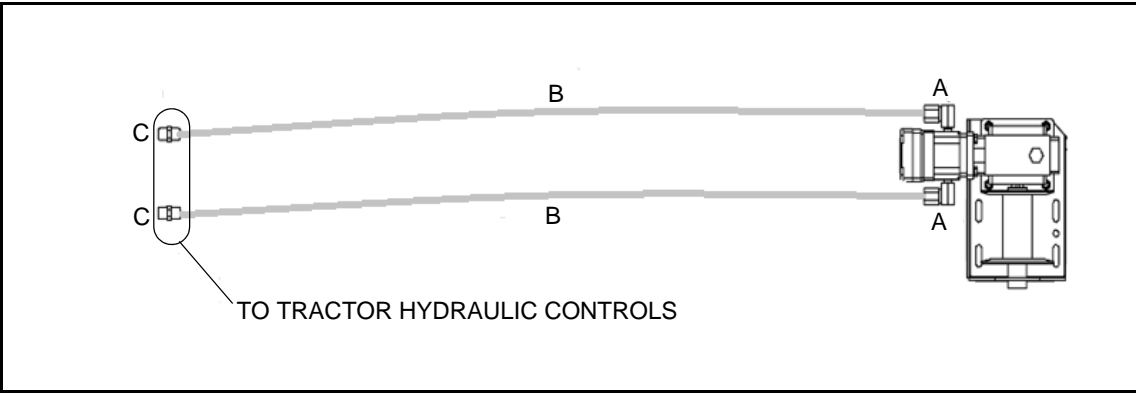


Table 3.17. Hydraulic Winch Hoses and Connectors

Part	Description
A	Steel Elbow 90.1 / 2FNPSMX3 / 8MNPT (1100625)
B	3/8" x 396" Hydraulic Hose (22585)
C	Pioneer coupler (9900047)

4. Transport



Before continuing, ensure you have completely read and understood this manual's Safety chapter, in addition to the safety information in the section(s) below.



This manual is a supplement to the MKX Series Operator Manual. Please ensure that you have read and understood that manual.

4.1. Transport Safety



WARNING

- Do not transport a GULP2-equipped auger with the end ramp installed on the GULP2 hopper. Always disconnect the end ramp and store it securely on the transport vehicle before transport.
- Raise intake feed hopper into transport position and lock hopper lift winch before transporting or moving auger.
- Do not operate auger with GULP2 hopper in transport position. This will cause damage to the u-joint.
- Connect the transport chain before moving.
- GULP2 hopper must be in transport position when lowering, raising, or moving auger.

4.2. Transport Procedure

1. Lower the side flaps fully.
2. Disconnect the end ramp, and store it securely in the vehicle used to transport the auger.



CAUTION Lifting the end ramp requires two people due to its weight and size.

3. Reel out the lift arm cable until one of the hooks can be attached to the lifting point on a side ramp, then use the winch to lift that side ramp until it is upright.
4. Attach the second hook to the lifting point on the opposite side ramp, then use the winch to raise the side ramp until it is upright.
5. Retract the lift arm cable and lift the hopper up until the transport chain can be connected to the cable diverter plate.
6. Disconnect hydraulic hoses, remove power source, and secure the hose on the auger frame to prevent the hose from damage due to dragging.

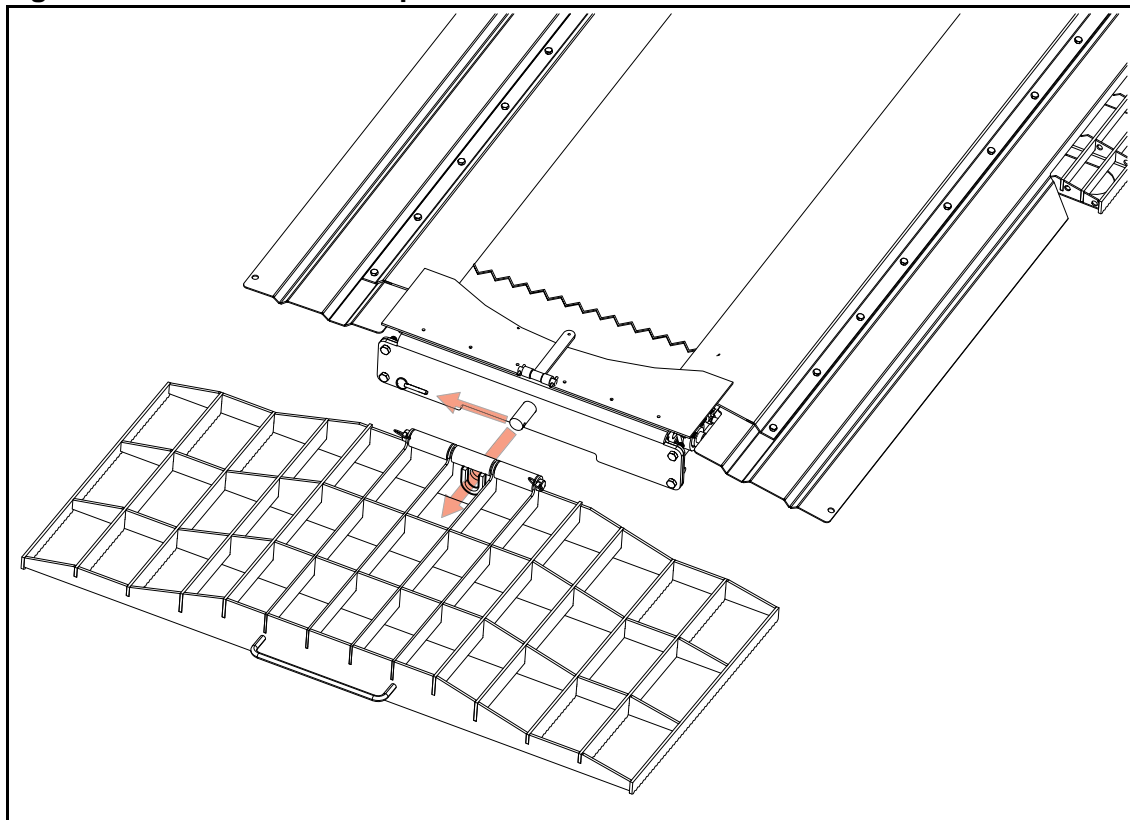
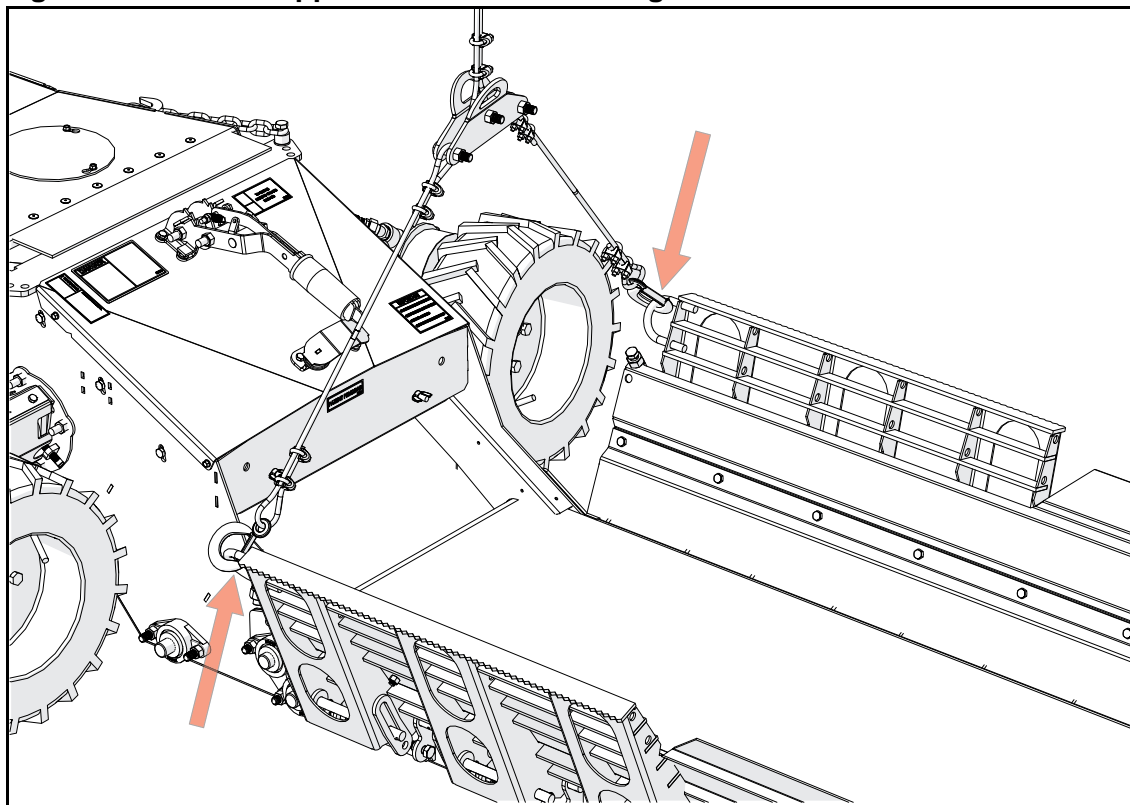
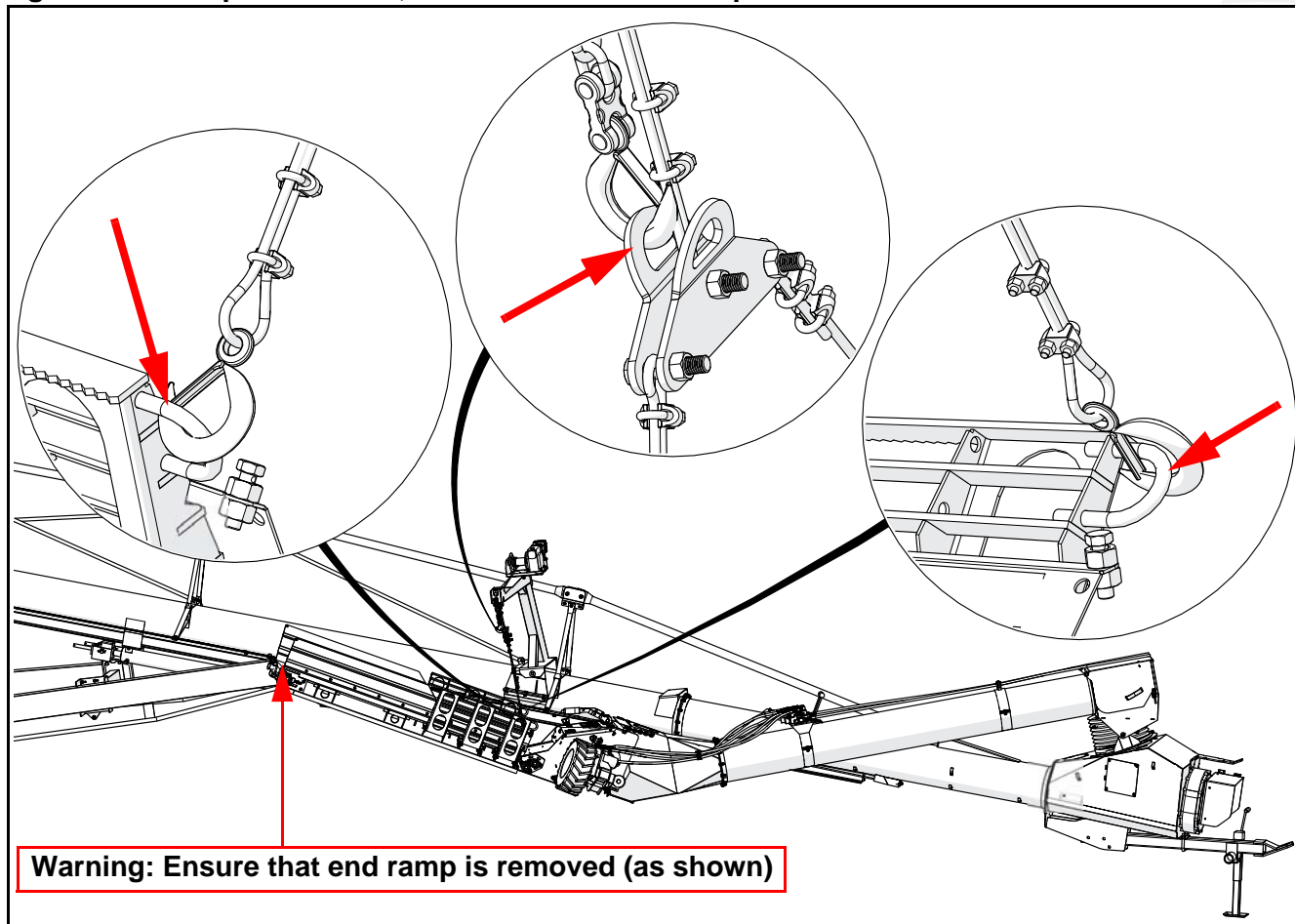
Figure 4.1 Remove End Ramp**Figure 4.2 GULP2 Hopper Lift Arm Cable Lifting Points**

Figure 4.3 Transport Position, Cable Hooks and Transport Chain Attached





5. Placement



Before continuing, ensure you have completely read and understood this manual's Safety chapter, in addition to the safety information in the section(s) below.



This manual is a supplement to the MKX Series Operator Manual. Please ensure that you have read and understood that manual.

5.1. Placement Safety

WARNING

- Empty the GULP before raising or lowering.
- Move the GULP into position slowly. Do not unhitch and attempt to move by hand.

5.2. Placement

NOTICE

Raise the hopper off of the ground with the power swing hydraulic cylinder while positioning the hopper.

NOTICE

Ensure that the hopper is fully lowered onto the ground (completely unsupported by the power swing) before driving a truck over the hopper.

NOTICE

Align the transport vehicle tires with the drive-over ramps. Severe damage will occur to the GULP2 Hopper if the vehicle is not properly aligned.

1. Set up and position the auger and hopper to receive grain.

NOTICE

If required, adjust the transition-hopper chain positions so that the GULP2 does not drag on the ground when moving the power swing (this will vary for different bin heights).

2. Fully lower the side flaps.
3. Position the grain delivery vehicle for unloading. Ensure the tires are aligned with the drive-over zones on the hopper.
4. Drive the vehicle over the GULP2 Hopper, stopping the vehicle when the grain gate is centred above the hopper conveyor section.

Important: Always ensure that the GULP2 conveyor belt is off before driving over the GULP2 hopper to position the grain delivery vehicle.

5. Raise side flaps.



6. Operation



Before continuing, ensure you have completely read and understood this manual's Safety chapter, in addition to the safety information in the section(s) below.



This manual is a supplement to the MKX Series Operator Manual. Please ensure that you have read and understood that manual.

6.1. Operating Safety



WARNING

- Keep away from rotating auger flighting and moving parts, including drive components, shafts, and bearings.
- Always operate with guards, covers, and shields in place.
- Have another trained person nearby who can shut down the equipment in case of accident.
- The work area should be kept clear of bystanders.
- Keep the work area clean and free of debris.
- Ensure maintenance has been performed and is up to date.



6.2. Start-up and Break-in

1. Place all tractor and GULP2 Hopper controls in neutral.
2. Start the tractor and run at low idle.
3. Engage the tractor PTO, then increase the PTO speed of the auger to 540 RPM.
4. Place the tractor hydraulic control lever in detent.
5. Operate the 3-spool valve on the swing tube to turn the GULP2 belt on.
6. Adjust the hydraulic flow rate from the tractor to achieve the desired belt speed of 600-800 ft/min, which is 30-40 belt rotations per minute.

Note: If the conveyor speed is too slow, leakage or jamming may occur. If conveyor speed is too fast, the swing arm auger may become plugged.

7. Slowly open the grain gate on the grain supply vehicle. Monitor the transfer of grain into the hopper, and adjust augering speed, GULP2 conveyor speed, and amount of grain discharged from the vehicle grain gate accordingly.

6.3. Operator Controls

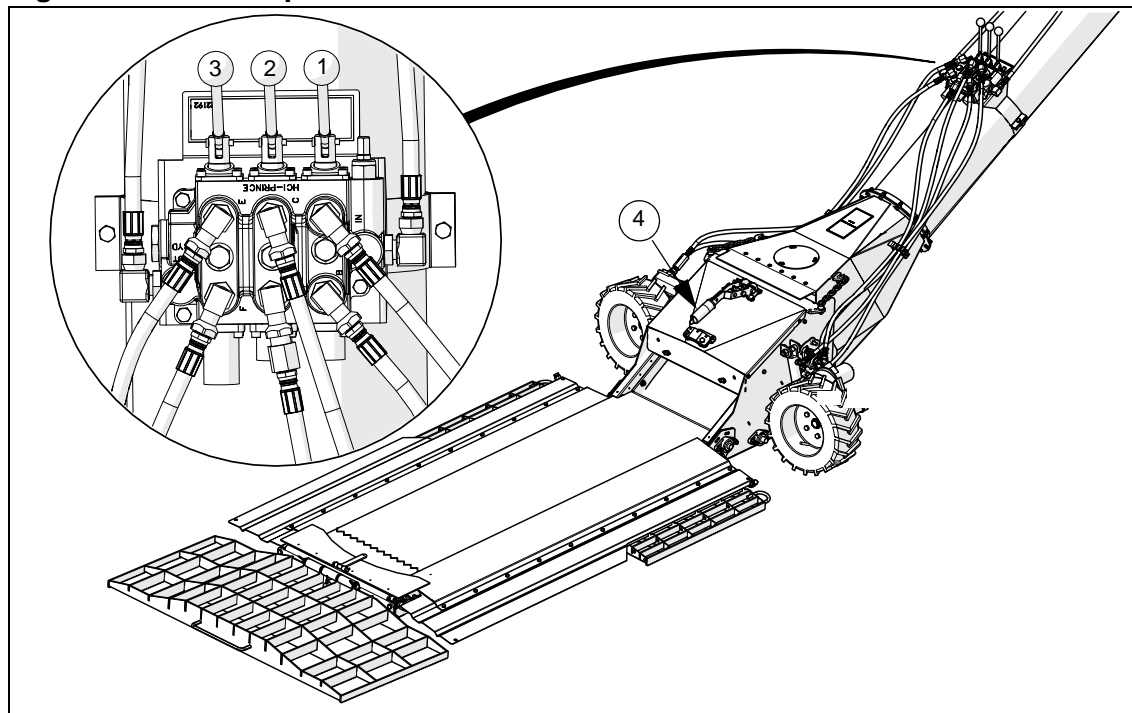
Table 6.1 lists the available operator controls for the GULP2 hopper, and Figure 6.1 shows the control locations.

Table 6.1 Operator Controls

1	Lift/lower GULP2	3-spool hydraulic valve	Swing tube
2	Move GULP2 using power swing	3-spool hydraulic valve: • forward • reverse • neutral	Swing tube
3	Conveyor belt ^a	3-spool hydraulic valve: • forward (detent) • neutral	Swing tube
4	Raise/lower side flaps	Levered handle	GULP2
---	Conveyor belt speed	Hydraulic supply	Tractor
---	Raise or lower GULP2 to or from transport position	Hydraulic supply control valve	Tractor

a. The conveyor belt cannot be operated in reverse due to the check valve installed on the conveyor motor.

Figure 6.1 GULP2 Operator Controls



6.4. Operation - Hydraulic Drive



When Equipped with a Hydraulic Drive

1. Inspect all hydraulic lines, hoses, fittings, and couplers for tightness. Use a clean cloth to wipe any accumulated dirt from the couplers before connecting to the hydraulic system of the tractor.
2. Position the tractor next to the GULP.
3. Place chocks in the front and rear of each wheel of the tractor, and be sure the hoses are routed out of the way.
4. Connect hydraulic hoses to the couplers.
5. Place all controls in neutral.
6. Start tractor and run at low idle.
7. Place hydraulic control lever in detent.
8. Increase engine speed to rated RPM to produce the required flow. For maximum recommended flow, refer to the Specifications Section.
9. Run until the GULP is fully empty.
10. Reduce engine speed to low idle.
11. Place hydraulic control lever in neutral.
12. Shut off tractor engine.
13. Disconnect hydraulics from tractor.



WARNING Relieve hydraulic pressure before disconnecting the couplers.

When starting under load:

If restarting the GULP under load (tube is full), start at low speed since the start-up torque loads are so much higher than normal.

6.5. Set GULP2 Belt Speed

The best results are obtained when the input drive (hydraulic supply) is set to provide a conveyor belt speed of 600-800 ft/min.

Using the belt splice as a reference, count the number of belt revolutions per minute (RPM) to determine belt speed.

- Approximate belt length is 239"
- Belt speed (ft/min) = (RPM X 239")/12

Between 30-40 belt rotations per minute is ideal.

Note: Belt rotation can also be determined by listening for the audible "click" of the belt lace as it enters the hopper.

6.6. Emergency Shutdown

In an emergency situation:

1. Stop or shut down the power source immediately and lock out all power.
2. Stop the flow of material (if applicable).

3. Ensure the machine components come to a stop before inspecting.
4. Correct the emergency situation before resuming work.

6.7. Restarting with a Full Tube

When the GULP is shut down inadvertently or due to an emergency, the tube may still be filled with material.

1. With the power source locked out, remove as much of the grain as possible from the tube and intake using a shop vacuum or other tool. Do not use your hands.

NOTICE

Starting under load may result in damage to the GULP if grain is not removed as much as possible.

2. If guards or covers have been opened or removed, close or replace them before restarting the unit.
3. Once the GULP has been started, you may resume normal operation.

6.8. Shutdown

NOTICE

Prolonged operation of an empty auger will cause unnecessary wear.

1. Run the auger and GULP2 Hopper until the hopper and discharge tube are empty.
2. Place the tractor hydraulic controls in neutral.
3. Relieve hydraulic pressure on GULP2 components before disconnecting hydraulic lines from the tractor.

6.9. Clean Out

After using your GULP, follow the clean out steps below to ensure longer belt life and trouble free operation. Failure to clean out the GULP can cause build up of product on the belt and roller shafts, causing spillage, roller misalignment, and excess wear/damage to the belt



WARNING

Ensure ignition key is removed or power is locked out before cleaning out the GULP.

1. Remove any product remaining in the hopper and spout with a vacuum or sweep out.
2. Remove debris from shafts, sheaves, and drive belts (as equipped).
3. Once the GULP is empty of all product, check for damage on belt and lacing such as notches or cut outs. Any damage on belt may result in product getting under it creating a build-up. If belt replacement and re-lacing is necessary, refer to the Maintenance Section.

Important: Ensure the GULP is free from all product and debris to prevent build-up. Any build-up on belt and shaft becomes a source of spillage and can cause belt misalignment with the possibility of belt edges sustaining damage on the fixed structure. Build-up on the hopper and spout will cause the belt to wear faster due to drag.

4. Once cleaned out, cover intake to prevent moisture from collecting in hopper.

7. Maintenance



Before continuing, ensure you have completely read and understood this manual's Safety chapter, in addition to the safety information in the section(s) below.

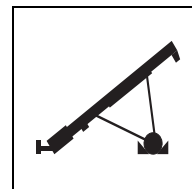


This manual is a supplement to the MKX Series Operator Manual. Please ensure that you have read and understood that manual.

7.1. Maintenance Safety

WARNING

- Keep components in good condition. Follow the maintenance procedures.
- Ensure the service area is clean, dry, and has sufficient lighting.
- Do not modify any components without authorization from the manufacturer. Modification can be dangerous and result in serious injuries.
- After maintenance is complete, replace all guards, service doors, and/or covers.
- Shut down and lock out power before maintaining.
- Use only genuine Westfield replacement parts or equivalent. Use of unauthorized parts will void warranty. If in doubt, contact the manufacturer or your local dealer.
- Lower GULP fully.
- Chock wheels.
- Support tube if performing maintenance on the undercarriage assembly.
- **If equipped with hydraulics:** Before applying pressure to a hydraulic system, make sure all components are tight and that hoses and couplings are in good condition.



7.2. Maintenance Intervals

For details of service, refer to Section See "Maintenance Procedures" on page 48.

	DAILY (8000 BU)	WEEKLY (40, 000 BU)	BEFORE STORAGE	AFTER STORAGE
VISUALLY INSPECT THE UNIT	Y	-	Y	-
INSPECT HYDRAULIC HOSE AND COUPLER	Y	-	-	-
GREASE MACHINE	Y	-	Y	-
SERVICE HOPPER BELT DRIVE	-	Y	-	-
CHECK/ADJUST BELT TENSION	Y	-	-	-
CHECK/ADJUST BELT ALIGNMENT	Y	-	-	-
CHECK/ADJUST BELT SPEED	Y	-	-	-
REPLACE BELT	-	-	-	-
CLEAN MACHINE	-	-	Y	-

7.3. Fluids and Lubricants

Grease

Use SAE multi-purpose high-temperature grease with extreme pressure (EP) performance or SAE multi-purpose lithium-based grease.

Storage and Handling

Always follow manufacturer's guidelines for the safe and effective storage and handling of lubricants.

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contaminants.

7.4. Maintenance Procedures

7.4.1. Visual Inspection

Before beginning visual inspection, check auger wheels and ensure that all operators are aware of safety procedures.

When inspecting, look for possible defects and for the following:

- Be sure all guards are in place, functioning, and not damaged.
- Make sure access, service, and cleanout covers are in place and secure.
- Check that all hardware is in place and secure.
- Inspect hydraulic hoses and fittings for leaks and wear. Fix or replace where necessary.
- Inspect around the machine for evidence of hydraulic leaks.
- Examine belt and flighting for damage or unusual wear.
- Be sure all safety decals are in place and legible.
- Ensure that the intake area is free of obstructions.

7.4.2. Hydraulic Hose and Coupler Inspection

Using a piece of cardboard or wood, run it along the length of the hose and around all fittings. Replace the hose or tighten/replace the fitting if a leak is found.

NOTICE

Replacement hose and hose ends must have a minimum strength of 2500 psi (17200 kPa) working pressure.

7.4.3. Machine Greasing

1. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
2. Replace and repair broken fitting immediately.
3. If fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

7.4.4. Conveyor Belt Tension

⚠ WARNING Ensure ignition key is removed or power is locked out before adjusting or servicing your conveyor.

Adjusting your conveyor belt for proper tension helps to ensure trouble-free operation and long belt life.

The GULP 2 is factory-adjusted to provide a conveyor belt deflection of 5" for a 40 lb force pulling up across the top-side of the conveyor belt.

For post-factory adjustment, the conveyor belt needs to be tight enough to not slip on the drive roller, but no tighter. If the belt is too loose, it will slip on the drive roller making a noticeable sound, slowing the belt down.

⚠ WARNING Failure to stop using a conveyor with a slipping belt will damage it and/or the drive roller lagging. In extreme cases, sections of burnt belt will have to be replaced. This type of damage is not covered by warranty

To Adjust Belt Tension:

1. Loosen bearing bolts on both sides of the adjustable roller.
2. Advance the adjust bolts on each side equally (use a tape measure to verify) until the conveyor belt is just tight enough to not slip on the drive roller. Do not over-tighten.
3. Tighten bearing bolts fully.

Figure 7.1 . Bearing and Adjust Bolts

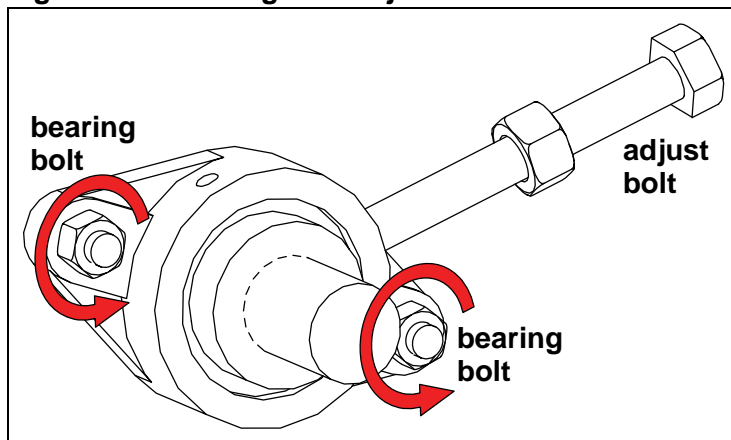
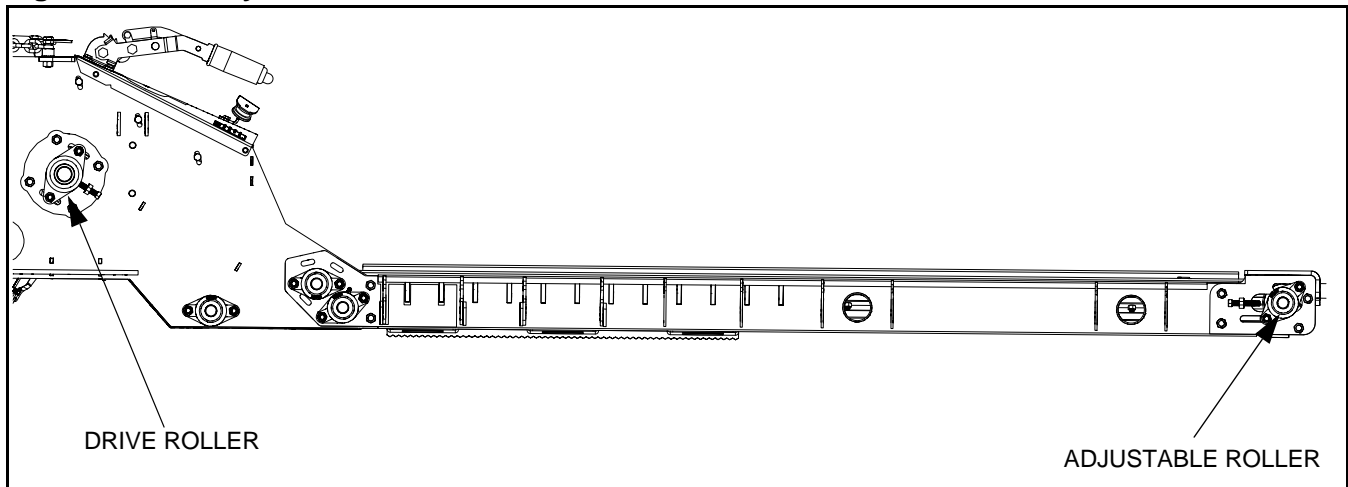


Figure 7.2 Conveyor Belt and Rollers

7.4.5. Conveyor Belt Alignment

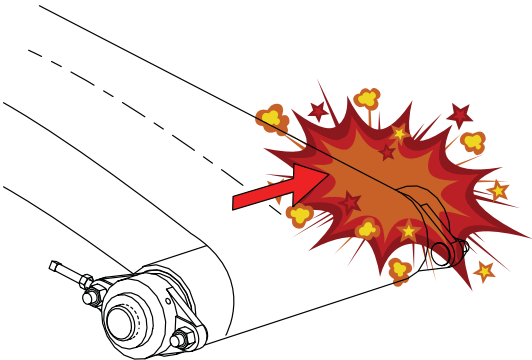
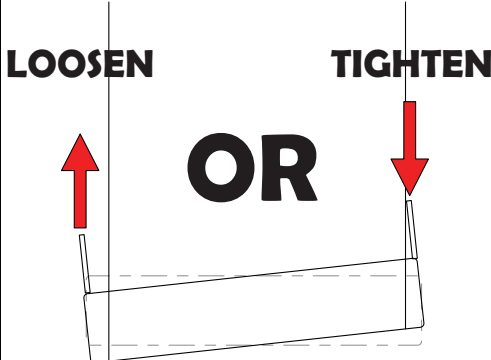


WARNING Ensure ignition key is removed or power is locked out before adjusting or servicing conveyor.

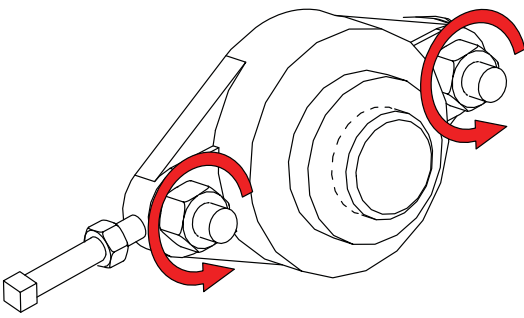
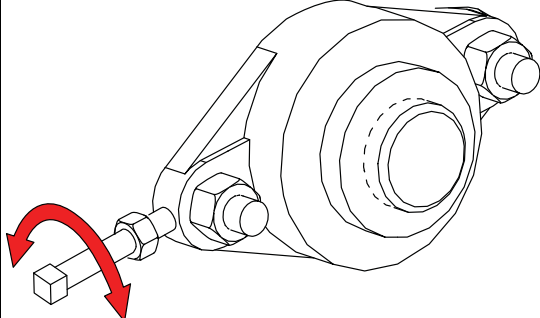
If your belt is tracking to one side, use instructions below and follow steps listed to center it.

Some belts may have uneven edges, appearing misaligned. Wait until the belt makes a complete revolution before adjusting rollers.

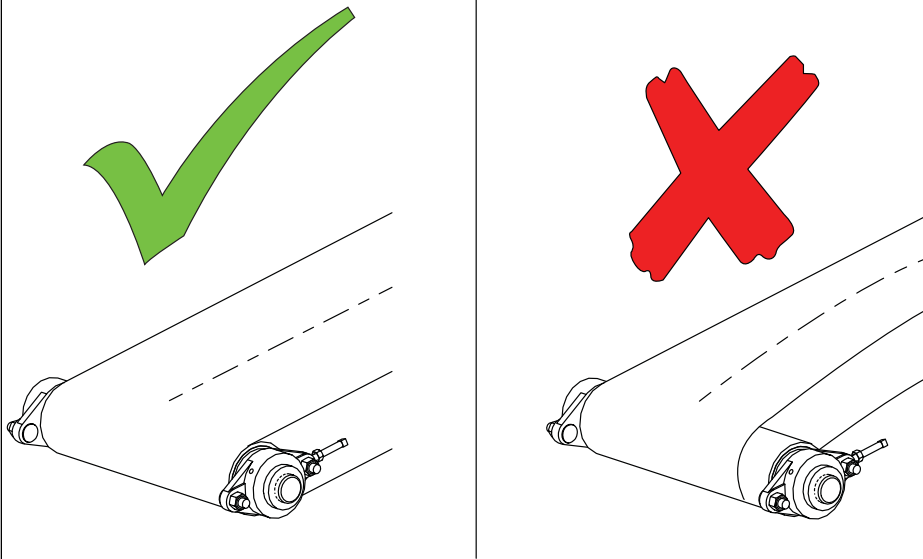
Ensure that the conveyor is empty of all product before adjusting belt alignment.

	
If belt is tracking to one side...	Loosen or tighten the adjustment bolt(s) to align belt. Tighten the side the belt has moved toward, or loosen the side the belt has moved away from.

Rollers

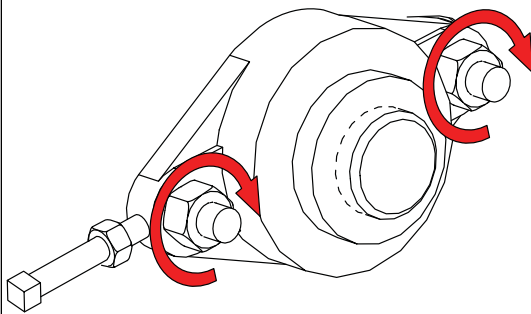
To ensure proper belt alignment:	
1 	2 
Loosen bearing bolts and nuts.	Rotate adjustment bolt 1/2 turn.
3	Restart conveyor and run empty for 1 minute.
4	Stop the conveyor and remove ignition key or lock out the power source.

5



If the belt has centered, move to next step. If not, repeat 2 to 4 until the belt is centered.

6



Tighten the bearing bolts and nuts.

7.4.6. Inspect Belt Lacing

Inspect condition of the belt lacing, if any clips are worn through, replace all lacing.

To replace the belt lacing:

1. Rotate the belting until the lacing is by the hopper or easily accessible.
2. Loosen conveyor belt and remove lacing retainer clip and pin.
3. Using a square and sharp knife, cut lacing off right behind the lacing clips. Cut belt **MUST** have a square end.
4. Use knife to cut Chevron pattern off 1" back from end of belt. This ensures that the lacing is centered and fully seated on the belt.
5. Use lacing tool to install new lacing clips. Lacing clips are one clip shorter than belt width. For example: the lacing for a 15" wide belt is 14 clips. Center lacing on belt and install lacing as per instructions on lacing tool.
6. Reattach conveyor belt ends together. If required, use a ratchet strap clamped to both ends of belt to cinch belting ends together.

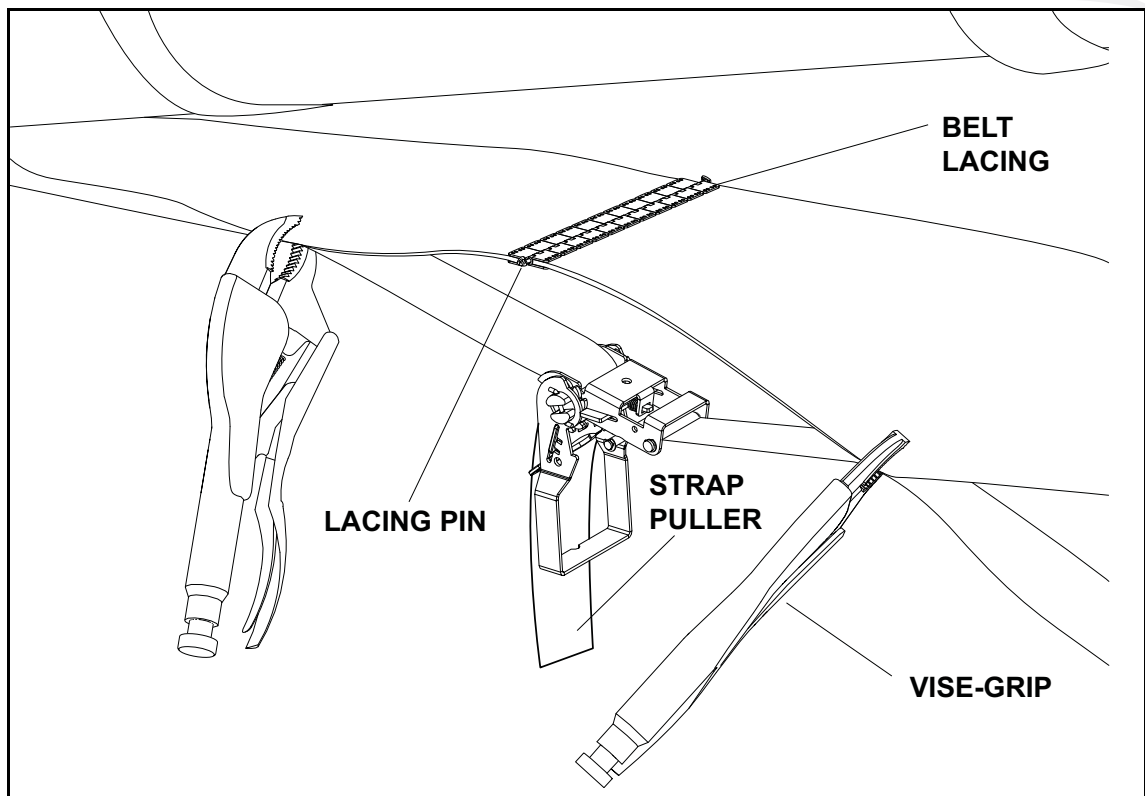


Figure 7.3 Use Ratchet Strap

7. Install lacing pin and crimp retainer clips onto each end of the lacing pin.
8. Remove ratchet strap and tighten conveyor belt (see "Conveyor Belt Tension").
9. Check and set belting alignment (see "Conveyor Belt Alignment").
10. Engage conveyor drive. Allow to run for 30 seconds, then shut down conveyor and inspect lacing.

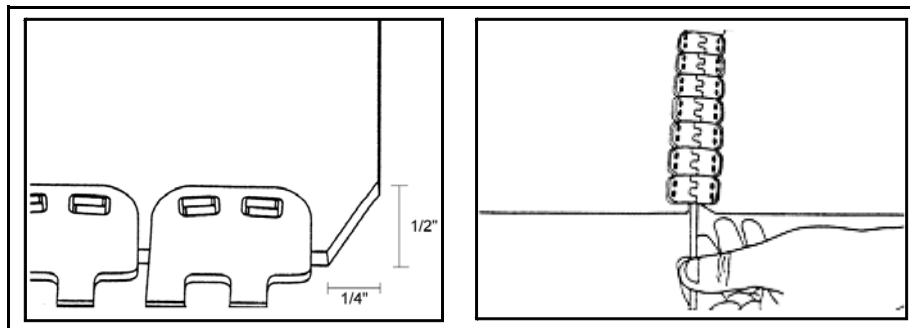


Figure 7.4 Lacing New Belt

7.4.7. Conveyor Belt Replacement

1. Rotate the belting until the lacing is by the hopper or easily accessible.
2. Move the tension roller to its loosest position.
3. Pull all the slack to the lacing area.
4. Remove the lacing retainer clip and pin (see Figure 7.6).
5. Attach one end of the replacement belt to the belt end being removed, closest to the hopper.

6. Pull the old belt out and the new belt will be threaded into place.
7. Disconnect the old belt.
8. Reattach conveyor belt ends together. If required, use a ratchet strap clamped to both ends of belt to cinch belting ends together.

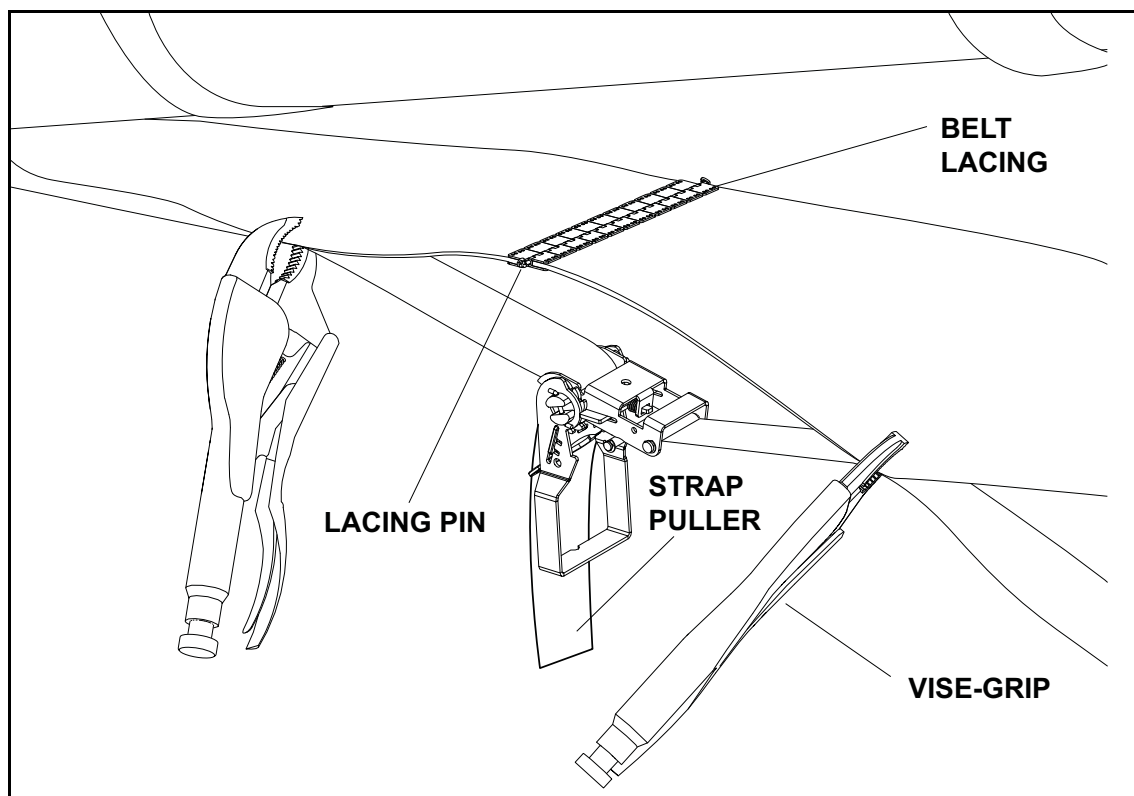


Figure 7.5 Use Ratchet Strap

9. Install lacing pin and crimp retainer clips onto each end of the lacing pin.
10. Remove ratchet strap and tighten conveyor belt (see "Conveyor Belt Tension").
11. Check and set belting alignment (see "Conveyor Belt Alignment").
12. Engage conveyor drive. Allow to run for 30 seconds, then shut down conveyor and inspect lacing.

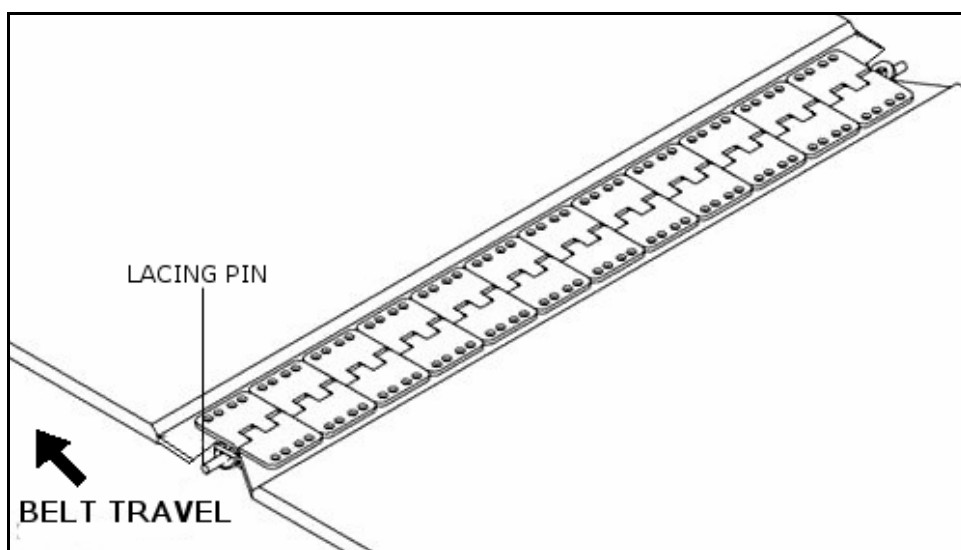


Figure 7.6 Belt Lacing Pin

8. Troubleshooting

The following table lists the causes and solutions to some potential problems you may encounter in operating your GULP2 Hopper.

Problem	Cause	Solution
Hopper conveyor belt does not run	Hopper belt loose	Tighten and align belt
	Drive roller lagging worn or damaged	Replace drive roller lagging
	No hydraulic flow is coming from the power source	Turn hydraulics on in tractor
	Belt frozen to tube from operating in high humidity in cold conditions	Remove GULP2 hopper from area of high humidity and warm belt to de-ice
Excessive belt edge fraying	Belt not aligned	Align and tension belt
Belt loose	Belt stretches over time	Re-tension belt
		Can also be caused by oily grain/product
Ramps difficult to lift	Ramps binding in tabs	Check for damage; repair as required
	Obstruction between ramp and ground	Remove obstruction
Conveyor belt has stopped	Drive chain broken or disconnected	Check the drive chain; repair or replace
	Obstruction in the hopper	Identify and remove obstruction
Low augering capacity	Incorrect belt speed	Verify and adjust belt speed to appropriate speed
	Hopper belts slipping	Tighten belt (see "Belt Tension Adjustment" on page 36)
Grain leaking from hopper	Belt is misaligned	Adjust belt aligned (see "Conveyor Belt Alignment" on page 36)
	Misaligned or broken flap lift cable	Check flap lift cable installation and repair as required.
	Broken bungee rope	Check bungee rope installation and repair as required
	Rubber flaps worn or damaged	Replace damaged hopper rubber flaps
Grain leaking from transition	Belt speed is too slow (less than 600 ft/min)	Increase belt speed
	Belt speed is too fast (more than 800 ft/min) and overfilling swing tube transition	Decrease belt speed

9. Appendix

9.1. Specifications

Important: Westfield reserves the right to change specifications without notice.

Table 9.1. GULP2 Specifications

Specification	130	160
Length with ramp down	141"	141"
Length with ramp up	116"	116"
Weight	885 lb	950 lb
Height/Clearance	5.5"	4.5"
Width with side ramps down	58"	66"
Width of end ramp	68.5"	66"
Tire pressure	25-30 psi	25-30 psi
Operating belt speed	600-800 ft/min	600-800 ft/min
Hydraulic pressure	1500 psi	1900 psi
Hydraulic flow	15-20 gpm	15-20 gpm

9.2. Open/Closed-Center Valve Conversion

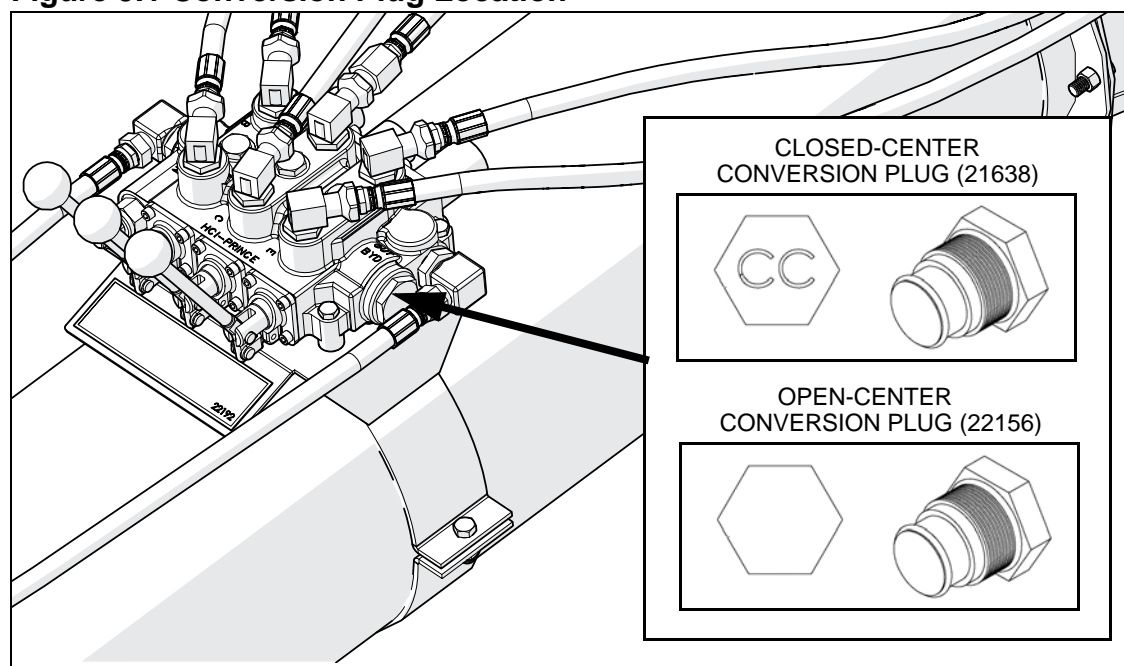
Note: The standard configuration for the control valve is closed-centre.

The control valve can be converted between open-centre and closed-centre configurations by installing the appropriate conversion plug.

- Install the closed-center conversion plug (21638) for closed-centre operation.
- Install the open-center conversion plug (22156) for open-centre operation.

Note: Retain the conversion plug that was removed for future use.

Figure 9.1 Conversion Plug Location



9.3. Tightening O-Ring Fittings

1. Inspect o-ring and seat for dirt or obvious defects.
2. On the angle fittings, back the lock nut off until washer bottoms out at top of groove.
3. Hand-tighten fitting until backup washer or washer face (if straight fitting) bottoms on face and o-ring is seated.
4. Position angle fittings by unscrewing no more than one turn.
5. Tighten straight fittings to torque shown.
6. Tighten while holding body of fitting with a wrench.

Table 9.1 O-Ring Fittings

Tube Size OD (in.)	Nut Size Across Flats (in.)	Torque Values ^a (N·m)	Torque Values ^a (ft·lb)	# of Turns to Tighten (Flats)	Turn (After Finger Tightening)
3/8	1/2	8	6	2	1/3
7/16	9/16	12	9	2	1/3
1/2	5/8	16	12	2	1/3
9/16	11/16	24	18	2	1/3
3/4	7/8	46	34	2	1/3
7/8	1	62	46	1-1/2	1/4
1-1/16	1-1/4	102	75	1	1/6
1-3/16	1-3/8	122	90	1	1/6
1-5/16	1-1/2	142	105	3/4	1/8
1-5/8	1-7/8	190	140	3/4	1/8
7/8	2-1/8	217	160	1/2	1/12

a. The torque values shown are based on lubricated connections as in reassemble.

9.4. Bolt Torque Values

Tables 9.2 and 9.3 give correct torque values for various bolts and capscrews. The bolt diameter is measured to the outside of the threads. When tightening all bolts, tighten the nut on the bolt to the torque specified in the tables, unless otherwise specified. Do not replace or substitute bolts, nuts, or other hardware that is of lesser strength than the hardware supplied by the manufacturer.

Torque values indicated below are valid for non-greased or non-oiled threads and head, unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

Table 9.2 SAE Bolt Torque




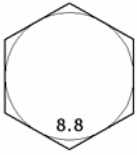
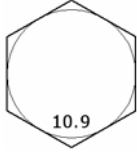
	 SAE 2		 SAE 5		 SAE 8	
Bolt Diameter	(N·m)	(ft·lb)	(N·m)	(ft·lb)	(N·m)	(ft·lb)
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970

Table 9.3 Metric Bolt Torque

	 8.8		 10.9	
Bolt Diameter	(N·m)	(ft·lb)	(N·m)	(ft·lb)
M3	0.5	0.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710

WARRANTY

Westfield Industries Ltd. warrants products of its manufacture against defects in materials or workmanship under normal and reasonable use for a period of one year after date of delivery to the original purchaser.

Our obligation under this warranty is limited to repairing, replacing, or refunding defective part or parts which shall be returned to a distributor or a dealer of our Company, or to our factory, with transportation charges prepaid. This warranty does not obligate Westfield Industries Ltd. to bear the cost of labor in replacing defective parts. Any defects must be reported to the Company before the end of the one year period.

This warranty shall not apply to equipment which has been altered, improperly assembled, improperly maintained, or improperly repaired so as to adversely affect its performance. Westfield Industries Ltd. makes no express warranty of any character with respect to parts not of its manufacture.

The foregoing is in lieu of all other warranties, expressed or implied, including any warranties that extend beyond the description of the product, and the IMPLIED WARRANTY of MERCHANTABILITY is expressly excluded.

WESTFIELD INDUSTRIES LTD.

ROSENORT, MANITOBA

CANADA

R0G 1W0



P.O. Box 39

Rosenort, Manitoba, CANADA R0G 1W0

Phone: (866) 467-7207 (Canada & USA) or (204) 746-2396

Fax: (866) 768-4852

Website: www.grainaugers.com

Email: sales@grainaugers.com

Part of the Ag Growth International group

© Ag Growth International Inc. 2017



Printed in Canada