HENNIG

PROTECT YOUR SUCCESS

HAAS

CDF CONVEYOR SYSTEMS

Installation, Maintenance, Spare Parts

Use QR code to download a digital version of the manual, or go to *hennigworldwide.com/conveyor-manuals* and select "CDF Manual (Haas)".

INTRO HAAS CDF CONVEYOR SYSTEMS

Thank you for purchasing your Hennig conveyor system with CDF (Chip-Disc Filtration). Following this manual will help give your system a long, trouble-free service life. The purpose of this manual is to give exact information about the installation, operation, and maintenance of your system. This information should be shared with operators and maintenance personnel.

For assistance in new applications or questions regarding your system, contact a customer service representative: **815-636-9900** or **info@hennig-inc.com**.

Your new Hennig system undergoes 100% end-of-line test and inspection to verify proper function, prior to packing and shipment.

Machine	Hennig Conveyor #	Spare Parts Page
UMC-500	103239F	17-18
UMC-750/1000	103240F	19-20
UMC-1250	103347F	21-22
UMC-1500	103346F	23-24
EC-400	103183F	25-26
EC-500	103245F	27-28
EC-630	103664F	29-30

INTENDED USE

The purpose of your system is to efficiently transport metal chips and filter coolant. Metal chips are transported to a bin. Filtered coolant is returned to the machine, with chips and swarf removed, down to a 24 mesh (120 μm) nominal filtration level.

IMPORTANT INFO FOR PROPER OPERATION

The system is engineered to handle only certain types of chips and coolant. Changes to either may impact machine operation. The system, including the conveyor belt and backwash pump, must be running whenever there is a possibility of chips falling into the infeed. Starting the system after a large amount of chips has accumulated could result in damage to the system. Always use a bin to catch chips when running the system. Daily and preventative maintenance (PM) are necessary to avoid unintended down-time.

OBSERVE THE FOLLOWING

- Follow the warnings and instructions of this manual, and your own safety system.
- Use your lock-out tag-out (LOTO) system for electrical work.
- Provide the proper level of training to operators and maintenance personnel.
- Do not disable safety devices on your system.
- Keep away from moving parts and pinch points of the system while it is operating.
- Electrical work should only be done by authorized personnel, according to your training and safety system.
- Keep guards/covers in place, except for maintenance.
- Disconnect power before performing maintenance.


RECOMMENDED PPE

- Eye Protection
- Gloves (especially when handling coolant, cutting oils, and metallic chips)


2.1 INSPECT YOUR SYSTEM

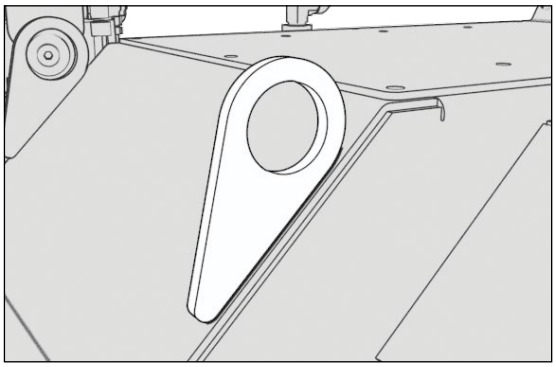
Before transporting your CDF system or removing it from the pallet, check for any damage that could have occurred during shipping. If damage is found, contact Hennig at 815-636-9900 or info@hennig-inc.com.

2.2 REMOVING THE PALLET

Hennig CDF systems ship on a custom pallet. The system can be moved on/off its pallet with a forklift or an overhead lifting apparatus (crane). Make sure your forklift/straps/chains meet the weight specifications for the system being lifted or moved.

With overhead lifting
Only use the lifting eyes (see image) for picking up the system using straps or chains.
Keep the system horizontal while moving.

With fork lift
Position forks under the system for lifting.
The unit should only be picked up far enough to remove the pallet.



2.3 TRANSPORTING

Use section 2.2 above as a reference for transporting via overhead lifting or a fork lift.
Drain all coolant and remove all chips before transporting the CDF system.

2.4 STORAGE

In the event your system needs to be stored or out of service for more than 90 days, take the following steps:

1) Drain all coolant and wipe all surfaces to remove chips, swarf, oil, coolant, etc.
2) Using a shop towel or rag, wipe exposed sheet metal surfaces with a rust preventative.

Outdoor storage not recommended.

3.1 REMOVE PACKAGING AND DEBRIS

Remove all objects such as shipping papers, crating, etc., that may be present in the system. Be sure to check on and around the coveyor belt for any debris that could have accumulated during shipping.

3.2 POSITION THE SYSTEM

If not already removed from the pallet, follow the recommendations under Transport/Handling (Page 3, Section 2.2) for safe handling while positioning the CDF's chip chute under the machine's chip/coolant discharge.

3.3 CONNECT POWER AND CONTROL CABLES TO MACHINE

Install power and auxiliary cables into electrical box or switch.
Be sure to use the correct voltage and phase for the system.

3.4 INSTALL HOSES

Connect coolant hose to the fitting on top of the disc filter cover.
Please note, tapered thread fittings (such as NPT thread) will require the use of Teflon tape to create a reliable seal. Swivel fittings do not use their threads to make a seal, so no thread sealant should be applied.

3.5 POSITION THE CHIP BIN

For easy chip disposal, place a large metal bin under the discharge head to collect the discharged chips.

3.6 POWER ON & RUN THE SYSTEM

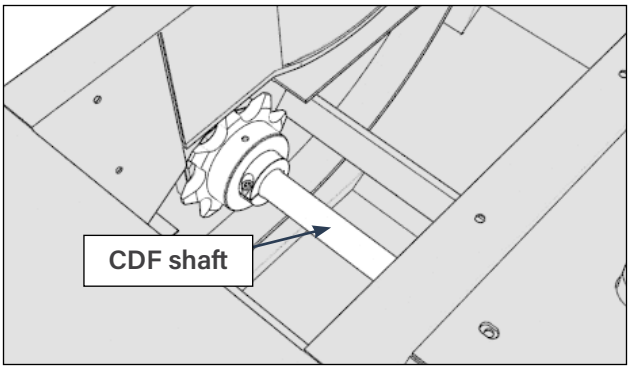
Start up the CDF system and allow it to run (without the machine in operation) for approximately an hour (without load) to ensure everything is working properly.

Once everything is running properly you're all set to start using your new CDF system!
After the system has run for a while, it may be necessary to top-off the coolant.

4.1 CHECK THE CONVEYOR COOLANT LEVEL

Remove the cover plate and check the coolant level in the conveyor part of the system. Normal coolant level in the conveyor should remain below the CDF shaft/center of the disc filter assembly. If it is higher than normal, inspect the filter screen for blockage. Clean or replace the filter screen as needed to bring the system back into a normal operating condition.

See Page 8, Section 5.4 for filter screen maintenance.

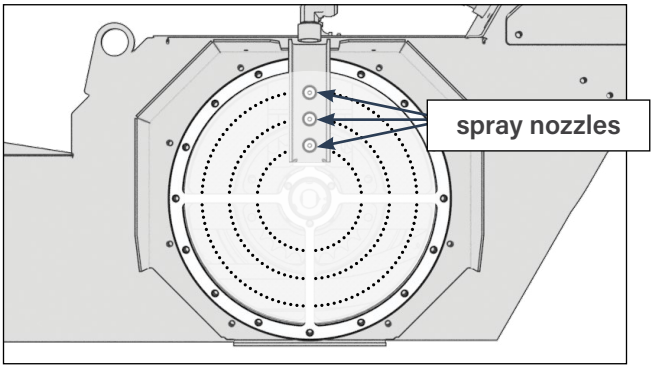


4.2 CHECK THE CDF BACKWASH SYSTEM

Remove the filter disc cover and check the CDF filtration backwash system for sufficient spray volume. A banding (slight discoloration) of the filter screen that reflects the position of the spray nozzles is normal and shows the nozzles are effectively washing chips off the filter screen.

Dotted line (·····) represents proper banding pattern on the filter.

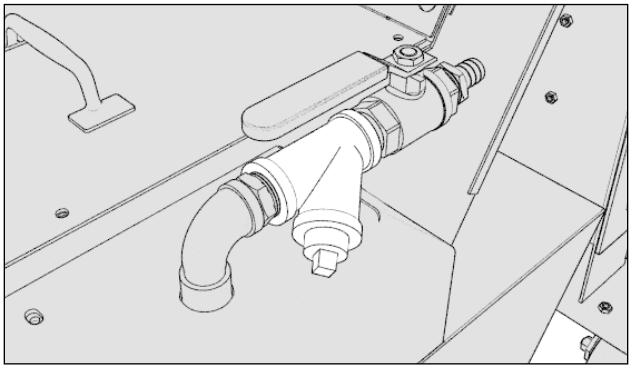
See page 9, Section 6.2 for removing filter disc cover.



4.3 CHECK THE Y-STRAINER

Remove the cap on the Y-strainer (located on the top of the CDF disc cover) and check for chip build up.

Clean out as required and reinstall the cap.



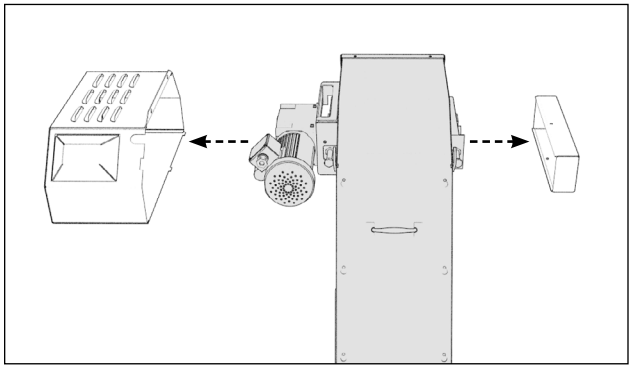
4.4 EMPTY THE CHIP BIN

Be careful not to let the bin overflow, otherwise chips can build up at the discharge head and cause a jam.

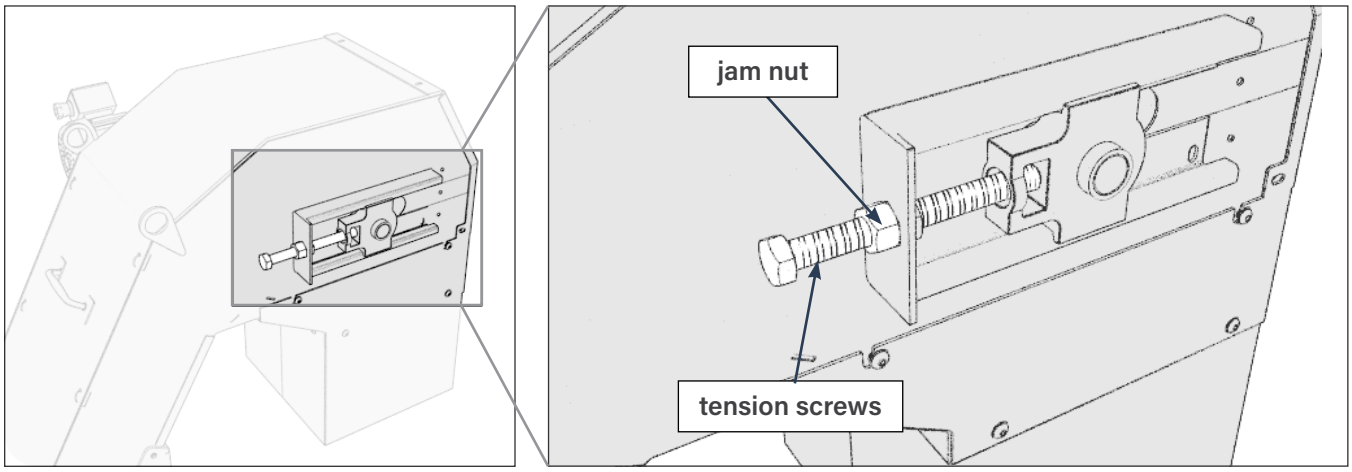
Depending on chip flow rate, you may need to empty the chip bin more than once a day.

5.1 CHECK/ADJUST BELT TENSION

1. Remove the covers to access the tension bolts



2. Loosen the jam nut on each side of the conveyor.



3. Tighten the tension screws (one on bearing side, one on motor side) until taught, back out 5mm, and then lock in the jam nut.
   Tension screws should be adjsuted to same length on each side to ensure proper operation of the belt.

4. Observe the belt running.
   - Belt jamming (stopping) indicates the tension screws are too tight.
   - Belt jumping out of the sprocket indicates tension screws are too loose or uneven.

   Adjust as needed and tighten the jam nuts.

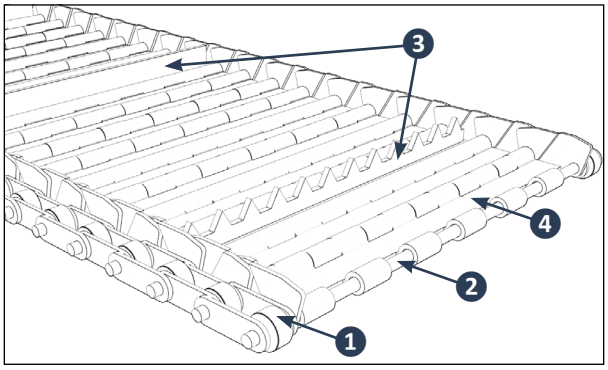
5.2 VISUALLY INSPECT BELT FOR DAMAGE

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).

To get a detailed inspection of the belt assembly, a complete removal of the belt from the conveyor body is recommended. This will provide complete access to all the integrated components. See Section 8 for hinge belt removal instructions.

HINGE BELT

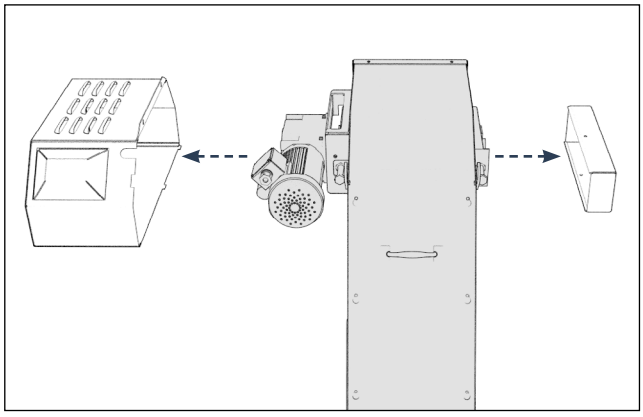
1. Ensure rollers are rotating freely and check for wear.
2. Check belt shafts for wear.
3. Ensure that scrapers and cleats are still effective. Replace if necessary. Hinge belts are equipped with plain cleats, serrated cleats, and scrapers.
4. Check hinge plates for damage.



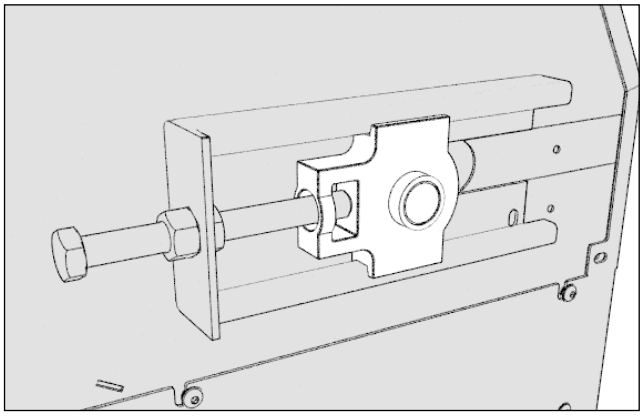
5.3 GREASE THE TAKE-UP BEARINGS

The bearings are accessible by removing a cover or plate. A good, general-purpose grease is recommended. Hennig recommends Mobilgrease XHP222. Do not over-grease or bearing seal damage may result.

Take-up bearings are found on the sides of the discharge head (one on each side of the conveyor).



Remove the cover plates for take up bearing access.



Take up bearings are accessible once cover plates are removed.

5.4 INSPECT/CLEAN THE FILTER DISC ASSEMBLY

If new parts are required, locate your systems spare parts page for part numbers, Pages 17-28, Section 10.

1. Remove the disc assembly.
   See Page 9, Section 6 for filter disc removal and disassembly.

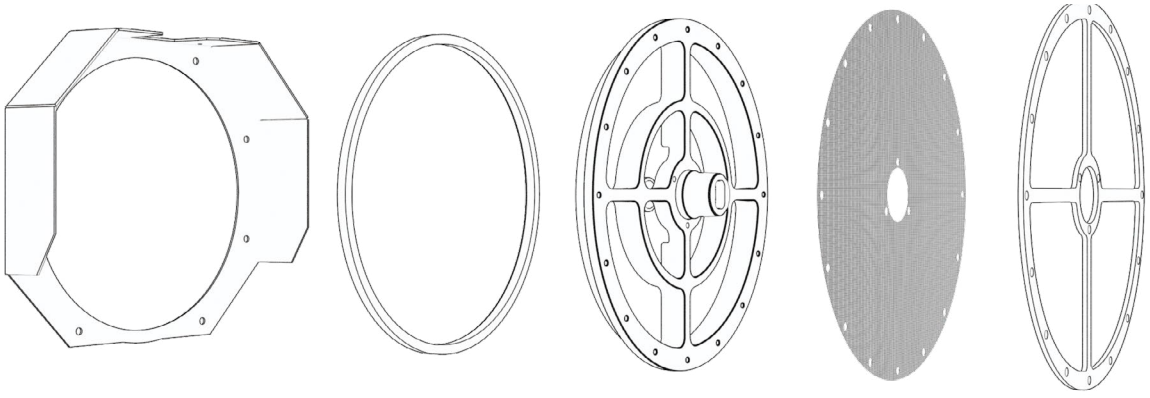
2. Clean out all chip accumulation in the chip disc filter components (filter disc, filter screen, clamp disc).
   Regardless of adequate back-wash spray, filter screens over time can become unusable because chips become embedded in the mesh. Replace the screen if the filter screen cannot be properly cleaned or reduced performance has been observed.

3. Inspect the rubber V-seal. It should be free of nicks and cuts, and chips should not be embedded in it. Remove all chips before reassembly. Replace seal if there is substantial damage.
   Check for tension: v-seal should be tight on the disc and not be able to spin freely.

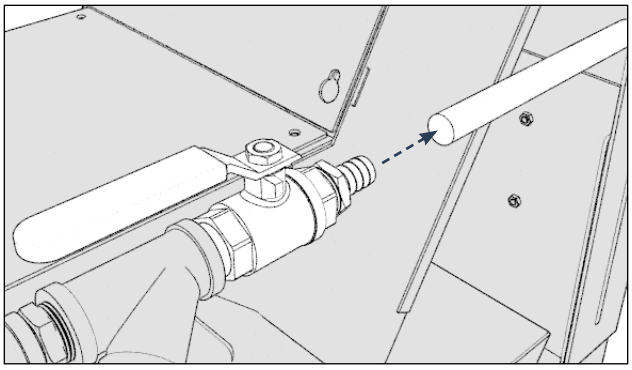
4. Inspect the wear plate. There should be no scratches or grooves in it, which could limit its sealing capability. Replace the wear plate if there is substantial wear.

5. Check the disc drive bearings and make sure all seals are intact.

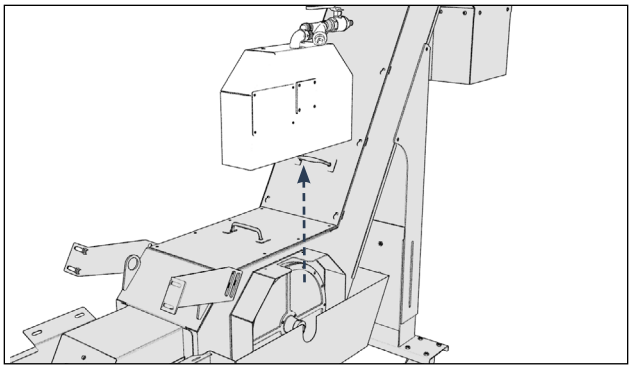
6. Re-assemble and install the chip disc filter assembly when disc assembly components have been cleaned and/or replaced.
   See Page 10, Section 7 for filter disc assembly and installation.



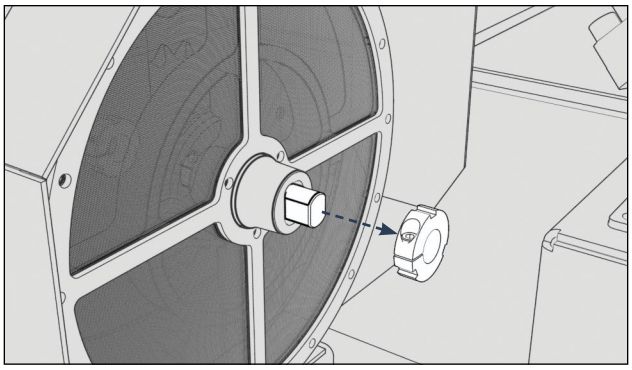
a Wear plate **b** Rubber V-seal **c** Filter disc **d** Filter screen **e** Clamp disc



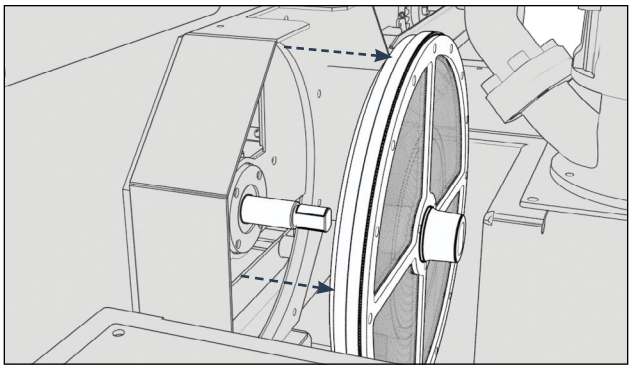
6.1 Remove the hose from the CDF sprayer.



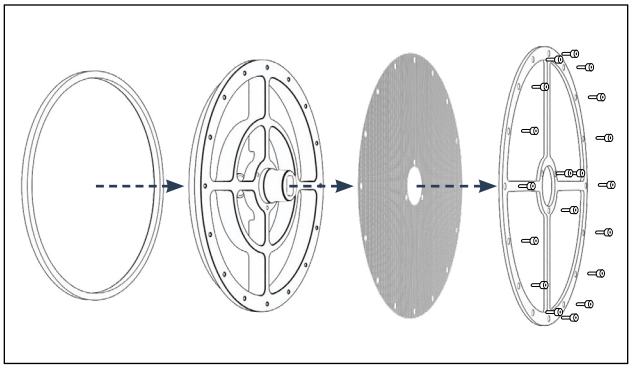
6.2 Remove CDF cover/sprayer assembly by removing the allen head screws and lifting it out of the system.



6.3 Loosen the clamp nut lock screw and then remove the clamp nut by turning it off the CDF shaft.



6.4 With the clamp nut removed, now remove the disc assembly by sliding it off the shaft.

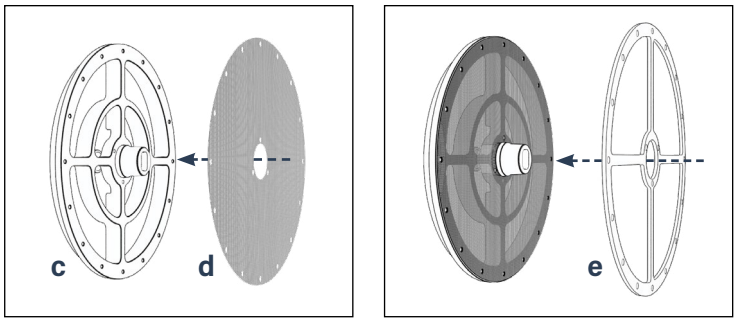


6.5 Disassemble disc filter assembly (by removing allen head bolts) so components can be properly inspected.

7.1 ASSEMBLE THE CHIP DISC FILTER

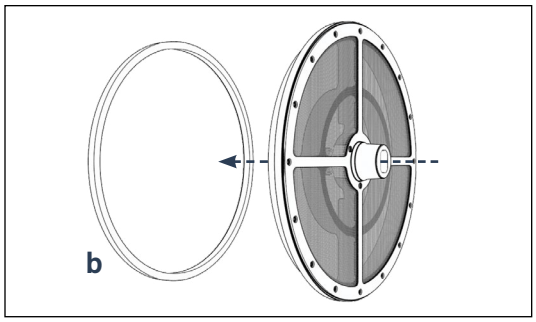
1. Position filter screen (**d**) on filter disc (**c**).

2. Install the clamp disc (**e**) and secure with allen head cap screws.



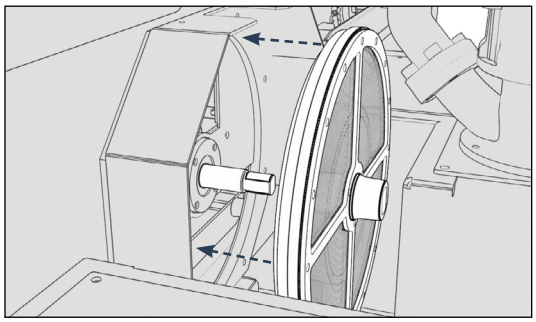
7.2 AFFIX THE RUBBER SEAL

Coat the seal lip with a generous amount of white lithium grease and press rubber V-seal (**b**) on filter disc (bearing or axle grease may also be used).
V-seal should not turn freely on the filter disc.



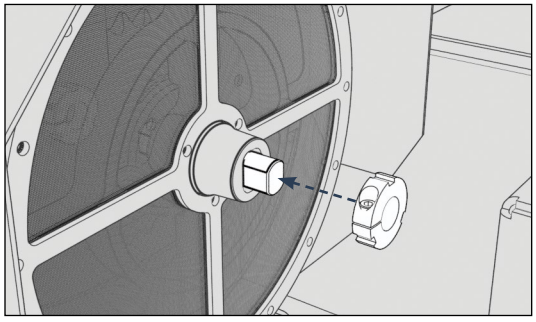
7.3 INSTALL THE CHIP DISC ASSEMBLY

Slide disc filter assembly on the CDF shaft, but do not press it against the wear plate yet.

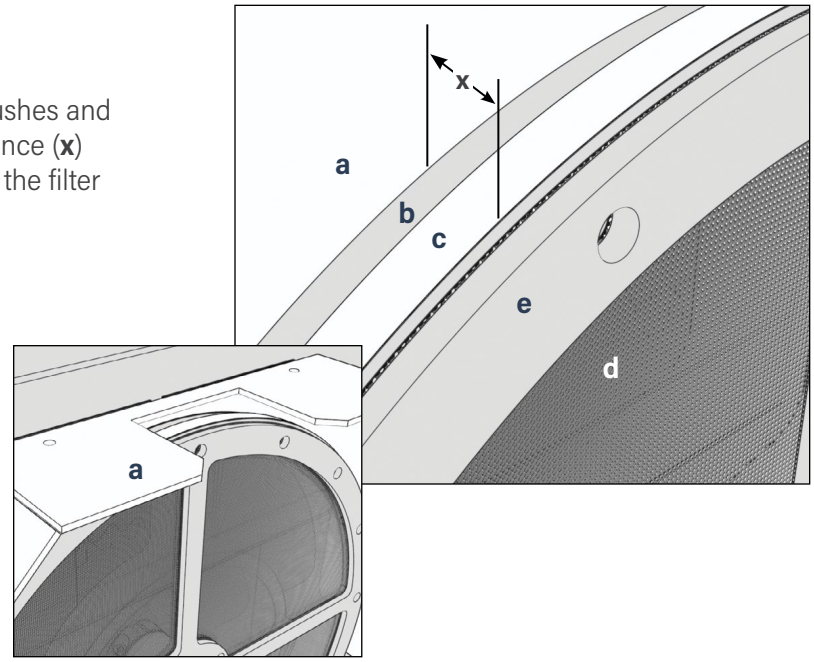


7.4 INSTALL THE CLAMP NUT

Thread the clamp nut on the CDF shaft.
Do not tighten the clamp nut yet.



7.5 CHECK DISC FILTER POSITION



1. Keep threading the clamp nut in (which pushes and positions the disc assembly), until the distance (**x**) from the CDF wear plate (**a**) to the edge of the filter disc (**c**) is 21-23 mm.

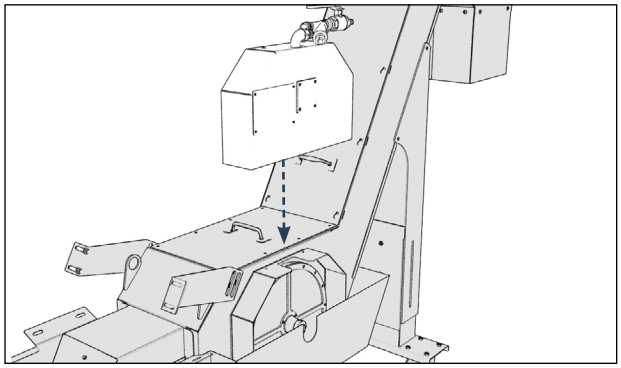
a Wear plate
b Rubber V-seal
c Filter disc
d Filter screen
e Clamp disc

- ***Check distance every 90°.***
- ***Make sure you're measuring at the edge of the filter disc.***
- ***Do not measure to the edge of the clamp disc.***

2. Tighten the allen head cap screw on the clamp nut to secure the CDF assembly.

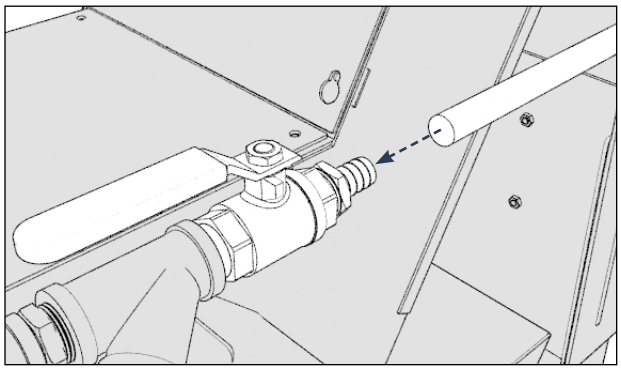
7.6 INSTALL CDF COVER / SPRAYER ASSEMBLY

Install the CDF cover/sprayer assembly and secure with allen head cap screws and washers.

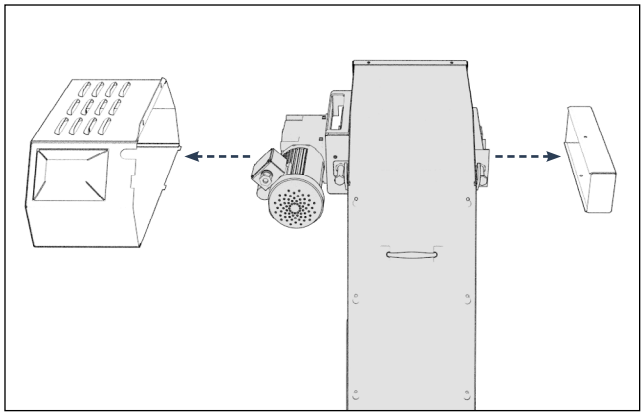


7.7 INSTALL HOSE ON SPRAYER ASSEMBLY

Install the hose to CDF sprayer.

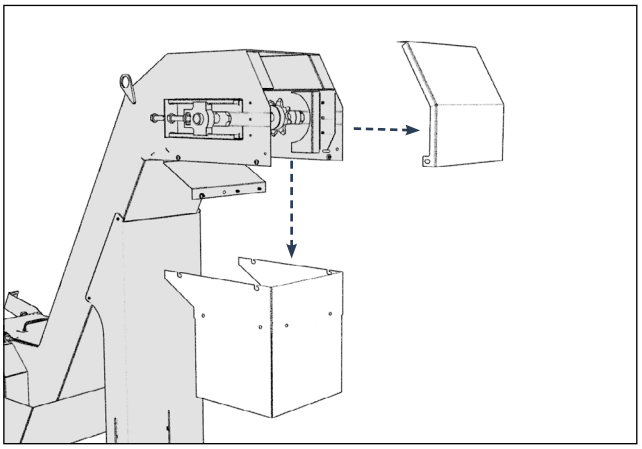


8.1 REMOVE THE MOTOR/BEARING COVERS



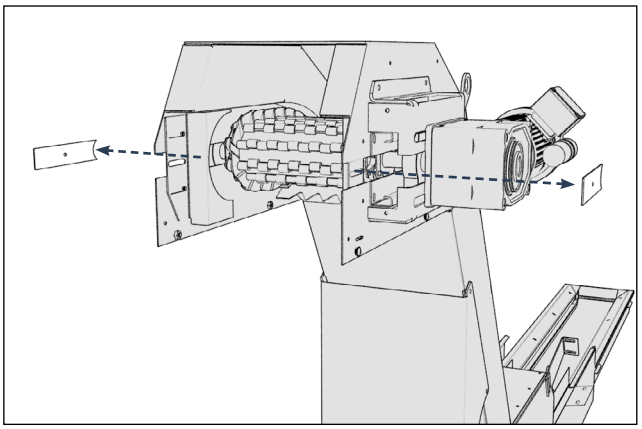
8.2 REMOVE THE DISCHARGE GUARDS

Remove discharge guards, exposing the drive shaft and hinge belt so they are visible at the top of the discharge chute.

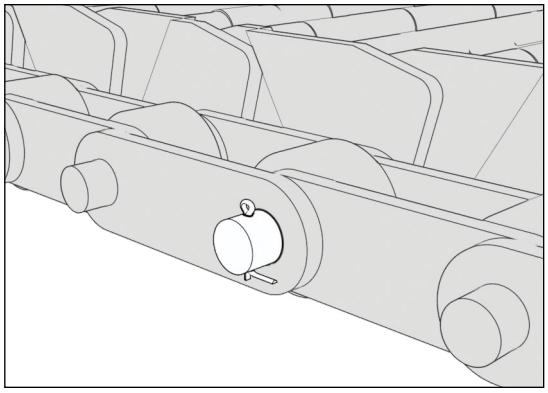


8.3 REMOVE COVER PLATES

Remove the cover plates, allowing access to the master shaft of the belt.



8.4 LOCATE THE MASTER SHAFT



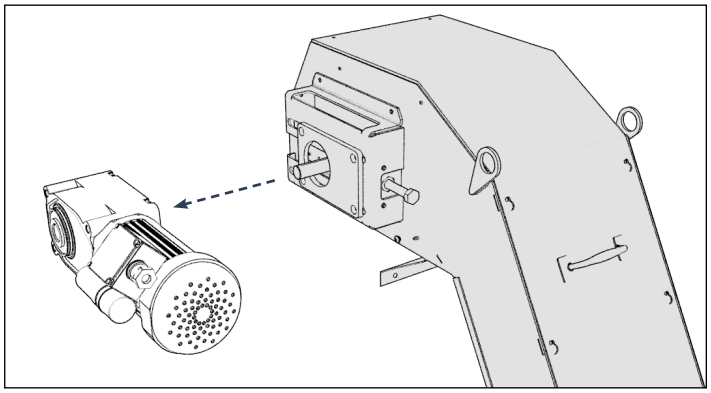
1. Run the conveyor until the master shaft (identified as shaft with cotter pins) is visible at the top of the discharge chute.

2. Leave the cotter pin in the shaft, turn off the system and disconnect the power cable.

If the conveyor is jammed and the master shaft cannot be moved to the discharge end, any other shaft can be removed by grinding the crimp from the end of the shaft.

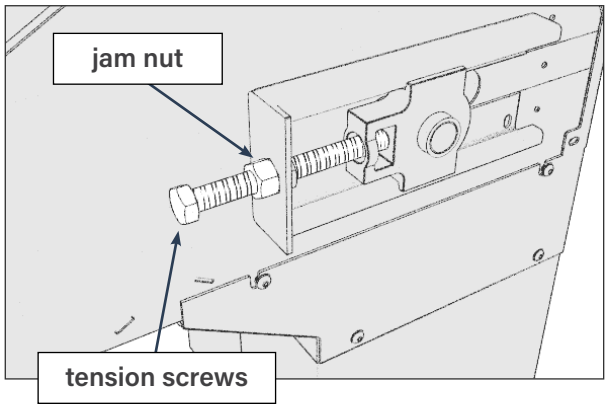
8.5 REMOVE THE MOTOR

Remove the motor by removing the (4) fastener sets and pulling it off the drive shaft. This will allow the drive shaft to freewheel so the hinge belt may be easily removed.



8.6 LOOSEN THE JAM NUTS / TENSION SCREWS

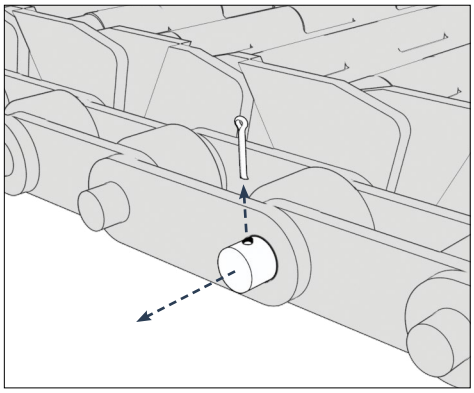
Loosen the jam nuts and tension screws (on bearing side and on motor side) to remove pressure on the drive shaft.
See Page 6, Section 5.1 for instructions on loosening the jam nuts and tension screws.

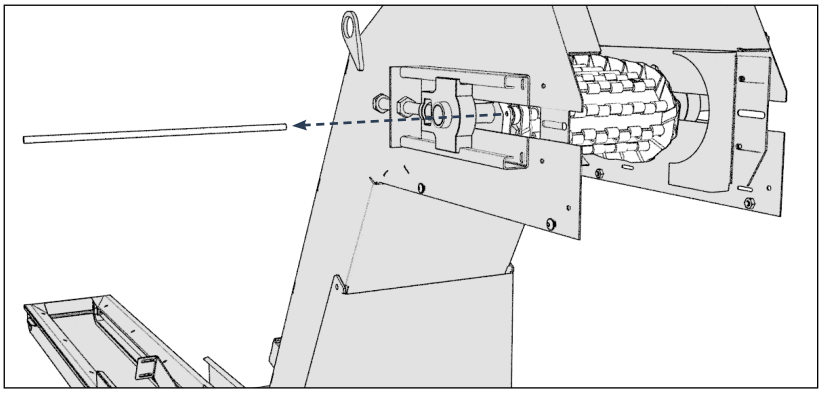


8.7 REMOVE THE MASTER SHAFT / SEPARATE THE BELT

Remove the cotter pin from the master shaft and slide the shaft out of the belt assembly. Once removed, separate the hinge plates that it connected.

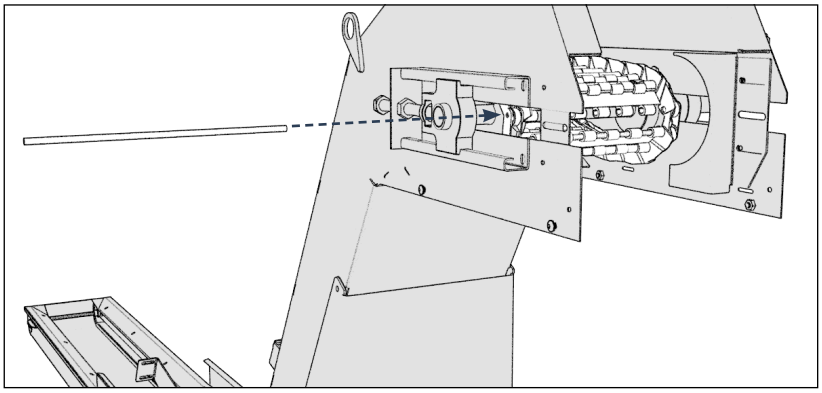
If the master shaft cannot be removed, grind the crimp off of the shaft closest to the discharge end and slide out the shaft.





8.8 REINSTALL MASTER SHAFT

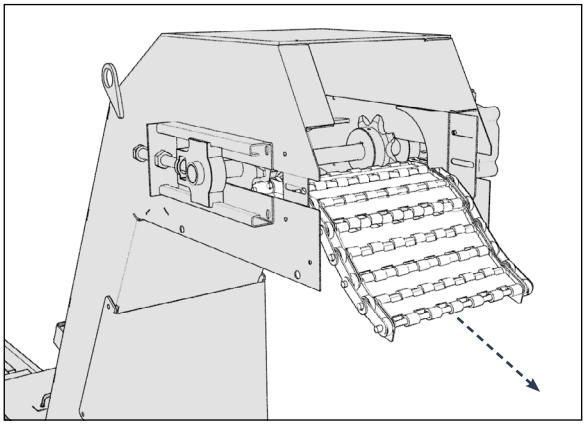
Re-install the master shaft into the top section of the belt only (trailing end) to ensure easy belt removal.



8.9 REMOVE THE BELT

Having a pallet or bin to receive the belt helps with transporting it.

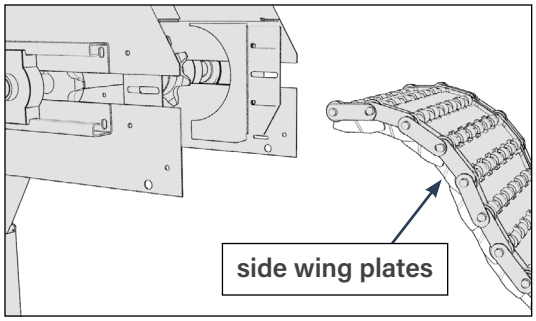
Pull the hinge belt out of the lower side of the discharge chute (the master shaft should trail the belt assembly as it comes out), folding the belt on itself to make a neat pile.



Scan QR code to view our hinge belt installation tutorial on Youtube.

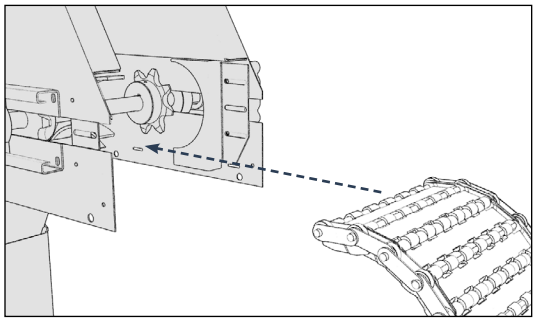
9.1 PREP THE HINGE BELT

1. Make sure the master shaft is installed.
2. Position the belt so the side wing plates are facing down towards the bottom of the infeed, and the master shaft is at the end of the belt being fed into the system.



9.2 FEED HINGE BELT INTO THE SYSTEM

1. Feed the hinge belt down the lower rail system.
2. Continue feeding the belt through until both ends meet back up at the discharge of the CDF conveyor.



9.3 CONNECT THE BELT ENDS

1. Remove the master shaft and mesh the two ends of the belt assembly together.
2. Slide the master shaft through the mating parts of the belt assembly.
3. Install washers and cotter pin on each side of the belt.

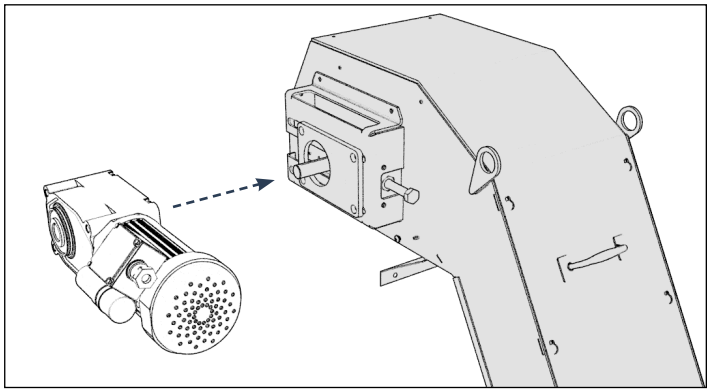
9.4 SET THE BELT TENSION

Set the final tension of the hinge belt by adjusting the tension screws on each side of the belt.

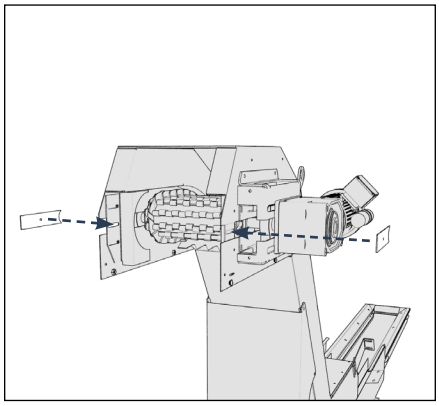
See Page 6, Section 5.1 for adjusting belt tension.

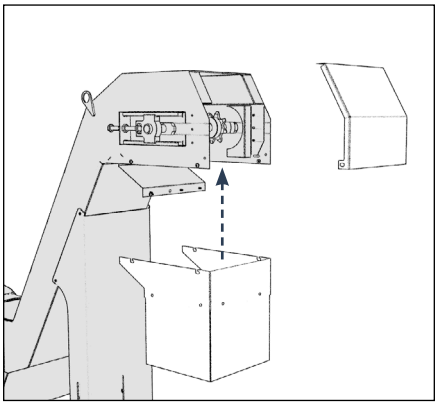
9.5 INSTALL THE MOTOR

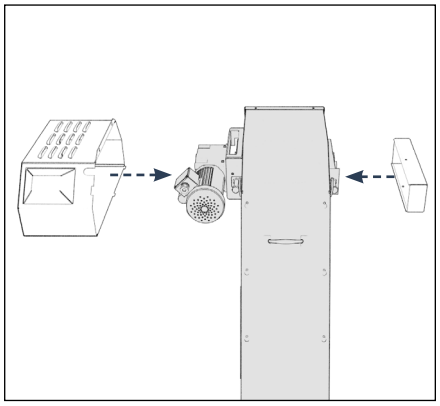
Install the motor and key on the drive shaft.
Secure the motor with (4) fastener sets.



9.6 REINSTALL THE COVER PLATES, DISCHARGE COVERS & BEARING/MOTOR COVERS







9.7 POWER UP THE SYSTEM

Provide power to the motor by attaching power cables and connectors to the motor. Turn the system on.

9.8 RUN / MONITOR THE SYSTEM

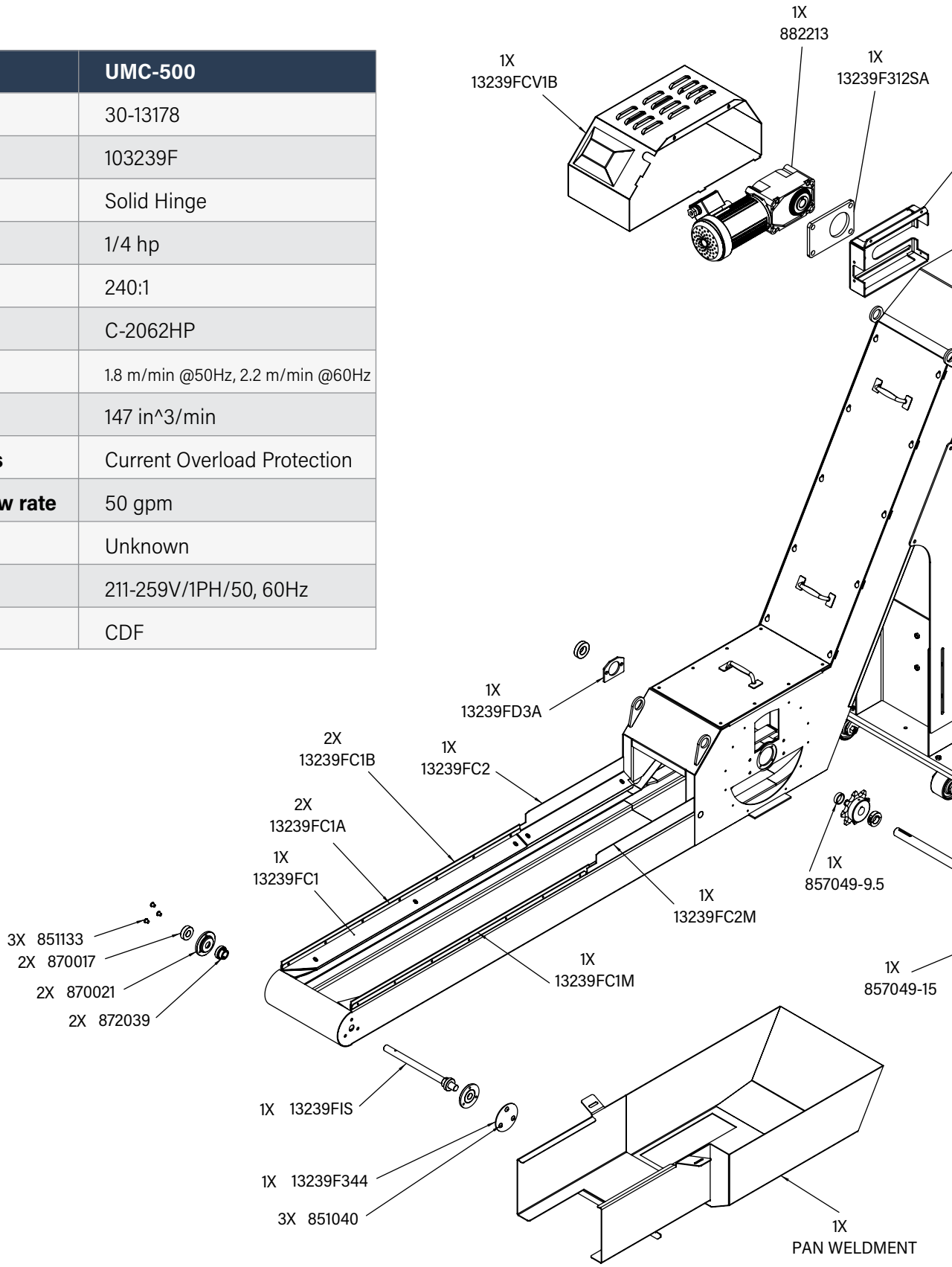
Using the manual provided for the VFD/control box, run the belt forward and backward for a few minutes, completing 5 to 10 belt revolutions each way. Monitor the hinge belt to look for even, smooth movement.

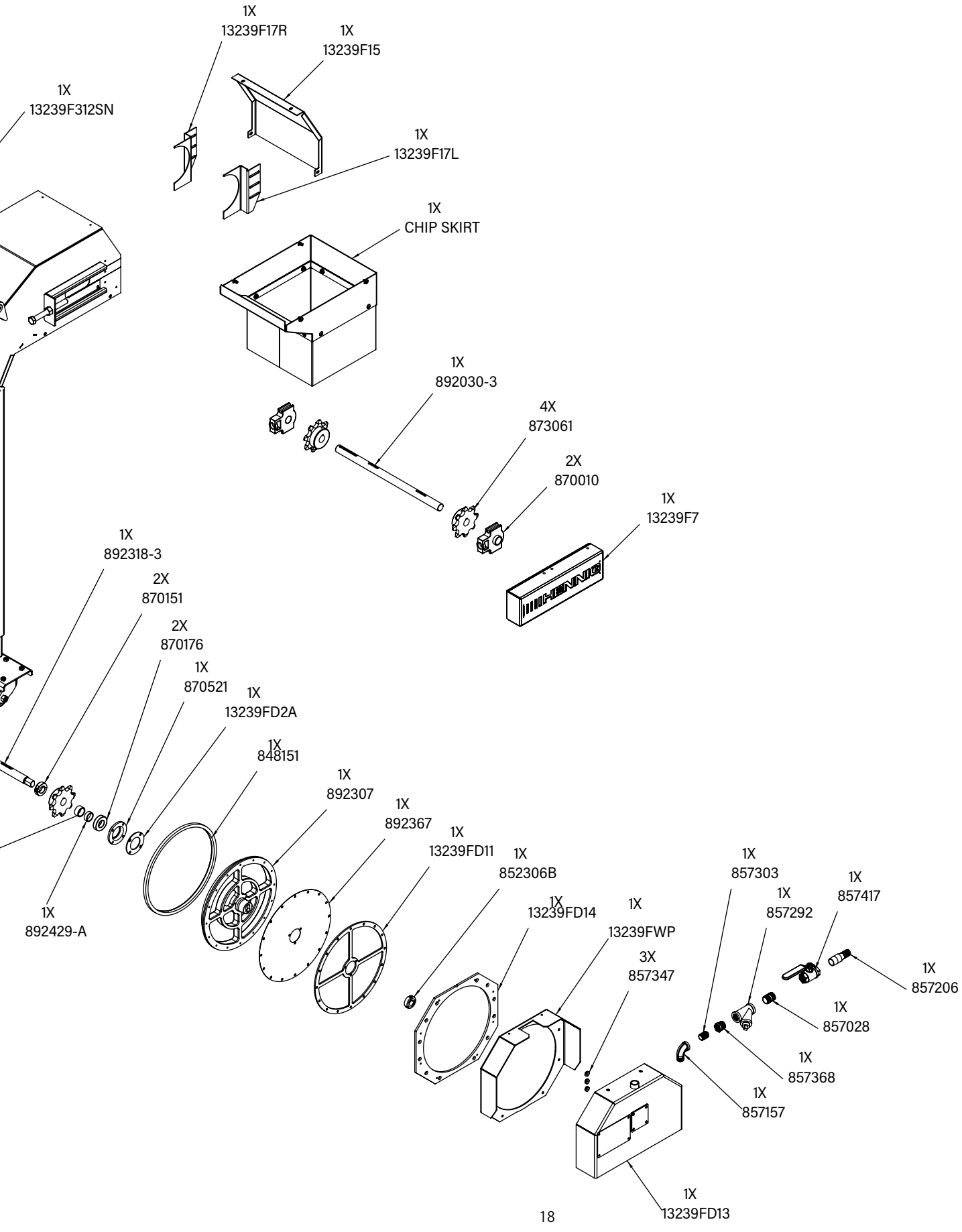
9.9 YOU'RE ALL SET

Great job! Your Haas CDF system is ready to start moving chips again!

10. SPECS & SPARE PARTS 103239F (UMC-500)

MACHINE	UMC-500
Haas part #	30-13178
Hennig Part #	103239F
Type	Solid Hinge
Motor	1/4 hp
Reducer	240:1
Conveyor chain	C-2062HP
Speed	1.8 m/min @50Hz, 2.2 m/min @60Hz
Capacity	147 in^3/min
Safety apparatus	Current Overload Protection
Filter coolant flow rate	50 gpm
Chips	Unknown
Voltage	211-259V/1PH/50, 60Hz
Style	CDF

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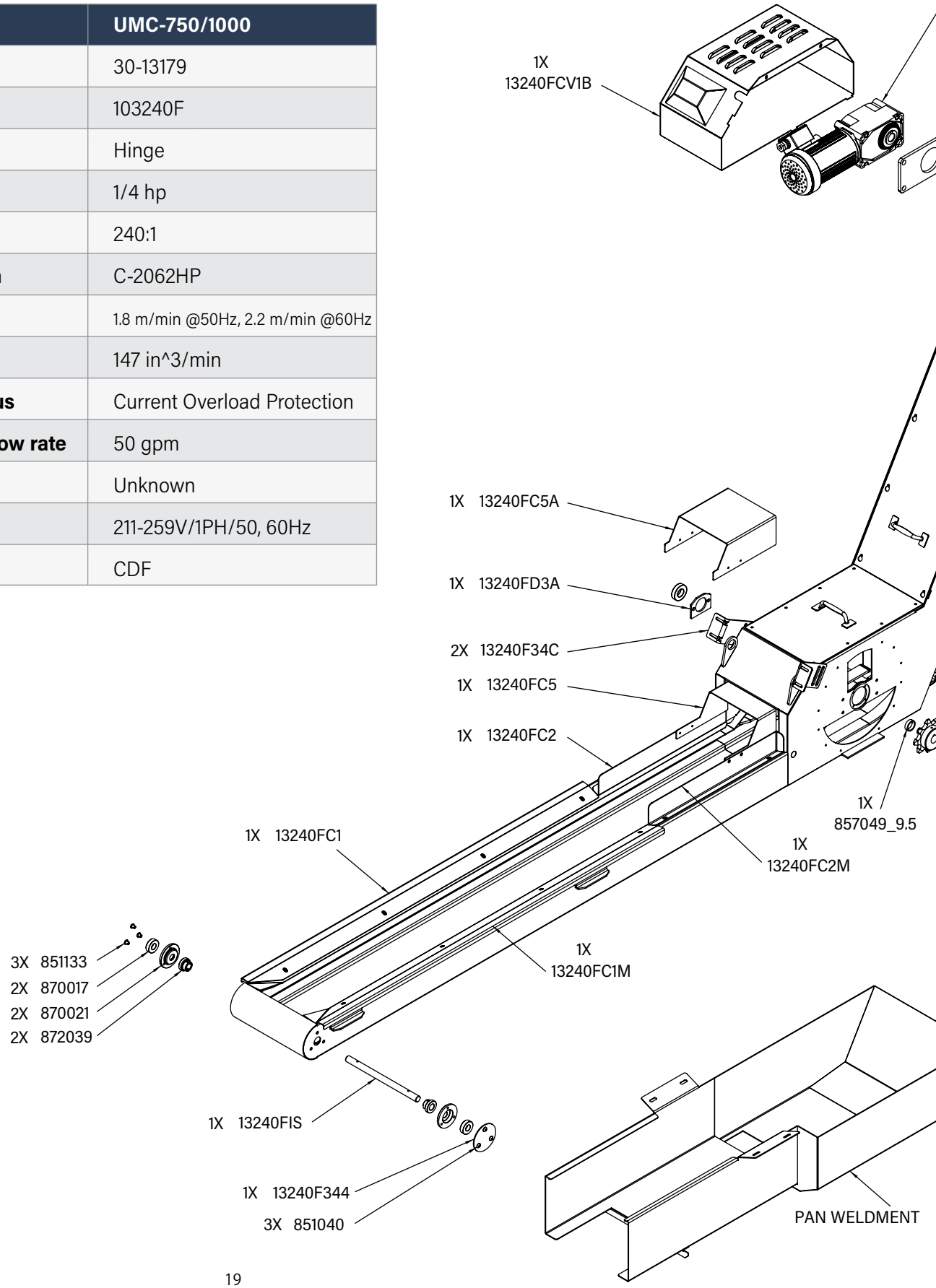
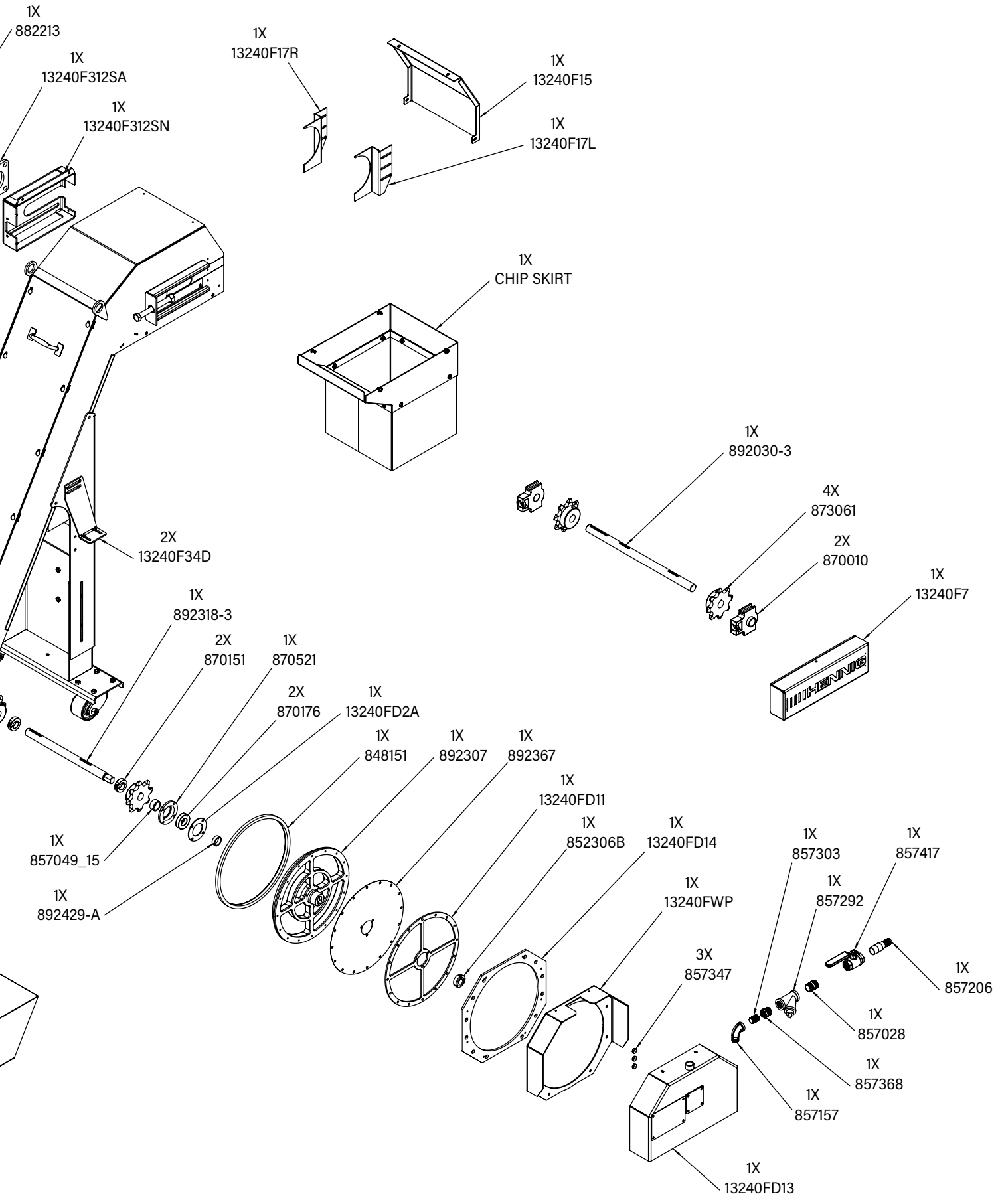
10. SPECS & SPARE PARTS 103240F (UMC-750/1000)

MACHINE	UMC-750/1000
Haas part #	30-13179
Hennig Part #	103240F
Type	Hinge
Motor	1/4 hp
Reducer	240:1
Conveyor chain	C-2062HP
Speed	1.8 m/min @50Hz, 2.2 m/min @60Hz
Capacity	147 in^3/min
Safety apparatus	Current Overload Protection
Filter coolant flow rate	50 gpm
Chips	Unknown
Voltage	211-259V/1PH/50, 60Hz
Style	CDF

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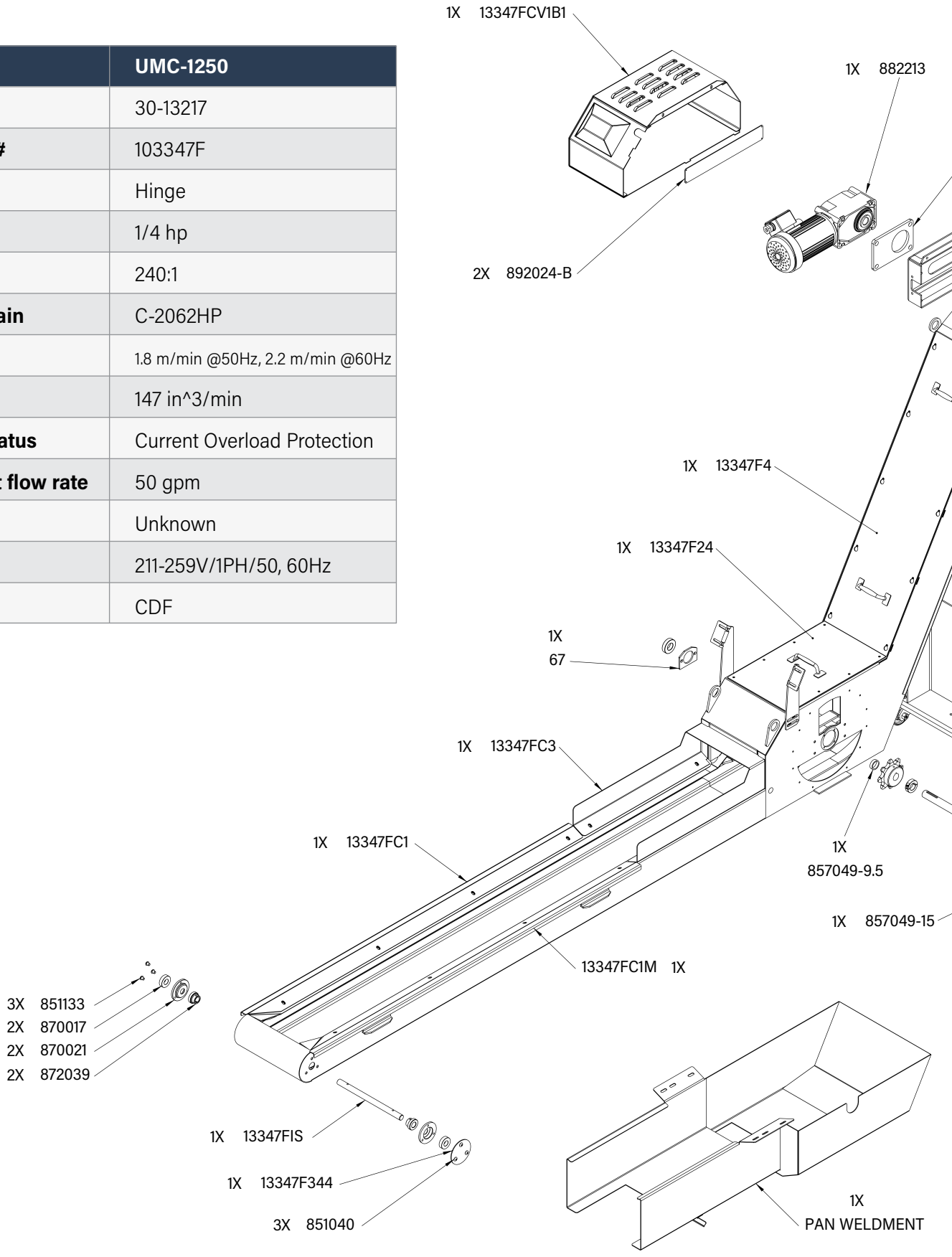
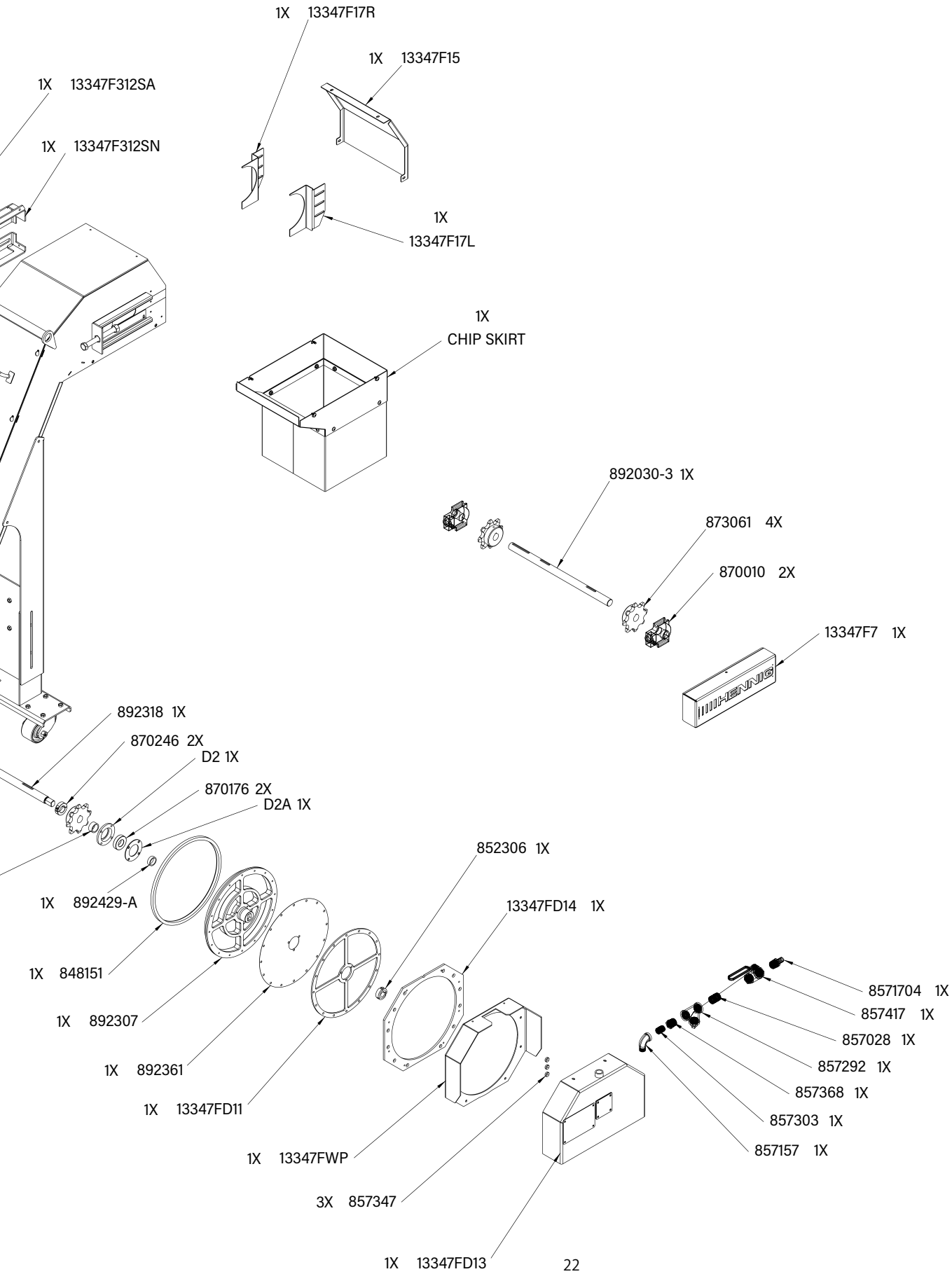
10. SPECS & SPARE PARTS 103347F (UMC-1250)

MACHINE	UMC-1250
Haas part #	30-13217
Hennig Part #	103347F
Type	Hinge
Motor	1/4 hp
Reducer	240:1
Conveyor chain	C-2062HP
Speed	1.8 m/min @50Hz, 2.2 m/min @60Hz
Capacity	147 in^3/min
Safety apparatus	Current Overload Protection
Filter coolant flow rate	50 gpm
Chips	Unknown
Voltage	211-259V/1PH/50, 60Hz
Style	CDF

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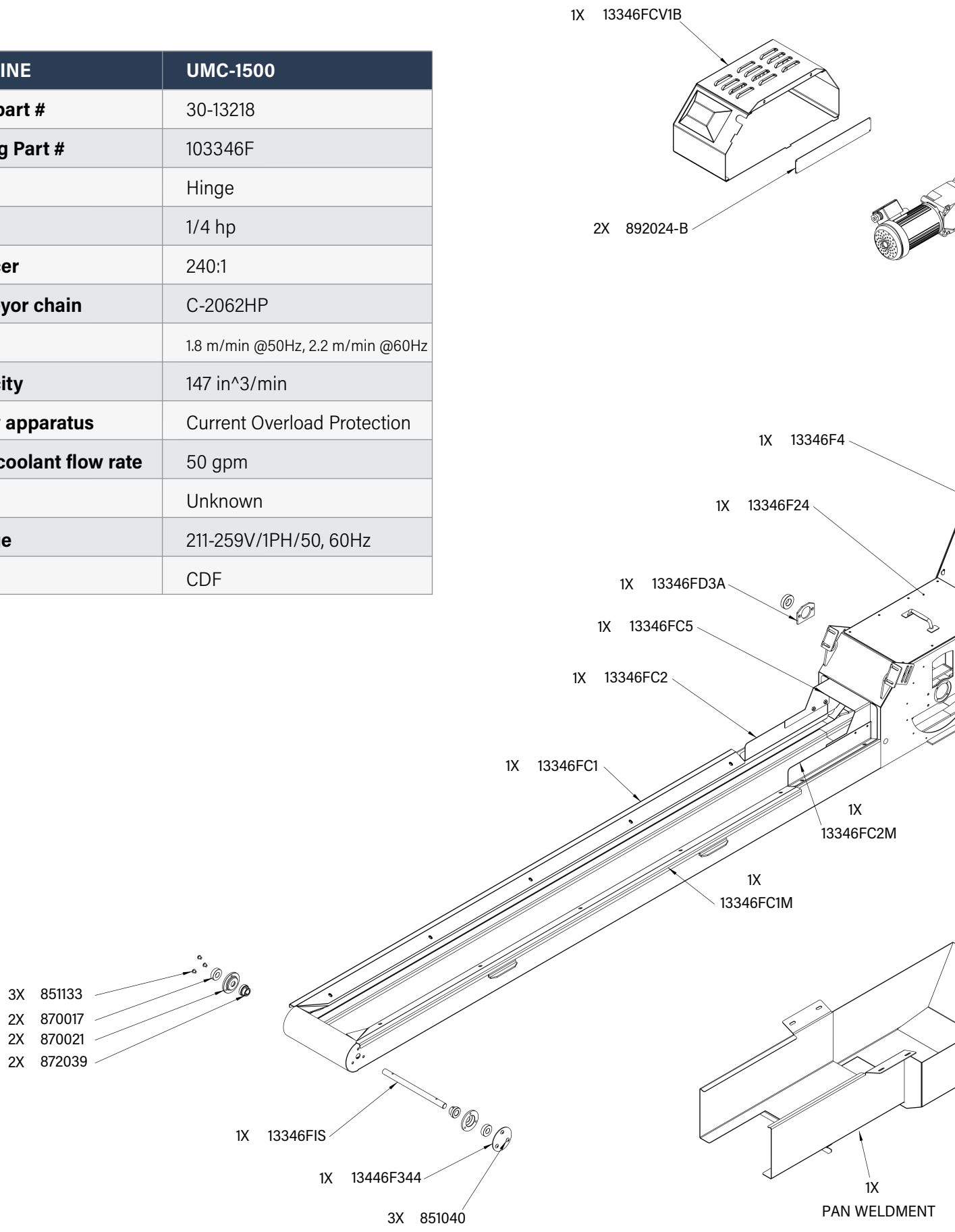
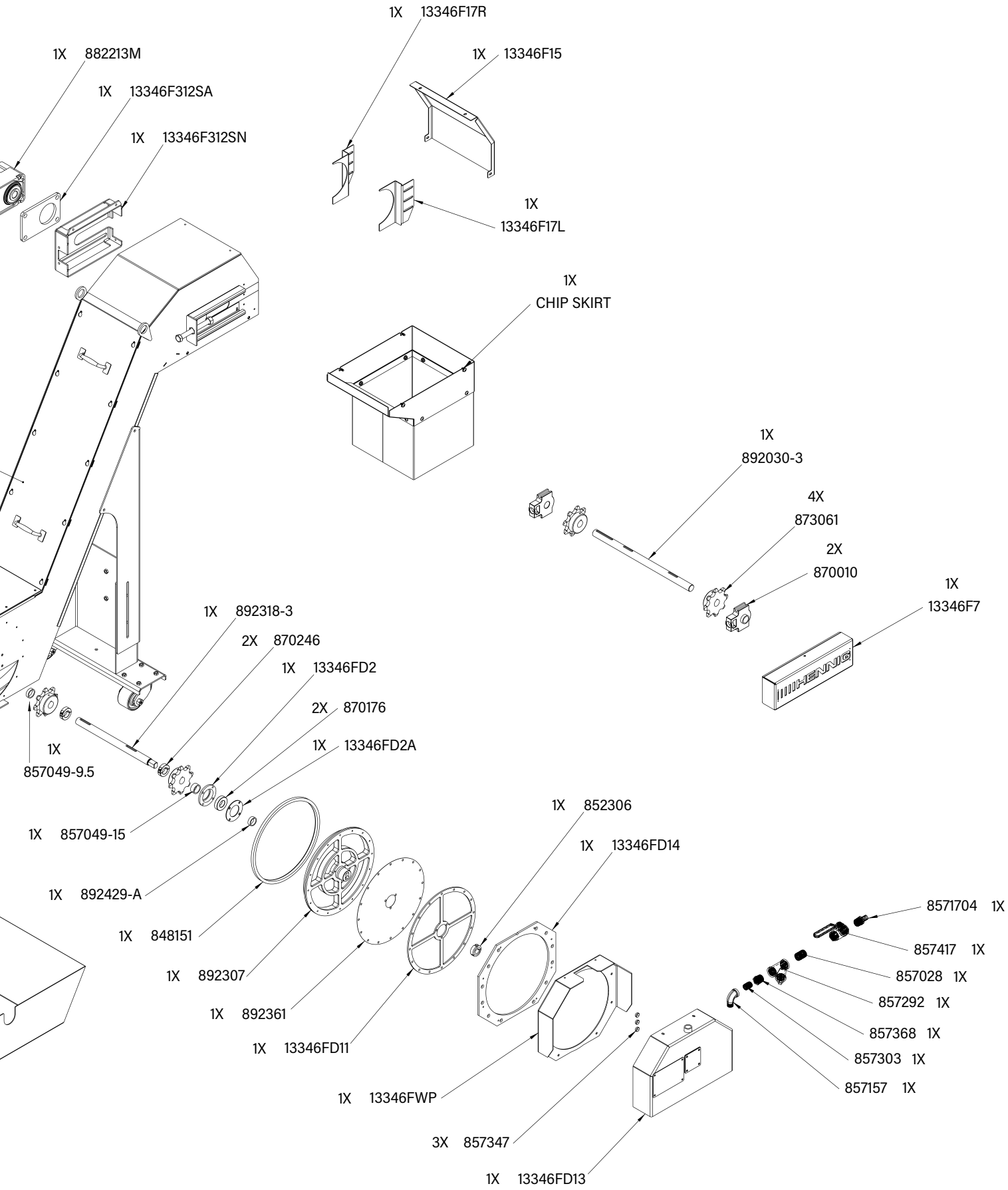
10. SPECS & SPARE PARTS 103346F (UMC-1500)

MACHINE	UMC-1500
Haas part #	30-13218
Hennig Part #	103346F
Type	Hinge
Motor	1/4 hp
Reducer	240:1
Conveyor chain	C-2062HP
Speed	1.8 m/min @50Hz, 2.2 m/min @60Hz
Capacity	147 in^3/min
Safety apparatus	Current Overload Protection
Filter coolant flow rate	50 gpm
Chips	Unknown
Voltage	211-259V/1PH/50, 60Hz
Style	CDF

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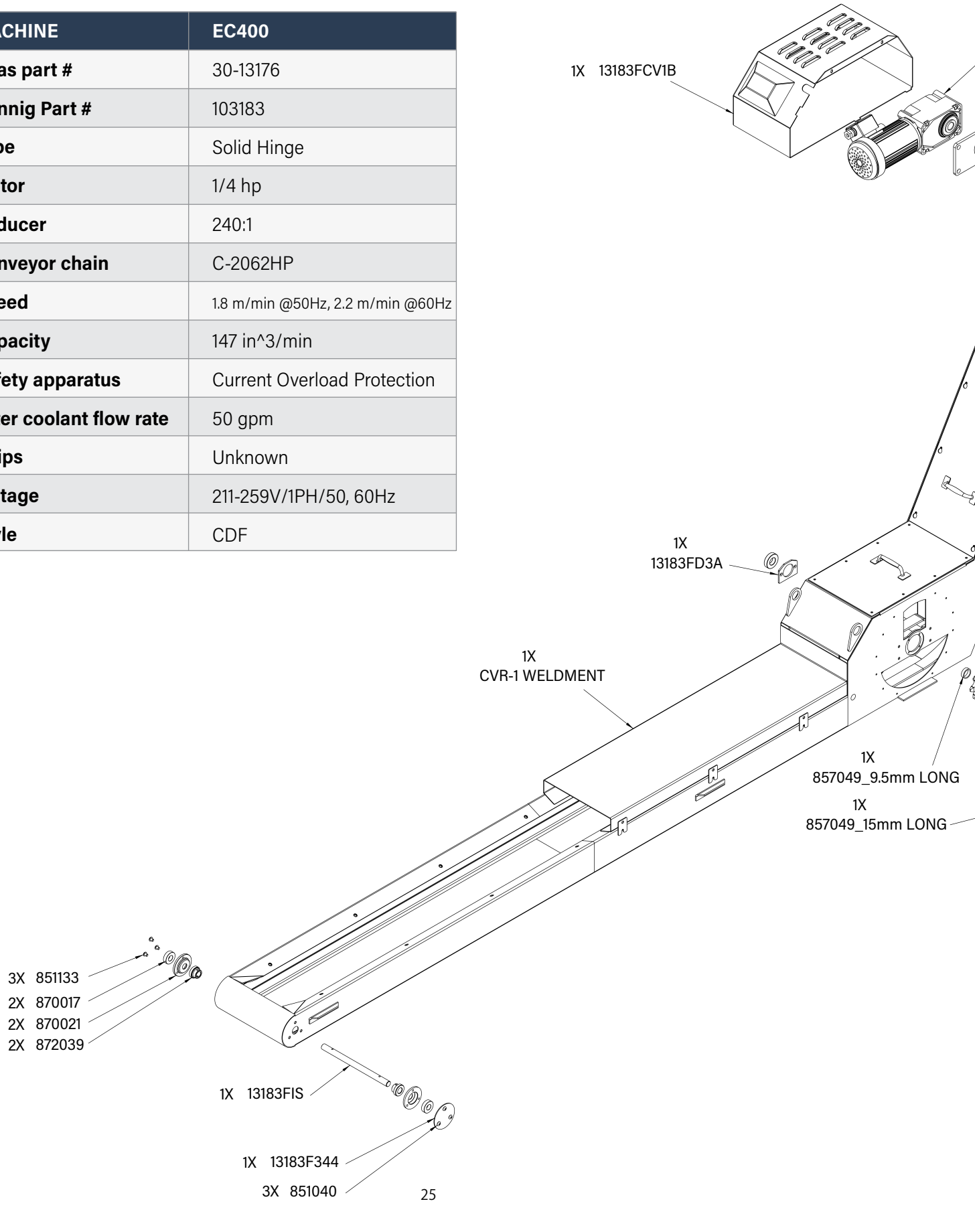
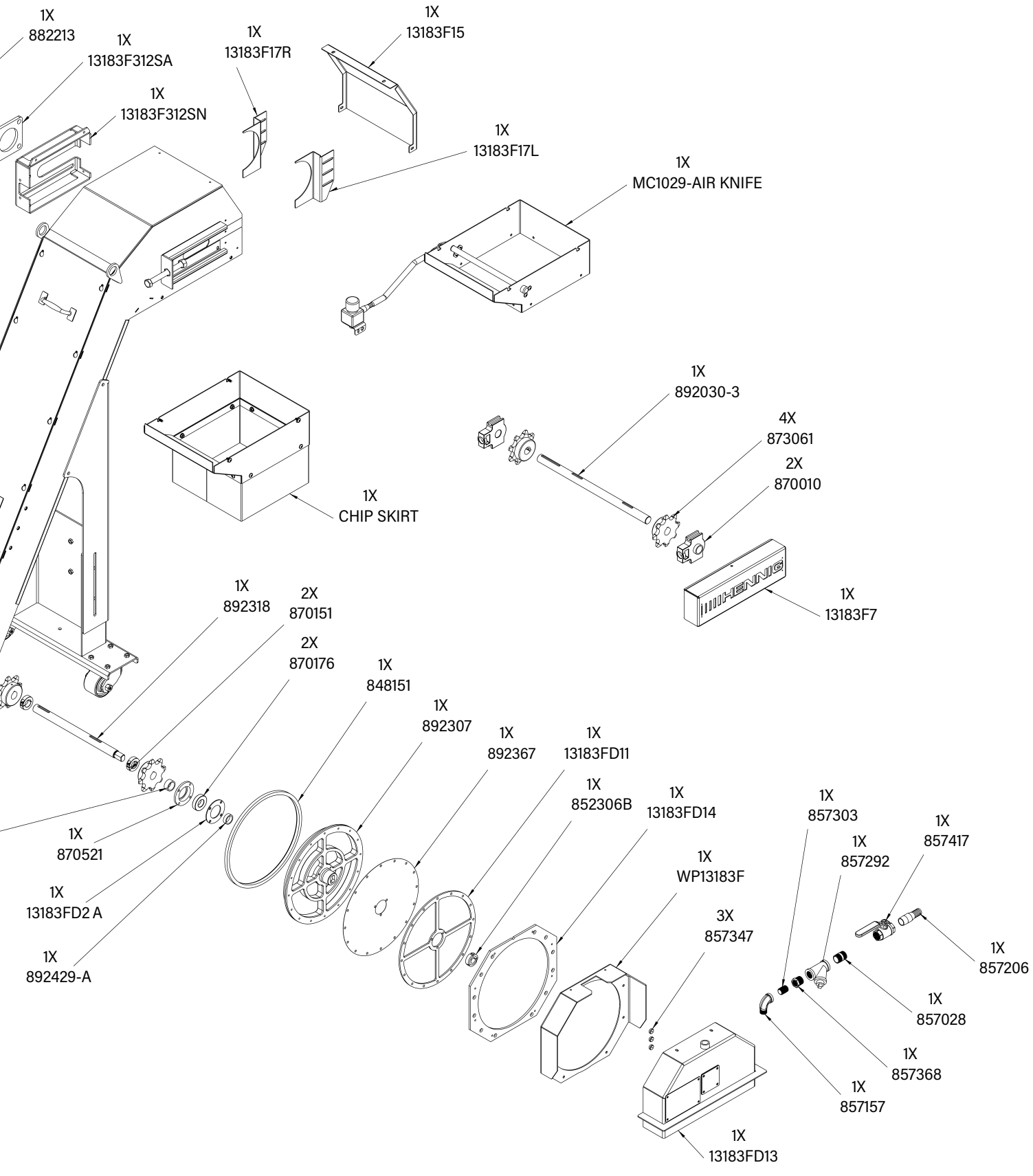
10. SPECS & SPARE PARTS 103183F (EC400)

MACHINE	EC400
Haas part #	30-13176
Hennig Part #	103183
Type	Solid Hinge
Motor	1/4 hp
Reducer	240:1
Conveyor chain	C-2062HP
Speed	1.8 m/min @50Hz, 2.2 m/min @60Hz
Capacity	147 in^3/min
Safety apparatus	Current Overload Protection
Filter coolant flow rate	50 gpm
Chips	Unknown
Voltage	211-259V/1PH/50, 60Hz
Style	CDF

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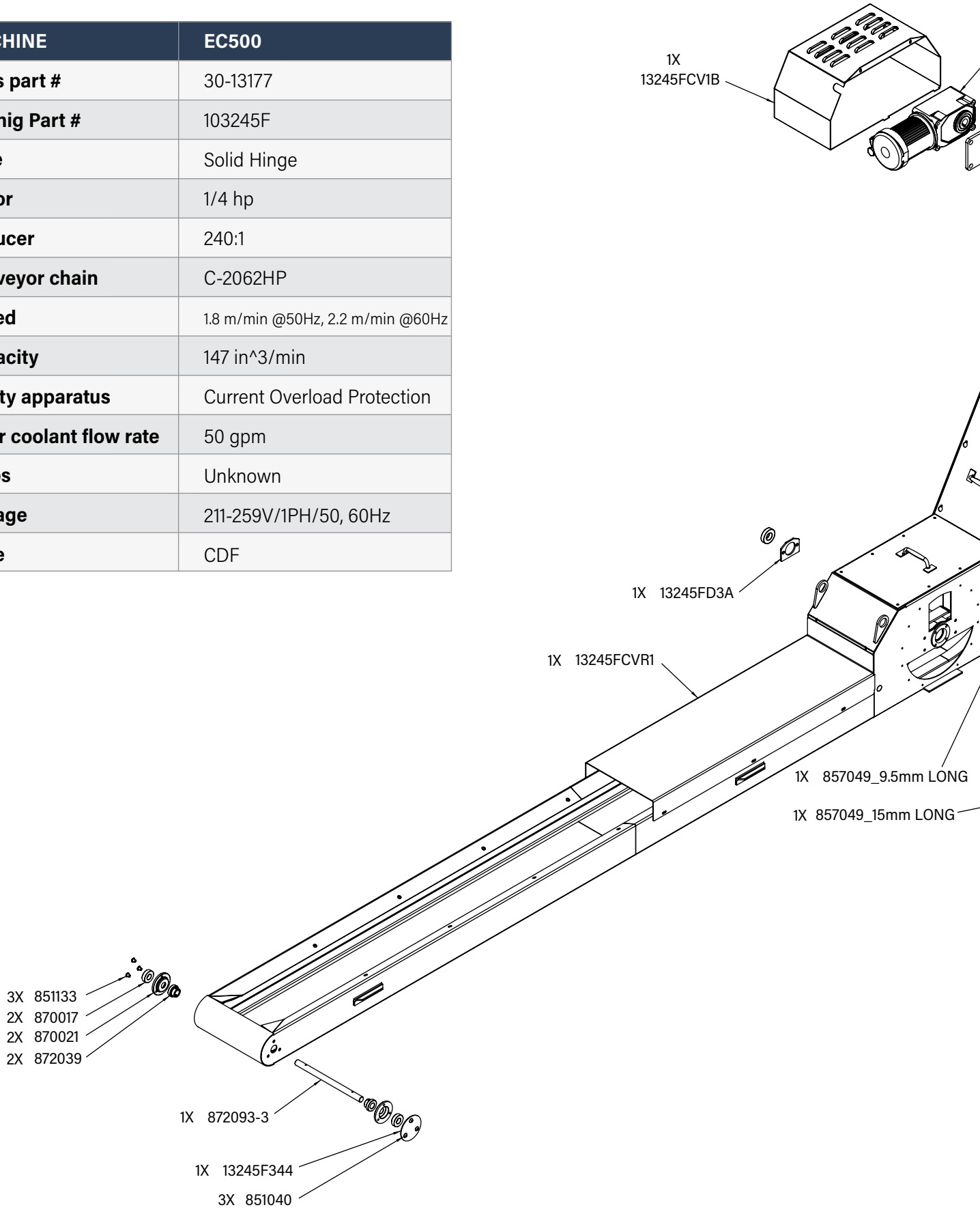
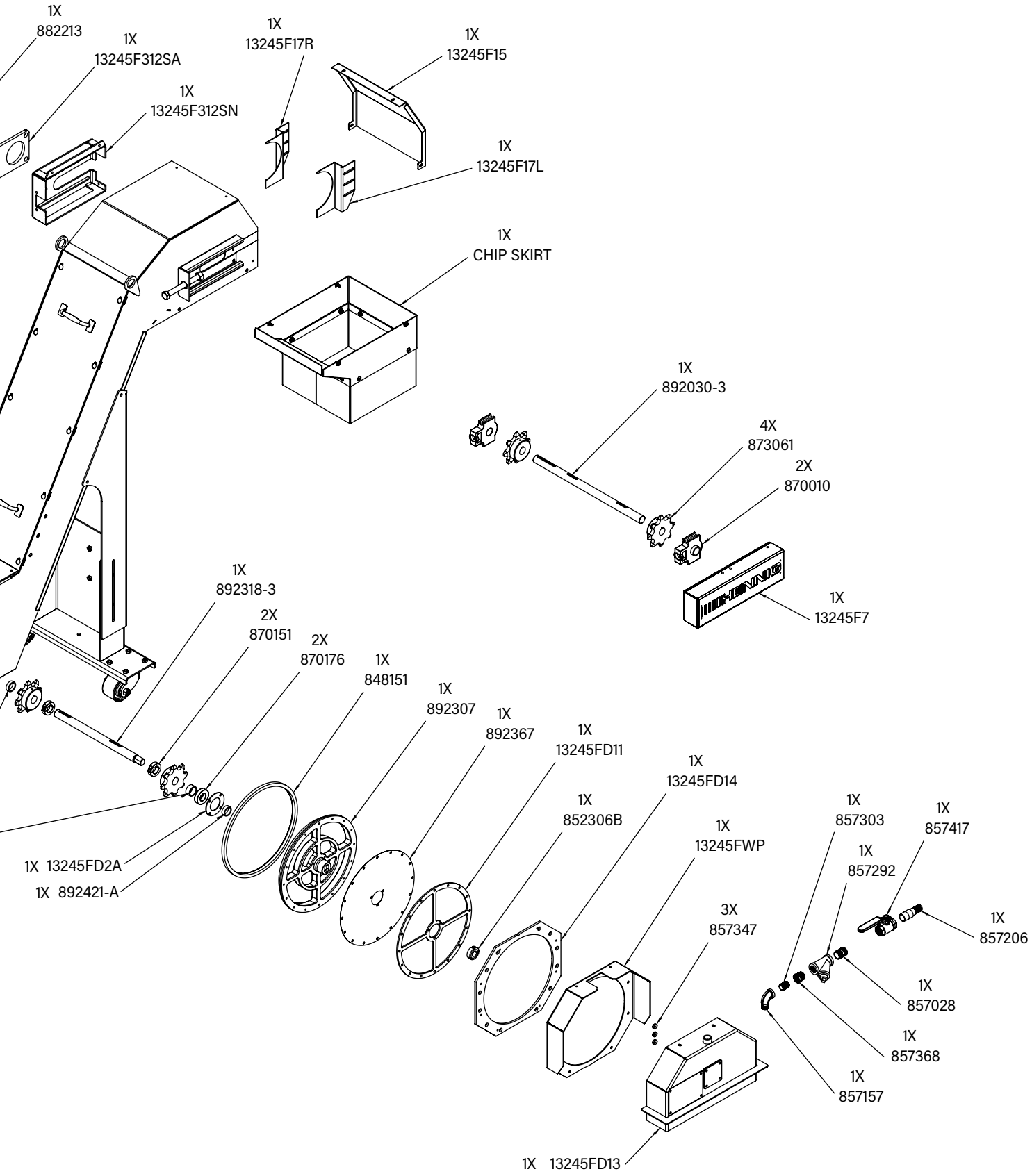
10. SPECS & SPARE PARTS 103245F (EC500)

MACHINE	EC500
Haas part #	30-13177
Hennig Part #	103245F
Type	Solid Hinge
Motor	1/4 hp
Reducer	240:1
Conveyor chain	C-2062HP
Speed	1.8 m/min @50Hz, 2.2 m/min @60Hz
Capacity	147 in^3/min
Safety apparatus	Current Overload Protection
Filter coolant flow rate	50 gpm
Chips	Unknown
Voltage	211-259V/1PH/50, 60Hz
Style	CDF

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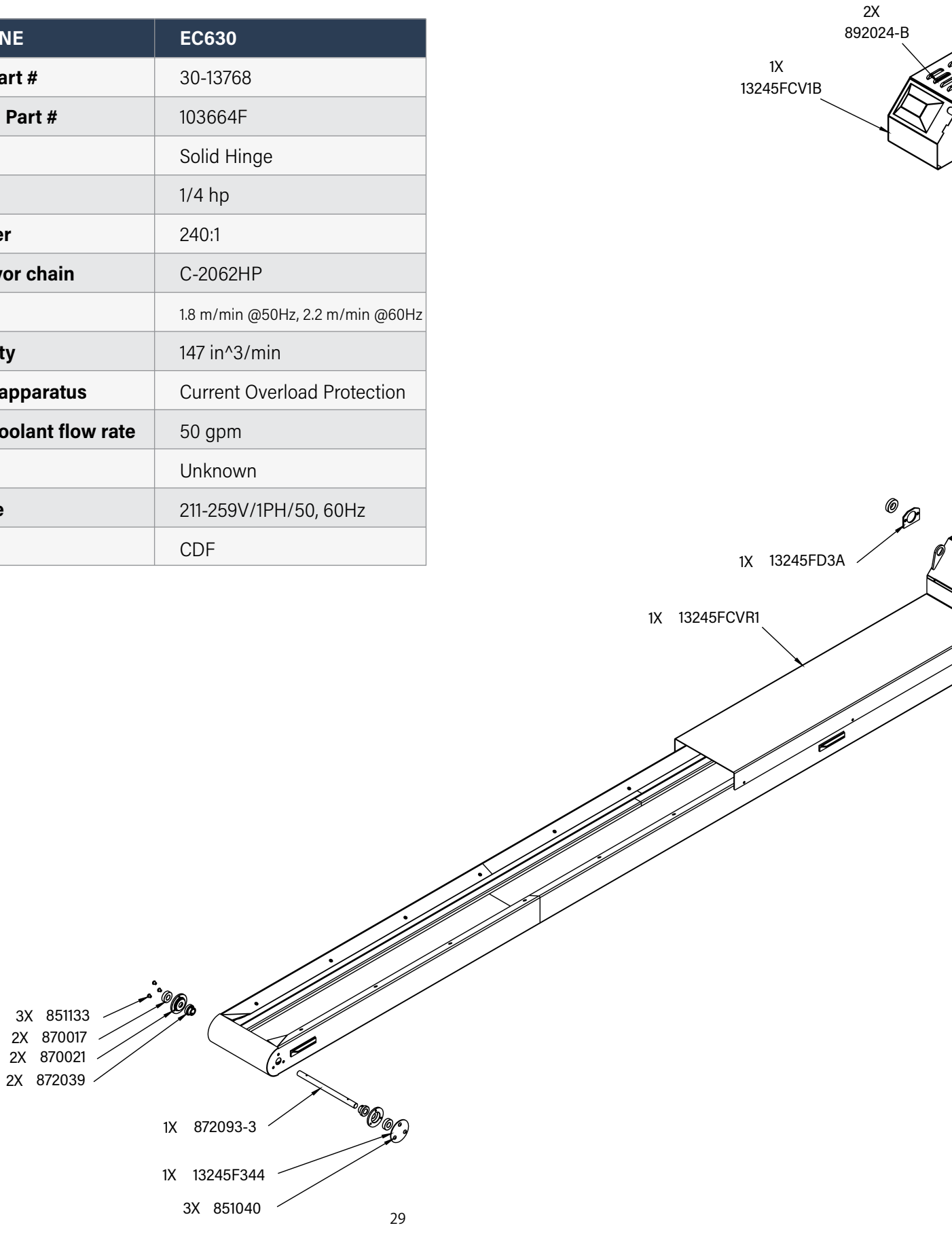
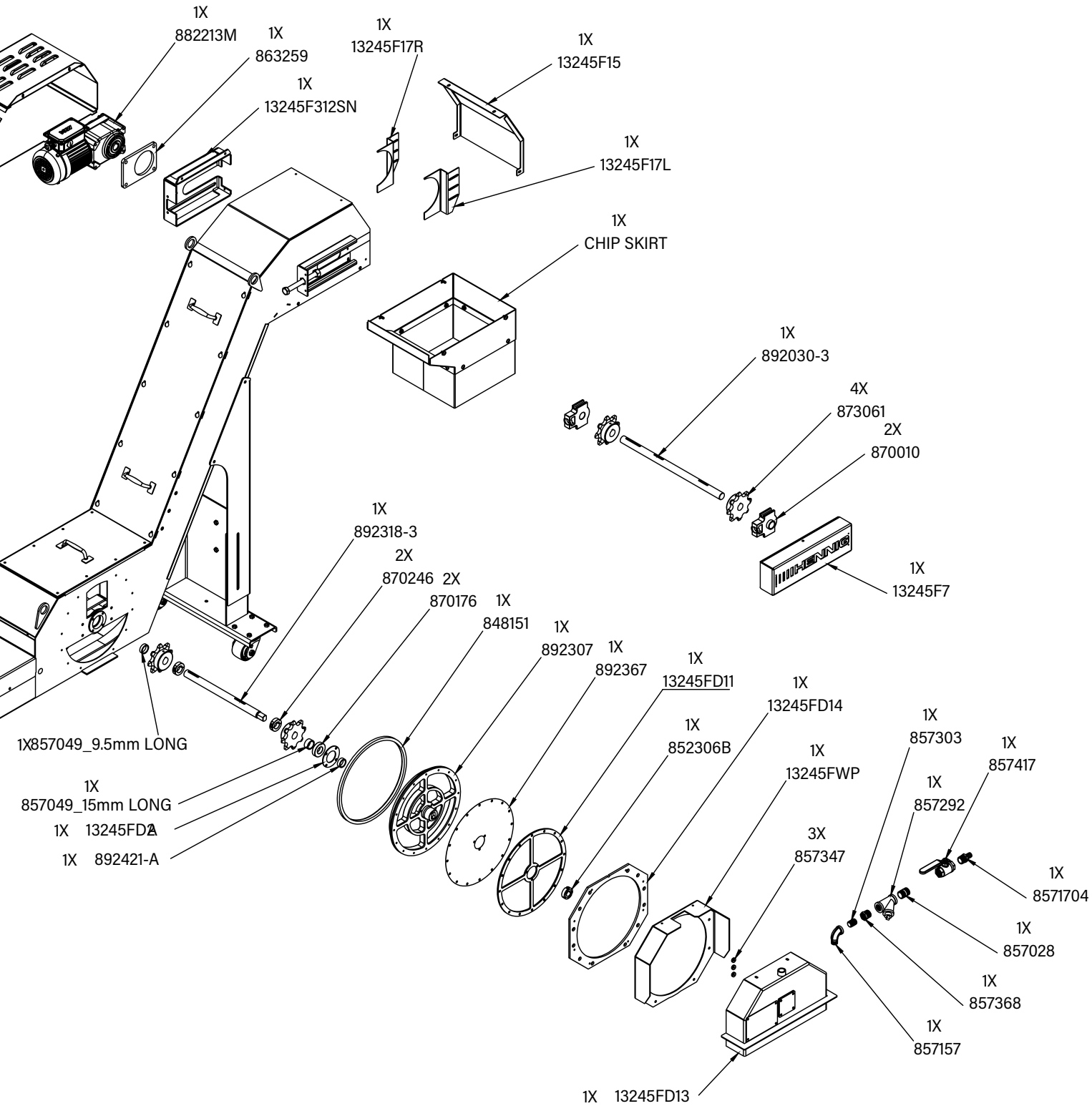
MACHINE	EC630
Haas part #	30-13768
Hennig Part #	103664F
Type	Solid Hinge
Motor	1/4 hp
Reducer	240:1
Conveyor chain	C-2062HP
Speed	1.8 m/min @50Hz, 2.2 m/min @60Hz
Capacity	147 in^3/min
Safety apparatus	Current Overload Protection
Filter coolant flow rate	50 gpm
Chips	Unknown
Voltage	211-259V/1PH/50, 60Hz
Style	CDF

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