

# TRANSFER CONVEYOR OPERATOR'S MANUAL



1314LP, 1515LP, &  
1814LP





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## SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Batco Transfer conveyor when ordering parts or requesting service or other information.

The serial number plate is located where indicated. Please mark the number in the space provided for easy reference.



**Serial number locations (Typical)**

**Model #**

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**Serial #**

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**Production Year**

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## **BATCO MANUFACTURING LTD. NEW EQUIPMENT WARRANTY**

### **POLICY:**

- Batco Manufacturing Ltd. will warrant each new conveyor to be free from factory defects in material and workmanship under normal use and service when set up and operated in accordance with factory instructions.
- Commercial applications will reduce the warranty period to 90 days from the original date of delivery.
- This warranty will apply under the following conditions:

### **CONDITIONS:**

- The warranty will be limited to one year from the date of purchase.
- A "Warranty Registration Form" and "Inspection Report" must be filled out and returned to Batco Manufacturing Ltd. at the time of sale in order to qualify for replacement of defective parts.
- The warranty is void on any unit that has been tampered with or has been subject to misuse, negligence or accident.
- The warranty is limited to the supplying of replacement parts in exchange for parts defective due to material or factory workmanship.
- The warranty covers material only, unless expenditures are pre-authorized by Batco Manufacturing Ltd. in writing.
- A reasonable allowance may be charged to cover labor for replacement of damaged parts at the discretion of the Batco Warranty Department.
- Normal wear and service items such as belts, hoses, flashing, etc., will only be considered warranty at the discretion of the Batco Warranty Department.

### **PROCEDURE:**

- All warranty repairs must be performed at an authorized Batco dealership in order to receive credit.
- All returned parts must be sent to the factory in order to qualify for warranty replacement.
- All returned parts must be sent to the factory, freight pre-paid, and will be returned freight collect.

**Please direct all claims to the attention of the Warranty Department at Batco Manufacturing Ltd.  
(306-773-7779)**

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# 1. INTRODUCTION

Congratulations on your choice of a Batco Conveyro to complement your agricultural operation. This equipment has been designed and manufactured to meet the needs of the discriminating buyer for the efficient moving of grain, pulse crops, fertilizer or any other granular materials.

Safe, efficient and trouble free operation of your transfer conveyor requires that you and anyone else who will operating or maintaining the conveyor, read and understand the Safety, Operation, Maintenance and Trouble shooting information contained within this Operator's manual.



Keep this manual handy for frequent reference and to pass on to new owners. Call your distributor or dealer if you need assistance, information or additional copies of the manual.

This manual cover the Model 1314, 1515, and 1814 Transfer conveyors made by Batco Manufacturing Ltd. Use the Table of Contents as a guide when searching for specific information.

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Batco distributor or dealer if you need assistance, information or additional copies of the manual.

**Operator Orientation**—The directions left, right, front, and rear, as mentioned throughout this manual, are as seen when standing at the spout end and looking toward the hopper end.

## 2. SAFETY

This Safety Alert symbol means  
**ATTENTION BECOME ALERT!**  
**YOUR SAFETY IS INVOLVED**



The Safety Alert symbol identifies important safety messages on the Batco grain conveyor and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.




**Why is SAFETY important to you?**

### 3 Big Reasons

**Accidents Disable and Kill**  
**Accidents Cost \$\$**  
**Accidents Can Be Avoided**

### SIGNAL WORDS:

NOTE THE USE OF SIGNAL WORDS **DANGER, WARNING AND CAUTION** WITH THE SAFETY MESSAGES. THE APPROPRIATE SIGNAL WORD FOR EACH MESSAGE HAS BEEN SELECTED USING THE FOLLOWING GUIDELINES:

<b>DANGER -</b>		<p>Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded</p>
<b>WARNING -</b>		<p>Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices</p>
<b>CAUTION -</b>		<p>Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices</p>

## SAFETY

**YOU** are responsible for the **SAFE** operation and maintenance of your Batco Grain Conveyor. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Grain Conveyor be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the conveyor.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Conveyor owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter per OSHA (Occupational Health & Safety 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.
- 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.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think **SAFETY!** Work **SAFELY!**

## 2.1 GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or unplugging the conveyor.

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



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

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



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



6. Wear appropriate protective gear. This list includes but is not limited to:

- A hard hat.
- Protective shoes with slip resistant soles.
- Protective goggles.
- Hearing protection.
- Respirator or filter mask.



7. Before servicing, adjusting, repairing or unplugging, 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.


8. Review safety related items annually with all personnel




## 2.2 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Hydraulic drives: Stop the engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Gas engine drives: Stop engine, place all controls in neutral, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
4. Electric motor drives: Disconnect and disable electrical supply completely and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
5. Clear the area of bystanders, **especially children**, before starting.
6. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
7. Do not operate machine when any guards are removed.
8. Review safety related items annually with all personnel who will be operating or maintaining the conveyor.

## 2.3 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 the 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.

## 2.4 MAINTENANCE SAFETY

1. Review the Operator's Manual and all safety items before working with, maintaining or operating the 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. Follow good shop practices:
  - Keep service area clean & dry
  - Be sure electrical outlets and tools are properly grounded.
  - Use adequate light for the job at hand.
4. Before applying pressure a hydraulic system, make sure all components are tight and that hoses and couplings are in good condition. 
5. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
6. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
7. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
8. Before resuming work, install and secure all guards when maintenance work is completed.
9. Keep safety signs clean. Replace signs that are damaged or not clearly visible.

## 2.5 STORAGE SAFETY

1. Store the unit in an area away from human activity.
2. Do not permit children to play on or around the stored machine.

## **2.6 HYDRAULIC SAFETY**

1. Always place all tractor hydraulic controls in neutral before disconnecting from tractor or working on hydraulic system.
2. Make sure that all components in the hydraulic system are kept in good condition and are clean.
3. Replace any worn, cut, abraded, flattened or crimped hoses.
4. 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.
5. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.



## **2.7 TIRE SAFETY**

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion, which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. When replacing worn tires, make sure they meet the original tire specifications. Never undersize the replacement tire.

## **2.8 GAS MOTOR 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 that 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 above rated speeds. This may result in injury.
11. DO NOT tamper with governor springs, governor links or other parts that 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 operator must keep the arrester in proper working order. 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 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 debris that 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.



## 3. SAFETY SIGN LOCATIONS

### 3.1 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your Distributor or the factory.

### 3.2 HOW TO INSTALL SAFETY SIGNS:

- ⇒ Be sure that the installation area is clean and dry.
- ⇒ Decide on the exact position before you remove the backing paper.
- ⇒ Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- ⇒ Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- ⇒ Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

### 3.3 LOCATIONS

The types of safety signs and locations on the equipment are shown in the illustrations below. Good Safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

Think SAFETY ! Work SAFELY !

**REMEMBER:** If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

A



B





C

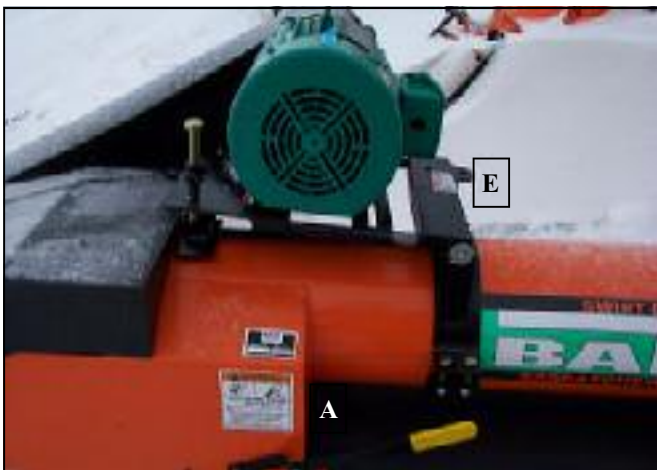
<b>⚠ CAUTION</b>	
<ol style="list-style-type: none"> <li>1. Read and understand the Operators Manual before operating.</li> <li>2. Keep all safety shields and devices in place and in good working order.</li> <li>3. Make certain everyone is clear before operating or moving the machine. Keep children, visitors and untrained people away.</li> <li>4. Keep hands, feet, and clothing away from moving parts.</li> <li>5. Shut off and disable power source before adjusting, servicing, repairing, or cleaning.</li> <li>6. Support discharge end or anchor intake end to prevent upending.</li> <li>7. Empty Conveyor before moving to prevent upending.</li> <li>8. Lower conveyor to its fully down position before moving or transporting. Use a tractor to move and transport.</li> <li>9. Lower Conveyor well below level of power lines before moving or transporting. Electrostatic can occur without direct contact.</li> <li>10. Keep away from intake. Keep others away.</li> <li>11. Train operators annually.</li> </ol>	
<small>9410</small>	

D

<b>⚠ WARNING</b>	
<b>HIGH-PRESSURE FLUID HAZARD</b>	
<p>To prevent serious injury or death from high-pressure fluid:</p> <ol style="list-style-type: none"> <li>1. Relieve pressure on system before repairing, adjusting or disconnecting.</li> <li>2. Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.</li> <li>3. Keep all components in good repair.</li> </ol>	
<small>9415</small>	

E

<b>⚠ DANGER</b>	
	<b>ELECTROCUTION HAZARD</b>
<ol style="list-style-type: none"> <li>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 machine or electrical components.</li> <li>2. Keep electrical components in good repair.</li> </ol>	



## 4. OPERATING & SAFETY INSTRUCTIONS

### 4.1 SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Hydraulic drives: Stop the engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Gas engine drives: Stop engine, place all controls in neutral, remove ignition key and wait for all moving parts to stop before servicing, repairing or unplugging.
4. Electric motor drives: Disconnect and disable electrical supply completely and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
5. Clear the area of bystanders, especially children, before starting.
6. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
7. Do not operate machine when any guards are moved.
8. Review safety related items annually with all personnel who will be operating or maintaining the conveyor.

### 4.2 OWNER / OPERATOR RESPONSIBILITY

The Batco Transfer conveyor is designed to efficiently remove grain, pulse crops, or granular material from under low trucks or storage facilities. An electric motor, gas engine or hydraulic motor provides power. Be familiar with the machine before starting.

**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 machine. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern and prudence of personnel involved in the operation, transport, maintenance and storage of equipment or in the use and maintenance of facilities.**

**Follow all Safety Instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to operate the machine.**

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 and how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your conveyor will provide many years of trouble-free service.

### 4.3 MACHINE COMPONENTS

The Batco conveyor has an endless belt that travels through a tube for moving grain or any granular product. The machine is portable and low enough to fit under trucks or low storage facilities. Normally the discharge is directed into another conveying system.

A gas engine hydraulic motor or electric motor can supply power to the belt drive located at the discharge end. Material enters the system through an intake or hopper on the top end and exits through the outlet or spout on the bottom end.



- a. Main tube
- b. Electric Motor Drive
- c. Gas Engine Drive
- d. Hydraulic Drive
- e. Spout or Outlet
- f. Hopper or Intake

**Fig. 1 MACHINE COMPONENTS**



## **4.4 MACHINE BREAK-IN**

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

1. Before starting:
  - a. Read the conveyor and engine (if so equipped) Operator's Manuals.
  - b. During the first few minutes of operation, check belt alignment to ensure preset alignment does not vary under loaded conditions (*See Service and Maintenance Section for correct alignment conditions.*)
2. After operating for 1/2 hour:
  - a. Re-torque fasteners and hardware.
  - b. Check that all safety decals are installed and legible. Apply new decals if required.
  - c. Check the drive belt tension and alignment. Tension or align as required. (*See Service and Maintenance Section*)
  - d. Check the conveying belt tension alignment. Tension or align as required.
  - e. Check that all guards are installed and working as intended.
3. After operating for 5 and 10 hours:
  - a. Re-torque all wheel bolts, fasteners and hardware.
  - b. Check that all guards are installed and are working properly.
  - c. Check safety decals. Install new ones if required.
  - d. Check the drive and conveying belt tension and alignment. Tension or align as required. (*See Service and Maintenance Section*)
  - e. Change the gas engine crankcase oil (if so equipped).
  - f. Then go to the normal servicing and maintenance schedule as defined in the *Service and Maintenance section*.

## **4.5 PRE-OPERATION CHECKLIST**

Efficient and safe operation of the Batco 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 conveyor that this checklist is followed.

Before operating the conveyor, and each time thereafter, the following areas should be checked off:

1. Service the machine per the schedule outlined in *Service and Maintenance Section*.
2. Use only a gas engine 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 work site. Clean up working area to prevent slipping or tripping.
5. Check that drive and conveying belts are not frayed or damaged and that they are properly adjusted and aligned.
6. Be sure wheels are chocked.
7. Check that discharge and intake areas are free of obstructions.

## **4.6 CONTROLS**

Before starting to work, all operators should familiarize themselves with the location and function of the controls. Refer to engine manufacturer operator manual for details.

### **1. GAS ENGINE**

#### **a. Ignition Switch:**

This switch controls the electrical power to the engine electrical system. Turn the switch counterclockwise to turn OFF. Turn clockwise to the first position for ON.

#### **b. Choke:**

This lever controls the position of the choke. Slide the lever to the left to close the choke valve for starting when the engine is cold. Slide to the right to open the choke as the engine warms. Always open the choke fully when operating the machine.

#### **c. Fuel shut-off valve:**

This valve controls the flow of fuel to the engine. Slide the lever to the left to close the valve and stop the flow of fuel. Move to the right to open the valve and the engine will run.

d. Throttle:

This lever controls the engine RPM. Move the lever to the left to increase the engine speed and right to decrease. Always run at maximum engine RPM when operating.

e. Starting rope:

This retracting rope and T bar is used to turn the engine over for starting. Grasp T bar firmly and pull the rope sharply to start the engine. Close the choke if the engine is cold.

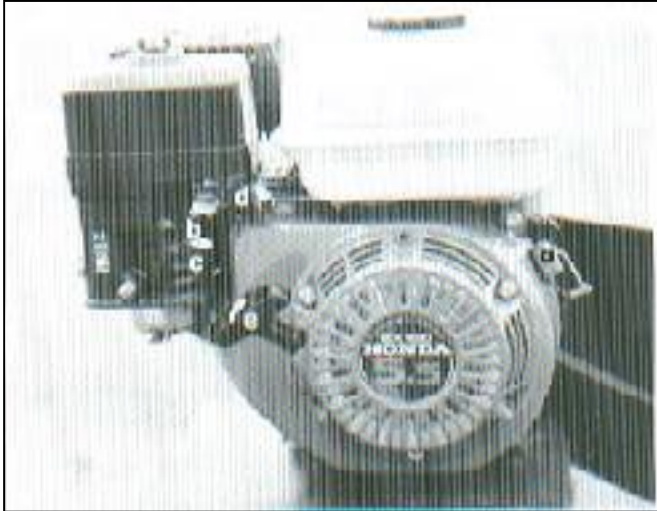


Fig. 2 GAS ENGINE CONTROLS

2. BELT ENGAGEMENT HANDLE (Gas Engine Model Only):

This handle sets the position of the gas engine-mounting base. Turn the lever clockwise to disengage the drive and counterclockwise to engage.

WARNING

MACHINE IS SHOWN WITH GUARD REMOVED FOR ILLUSTRATIVE PURPOSES ONLY. DO NOT OPERATE MACHINE WITH GUARD REMOVED.

BE ALERT

3. ELECTRIC DRIVE

Use a licensed electrician to provide power to the machine. Install ON/OFF switch next to the motor for the convenience of the operator.

4. COLLAPSIBLE HOPPER CONTROL

The conveyor is designed with a collapsible hopper to allow it to go under low discharge units. Move the control handle toward the hopper or intake to release the hopper and move the handle toward the outlet or spout end to collapse the hopper.



Fig. 5 COLLAPSIBLE HOPPER CONTROL



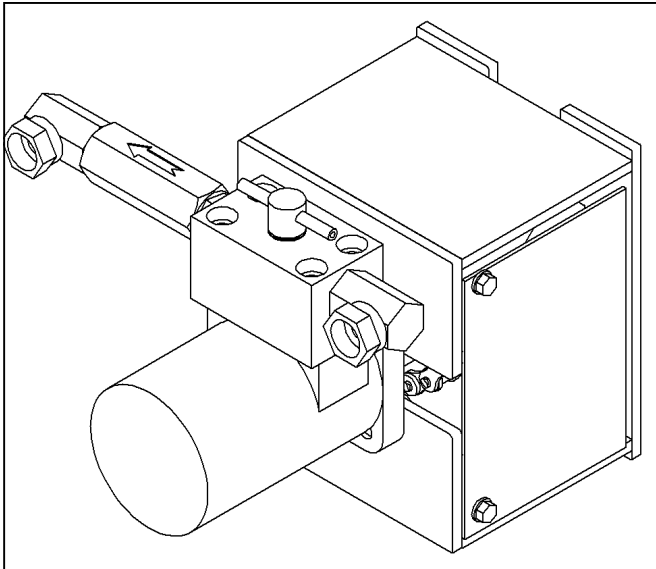
Fig. 3 GAS ENGINE POSITION LEVER



Fig. 4 ELECTRIC SWITCH (Typical)

## 5. HYDRAULIC DRIVE VALVE

This handle sets the position of the valve controlling the flow of oil to the hydraulic motor. Turn the handle so it is parallel to the valve block to close the valve and stop the motor. Position at right angles to the valve block to open valve and run motor at full speed. Set the handle between these two positions to run at partial speed.



Open - Motor Running

**Fig. 6 HYDRAULIC DRIVE VALVE**

## 4.7 MACHINE PLACEMENT

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

1. Make sure that bystanders, especially small children, are clear of the working area.
2. Be sure there is enough clearance from other equipment to move the machine into its working position.
3. Move the machine under the truck or storage facility. **The transfer conveyor is designed such that product to be conveyed must be dumped onto the rear area of the hopper (away from the discharge end) to achieve maximum capacity and efficiency.**

### NOTE

The machine is almost evenly balanced. Pushing down a little on the discharge end will raise the intake end off the ground and allow easy maneuvering.

4. Place chocks in the front and rear of each wheel.
5. Position the next conveyor or conveying system under the discharge and secure.
6. **For the Electric Motor Model:**
  - a. Have a certified electrician provide power to the machine.
  - b. Provide convenient shutdown switches and comply with local electrical codes.
  - c. Use a totally enclosed electric motor when conveying in extremely dusty conditions. Be sure electric motor is properly grounded.
7. **For the Hydraulic Drive Model:**
  - a. Position the power unit next to the conveyor.
  - b. Place chocks in the front and rear of each wheel of the power unit.
  - c. Connect hydraulic hoses to the couplers.
8. Reverse the above procedure when removing the machine from its working position.



**Storage Facility**



**Truck**

**Fig. 7      POSITIONED**

## 4.8 GENERAL OPERATING INSTRUCTIONS

When using the conveyor follow this procedure:

1. Clear the area of bystanders, especially small children, before starting.
2. Review the Pre-Operation checklist (*See Pre-Operation Checklist in Operating and Safety Instructions*) before starting.
3. Keep all spectators and bystanders out of the working and machine area. Should anyone enter this area, stop the machine immediately.
4. Check that the machine is placed per *Machine Placement in Operating and Safety Instructions*.
5. On the electric drive models, be sure a certified electrician is used to provide power and shutdown switches are conveniently positioned for the operator.
6. On the gas engine model, be sure that the engine assembly is in its loosest position.
7. On the hydraulic drive models, be sure the tractor tires are chocked and the hoses are routed out of the way.
8. Check that all guards are in place and working as intended.
9. Check drive and conveying belt tension and alignment. There may be a decrease in belt tension during the first few hours of operation until the belts have broken in. The correct operating tension is the lowest tension at which the belts will not slip under peak load conditions. *See Drive Belt Tension and Alignment* for procedure.
10. Drive or back the truck into position for loading or unloading or place under hopper bin.

**NOTE:** Never dump material onto the transition area. Always dump as close to the back of the hopper as possible.

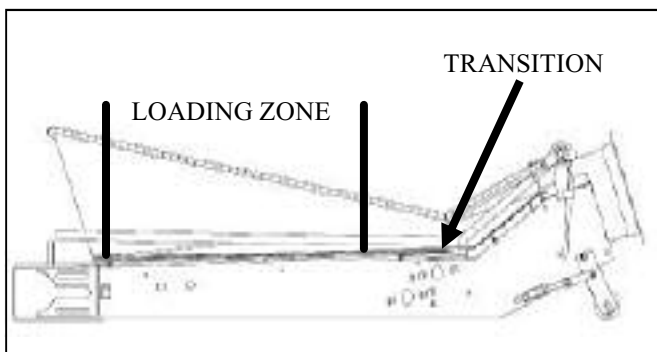


Fig. 8 LOADING ZONE

11. Start the system that removes material from the Transfer conveyor.
12. **Starting:**
  - A. **Electric Motor Models:**
    - a. Turn the electric motor ON.
    - b. Start the flow of material and unload.
  - B. **Gas Engine Models:**
    - a. Turn the ignition switch to its ON position.
    - b. Move throttle to its 1/4 position for starting.
    - c. Close choke if engine is cold.
    - d. Pull sharply on rope to start engine.
    - e. Run for a couple of minutes until the engine warms and the choke is opened.
    - f. Move engine base to engage drive.
    - g. Move throttle to give maximum engine RPM.
  - C. **Hydraulic Drive Models:**
    - a. Place all controls in neutral.
    - b. Start tractor engine and run at low idle.
    - c. Place hydraulic lever in detent.
    - d. Increase engine speed to rated RPM.



Fig. 9 HYDRAULIC DRIVE

**13. Stopping:****A. Electric Motor Models:**

- a. Run until the belting is empty.
- b. Turn off motor and lock out power source.

**B. Gas Engine Models:**

- a. Run until the belting is empty.
- b. Reduce engine speed to low idle.
- c. Move engine base to disengage belt drive.
- d. Shut off engine.

**C. Hydraulic Drive Models:**

- a. Run until the belting is empty.
- b. Reduce engine speed to low idle.
- c. Place hydraulic lever in neutral.
- d. Shut off engine.

**Fig. 10      UNLOADING****14. Emergency Stopping:**

Although it is recommended that the tube be emptied before stopping, in an emergency situation, stop or shut down the power source immediately. Correct the emergency before resuming work.

**15. Re-starting (full tube):**

When the machine is shut down inadvertently, or for an emergency, the belting will still be filled with material. Since the start-up torque loads are much higher than normal when the belting is full, re-start at low idle engine speed. It may be necessary to tighten the drive belts slightly to handle the heavier than normal loads. Do not let the belt drive roller spin on the belt if conveying belt does not start moving immediately. This will damage the drive roller and conveying belt.

**16. Belt Speed:**

For best results, set input drives to provide a belt speed of approximately 600ft./min. If the belt speed is too low, conveyor may leak around transition area. Count the number of belt revolutions per unit time to determine belt speed. Contact your dealer or the factory for appropriate drive components to give the recommended belt speed.

**17. Operating Hints:**

- a. 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.
- b. The wheel position bracket is slotted to allow the operator to set the machine balance. Use this setting to balance the machine when the power unit is installed. The best results are obtained when a downward force of 10 lbs is required on the discharge end handle.
- c. Correct belt alignment and tension is critical for efficient operation. (See page 30).
- d. Never allow anyone into the workplace hazard area. If anyone enters, stop immediately. Make them LEAVE before resuming work.
- e. Do not run the machine for long periods of time without material on the belting. It increases the wear. Try to run only when moving material.
- f. Keep intake end completely covered with material for maximum capacity.



**Discharge Light**



**Discharge Heavy**

**Fig. 11 WHEEL POSITION**

**I. Transport**

- a. When moving the **1314** from location to location, place the unit on a transport vehicle and tie down securely. Do not tow behind a vehicle.
- b. When moving the **1515** or **1814** from location to location, connect unit to truck or tractor hitch. Do not transport the unit at speeds exceeding 20mph (30kph).



**Fig. 12 TRANSPORTING 1314 ONLY**

WARNING

DO NOT TOW 1314 UNIT BEHIND VEHICLE. TIRES NOT RATED FOR HIGHWAY USE

BE ALERT

## **4.9 STORAGE**

1. Store the unit in an area away from human activity.
2. Do not permit children to play on or around the stored machine.
3. After the season's use, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the start of the next season. To ensure a long, trouble free life, this procedure should be followed when preparing the unit for storage.
4. Stop the machine with the belt lacing inside the tube. This helps prevent the lacing from rusting.
5. Remove all residual material from the hopper and the tube.
6. Wash the entire machine thoroughly using a water hose or pressure washer to remove all dirt, mud, debris or residue.
7. Inspect all moving or rotating parts to see if anything has become entangled in them. Remove the entangled material.
8. Touch up all paint nicks and scratches to prevent rusting.
9. Select an area that is dry, level and free of debris.
10. Store inside if possible. Cover with a waterproof tarpaulin if stored outside.



**Fig. 13      STORAGE**



## 5. SERVICE & MAINTENANCE

1. Review the Operator's Manual and all safety items before working with, maintaining or operating the conveyor.
2. Place all controls in neutral or off position, stop the engine or motor, remove ignition key and lockout power source and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. 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.
4. Before applying pressure from hydraulic system, make sure all components are tight and that hoses and couplings are in good condition. Use cardboard to check for leaks
5. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
6. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
7. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making adjustments.
8. Before resuming work, install and secure all guards when maintenance work is completed.
9. Keep safety signs clean. Replace any signs that are damaged or not visible.

### 5.1 SERVICE

#### 1. FLUIDS AND LUBRICANTS

- a. Grease:  
Use SAE multi-purpose high temperature grease with extreme pressure (EP) performance. Also acceptable is SAE multi-purpose lithium based grease.
- b. Engine crankcase oil:  
Consult the engine manual for details
- c. Engine Gasoline:  
Use a standard automotive unleaded gasoline for all operating conditions.
- d. 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.

#### 2. GREASING

**NOTE: Most original equipment bearings used by Batco are sealed units and will not accept grease.**

Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

- a. Use a hand-held grease gun for all greasing.
- b. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
- c. Replace and repair broken fittings immediately.
- d. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

### 3. SERVICING INTERVALS

#### 8 Hours or Daily

1. Check fuel level. Add as required.
2. Check crankcases oil level. Add as required.

#### 40 Hours

1. Check drive belt tension and alignment.
2. Check the conveyor belting tension and alignment. If belt requires adjusting, *see Drive Belt Tension and Alignment.*
3. Check condition of hopper flashing. Be sure it seals the hopper and prevents leaking.
4. Check drive belt tension and alignment.
5. Clean air cleaner foam.



Fig. 15 ALIGNMENT AND FLASHING



**NOTE:**  
Clean more frequently in very dirty or dusty conditions.

Fig. 14 AIR CLEANER



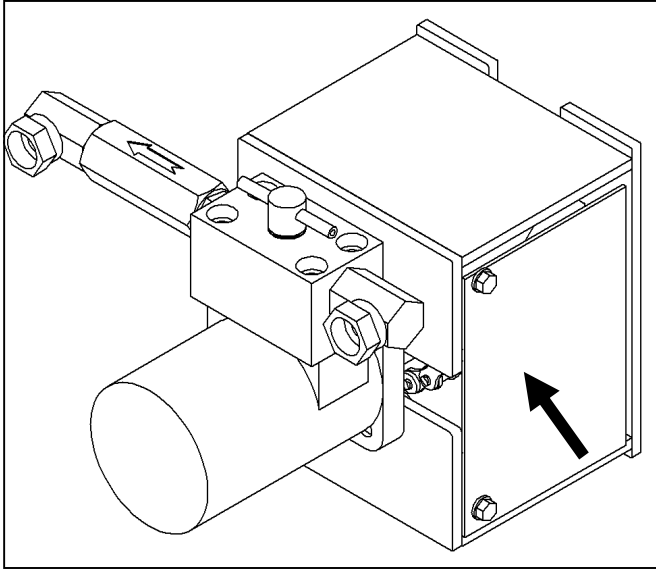
Fig. 16 DRIVE BELT (GAS DRIVE)



Fig. 17 ALIGNMENT

**100 Hours or Annually**

1. Change engine oil.
2. Oil hydraulic motor chain coupler.



**Fig. 18 CHAIN COUPLER**

3. Grease wheel shafts (2 locations 1314).
4. Wash machine.
5. Repack wheel bearings.



**Fig. 19 WHEEL SHAFTS**

**4. SERVICE RECORD**

See Lubrication and Maintenance sections for details of service. Copy this page to continue record keeping.

ACTION CODES:            ✓    Check            CL    Clean  
                                   L    Lubricate        C    Change

<b>HOURS:</b>														
<b>SERVICED BY:</b>														
<b><u>Maintenance Schedule</u></b>														
<b>8 HOURS OR DAILY</b>														
✓ Fuel Level														
✓ Crank Oil Level														
<b>40 HOURS OR WEEKLY</b>														
✓ Belting Tension & Alignment														
CL AIR CLEANER FOAM														
✓ Condition of Hop. Flashing														
<b>Electric Drive Models</b>														
✓ Drive Belt Tens. & Align.														
<b>Gas Engine Drive Models</b>														
✓ Drive Belt Tens. & Align.														
<b>100 HOURS OR ANNUALLY</b>														
C Engine Oil														
L Hyd. Motor Chain Coupler														
L Wheel Shafts (2)														
CL Machine														

## 5.2 MAINTENANCE

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free service.

### 1. CONVEYING BELT TENSION AND ALIGNMENT

A flat belt is used to convey material through the tube. The tension and alignment of the belt should be checked weekly, or more often if required, to be sure that it does not slip or run to one side. To maintain the belt, follow this procedure:

- a. Place all controls in neutral or off, stop engines or motors and disable power source before working on belt.
- b. Tension:
  1. Use the intake end roller position bolts to set the tension of the belting.
  2. Loosen the bearing assembly bolts.
  3. Use the tightener bolt to move roller to provide the required tension.
  4. A properly tensioned belt will not slip when it is operating.
  5. Tighten bearing assembly bolts.
- c. Alignment:

The belting is properly aligned when the belt runs in the center of the rollers on the ends.

#### 1. Checking Alignment:

Use the roller on the intake or hopper end to check the alignment. The belt should be centered.

Turn the belt a 1/2 revolution when the belt is new and check the intake roller. If out of alignment, the belt will move to the loose side. Adjust, run a couple of revolutions and check again. Check frequently during the first few minutes of operation and then several times during the first 10 hours. The belt normally seats itself during the first 10 hours of operation and can be checked weekly after that.



**Alignment Centered**



**Adjusters**

**Fig. 20 ADJUSTMENT**

2. Adjusting Alignment:

A misaligned belt will track toward the loose side. Set the alignment by loosening the bearing mounts on the tight side and move the end of the roller back slightly. Tighten the bearing mount.

Move the belting another revolution and check the alignment again. Loosen the tight side slightly again if required. Repeat the adjusting and checking procedure until the belting centers on the input end roller and stays centered when running.

Check the discharge end also and move the bearing assembly as required. The bearing housing anchor bolt holes are slotted to allow adjustment.

Always repeat this aligning procedure when installing a new belt. Check frequently during the first 10 hours of operation. After 10 hours, the belt is normally seated and checking the alignment can be done less frequently.

d. Belt Replacement:

1. Rotate the belting until the seam is in the open.
2. Move the intake roller to its loosest position.
3. Pull all the slack to the seam area.
4. Remove the wire connector and open the belt.
5. Attach one end of the replacement belt to the belt end being removed.
6. Pull the old belt out and the new belt will be threaded into place.
7. Disconnect the old.
8. Connect the ends of the new belt together and secure.
9. Set the belting tension.
10. Check and set the belting alignment.

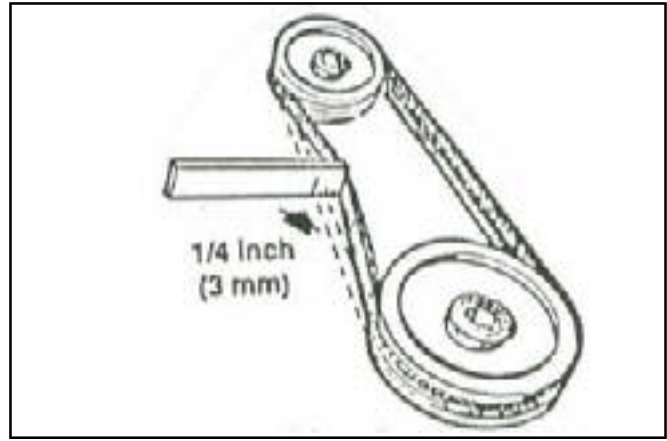


**Fig. 21**      **CONNECTOR WIRE**

## 2. DRIVE BELT TENSION AND ALIGNMENT (GAS AND ELECTRIC)

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

- a. Turn motor off and unplug power cord or turn off power at the master panel before starting on drive belt system for electric drive model.
- b. Stop engine and remove ignition key before starting on drive belt system for gas drive model.
- c. Belt Tension (Electric Drive):
  1. Push on the center of the belt span with a force of approximately 5 lbs.
  2. The belts will deflect approximately 1/4" to 1/2" when properly tensioned.
  3. Move the motor base to set drive belt tension.
  4. Close and secure guards.
- d. Belt Tension (Gas Drive):
  1. Move motor to its loosest belt position.
  2. Move engine base to set tension.
  3. Be sure pulleys are aligned.
  4. Tighten engine base bolts.
  5. Engage belt.



**Schematic**



**Motor**

**Fig. 22 BELT TENSION**

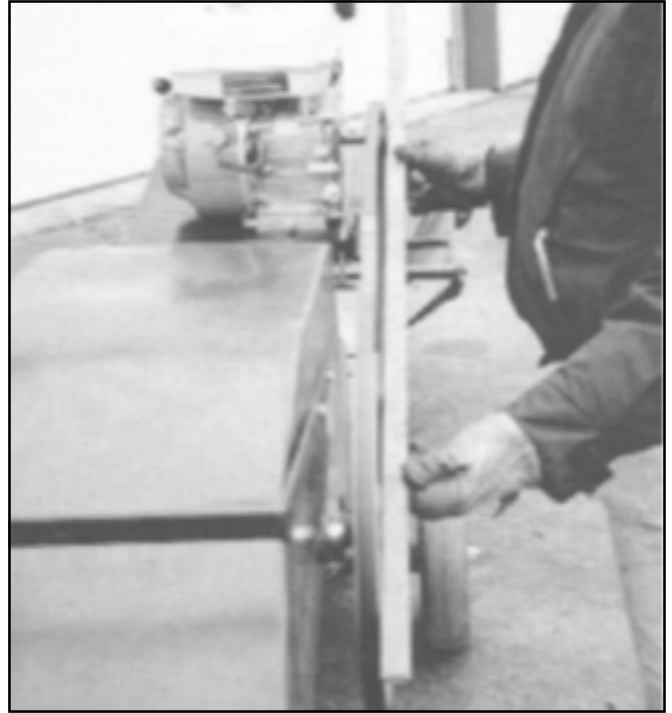
- e. Alignment:
1. Lay a straight edge across the pulley faces to check the alignment.
  2. Use the pulley hub to move the pulley to the required position for alignment.
  3. Tighten hub bolts to secure pulley on shaft.
  4. Check belt tension.
  5. Close and secure guards.
- f. Belt Replacement:
1. Move motor to its loosest belt position
  2. Remove old belt and replace with new one.
  3. Move motor base to set the belt tension.
  4. Check pulley alignment. Adjust if required.
  5. Close and secure guards.

WARNING



MACHINE IS SHOWN WITH  
GUARD REMOVED FOR ILLUSTRATIVE  
PURPOSES ONLY. DO NOT OPERATE MACHINE WITH  
GUARD REMOVED.

BE ALERT



**Fig. 23** ALIGNMENT (TYPICAL)



**Fig. 24** BELT DRIVE (GAS DRIVE)



### 3. CLEANING AIR CLEANER

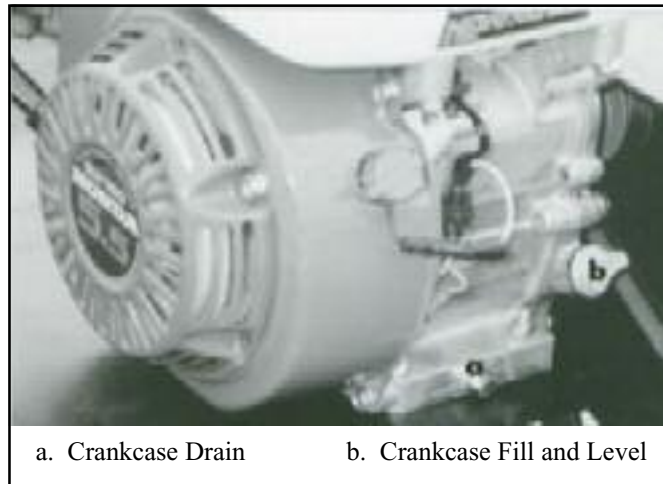
1. Review gas engine Operator's Manual.
2. Place all controls in neutral, stop engine and remove ignition key before maintaining.
3. Remove the cover over the air cleaner.
4. Remove the foam from the intake.
5. Use an air hose to blow the dust and debris out of the foam. Replace filter element if required.
6. Install foam.
7. Install and secure the cover.

### 4. CHANGING ENGINE OIL

1. Review gas engine Operator's Manual.
2. Place all controls in neutral, stop engine, and remove ignition key before maintaining.
3. Do not change engine oil immediately after operation. Hot oil can cause burns if it contacts exposed skin. When engine is warm, but not hot, change oil while the engine is warm to keep the contaminants in suspension.
4. Place a pan under the drain plug.
5. Remove the drain and allow the oil to drain for 10 minutes.
6. Install and tighten the drain plug.
7. Dispose of the used oil in an approved container.
8. Fill the crankcase with oil specified in gas engine operator's manual.
9. Run the engine for 1-2 minutes and check for oil leaks at drain plug. Check engine oil level.
10. If leaks are found around the drain plug, tighten slightly, then repeat step 9.
11. Check engine oil level. Top as required.



**Fig. 25 AIR CLEANER**



**Fig. 26 ENGINE**



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## 6. TROUBLE SHOOTING

The Batco grain conveyor uses an endless flat belt moving through a tube to convey material from one location to another. It is a simple and reliable system that requires minimal maintenance.

In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this troubleshooting section, please call your local Batco dealer or distributor. Before you call, please have this Operator's Manual and the serial number from your machine ready.

<b><u>PROBLEM</u></b>	<b><u>CAUSE</u></b>	<b><u>SOLUTIONS</u></b>
Conveyor will not run.	Conveying belting loose.	– Tighten & align ( <i>See Maintenance Section</i> ).
	Drive belts loose	– Tighten & align belting ( <i>See Maintenance Section</i> ).
	Belt frozen to tube from operating in high humidity in extreme cold conditions	– Remove conveyor from area of high humidity and continue to run so the belt dries prior to freezing.
	Check valve installed in incorrectly	– Change orientation of valve
Excessive Belt Edge Fraying	Belting not aligned.	– Align and tension belting ( <i>See Maintenance Section</i> ).
Low Conveying Capacity	Incorrect belt speed	– Adjust belt speed to correct range ( <i>See General Operating Instructions</i> )
	Conveyor belt slipping.	– Tighten and align ( <i>See Maintenance Section</i> ) – Replace if worn or glazed ( <i>See Maintenance Section</i> )
	Drive belt slipping.	– Set correct tension and alignment ( <i>See Maintenance Section</i> )

<b><u>PROBLEM</u></b>	<b><u>CAUSE</u></b>	<b><u>SOLUTIONS</u></b>
Belt loose	Belt stretches over time	Tighten takeup roller, ensure that each takeup bolt is tightened the same amount (use measuring tape to check) ( <i>See Maintenance Section</i> )
U-Clamps sliding on tube	Clamp not properly crimped to tube	Contact authorized dealer to correct positioning
Grain Leaking From Conveyor Hopper	Belt not tracked (centered)	Track belt ( <i>See Maintenance Section</i> )
	Flashing installed incorrectly or worn	Inspect flashing for wear and replace if required
Grain Leaking From Conveyor Spout	Belt not tracked	Track belt ( <i>See Maintenance Section</i> )
	Belt speed is too fast, hood plugging	Decrease belt speed

## 7. SPECIFICATIONS

### 7.1 MECHANICAL

<b>Model</b>	<b>1314</b>	<b>1515</b>	<b>1814</b>
<b>Length:</b>	14'	17'9"	18'
<b>Width:</b>	2'6"	2'6"	3'
<b>Height:</b>	4'	4'6"	5'2"
<b>Clearance:</b>	10"	12"	10"
<b>Weight</b>	400 lb	700 lb	800 lb
<b>Power Options</b>			
<b>Hydraulic:</b>	4.5 cu. In.	5.9 cu. In.	6.1 cu. In.
<b>Gas/hp:</b>	5.5 HP with 6:1 gear reduction	9 HP	9 HP
<b>Electric/hp:</b>	5 HP	5 HP	7.5 HP

**SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE**

## **7.2 BOLT TORQUE**

### **Checking Bolt Torque**

The tables shown below give correct torque values for various bolts and cap screws. Tighten all bolts to the torque specified in the chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as you guide. Replace hardware with the same strength bolt.

#### ENGLISH TORQUE SPECIFICATIONS

##### **Bolt Torque\***

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

#### METRIC TORQUE SPECIFICATIONS

##### **Bolt Torque\***

<b>Bolt Diameter "A"</b>	<b>8.8</b>	<b>8.8</b>	<b>10.9</b>	<b>10.9</b>
	<b>(N.m)</b>	<b>(lb-ft)</b>	<b>(N.m)</b>	<b>(lb-ft)</b>
M3	.5	.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710

**\* Torque value for bolts and cap screws are identified by their head markings.**

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

**7.3 HYDRAULIC FITTING TORQUE**

## TIGHTENING FLARE TYPE TUBE FITTINGS \*

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel until snug.
4. To prevent twisting the tube (s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

\* *The torque values shown are based on lubricated connections as in re-assembly.*

<b>Tube Size OD</b>	<b>Nut Size Across Flats</b>	<b>Torque Value *</b>	<b>Torque Value *</b>	<b># of Turns to Tighten</b>	<b>(After finger tightening)</b>
<b>(in.)</b>	<b>(in.)</b>	<b>(N.m.)</b>	<b>(lb-ft)</b>	<b>(Flats)</b>	<b>(Turn)</b>
3/16"	7/16	8	6	1	1/6
1/4"	9/16	12	9	1	1/6
5/16"	5/8	16	12	1	1/6
<b>3/8"</b>	<b>11/16</b>	<b>24</b>	<b>18</b>	<b>1</b>	<b>1/6</b>
1/2"	7/8	46	34	1	1/6
5/8"	1	62	46	1	1/6
3/4"	1-1/4	102	75	3/4	1/8
7/8"	1-3/8	122	90	3/4	1/8

## TIGHTENING "O" RING FITTINGS \*

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

\* *The torque values shown are based on lubricated connections as in re-assembly.*

<b>Tube Size OD</b>	<b>Nut Size Across Flats</b>	<b>Torque Value *</b>	<b>Torque Value *</b>	<b># of Turns to Tighten</b>	<b>(After finger tightening)</b>
<b>(in.)</b>	<b>(in.)</b>	<b>(N.m.)</b>	<b>(lb-ft)</b>	<b>(Flats)</b>	<b>(Turn)</b>
3/8"	1/2	8	6	2	1/3
7/16"	9/16	12	9	2	1/3
1/2"	5/8	16	12	2	1/3
9/16"	11/16	24	18	2	1/3
3/4"	7/8	46	34	2	1/3
7/8"	1	62	46	1-1/2	1/4
1-1/16"	1-1/4	102	75	1	1/6
1-3/16"	1-3/8	122	90	1	1/6
1-5/16"	1-1/2	142	105	3/4	1/8
1-5/8"	1-7/8	190	140	3/4	1/8
7/8"	2-1/8	217	160	1/2	1/12



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