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Read and Understand

WARNING

Read and follow all instructions and safety precautions in this manual and all other manuals for products associated with this planter as well as in all on-product warning decals. Failure to do so could result in death or serious injury, or property damage. Contact your Norwood dealer if any of your manuals are missing or illegible or you have questions.

Preface
This manual is intended for use with the following S-Drive Conveyor:

1800 Series
1835 SD, 1840 SD, 1845 SD, 1850 SD, 1855 SD, 1865 SD, 1875 SD, 1885 SD, 1895 SD, 18100 SD 18105 SD

2200 Series
2235 SD, 2245 SD, 2255 SD, 2243 SD, 2247 SD, 2248 SD, 2265 SD, 2275 SD, 2285 SD, 2290 SD, 22100 SD, 22105 SD, 22110 SD, 22120 SD 22125 SD

2600 Series
26110 SD, 26120 SD, 26125 SD

Revision History

<table>
<thead>
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<th>Issue</th>
<th>Date</th>
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</tr>
</thead>
<tbody>
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<td>June 21st 2018</td>
<td>Updated Torque Charts</td>
</tr>
</tbody>
</table>
# Contents

1 - GENERAL INFORMATION

- Note to the Owner .......................................................... 1-1
- Determining Left and Right Side of the Machine ................. 1-3
- Determining Orientation Using Directional Arrows ................. 1-3

2 - Safety Information

- Safety Rules And Signal Word Definitions .......................... 2-1
- Personal Safety ................................................................ 2-1
- Machine Safety ................................................................ 2-1
- Safety Rules ................................................................... 2-2
- Raising And Lowering The Conveyor Safety ....................... 2-5
- Helpful Hints .................................................................. 2-7
- Safety Decals .................................................................. 2-12
- Safety Decal Locations Cont’d ......................................... 2-13
- Safety Decal Locations Cont’d ......................................... 2-14
- Safety Decal Locations Cont’d ......................................... 2-15
- Safety Decal Locations Cont’d ......................................... 2-16
- Safety Decal Locations Cont’d ......................................... 2-17
- Safety Decal Locations Cont’d ......................................... 2-18
- Safety Decal Locations Cont’d ......................................... 2-19

3 - TRANSPORT OPERATIONS

- Transport Preparation ....................................................... 3-1
- Connect the Conveyor to the Towing Vehicle ....................... 3-2
- Raising And Lowering The Conveyor ................................ 3-4
- Extending and retracting the extendable axles ..................... 3-5
- Extending the extendable axles ........................................ 3-5
- Retracting the extendable axles ........................................ 3-7

4 - WORKING OPERATIONS

- Machine Components (Page 1 of 2) ................................. 4-1
- Machine Components (Page 1 of 2) ................................. 4-2
- Machine Components Contd. ........................................... 4-3

10 4-4
- MACHINE BREAK-IN ..................................................... 4-5
- PRE-OPERATION CHECKLIST ....................................... 4-5
- Emergency Shutdown ...................................................... 4-19
- Restarting with a Full tube .............................................. 4-19
- Shutdown ..................................................................... 4-19
- Clean Out ..................................................................... 4-19

5 - MAINTENANCE

- General Maintenance Safety ............................................ 5-1
- FLUIDS AND LUBRICANTS ............................................. 5-2
- Hydraulic Oil ................................................................. 5-2
- Grease ................................................................. 5-2
- Greasing ................................................................. 5-2
- SERVICING INTERVALS .................................................. 5-2
- MAINTENANCE CHART .................................................. 5-3
- S-Drive Conveyor Belt Tension ........................................ 5-4
- S-Drive Conveyor Belt Alignment .................................... 5-5
- Re-torque Wheel Lug Bolts ............................................ 5-7
- Grease PTO Drivelines .................................................. 5-8
- EVERY 10 HOURS OR EACH DAY ..................................... 5-9
- Visually Inspect The Equipment ...................................... 5-9
- Every 40 Hours ............................................................ 5-9
- Re-torque Wheel Lug Bolts ............................................ 5-10
- Grease Wheel Bearings ................................................ 5-10
- Check Roller Lagging ..................................................... 5-11
- Inspect Hydraulic Hoses And Fittings ............................... 5-12
Inspect Hopper Flashing .......................................................... 5-12
Inspect Belt Lacing ............................................................... 5-12
Check the Gearbox Oil .......................................................... 5-13
Breather Cleaning ................................................................. 5-13
Check & Adjust the Belt Return Wear Blocks ......................... 5-14
Repack Wheel Bearings .......................................................... 5-14
Change the Gearbox Oil .......................................................... 5-15
Clean and Wash the Equipment ............................................... 5-15
Replace The Hopper Flashing .................................................. 5-16
Replacing the Conveyor Belt .................................................... 5-17
Replacing the Belt Lacing .......................................................... 5-18
Tension and Alignment of the Drive Belts ............................... 5-21
Tension and Alignment of the Drive Belts Contd. ....................... 5-23
Replace the Drive Belts ........................................................... 5-24
Inspect and Service the Hydraulic & Hand Winch Cable .......... 5-24
Check And Adjust the Truss Cables .......................................... 5-25
STORAGE ........................................................................ 5-26
Preparing For Storage ............................................................. 5-26

6 - TROUBLESHOOTING ......................................................... 6-1
SYMPTOM(S) .................................................................... 6-1

7 - SPECIFICATIONS ............................................................ 7-1
Kwik Belt Specifications: ......................................................... 7-1
7 - SPECIFICATIONS Cont’d. .................................................. 7-2
Torque – Hydraulic Tubes and Fittings ................................. 7-3
Torque – Fasteners ................................................................. 7-4
Metric International Standards Organization (ISO) Fastener Torque .................................................. 7-5

8 - FORMS AND DECLARATIONS ............................................. 8-1
1 - GENERAL INFORMATION

Note to the Owner

This manual contains important information about the safe operation, adjustment and maintenance of your S-Drive Conveyor. Refer to the table of contents at the beginning or the Index at the end of this manual for locating specific items about your machine.

DO NOT operate or permit anyone to operate or service this machine until you or the other persons have read this manual. Use only trained operators who have demonstrated the ability to operate and service this machine correctly and safely.

All persons who will be operating this machine shall possess applicable local age work permits.

This S-Drive Conveyor, with standard equipment and authorized attachments, is intended to be used for seed and grain with stainless steel configurations for dry fertilizer applications.

DO NOT use this machine for any purpose or in any manner other than as described in the manual, decals, or other product safety information provided with the machine. These materials define the machine's intended use.

Use only approved accessories and attachments designed for your machine.

Consult your dealer on changes, additions or modifications that may be required for your machine.

Do not make any unauthorized modifications to your machine.

This operator's manual is to be stored in the “Operators Manual Canister” on the left side of the machine on the upper transport arm for reference during field operation. (See Fig. # 1-1) Make sure this manual is complete and in good condition. Contact your dealer to obtain additional manuals and approved service parts. Your dealer has technicians with special training that know the best methods of repair and maintenance for your S-Drive Conveyor.

Fig. # 1-1 Operators Manual Location
Your S-Drive Conveyor dealer will instruct you in the general operation of your new equipment. Your dealer’s staff of factory-trained service technicians will be glad to answer any questions that may arise regarding the operation of your machine.

Fig. # 1-2 S-Drive Conveyor
Kwik Belt S-Drive Standard Conveyor Model / Serial Number Location

Always give your authorized Kwik Belt dealer the Model / Serial Number of your Kwik Belt product when ordering parts, requesting service, or any other information to provide the most efficient service.

The Model / Serial Number is identified in (See Fig. # 1-3) below.

Make a copy of the number below and keep in a safe place. If the machine is stolen, report the numbers to your local law enforcement agency.

Write the Model / Serial Number on the line provided.

Model Number __________________________________

Serial Number __________________________________

Fig. # 1-3 Model / Serial Number Decal

The Model / Serial Number is located where indicated below. (See Fig. # 1-4)

Fig. # 1-4 Model / Serial Number Decal Location
Determining Left and Right Side of the Machine

**Operator Orientation** - The directions Front (1), Back (2), Left (3), and Right (4) as mentioned throughout the manual, are determined when standing at the discharge spout and looking toward the intake hopper.

**Determining Orientation Using Directional Arrows**

The symbols shown below, may be illustrated on certain pages in this manual, and where indicated, determine the front of the machine.
2 - Safety Information

Safety Rules And Signal Word Definitions

Personal Safety

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Read and understand all the safety messages in this manual and associated equipment manuals before you operate or service the machine. Obey all safety messages that follow this symbol to avoid possible death or serious injury.

Throughout this manual and on machine decals, you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

**DANGER**

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury. The color associated with DANGER on the machine decals is RED.

**WARNING**

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. The color associated with WARNING on the machine decals is ORANGE.

**CAUTION**

CAUTION used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. The color associated with CAUTION on the machine decals is YELLOW.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine Safety

**NOTICE**

Notice indicates a situation which, if not avoided, could result in machine or property damage. The color associated with Notice on the machine decals is BLUE.

**IMPORTANT**

Important indicates a situation which, if not avoided, could result in machine or property damage. The color associated with Important on the machine decals is WHITE.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

**NOTE**

Note indicates additional information which clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.
Safety Rules
Read Entire Section Before Use.

Understand that your safety and the safety of other persons is measured by how you service and operate this machine. Know the positions and operations of all controls before you try to operate. MAKE SURE YOU CHECK ALL CONTROLS IN A SAFE AREA BEFORE STARTING YOUR WORK.

READ THIS MANUAL COMPLETELY AND MAKE SURE YOU UNDERSTAND THE CONTROLS. All equipment has a limit. Make sure you understand the stability and load characteristics of this machine before you start to operate.

NOTE: Safety messages in this section point out specific safety hazards which can be encountered during the normal operation and maintenance of your machine. These safety messages also give possible ways of dealing with these conditions.

The safety information given in this manual does not replace safety codes, insurance needs, federal, state and local laws. Make sure your machine has the equipment required by the local laws and regulations.

Owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.

The most important safety device on this equipment is a SAFE operator. It is the operator’s responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow them. All accidents can be avoided.

A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.

Additional safety messages are used in the text of the manual to indicate specific safety hazards. See your dealer for more information if you have any questions.

Use caution when operating the machine on slopes. Raised equipment, partially full or full conveyor belt and other loads will change the center of gravity of the machine. The machine can tip or roll over when near ditches and embankments or uneven surfaces.

Travel speed must be such that complete control and machine stability is maintained at all times. Reduce speed when turning, crossing slopes and when on rough, slick or muddy surfaces.

Never permit anyone to ride on any part of the machine.

Some illustrations in this manual will show shields or cover panels removed for purposes of clarity. DO NOT operate this machine with any of the shields or cover panels removed.

Never operate the machine under the influence of alcohol, drugs or while otherwise impaired.

Pay attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety. Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines.

General Safety
Read and understand the Operator’s Manual and all safety signs before operating, maintaining, adjusting or unplugging.

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

Only trained persons shall operate the machine. An untrained operator is not qualified to operate the machine.

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

Do not allow children, spectators or bystanders within hazard area of machine.

Keep clear of moving parts. Loose clothing, jewelry, watches, long hair and other loose or hanging items should be avoided as they can become entangled in moving parts.

Wear protective equipment when appropriate.

DO NOT attempt to remove material from any part of the machine while it is being operated or components are in motion.

Make sure all guards and shields are in good condition and properly installed before operating the machine. Never operate the machine with shields removed. Always close access doors or panels before operating the machine.

Dirty or slippery steps, ladders, walkways and platforms can cause falls. Make sure these surfaces remain clean and clear of debris.

A person or pet within the operating area of a machine can be struck or crushed by the machine or its equipment. DO NOT allow anyone to enter the work area.

Raised equipment and/or loads can fall unexpectedly and crush persons underneath. Never allow anyone to enter the area underneath raised equipment at any time.
Review this manual and any other associated manuals before each season of use.

Never allow anyone unfamiliar, untrained, or complacent to operate the machine.

Use extreme care when cleaning, filling, or adjusting the machine.

**DO NOT** work around rotating equipment. Loose clothing, rings, watches, etc. may get caught and cause death or serious injury.

**Hydraulic Safety**

Hydraulic oil leaking under pressure can penetrate the skin, causing death or serious injury, or infection.

**DO NOT** use your hand to check for leaks. Use a piece of cardboard or plywood.

Stop engine, remove key and relieve the pressure before connecting or disconnecting fluid lines.

Make sure all components are in good condition and tighten all connections before starting the engine or pressurizing the system.

Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

Replace any worn, cut, abraded, flattened or crimped hoses.

If hydraulic fluid penetrates the skin, seek medical attention immediately.

Continuous long term contact with hydraulic fluid may cause skin cancer. Avoid long term contact and wash the skin promptly with soap and water.

**Gas Engine Safety**

BEFORE STARTING ENGINE, READ AND UNDERSTAND THE OPERATING AND MAINTENANCE INSTRUCTIONS THAT CAME WITH YOUR ENGINE.

**WARNING: DO NOT**

1. **DO NOT** run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
2. **DO NOT** place hands or feet near moving or rotating parts.
3. **DO NOT** store, spill, or use gasoline near an open flame, or devices such as a stove, furnace, or water heater which use a pilot light or devices which can create a spark.
4. **DO NOT** refuel indoors where area is not well ventilated. Outdoor refueling is preferred.
5. **DO NOT** fill fuel tank while engine is running. Allow engine to cool for 5 minutes before refueling. Store fuel in approved safety containers.
6. **DO NOT** remove fuel tank cap while engine is running.
7. **DO NOT** operate engine if gasoline is spilled. Move machine away from the spill and avoid creating any ignition until the gasoline has evaporated.
8. **DO NOT** smoke when filling fuel tank.
9. **DO NOT** choke carburetor to stop engine. Whenever possible, gradually reduce engine speed before stopping.
10. **DO NOT** run engine at excessive speeds. This may result in injury.
11. **DO NOT** tamper with governor springs, governor links or other parts which may increase the governed engine speed.
12. **DO NOT** tamper with the engine speed selected by the original equipment manufacturer.
13. **DO NOT** check for spark with spark plug or spark plug wire removed. Use an approved tester.
14. **DO NOT** crank engine with spark plug removed. If engine is flooded, place throttle in “FAST” position and crank until engine starts.
15. **DO NOT** strike flywheel with a hard object or metal tool as this may cause flywheel to shatter in operation. Use proper tools to service engine.
16. **DO NOT** operate engine without a muffler. Inspect periodically and replace, if necessary. If engine is equipped with muffler deflector, inspect periodically and replace, if necessary, with correct deflector.
17. **DO NOT** operate engine with an accumulation of grass, leaves, dirt or other combustible materials in the muffler area.
18. **DO NOT** use this engine on any forest covered, brush covered, or grass covered unimproved land unless a spark arrester is installed on the muffler. The arrester must be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.

19. **DO NOT** touch hot muffler, cylinder or fins because contact may cause burns.

20. **DO NOT** run engine with air cleaner or air cleaner cover removed.

**WARNING:** **DO**

1. **ALWAYS DO** remove the wire from the spark plug when servicing the engine or equipment **TO PREVENT ACCIDENTAL STARTING**. Disconnect the negative wire from the battery terminal if equipped with a 12 volt starting system.

2. **DO** keep cylinder fins and governor parts free of grass and other debris which can affect engine speed.

3. **DO** examine muffler periodically to be sure it is functioning effectively. A worn or leaking muffler should be repaired or replaced as necessary.

4. **DO** use fresh gasoline. Stale fuel can gum carburetor and cause leakage.

5. **DO** check fuel lines and fittings frequently for cracks or leaks. Replace if necessary.

**PTO Driveline Safety**

1. Keep body, hair, and clothing away from rotating PTO driveline.

2. Make certain the driveline shields telescope and rotate freely on driveline before attaching.

3. Make certain the driveline is securely attached at both ends.

4. Do not operate conveyor unless all driveline, tractor, and equipment shields are in place and in good working order.

5. Consult owner’s manual for maximum operating RPM.

6. Keep universal joint angles small and equal. Do not exceed maximum recommended length for PTO driveline.

7. Engage tractor parking brake and chock wheels.

8. When raising or lowering the conveyor, disconnect the PTO driveline.

**Lockout**

8. Position all controls in neutral, shut off tractor’s engine, and remove key from tractor.

9. If removing key is impossible, remove PTO driveline from tractor.

**Electric Motor Safety**

- Electric motors and controls shall be installed and serviced by a qualified electrician and must meet all local codes and standards.

- A magnetic starter should be used to protect your motor.

- You must have a manual reset button.

- Reset and motor starting controls must be located so that the operator has full view of the entire operation.

- Locate main power disconnect switch within reach from ground level to permit ready access in case of an emergency.

- Motor must be properly grounded.

- Guards must be in place and secure.

- Ensure electrical wiring and cords remain in good condition; replace if necessary.

- Use a totally enclosed electric motor if operating in extremely dusty conditions.

**Lockout**

- The main power disconnect switch should be in the locked position during shutdown or whenever maintenance is performed.

- If reset is required, disconnect all power before resetting motor.
2 - SAFETY INFORMATION

⚠️ Operating Safety ⚠️

1. Read and understand the Operator’s Manual and all safety signs before using.

2. Gas engine drives: Place all controls in neutral by disengaging the slide Belt Drive Engagement Lever, stop the engine, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

3. Electric motor drives: Disconnect and disable electrical supply completely and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

4. PTO drive option: Place all controls in neutral, stop the tractor, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging. If removing key is impossible, remove the PTO driveline from tractor.

5. Clear the area of bystanders, especially children, before starting.

6. Be familiar with the machine hazard area. If anyone enters hazard area, shut down machine immediately. Clear the area before restarting.

7. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.

8. **DO NOT** step on or touch moving S-Drive Conveyor belt.

9. **DO NOT** allow riders on the S-Drive Conveyor or tractor when transporting.

10. Stay away from overhead obstructions and power lines during operation and transporting. Electrocution can occur without direct contact.

11. **DO NOT** operate machine when any guards are removed.

12. Set park brake on tractor before starting.

13. Lower S-Drive Conveyor to its lowest position before moving or transporting or when not in use. Keep lift point at drawbar height.

14. Anchor intake end and/or support discharge end to prevent upending.

15. Empty S-Drive Conveyor and fully lower before moving.

16. Intake end must always have downward weight. Do not release until attached to tow bar or resting on ground.

17. Inspect lift cable before using S-Drive Conveyor. Replace if frayed or damaged.

18. Make certain lift cable is properly seated in cable pulleys.

⚠️ Personal Protective Equipment (PPE) ⚠️

Wear personal protective equipment. This list includes but is not limited to:

- A hard hat
- Protective shoes with slip resistant shoes
- Safety glasses or goggles
- Heavy gloves
- Hearing protection
- Respirator or filter mask
- Protective clothing

**Raising And Lowering The Conveyor Safety**

For applicable models:

- Do not raise the conveyor unless all material is discharged from the conveyor and the axles are in the extended position.
- Lower the conveyor to its lowest position when not in use.
- Empty the conveyor before raising or lowering.
- Check that wheels are free to move before raising or lowering the conveyor.
- The conveyor is not insulated, keep away from overhead power lines. Electrocution can occur without direct contact.
- Do not get on or beneath the conveyor when raising or lowering.
- Raise and lower conveyor on reasonably level ground only. The conveyor could topple if ground is too uneven.
- Never attempt to increase height of the tube by positioning wheels on lumber, blocks, or by any other means. To do so will result in damage to conveyor and/or serious injury.
- Do not rest the spout or hood on the bin. This may cause hood or belt damage.
- Anchor intake end before using.
- Do not transport the conveyor unless the axles are in the retracted position.
**Lock-Out Tag-Out Safety**

Before you start servicing the machine: Turn machine OFF, shut down and lock out power source, remove key, unplug power cord and wait for all moving parts to stop. Attach a "Do Not Operate" warning tag to the machine in an area that will be visible.

1. Establish a formal Lock-Out Tag-Out program for your operation.
2. Train all operators and service personnel before allowing them to work around the area.
3. Provide tags on the machine and a sign-up sheet to record tag out details.

**General Maintenance Safety**

1. Review the Operator’s Manual and all safety items before working with, maintaining or operating the Machine.
2. Place all controls in neutral or off, stop engine or motor, remove ignition key or disable power source and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Do not attempt to clean, lubricate, clear obstructions or make adjustments to the machine while it is in motion or while the engine is running.
4. Follow good shop practices:
   - Keep service area clean and dry.
   - Be sure electrical outlets and tools are properly grounded.
   - Use adequate light for the job at hand.
5. Before applying pressure to a hydraulic system, make sure all components are tight and that hoses and couplings are in good condition.
6. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
7. **DO NOT** step on or touch moving conveyor belt.
8. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
9. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
10. Place stands or blocks under the frame before working beneath the machine.
11. Before resuming work, install and secure all guards when maintenance work is completed.
12. Support the conveyor main tube before attempting maintenance on the under carriage assembly. Where possible, the conveyor should be in the fully down position.
13. Keep safety signs clean. Replace any sign that is damaged or not clearly visible.
14. Always make sure working area is clear of tools, parts, other persons and pets before you start operating the machine.

**Refueling Safety**

1. Handle fuel with care. It is highly flammable.
2. Allow engine to cool for 5 minutes before refueling. Clean up spilled fuel before restarting engine.
3. Do not refuel the machine while smoking or when near open flame or sparks.
4. Fill fuel tank outdoors.
5. Prevent fires by keeping machine clean of accumulated trash, grease and debris.

**Placement Safety**

1. Move with a tractor or vehicle capable of the load.
2. Use Transfer conveyor Handles only, when moving by hand.
3. Keep conveyor discharge end as low as possible.
4. Chock the conveyor and tractor wheels front and rear before operating.
5. Locate the machine to provide ample space for trucks to unload.
6. Keep conveyor as low as possible when moving.Raise only when it is next to storage facility.
7. Be familiar with machine hazard area. If anyone enters hazard areas, shut down machine immediately. Clear the area before restarting.
8. Operate the conveyor on level ground free of debris. If ground is uneven, anchor the conveyor to prevent tipping or upending.
Wheel and Tire Safety

Make sure tires are correctly inflated. Do not exceed recommended load or pressure. Follow instructions in the manual for proper tire inflation.

Always have a qualified tire technician service the tires and rims. If a tire has lost all pressure, take the tire and rim to a tire shop or your dealer for service. Explosive separation of the tire can cause death or serious injury.

• DO NOT attempt to mount a tire unless you have the proper equipment and experience to do the job.
• Have a qualified tire dealer or repair service perform required tire maintenance.
• When replacing worn tires, make sure they meet the original tire specifications. Never undersize the replacement tire.
• DO NOT weld to the tire rim with the tire mounted on the rim. This action may cause an explosion which could result in serious injury or death.
• Inflate tires to the manufacturer’s recommended pressure.
• Tires should not be operated at speeds higher than their rated speed.
• Keep wheel lug nuts tightened to manufacturer’s recommendations.
• Never reinflate a tire that has been run flat or seriously under-inflated without removing the tire from the wheel. Have the tire and wheel closely inspected for damage before remounting.

Battery Safety

• Wear safety glasses when working near batteries.
• Make certain the battery or terminal covers are in place and in good working order.
• Keep all sparks and flames away from batteries; gas given off by electrolyte is explosive.
• Avoid contact with battery electrolyte. Wash off any spilled electrolyte immediately.
• Do not tip batteries more than 45° to avoid electrolyte loss.
• To avoid injury from sparks or short circuits, disconnect battery ground cable first before servicing any part of an electrical system.

Electrical Storm Safety

Do not operate machine during an electrical storm.

If you are on the ground during an electrical storm, stay away from machinery and equipment. Seek shelter in a permanent, protected structure.

If an electrical storm should strike during operation, remain in the cab. Do not leave the cab. Do not make contact with the ground or objects outside the machine.

Working at Heights (If Applicable)

Do not stand on surfaces which are not designed as steps or platforms.

Do not use the machine as a lift, ladder or platform for working at heights.

Noise Level Safety

Exposure to loud noises can cause hearing damage. Always wear hearing protection when operating noisy equipment or when working in a noisy environment.

Chemical Safety and the Environment

Soil, air, and water are vital factors of agriculture and life in general. When legislation does not yet rule the treatment of some of the substances which are required by advanced technology, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

NOTICE: The following are recommendations which may be of assistance:

• Become acquainted with and ensure that you understand the relative legislation applicable to your country.
• Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, antifreeze, cleaning agents, etc., with regard to their effect on man and nature and how to safely store, use and dispose of these substances.
• Agricultural consultants will, in many cases, be able to help you as well.

Helpful Hints

• Avoid filling tanks using cans which may cause considerable spillage.
• In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances which may be harmful to your health.
• Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
• Avoid spillage when draining off used gearbox and hydraulic oils, etc. Do not mix drained fluids with lubricants. Store drained fluids safely until they can be disposed of properly to comply with local legislation and available resources.
• Repair any leaks or defects in the hydraulic system immediately.
• Do not increase the pressure in a pressurized circuit as this may lead to a component failure.
• Protect hoses during welding as penetrating weld splatter may burn a hole or weaken them, allowing the loss of hydraulic fluid.
WALKING SURFACE, IS IT SLIPPERY? ARE THERE THINGS TO TRIP YOU?

OVERHEAD WIRES KEEP AWAY

UNDER CONVEYOR AND UNDERCARRIAGE AREA HAZARD - KEEP AWAY

WHEEL CHOCKS

WORK AREA AUTHORIZED PERSONNEL ONLY

CONVEYOR DRIVE AREA HAZARD - KEEP OUT

Fig. # 2-6 Workplace Hazard Area (Gas & Electric Drive)
Fig. # 2-7 Workplace Hazard Area (Front PTO Drive)
Workplace Hazard Area (Side PTO Drive)

- Walking surface, is it slippery? Are there things to trip you?
- Authorized personnel only
- Overhead wires keep away
- Support discharge end
- Under conveyor and undercarriage area hazard - keep away
- Conveyor intake / discharge area hazard - keep out
- Keep out of shaded hazard area
- Wheel chocks
- Overhead wires keep away
- Wheel chocks
- Wheel chocks
- Wheel chocks
- Wheel chocks
- PTO drive area hazard - keep out
- Work area authorized personnel only

Fig. # 2-8 Workplace Hazard Area (Side PTO Drive)
Transport Safety

1. Read and understand ALL the information in the Operator’s Manual regarding procedures and SAFETY when moving or transporting the machine.

2. Check with local authorities regarding conveyor transport on public roads. Obey all applicable laws and regulations.

3. Always travel at a safe speed. Use caution when making corners or meeting traffic. Travel speed should be such that complete control and machine stability is maintained at all times.

4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.

5. Do not allow riders on the Conveyor or the tractor when transporting.

6. Attach Conveyor to towing vehicle with a pin and retainer. Always attach the safety chain.

7. Lower Conveyor to its lowest position for transporting. Keep lift point at drawbar height.

8. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.

9. Do not exceed 25 m.p.h. (40 km/h). Reduce speed on rough roads and surfaces.

10. Stay away from overhead obstructions and power lines when transporting. Electrocution can occur without direct contact. Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines. Should a contact between the machine and an electric power source occur, the following precautions must be taken: Stop the machine movement immediately. Apply the park brake, stop the engine. Check if you can safely leave the cab or your actual position without contacting the electrical wires. If not, stay in your position and call for help. If you can leave your position without touching lines, jump clear of the machine to make sure you do not make contact with the ground and the machine at the same time. Do not permit anyone to touch the machine until power has been shut off to the power lines.

11. Always use hazard warning flashers on tractor when transporting unless prohibited by law.

12. Slow down and signal before turning.

13. Follow correct towing procedure for equipment with or without brakes.
Safety Decals

The following safety decals are placed on your machine as a guide for your safety and for those working with you. Walk around the machine and note the content and location of these safety decals before operating your machine.

Keep safety decals clean and legible. Clean safety decals with a soft cloth, water, and a gentle detergent. Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety decals.

Replace all safety decals that are damaged, missing, painted over, or illegible. If a safety decal is on a part that is replaced, make sure the safety decal is installed on the new part. See your dealer for replacement safety decals.

Safety decals that display the “Read Operator’s Manual” symbol are intended to direct the operator to the operator’s manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When a safety decal displays this symbol, refer to the appropriate page of the operators manual.

**NOTE:** Replacement decals are available from your dealer.

Safety Decal Locations

![Diagram of safety decal locations](image)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty.</th>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>90-44-0021</td>
<td>Decal, Danger Missing Guard (2 x 3.5)</td>
<td>3</td>
<td>7</td>
<td>90-44-0263</td>
<td>Decal, Danger Belt Conveyor Electrocution Hazard</td>
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<tr>
<td>2</td>
<td>90-44-0272</td>
<td>Decal, Notice S-Drive Belt Tension</td>
<td>2</td>
<td>8</td>
<td>90-44-0264</td>
<td>Decal, Warning Upending Hazard</td>
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<tr>
<td>3</td>
<td>90-44-0257</td>
<td>Decal, Warning Transport Hazard</td>
<td>1</td>
<td>9</td>
<td>90-44-0269</td>
<td>Decal, Notice Wheel Movement</td>
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<tr>
<td>4</td>
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<td>Decal, Caution Belt Guard Slip Hazard</td>
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<td>10</td>
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<td>Decal, Warning-Read and Understand-Man Holder</td>
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<td>Decal, Warning Entanglement Hazard</td>
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<td>11</td>
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<td>Decal, Warning-Entanglemnt and Open Belt Hazard</td>
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<td>6</td>
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<td>Decal, Safety Information</td>
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<td>12</td>
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<td>Decal, Winch Operation</td>
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</table>

*Not shown in this view*
Safety Decal Locations Cont’d.

⚠️ DANGER
MISSING GUARD HAZARD

*Machine is shown with guard removed for illustrative purposes.*

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

---

**Fig. # 2-11 Safety Decal Locations (Electric Drive Option)**

<table>
<thead>
<tr>
<th>Item</th>
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<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty.</th>
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<td>Decal, Danger Missing Guard (2 x 3.5)</td>
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<td>7</td>
<td>90-44-0263</td>
<td>Decal, Danger Belt Conveyor Electrocution Hazard</td>
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<tr>
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<td>90-44-0272</td>
<td>Decal, Notice S-Drive Belt Tension</td>
<td>2</td>
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<td>90-44-0264</td>
<td>Decal, Warning Upending Hazard</td>
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<tr>
<td>3</td>
<td>90-44-0257</td>
<td>Decal, Warning Transport Hazard</td>
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<td>9</td>
<td>90-44-0269</td>
<td>Decal, Notice Wheel Movement</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
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<td>Decal, Warning-Read and Understand-Man Holder</td>
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<td>Decal, Warning Entanglement Hazard</td>
<td>3</td>
<td>11</td>
<td>90-44-0296</td>
<td>Decal, Warning-Entanglement and Open Belt Hazard</td>
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<td>6</td>
<td>90-44-0262</td>
<td>Decal, Safety Information</td>
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<td>12</td>
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* Not shown in this view
Safety Decal Locations Cont’d.

⚠️ DANGER
MISSING GUARD HAZARD
Machine is shown with guard removed for illustrative purposes.

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

Fig. # 2-12 Safety Decal Locations (Front PTO Drive Option)

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<td>90-44-0269</td>
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* Not shown in this view
Safety Decal Locations Cont’d.

**Fig. # 2-13 Safety Decal Locations (Front PTO Drive Option)**

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<th>Item</th>
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<td>Decal, Notice Wheel Movement</td>
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<td>Decal, Warning Rotating PTO Driveline Hazard</td>
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<td>Decal, Warning-Read &amp; Understand-Manual Holder</td>
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*Not shown in this view
**DANGER**

MISSING GUARD HAZARD

*Machine is shown with guard removed for illustrative purposes.*

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.
### Safety Decal Locations Cont’d.

**Fig. # 2-15 Safety Decal Locations (Side PTO Drive Option)**

<table>
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<td>90-44-0263</td>
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<td>8</td>
<td>90-44-0264</td>
<td>Decal, Warning Upending Hazard</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>90-44-0257</td>
<td>Decal, Warning Transport Hazard</td>
<td>1</td>
<td>9</td>
<td>90-44-0269</td>
<td>Decal, Notice Wheel Movement</td>
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</tr>
<tr>
<td>4</td>
<td>90-44-0258</td>
<td>Decal, Caution Belt Guard Slip Hazard</td>
<td>2</td>
<td>10*</td>
<td>90-44-0273</td>
<td>Decal, Warning Rotating PTO Driveline Hazard</td>
<td>1</td>
</tr>
<tr>
<td>5*</td>
<td>90-44-0260</td>
<td>Decal, Warning Entanglement Hazard</td>
<td>3</td>
<td>11*</td>
<td>90-44-0295</td>
<td>Decal, Warning-Read &amp; Understand-Manual Holder</td>
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</tr>
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<td>90-44-0296</td>
<td>Decal, Warning-Entanglement and Open Belt Hazard</td>
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</tbody>
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*Not shown in this view*
### Safety Decal Locations Cont’d.

*Not shown in this view*

<table>
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<th>Item</th>
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<th>Qty.</th>
<th>Item</th>
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<td>Decal, Warning Upending Hazard</td>
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<td>12</td>
<td>90-44-0267</td>
<td>Decal, Unleaded Gasoline Only (87 Oct)</td>
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<td>Decal, Danger Belt Conv Elect Hazard</td>
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<td>Decal, Key, Choke &amp; Throttle Kwik Belt</td>
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<td>Decal, Warning Transport Hazard</td>
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<td>14</td>
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<td>Decal, Belt Drive Engagement Lever</td>
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Fig. #2-16 Safety Decal Locations (Gas Engine Drive Option)
### Safety Decal Locations Cont’d.

**Fig. # 2-17 Safety Decal Locations (Gas Engine Drive Option)**

<table>
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<tr>
<th>Item</th>
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<td>Decal, Danger Missing Guard (2 x 3.5)</td>
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<tr>
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<td>90-44-0269</td>
<td>Decal, Notice Wheel Movement</td>
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<td>Decal, Rotating Parts Hazard Decal</td>
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<td>Decal, Warning Upending Hazard</td>
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<td>Decal, Unleaded Gasoline Only (87 Oct)</td>
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<td>Decal, Danger Belt Conv Elect Hazard</td>
<td>1</td>
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<td>90-44-0362</td>
<td>Decal, Key, Choke &amp; Throttle Kwik Belt</td>
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<td>90-44-0257</td>
<td>Decal, Warning Transport Hazard</td>
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<td>90-44-0363</td>
<td>Decal, Key Switch OFF, Start, On</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>90-44-0296</td>
<td>Decal, Warn-Entang and Open Belt Hazard</td>
<td>1</td>
<td>15*</td>
<td>90-44-0364</td>
<td>Decal, Belt Drive Engagement Lever</td>
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<tr>
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<td>90-44-0260</td>
<td>Decal, Warning Entanglement Hazard</td>
<td>3</td>
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<td>90-44-0295</td>
<td>Decal, Warn-Read and Undrstnd - Manual Holder</td>
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<td></td>
<td>90-44-0366</td>
<td>Decal, Belt Drive ON/OFF</td>
<td>1</td>
</tr>
</tbody>
</table>

*Not shown in this view*
Failure to follow these instructions can cause serious injury or death.

- Read and understand the manual before assembling, operating, or maintaining the equipment.
- Only trained personnel may assemble, operate, or maintain the equipment.
- Children and untrained personnel must be kept outside of the work area.
- If the manual, guards, or decals are missing or damaged, contact the factory or dealer for replacements.
- Lock out power before performing maintenance.
- To prevent equipment collapse, support equipment tube while disassembling certain components.
- Electric motors must be grounded. Disconnect power before resetting overloads.
2 - SAFETY INFORMATION

Fig. # 2-20 Danger Decal Qty 1 Per Machine P/N 90-44-0263

Fig. # 2-21 Safety Decal Location

Danger Decal Qty 1 Per Machine P/N 90-44-0263

- When operating or moving, keep equipment away from overhead powerlines and devices.
- Fully lower equipment before moving.
- Electrocution can result without direct contact.
- If the equipment should become electrically charged, keep clear of equipment and load.

Failure to comply will result in serious injury or death.

ELECTROCUTION HAZARD

Failure to comply will result in serious injury or death.

(See Fig. # 2-20)
**WARNING**

**UPENDING HAZARD**

Can cause serious injury or death.

- Anchor intake end and/or support discharge end to prevent upending.
- Intake end must always have downward weight. Do not release until attached to tow bar or resting on ground.
- Do not raise intake end above tow bar height.
- Empty conveyor and fully lower before moving.

Fig. # 2-22 Warning Decal Qty 1 Per Machine P/N 90-44-0264

Fig. # 2-23 Safety Decal Location

(See Fig. # 2-22)
DANGER
MISSING GUARD HAZARD
To Prevent Injury or Death:
1. Shut off and lockout power source.
2. Reattach guard before operating.

Fig. # 2-24 Danger Decal Qty 2 Per Machine P/N 90-44-0021

DANGER
MISSING GUARD HAZARD
Machine is shown with guard removed for illustrative purposes.
• Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
• Keep body, hair, and clothing away from moving conveyor belt and rollers.
• Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

Fig. # 2-25 Safety Decal Location (Electric Drive Option Shown)

Fig. # 2-26 Safety Decal Location (All Drive Options) Qty. 2 (1 Each Side)
Fig. # 2-27 Danger Decal Qty 2 Per Machine P/N 90-44-0021

**DANGER**

MISSING GUARD HAZARD
To Prevent Injury or Death:
1. Shut off and lockout power source.
2. Reattach guard before operating.

Machine is shown with guard removed for illustrative purposes.

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

Fig. # 2-28 Safety Decal Location (Gas Engine Drive Option Shown)

Fig. # 2-29 Safety Decal Location (Gas Engine Drive Option Shown)

(See Fig. # 2-27)

(See Fig. # 2-27)
WARNING

Improper operation or maintenance can result in serious injury or death.

Read and understand the Operator's Manual, and all safety signs before using or maintaining the machine. If you do not understand the information in the manual, consult your supervisor, the owner, or the manufacturer.

Fig. # 2-30 Warning Decal Qty 1 Per Machine P/N 90-44-0295

Fig. # 2-31 Safety Decal Location

(See Fig. # 2-30)
ROTATING PART HAZARD
Can cause serious injury or death.
1. Keep hands, feet, clothing and hair away from moving parts.
2. Do not operate with guards removed.
3. Keep others away from moving parts.

Fig. # 2-32 Warning Decal Qty 1 Per Machine, P/N 90-44-0167
(See Fig. # 2-32)

Fig. # 2-33 Safety Decal Location (Electric Drive Option)
(See Fig. # 2-32)

Fig. # 2-34 Safety Decal Location (Gas Engine Drive Option)
(See Fig. # 2-32)

Fig. # 2-35 Safety Decal Location (Gas Engine Drive Option)
(See Fig. # 2-32)
WARNING

HIGH-PRESSURE FLUID HAZARD

TO PREVENT SERIOUS INJURY OR DEATH:
1. Relieve pressure on system before repairing, adjusting or disconnecting.
2. Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
3. Keep all components in good repair.

Fig. # 2-36 Warning Decal Qty 2 Per Machine (Hydraulic Winch Option) P/N 90-44-0173

(See Fig. # 2-25)

Fig. # 2-37 Warning Decal Location (Hydraulic Winch Option)
**WARNING**

**ENTANGLEMENT HAZARD**

Can cause serious injury or death.

- Keep away from rotating cable drum and winch cable.
- Inspect lift cable periodically; replace if damaged.
- Inspect cable clamps periodically; tighten if necessary.
- 12 gal/min Maximum hydraulic flow rate

(See Fig. #2-39)

**Fig. # 2-39** Warning Decal Qty 1 Per Machine (Hydraulic Winch Option Only) P/N 90-44-0275
WARNING
TRANSPORT HAZARD
Can cause serious injury or death.
- Securely attach equipment to vehicle with correct pin and safety chains.
- Use a tow vehicle to move equipment.

Fig. # 2-40 Warning Decal Qty 1 per machine P/N 90-44-0257

Fig. # 2-41 Safety Decal Location
**WARNING**

**ENTANGLEMENT AND OPEN BELT HAZARD**

Can cause serious injury or death.

- DO NOT step on or touch moving conveyor belt.
- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order.

*Fig. # 2-42 Warning Decal Qty 2 per Machine P/N 90-44-0296*

*(See Fig. # 2-42)*

*Fig. # 2-43 Safety Decal Location*
ENGLISH
Fig. # 2-44 Warning Decal Qty 2 Per Machine P/N 90-44-0260

ENTANGLEMENT HAZARD
Can cause serious injury or death.

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

90-44-0260

Fig. # 2-45 Safety Decal Location

(See Fig. # 2-44)

Fig. # 2-46 Safety Decal Location

(See Fig. # 2-44)

Fig. # 2-47 Safety Decal Location

(See Fig. # 2-44)
**CAUTION**

**SLIP HAZARD**
Can cause injury or damage to equipment
- **DO NOT** use belt guard as a step.

---

Fig. # 2-48 Caution Decal Qty 1 Per Machine P/N 90-44-0258

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(See Fig. # 2-48)

Fig. # 2-49 Caution Decal

---

(See Fig. # 2-48)

Fig. # 2-50 Caution Decal
**WINCH OPERATION**

Can cause equipment damage.

- After lowering equipment, always tighten brake lock by turning winch handle clockwise at least two clicks.
- Rotate winch handle until cable has light tension, when in towing position.
- Do not lubricate winch brake discs.

**ENTANGLEMENT HAZARD**

Can cause serious injury or death.

- Keep away from rotating cable drum and winch cable.
- Inspect lift cable periodically; replace if damaged.
- Inspect cable clamps periodically; tighten if necessary.

---

*Fig. # 2-51 Caution / Warning Decal Qty 1 Per Machine P/N 90-44-0270*

*Fig. # 2-52 Warning Decal Location*
**WARNING**

ROLLOVER HAZARD

Can cause serious injury or death.

- Fully extend axles before raising conveyor tube.
- Retract axles before transporting.

Fig. # 2-53 Warning Decal Qty 1 Per Machine (Extendable Axle Models Only) P/N 90-44-0259

Fig. # 2-54 Warning Decal Location

(See Fig. # 2-53)

Fig. # 2-55 Warning Decal Location

(See Fig. # 2-53)
ROTATING PTO DRIVELINE HAZARD

Can cause serious injury or death.

- Keep hair, body, and clothing away from moving parts.
- Keep all driveline guards and shields in place and in good working condition when operating.
- Keep u-joint angles equal and as small as possible.
- Do not exceed maximum recommended length.
- Consult owner's manual for maximum operating RPM.

Fig. # 2-56 Danger Decal (Front PTO Models Only) P/N 90-44-0273

(See Fig. # 2-56)

(See Fig. # 2-56)

(See Fig. # 2-56)
ROTATING PTO DRIVELINE HAZARD

Can cause serious injury or death.

- Keep hair, body, and clothing away from moving parts.
- Keep all driveline guards and shields in place and in good working condition when operating.
- Keep u-joint angles equal and as small as possible.
- Do not exceed maximum recommended length.
- Consult owner's manual for maximum operating RPM.

Fig. # 2-60 Danger Decal (Side PTO Models Only) P/N 90-44-0273

(See Fig. # 2-60)

Fig. # 2-61 Danger Decal Location
2 - SAFETY INFORMATION

**DANGER**

**ELECTROCUTION HAZARD**

1. Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before servicing or repairing electrical components.
2. Keep electrical components in good repair.

Fig. # 2-62 Danger Decal Qty 1 Per Machine P/N 90-44-0350

Fig. # 2-63 Safety Decal Location
Important, Notice & Informative Decal Locations

**NOTICE**

WHEEL MOVEMENT

Can cause equipment damage.

- Wheels must be free to move when raising or lowering equipment.
- When equipment is positioned, chock all wheels.

Fig. # 2-64 Notice Decal Qty 1 Per Machine P/N 90-44-0269

Fig. # 2-65 Informational Decal

(See Fig. # 2-64)
To prevent belt damage, use correct belt tension and do not attempt to adjust belt tracking with the take-up roller.

To set correct belt tension:

- With conveyor empty, tighten nut to spring cover so that spring is not visible.
- Ensure take-up roller is tensioned equally on both sides by measuring “A” distance on both sides.
- After conveyor belt has been tensioned, run the unit, check alignment of all other rollers, and adjust alignment roller as needed.

See manual for complete instructions.
Fig. # 2-69 Informational Decal Qty 1 Per Machine P/N 90-44-0362

Press and hold the red button on throttle to adjust.

Fig. # 2-70 Informational Decal

(See Fig. # 2-69)
Fig. # 2-71 Informational Decal Qty 1 Per Machine P/N 90-44-0363

Fig. # 2-72 Informational Decal

(See Fig. # 2-71)
UNLEADED GASOLINE ONLY

Fuel must meet these requirements:

- 87 Octane or higher.
- Maximum 10% of ethanol content.
- Never use gasoline with ethanol content higher than 10%. The use of gasoline with ethanol content higher than 10% can damage the engine and the fuel system and will void the manufacturer's warranty.
- DO NOT use E15, E20 or E85, they are not approved and should not be used.
Fig. # 2-75 Informational Decal Qty 1 Per Machine P/N 90-44-0366

(See Fig. # 2-73)

Fig. # 2-76 Informational Decal
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3 - TRANSPORT OPERATIONS

Transport Safety

1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when moving or transporting the machine.

2. Check with local authorities regarding conveyor transport on public roads. Obey all applicable laws and regulations.

3. Always travel at a safe speed. Use caution when making corners or meeting traffic. Travel speed should be such that complete control and machine stability is maintained at all times.

4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.

5. Do not allow riders on the Conveyor or the tractor when transporting.

6. Attach Conveyor to towing vehicle with a pin and retainer. Always attach the safety chain.

7. Lower Conveyor to its lowest position for transporting. Keep lift point at drawbar height.

8. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.

9. Do not exceed 25 m.p.h. (40 km/h). Reduce speed on rough roads and surfaces.

10. Stay away from overhead obstructions and power lines when transporting. Electrocutation can occur without direct contact. Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines. Should a contact between the machine and an electric power source occur, the following precautions must be taken: Stop the machine movement immediately. Apply the park brake, stop the engine. Check if you can safely leave the cab or your actual position without contacting the electrical wires. If not, stay in your position and call for help. If you can leave your position without touching lines, jump clear of the machine to make sure you do not make contact with the ground and the machine at the same time. Do not permit anyone to touch the machine until power has been shut off to the power lines.

11. Always use hazard warning flashers on tractor when transporting unless prohibited by law.

12. Slow down and signal before turning.

13. Follow correct towing procedure for equipment with or without brakes.
Transport Preparation

S-Drive Conveyors are designed to be easily and conveniently moved from place to place. When transporting, follow this procedure:

1. Review the Transport Safety Schematic before starting.
2. Be sure all bystanders are clear of the machine.
3. On electric motor drive units, unplug the power cord, and secure to prevent dragging.
4. On PTO powered units, disconnect PTO driveline from tractor and secure to the PTO rest. Secure it with the bent pull clevis pin, and hairpin and keep it in the PTO rest when transporting.
5. If the Standard Hitch (A) was removed during operation, then re-install the Standard Hitch (A), Bent Pull Clevis Pin (B), and Hairpin (C).

6. Attach to a tractor or truck using a hitch pin with a retainer and safety chains. (Refer to “Connect the Conveyor to the Towing Vehicle”).

7. If equipped with an optional lighting package, connect wiring harness to the towing vehicle and secure across the hitch. Do not allow the harness to hang or drag on the ground.

8. Remove chocks from the wheels.

9. Slowly pull away from the storage facility and stop as soon as the discharge end clears the storage facility.

10. Stop and lower the S-Drive Conveyor into its fully down position. (Refer to “Raising And Lowering The Conveyor” in this section and the “Manual & Hydraulic Winch” Controls in Working Operations section)

11. If equipped with extendable axles, retract axles before transporting. Conveyor must be connected to the towing vehicle before retracting axles. (Refer to “Extending and Retracting the Extendable Axles”).

12. Stay away from overhead power lines. Electrocution can occur without direct contact. (See Fig. # 3-4)

IMPORTANT
It may be necessary to raise the discharge end above the storage facility to provide clearance to raise the intake end. (See Fig. # 3-4)

DANGER
ELECTROCUTION HAZARD
- When operating or moving, keep equipment away from overhead powerlines and devices.
- Fully lower equipment before moving.
- Electrocution can result without direct contact.
- If the equipment should become electrically charged, keep clear of equipment and load. Failure to comply will result in serious injury or death.

Fig. # 3-4 Danger, Electrocution Hazard

Fig. # 3-2 Re-Install Standard Hitch

Fig. # 3-3 Attach S-Drive Conveyor To Towing Vehicle

Fig. # 3-5 Remove Wheel Chocks
13. Never go across slopes of more than 20°. It is better to go straight up or straight down a slope.

\[\textbf{WARNING}\]

Avoid transporting the S-Drive Conveyor along slopes of 20° or more, failure to heed may result in serious injury or death.

14. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.

15. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.

16. It is not recommended that the machine be transported faster than 25 mph (40 km/h). (See Fig. # 3-7) This table gives the acceptable transport speed as the ratio of towing vehicle weight to machine weight.

<table>
<thead>
<tr>
<th>Road Speed</th>
<th>Weight of fully equipped or loaded implement(s) relative to weight of towing machine.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25 mph (40 km/h)</td>
<td>1 to 1, or less</td>
</tr>
<tr>
<td>Up to 10 mph (16 km/h)</td>
<td>2 to 1, or less</td>
</tr>
<tr>
<td>Do not tow if</td>
<td>More than 2 to 1</td>
</tr>
</tbody>
</table>

\[\text{Fig. # 3-7 Speed vs Weight Ratio}\]

17. Do not allow riders on the machine or tractor.

18. During periods of limited visibility, use pilot vehicles or add extra lights to the machine.

19. Always use hazard flashers on the towing vehicle when transporting unless prohibited by law.

20. Longer conveyors have a large turning radius. Allow ample room for turning as discharge end may swing dramatically.
Connect the Conveyor to the Towing Vehicle

Follow all safety precautions when transporting the S-Drive Conveyor and use a proper towing vehicle. The S-Drive Conveyor may be attached to a truck or tractor whenever it is moved. It is road worthy and may be transported by a truck over long distances. Follow this procedure when attaching to or unhooking from a towing unit:

1. Make sure that bystanders, especially small children, are clear of the working area.
2. Be sure that there is sufficient room and clearance to back up to the conveyor.

3. Set the park brake before dismounting.
4. Place the conveyor in the fully down position. The frame should be in the fully down position with slight tension on the lift cable. (Refer to “Raising And Lowering The Conveyor” in this section and the “Manual & Hydraulic Winch” Controls in Working Operations section)
5. Raise the hopper section only high enough to reach the drawbar height on the towing vehicle, avoid an upending hazard. (See Fig. # 3-9)

6. Place and secure hitch pin and safety chains. (See Fig. # 3-10)

**IMPORTANT**
The safety chains should be threaded around the drawbar cage and form a cradle that will prevent the machine from digging into the road surface, should a breakaway occur. (See Fig. # 3-10)

**IMPORTANT**
Use a type of hitch pin that will not allow conveyor to separate from towing vehicle.

**IMPORTANT**
It is the customers responsibility to provide safety chains to secure the S-Drive Conveyor to the towing vehicle before transporting the machine.

7. Replace the safety chain if one or more links or end fittings are stretched, broken, damaged, or deformed.
8. The safety chains should have a load rating at least as high as the conveyor weight, refer to Specifications.
9. Remove the chocks from the wheels.
10. Move the machine out of its working or storage location.
11. Reverse the above procedures when unhooking.
Raising And Lowering The Conveyor

Before raising, lowering, moving or adjusting the conveyor, make sure the area around the conveyor is clear of obstructions and or untrained personnel. Never allow anyone to stand on or beneath the conveyor when it is being placed.

- Before raising or lowering the conveyor, allow the hitch tongue to rotate by pulling the Clevis Pin (B), and Hairpin (C) from the Hitch (A). The clevis pin does not have to be re-installed during operation, but will have to remain installed during transporting. (See Fig. # 3-11)

![Fig. # 3-11 Adjustable Hitch Tongue](image1)

- When the conveyor is raised to the desired height, lower the jack to secure the position and remove the clevis pin from the Transport Position (A) and insert the clevis pin into either the Mid Running Position (B), or High Running Position (See Fig. # 3-12)

![Fig. # 3-12 Three Position Adjustable Hitch](image2)

- Check that wheels are free to move before raising or lowering the conveyor.
- The conveyor is not insulated, keep away from overhead power lines. Electrocution can occur without direct contact.
- Do not get on or beneath the conveyor when raising or lowering.
- Raise and lower conveyor on reasonably level ground only. The conveyor could topple if ground is too uneven.
- Never attempt to increase height of the tube by positioning wheels on lumber, blocks, or by any other means. To do so will result in damage to conveyor and/or serious injury.
- Do not rest the spout or hood on the bin. This may cause hood or belt damage.
- Anchor intake end before using.
- Do not transport the conveyor unless the axles are in the retracted position.

Extending and Retracting the Extendable Axles

Extendable axles are standard equipment for S-Drive Conveyor’s 85 feet in length or longer. When equipped with extendable axles follow these steps for extending and retracting the extendable axles.

**IMPORTANT**

Do not raise the conveyor unless all material is discharged from the conveyor and the axles are in the extended position.

Do not transport the conveyor unless the axles are in the retracted position.

**WARNING**

Rollover can occur if axles are not extended before raising the conveyor.

**WARNING**

- Fully extend axles before raising conveyor tube.
- Retract axles before transporting.

Extending the Extendable Axles

1. Ensure the conveyor is empty and is on level ground before attempting to extend or retract the axles.
2. The conveyor must be attached to the tractor at all times.

3. Remove the **Jack (A) Bent Pull Clevis Pin (B), and Hairpin (C),** from the front **Jack Stub (D).** *(See Fig. # 3-13)*

4. Using the jack that was removed from the front jack stub, insert it into one of the jack stubs located on one end of the axle. **Jack (A) must be secured to jack stub using Bent Pull Clevis Pin (B), and Hairpin (C).** *(See Fig. # 3-14)*

3. Raise one side at a time. Lower the jack to raise the conveyor only high enough for the tire to clear the ground. *(See Fig. # 3-15)*

4. Remove the **Bent Pull Clevis Pin (B), and Hairpin (C) from the Axle (A).** *(See Fig. # 3-16)*
5. Move the Wheel & Axle Shaft Assembly (D) outward approximately 19" until the holes line up. Reinsert the Bent Pull Clevis Pin (B) into the Axle (A), and secure with Hairpin (C). (See Fig. # 3-17)

6. Raise the jack to lower the conveyor to the ground.

7. Repeat the process on the opposite side of the axle.

Retracting the Extendable Axles

1. Ensure the conveyor is empty and is on level ground before attempting to extend or retract the axles.

2. The conveyor must be attached to the tractor at all times.

3. Remove the Jack (A) Bent Pull Clevis Pin (B), and Hairpin (C), from the front Jack Stub (D). (See Fig. # 3-13)

4. Using the jack that was removed from the front jack stub, insert it into one of the jack stubs located on one end of the axle. Jack (A) must be secured to jack stub using Bent Pull Clevis Pin (B), and Hairpin (C). (See Fig. # 3-14)

3. Raise one side at a time. Lower the jack to raise the conveyor only high enough for the tire to clear the ground. (See Fig. # 3-15)
4. Remove the Bent Pull Clevis Pin (B), and Hairpin (C) from the Axle (A). (See Fig. # 3-16)

5. Move the Wheel & Axle Shaft Assembly (D) inward approximately 19” until the holes line up. Reinsert the Bent Pull Clevis Pin (B) into the Axle (A), and secure with Hairpin (C). (See Fig. # 3-17)

6. Raise the jack to lower the conveyor to the ground.

7. Repeat the process on the opposite side of the axle.
It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the Kwik Belt S-Drive Standard Conveyor. Follow all safety instructions exactly. It is everyone’s business. By following recommended procedure, a safe working environment is provided for the operator, bystanders and the area around the work site. The design and configuration of this machine includes safety decals and equipment. Hazard controls and accident prevention are dependent upon the personnel operating and maintaining it. Their awareness, concern, prudence and proper training are crucial. Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely. There are instructions on how to set it, and to provide maximum efficiency. By following the operating instructions, in conjunction with a good maintenance program, your Kwik Belt S-Drive Standard Conveyor will provide many years of trouble free service.
Machine Components (Page 1 of 2)

⚠️ DANGER
MISSING GUARD HAZARD

Machine is shown with guard removed for illustrative purposes.

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

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<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Item</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Main Tube</td>
<td>22</td>
<td>Drawbar Cage</td>
</tr>
<tr>
<td>2</td>
<td>Discharge Spout</td>
<td>23</td>
<td>Electric Motor Drive (Optional Equipment)</td>
</tr>
<tr>
<td>3</td>
<td>Intake Hopper</td>
<td>24*</td>
<td>Gas Engine Drive (Optional Equipment)</td>
</tr>
<tr>
<td>4</td>
<td>Truss</td>
<td>25</td>
<td>Axle Assembly</td>
</tr>
<tr>
<td>5</td>
<td>Transport Slide</td>
<td>26</td>
<td>Hopper Section</td>
</tr>
<tr>
<td>6</td>
<td>Transport Rail</td>
<td>27</td>
<td>Discharge Section</td>
</tr>
<tr>
<td>7</td>
<td>Lower Transport Arm</td>
<td>28</td>
<td>Wind Guard</td>
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<tr>
<td>8</td>
<td>Upper Transport Arm</td>
<td>29</td>
<td>Hopper Pulley</td>
</tr>
<tr>
<td>9</td>
<td>Conveyor Belt</td>
<td>30</td>
<td>Upper S-Drive Return Roller</td>
</tr>
<tr>
<td>10</td>
<td>HD Adjustable Hitch</td>
<td>31</td>
<td>Lower S-Drive Return Roller</td>
</tr>
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<td>Jack</td>
<td>32</td>
<td>Drive Pulley</td>
</tr>
<tr>
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<td>Owners Manual Canister</td>
<td>33</td>
<td>Snub Pulley</td>
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<td>Manual Winch</td>
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<td>Take-up Pulley</td>
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<tr>
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<td>S-Drive</td>
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<td>Spout Pulley</td>
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<td>15</td>
<td>S-Drive Guard</td>
<td>36</td>
<td>S-Drive Takeup Cover</td>
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<td>16</td>
<td>Cable Truss</td>
<td>37</td>
<td>S-Drive Takeup</td>
</tr>
</tbody>
</table>

*Not shown in this view*
Machine Components Contd.

The S-Drive Conveyor uses an endless belt that travels in a frame for moving grain or almost any granular product. The machine is portable for easy moving and can be raised or lowered as required for filling storage facilities.

An electric motor, gas engine, or tractor supplied PTO can supply power to the conveying belt drive located at the S-Drive section.

Material enters the system through the intake hopper on the bottom end and exits through the discharge spout on the top end.

A hand operated winch, hydraulic winch, or hydraulic lift cylinders are used to raise or lower the frame.

The main components are shown above and on the previous page in this manual.

* There are some options shown which may not be available on all models.

* The position of components may vary depending on the model.
Fig. # 4-27 Machine Components

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Item</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Front PTO Drive Option</td>
<td>6</td>
<td>Extendable Axles</td>
</tr>
<tr>
<td>2</td>
<td>Jack Stubs</td>
<td>7</td>
<td>Hydraulic Lift Cylinders</td>
</tr>
<tr>
<td>3</td>
<td>Hydraulic Winch (Optional Equipment)</td>
<td>8</td>
<td>PTO Shaft</td>
</tr>
<tr>
<td>4</td>
<td>Scissor Lift Undercarriage</td>
<td>9</td>
<td>Gearbox</td>
</tr>
<tr>
<td>5</td>
<td>Tube Truss</td>
<td>10</td>
<td>Side PTO Drive Option</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
<td>PTO Rest</td>
</tr>
</tbody>
</table>
MACHINE BREAK-IN

Although there are no operational restrictions on the S-Drive Conveyor when used for the first time, it is recommended that the following mechanical items be checked:

A. Before starting:
   1. Read the Owner / Operator’s Manual.
   2. During the machines first few minutes of operation, check conveying belt alignment to ensure preset alignment does not vary under loaded conditions.

B. After operating or transporting for 1/2 hour:
   1. Re-torque all the wheel bolts.
   2. Re-torque fasteners and hardware.
   3. Check that all safety decals are installed and legible. Apply new decals if required.
   4. Check the drive belt and roller chain tension and alignment. Tension or align as required.
   5. Check the conveying belt tension and alignment. Tension or align as required.
   6. Check that all guards are installed and working as intended.

C. After operating for 5 hours and 10 hours:
   1. Re-torque all wheel bolts, fasteners and hardware.
   2. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.
   3. Check safety decals. Install new ones if required.
   4. Check the drive belt, roller chain, and conveying belt tension and alignment. Tension or align as required.
   5. Then go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

PRE-OPERATION CHECKLIST

Efficient and safe operation of the S-Drive Conveyor requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining the good mechanical condition of the S-Drive Conveyor that this checklist is followed.

Before operating the S-Drive Conveyor and each time thereafter, the following areas should be checked off:

1. Service the machine per the schedule outlined in Section 5 Service and Maintenance.
2. Use only a tractor, or electric motor of adequate power to operate the machine.
3. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.
4. Check worksite. Clean up working area to prevent slipping or tripping.
5. Check winch and cable for security and operation. There should be at least 3 complete wraps of cable around winch drum in fully down position. Cable anchor on winch drum must be tight. Inspect cable for fraying or damage and replace if damaged or frayed.
6. Check that cable clamps are secure.
7. Check that drive belts and chains and conveying belts are not frayed or damaged and that they are properly adjusted and aligned.
8. Be sure S-Drive Conveyor wheels are chocked.
9. Check that discharge and intake areas are free of obstructions.

IMPORTANT

Anchoring and/or support of S-Drive Conveyor during operation is necessary. When lower half of S-Drive Conveyor empties of material, the weight balance transfers to the upper end of the machine, which can cause upending.
CONTROLS

Before starting to work, all operators should familiarize themselves with the location and function of the controls.

1. Electric Drive Motor (Standard Equipment)

   **IMPORTANT**
   In some cases, not all S-Drive Conveyors are supplied with ON/OFF switches. If your machine was not supplied with a ON/OFF switch, have a licensed electrician to provide power to the machine per the National Electrical Code ANSI/NFPA 70 and local codes. Install an ON, OFF switch for the convenience of the operator.

   **Fig. # 4-28 Electric Motor ON/OFF Switch**

   **Fig. # 4-29 Electric Motor**

   A. Turn the electric motor switch on to start the S-Drive Conveyor.
   B. Discharge the desired amount of material from the S-Drive Conveyor.
   C. Run until the belting is empty.
   D. Turn off motor and lock out power source.
   E. Unplug the power cord, wrap around the equipment and secure to prevent dragging, especially when transporting or placing the conveyor.
2. Collapsible Intake Hopper

The conveyor is designed with a collapsible intake hopper to allow it to go under low clearance discharge machines such as grain trucks and grain bins. (See Fig. # 4-30)

![Fig. # 4-30 Collapsible Intake Hopper](image)

A. Push the hopper down and secure with hook. (See Fig. # 4-31)

![Fig. # 4-31 Hopper Collapsed](image)

C. Push down again to release the hook and raise the hopper cloth.

![Fig. # 4-32 To Expand Hopper, Push Down and Unhook](image)
3. Manual Winch (Standard Equipment)

A winch is located on the main tube and is used to raise and lower the conveyor. Turn the handle clockwise to raise and counterclockwise to lower. (See Fig. # 4-33)

![Manual Winch](image1)

**Fig. # 4-33 Manual Winch (Standard Equipment)**

Before using the hand winch, ensure that:

- The cable anchor on the winch drum is tight.
- All cable clamps are secure.
- The lift cable is seated in cable pulley.
- The cable is in good condition, if damaged, replace it immediately.
- There is a minimum of 3 cable wraps on the winch drum when the conveyor fully lowered.

![Keep 3 Wraps Around Winch Drum](image2)

**Fig. # 4-34 Keep 3 Wraps Around Winch Drum**

**To operate:**

A. Turn the winch handle to raise and lower the conveyor. The winch must make a clicking sound when raising the conveyor. If clicking sound stops, retain grip on handle, lower the conveyor fully and repair winch.

**DANGER**

Do not touch, grab, or guide cable while equipment is being raised or lowered.

**IMPORTANT**

Do not continue to crank the winch when the conveyor has reached full up position as this can cause damage.

B. While raising the S-Drive Conveyor, stop raising prior to hitting the transport slide with the cable clamp. (See Fig. # 4-40)

![Cable Clamp](image3)

**Fig. # 4-35 Stop Raising Prior to Cable Clamp Hitting Transport Slide**

C. When lowering, if the cable becomes slack before conveyor is in fully down position, this indicates that the track shoe is stuck. To correct the problem, reverse the winch and raise the conveyor until the cable is taut and the track slides normally. Do not lubricate the winch brake discs.

D. After lowering the conveyor, always tighten the brake lock by turning the winch handle clockwise at least two clicks.

E. After lowering, rotate the winch handle until cable has light tension.
4. **Hydraulic Winch (Optional Equipment)**

A hydraulic Winch is located as shown (See Fig. # 4-36) and is used to raise and lower the conveyor. The hydraulic winch is connected to your tractor’s hydraulic system.

![Fig. # 4-36 Hydraulic Winch Option](image)

Before using the hydraulic winch, ensure that:

- The cable anchor on the winch drum is tight.
- All cable clamps are secure.
- The lift cable is seated in cable pulley.
- The cable is in good condition, if damaged, replace it immediately.
- There is a minimum of 3 cable wraps on the winch drum when the conveyor is fully lowered. (See Fig. # 4-37)

![Fig. # 4-37 Keep 3 Wraps Around Winch Drum](image)

- The hydraulic hoses are free from leaks, binding, flattening, kinks, or wear.

**Installing Hydraulic Hoses:**

Hydraulic hoses for the hydraulic winch are not supplied with the machine as the preference for length is different from operator to operator. Follow the next steps to correctly install the hydraulic hoses to the hydraulic winch.

A. In most cases, your machine will have the cable wrapped in the direction shown in (See Fig. # 4-38) if this is the case, then install the hose to be pressurized in PORT “B” and the hose to used as a return line to PORT “A”. This will raise the discharge end of the machine.

![Fig. # 4-38 Cable Winding Direction](image)

<table>
<thead>
<tr>
<th>PORT</th>
<th>HYDRAULIC FLUID STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>“A”</td>
<td>PRESSURIZED = CCW</td>
</tr>
<tr>
<td>“B”</td>
<td>PRESSURIZED = CW</td>
</tr>
</tbody>
</table>

B. If your machine has the cable wrapped in the direction shown in (See Fig. # 4-39), then install the hose to be pressurized in PORT “A” and the hose to used as a return line to PORT “B”. This will raise the discharge end of the machine.

![Fig. # 4-39 Cable Winding Direction](image)
To operate:

A. Wipe the hydraulic hose couplers clean before connecting the tractor to the winch.

**IMPORTANT**

Dirt in the hydraulic system can damage the winch motor and can cause failure to the system.

B. Connect the hydraulic hoses and ensure the connections are tight.

C. Start tractor and idle at low rpm. Engage hydraulic lever in the tractor to the hydraulic winch. Test the direction of rotation of winch to ensure drum is moving in the direction required. Increase tractor rpm until desired rate of lift or descent is reached.

**DANGER**

Do not touch, grab, or guide cable while equipment is being raised or lowered.

**IMPORTANT**

Do not continue to supply power to winch when the conveyor has reached full up position as this can cause damage.

D. While raising the S-Drive Conveyor, stop raising prior to hitting the transport slide with the cable clamp. (See Fig. # 4-40)

E. When lowering, if the cable becomes slack before the conveyor is in the fully down position, this indicates that the track shoe is stuck. To correct the problem, reverse the winch and raise the conveyor until the cable is taut and track slides normally.

F. After lowering, adjust the hydraulic winch until cable has light tension.

5. **Jack**

It is recommended that the jack be used to raise the S-Drive Conveyor to the drawbar height to connect to a towing vehicle.

Follow this procedure when attaching to or unhooking from a tow unit.

A. Make sure that bystanders, especially small children, are clear of the working area.

**DANGER**

Electrocution Hazard

- When operating or moving, keep equipment away from overhead powerlines and devices.
- Fully lower equipment before moving.
- Electrocution can result without direct contact.
- If the equipment should become electrically charged, keep clear of equipment and load.

Failure to comply will result in serious injury or death.

**Fig. # 4-41 Danger, Electrocution Hazard**

B. Use the jack to raise the hopper end of the machine only high enough to connect to the towing vehicle.

C. Make sure that the pin that secures the jack to the jack stub is installed before lowering the jack to the ground. (See Fig. # 4-42)

**Fig. # 4-42 Make Sure Pin Is Installed Before Lowering Jack**
D. Rotate the handle CW to lower the jack which raises the hopper end of the machine.

E. Rotate the handle CCW to raise the jack which lowers the hopper end of the machine.

F. The jack can also be removed completely from the S-Drive Conveyor.

6. **Hydraulic Lift Cylinders**

   The hydraulic lift cylinders are located as shown and are used to raise and lower the conveyor. The hydraulic lift cylinders (See Fig. # 4-45) are connected to your tractor’s hydraulic system with a ball valve assembly. (See Fig. # 4-46)

   **Fig. # 4-43 Rotate the Handle CW To Lower the Jack Which Raises The Hopper End**

   **Fig. # 4-44 Rotate the Handle CCW To Raise the Jack Which Lowers The Hopper End**

   **Fig. # 4-45 Hydraulic Lift Cylinders**

   **Fig. # 4-46 Hydraulic Ball Valve Assembly**

   **Raising:**

   A. Before connecting the hydraulic hose ball valve assembly to the tractor, wipe the hose coupler clean.

   **IMPORTANT**

   Dirt in the hydraulic system can damage the winch motor and can cause failure to the system.
B. Connect the hydraulic hoses, ensure the connections are tight. Visually check for leaks, binding, flattening, kinks, or wear.

C. Open the ball valve assembly to the “ON” position.

D. Start tractor and idle at low rpm.

E. Engage hydraulic lever to power the cylinder.

F. Increase tractor rpm until desired rate of lift is reached.

G. Raise the conveyor to the desired height.

H. Close the ball valve assembly to the “OFF” position when the conveyor is fully raised.

**IMPORTANT**
Failure to close the ball valve will cause the frame to lower onto the bin structure, damaging the conveyor.

**Lowering:**

A. Reconnect the hydraulic hose coupler to tractor, if disconnected. Keep the tractor running while lowering the conveyor should the need arise to re-lift it.

B. Open the ball valve assembly to the “ON” position.

C. Open the tractor valve, feathering the control to prevent too rapid a descent.

**IMPORTANT**
Once the valves are opened, the conveyor tube lowers by gravity. As the tube nears the fully down position, the rate of descent will increase. Do not operate with the tractor valve fully open.

4. Turn off the tractor, and lock out the tractor power source.

5. Before disconnecting hydraulic couplers, relieve the hydraulic pressure.

**WARNING**
Disconnecting a hydraulic hose under pressure can result in serious injury.

7. **Gas Engine Controls**
The gas engine controls are located as shown and are used to start and run the engine to power the conveyor.

A. Make sure the Belt Drive switch is in the OFF position.
(See Fig. # 4-47)

**Fig. # 4-47 Belt Drive Switch ON/OFF**

B. Move throttle to its idle position (Approx 1/3 throttle) Press and hold the red button on the throttle and tighten knob.

**Fig. # 4-48 Adjust Throttle To Idle Position**
C. Close the choke by pulling the handle as shown if the engine is cold or if the unit has not been run for a while.

Fig. # 4-49 Pull Handle To Choke As Needed

D. Turn the ignition key clockwise to start the engine. Release the key when the engine starts.

Fig. # 4-50 Pull Handle To Choke As Needed

E. Run for 2-3 minutes to allow the engine to warm.

F. Engage the belt drive switch when the engine is running just above idle.

IMPORTANT
Do not engage drive belt when engine is at full RPM.

G. Now, increase engine speed to full throttle.

H. Start the flow of material and unload into the intake hopper.
When using the S-Drive Conveyor, follow this procedure:

1. Clear the area of bystanders, especially small children, before starting.
2. Review the Pre-Operation Checklist (Section 4.4) before starting.
3. Review the Workplace Hazards schematics and use extra care when inside the hazard area. Keep all spectators and bystanders out of this area. Should anyone enter this area, stop the machine immediately.
MACHINE PLACEMENT

Follow this procedure when placing the S-Drive Conveyor into its working position:

1. Clear the area of bystanders, especially small children, before starting.
2. Be sure there is enough clearance from overhead obstructions and power lines or other equipment to move the machine into its working position.

3. Attach the S-Drive Conveyor to the tractor. (See Fig. # 4-56) (See Fig. # 4-57) (See Fig. # 4-58) (See Fig. # 4-59)
4. Back the machine up to the storage facility while it is in its lowered configuration.
5. Set the park brake on the towing vehicle before dismounting.
6. Use the winch to raise the machine so it clears the storage facility. Stay away from power lines.
7. Slowly back the machine until the discharge spout is over the opening in the storage facility.
8. Use the winch to slowly lower the discharge end of the machine until the spout is protruding into the storage facility without making contact.
9. Place chocks in the front and rear of each wheel.
10. Unhook the unit from the tractor or towing-vehicle and lower to the ground.
11. Remove the hitch from the machine to prevent interfering with other equipment.
12. Lower the machine again so the discharge end is resting on the storage facility.
13. If the S-Drive Conveyor is not being used with a storage facility, it will be necessary to stake or weight the intake end to prevent upending when the machine is emptying.
14. Review the Workplace Safety Diagram for your model prior to starting work. Follow all setup instructions and do not allow any unauthorized people into the working area.
15. For the front and side PTO Drive Models:
   A. Back tractor into position 10 to 12 feet from the conveyor.
   B. Chock tractor wheels and set parking brake.
   C. Check that the guard rotates freely and the driveline telescopes easily. If not, clean, lubricate or repair as required before installing.
   D. Depress pin on yoke to retract lock pin. Slide the yoke over the tractor shaft. Stop when the lock pin clicks into position in the groove.
   E. Pull on the yoke to be sure it is locked into the shaft.
   F. Check that the yokes on the driveline are secured to their respective shafts.
   G. Align the tractor axis with the conveyor input shaft to minimize the angles of the universal joints on the PTO driveline. 15° or less is recommended. (See Fig. # 4-56) (See Fig. # 4-57) (See Fig. # 4-58) (See Fig. # 4-59)
   H. Ensure the PTO drive on the tractor is in the off position before starting the tractor.
   I. When raising or lowering the conveyor, disconnect the PTO driveline.
   J. If restarting the conveyor under load (tube is full), engage the PTO with the tractor idling.
   K. If everything is operating normally, start running grain through the conveyor and increase the speed to rated rpm to produce the required flow.
   L. To shutdown, reduce the speed to low idle and lockout the PTO.
   M. Disconnect PTO driveline from tractor and secure to the PTO rest. Secure it with the bent pull clevis pin, and hairpin and keep it in the PTO rest when transporting.

   IMPORTANT
   Engaging PTO at high engine speed will result in equipment damage.

16. Reverse the above procedure when removing the machine from its working position.
**IMPORTANT**

The hitch pin must be long enough to pass through both ears of the hitch tongue. Also the pin diameter must be a minimum of Ø1.0”.

<table>
<thead>
<tr>
<th></th>
<th>Front PTO Drive Option</th>
<th>Side PTO Drive Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dim.</td>
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<td>22-26 Series</td>
</tr>
<tr>
<td>A</td>
<td>29” - 37”</td>
<td>30” - 38”</td>
</tr>
</tbody>
</table>

**Fig. # 4-56 PTO Tractor to Conveyor Hitch Adjustment (Front PTO Drive Option)**

**Fig. # 4-57 PTO Tractor to Conveyor Hitch Adjustment (Side PTO Drive Option)**
Fig. # 4-58 PTO Shaft Alignment (Front PTO Drive Option)

Fig. # 4-59 PTO Shaft Alignment (Side PTO Drive Option)
OPERATING HINTS

Follow this procedure when placing the S-Drive Conveyor into its working position:

- Keep the hopper full for maximum capacity. Most efficient results will be obtained when flow of incoming material is directed to the front (closer to the tube) of the hopper. *(See Fig. # 4-61)*
- Always listen for any unusual sounds or noises. If any are heard, stop the machine and determine the source. Correct the problem before resuming work.
- Do not run the machine for long periods of time with no material on the belting. This increases the wear. Try to run only when moving material.
- Do not support discharge end directly on the storage facility.
- Stake the hopper or weigh it down to prevent upending.
- The hopper is designed with flashing to seal the junction of the belt with the sides of the hopper. It must be kept in good condition to prevent the material from “leaking” out of the hopper. Replace flashing if “leakage” occurs.
- Belt Speed:
  
  The best results are obtained when the drive is set to provide a belt speed of 600 - 650 ft./min.

  **Count the number of belt revolutions per minute to determine belt speed:** Use the connector splice as a reference when counting belt revolutions.

  **Find your Belt Length:** Use the specifications section to find your belt length.

**Example:** A model 1840 has a belt length of 87 ft. After running the S-Drive Conveyor for 1 Minute, the count is 7 complete revolutions. *(See Formula Below)*

\[
\text{Belt Revolutions Per/Min.} \times \text{Belt Length ft} = \text{Belt Speed ft/Min.} \\
7 \times 87 = 609 \\
\text{Belt Speed} = 609 \text{ ft/Min.}
\]

Contact your dealer or the factory for the appropriate drive components to give the recommended belt speed.

- Operating Angle:
  
  The manual or hydraulic winch can set the tube angle at any position between the lowest position and the highest position when operating. Because the belt does not have roll-back barriers, the product will roll-back if the angle is too steep. Do not position at more than 30°.

**IMPORTANT**

The lower the angle of the S-Drive Conveyor, the greater the capacity.

**Loading Area**

To achieve maximum capacity:

- Feed material onto the belt until the material tube clearance is 1/2”.

**Fig. # 4-60 Maintain 1/2” Clearance From Tube**

- Direct the flow of material into the input hopper in the direction of the belt travel for the best capacity.

**Fig. # 4-61 Load Material Only Between These Arrows**

- Do not:
  
  - Flood feed the hopper.
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.

Restarting with a Full Tube
When the conveyor is shut down inadvertently or due to an emergency, the tube may still be filled with grain.

**WARNING**
- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

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 sweep out. Do not use your hands.

**IMPORTANT**
Starting under load may result in damage to the S-Drive Conveyor 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. Electric Drive Models: It may be necessary to tighten the drive belts slightly to handle the heavier than normal loads.
4. Gas and PTO Drive Models: Since the start-up torque loads are so much higher than normal when the conveyor belting is full, restart at low speed. Do not let the conveyor belt drive roller spin on the belt if conveying belt does not start moving immediately. This will damage the drive roller and conveying belt.
5. Once the conveyor has been started, you may resume normal operation.

Shutdown
When operation has been completed:
1. Once the conveyor is clear of grain, lock out the power source.
2. Lower the conveyor fully.
3. Clean out any remaining grain from the conveyor with a vacuum or sweep out.
4. Clean the entire work area.
5. Remove anchors, supports, and chocks.

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

Failure to lock out power can cause severe injury.
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 conveyor 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 replacing is necessary, refer to the Maintenance Section.

**IMPORTANT**
Ensure the conveyor 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.
5 - MAINTENANCE

General Maintenance Safety

1. Review the Operator’s Manual and all safety items before working with, maintaining or operating the S-Drive Conveyor.
2. Place all controls in neutral or off, stop engine or motor, remove ignition key or disable power source and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Do not attempt to clean, lubricate, clear obstructions or make adjustments to the machine while it is in motion or while the engine is running.
4. Follow good shop practices:
   - Keep service area clean and dry.
   - Be sure electrical outlets and tools are properly grounded.
   - Use adequate light for the job at hand.
5. Before applying pressure to a hydraulic system, make sure all components are tight and that hoses and couplings are in good condition.
6. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
7. **DO NOT** step on or touch moving S-Drive Conveyor belt.
8. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
9. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
10. Place stands or blocks under the frame before working beneath the machine.
11. Before resuming work, install and secure all guards when maintenance work is completed.
12. Support the S-Drive Conveyor main tube before attempting maintenance on the under carriage assembly. Where possible, the S-Drive Conveyor should be in the fully down position.
13. Keep safety signs clean. Replace any sign that is damaged or not clearly visible.
14. Always make sure working area is clear of tools, parts, other persons and pets before you start operating the machine.
15. Lower the conveyor fully.
FLUIDS AND LUBRICANTS

Hydraulic Oil:
Use an ISO grade 36 hydraulic oil for all operating conditions (Hydrex MV36 or comparable).

Storing 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.

Grease:
Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable, SAE multipurpose lithium based grease.

Greasing
Use the Maintenance Chart provided on page 5-3 to keep a record of all scheduled maintenance.

1. Use only a hand-held grease gun for all greasing. An air-powered greasing system can damage the seals on bearings and lead to early failures.
2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. All roller bearings are sealed and not greasable, only the wheel hubs are greasable. They require minimal lubricant. Recommended greasing is 1 small stroke every 2 weeks. Be careful not to over-grease, as this may push the seal out.
4. Replace and repair broken fittings immediately.
5. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

SERVICING INTERVALS

Make sure your S-Drive Conveyor is ready to go to the field when you are. Perform the service and maintenance procedures that are recommended in this section to prepare for the next season. Careful maintenance preparation will save time and expense as you enter the busy season.

The periods recommended on page 5-3 are based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication and oil changes.

Schedules may vary depending on equipment options contained in the present unit.

The S-Drive Conveyor belt alignment is preset to run true under a condition of no load. It is important to check alignment and make adjustments, if required, during the initial few minutes of operation.
# MAINTENANCE CHART

<table>
<thead>
<tr>
<th>Interval</th>
<th>Page #</th>
<th>Maintenance Action</th>
<th># of Pts.</th>
<th>Change Fluid</th>
<th>Adjust Fluid</th>
<th>Drain Fluid</th>
<th>Check Fluid</th>
<th>Grease Fluid</th>
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<td>5-7</td>
<td>Re-torque Wheel Lug Bolts</td>
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<td>EVERY 10 HOURS OR EACH DAY</td>
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<td>5-9</td>
<td>Visually Inspect The Equipment</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>40 HOURS</td>
<td>5-10</td>
<td>Re-torque Wheel Lug Bolts</td>
<td>8/12/16</td>
<td>X</td>
<td>X</td>
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<tr>
<td>5,000 Miles</td>
<td>5-10</td>
<td>Grease Wheel Bearings</td>
<td>2</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>MONTHLY</td>
<td>5-11</td>
<td>Check Roller Lagging</td>
<td>2</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>5-12</td>
<td>Inspect Hopper Flashing</td>
<td>3</td>
<td>X</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>5-12</td>
<td>Inspect Belt Lacing</td>
<td>1</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>5-12</td>
<td>Inspect Hydraulic Hoses And Fittings</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<td></td>
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<tr>
<td></td>
<td>5-13</td>
<td>Check the Gearbox Oil</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
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<td>5-13</td>
<td>Clean Gearbox Breather(s)</td>
<td>1/3</td>
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<td>X</td>
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<td>5-14</td>
<td>Check &amp; Adjust the Belt Return Wear Blocks</td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>Yearly</td>
<td>5-14</td>
<td>Repack Wheel Bearings</td>
<td>2</td>
<td>X</td>
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<tr>
<td>2 to 3 Years</td>
<td>5-15</td>
<td>Change the Gearbox Oil</td>
<td></td>
<td></td>
<td></td>
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<td>X</td>
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<tr>
<td>As Required</td>
<td>5-15</td>
<td>Clean and Wash the Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td></td>
<td>5-16</td>
<td>Replace the Hopper Flashing</td>
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<td></td>
<td></td>
<td></td>
<td>X</td>
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<td>5-17</td>
<td>Replacing the Conveyor Belt</td>
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<td>5-18</td>
<td>Replace the Belt Lacing</td>
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<td>5-21</td>
<td>Tension And Alignment of the Drive Belts</td>
<td>2</td>
<td>X</td>
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<td>Replacing the Drive Belts</td>
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<tr>
<td></td>
<td>5-24</td>
<td>Inspect and Service the Hydraulic &amp; Hand Winch Cable</td>
<td>1</td>
<td>X</td>
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<tr>
<td></td>
<td>5-25</td>
<td>Check And Adjust the Truss Cables</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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</table>

* For conveyor’s with the gas drive option, consult your Kohler Command Pro owner’s manual for maintenance.
First 1 Hour

S-Drive Conveyor Belt Tension

Adjusting your conveyor belt for proper tension helps to ensure trouble-free operation and long belt life. A conveyor belt only needs to be tight enough to eliminate slipping on the drive roller. If the belt is too loose, it will slip on the drive roller making smoke or a noticeable sound, with the belt slowing down. To correct belt slippage and set proper tension on the belt, follow the steps below.

IMPORTANT

Failure to stop using the machine 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.

1. Clear area of bystanders.

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

2. With the conveyor empty and power locked out, follow this procedure.

3. Bottom out the Spring Cover (B) by tightening the 2 Nuts (A) to eliminate the gap so the Spring (C) does not show. (See Fig. # 5-1)

4. Repeat this for the other side.

5. Now tighten the nuts and additional 2 turns.

6. Repeat this for the other side.

7. Now make sure the take-up roller is tensioned equally on both sides by using a tape measure to check the distance "A". Slide the end of the tape measure behind the guard and against the bearing face and note the dimension to the edge of the washer. (See Fig. # 5-2)

8. Check belt tension by running conveyor for one (1) minute.

9. After running conveyor for one (1) minute, check for a gap at the spring cover. (See Fig. # 5-3) If gap is more than 1/2", repeat step # 3.

10. If belt tracks to either side abruptly, then the belt is too loose. See “Replacing the Conveyor Belt” in this section.

11. If belt is not slipping, but is running to one side gradually, the tensioned roller needs to be realigned. See “S-Drive Conveyor Belt Alignment” section to correct this problem.

12. Ensure that all covers and guards are securely in place before operation.
First 1 Hour

S-Drive Conveyor Belt Alignment

The S-Drive Conveyor Conveyor Belt should be checked during the first hour of operation, then weekly to ensure it is properly aligned. If the belt is tracking to one side, use the following steps to correct the problem.

**IMPORTANT**

Failure to stop using the machine with a misaligned belt will damage it. In extreme cases, sections of the belt will have to be replaced. This type of damage is not covered by warranty.

1. Clear area of bystanders.

2. With the conveyor empty and power locked out, follow this procedure.

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

3. Start at the side without a drive side first. Loosen the Bearing Nuts A at the drive roller. Do not loosen the Alignment Bolt B at this time. (See Fig. # 5-65)

4. Adjust Alignment Bolt B to center the bearing in the slots. (See Fig. # 5-5)

5. Check belt alignment by running the conveyor for one (1) minute.

6. Whichever direction the belt tracks towards, use Alignment Bolt B and tighten and move the belt centered. (See Fig. # 5-6)

**IMPORTANT**

Wait until the conveyor belt makes a complete revolution before adjusting for alignment. Some belts may have uneven edges, appearing misaligned.
7. Another way to center the bearings, is to check the dimension from the **Alignment Bolt (B)** to the **Tab (D)**. Dimension “A” should be the same on each side of the s-drive. (See Fig. # 5-7) (See Fig. # 5-8)

**NOTICE**
Checking for the equal alignment bolt dimension does not apply to the front PTO drive option.

8. While running the conveyor for one (1) minute, check the alignment at the intake hopper end. (See Fig. # 5-9)

9. If belt is not centered on the intake hopper end, and is tracking to the left side, adjust the bearing by tightening the **Alignment Bolt (B)** If the belt is tracking to the right side, loosen **Alignment Bolt (B)**. (See Fig. # 5-10)

**IMPORTANT**
The bearing is not adjustable on the right side of the intake hopper end, only the left side bearing is adjustable.
10. Now check conveyor belt alignment at the discharge end.  
(See Fig. # 5-11)

![Fig. # 5-11 Checking Conveyor Belt Alignment At Discharge End](image)

11. The bearings are set at the factory. No adjustment is required, except for the case of a replacement part.

12. Tighten bearing bolts and jam nuts if applicable.

13. Replace any covers or guards that may have been removed.

**First 1 Hour**

**Re-torque Wheel Lug Bolts**

1. Check after the first 1 hour of use. If lug nut torque is not at the specified torque, re-torque all lug nuts.  
(See Fig. # 5-12)  
(See Fig. # 5-13)  
(See Fig. # 5-14)

![Fig. # 5-12 Re-torque Wheel Lug Bolts](image)

![Hub Design](image)

<table>
<thead>
<tr>
<th>Hub Design</th>
<th>Torque</th>
<th>Number of Lug Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 BOLT</td>
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</tr>
<tr>
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<td>70 ft-lbs (95 N-m)</td>
<td>16</td>
</tr>
</tbody>
</table>

![Fig. # 5-13 Table Wheel Lug Bolt Torque Values](image)

![Fig. # 5-14 Wheel Lug Bolts Torque Pattern](image)
Every 8 Hours

Grease PTO Drivelines

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Do not service the PTO driveline while it is connected to the tractor.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

**DANGER**

**ROTATING PTO DRIVELINE HAZARD**

*Can cause serious injury or death.*

- Keep hair, body, and clothing away from moving parts.
- Keep all driveline guards and shields in place and in good working condition when operating.
- Keep u-joint angles equal and as small as possible.
- Do not exceed maximum recommended length.
- Consult owner's manual for maximum operating RPM.

Grease the (5) points on the PTO drivelines every 8 hours of operation. Use Multi-Purpose Grease 251H EP or equivalent. (Pump until the grease becomes visible)

*Fig. # 5-57 PTO Drivelines (Front PTO)*

*Fig. # 5-58 PTO Drivelines (Side PTO)*

- Grease fittings (A) CROSS & BEARINGS can be easily accessible or can be reached through a hole in implement and tractor end portion of the driveline guard. Constant angle applications may require a lube interval of 4 hours.

*Fig. # 5-56 Typical PTO Driveline Grease Points*
- Grease fittings **GUARD BUSHINGS** can be easily accessible.

- Grease fitting **TELESCOPING MEMBERS** can be reached through a hole in the outer portion of the driveline guard.

- Wipe the grease fittings with a clean cloth before greasing to avoid injecting dirt and grit.

- Use a hand-held grease gun for all greasing.

- If fittings will not take grease, remove and clean thoroughly.

- Replace fittings if they are broken or will not accept grease.

- Rotating guard bushings should be lubricated upon replacement.

- Replacement parts must be lubricated at time of assembly and during use per the lube recommendations. The first lube interval should be 16-24 hours of operation after initial start-up, then follow the schedule on the table on page 5-3.

---

**EVERY 10 HOURS OR EACH DAY**

**Visually Inspect The Equipment**

Check the following during a visual inspection:

1. Ensure all guards are in place and in good working order.
2. Examine the belt conveyor for damage or unusual wear.
3. Check tightness of bolts/nuts, fasteners, and hardware (re-torque if necessary).
4. Be sure all safety decals are in place and are legible.
5. Check that the discharge and intake area are free of obstructions.
6. Inspect all moving or rotating parts to see if anything has become entangled in them. Remove any entangled material.
7. **When equipped:** Inspect hydraulic hoses and fittings for leaks and wear. Fix or replace where necessary.
8. Examine tires for gashes, uneven wear, or loss of air pressure. Maintain pressure according to tire sidewall recommendations.
9. Check all operating, lifting, and transport components. Replace damaged or worn parts before using the conveyor.
10. Inspect the winch cable for fraying, kinking, unwinding, or other possible damage.
Every 40 Hours

Re-torque Wheel Lug Bolts

1. Check at the beginning of the season, and at 10 hour intervals (daily). If bolt torque is stable, check at 40 hour intervals. If lug nut torque is not at the specified torque, re-torque all lug nuts.

Every 5,000 Miles

Grease Wheel Bearings

Grease the (2) points on the wheel hubs every 5,000 miles of travel. Use Multi-Purpose Grease 251H EP or equivalent. (Pump until the grease becomes visible)
Every Month

Check Roller Lagging

Visually inspect roller lagging on the Hopper Pulley, Drive Pulley, and Spout Pulley to see if it is showing signs of wear. (See Fig. # 5-19)

**IMPORTANT**

Operating the S-Drive Conveyor with a damaged roller or pulley will result in a damaged conveyor belt.

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

---

Fig. # 5-19 Check Roller Lagging At Hopper Pulley

Fig. # 5-20 Check Roller Lagging At Drive Pulley

Fig. # 5-21 Check Roller Lagging At Spout Pulley
Every Month

Inspect Hopper Flashing

Worn flashing will cause hopper leakage. Check the condition of the rubber hopper flashing. *(See Fig. # 5-59)* Be sure it still seals the hopper to prevent leaking. If any product comes out of the hopper around the flashing, See “Replacing The Hopper Flashing”

Every Month

Inspect Belt Lacing

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

Every Month

Inspect Hydraulic Hoses And Fittings

It is important to regularly check the hydraulic system for leaks. Follow this procedure when checking for leaks.

**WARNING**

**Hydraulic Hazard**

Hydraulic oil leaking under pressure can penetrate the skin, causing death or serious injury, or infection. Stop engine, remove key and relieve the pressure before connecting or disconnecting fluid lines.

1. Pressurize the system.
2. Using a piece of cardboard or plywood, run it along the length of the hose and around all fittings.
3. Replace the hose or tighten/replace the fitting if a leak is found.
4. Replace any hose that is badly cut, nicked, abraded, or is separating from the crimped end of the fitting.
5. Secure hoses to the machine.
Every Month

Check the Gearbox Oil

The machine is designed with a gearbox located at the top and bottom ends of the side drive shaft. Each gearbox is equipped with a drain, level and fill plug. Every month or 100 hours, whichever comes first, the oil level should be checked. Check more frequently if there are leaks around any of the plugs or shaft seals. When checking oil level, follow this procedure:

1. Position the machine in its lowest position to level the gearboxes.
2. Stop tractor engine and remove ignition key for PTO drive models.
3. Do not service the PTO gearbox(s) while the PTO driveline is connected to the tractor.
4. Checking Oil Level:
   A. When the gearbox is cold, remove the level plug from the side of the gearbox.
   B. When the oil just fills the threads of the level plug, it is at the correct level.
   C. Add oil through the fill plug as required.
   D. Install and tighten the fill plugs.

Fig. # 5-22 Gearbox Fill Plug

IMPORTANT
It may be necessary to add teflon tape or pipe sealant to the drain plug prior to installation to prevent leaking.

Breather Cleaning

Each gearbox is equipped with a breather in the fill plug that vents the internal pressure to atmosphere. As the gearbox temperature increases and decreases during the operating and stopped modes, the pressure in the gearbox will increase or decrease if it is not vented to atmosphere. An increase in internal pressure will cause the shaft seals to leak until the gearbox runs low on or out of oil. To check on or clean the breather, follow this procedure:

1. Stop tractor engine and remove ignition key for PTO drive models.
2. Do not service the PTO gearbox while the PTO driveline is connected to the tractor.
3. Remove the fill plug/breather from the gearbox.
4. Check that the vent passage through the plug is open.
5. If plugged, soak in a solvent.
6. Use a high-pressure air hose to blow the passage open. Use a probe to clear the passage if the hole is caked with dirt or debris.
7. Install and tighten the breather plug.

Fig. # 5-23 Clean Gearbox Breather(s)

IMPORTANT
Always clean the breather if any leaks are noticed around shafts.
Every Month

Check & Adjust the Belt Return Wear Blocks

As the conveyor breaks in, the conveyor belt will stretch over time causing the belt return blocks to wear unevenly. To check and adjust the belt return wear blocks, follow this procedure:

1. Visually inspect all wear blocks. *(See Fig. # 5-24)*

2. The quantity of belt return wear blocks depends on length of conveyor.

3. Adjust the wear blocks by rotating them 90 or 180 degrees. If they are worn down, replace the wear blocks.

Yearly

Repack Wheel Bearings

Follow these steps to repack the wheel bearings. Refer to *(See Fig. # 5-25)*

1. Block wheels and ensure unit is stable.

2. Remove the wheel bolts ① and the wheels ②.

3. Remove Dust Cap ③, Cotter Pin ④, Castle Nut ⑤ and Washer ⑥.

4. Slide Hub ⑦ off the Spindle ⑧ along with the Outer Bearing ⑨, and Inner Bearing ⑩.

5. Only remove Seal ⑪ if damaged.

6. Clean wheel and hub mounting surfaces to ensure there is no rust or debris.

7. Clean the wheel bearings and pack with grease. Use SAE multi-purpose high-temperature grease with extreme pressure (EP) performance. SAE multi-purpose lithium-based grease is also acceptable.

8. Reverse disassembly procedure.

8. Tighten the wheel bolts (diagonal pattern) *(See Fig. # 5-27)* with a torque wrench to (70 ft-lbs) *(See Fig. # 5-26)* of torque. Inspect to make sure the wheel is sitting flush with the hub.

<table>
<thead>
<tr>
<th>Hub Design</th>
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</tr>
</thead>
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</tbody>
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*(See Fig. # 5-26)* Table Wheel Lug Bolt Torque Values
Every 2 To 3 Years

Change the Gearbox Oil

Every 400 hours or 2 years, whichever comes first, the oil should be changed. Check more frequently if there are leaks around any of the plugs or shaft seals. When changing oil, follow this procedure:

A. Place a container under the drain plug.
B. Remove the drain, level and fill plugs.
C. Allow 10 minutes to drain.
D. Install and tighten the drain plug.

E. Add approximately 1 qt. (1 liter) of SAE 80W-90 gear oil lubricant or equivalent. Use the level plug to determine the proper amount of oil.
F. Check that the air passage through the breather is open.

G. Install and tighten the fill and level plugs.
H. Dispose of the used oil in an environmentally safe manner.

As Required

Clean and Wash the Equipment

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

1. Clean out excess material from all areas of the S-Drive Conveyor.
2. Make sure water can drain from the conveyor tube and intake hopper, then wash the tube with a water hose or pressure washer until all dirt, mud, debris, or residue is gone.
3. Provide sufficient time for the water to drain from the S-Drive Conveyor.

**IMPORTANT**

It may be necessary to add teflon tape or pipe sealant to the drain plug prior to installation to prevent leaking.
As Required

Replace The Hopper Flashing
If any product leaks out of the hopper around the flashing, replace the worn hopper flashing.

⚠️ WARNING

• Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
• Keep body, hair, and clothing away from moving conveyor belt and rollers.
• Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

⚠️ WARNING

The Collapsible Intake Hopper is under extreme torsion. Removing all elevator bolts securing the Collapsible Intake Hopper to the Hopper Section of the frame will result in the Collapsible Intake Hopper suddenly swinging upward with force. Secure the front of the Collapsible Intake Hopper to the hitch cross member before servicing, repairing or adjusting. Failure to comply could result in serious injury or death.

1. Secure the front of the Collapsible Intake Hopper to the hitch cross member before servicing, repairing or adjusting.

2. Loosen and remove the 1/4-20 Nuts. (See Fig. # 5-29)

3. Remove the 1/4-20 Elevator Bolts. (See Fig. # 5-29)

4. Remove and replace the worn flashing.

5. Re-install the elevator bolts and nuts.

6. Run the S-Drive Conveyor again. Repeat until no grain is lost. If the flashing is stuck to the belt, manually peel the flashing up and off the hopper. Replace it if necessary.

Fig. # 5-28 Secure Collapsible Intake Hopper to Hitch

Fig. # 5-29 Replacing Hopper Flashing
As Required

Replacing the Conveyor Belt

The belt provided on your S-Drive Conveyor should last for several years under normal working conditions, providing it is maintained properly. If a new belt is to be installed, be sure to loop the belt through the loader properly. Looping the Conveyor belt improperly will cause belt tracking, belt tensioning, and belt lacing problems. The recommended procedure to replace a belt is:

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

1. Rotate the conveyor belt until the lacing is by the hopper or is easily accessible. Most likely position is the lowest position below the Main Tube under the Wind Guards.

2. Loosen tension bolts and jam nut at S-Drive. (See Fig. # 5-31)

3. While loosening the tension bolts the take-up pulley will move forward with the tension of the belt. (See Fig. # 5-32)

4. Loosen the conveyor belt by pulling all slack to the seam area and remove the old lacing pin. If required, use a ratchet strap clamped to both ends of belt to cinch belting ends together. (See Fig. # 5-33)

---

**Fig. # 5-30 Locating Belt Lacing At Lowest Position**

**Fig. # 5-31 Loosen Tension Bolts To Loosen Take-Up Pulley**

**Fig. # 5-32 Loosening the Take-Up Pulley Under Tension Of Belt**

**Fig. # 5-33 Replacing The Belt Lacing**
5. Attach one end of the replacement belt to the belt end being removed, closest to the hopper end of the machine. 
   (See Fig. # 5-34)

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. (See Fig. # 5-33)

9. Install the lacing pin and crimp the retainer clips onto each end of the lacing pin, (see “Replacing The Belt Lacing”)

10. Remove the ratchet strap and tighten the conveyor belt (see “Tension the Conveyor Belt”).

11. Check and set the belt alignment (see “Align the Conveyor Belt”).

12. Engage the conveyor drive. Allow it to run for 30 seconds, then shut down the conveyor and inspect the lacing.

As Required

Replacing the Belt Lacing

The most common method of joining belt ends is the metal fastener such as the “Clipper” type wire lace or the “Alligator” type steel hinge, as well as others. Fastener manufacturer’s catalogs should be consulted for proper size and method of application. Refer to the instructions that came with your type of belt lacing, or consult your Norwood dealer.

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

1. Rotate the conveyor belt until the lacing is by the hopper or is easily accessible. Most likely position is the lowest position below the Main Tube under the Wind Guards. (See Fig. # 5-35)

2. Loosen tension bolts and jam nut at S-Drive. (See Fig. # 5-36)
3. While loosening the tension bolts the take-up pulley will move forward with the tension of the belt. *(See Fig. # 5-37)*

4. Loosen the conveyor belt by pulling all slack to the seam area and remove the old lacing pin. If required, use a ratchet strap clamped to both ends of belt to cinch belting ends together. *(See Fig. # 5-38) (See Fig. # 5-39)*

5. Using a square and sharp knife, cut the lacing off right behind the lacing clips. The cut belt MUST have a square end.

**IMPORTANT**

If the belt is not cut off truly square, improper belt tracking will occur and serious belt damage can result. Always use a large T-square or equivalent method to make sure that belt ends are cut square at the lacing ends.

A. To properly square the belt ends, we recommend the center line method. To properly establish the belt center line, start near the belt end as shown in *(See Fig. # 5-40)*

B. Measure the belt width at six points approximately 10” apart. Divide each measurement in two and mark these center points as shown. Using these six “center points”, draw the resultant “average” center line. *(See Fig. # 5-41)*

C. Using a carpenter square or “tee” square, draw a “cut line” across the width of the belt near the belt end *(See Fig. # 5-31)*. It is also a good idea to mark several right angle reference lines across the belt surface for use as guidelines later on.

D. Using the “cut line” as the guide, cut off the end of the belt with a sharp razor knife. Make sure that the cut is clean and vertical. This operation should then be repeated on the other end of the belt.
4. If you are installing a crescent top belt be sure to remove approximately 1.0” of the raised belt crescents on both ends of the belt. This ensures that the lacing is centered and fully seated on the belt. Belts can be skived with a Flexco® brand Rough Top Belt Skiver. (See Fig. # 5-42)

5. Use a lacing tool to install new lacing clips. Lacing clips are one clip shorter than the belt width. For example: The lacing for a 18” wide belt is 18 clips. Center the lacing on the belt and install the lacing as per instructions on the lacing tool.

6. Notch the conveyor belt as necessary in order to keep belt from catching conveyor framework. Notch only the trailing end of the conveyor belt. (See Fig. # 5-43)

6. Reattach the conveyor belt ends together. If required, use a ratchet strap clamped to both ends of the belt to cinch the belting ends together. (See Fig. # 5-39)

7. Install the lacing pin and bend the ends of the lacing pin away from belt travel direction or crimp the retainer clips onto each end of the lacing pin. (See Fig. # 5-44)

8. Remove the ratchet strap and tighten the conveyor belt (see “S-Drive Conveyor Conveyor Belt Tension”).

9. Check and set the belt tension and alignment (see “S-Drive Conveyor Belt Alignment”).

10. Engage the S-Drive Conveyor drive. Allow the conveyor to run for 30 seconds, then shut down the conveyor and inspect the lacing.
As Required

Tension and Alignment of the Drive Belts

Power to the conveyor belt is transmitted through a V belt primary drive. The drive system must be maintained at the proper belt tension and pulley alignment to obtain the desired performance and life. When maintaining the primary belt drive system, follow this procedure:

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

Tensioning the Drive Belt (Electric Drive Option)

1. Remove the guard.

2. Push on the center of the belt span with a force of approximately 5 lb. (See Fig. # 5-46)

3. The belts will deflect approximately 1” (25 mm) when properly tensioned. (See Fig. # 5-46)

**IMPORTANT**

The drive belt should be just tight enough to not slip on the drive pulley when operating. If the belt is too loose, it will slip, possibly causing a squeaking sound and slowing the belt down. If the belt is too tight, it will cause excess wear.

4. Move the motor or engine base to set drive belt tension.

5. Tighten Jam Nuts when the proper tension is set.

6. Close and secure guards.
Tensioning the Drive Belt (Gas Drive Option)

1. Remove the guard.

2. Push on the center of the belt span with a force of approximately 5 lb. (See Fig. # 5-50)

3. The belts will deflect approximately 1” (25 mm) when properly tensioned. (See Fig. # 5-50)

4. Tighten the bolt to move the engine slide assembly away from the conveyor which tightens the belts. Loosen the bolt to move the engine slide assembly inward which loosens the belts. (See Fig. # 5-51)

IMPORTANT

The drive belt should be just tight enough to not slip on the drive pulley when operating. If the belt is too loose, it will slip, possibly causing a squeaking sound and slowing the belt down. If the belt is too tight, it will cause excess wear.
5. Loosen the tension pulley bolt. (See Fig. # 5-52)

6. Then turn the adjustment bolt CW which tightens the belts. Or turn the adjustment bolt CCW which loosens the belts. (See Fig. # 5-52)

### As Required

#### Tension and Alignment of the Drive Belts Contd...

#### Alignment of the Drive Belt

![Fig. # 5-52 Setting Belt Tension](image)

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

1. Lay a straightedge across the pulley faces to check the alignment. (See Fig. # 5-38)

![Fig. # 5-53 Belt Alignment](image)

2. Use the tapered lock hub in the center of the pulley to adjust the position of a pulley if required.
3. Tighten hub bolts to secure pulley on shaft.
4. Check belt tension.
5. Close and secure guards.
As Required

Replace the Drive Belts

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

1. Move motor base to its loosest position.
2. Remove old belts and replace with new ones.
3. Move motor base to set the belt tension.
4. Check pulley alignment. Adjust if required.
5. Close and secure guards.

As Required

Inspect and Service the Hydraulic & Hand Winch Cable

Place conveyor in fully lowered position with slack in cable.

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

1. Inspect the cable for damage such as fraying, kinking, or unwinding. Replace if damaged.
2. Check to make sure cable clamps are secure.
3. Oil cable pulleys as needed.
4. Keep a film of grease on the gears. Occasionally oil the bushings, drum shaft, and ratchet.
5. Do not get oil or grease on brake discs. *(Hand Winch Only)*
6. Replace brake discs if less than 1/16” (1.6 mm) thick. *(Hand Winch Only)*
7. Check for proper ratchet pawl operation: *(Hand Winch Only)*
   - When cranking in (clockwise) = loud clicking
   - When cranking out (counterclockwise) = no clicking and ratchet pawl fully engaged into gear teeth.

To Replace the Lift Cable:

1. Unwind the winch drum until cable is slack and remove all cable clamps.
2. Remove the cable.
3. Reverse the above steps to install the new cable.
As Required

Check And Adjust the Truss Cables

Check tube for straightness, no slack in the cables, and a noticeable upward deflection of the discharge end. During operation, it is normal for the tube to deflect downward.

1. Lift the discharge end of the conveyor with an overhead crane, front end loader, or other proper lifting device so that the tube has a slight upward deflection at the discharge end to give the cable some slack.

2. When the conveyor has more than one set of cables start from the innermost cables and work your way out.

3. Loosen cable clamps on cable truss where the cable requires adjustment. (See Fig. # 5-54)

4. Locate the eyebolt anchors for the cable.

5. Tighten cable eyebolts evenly on both sides (use eyebolt nuts to tighten eyebolts) until the discharge end starts to angle upward.
   - The tube should not deflect to the left or right if tightened evenly.

   - Tension should be greater on shorter cables than on longer cables. If the conveyor tubes remain straight then the cables are tensioned properly.

6. If the proper cable tension can’t be obtained before the eyebolts run out of adjustment, then do the following:
   a. Loosen the eyebolts.

   b. At the eyebolts, loosen the cable clamps, shorten the cables until there is tension on the cable, then tighten the cable clamps fully.

   c. Return to step 5.

7. Secure jam nut on cable eyebolt and re-tighten any cable clamps that were loosened.

8. The cables are properly tightened when:
   - There is no slack in the cables.

   - The discharge end is deflected sightly upwards.

   - The tube is straight side-to-side.
STORAGE

Preparing For Storage

After the season’s use or when the S-Drive Conveyor will not be used for a period of time, completely inspect all major systems of the S-Drive Conveyor.

Replace or repair any worn or damaged components to prevent any unnecessary down time at the beginning of the next season.

Follow these procedures before storing:

12. **PTO Models**: Clean and lightly lubricate the spline on the PTO driveline. Cover the PTO driveline with a plastic bag to protect it from the weather and place it in the transport saddle.

13. Support intake on blocks to eliminate prolonged contact with the ground.

14. Cover motor or engine with waterproof tarpaulin if stored outside to protect from weather.

---

**WARNING**

- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before inspecting, servicing or repairing machine.
- Keep body, hair, and clothing away from moving conveyor belt and rollers.
- Do not operate with any guards removed or modified. Keep guards in good working order. Failure to comply could result in death or serious injury.

1. Remove all left over material from the machine.
2. Thoroughly wash the unit to remove all dirt, mud and debris.
3. Inspect all rotating parts for entanglements. Remove anything caught in the mechanisms.
4. Check the condition of the components in the hydraulic system. Repair, replace or adjust as required.
5. Check the condition of the S-Drive Conveyor Belt, replace any damaged areas by splicing a new section.
6. Lubricate all fittings and fill grease cavities.
7. Touch up all paint nicks and scratches to prevent rusting.
8. Store the S-Drive Conveyor inside for protection from the weather. If the S-Drive Conveyor must be stored outside, cover with a waterproof tarpaulin and tie down securely, place boards under the wheels and parking stands to prevent sinking into the soil.
9. Stop the machine with the belt lacing inside the tube. This helps prevent the lacing from rusting.
10. Check tire pressure and inflate according to tire side-wall recommendations.
11. Chock wheels.
### 6 - TROUBLESHOOTING

#### SYMPTOM(S)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conveyor Belt slipping</strong></td>
<td>Conveyor belt is loose.</td>
<td>Tighten and align belt. See Operating Angles in Operation.</td>
</tr>
<tr>
<td></td>
<td>Drive roller lagging worn or damaged.</td>
<td>Replace drive roller lagging.</td>
</tr>
<tr>
<td></td>
<td>Drive belt loose.</td>
<td>Tighten and align. See Belt Tension and Belt Alignment in Maintenance.</td>
</tr>
<tr>
<td></td>
<td>Belt frozen to tube from operating in high humidity and cold temperatures.</td>
<td>Remove conveyor from area of high humidity and warm belt to de-ice.</td>
</tr>
<tr>
<td><strong>Excessive belt edge fraying</strong></td>
<td>Belt not in alignment.</td>
<td>Align and tension belt.</td>
</tr>
<tr>
<td><strong>Belt loose</strong></td>
<td>Belt stretches over time… also can be caused by oily grain products.</td>
<td>Re-tension belt If tightener is fully engaged, you may need to shorten belt.</td>
</tr>
<tr>
<td><strong>Low conveying capacity</strong></td>
<td>Conveyor angle is too high.</td>
<td>Re-position with lower tube angle, see Operation.</td>
</tr>
<tr>
<td></td>
<td>Incorrect belt speed.</td>
<td>Verify and adjust belt speed to appropriate speed, see Belt Speed in Operation.</td>
</tr>
<tr>
<td></td>
<td>Conveyor belt slipping.</td>
<td>Tighten S-Drive Conveyor belt, see Belt Tension in Maintenance.</td>
</tr>
<tr>
<td></td>
<td>Drive belts slipping</td>
<td>Tighten belts, see drive belt tension in maintenance.</td>
</tr>
<tr>
<td><strong>Low capacity for some grains.</strong></td>
<td>Smaller and smoother grains will slide at shallower angles.</td>
<td>Reduce conveyor height, see Conveyor Operating Angles in Operation.</td>
</tr>
<tr>
<td><strong>Excessive belt edge fraying.</strong></td>
<td>Belt not aligned.</td>
<td>Align belt, see Belt Alignment in Maintenance.</td>
</tr>
<tr>
<td><strong>Conveyor belt loose.</strong></td>
<td>Belt stretches over time.</td>
<td>Re-tension belt, see Belt Tension in Maintenance.</td>
</tr>
<tr>
<td></td>
<td>If belt is fully tensioned, you may need to shorten belt and re-lace, see Belt Relacing in Maintenance.</td>
<td></td>
</tr>
<tr>
<td><strong>Grain leaking from collapsible Intake hopper</strong></td>
<td>Belt not aligned (centered).</td>
<td>Align belt, see Belt Alignment in Maintenance.</td>
</tr>
<tr>
<td></td>
<td>Flashing installed incorrectly or worn.</td>
<td>Inspect flashing for wear and replace if required.</td>
</tr>
<tr>
<td></td>
<td>Hopper cloth worn or damaged.</td>
<td>Replace damaged hopper cloth.</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>----------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hopper cloth collapsing under grain.</td>
<td>Misaligned or broken spring</td>
<td>Check spring installation and repair as required.</td>
</tr>
<tr>
<td></td>
<td>Pivot shafts improperly installed.</td>
<td>On some machines, switching pivot shafts left to right will increase hopper tension.</td>
</tr>
<tr>
<td>Grain leaking from discharge end between belt and tube.</td>
<td>Belt not aligned (centered).</td>
<td>Align belt, see Belt Alignment in Maintenance.</td>
</tr>
<tr>
<td>Grain leaking from conveyor discharge between hood and belt.</td>
<td>Belt speed is too fast, hood plugging.</td>
<td>Decrease belt speed, see Belt Speed in Operation.</td>
</tr>
<tr>
<td>U-clamps or brackets sliding on tube.</td>
<td>U-clamps or brackets not properly crimped to tube.</td>
<td>Contact dealer or Norwood to correct positioning.</td>
</tr>
<tr>
<td>The conveyor will not raise or lower.</td>
<td>The conveyor is already at it’s maximum or minimum height.</td>
<td>If at maximum height, lower the conveyor.</td>
</tr>
<tr>
<td></td>
<td>The cable clamp has hit the transport slide</td>
<td>Maximum height has been achieved. Do not try to raise any further.</td>
</tr>
<tr>
<td></td>
<td>Obstruction in the slide.</td>
<td>Clear the obstruction.</td>
</tr>
<tr>
<td></td>
<td>Faulty cable.</td>
<td>Replace cable.</td>
</tr>
<tr>
<td></td>
<td>Faulty winch.</td>
<td>Consult your local dealer.</td>
</tr>
<tr>
<td></td>
<td>The bottom or top of the conveyor is obstructed.</td>
<td>Clear the obstruction.</td>
</tr>
<tr>
<td>Drive making noise.</td>
<td>Electric Drive:</td>
<td>Tighten belts, see Drive Belt Tension in Maintenance.</td>
</tr>
<tr>
<td></td>
<td>Slipping drive belt.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hot shaft, pulley or bearing.</td>
<td>Overheated components indicate a failed bearing that must be repaired.</td>
</tr>
<tr>
<td></td>
<td>Broken drive roller.</td>
<td>Replace damaged component.</td>
</tr>
</tbody>
</table>
Kwik Belt Specifications:

Standard Features:
- 10" x 12 Ga tube w/ 18" 2ply chevron belt (10,000 Bu/hr)
- 12" x 12 Ga tube w/ 22" 2ply chevron belt (14,000 Bu/hr)
- 14" x 12 Ga tube w/ 26" 2ply chevron belt (18,000 Bu/hr)
- Swing away models available in 65' to 125'
- Hydraulic scissor lift on 65' to 125'
- 1-1/2" PEER bearings (18 Series)
- 1-15/16" PEER bearings (22 Series)
- 2-3/16" PEER bearings (26 Series)
- Weather guards standard
- Lengths from 30' to 125'

Drive Options:
- Electric
- Gas
- Front PTO
- Side PTO

Kwik Belt Dimensional Data

Fig. # 7-61 Kwik Belt Dimensional Data

<table>
<thead>
<tr>
<th>Model</th>
<th>Low Position</th>
<th>High Position</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>1835</td>
<td>10'-2&quot;</td>
<td>12'-8&quot;</td>
<td>15'-2&quot;</td>
</tr>
<tr>
<td>1840</td>
<td>10'-7&quot;</td>
<td>13'-1&quot;</td>
<td>17'-8&quot;</td>
</tr>
<tr>
<td>1845</td>
<td>10'-8&quot;</td>
<td>13'-2&quot;</td>
<td>19'-6&quot;</td>
</tr>
<tr>
<td>1850</td>
<td>10'-10&quot;</td>
<td>13'-4&quot;</td>
<td>21'-4&quot;</td>
</tr>
<tr>
<td>1855</td>
<td>10'-10&quot;</td>
<td>13'-4&quot;</td>
<td>22'-11&quot;</td>
</tr>
<tr>
<td>1865</td>
<td>8'-11&quot;</td>
<td>11'-7&quot;</td>
<td>32'-5&quot;</td>
</tr>
<tr>
<td>1875</td>
<td>9'-11&quot;</td>
<td>12'-7&quot;</td>
<td>40'-4&quot;</td>
</tr>
<tr>
<td>1885</td>
<td>11'-4&quot;</td>
<td>14'-1&quot;</td>
<td>44'-5&quot;</td>
</tr>
<tr>
<td>1890</td>
<td>12'-1&quot;</td>
<td>14'-10&quot;</td>
<td>49'-5&quot;</td>
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<td>18100</td>
<td>11'-7&quot;</td>
<td>14'-4&quot;</td>
<td>51'-6&quot;</td>
</tr>
<tr>
<td>18105</td>
<td>12'-3&quot;</td>
<td>15'-0&quot;</td>
<td>56'-6&quot;</td>
</tr>
</tbody>
</table>

Fig. # 7-62 Kwik Belt S-Drive Dimensional Data Table

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
### SPECIFICATIONS Cont’d.

#### Kwik Belt Dimensional Data

![Kwik Belt Dimensional Data Diagram](image)

**Fig. # 7-63 Kwik Belt Dimensional Data**

<table>
<thead>
<tr>
<th>Model</th>
<th>Low Position</th>
<th>High Position</th>
<th>Width</th>
<th>Belt Length</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2235</td>
<td>10' - 2&quot;</td>
<td>16' - 10&quot;</td>
<td>7' - 8&quot;</td>
<td>76' - 6&quot;</td>
<td>2205 lbs</td>
</tr>
<tr>
<td>2240</td>
<td>10' - 7&quot;</td>
<td>19' - 7&quot;</td>
<td>7' - 8&quot;</td>
<td>86' - 6&quot;</td>
<td>2380 lbs</td>
</tr>
<tr>
<td>2245</td>
<td>10' - 8&quot;</td>
<td>22' - 1&quot;</td>
<td>7' - 8&quot;</td>
<td>97' - 2&quot;</td>
<td>2545 lbs</td>
</tr>
<tr>
<td>2250</td>
<td>10' - 10&quot;</td>
<td>24' - 7&quot;</td>
<td>7' - 8&quot;</td>
<td>107' - 2&quot;</td>
<td>2696 lbs</td>
</tr>
<tr>
<td>2255</td>
<td>10' - 10&quot;</td>
<td>27' - 1&quot;</td>
<td>7' - 8&quot;</td>
<td>117' - 2&quot;</td>
<td>2840 lbs</td>
</tr>
<tr>
<td>2265</td>
<td>8' - 11&quot;</td>
<td>32' - 5&quot;</td>
<td>11' - 3&quot;</td>
<td>137' - 2&quot;</td>
<td>4430 lbs</td>
</tr>
<tr>
<td>2275</td>
<td>9' - 11&quot;</td>
<td>37' - 2&quot;</td>
<td>11' - 3&quot;</td>
<td>157' - 2&quot;</td>
<td>4715 lbs</td>
</tr>
<tr>
<td>2285</td>
<td>11' - 4&quot;</td>
<td>42' - 2&quot;</td>
<td>11' - 6&quot;</td>
<td>177' - 2&quot;</td>
<td>5970 lbs</td>
</tr>
<tr>
<td>2290</td>
<td>12' - 1&quot;</td>
<td>46' - 7&quot;</td>
<td>11' - 6&quot;</td>
<td>187' - 2&quot;</td>
<td>6080 lbs</td>
</tr>
<tr>
<td>22100</td>
<td>11' - 7&quot;</td>
<td>51' - 7&quot;</td>
<td>11' - 6&quot;</td>
<td>207' - 2&quot;</td>
<td>7350 lbs</td>
</tr>
<tr>
<td>22105</td>
<td>12' - 3&quot;</td>
<td>56' - 6&quot;</td>
<td>11' - 6&quot;</td>
<td>218' - 0&quot;</td>
<td>7455 lbs</td>
</tr>
<tr>
<td>22110</td>
<td>12' - 10&quot;</td>
<td>59' - 4&quot;</td>
<td>11' - 6&quot;</td>
<td>228' - 0&quot;</td>
<td>9730 lbs</td>
</tr>
<tr>
<td>22120</td>
<td>13' - 4&quot;</td>
<td>62' - 2&quot;</td>
<td>11' - 6&quot;</td>
<td>248' - 0&quot;</td>
<td>10550 lbs</td>
</tr>
<tr>
<td>22125</td>
<td>13' - 6&quot;</td>
<td>66' - 1&quot;</td>
<td>11' - 6&quot;</td>
<td>268' - 0&quot;</td>
<td>10850 lbs</td>
</tr>
<tr>
<td>2665</td>
<td>8' - 11&quot;</td>
<td>32' - 2&quot;</td>
<td>11' - 3&quot;</td>
<td>157' - 2&quot;</td>
<td>4715 lbs</td>
</tr>
<tr>
<td>2675</td>
<td>9' - 11&quot;</td>
<td>39' - 1&quot;</td>
<td>11' - 3&quot;</td>
<td>177' - 2&quot;</td>
<td>5970 lbs</td>
</tr>
<tr>
<td>2685</td>
<td>11' - 4&quot;</td>
<td>44' - 1&quot;</td>
<td>11' - 6&quot;</td>
<td>187' - 2&quot;</td>
<td>6080 lbs</td>
</tr>
<tr>
<td>2690</td>
<td>12' - 1&quot;</td>
<td>49' - 5&quot;</td>
<td>11' - 6&quot;</td>
<td>207' - 2&quot;</td>
<td>7350 lbs</td>
</tr>
<tr>
<td>26100</td>
<td>11' - 7&quot;</td>
<td>54' - 10&quot;</td>
<td>11' - 6&quot;</td>
<td>228' - 0&quot;</td>
<td>9730 lbs</td>
</tr>
<tr>
<td>26105</td>
<td>12' - 3&quot;</td>
<td>59' - 10&quot;</td>
<td>11' - 6&quot;</td>
<td>248' - 0&quot;</td>
<td>10550 lbs</td>
</tr>
<tr>
<td>26110</td>
<td>12' - 10&quot;</td>
<td>64' - 4&quot;</td>
<td>11' - 6&quot;</td>
<td>268' - 0&quot;</td>
<td>10850 lbs</td>
</tr>
<tr>
<td>26120</td>
<td>13' - 4&quot;</td>
<td>69' - 1&quot;</td>
<td>11' - 6&quot;</td>
<td>288' - 0&quot;</td>
<td>11250 lbs</td>
</tr>
<tr>
<td>26125</td>
<td>13' - 6&quot;</td>
<td>74' - 1&quot;</td>
<td>11' - 6&quot;</td>
<td>308' - 0&quot;</td>
<td>11650 lbs</td>
</tr>
</tbody>
</table>

**Fig. # 7-64 Kwik Belt S-Drive Dimensional Data Table**

**SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE**
Torque – Hydraulic Tubes and Fittings

Standard torque data for hydraulic tubes and fittings

<table>
<thead>
<tr>
<th>Size</th>
<th>Tubing OD</th>
<th>Thread Size</th>
<th>ft-lbs Min</th>
<th>ft-lbs Max</th>
<th>Nm Min</th>
<th>Nm Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1/4</td>
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</table>

The above torque figures are recommended for plain, cadmium or zinc plated fittings, dry or wet installations and swivel nuts either swagged or brazed. These torques are not recommended for tubes 12.7 mm (0.5 in) OD and thicker with wall thickness of 0.889 mm (0.035 in) or less. The torque is specified for 0.889 mm (0.035 in) wall tubes on each application individually.
**Torque – Fasteners**

**Society of Automotive Engineers (SAE) fastener torque**

Use these torques, unless special torques are specified. Values are for Unified Coarse (UNC) and Unified Fine (UNF) thread fasteners, plated or unplated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, molydisulphide or other extreme pressure lubricant is used.

* Use the torque values as shown, unless specified otherwise. Torque values specified as lubricated, are fasteners that are to be assembled with threadlocker.

**NOTE:** Bolt head identification marks as per grade. Manufacturing marks will vary. Thick nuts must be used with Grade 8 bolts.

<table>
<thead>
<tr>
<th>SAE Grade No.</th>
<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
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<td><img src="image" alt="Bolt Head" /></td>
<td><img src="image" alt="Bolt Head" /></td>
<td><img src="image" alt="Bolt Head" /></td>
</tr>
<tr>
<td><strong>Bolt Size</strong></td>
<td><strong>ft-lbs</strong></td>
<td><strong>ft-lbs (Lubricated)</strong>*</td>
<td><strong>ft-lbs</strong></td>
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<tr>
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<td>8.5</td>
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<td>17.4</td>
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<td>30.9</td>
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<td>711</td>
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Metric International Standards Organization (ISO) Fastener Torque

Use these torques, unless special torques are specified. Values are for coarse thread fasteners, plated or unplated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, molydisulphide or other extreme pressure lubricant is used.

* Use the torque values as shown, unless specified otherwise. Torque values specified as lubricated, are fasteners that are to be assembled with threadlocker.

NOTE: Bolt head identification marks as per grade. Manufacturing marks will vary.

<table>
<thead>
<tr>
<th>ISO Class No.</th>
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<td>ft-lbs (Lubricated)*</td>
<td>ft-lbs</td>
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8 - FORMS AND DECLARATIONS

Norwood follows the general Safety Standards specified by the American Society of Agricultural Engineers (ASAE), and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the equipment must read and clearly understand all Safety, Operating and Maintenance information presented in this manual.

Do not operate, or allow anyone else to operate, this equipment until this document has been read. Review this information annually, before the season start-up.

Make periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment.

The following Sign-Off Form is provided for your record keeping. Use it to show that all personnel who will be working with the equipment have read and understand the provided information. Also, they have been instructed in the operation of the equipment. Copy this page to continue the record.

### SIGN - OFF FORM

<table>
<thead>
<tr>
<th>DATE</th>
<th>EMPLOYEES SIGNATURE</th>
<th>EMPLOYERS SIGNATURE</th>
</tr>
</thead>
<tbody>
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</table>
Warranty

Warranty Registration

Customer’s Name __________________________________________ Dealer’s Name __________________________________________

________________________________________

Address __________________________________________ __________________________

City __________________________ State _______ Area Code __________ City __________________________ State _______ Area Code __________

Phone Number __________________________________________ Phone Number __________________________________________

Model __________________________________________ Serial Number __________________________________________

Delivery Date __________________________________________ Check One Below:

Commercial Use _____ Farm Use _____

Dealer Inspection Report

_____ Wheel Nuts Tight _____ Signal Lights Work Properly

_____ Tire Pressure _____ Safety Chain Installed

_____ Fasteners Tight _____ Review Operating & Safety Instructions

_____ All Decals Installed _____ Operator Manual Supplied

I have thoroughly instructed the buyer on the above described equipment including a review of the Operator’s Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

________________________________________ Date __________________________ Dealer’s Signature __________________________

I have received the above equipment and Operator’s Manual and I have been thoroughly instructed on its care, adjustments, safe operation and applicable warranty policy.

________________________________________ Date __________________________ Owner’s Signature __________________________
Warranty

Limited Warranty Policy

Norwood Sales Inc. warrants to the buyer that the new machinery is free from defects in material and workmanship.

This warrant is only effective on new machinery, which has not been altered, changed or repaired since its delivery to the buyer.

Norwood Sales Inc. shall only be liable for defects in materials or workmanship and specifically excludes liability for repairs arising as a result of normal wear and tear of the new machinery and without limiting the generality of the foregoing, excludes application or installation of parts not completed in accordance with Norwood Sales Inc. operator’s manual, specifications, or printed instructions.

Written notice shall be given by registered mail, to Norwood Sales Inc. within seven (7) days after the defect shall have become apparent or the repairs shall have become necessary, addressed as follows: Norwood Sales Inc., 11202 38th Street South, Horace, ND 58047.

A Warranty Registration Form and Dealer Inspection Report must be completed at the time of delivery and returned to Norwood Sales Inc., 11202 38th Street South, Horace, ND 58047 within thirty (30) days.

Warranty Period

<table>
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<tr>
<th>Usage</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Private Farm Use</td>
<td>One (1) year from date of purchase.</td>
</tr>
<tr>
<td>Commercial, Custom, or Rental Use</td>
<td>Ninety (90) days from date of purchase.</td>
</tr>
<tr>
<td>Replacement Parts</td>
<td>Ninety (90) days from date of replacement</td>
</tr>
</tbody>
</table>

If these conditions are fulfilled, Norwood Sales Inc. at its option will either repair or replace any defect. The buyer shall be responsible for all expenses incurred as a result of repairs, labor, parts, transportation or any other work, unless Norwood Sales Inc. authorizes such expenses in advance.

The warranty shall not extend to any repairs, changes, alterations, or replacements made to the new equipment other than by Norwood Sales Inc. or its authorized dealers.

This warranty extends only to the original owner of the new equipment.

This warranty is limited to the terms stated herein and is in lieu of any other warranties whether expressed or implied, and without limiting the generality of the foregoing, excluded all warranties, expressed or implied or conditions whether statutory or otherwise as to quality and fitness for any purpose of the new equipment. Norwood Sales Inc. disclaims all liability for incidental or consequential damages.

This machine is subject to design changes and Norwood Sales Inc. shall not be required to retro-fit or exchange items on previously sold units except at its own option.