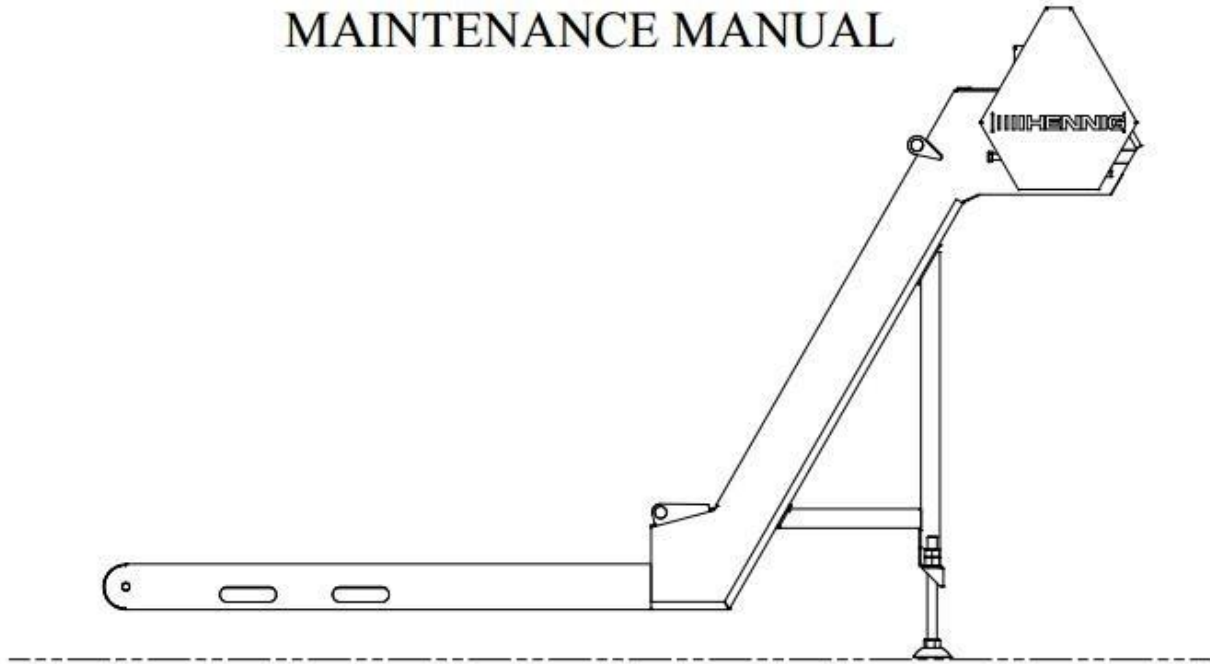




## HENNIG CHIP CONVEYOR MAINTENANCE MANUAL



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*MANUAL REVISION DATE: 07/27/2016*

# **HENNIG CHIP CONVEYOR**

The Hennig Chip Conveyor is available in a variety of configurations to be adaptable to a wide array of machine tool applications. The Hennig Chip Conveyor is designed to remove chips and debris from coolant used in machine tool applications. The life of the Hennig Chip Conveyor can be extended greatly by following the instructions and guidelines in this manual. For assistance in new applications or questions regarding your system, please contact a Customer Service Representative at our U.S. manufacturing facility:

Hennig, Inc.  
9900 N. Alpine Road  
Machesney Park, IL 61115  
(815) 636-9900  
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## **IMPORTANT INSTRUCTIONS FOR ORDERING PARTS**

It is important to have the following information available when ordering parts:

- Hennig Chip Conveyor Model Number\*
- Hennig Serial Number\*
- Part Name
- Manual Revision Date

(\* ) - May be found on the name plate located on the side of the head section of the conveyor.

## **INSTALLATION AND START-UP INSTRUCTIONS**

Your new Hennig Chip Conveyor has been tested and inspected prior to delivery to ensure it functions properly upon installation. Please follow the following instructions for effective startup of your system:

1. Visually inspect your system for any shipping damage. Contact Hennig, Inc. immediately if damage has occurred.
2. Roll entire system (conveyor and tank) into position so that the conveyor chip chute is located under the machine coolant/chip discharge.
3. Level coolant tank using leveling screws mounted on the sides. After the tank is level, install and adjust the support feet (or casters) of the filter/conveyor for sufficient support. Tighten locknuts when leveling screws and support feet (or casters) are correctly adjusted.
4. Install wiring to electrical box or switch. Be sure to use the correct voltage and phase for the system. Proper rotation of the conveyor belt may be obtained by reversing power connection.
5. Make sure all foreign objects such as shipping papers, crating, cleaning rags, etc. are removed from the conveyor prior to start-up.
6. Check the belt tension of the conveyor. Adjust tension using tension bolts and lock in place using jam nuts if required.
7. Fill the coolant tank to the level indicated on the Chip Conveyor System layout drawing. Typically the coolant level can be maintained approximately 2" below the covers of the tank. Check for any leakage and contact Hennig, Inc. if any occurs.
8. Install all required plumbing to pumps, chillers, etc. Ensure that all fittings are correctly tightened before starting pumps.
9. Install wiring for pumps, chillers, oil skimmers, hi/low float switches, etc. to machine electrical system if required. Ensure that all electrical service meets local codes.
10. Make sure hands, feet, and clothing are clear of all moving parts before start-up.
11. Make sure all drive train guarding is securely attached before start-up.
12. Locate a chip hopper under the conveyor discharge for collection of chips.
13. Start-up machine and Hennig Chip Conveyor System.

*Note: The conveyor should be set up to run continuously while machine tool is discharging coolant and chips. Unusually high amounts of chips during a short period of time can result in jamming the conveyor.*

**CAUTION:  
KEEP HANDS, FEET, AND CLOTHING CLEAR  
OF MOVING PARTS OF CONVEYOR**

# **SCHEDULED MAINTENANCE PROCEDURES**

## **Daily Maintenance:**

1. Check coolant level in tank. Fill if necessary. Never fill tank with pumps in operation – overflow may occur due to overfilling once pumps are shut off.
2. For hinge belt conveyors, place a few shop rags across the width of hinge plate and run conveyor in reverse to clean out any chips from the bottom side of the frame. Repeat if necessary. Caution: Do not stick hands into harm's way of conveyor belt – avoid pinch points.

## **Every 1,000 Hours of Use Maintenance:**

1. Check tension of conveyor “hinge/scrapper belt” by checking the torque setting of the “adjusting screws” for the “take-up bearings” on each side of the head. Torque to be set at 25 in-lbs. Note: If the “hinge/scrapper belt” tension is adjusted please check the “motor drive chain” tension as it may have changed. *(Figure #6)*
2. The “torque limiter” or “current sensor” is set at the factory. The torque setting can vary between individual systems but typically ranges between 20 – 60 ft.-lbs. Do not over-tighten the “torque limiter” as damage may occur to the conveyor in the event of a jam. *(Figure #2 & #6)*
3. Check the tension and alignment of the “motor drive chain.” There should be approximately ½” of slack (side to side) on the chain. The chain should also be lightly oiled at this time, taking care not to introduce oil to the “torque limiter friction pads.” *(Figure #6)*
4. Grease “take-up bearings” with grease gun. Do not over grease – seals can be damaged. *(Figure #2)*
5. Inspect “hinge/scrapper belt” for wear or damage. *(See Hinge/Scrapper Belt Removal and Installation Procedure if necessary)*
6. Maintain pumps, chillers, oil skimmers, etc. per manufacturer's instructions.

**CAUTION:**  
**ALWAYS DISCONNECT POWER BEFORE**  
**PERFORMING ANY MAINTENANCE**

## **BELT REMOVAL, MAINTENANCE, AND INSTALLATION**

Hennig Chip Conveyors are typically equipped with either a “hinge belt” or “scraper belt” dependent upon the specific application. The “scraper belt” is wide open for viewing of critical components so maintenance requirements are easily seen. On the other hand, inspection of the “hinge belt” can be somewhat more difficult. General inspection of either belt type can be accomplished at the discharge opening at the head of the conveyor, by removal of the slide lid, or through openings in the trough. Detailed inspection of a “hinge belt,” however, requires complete removal of the belt from the conveyor body to provide complete access to all the integrated components.

### **Hinge Belt Assembly Removal:**

1. Disconnect power source to conveyor.
2. Drain tank or remove conveyor from tank as required.
3. Run conveyor until the “master shaft” (identified as shaft with cotter pins and washers) are positioned at the slot opening located near the discharge of the conveyor (so that the “master shaft” may be knocked out). *Note: if the conveyor is jammed and cannot be run, go to step #4. (Figure #3)*
4. Open and secure the flip lid, remove bearing cover, outside chain guard, and belt guards (*found at discharge end of conveyor*).
5. Remove “drive chain” from the “gear motor” by reducing tension and removing “chain master link.” (*Figure #6*)
6. Back-off “take-up bearing adjusting screws” to reduce tension of “hinge belt.” Be sure to note the position of the bearings prior to reducing tension so the correct tension may be easily set upon re-installation. (*Figure #3*)
7. Remove “cotter pin” and “washer” from “master shaft.” Slide the “master shaft” out of the belt assembly. If the “master shaft” cannot be moved into removal position (*as stated in step #3*), any “shaft” located in the slot near the discharge of the filter/conveyor may be removed by, first, grinding the crimp from the end of the “shaft” to allow for removal. (*Figure #4*)
8. At this point, the belt should easily be disconnected. Re-install the “master shaft” into the belt in the top section only to ensure easy belt removal.
9. Remove the belt assembly from the conveyor by pulling out the bottom end of the belt assembly first (*the “master shaft” should trail the belt assembly as it comes out*). (*Figure #5*)

**CAUTION:**  
**ALWAYS WEAR PROTECTIVE GLOVES**  
**WHEN HANDLING A HINGE BELT**

### **Hinge Belt Assembly Maintenance:**

1. Clean belt – remove excessive buildup of chips and swarf.
2. Visually inspect belt for damage and wear.
  - a. Ensure that rollers are rotating freely and check for wear. *(Figure #4)*
  - b. Check belt shafts for wear. *(Figure #4)*
  - c. Ensure that scrapers are still effective – replace if necessary.
  - d. Check “hinge plates” for damage. *(Figure #4)*
3. Check guide rails, sprockets, and conveyor body for wear or damage.

### **Hinge Belt Assembly Installation:**

1. With “master shaft” installed as stated in the “Hinge Belt Assembly Removal” procedure (*step #8*), feed the belt in (master shaft first) on lower rail system until the ends of the belt meet back up at the discharge of the filter/conveyor. *(Figure #5)*
2. Remove the “master shaft” and mesh the two ends of the belt assembly together. Slide the master shaft through the mating parts of the belt assembly (*install “washers” and “cotter pin” on each end*). *(Figure #3 & #4)*
3. Adjust the belt tension by checking the torque setting of the “adjusting screws” for the “take-up bearings” on each side of the head. Torque to be set at 25 in-lbs or adjust “take-up bearings” to original position. *(Figure #3)*
4. Install “motor drive chain” and tension until there is ½” of play side to side.
5. Replace all guards and covers.
6. Re-install conveyor into tank and add coolant as required.
7. Connect power source.

Video of belt assembly removal can be found at:

<http://www.hennig-inc.com/products/chip-conveyors/conveyor-belt-assembly-video/>

**SPARE HINGE/SCRAPER BELT KITS  
AND COMPLETE BELT ASSEMBLIES  
CAN BE PURCHASED AT  
HENNIG, INC.**

# PARTS LISTS AND DRAWINGS

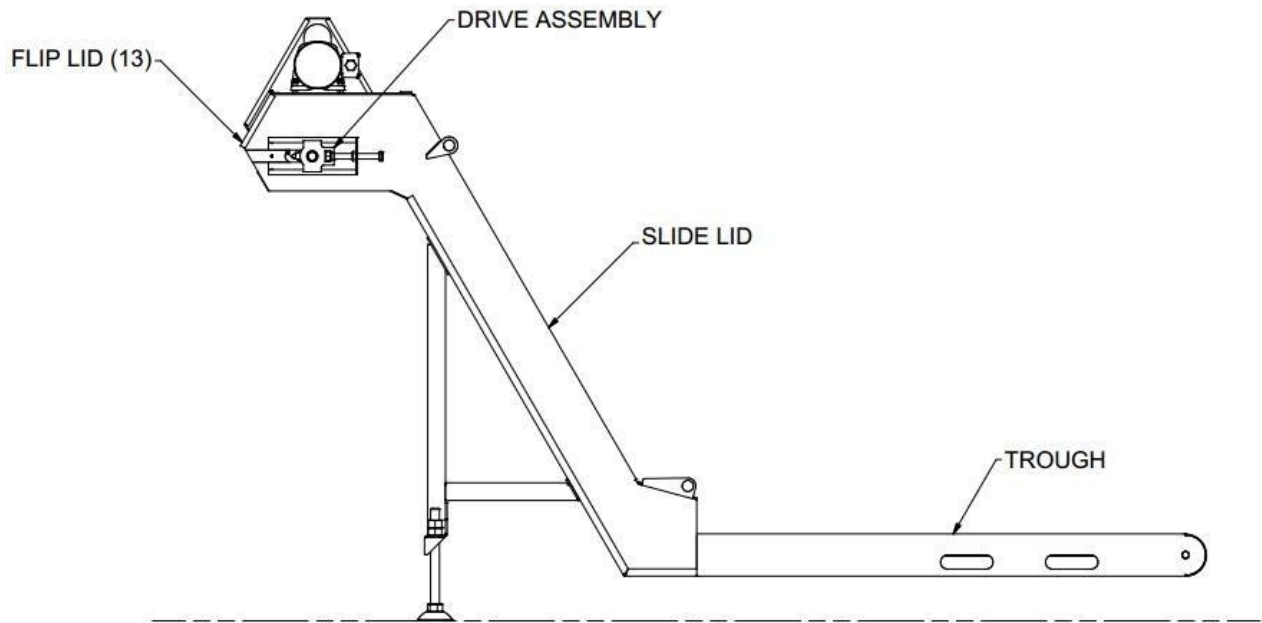


FIGURE #1

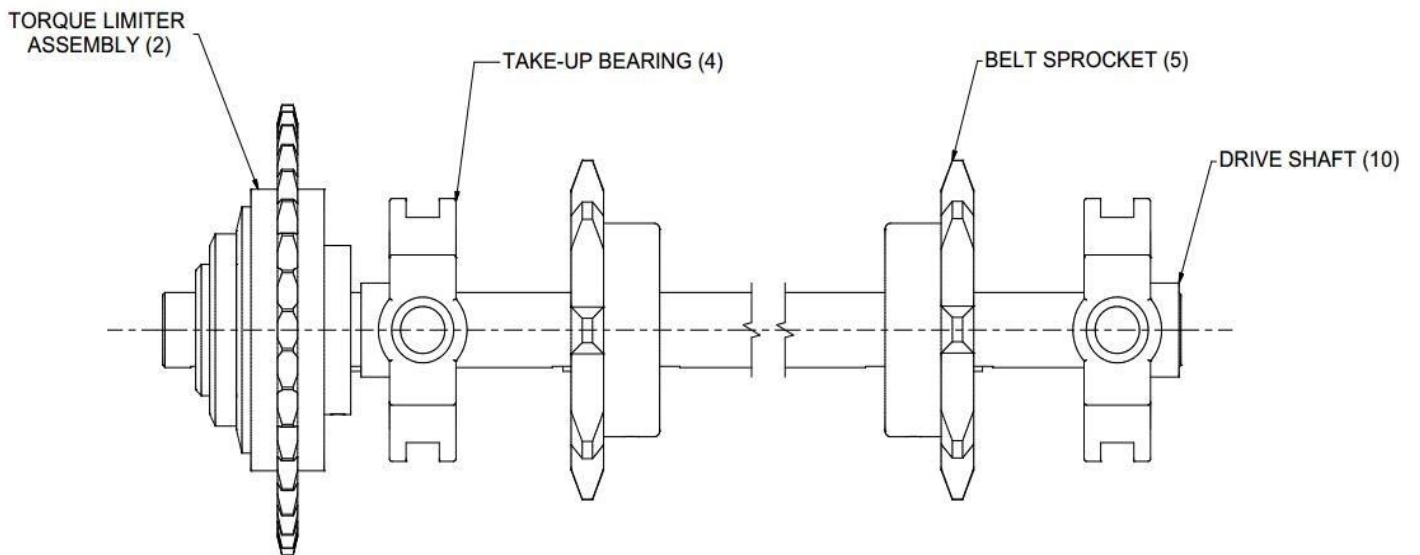


FIGURE #2

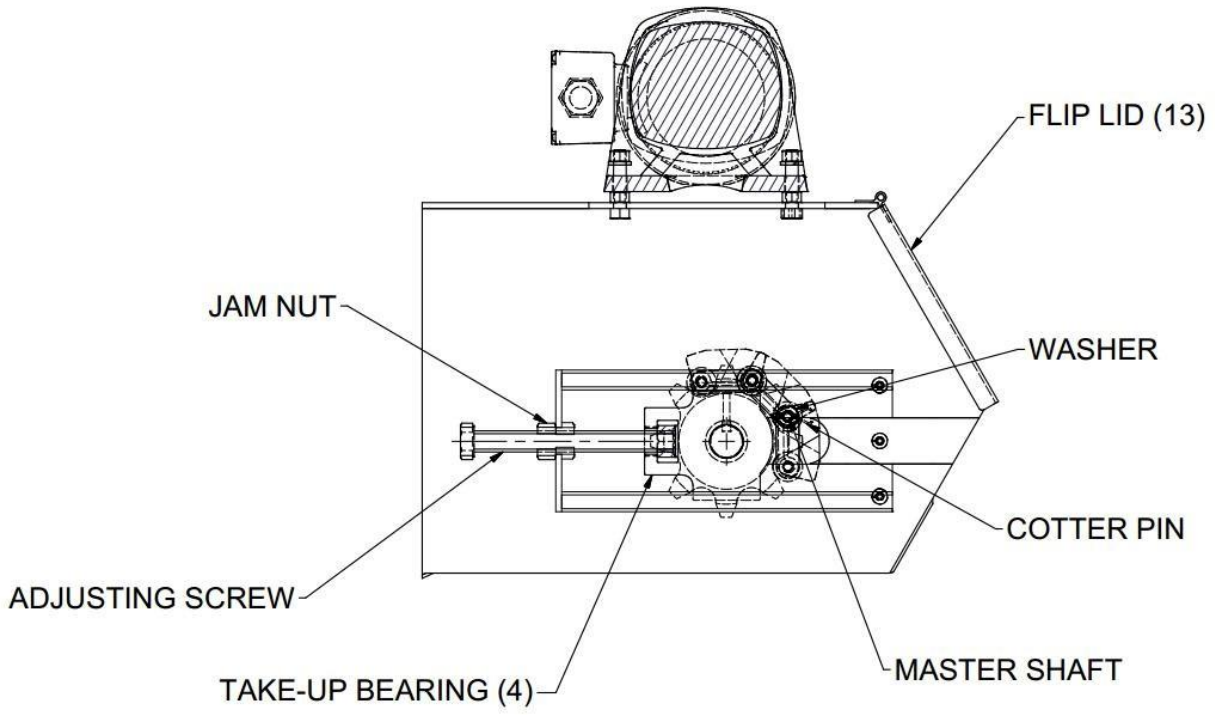


FIGURE #3

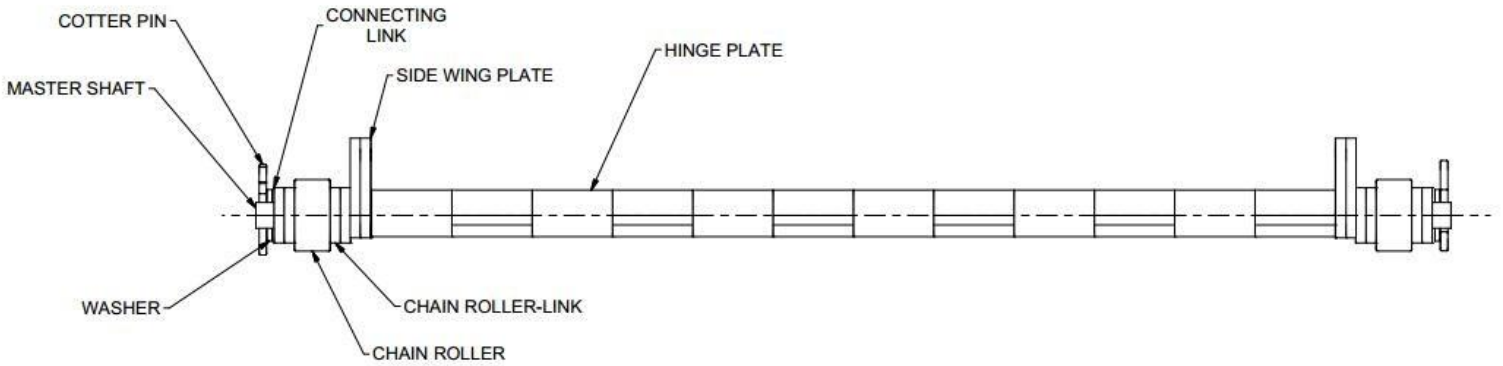


FIGURE #4



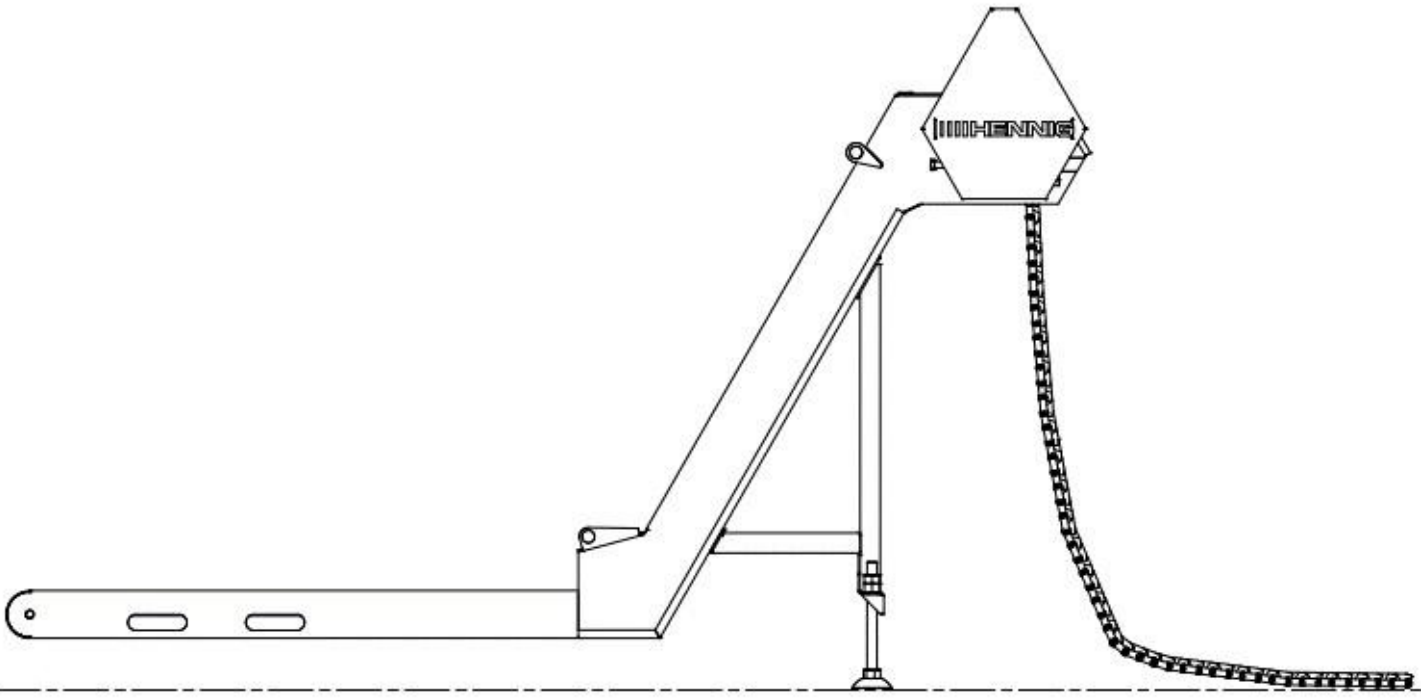


FIGURE #5

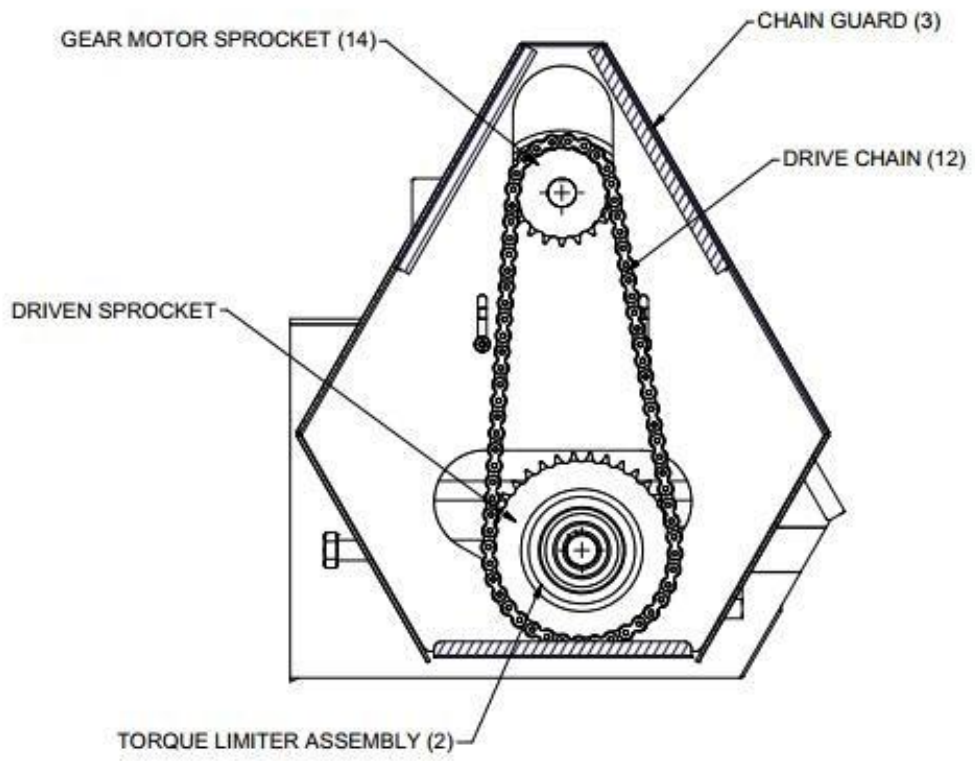
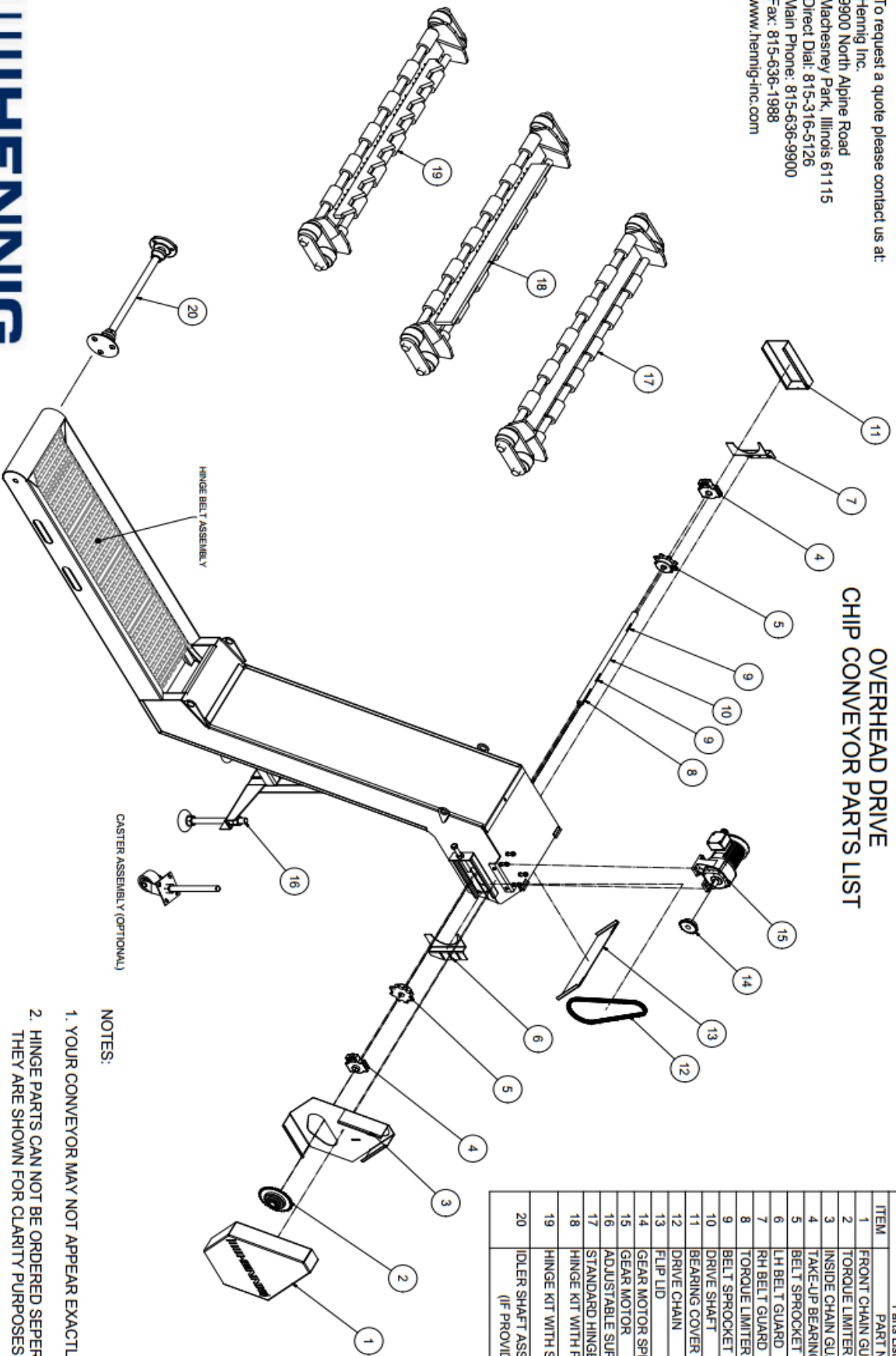


FIGURE #6

To request a quote please contact us at:  
 Hennig Inc.  
 9900 North Alpine Road  
 Machesney Park, Illinois 61115  
 Direct Dial: 815-316-5126  
 Main Phone: 815-636-9900  
 Fax: 815-636-1988  
 www.hennig-inc.com

## OVERHEAD DRIVE CHIP CONVEYOR PARTS LIST



ITEM	PART NUMBER
1	FRONT CHAIN GUARD
2	TORQUE LIMITER ASSEMBLY
3	INSIDE CHAIN GUARD
4	TAKE-UP BEARING
5	BELT SPROCKET
6	LH BELT GUARD
7	RH BELT GUARD
8	TORQUE LIMITER KEY
9	BELT SPROCKET KEY
10	DRIVE SHAFT
11	BEARING COVER
12	DRIVE CHAIN
13	FLIP LID
14	GEAR MOTOR SPROCKET
15	GEAR MOTOR
16	ADJUSTABLE SUPPORTS
17	STANDARD HINGE KIT
18	HINGE KIT WITH PLAIN CLEAT
19	HINGE KIT WITH SERRATED CLEAT
20	IDLER SHAFT ASSEMBLY (IF PROVIDED ORIGINALLY)

**NOTES:**

1. YOUR CONVEYOR MAY NOT APPEAR EXACTLY AS SHOWN.
2. HINGE PARTS CAN NOT BE ORDERED SEPARATELY. THEY ARE SHOWN FOR CLARITY PURPOSES ONLY.
3. WHEN ORDERING PARTS, PLEASE HAVE **MODEL & SERIAL NO.** INFORMATION AVAILABLE.

**HENNIG**  
 perfect machine protection.