IMPORTANT! The reducer gear box is shipped **Without Oil**.

*Oil must be added before operation.*

Refer to the Assembly Section in this manual.
HUTCHINSON | MAYRATH

POLICIES and PROCEDURES

**Prices:** Prices in effect at time of shipment will apply. Prices are subject to change without notice. All prices are F.O.B. Clay Center, Kansas. Orders shipped from locations other than Clay Center, Kansas will be subject to additional charges, such as back freight and/or additional freight.

**Service Charge:** A service charge will be assessed for all past due balances as permitted by state law not to exceed 1-1/2% per month.

**Minimum Order:** Processing and handling costs necessitate a minimum charge of $15.00 net on all orders.

**Back Orders:** Back orders will be shipped as they become available. Contact Hutchinson, Mayrath Customer Service for alternative shipping options or if cancellation is desired.

**Damaged Goods:** It is the consignee’s responsibility to check all shipments thoroughly upon receipt of goods. If any damage is discovered, it must be noted on the freight bill of lading before signing. The consignee must make necessary claims against the respective freight line. All damage claims must be submitted within 30 days of delivery receipt.

**Shortages:** All shortages must be noted at time of delivery. Shortages must be noted on the freight bill of lading before signing. Hutchinson, Mayrath must be advised of all concealed shortages upon discovery. Once notified of concealed shortages Hutchinson, Mayrath will advise corrective action to be taken.

**Return of Goods:** All returns must be approved by Hutchinson, Mayrath prior to shipment. All return requests will be issued a return authorization number. NO RETURNS WILL BE ACCEPTED WITHOUT A RETURN AUTHORIZATION NUMBER AND PRIOR AUTHORIZATION FROM THE FACTORY. All returns must be shipped prepaid. A 15% restocking charge will be applied to all returned merchandise. Custom Products may not be returned for credit. Only current products in new and salable condition may be returned. No safety devices may be returned for credit.

**Modifications:** It is the policy of Hutchinson, Mayrath to improve its product whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.

**Limited Warranty:**

(a) For a period of (1) year after receipt of goods by the original consumer buyer, Hutchinson, Mayrath will supply free of charge replacement parts for parts that prove defective in workmanship or material. Defective parts must be returned freight prepaid to a specified Hutchinson, Mayrath location. Only Hutchinson, Mayrath original repair parts may be used for warranty repairs.

(b) This limited warranty does not extend to parts designed to wear in normal operation and be replaced periodically; or to damage caused by negligence, accident, abuse or improper installation or operation.

(c) GOODS NOT MANUFACTURED BY HUTCHINSON, MAYRATH CARRY ONLY THE MANUFACTURER’S WARRANTY.

(d) THIS UNDERTAKING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

FAILURE TO FOLLOW THE INSTRUCTIONS CONTAINED IN THE OWNER’S & OPERATOR’S MANUALS AND THE ITEMS LISTED BELOW WILL RESULT IN THE VOIDING OF THIS LIMITED WARRANTY.

(1) Improper assembly, including failure to properly install all safety equipment.

(2) Improper installation.

(3) Unauthorized alternations of goods.

(4) Goods operated when obviously in need of repair.

(5) Use of unauthorized repair parts.

(6) Irresponsible operation.

(7) Used to handle materials other than free flowing, nonabrasive and dry materials, as intended.

(8) Damaged through abusive use or accident.

**Limitation of Liability:** BUYER AGREES THAT IN NO EVENT SHALL HUTCHINSON, MAYRATH HAVE LIABILITY FOR DIRECT DAMAGES IN EXCESS OF THE CONTRACT PRICE OF THE GOODS IN RESPECT OF WHICH CLAIM IS MADE. BUYER FURTHER AGREES THAT IN NO EVENT SHALL HUTCHINSON, MAYRATH ON ANY CLAIM OF ANY KIND HAVE LIABILITY FOR LOSS OF USE, LOSS OF PROFITS, OR FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.
GENERAL SAFETY STATEMENT

This manual was written with the safety of the operator and others who work with the equipment as our prime concern. The instructions presented will help the reader learn SAFE day to day work practices. We want you as our partner in safety.

It is your responsibility as an owner, operator or supervisor to know what specific safety requirements and precautions exist and to make these known to all other personal working with the equipment or in the area, so that they too may safely perform their duties and avoid any potentially hazardous situations.

Please remember safety equipment provides important protection for persons around a grain handling system that is in operation. Be sure that ALL safety shields and protection devices are installed and properly maintained. If any shields or guards are damaged or missing, contact your dealer to obtain the correct items.

Avoid any alterations of the equipment. Such alterations may create a dangerous situation where serious injury or death may occur.

SAFETY ALERT SYMBOL

The symbol shown below is used to call your attention to instructions concerning your personal safety. Watch this symbol - it points out important safety precautions. It means 'ATTENTION! Become alert! Your personal safety is involved!' Read the message that follows and be alert to the possibility of personal injury or death.

BE ALERT! YOUR SAFETY IS INVOLVED.

WARNING

Anyone who will operate or work around this machine shall first read this manual! This manual must be delivered with the equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.
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OPERATOR QUALIFICATIONS

Operation of this auger shall be limited to competent and experienced persons. In addition, anyone who will operate or work with this system must use good common sense. In order to be qualified, they must also know and meet all other requirements, such as:

1. Some regulations specify that no one under the age of 16 may operate power machinery. This includes augers. It is your responsibility to know what these regulations are in your own area or situation.
2. Current OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved."
3. Unqualified persons are to stay out of the work area.
4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.

* Federal Occupational Safety & Health Standards for Agriculture Subpart D, Section 1928.57 (a)(6).

SIGN OFF SHEET

As a requirement of OSHA it is necessary for the employer to train the employee in the safe operation and safety procedures of this auger. We include this sign off sheet for your convenience and personal record keeping.

<table>
<thead>
<tr>
<th>DATE</th>
<th>EMPLOYER SIGNATURE</th>
<th>EMPLOYEE SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

MACHINE INSPECTION

After delivery of your new auger and/or completion of assembly and before each use, inspection of the machine is mandatory. This inspection should include, but not be limited to:

1. Check to see that all guards listed in the assembly instructions are in place and secured and functional.
2. Check all safety signs and replace any that are worn, missing or illegible. They are listed in the parts section. Safety signs may be obtained from your Dealer or ordered from the factory.
3. Are all fasteners tight?
GENERAL INFORMATION

As the name implies, custom built augers are made to fit your specific requirements. Since these augers are normally installed in a permanent position, the selection of the proper size initially can save time and money later. For example, if today's requirements call for 1200 BPH capacity, a six inch auger would be adequate. Considering the fact that the unit may be installed 30 ft. above ground as a fill auger over the top of several bins, an eight inch custom might be a better buy. The larger auger can be run slower, giving a longer life, plus allowing the capacity of the system to be increased in the future without costly replacement.

Intermediate bearings should always be used on overhead augers that have more than one discharge opening as this application allows some portion of the auger to run empty. These bearings placed at 10' intervals will keep the flighting centered to prevent contact with the tube, thus eliminating excess wear and noise. Intermediate bearings should be considered on any unit that it out in the open where inspection can be performed at bearing points.

The length of a custom auger is generally limited only by the capacity of the drive. Reducer drives should be considered in the longer or more demanding units. Reducers allow the use of larger pulleys which provide more belt contact, thus reducing slippage. The larger the motor the more important this becomes. Reducer drives also offer better speed control as they allow the use of a wider range of pulley sizes. The ability to control speed and flow is important in any system where one conveyor is feeding another.

Custom augers, like any other screw conveyor, should be operated at partial capacity until the unit is polished up before maximum capacity and efficiency can be expected.

In situations where an auger will be pressure-fed at the intake end it is advisable to use a device for restricting the flow. This will keep the tube from filling so full that it tends to "jam" the flighting. Examples of these situations where over-filling can occur: formed hopper pits under storage bins; dump pit to wet holding tank; bulk (hopper bottom) tank unloading. If an auger is kept from absolute filling, it will make start-up easier and will convey more efficiently.

Slide gates and intake control gates can be used in the pressure area. The most positive method, however, is using a short section of half-pitch flighting at the intake end. Slide gates can be shut down, but this can sometimes cause bridging so it is advisable to use half-pitch flight in combination with the gate control.

Augers to be placed in hopper pits under storage bins should not have intermediate bearings unless the complete auger is to house in a larger guide pipe. If the outside guide pipe is not used, the bearings prevent removal of the flighting in case of plugging. The outside pipe is usually recommended for this type of installation as it can prevent damage to the auger tube from excessive grain weight. Reducer drives are also recommended on these augers as they allow the use of larger pulleys resulting in a longer lasting drive for stopping and starting under a load.

Custom augers should be supported with good solid brackets, towers, and trusses. Supports are no stronger than what they are attached to. Most conveyors should be supported approximately every 10' or 15', but can vary with size and weight. Clamp bands for attaching towers to augers are listed in spotting section of catalog.

ASSEMBLY INSTRUCTIONS

Assembly of a custom auger system is unique with each and every situation. Some systems may be comprised of a number of tubeflight assemblies with a variety of inlets and outlets including hoppers, spouts, valves, dead heads and elbows with a accompanying hardware and supports. Other systems may be extremely simple, comprised of only a hopper, one tubeflighting section and a discharge.

The assembly instructions in this manual offer information as to how to assemble all possible components in any given plan, comprised of only a hopper, one tubeflighting section and a discharge.

The assembly instructions in this manual offer information as to how to assemble many of the possible components in any given system, simple or complex. Specific, detailed instructions are given for motor mounts due to the many variations in their assembly.
DESIGNATED WORK AREA

Before starting the auger, a designated work area should be established around it.

Under no circumstances should persons not involved in the operation be allowed to trespass into the work area.

It shall be the duty of all operators to see that children and/or other persons stay out of the work area. Trespass into the work area by anyone not involved in the actual operation shall result in an immediate shutdown by the operator.

It shall be the responsibility of all operators to see that the work area has secure footing, is clean and free of all debris, and tools which might cause accidental tripping and/or falling.

OPERATING INSTRUCTIONS

AUGER CAPACITIES

The capacities of screw conveyors (augers) can vary greatly under varying conditions. Different materials, moisture content, amount of foreign matter, angle of operation, methods of feeding and speed all play a role in the performance of the auger. An auger operating at a 45° incline could operate at a capacity 20% less than an auger operating horizontally. Moisture content at 25% could cut capacity back by as much as 40% under some conditions. If an inclined auger has one foot of grain over the inlet flight, it will probably get better capacity than if it had only a one inch covering. On the other hand, an auger in the bottom of a cone shaped pit or under a bulk tank with approximately four feet or more of grain on top of it may be overfed. This overfeeding would be caused from the weight of the grain over the intake forcing more into the auger than it can efficiently move. The result would be an increased horsepower requirement, extra strain on the driveline, and possibly a complete stalling out. Under the "extra" grain pressure conditions a control gate should be used or a short length of 1/2" pitch flight.

SCREW CONVEYOR GENERAL CAPACITIES, FLIGHT SPEEDS & DRIVE INFORMATION

Based on horizontal operation and clean, dry corn approximately 90% load, which in most cases is maximum. Capacities will vary according to grain, grain conditions, loading method, etc. DO NOT exceed maximum flight speed listed in chart. Units with intermediate bearings should run a maximum of 500 RPM.

<table>
<thead>
<tr>
<th>Drive Type</th>
<th>Motor H.P. (kW)</th>
<th>No. of Belts</th>
<th>Belt Size</th>
<th>Pulley Dia.</th>
<th>Driven Pulley Dia.</th>
<th>Flight Speed (RPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:1 Reducer Drive</td>
<td>7 1/2 to 10 hp (5.6 to 7.5 kW)</td>
<td>2</td>
<td>B 57</td>
<td>5.0&quot; PD</td>
<td>11.0&quot; PD</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>15 to 20 hp (11.2 to 15 kW)</td>
<td>3</td>
<td>B 57</td>
<td>5.0&quot; PD</td>
<td>11.0&quot; PD</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>25 to 30 hp (18.7 to 22.4 kW)</td>
<td>4</td>
<td>B 57</td>
<td>5.0&quot; PD</td>
<td>11.0&quot; PD</td>
<td>200</td>
</tr>
<tr>
<td>Direct Drive</td>
<td>15 to 20 hp (11.2 to 15 kW)</td>
<td>3</td>
<td>B 84</td>
<td>5.0&quot; PD</td>
<td>20.0&quot; PD</td>
<td>440</td>
</tr>
<tr>
<td></td>
<td>20 to 25 hp (15 to 18.7 kW)</td>
<td>4</td>
<td>B 84</td>
<td>5.0&quot; PD</td>
<td>20.0&quot; PD</td>
<td>440</td>
</tr>
</tbody>
</table>
OPERATING INSTRUCTIONS - CONT.

⚠️ Make certain everyone is clear before operating the machine.

ELECTRIC MOTOR DRIVES

Always use a motor with required H.P. suggested in the chart on page 5. Use a motor that operates at 1750 RPM. Electric motors and controls shall be installed by a qualified electrician and must meet the standards set by the National Electrical Code and all local and state codes.

A magnetic starter should be used to protect your motor when starting and stopping. It should stop the motor in case of power interruption, conductor fault, low voltage, circuit interruption or motor overload. Then the motor must be restarted manually. Some motors have built-in thermal overload protection. If this type motor is used, use only those with manual reset.

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

⚠️ A main power disconnect switch capable of being locked only in the OFF position shall be provided. This shall be locked whenever work is being done on the Custom-Built Auger.

The horsepower recommendations are based on clean, dry shelled corn or wheat. High moisture grain (above 15%) will require greater power. The maximum possible capacity will be less with high moisture grain than with dry grain. Use chart on Page 5 to determine size of motor required.

FLIGHT SPEED INFORMATION

Proper auger flight speed is important for efficient operation of the auger.

1. If the flight speed is too fast, excessive wear will result.
2. If the flight speed is too slow and the auger flighting is permitted to "load-up", high torque will be required to turn the auger flighting, and damage to the auger can result. Control the amount of grain fed into the auger inlet. See chart on page 5 for recommended flight speeds.
OPERATING INSTRUCTIONS - CONT.

START-UP

It is important to be familiar with the following routine operation procedures before attempting start-up.

During the operation of the auger, one person shall be in a position to monitor the operation. Inspect the drive before adding power and know how to shut down in an emergency. (See page 6.) Visually inspect the auger periodically during operation. For efficient and safe operation, be aware of all the adjustments and checks which should be performed.

Make certain everyone is clear before operating equipment.

The operator shall be aware of any unusual vibrations, noises and the loosening of any fasteners.

Keep all safety shields and devices in place.

Keep hands, feet and clothing away from moving parts.

Shut off and lock out power to adjust, service or clean.

BREAK-IN INFORMATION

Any screw conveyor when it is new or after it sets idle for a season should go through a "break-in" period. The auger should be run at partial capacity until the screw becomes polished and smooth before attempting full capacity. A failure will most likely occur when run full before it has "polished up". It is recommended that several hundred bushels of grain be augered at partial capacity.

Never operate the auger when empty for any length of time, as excessive wear will result. If at all possible do not stop or start the auger under load, especially before the flight and tube become well polished, as this may cause the auger to "freeze-up".

During the initial start-up and break-in period, the operator shall note any unusual vibrations or noises. Keep all safety shields and devices in place. Keep hands, feet and clothing away from moving parts.

Proper auger flight speed is important for efficient operation of the equipment.

1. If the flight speed is in excess of what is recommended, excessive wear will result.

2. If the flight speed is slow and the auger fighting is permitted to "load up", high torque will be required to turn the auger flighting and damage to the auger can result. Control the amount of grain fed into the auger. An optional control gate is available for this purpose.

OPERATING CAPACITIES

The results or capacities of screw conveyors or augers can vary greatly under varying conditions. Different materials, moisture content, amount of foreign matter, methods of feeding and speed all play a role in the performance of the auger. Twenty-five (25%) moisture could cut capacity back by as much as 40% under some conditions.
OPERATING INSTRUCTIONS - CONT.

FULL LOAD OPERATION

⚠️ Observe work area restrictions. Make certain everyone is clear before operating equipment.

TO START AUGER
1. Start electric motor before conveying grain.

TO STOP AUGER
1. Allow the auger to empty before stopping.
2. Shut off electric motor and lockout.

SHUTDOWN

A. NORMAL SHUTDOWN
Permit the auger to clean out before stopping the unit. Before the operator leaves the work area, the power source shall be locked out.

B. EMERGENCY SHUTDOWN
Should the auger be immediately shutdown under load - disconnect and lockout the power source.

NOTE: Starting the unit under load may result in damage to the auger. Such damage is considered abuse of the equipment.

Reconnect power source and clear auger gradually.

⚠️ Whenever you must service or adjust your equipment, make sure to stop motor and lockout your power source!

LOCKOUT

If the operator must leave the work area, or whenever servicing or adjusting, the utility auger must be stopped and the power source turned off. Precaution should be made to prevent anyone from operating the auger when the operator is absent from the work area.

IMPORTANT: Use a main power disconnect switch capable of being locked only in the off position.

CLEAN-UP

1. Check to see that all guards listed in the assembly instructions are in place and secured and functional.

2. Check all safety signs and replace any that are worn, missing or illegible. The safety signs are listed in the parts section of this manual. Safety signs may be obtained from your dealer or ordered from the factory.

3. Are all fasteners tight?
OPERATING INSTRUCTIONS - CONT.

TROUBLE SHOOTING

AUGER VIBRATION

Driving belt may be over tightened, putting head stub and flight in a bind. Damage can occur to the auger flighting, thus causing noise. Damage usually occurs because of foreign material having been run through the auger. It may be necessary to remove the flighting for inspection.

LOW CAPACITY

The auger may not be getting enough grain. Check to make sure the intake has not bridged over, restricting flow. The exposed flighting at the auger intake should be covered with grain to achieve maximum capacity.

Check auger speed. Speeds slower than the recommended speed will result in low capacity.

AUGER PLUGS

The auger may be getting too much grain, causing "jamming" inside the housing.

The motor may be too small or wired improperly. (See HP requirements, page 5.)

If wet grain or other hard-to-move material is being augered, use a larger size motor than recommended for normal use. (See footnote to HP chart, page 5.)

Is the auger free of any foreign material, such as sacks, tarp corners, etc? A plug of the discharge end will cause an auger plug.
ASSEMBLY INSTRUCTIONS
AUGER HOUSING & FLIGHT

NOTE: A custom auger may not have an extension or it may have more than one extension. All sections connect in the same manner.

1. Bolt the tail stub into the flight.

2. Slide extension fitting out of housing and connect to head flight using the bolts in the connecting stub. (NOTE: Go to next section if the auger has intermediate bearings.)

3. Loosen bolts in connecting band enough to allow it to slide on auger housing. Slide extension housing up until it contacts the head auger housing and move connecting band until it is centered on both housings. Tighten bolts in connecting band.

AUGER HOUSING & FLIGHT WITH INTERMEDIATE BEARINGS

1. Remove bolt, lockwasher & mounting plate (See Fig. 2) in all of the auger extensions, sections, but not in the head sections.

2. Slide extension fitting out of housing and connect to the head flight using the bolts in the connecting stub.
ASSEMBLY INSTRUCTIONS
AUGER HOUSING & FLIGHT
WITH INTERMEDIATE BEARING - CONT.

3. Loosen bolts in connecting band enough to allow it to slide on auger housing. Slide tube sections together as tightly as possible. Move connecting band over connection and up until it contacts mounting plate of intermediate bearing located in the head section. Tighten connecting band bolts.

4. The intermediate bearings can now be mounted to the extension tubes. A special tool (called a "bearing positioning bar") has been provided to position the bearing hangers for assembly.

5. Use the bearing positioning bar to grab the bearing hanger stem through the housing slot to rotate the hanger into its upward position as follows:
   A. Insert the double bended end of bearing positioning bar into slot and hook the bearing hanger stem. Rotate the stem upward as much as possible. See Fig. 3.
   B. Remove the positioning bar and insert the single bent end into slot. Hook the bearing hanger stem end, by pulling upward, rotate it completely upright. See Fig. 4.

C. Attach each bearing hanger to the auger housing using a mounting plate, a hex head capscrew and lockwasher as seen in Fig. 2. Before tightening the mounting bolts, adjust the bearing hangers so they are centered between the ends of the auger flights. (See Fig. 5.) This can be done by sliding the hanger back and forth in the slot to determine the approximate center.
ASSEMBLY INSTRUCTIONS

OUTLETS

Location of outlets (drops) should have been predetermined before ordering. Openings should not occur where there is a connecting band, as the connection would be severely weakened.

When an opening is cut, that section of the tube loses much of its strength. You should determine if additional support is necessary. See truss information on Page 16.

Openings may be cut below internal bearings but a hole must be located in the outlet backband to allow clearance for the internal bearing attachment bolt.

For best results, flight should be removed from tubes before cutting. If flight is left in tube, minor damage will occur (flight will be notched and/or rough edges will be created). This will not affect the performance of the auger greatly, but burns or molten metal should be removed or abnormal wear will result. Likewise, rough edges on tubing should be ground for a tighter fit and smoother operation.

Make sure the opening for any given outlet is the correct size. It is very important that the opening be large enough so the capacity of the outlet is not reduced, but small enough so the outlet can be mounted securely.

The illustrations below show a 90° discharge spout on the auger. Follow these recommended guidelines for drops installed in your system.

FIG. 6

See next page for enclosed slide gates.

FIG. 7
ASSEMBLY INSTRUCTIONS
OUTLETS - CONT.

ENCLOSED SLIDE GATE WITH RACK AND PINION CONTROL
1. Follow cutting procedures outlined on previous page.
2. Attach spout to tube with backband.
3. Remove smaller (outside) nut from connecting arm and insert end of arm through hole in angle on gate.
4. With the gate fully closed, tighten the 2” wide bands at the end of the control arm farthest from the spout.
5. Secure rope or cable around pulley, doubling it to prevent slippage.
ASSEMBLY INSTRUCTIONS

INLET HOPPERS

BASIC HOPPER

Whether used as an intermediate inlet or end inlet, follow the cutting procedures outlined on Page 12, when cutting an outlet opening. Attach hopper to tube with backband. See illustration below.

When hopper is to be placed at the end of an auger, most auger tubes have the end plate and bearing already mounted. If you have ordered separate components, follow procedure:

1. Slide ring flange over tube end and weld. Make sure flange is mounted squarely.
2. Bolt end plate to flange.
3. Bolt bearing to end plate.
5. Install covers where applicable.

When possible, place covers on hoppers, if accessible to personnel.
ASSEMBLY INSTRUCTIONS

INLET HOPPERS - CONT.

HOPPER WITH BEARING

1. Bolt bearing to outside of hopper (see Fig. 10 on previous page).
2. Guide tube-flight assembly through band and into hopper, inserting intake stub through hole in hopper and bearing.
3. Tighten bearing lock collar on intake stub outside of hopper.
4. Tighten band with bolts already in it.
5. Install cover where applicable.

⚠️ Keep cover on hopper whenever possible to keep foreign material out and to prevent personal injury in case of accidental start-up

INTAKE GUARD/CONTROL GATE

1. If an optional control gate is being used, slide control gate sleeve over flight and inside of auger tube.
2. For units with or without control gate, slide the intake guard over the auger tube. Insert stub through the bearing and clamp the guard to the auger tube using the halfband provided.

NOTE: DO NOT slide intake guard on so far that the auger flight is in contact with the bearing. Leave at least 1/2” clearance between the flight and the bearing.

3. For units with control gates, insert handle through the small tube mounted on the halfband. Clamp halfband to tube after adjusting handle to desired position (directly on top of tube or to either side).
4. Insert 5/16” x 1” capscrew through hole in handle and into square nut on control gate sleeve. Capscrew should be tightened until it is in firm contact with sleeve then tightened one-half turn more to lock in place. DO NOT over-tighten.

FIG. 11
ASSEMBLY INSTRUCTIONS

SPOUTING AND FITTINGS

To connect sections of spouting or to connect fittings to spouting, it is necessary to utilize one or all of the following procedures:

1. Spouting to Spouting - Slide flange rings over ends of spouting to be joined and weld in place. Make sure flanges are mounted squarely. Join flanges and bolt together.

2. Spouting to Fitting - Install ring flange on spouting as in Step 1. Join to flange on fitting (valve, dead head, slip joints, etc.).

3. Flange Clamps - Fit each half over flanges and tighten with bolts provided.

4. Quick-Connect Flange Clamps - Fit each half over flanges and tighten bolt. Do not use in locations where permanent unions are required.

TRUSSING

Truss cable kits are designed to provide support for spouting and certain auger sections. The two different kits provide trussing for three span groupings.

20’ to 30’ SPAN KITS FOR AUGER AND SPOUTING - 30’ TO 40’ SPAN KITS FOR SPOUTING ONLY.

These kits include four truss cables, two anchor brackets, one center support bracket and three half bands. Install truss rods, as shown. Make sure trussing is on the underside of the auger or spouting section.

WARNING: A permanent rigid type support should be used instead of truss kits for supporting auger units over 25’ span. If not, auger vibration may occur during operation if only truss rods are used and not rigid support members.

See instructions that come with the kits for proper assembly.
ASSEMBLY INSTRUCTIONS

14” HEAVY DUTY MOTOR MOUNT
(4:1 REDUCER DRIVE)

See assembly drawing on next page.

IMPORTANT! The 4:1 reducer gearbox is shipped WITHOUT oil. Oil needs to be added before operation. Even under normal working conditions, oil still has a tendency to dissipate. Periodically check oil level and maintain proper level.

1. With the gearbox in the upright position, remove the level check plug shown in Fig. 13.
   Remove one of the plugs from the top of the gearbox, this will be used as the fill opening.
   Add approx. 32 oz. (9.6 ml) of an SAE 80W90 weight oil through the plug opening on the top of the gearbox (a small funnel, pipe nipple or syringe type tool can be used to add the oil).
   Watch the oil level check opening. When oil begins to leak from the opening stop adding oil. Do Not overfill. Additional oil may damage the seals or be forced through the vent plug.
   Replace the level check plug once oil level has been established.

2. Discard the plug removed from the top of the gearbox fill opening and install the vent plug shipped separately with the gearbox (See Fig. 13).

3. Fasten head plate (1) to the angle flange ring on end of the auger housing, using eleven 3/8" x 1" long hex head bolts, lockwashers and nuts.

4. Fasten belt guard brackets (6 & 7) to reducer (8) and reducer to head plate (1) with four 1/2" x 5" long hex head capscrews and lockwashers.

5. Slide end of flight shaft over output shaft of reducer (8) and secure with two 5/8" x 4" long hex head capscrews and locknuts.

6. Fasten motor mount support (2) to the head plate (1) with four 1/2" x 1-1/4" hex head bolts, lockwashers and nuts.
   NOTE: Make certain that the motor mount support (2) is arranged so that the pivot shaft holes are on the right hand side, as seen when looking from the intake end of the auger toward the discharge end. In addition, make sure the front set of holes in each side of the support (2) are used to mount to the head plate (1).

7. Thread the adjusting rod (5) down through the nut in the top of the motor mount support (2) until it only extends two to three inches above the top of the support (final adjustment will be done after installing motor and belts).

8. Set the motor mount plate (3) down over the motor mount support (2) and align the pivot shaft holes in each.
   Install the pivot shaft (4) through the holes and install a 3/16" x 1-1/2" cotter pin in each end to secure it in place.

9. Mount the belt guard (9) between brackets (6 & 7) using four 5/16" x 1" long hex head capscrews, flat washers, lockwashers and nuts.

10. Install the driven sheave (10) to reducer input shaft (8) using the QD type hub (11) with key.
    NOTE: The drives are designed for using a 7.4" pitch diameter sheave.
ASSEMBLY INSTRUCTIONS

14” HEAVY DUTY MOTOR MOUNT
(4:1 REDUCER DRIVE) - CONT.

11. Install electric motor and mount pulley on motor shaft. (Motor not furnished). See Page 19 for motor mount hole locations.

   IMPORTANT: Use the proper size and speed motor to ensure satisfactory conveyor operation. Too small of a motor will not supply the horsepower required to achieve capacity and possible damage to the motor will occur. Too large of a motor may cause high stress on conveyor components resulting in shorter life for those components. Align by using straight edge, placed across the outer faces of both pulleys.

   NOTE: With 5.0” drive (motor) pulley, use an 11” driven pulley for 200 RPM auger speed. Use a 5.0” drive (motor) pulley with a 20” driven pulley to obtain 440 RPM auger speed.

12. Install belts (12) and tighten belts by adjusting the threaded rod (5) up against the bottom of the motor mount plate (3). Once belts are tensioned properly, install a 3/4” nut onto the threaded rod (5) and secure it tightly against the bottom of the motor mount support (2).

   DO NOT over tighten driving belt, as this puts unnecessary load on the bearing. It will be necessary to check the belt tension as part of the drives periodic maintenance.
ASSEMBLY INSTRUCTIONS

14” HEAVY DUTY MOTOR MOUNT
(4:1 REDUCER DRIVE) - CONT.

<table>
<thead>
<tr>
<th>Motor Size H.P.</th>
<th>Motor Frame Size</th>
<th>Bolt Dia. Req’d.</th>
<th>Mount in Holes Marked (•)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5</td>
<td>213T</td>
<td>3/8”</td>
<td>• • • • • • • •</td>
</tr>
<tr>
<td>10</td>
<td>215T</td>
<td>3/8”</td>
<td>• • • • • • • •</td>
</tr>
<tr>
<td>15</td>
<td>254T</td>
<td>1/2”</td>
<td>• • • • • • • •</td>
</tr>
</tbody>
</table>

Top View
For 7.5, 10 & 15 HP Motors
(213T, 215T & 254T Frames)
Detail “A”

<table>
<thead>
<tr>
<th>Motor Size H.P.</th>
<th>Motor Frame Size</th>
<th>Bolt Dia. Req’d.</th>
<th>Mount in Holes Marked (•)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>256T</td>
<td>1/2”</td>
<td>• • • • • • • •</td>
</tr>
<tr>
<td>25</td>
<td>284T</td>
<td>1/2”</td>
<td>• • • • • • • •</td>
</tr>
<tr>
<td>30</td>
<td>286T</td>
<td>1/2”</td>
<td>• • • • • • • •</td>
</tr>
</tbody>
</table>

Top View
For 20, 25 & 30 HP Motors
(256T, 284T & 286T Frames)
Detail “B”
### PARTS LIST TABLE OF CONTENT

<table>
<thead>
<tr>
<th>Component</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Decals</td>
<td>P-1</td>
</tr>
<tr>
<td>4:1 Reducer Drive Components</td>
<td>P-2</td>
</tr>
<tr>
<td>Direct Drive Components</td>
<td>P-3</td>
</tr>
<tr>
<td>Auger Housing And Flighting Components</td>
<td>P-4 to P-5</td>
</tr>
<tr>
<td>4:1 Reducer Gearbox (Part No. 1025519-1) Components</td>
<td>P-6</td>
</tr>
</tbody>
</table>
PARTS LIST

SAFETY DECALS
Check components as specified below to insure that safety decals are present and in good condition.
If a decal cannot be easily read for any reason or has been painted over, replace it immediately.
Decals may be ordered through your dealer.

"DANGER" Decal
Part No. 1001985

"DANGER" Decal
Part No. 1001987

"CAUTION" Decal
Part No. 1002301

SERIAL NUMBER
To insure efficient and prompt service, please furnish us with the model and serial number of your auger in all correspondence or other contacts. The serial plate is located on the motor mount frame.

1001985 1001987 1002001 A0001719
# PARTS LIST

**14” CUSTOM HEAVY DUTY 4:1 REDUCER DRIVE**

<table>
<thead>
<tr>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1022251</td>
<td>Head Plate</td>
</tr>
<tr>
<td>2</td>
<td>1022142</td>
<td>Motor Mount Support</td>
</tr>
<tr>
<td>3</td>
<td>1022138</td>
<td>Motor Mount Plate</td>
</tr>
<tr>
<td>4</td>
<td>1022188</td>
<td>Pivot Pin</td>
</tr>
<tr>
<td>5</td>
<td>1022381</td>
<td>Adjusting Rod</td>
</tr>
<tr>
<td>6</td>
<td>1014407</td>
<td>Belt Guard Bracket</td>
</tr>
<tr>
<td>7</td>
<td>1014406</td>
<td>Belt Guard Bracket</td>
</tr>
<tr>
<td>8</td>
<td>1025519-1</td>
<td>Enclosed Gear Drive, 4:1 Reduction</td>
</tr>
<tr>
<td>9</td>
<td>1002042</td>
<td>Belt Guard</td>
</tr>
<tr>
<td>10</td>
<td>3308A1</td>
<td>Sheave, 11.0” P.D. (2-Belt)</td>
</tr>
<tr>
<td>(10)</td>
<td>3271A1</td>
<td>Sheave, 11.0” P.D. (3-Belt)</td>
</tr>
<tr>
<td>(10)</td>
<td>3274A1</td>
<td>Sheave, 11.0” P.D. (4-Belt)</td>
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<tr>
<td>11</td>
<td>3295A1</td>
<td>Bushing, QD SK 1-1/2”</td>
</tr>
<tr>
<td>12</td>
<td>40120</td>
<td>Belt, B-57 (2, 3 or 4 as required)</td>
</tr>
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</table>
# PARTS LIST

**14” CUSTOM HEAVY DUTY DIRECT DRIVE**

<table>
<thead>
<tr>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1023078</td>
<td>Head Plate f/Direct Belt Drive</td>
<td>15</td>
<td>33244</td>
<td>Bolt, 5/8-11 x 2” G5 PLT.</td>
</tr>
<tr>
<td>2</td>
<td>1022142</td>
<td>Motor Mount Support</td>
<td>16</td>
<td>33139</td>
<td>Nut, nylon lock 5/8-11 PLT.</td>
</tr>
<tr>
<td>3</td>
<td>1022138</td>
<td>Motor Mount Plate</td>
<td>17</td>
<td>33024</td>
<td>Washer, flat, 3/8” PLT.</td>
</tr>
<tr>
<td>4</td>
<td>1022188</td>
<td>Pivot Pin</td>
<td>18</td>
<td>33060</td>
<td>Bolt, 3/8-16 x 1” G5 PLT.</td>
</tr>
<tr>
<td>5</td>
<td>1022381</td>
<td>Adjusting Rod</td>
<td>19</td>
<td>D1149</td>
<td>Washer, lock, 3/8” PLT.</td>
</tr>
<tr>
<td>6</td>
<td>2214C</td>
<td>Bearing, 2” Flange</td>
<td>20</td>
<td>D1150</td>
<td>Nut, non-lock 3/8” PLT.</td>
</tr>
<tr>
<td>7</td>
<td>1023131</td>
<td>Head Stub, 2” x 13” long</td>
<td>21</td>
<td>33023</td>
<td>Washer, flat, 5/16” PLT.</td>
</tr>
<tr>
<td>8</td>
<td>1023132</td>
<td>Spacer Bushing</td>
<td>22</td>
<td>33144</td>
<td>Washer, lock, 5/16” PLT.</td>
</tr>
<tr>
<td>9</td>
<td>1023079</td>
<td>Belt Guard Bracket</td>
<td>23</td>
<td>33151</td>
<td>Nut, non-lock, 5/16-18 PLT.</td>
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<tr>
<td>10</td>
<td>1023080</td>
<td>Belt Guard</td>
<td>24</td>
<td>33046</td>
<td>Bolt, 5/16-18 x 1” G5 PLT.</td>
</tr>
<tr>
<td>11</td>
<td>40660</td>
<td>Bushing, QD SF 2” Bore</td>
<td>25</td>
<td>D1152</td>
<td>Nut, non-lock, 3/4-10 PLT.</td>
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<tr>
<td>12</td>
<td>40874</td>
<td>Sheave, QD 3B 20.0” (3-Belt Drive)</td>
<td>26</td>
<td>D1143</td>
<td>Washer, lock, 1/2” PLT.</td>
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<tr>
<td>13</td>
<td>40649</td>
<td>Sheave, QD 4B 20.0” (4-Belt Drive)</td>
<td>27</td>
<td>D1169</td>
<td>Nut, non-lock, 1/2-13 PLT.</td>
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<tr>
<td>14</td>
<td>1023084</td>
<td>Belt, B-84 (3 or 4 as required)</td>
<td>28</td>
<td>1002227</td>
<td>Bolt, 1/2-13 x 1 1/2” G5 PLT.</td>
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<tr>
<td>15</td>
<td>3337A1</td>
<td>Pin, cotter, 3/16” x 1.50”</td>
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</tbody>
</table>

Head plate, bearing and shaft shown assembled. Reference the exploded view to the right for parts identification.
PARTS LIST

AUGER HOUSING & FLIGHTING COMPONENTS
# PARTS LIST

## AUGER HOUSING & FLIGHT COMPONENTS

<table>
<thead>
<tr>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1024191</td>
<td>Head Housing w/Flange x 20’ long (12 ga.)</td>
</tr>
<tr>
<td>2</td>
<td>1024192</td>
<td>Extension Housing x 20’ long (12 ga.)</td>
</tr>
<tr>
<td>3</td>
<td>1008400</td>
<td>Connecting Band</td>
</tr>
<tr>
<td>4</td>
<td>1008386</td>
<td>Head Flight x 20’-11&quot; long (1/4&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>4</td>
<td>1016054</td>
<td>Head Flight x 20’-11&quot; long (3/8&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>5</td>
<td>1015018</td>
<td>Extension Flight with Stub x 20’ long (1/4&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>5</td>
<td>1017813</td>
<td>Extension Flight with Stub x 20’ long (3/8&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>6</td>
<td>2221C</td>
<td>Flight Connecting Stub (2&quot; x 9 1/2&quot; long)</td>
</tr>
<tr>
<td>7</td>
<td>2247C</td>
<td>Tail Connecting Stub (2&quot; x 9 1/2&quot; long)</td>
</tr>
<tr>
<td>8</td>
<td>1003070</td>
<td>Angle Ring Flange</td>
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<tr>
<td>9</td>
<td>1003073</td>
<td>End Plate</td>
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<tr>
<td>10</td>
<td>2214C</td>
<td>Bearing 2&quot; 4-hole Flange</td>
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</table>

## AUGERS WITH INTERNAL BEARINGS

<table>
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<tr>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>11</td>
<td>1024193</td>
<td>Head Housing with Flange x 20’ long (12 ga.)</td>
</tr>
<tr>
<td>12</td>
<td>1024194</td>
<td>Extension Housing x 20’ long (12 ga.)</td>
</tr>
<tr>
<td>13</td>
<td>1005907</td>
<td>Head Flight x 10’-10 1/2&quot; long (1/4&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>13</td>
<td>1017389</td>
<td>Head Flight x 10’-10 1/2&quot; long (3/8&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>14</td>
<td>1015206</td>
<td>Extension Flight x 4’-9 3/4&quot; long (1/4&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>14</td>
<td>1024195</td>
<td>Extension Flight x 4’-9 3/4&quot; long (3/8&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>14</td>
<td>1022096</td>
<td>Extension Flight x 9’-9 3/4&quot; long (1/4&quot; on 3&quot; pipe)</td>
</tr>
<tr>
<td>14</td>
<td>1017630</td>
<td>Extension Flight x 9’-9 3/4&quot; long (3/8&quot; on 3&quot; pipe)</td>
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<td>15</td>
<td>50434</td>
<td>Weld-in Bushing (3.06 O.D. x 2.46 I.D.)</td>
</tr>
<tr>
<td>15</td>
<td>53139</td>
<td>Weld-in Bushing (2.45 O.D. x 2.00 I.D.)</td>
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<tr>
<td>16</td>
<td>1274D</td>
<td>Flight Connecting Stub (2&quot; x 11 1/2&quot; long)</td>
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<td>1022390</td>
<td>Internal Bearing Hanger with Bronze Bushing</td>
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<tr>
<td></td>
<td>1254D</td>
<td>Bronze Bushing only (2&quot; I.D.)</td>
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<tr>
<td>18</td>
<td>1003079</td>
<td>Half Band for Inspection Hole</td>
</tr>
</tbody>
</table>
PARTS LIST

4:1 REDUCER DRIVE
Part No. 1025519-1

Use an SAE 80W90 Weight Oil
Capacity: Approx. 32 oz.

Ref. No. | Part No. | Description
---|---|---
1 | 1026473 | Bearing Cone (25590)
2 | 1021344 | Bearing Cup (25520)
3 | 1026474 | Bearing Cone (390A)
4 | 1026475 | Bearing Cup (394A)
5 | 1041291 | Seal f/ 1.50" Input Shaft
6 | 1041292 | Seal f/ 2.00" Output Shaft
7 | 1015290 | Relief Plug, 1/8-27 NPT