



8 - Chip Conveyor - UMC

Chip Removal and Coolant - Service Manual

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Coolant -
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Coolant Filter

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Flood Coolant

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Coolant

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- UMC**

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11 - High
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Coolant

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Spindle Coolant

13 - Through-Tool
Air Blast

14 - Haas Chip Lift

15 - Mist
Condenser

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8.1 CHIP CONVEYOR - OVERVIEW

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Sanitizer

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Separator

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8.1 CHIP CONVEYOR - OVERVIEW

Chip Conveyor - Overview

Service Minute - Chip
Conveyor Tension

Chip Conveyor
Troubleshooting - Haas
Service Tip

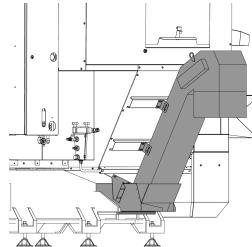
Toolroom Lathe
Conveyor Installation

8.2 STANDARD AND FILTER CONVEYOR INSTALLATION

UMC - Standard and Filter Chip Conveyor - Installation

AD0748

Introduction



This procedure outlines how to install the Standard Conveyor and the Filter Conveyor on UMC Machines.

This procedure applies to the following Standard Conveyor service kits:

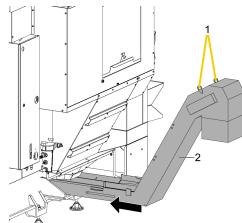
- **93-1000325:** CHIP CONV UMC-500 POST 12/2019
- **93-1000207:** CHIP CONV UMC-750 REBOOT
- **93-1000218:** CHIP CONV UMC-1000
- **93-1001030:** CHIP CONV KIT UMC-1250

This procedure applies to the following Filter Conveyor service kits:

- **93-1000936:** CHIP CONV FILTER 10" WIDE UMC-500
- **93-1000922:** CHIP CONV FILTER 10" WIDE UMC-750
- **93-1001041:** CHIP CONV FILTER 10" WIDE UMC-1000
- **93-1000962:** CHIP CONV FILTER 10" WIDE UMC-1250
- **93-1000963:** CHIP CONV FILTER 10" WIDE UMC-1500-DUO

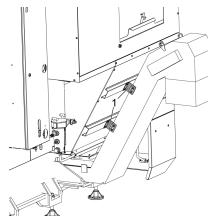
⚠ Important: When installing a Filter Conveyor on a UMC-500 with a 95 gallon coolant tank, a chip hopper will be required.

Installation

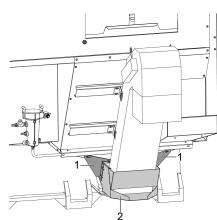
**1**

Unfold the standard conveyor and place the conveyor in position, using a big joe or a forklift attach straps to the lifting hooks [1] and support the other end of the conveyor [2] to begin sliding the conveyor into the casting.

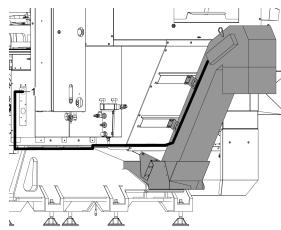
Note: The Filter Conveyor will not need to be unfolded to install.

**2**

Install the conveyor brackets [1] as shown. There should be two (2) brackets on each side for a total of four (4) brackets attached.

**3**

Install the drain pan [2] and its adapter brackets [1].

**4**

Connect the chip conveyor to power by routing the cable as shown [1] to ensure the cable does not get pinched or damaged.

Parameter Updates

Turn on the machine.

Login to the [HBC PORTAL](#).

Download the patch file.

Note: The option files will appear on the configuration download page after the service kit has been ordered. If the option does not appear, contact the service department.

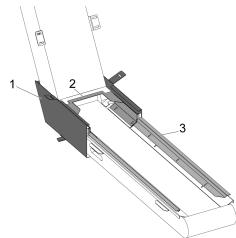
Load the option configuration patch file to the control. Refer to the [NEXT GENERATION CONTROL - CONFIGURATION FILE - DOWNLOAD/LOAD](#) procedure.

8.3 UMC CONVEYOR SPILLWAY EXTENSION - INSTALLATION

UMC Conveyor Spillway Extension - Installation

AD0565

Introduction

**1**

This procedure will explain how to install the chip conveyor spillway extension kits for the **UMC Series Machines**.

The kits come with three major components to help reduce chip overflow and reduce chip build up that can cause coolant blockage around the conveyor. The components are as follows:

1. The Spillway
2. The Mating Bracket
3. The Wing Extensions

This procedure will apply to the following kits:

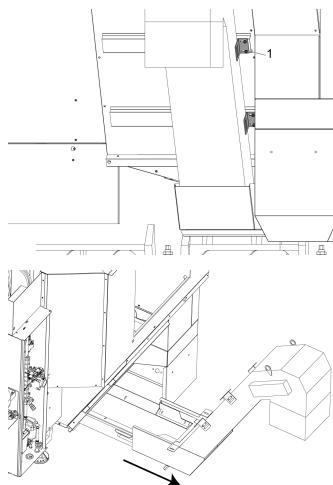
- **93-3326** CHIP CONVEYOR KIT
KEYARROW UMC 500
- **93-3327** CHIP CONVEYOR KIT
JORGENSEN UMC-500
- **93-3328** CHIP CONVEYOR KIT
HENNIG UMC 500
- **93-3409** CONV CHIP
MANAGEMENT KIT UMC
750/1000

NOTE: For UMC-500's built before November 2019 the provided mating bracket [2] may interfere with the sheet metal. The original mating bracket [2] can be used in place of the new one.

NOTE: For UMC-750/1000's built from October 2017 to February 2020 the spillway [1] may interfere with the enclosure. The original spillway [1] can be used in place of the new one.

NOTE: The kit needed for the UMC-500 will depend on which conveyor brand is on the machine. For the UMC-750/1000 **93-3409** will work for all brand conveyors.

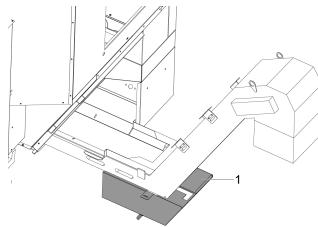
Installation

**1**

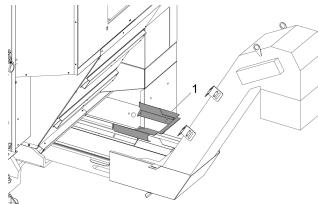
Remove the bolts attaching the conveyor to the enclosure [1].

2

Pull out the conveyor far enough so that the spillway can be removed and the mating bracket is exposed.

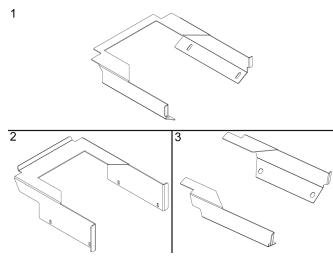
**3**

Remove the spillway from the conveyor, it should start falling out when the conveyor is pulled out. Replace it with the spillway supplied in the kit [1].

**4**

With the wing exposed remove the 4 bolts holding the mating bracket to the conveyor. Replace it with the mating bracket supplied in the kit [1].

NOTE: The UMC-1000 does not use a mating bracket, this portion of the procedure only applies to the UMC-500/7500.

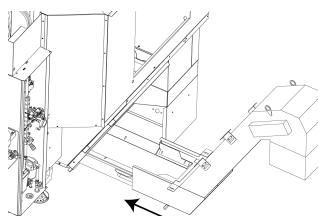
**5**

The mating bracket for the UMC-500 will differ depending on which brand of conveyor is on the machine. Make sure the proper mating bracket is being installed according to the image:

1. Keyarrow
2. Jorgenson
3. Hennig

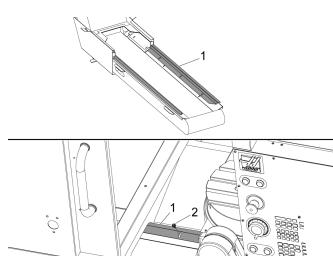
NOTE: Machines that were made before 11/2019 may contain an older sheet metal that may interfere, if the sheet metal interferes contact Haas Service for further instructions.

NOTE: 93-3409, CONV CHIP MANAGEMENT KIT UMC 750/1000, will have a mating bracket that fits all brands of conveyors for the UMC-750.

**6**

Once the spillway and mating bracket have been replaced push the conveyor back inside the machine.

Do not bolt the brackets to the enclosure yet.

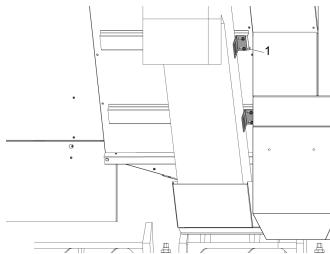
**7**

With the conveyor in the machine have someone push on the conveyor to create a gap between the conveyor and the casting.

Insert wing brackets [1] between the top of the conveyor and the casting. make sure the shoulder of the mating bracket is against the wing brackets.

With the brackets in place install self tapping screws at the TOP of the slots in the brackets. This will allow you to bring the brackets upward to meet the casting if necessary.

NOTE: Make sure the bracket is wedged between the casting and conveyor to create a seal so chips do not leak through the gaps.

**8**

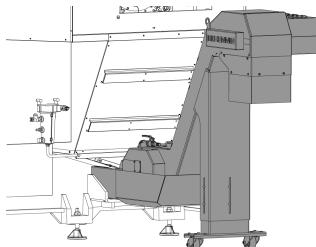
Reinstall the bolts attaching the conveyor to the enclosure [1].

8.4 HENNING CDF CONVEYOR - INSTALLATION

Hennig CDF Conveyor - Installation

AD0551

Introduction

**1**

This procedure will explain how to install the Hennig CDF Conveyor option found on the following machines:

- UMC-500
- UMC-750
- UMC-1000
- UMC-1250
- UMC-1500-DUO
- EC-400
- EC-500
- EC-630

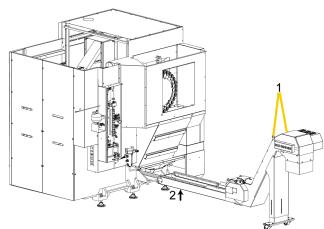
This procedure applies to the following kits:

- **93-1000661:** CHIP CONV UMC-500 CDF FIELD INSTALL
- **93-1000655:** CHIP CONV UMC-750 CDF FIELD INSTALL
- **93-1000656:** CHIP CONV UMC-1000 CDF FIELD INSTALL
- **93-1000657:** CHIP CONV UMC-1250 CDF FIELD INSTALL
- **93-1000658:** CHIP CONV UMC-1500 DUO CDF FIELD INSTALL
- **93-1000659:** CHIP CONV EC-400 CDF FIELD INSTALL
- **93-1000660:** CHIP CONV EC-500 CDF FIELD INSTALL
- **93-1000950:** CHIP CONV EC-630 CDF FIELD INSTALL

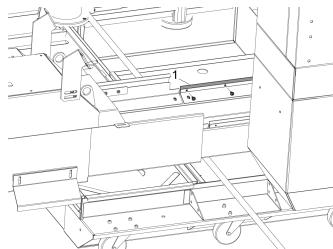
Prerequisites:

- **93-1000573 I/O DOOR ASSY**
HINGED order the hinge door if it did not come in the kit.
- EC-400 & EC 500 built **BEFORE** 2018 are **NOT** compatible with the CDF conveyors
- All applicable machines must have a **95 gallon** coolant tank

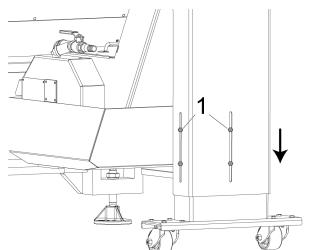
UMC - Installation

**1**

Place the conveyor in position, using a big joe or a forklift attach straps to the lifting hooks [1] and support the other end of the conveyor [2] to begin sliding the conveyor into the casting.

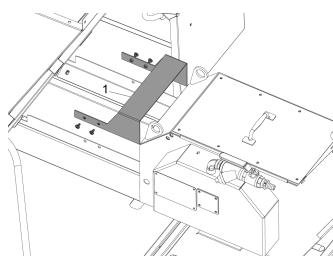
**2**

Remove the gaskets [1] from the each side of the conveyor. This will make installing the conveyor easier and to avoid damaging the gasket.

**3**

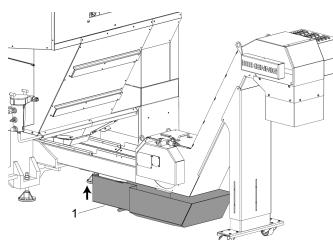
Loosen the hex head bolts [1] that hold the casters in place.

Loosen them enough so that the rollers touch the floor but can freely move up and down.

**4**

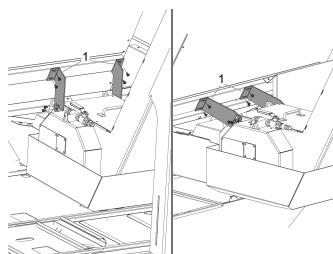
Begin to insert the conveyor into the machine, at the halfway point bolt the conveyor bracket [1] before completely sliding the conveyor in.

NOTE: These brackets may come in the color red. Some conveyors either do not have these brackets or have them pre installed. Only attach if the bracket is not already screwed onto the conveyor.

**5**

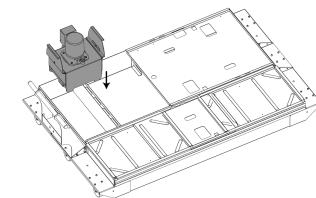
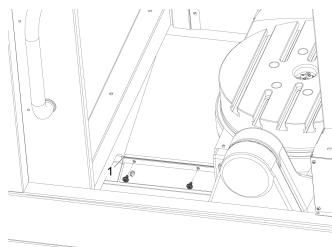
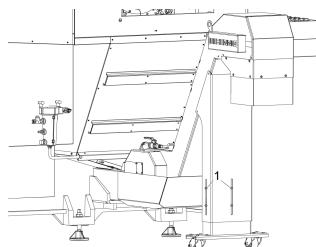
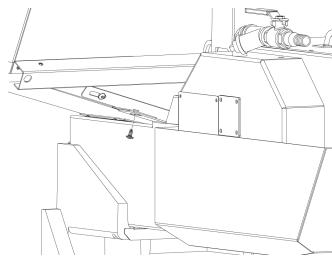
Once the conveyor bracket is installed, install the extension panel [1] to the conveyor and continue sliding it in.

NOTE: The extension panel does not bolt to the conveyor, it is wedged between the casting and conveyor.

**6**

With the conveyor pushed in bolt the conveyor brackets [1] to the enclosure using the provided hardware.

NOTE: These brackets may come in the color red. Some conveyors either do not have these brackets or have them pre installed. Only attach if the bracket is not already screwed onto the conveyor.

**7**

Bolt the extension panel of the conveyor to the enclosure as shown.

8

With the conveyor still supported by the lifting apparatus tighten the hex head bolts [1]. Make sure the casters are touching the floor.

Remove the lifting apparatus after the bolts are tightened.

9

Re-install the gasket [1] after the conveyor is fully installed.

NOTE: It may be easier leaving the conveyor a few inches out to access the first couple screws to the gasket and then push the conveyor all the way in to install the remaining screws.

10

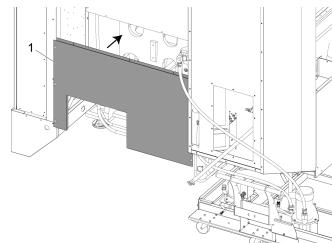
Place the wash down pump into the coolant tank and connect the output of the pump to the valve on the conveyor.

Verify the machine height for the coolant tank after the conveyor is completely installed.

NOTE: Releveling may be required after conveyor is completely installed if the machine leveling needed to be adjusted to install the CDF conveyor.

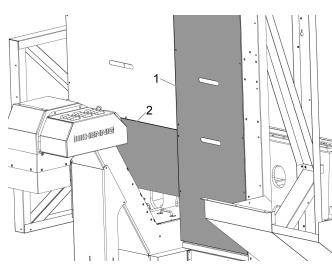
Once completed go to the [Electrical Installation](#) section of the procedure

EC - Installation

**1**

FOR EC-400/500 FIELD INSTALL

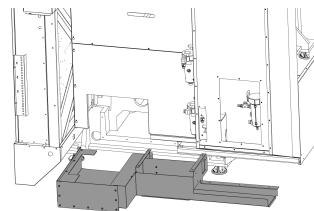
Remove the old panel and intall the new enclosure panel that will allow the CDF conveyor to fit on the EC machines.

**2**

FOR EC-630 FIELD INSTALL

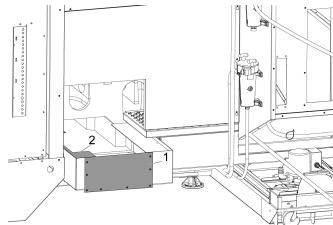
Remove the old panel and intall the new enclosure panel that will allow the CDF conveyor to fit on the EC machines.

NOTE: EC-630 machines will have two panels [1] & [2] instead of one panel to be installed for the CDF.



3 FOR FIELD INSTALL

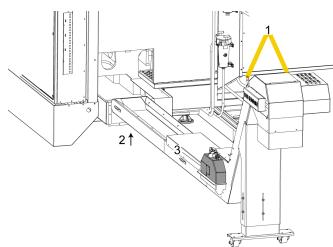
Install the drain pan onto the machine, use the provided hardware in the hardware kit.



4

Remove the service panel [1] and the left drain pan cover [2] to prepare for installing the conveyor.

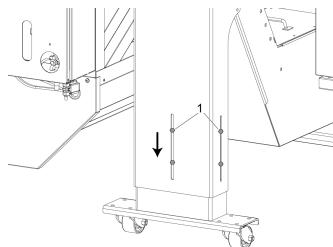
NOTE: Place the gasket for the service panel aside as you will need it later in the installation.



5

Place the conveyor in position, using a big joe or a forklift attach straps to the lifting hooks [1] and support the other end of the conveyor [2] to put the conveyor into the casting.

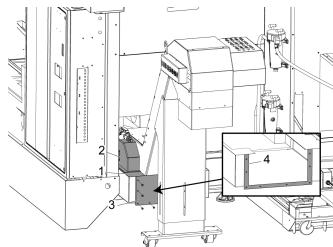
NOTE: Remove the chip disk filter cover [3] to make placing the conveyor into position easier.



6

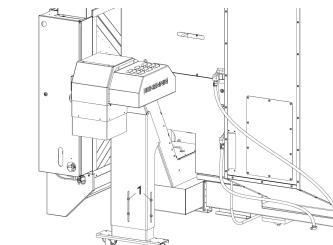
Loosen the hex head bolts [1] that hold the casters in place.

Loosen them enough so that the rollers touch the floor but can freely move up and down.



7

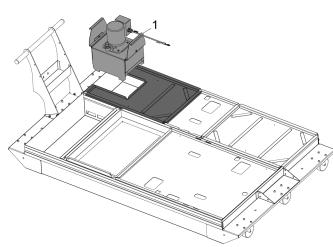
Once the conveyor has been fully slid into the casting, reinstall the left drain pan cover [1] and the chip disk filter cover [2]. Lastly, reinstall the service panel [3] to the spillway. Make sure the gasket [4] is reinstalled as well to prevent leaks from occurring.



8

With the conveyor still supported by the lifting apparatus tighten the hex head bolts [1]. Make sure the casters are touching the floor.

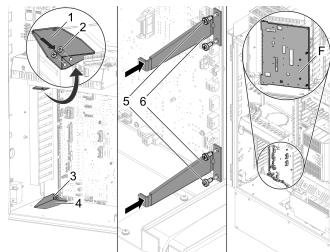
Remove the lifting apparatus after the bolts are tightened.



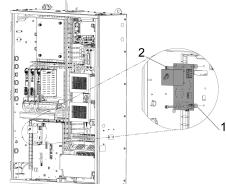
9

Place the wash down pump [1] into the coolant tank and connect the output of the pump to the valve on the conveyor.

Electrical Installation

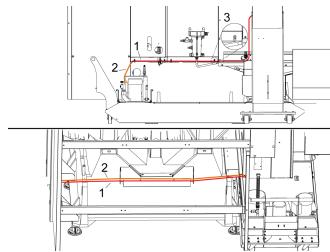
**1**

Please install the hinge door and refer to the [I/O PCB HINGED DOOR INSTALLATION](#) procedure for further instructions.

**2**

Install the TMD card onto the hinge door located as shown in the picture using the spacers and the provided hardware [2].

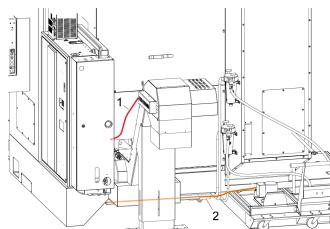
NOTE: Older versions of the hinged door use 1/4-20 bolts, newer version hinged doors use 10-32 size bolts, both are supplied with the kit or pre-installed on the hinged door. Use the correct bolt size for the appropriate version of hinged door.

**3**

FOR UMC MACHINES:

Route the conveyor drive cable [1] and pump motor cable [2] using the provided cable clamps [3].

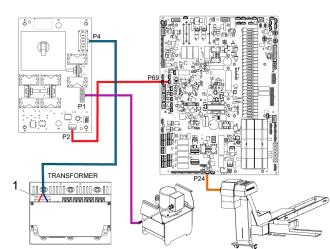
Route the cables along the skirt of the machine and into the back of the UMC into the junction box below the control cabinet.

**4**

FOR EC MACHINES:

Route the conveyor drive cable [1] and pump motor cable [2] into the rear of the control cabinet.

NOTE: Route the pump motor cable through the wire channel under the conveyor and spillway.

**5**

Follow the wiring diagram to wire the cables.

Connect [33-0987B](#) from the transformer to the **P4** on the TMD card.

NOTE: [1] There are some extensions provided for the transformer in case there is no more room to fit [33-0987B](#) in the transformer.

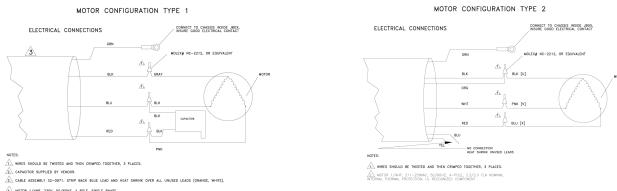
Connect [33-0517](#) from the **P69** on the I/O board to **P2** on the TMD card.

Connect [32-0971](#) from the junction box on the chip conveyor to **P24** on the I/O board.

Connect [32-0972](#) from the pump motor to **P1** on the TMD card.

6

After completing the installation, run the conveyor by pressing [**CHIP FWD**] if the conveyor runs backwards please check the motor wiring and verify it is wired correctly. Use the wiring diagrams below for reference.

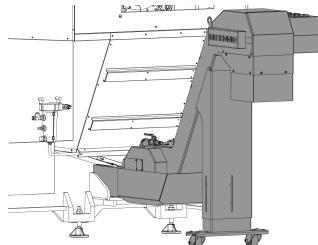


8.5 UMC - 500/750/1000/SS - HENNING CDF CONVEYOR EXTENSION PANEL - REPLACEMENT

UMC - 500/750/1000/SS - Henning CDF Conveyor Extension Panel - Replacement

AD0733

Introduction



1

This procedure will explain how to install the Hennig CDF Conveyor Extension Panel replacement. The kit comes with a new Extension Panel to fix any coolant leaks in the following machines:

- UMC-500
- UMC-750
- UMC-1000

This procedure applies to the following kits:

UMC-500/SS built **before** 2/24/22:

- **93-3613: CONV EXTENSION PANL KIT UMC-500 CDF**

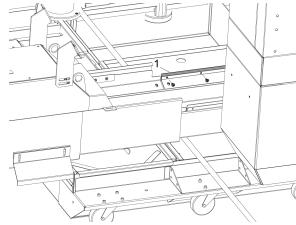
UMC-750/1000/SS built **before** 4/29/22:

- **93-3612: CONV EXTENSION PANL KIT UMC-750/1000 CDF**

Extension Panel Installation

1

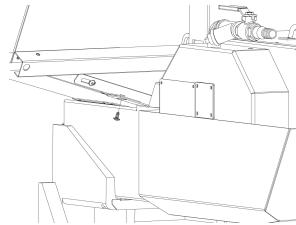
Push [E-STOP].



2

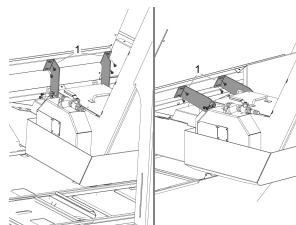
Remove the gaskets [1] from the each side of the conveyor.

NOTE: This will make installing the conveyor easier and to avoid damaging the gasket.



3

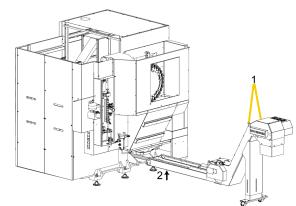
Remove the bolts from the adapter brackets to the extension panel.



4

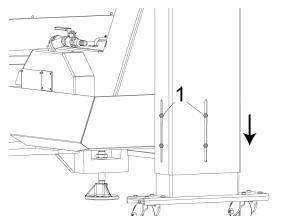
Remove the conveyor brackets [1] from the enclosure.

NOTE: These brackets may come in the color red. Some conveyors may not have these brackets. Remove brackets if it is screwed onto the enclosure and save them for later.



5

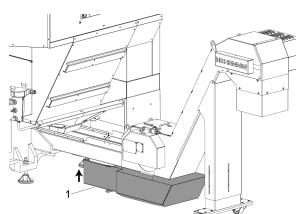
Use a big joe or a forklift, attach straps to the lifting hooks [1] and support the other end of the conveyor [2] to begin sliding the conveyor out half way.



6

Loosen the hex head bolts [1] that hold the casters in place.

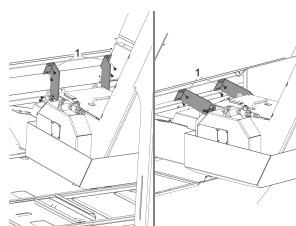
Loosen them enough so that the rollers touch the floor but can freely move up and down.



7

Remove extension panel and install the new extension panel [1] provided in the kit to the conveyor and slide conveyor back in towards the casting.

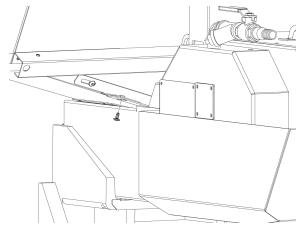
NOTE: The extension panel does not bolt to the conveyor, it is wedged between the casting and conveyor.



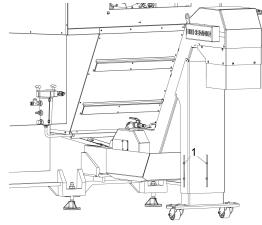
8

With the conveyor pushed back in, bolt the conveyor brackets [1] back onto the enclosure.

NOTE: These brackets may come in the color red. Some conveyors may not have these brackets installed. Only attach the brackets if they previously had them screwed onto the conveyor.

9

Bolt the extension panel of the conveyor to the adapter brackets as shown.

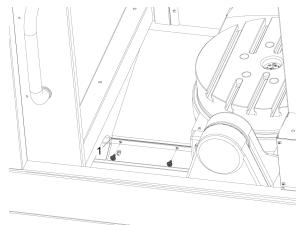
10

With the conveyor still supported by the lifting apparatus, tighten the hex head bolts [1]. Make sure the casters are touching the floor.

Verify the machine height for the coolant tank after the conveyor is completely installed.

NOTE: Releveling may be required after conveyor is completely installed if the machine leveling needed to be adjusted to install the CDF conveyor.

Remove the lifting apparatus after the bolts are tightened.

11

Re-install the gasket [1] after the conveyor is fully installed.

NOTE: It may be easier leaving the conveyor a few inches out to access the first couple screws to the gasket and then push the conveyor all the way in to install the remaining screws.

13

After completing the installation, remove the **[E-STOP]** and turn on the coolant and press **[CHIP FWD]** to run the Conveyor to check for any leaks.

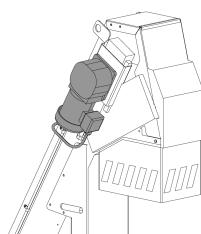
8.6 CHIP CONVEYOR - MOTOR REPLACEMENT

Chip Conveyor - Motor - Replacement

AD0345

Applies to machines built from: July, 1998

Introduction



This procedure tells you how to install and wire a replacement motor for a conveyor. When you receive the replacement motor, the cable for the motor will have one of these circumstances:

- The cable may match your existing electrical cable. In this circumstance, no modification is necessary.

- The cable may not match your existing electrical cable. In this circumstance, you have (2) options:
 - You can bypass the extension cable on the machine and connect the new motor cable directly to the I/O PCB.
 - You can take the cable off of the old motor and install it onto the new one. This procedure shows you how to make that modification.

Use P/N **93-1224B** for vertical mills and lathes with 200:1 and above gear ratios.

Use P/N **93-1224C** for vertical mills and lathes with Hennig or Keyarrow Chip Conveyors.

Use P/N **93-2381** for horizontal mills.

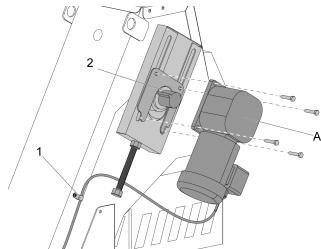
For CDF conveyor motor replacements refer to [AD0642 - CDF CHIP CONVEYOR - MOTOR REPLACEMENT](#).

Conveyor Motor Brand Differences



Note: Keyarrow Conveyors come with Michuen Motors [1] where the mount plate [2] is needed. If the motor being replaced is a Bison Motor [3] on a Keyarrow Conveyor, the mount plate is **NOT** needed [4]. Do not dispose mount plate.

Motor Replacement



- Remove the cable clamps [1].

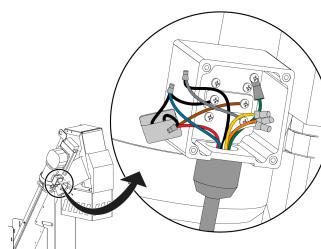
Remove the used motor.

Press the CHIPC MOTOR 1/8HP 235V 50/60HZ [A] onto the conveyor shaft. Align the slot in the motor shaft with the key [2] on the conveyor shaft.

Attach the motor to the conveyor head.

Install the cable clamps [1].

Connect the electrical cable.



- Do this step if you must modify the cable that came with the motor.

Cable Wire	Connect to:
Blue	Capacitor/motor black
Red	Capacitor/motor brown
Black	Motor gray
Green	Ground
Yellow	Cap off - no connection
Orange	Cap off - no connection
White	Cap off - no connection

Power on the machine.

Push **[CHIP FWD]**.

If the motor is wired correctly, the chip conveyor moves forward.

Push **[CHIP REV]**.

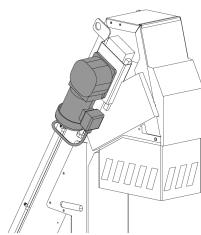
If the motor is wired correctly, the chip conveyor moves backward.

8.7 CDF CHIP CONVEYOR - MOTOR REPLACEMENT

CDF Chip Conveyor - Motor - Replacement

AD0642

Introduction



This procedure details how to install and wire a replacement motor for a CDF conveyor.

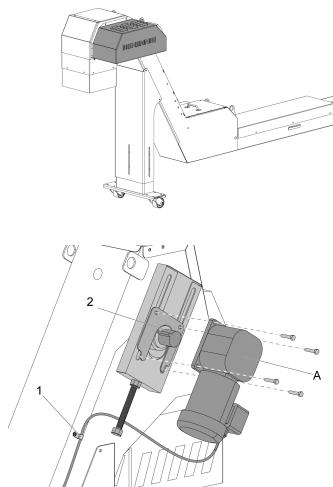
IMPORTANT: The images in this procedure may show a normal 1/8 HP conveyor motor but the steps will be the same for the CDF conveyor motor.

This procedure will apply to the following kits:

93-3360 CHIPC MOTOR 1/4 HP 240V
50/60HZ 240:1

For Standard conveyor motor replacements refer to [AD0345 - CHIP CONVEYOR - MOTOR - REPLACEMENT](#).

Motor Replacement

1

Remove the sheet metal enclosure housing the motor.

2

Remove the cable clamps [1].

Remove the used motor.

Press the 1/4HP CHIP CONVEYOR MOTOR CDF [A] onto the conveyor shaft. Align the slot in the motor shaft with the key [2] on the conveyor shaft.

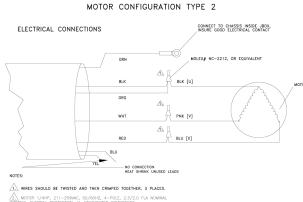
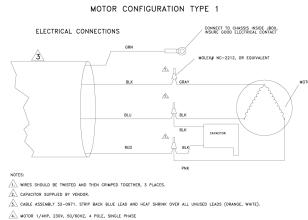
Attach the motor to the conveyor head.

Install the cable clamps [1].

Connect the electrical cable.

3

After completing the installation, run the conveyor by pressing [**CHIP FWD**] if the conveyor runs backwards please check the motor wiring and verify it is wired correctly. Use the wiring diagrams below for reference.



8.8 CHIP CONVEYOR SYSTEM - TROUBLESHOOTING

Conveyor System - Troubleshooting Guide

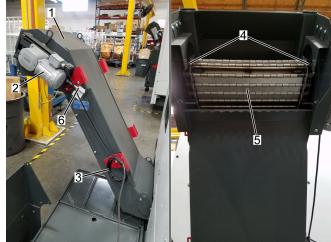
Note: Download and fill out the Chip Conveyor System Inspection Report Checklist below before replacing any parts.

CHIP CONVEYOR SYSTEM INSPECTION REPORT CHECKLIST

The following service video shows how to resolve common issues with the Haas conveyor system.

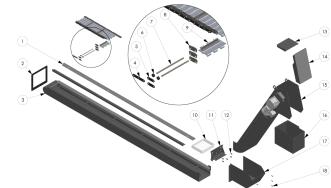
Note: This service video is for reference only and does not replace the written procedure.

Introduction



1. Conveyor
2. Drive Motor
3. Power Cord
4. Conveyor Drive Shaft /Sprockets
5. Belt
6. Belt Tensioning Screws

Exploded View



1. CONVEYOR TROUGH COVER
2. GASKET
3. CONVEYOR TROUGH
4. DOUBLE CHAIN LINK OUTER
5. SINGLE CHAIN LINK OUTER
6. CHAIN SPACER
7. BELT PIN
8. CHAIN LINK INNER
9. BELT PLATE
10. CONVEYOR TUNNEL INSERT
11. CONVEYOR BRACKET
12. HHB 5/16-18 X 1
13. CONVEYOR RAMP COVER TOP
14. CONVEYOR RAMP COVER SIDE
15. CONVEYOR RAMP
16. CONVEYOR CHUTE
17. CONVEYOR TROUGH EXTENSION
18. BHCS 5/16-18 X 1 SS

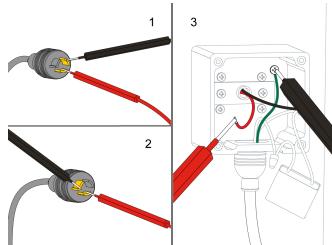
Symptom Table

NOTE: TO RECEIVE THE CORRECT TECHNICAL SUPPORT ON YOUR CONVEYOR, IT IS REQUIRED TO TAKE A CLEARLY VISABLE PHOTO OF THE CONVEYOR NAME PLATE AND THE MOTOR SEPCIFICATION PLATE.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
The conveyor does not start.	The circuit breaker is tripped.	Check for a short circuit in the motor or the cable. Refer to the Motor Cable Inspection section.
	No power from I/O PCB to the motor.	Verify voltage at I/O PCB and the motor.
	Blown fuses (I/O-version R and earlier).	Check the fuses on the I/O PCB.
	The conveyor motor capacitor is defective.	Inspect motor capacitor for damage.
For CDF Conveyor Only: The 230V system does not turn ON and the red LED on the motor drive PCB is OFF.	The jumper on the motor drive PCB is incorrectly located or defective.	Make sure that the motor drive PCB has a jumper installed on P3 inbetween pin 1 and 2 (the bottom two pins).
	There is no 12V input power.	Make sure that the 12V input power is connected to P2 on the motor drive PCB.
Conveyor is noisy or oscillates between forward and reverse.	There is a build up of chips.	Clear excessive chips and any obstructions.
	The conveyor belt is damaged.	Inspect conveyor belt and repair or replace.
	The conveyor belt tension is incorrect.	Adjust the belt tension.
The auger is noisy or oscillates between forward and reverse. Then Alarm 9906 CHIP CONVEYOR MALFUNCTION is generated.	There is an excessive chip build-up or an obstruction.	Clear all chips and obstructions from the auger trough and chip chute.
There is no chip build-up or obstruction and machine generates Alarm 9906 CHIP CONVEYOR MALFUNCTION	The auger motor is bound up.	The machine is detecting an overcurrent condition. Check the discrete input CHIP_CONVEYOR_OVERCURRENT cycles from 0 - 1 or 1 - 0 (0 means overload condition). Check the motor for burnout or binding.
		Run the Chip Conveyor Overcurrent Data Collection, refer to the Diagnostic Data Collection procedure for how to run the data collection.
Chip Auger, Conveyor, may start without operator action, even with doors open.	Machine has software 100.17.000.1016	Update software to 100.17.000.2030 or greater. This problem has been corrected such that the conveyor never restarts automatically. With a Classic Haas Control, the operator can restart the conveyor with the door open. NGC machines that have been updated after October 10th, 2018 will have strict door rules that makes this impossible.
M31 is restarting conveyor timers if the conveyor is already on.	Machine has software prior to 100.17.000.2030 and the conveyor cycle keeps restarting every time a M31 is encountered.	Update software to 100.17.000.2030 or greater. In the new software if a conveyor cycle is already running but in the off state, a M31 will NOT restart the conveyor. The conveyor will follow the cycle it is currently in.
Alarm 9819 CHIP CONVEYOR SHORT CIRCUIT	The auger motor start capacitor is at fault.	Inspect the auger motor start capacitor for damage.

Alarm 9848 CHIP CONVEYOR MOTOR DISCONNECTED	There is no power from the I/O PCB to the motor.	Verify the voltage at the I/O PCB and at the motor.
CDF Conveyor runs backwards when commanded to run forward	Motor wiring is incorrect.	Verify the motor wiring, use the wiring diagrams in the CDF Motor Wiring Section for reference.

Motor Cable Inspection



Corrective Action:

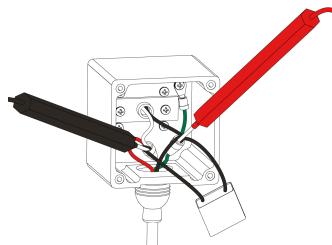
Inspect the motor cable for any sign of damage. Check for burn marks at the plug. This could be caused by coolant contamination.

Measure the Ohms across the motor power cable leads [1] at the plug. There should be resistance leg to leg. An open reading suggests a bad motor or cable.

Measure the Ohms on the motor power cable from each power leg to the ground leg [2] of the plug. This reading should be open.

If cable shows a short leg to ground at the plug, disconnect the power cable at the motor and check each motor power lead to the motor chassis [3]. If reading is open, the cable is at fault. If any lead tests short, the motor is shorted.

Voltage



Corrective Action:

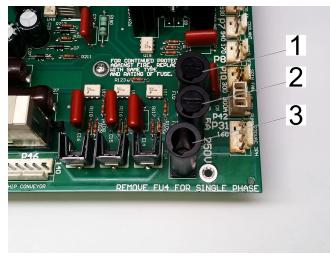
Find the chip conveyor motor cable 140 at the I/O PCB. Press **[CHIP FWD]**. Use a multimeter with needle tip probes to measure the voltage between the black and red wires on the cable.

Have someone press and hold **[CHIP REV]**. Measure the voltage between the black and white wires. When the I/O PCB operates correctly, each voltage reading is 240 VAC.

If the voltage at the I/O PCB is correct, open the conveyor motor junction box. Use a multimeter with needle tip probes to check for voltage on the power leads at the motor.

If there is no voltage, check the motor and the cable. If there is voltage, check the capacitor. If you verify the voltage and capacitor are correct, inspect the motor drive shaft and keyway.

Fuses

**Corrective Action:**

Check these fuses at the bottom right corner of the I/O PCB (Fuse type: AGC 5 amp):

- Single phase motors: FU2 [1] /FU3 [2]. There should be no fuse in FU4 [3].
- 3 phase motors: FU2 [1] /FU3 [2] /FU4 [3]

A short in the motor or the cable could have blown the fuse

Capacitor

**Corrective Action:**

Inspect the conveyor motor capacitor for damage. A damaged capacitor will usually have signs of deformation or bubbling on the capacitor casing. This could be caused by a short in the motor or in the cable.

Open the motor junction box. Check the capacitor. Look for burn marks on the case.

Measure the capacitor. Most multimeters can measure capacitance upon manual activation (turn to the correct units of measurement, and push the yellow button). It should be 6 or 9 microfarad as noted on the capacitor's case.

Chips

Corrective Action:

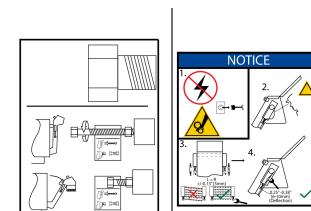
Clear chips and obstructions. Make sure the conveyor settings are optimized for the chips that are produced.

Belt Inspection

**Corrective Action:**

Inspect the conveyor belt for damage.

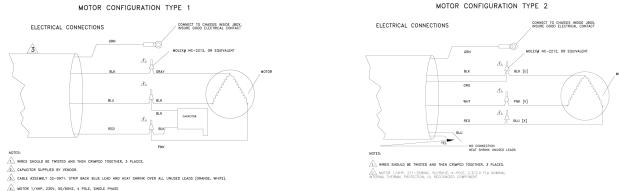
Belt Tension

**Corrective Action:**

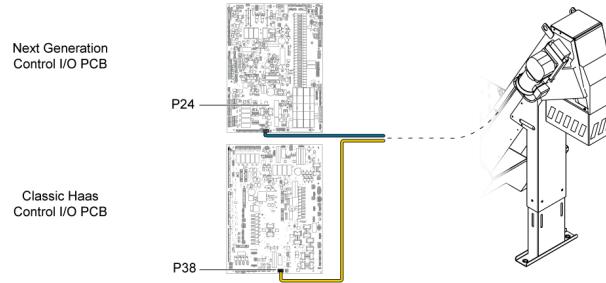
Make sure the belt tension is correct. Refer to the decals on the side of the machine. The correct belt slack for Jorgensen conveyors is 0.25" - 0.38" (6 - 10 mm). The correct belt slack for Hennig conveyors is 0.12" - 0.25" (3 - 6 mm).

CDF Motor Wiring

Run the conveyor by pressing [**CHIP FWD**] if the conveyor runs backwards please check the motor wiring and verify it is wired correctly. Use the wiring diagrams below for reference.



Electrical Diagram



Hennig CDF Conveyor Diagram

