

DYNATM * PRO

Assembly & Operating Manual



5980 Grand Haven Road
Norton Shores, MI USA 49441
www.dynamicconveyor.com

main: 231.798.1483
fax: 231.798.9583

Table of Contents

IMPORTANT INFORMATION	3
WARRANTY.....	3
LIMIT OF LIABILITY	3
FOR YOUR RECORDS	3
ASSEMBLY	5
Tools & Resources	5
Step 1 – Attach Legs to Conveyor Frame	5
Step 2 – Check all Fasteners for Tightness.....	5
Step 3 – Stand the Conveyor.....	5
Step 4 – Motor Driver	5
Optional Accessories.....	6
Friction Top Belting	6
Caster Kit	6
Retaining Wall Kits	7
Feed End Retaining Kit	8
I/O Cable for Machine Integration.....	8
OPERATION	8
Operating with Machine Integration	10
MAINTENANCE.....	13
Routine Inspection	13
Belt Removal	13
Belt Installation	14

IMPORTANT INFORMATION

The information contained in this manual is provided only as an aid and service to our customers. Dynamic Conveyor Corporation does not warrant the accuracy or applicability of such information and is not specifically responsible for property damage and/or personal injury inflicted directly or indirectly, or for damages and/or failures caused by improper application, installation, operation, abuse and/or misuse of its products whether or not based on information contained herein.

WARRANTY

Dynamic Conveyor Corporation warrants products of its own manufacture for a period of five (5) years. Dynamic Conveyor Corporation will repair or replace any products that have failed under normal use due to faulty material or defective workmanship. Components, products and conveyors not manufactured by Dynamic Conveyor will be covered by the manufacturer's warranty. No other warranty is expressed or implied unless otherwise set forth in writing and approved by representative duly authorized to extend such approval by Dynamic Conveyor Corporation.

Any Dynamic Conveyor Corporation equipment/systems that are physically altered without direct authorization from Dynamic Conveyor Corporation shall be termed "Product altered without authorization: no warranty or liability applies to that altered equipment/system".

LIMIT OF LIABILITY

In no event shall Dynamic Conveyor Corporation be liable for any special, indirect, incidental, or consequential damages of any character, including but not limited to loss of production facilities or equipment, lost profits, property damage, lost production, or any consequential downtime, whether suffered by distributor or third party, irrespective of whether claims or actions for such damages are based upon contract, warranty, tort (including negligence), strict liability, or otherwise.

FOR YOUR RECORDS

Thank you for your investment in a DynaPro Conveyor. We are confident this product will become a vital step in automating your process and provide long term value through its durability and reliability.

Please take the time to complete the following information as thoroughly as possible. It will prove helpful when you contact customer service in the event you have any questions about assembly, installation, or operation.

Date of Shipment: _____

Serial Number: _____

Model Number: _____

DYNAMIC CONVEYOR CORPORATION
5980 Grand Haven Road
Norton Shores, Michigan 49441

Customer Service

231.798.1483 x106

Service@DynamicConveyor.com

SUPPORT

Find additional support on our website at
DynamicConveyor.Com



DYNAPRO CONVEYOR OVERVIEW

The DynaPro Conveyor line was introduced by Dynamic Conveyor to meet the industry need for a durable, low profile slider bed conveyor capable of being used across various industries and applications. DynaPro Conveyors utilize brushless DC motors offering significant energy cost savings relative to similar conveyors.

DynaPro Conveyors feature modular link style belting which allows for a tensionless belting system ensuring that there are never tracking issues on the belt. In addition, modular link style belting offers considerably improved durability relative to fabric belted conveyors. Further, in the event of belting damage, single links may be replaced rather than requiring the entire belt to be replaced.

As standard features, the DynaPro line includes a variable speed motor driver, reversing capability, nose bar design on the feed end for tight transfers, and a standard I/O connector for seamless machine integration.

Dynamic Conveyor offers DynaPro in standard lengths and widths as shown below. If a more custom solution is required, contact us at Sales@DynamicConveyor.com

DynaPro Conveyor Sizing & P/Ns					
	3'	4'	6'	8'	10'
12"	PRO1236	PRO1248	PRO1272	PRO1296	PRO12120
18"	PRO1836	PRO1848	PRO1872	PRO1896	PRO18120
24"	PRO2436	PRO2448	PRO2472	PRO2496	PRO24120
30"	PRO3036	PRO3048	PRO3072	PRO3096	PRO30120

Note: DynaPro Conveyors with rubber top belting utilize the same part number with an "F" suffix. I.e.. PRO1236F

Optional Accessories can be added to the DynaPro Conveyor with ease. Accessories can be ordered with the conveyor, or later as add-ons. Accessories include:

Retaining Walls				
	2" Tall	4" Tall	6" Tall	8" Tall
3' Long Price	DPR236	DPR436	DPR636	DPR836
4' Long Price	DPR248	DPR448	DPR648	DPR848
6" Long Price	DPR272	DPR472	DPR672	DPR872
8' Long Price	DPR296	DPR496	DPR696	DPR896
10' Long Price	DPR2120	DPR4120	DPR6120	DPR8120

Feed End Retaining Kit				
	12" Wide	18" Wide	24" Wide	30" Wide
4" Tall	DPFS412	DPFS418	DPFS424	DPFS430
6" Tall	DPFS612	DPFS618	DPFS624	DPFS630
8" Tall	DPFS812	DPFS818	DPFS824	DPFS830

Options	Kit / PN
Caster Kit	DPA1000
5M M12 Cable	ELA3259
10M M12 Cable	ELA3351
15M M12 Cable	ELA3442
25' Power Cable	ELA3081

To order additional DynaPro Conveyors, or any optional accessories, contact Customer Service at Service@DynamicConveyor.Com or call (231) 798-1483 x106.

For additional information on Dynamic Conveyor Corporation, including additional product lines and capabilities, visit us at www.DynamicConveyor.Com

ASSEMBLY

Tools & Resources

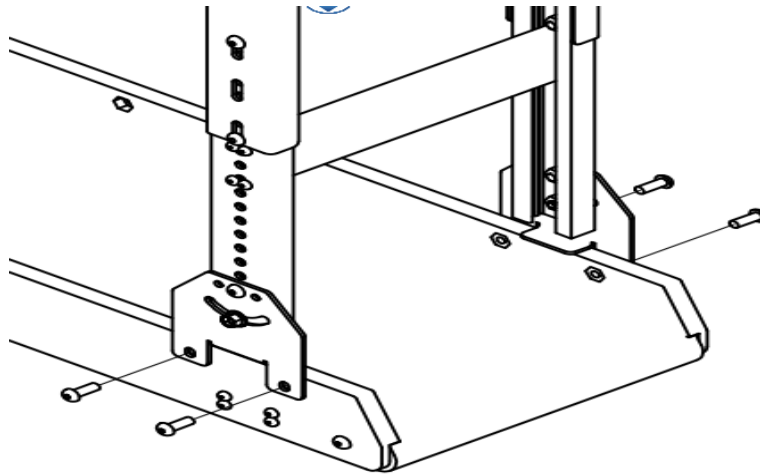
DynaPro conveyors are shipped fully assembled except for the leg supports. For final assembly of the DynaPro Conveyor, you will need the following:

- 7/32" Allen Wrench
- #3 Phillips Dead Screw Driver Bit

A minimum of two personnel are required for assembly.

Step 1 – Attach Legs to Conveyor Frame

Next, flip the conveyor upside down, on a flat surface. Attach the first leg set to the conveyor frame utilizing the two screws provided for each side of the conveyor. Repeat for the second leg set.



Step 2 – Check all Fasteners for Tightness

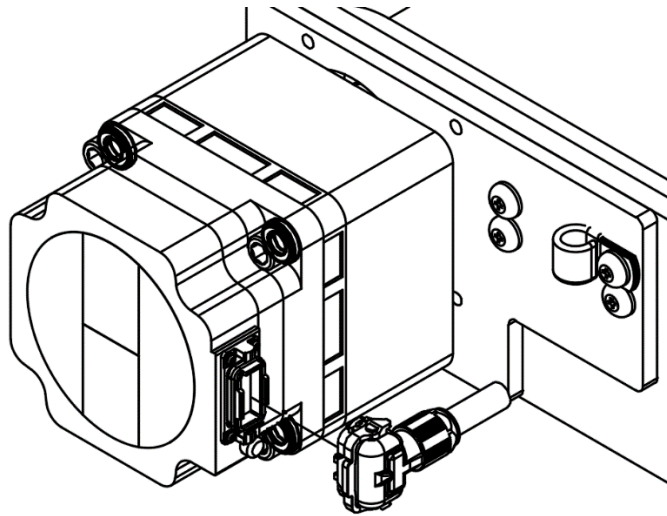
Verify that all leg support fasteners are secured.

Step 3 – Stand the Conveyor

With two people, lift the conveyor and rotate to right side up, now sitting on the two leg sets.

Step 4 – Motor Driver

Connect the motor driver to the motor as shown in the following diagram. The driver power cord can be plugged into a standard 120v receptacle.



Optional Accessories

DynaPro Conveyors are offered with the following additional accessories that can be ordered with your conveyor, or as an add on at a later date:

- Friction Top Belting
- Caster Kit
- 5m, 10m, or 15m I/O cable for machine integration
- 2", 4", 6" or 8" Feed End Retaining Wall Kit

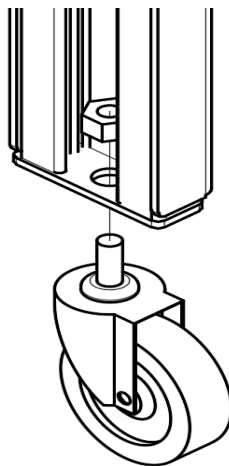
Friction Top Belting

DynaPro Conveyors ordered with friction top belting require no additional assembly by the customer. The friction top belting is installed by Dynamic Conveyor Corporation before shipping. If a friction top belt is added after the original purchase, reference the maintenance section of this manual for instructions on how to properly remove and replace the belt.

Caster Kit

DynaPro Conveyors ship with the standard leveling footpads. If the optional caster kit is ordered, the casters can be quickly assembled by the Customer. Each Caster is secured by a single 3/8 nut. A 1 1/4" box end wrench and an 11/16" box end wrench is required for installation of the caster.

Start by removing each of the leveling footpads. The casters can then be installed through the same hole and secured as per the below diagram.

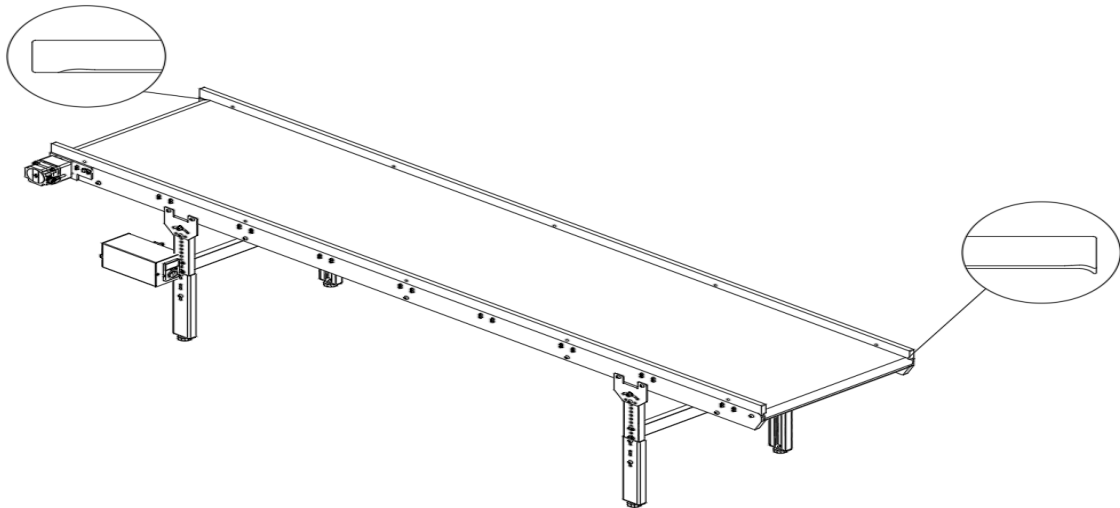


Retaining Wall Kits

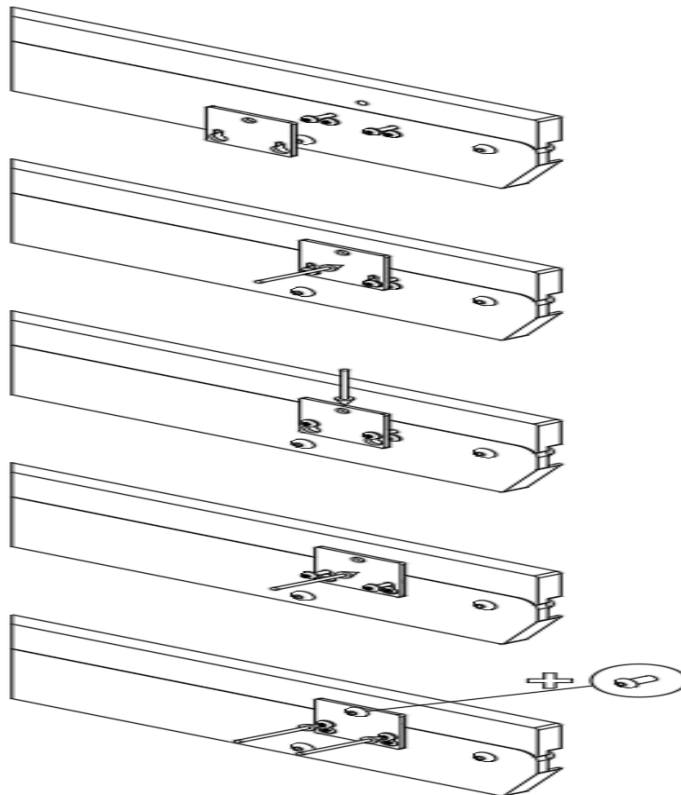
DynaPro Conveyors come standard with the belt $\frac{1}{8}$ " above the side wall allowing for easy product transfer, as well as conveyance of larger products, boxes, totes, etc. Sidewall and feed end retaining kits are available for conveyance of small parts, or when parts may be fed onto the conveyor and require containment.

Retaining wall kits mount to the existing conveyor frame utilizing the brackets and fasteners supplied.

1. Start by aligning each retaining wall with the conveyor frame to identify locations for the mounting brackets. Reference the picture below.



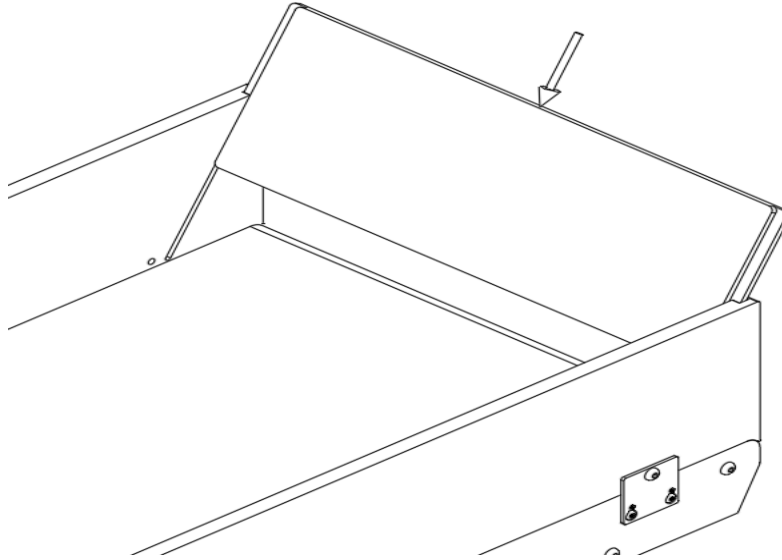
2. Once mounting locations have been identified, back out the top two screws in the conveyor sidewall $\frac{1}{2}$ " in each of the mounting locations. The retaining wall brackets can now be mounted in each of these locations as shown below and the screws tightened back into the conveyor sidewall.



Feed End Retaining Kit

For 4", 6" and 8" retaining wall kits, a feed end retaining shield is available and can be installed into the retaining walls as shown.

Note: The feed end shield is not required for operation of the conveyor with the sidewalls and is provided as an option only to provide additional parts containment.



I/O Cable for Machine Integration

All DynaPro Conveyors are shipped with a standard I/O connector to allow for seamless machine integration to equipment such as robots, molding machines, etc. Connection of the I/O cable (Purchased separately) to the DynaPro driver simply requires screwing the connector into the port on the backside of the motor driver enclosure box.

All DynaPro Conveyors are shipped with the motor driver programmed to run off the front control panel. If control from integrated machinery is desired, reference the **Operation** section of this manual to change the driver programming.

Reference OEM manual for making wiring terminations on equipment being integrated with the DynaPro Conveyor.

OPERATION

DynaPro Conveyors are designed to operate continuously in a forward direction, i.e., product is conveyed toward and discharged off the motorized end (Drive Module), with capability for reversing as needed.

DynaPro Conveyors are fitted with a DC Motor Driver which provides the user interface for conveyor control including, on / off, variable speed adjustment and forward / reversing. The motors operate off a standard 120v three prong receptable outlet.

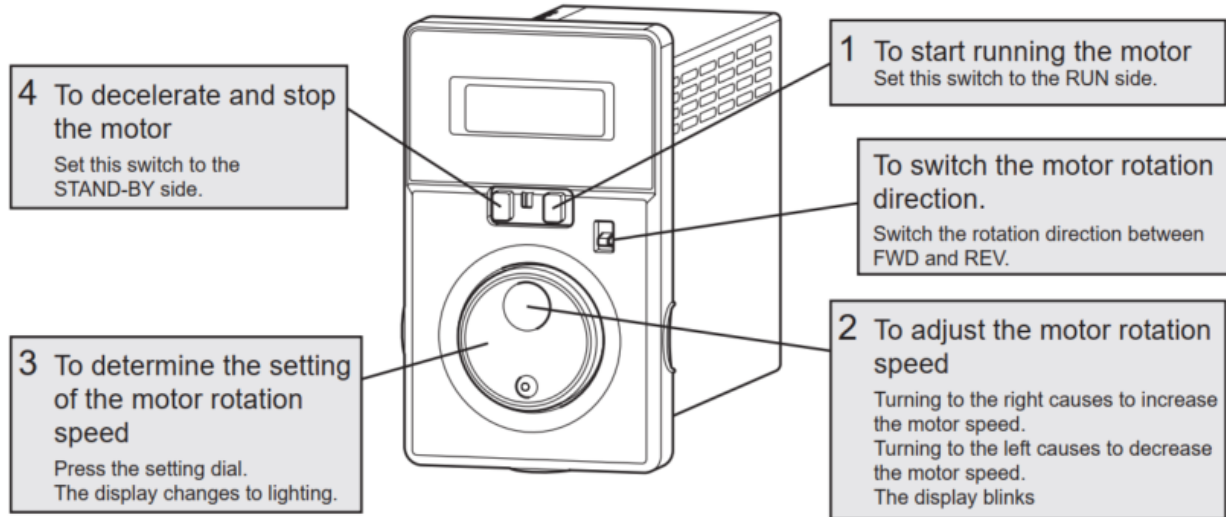
Before operating your DynaPro Conveyor, the following pre-operation checks should be made including but not limited to:

- Ensure the infeed and outfeed area of the conveyor are clear of obstacles
- Ensure there are no foreign objects on the belt including heavy dust, abrasives, or liquids
- Ensure the conveyor is properly assembled as per this Assembly & Operation Manual and all fasteners are secure.

- Ensure personnel in the immediate area are notified before starting.
- Ensure the belting is not contacting any structure or other machinery on both the feed and drive ends.

Once these have been verified, and any Customer required safety checks are carried out, you are now ready to plug in power and operate your DynaPro Conveyor. The below diagram provides an overview of the motor driver controls and functionality.

After turning on the power, operate the product as follows.



■ Running the motor

Setting the operation switch to the RUN side and turning the setting dial to the right causes the motor to start rotating.

■ Adjusting the speed

When turning the setting dial to the right slowly, the rotation speed accelerates by 1 r/min increments. When turning the setting dial to the left slowly, the rotation speed decelerates by 1 r/min increments.

When turning the setting dial quickly, the amount of the rotation speed change increases.

■ Determining the speed

• Set

When pressing the setting dial, the rotation speed is determined.

When the display is blinking, the rotation speed has not set yet. Determine it by pressing the setting dial.

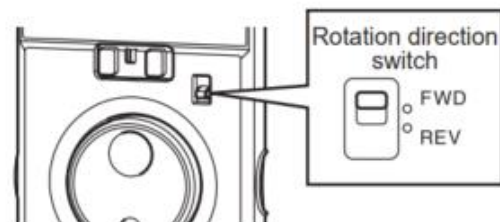
■ Stopping the motor

Setting the operation switch to the STAND-BY side causes the motor to decelerate to a stop.

Setting the operation switch again to the RUN side causes the motor to start rotating at the set rotation speed.

■ Changing the rotation direction

Change the rotation direction of the motor (gearhead) using the rotation direction switch. The rotation direction can be changed while operating.

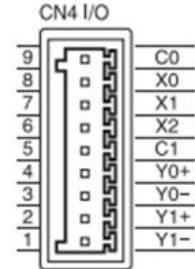


Operating with Machine Integration

The DC Motor Driver has the option of being controlled remotely using the photocoupler inputs on the back of the motor driver. Input signals are powered via (5 VDC) internal power supply or (24 VDC) external power supply. When using the external power supply, both sink and source input logic can be used. Usable external power supply: 24 VDC -15% to +20%, 100 mA or more.

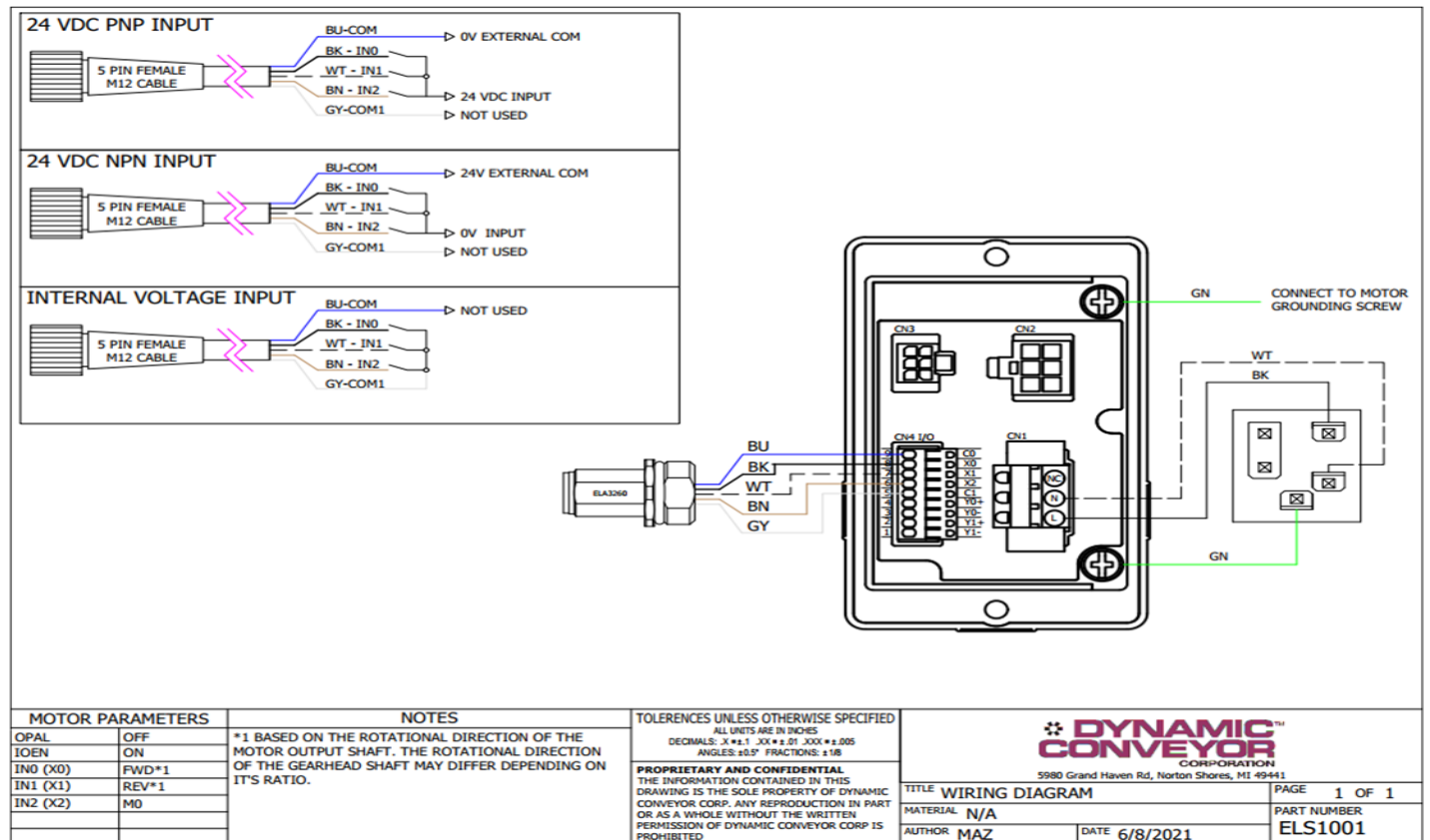
Signal Functions

Pin No.	Terminal	Function *	Description
9	C0	IN-COM0	Input signal common (For external power supply)
8	X0	[FWD]	The motor rotates in the forward direction while this signal is being "ON."
7	X1	[REV]	The motor rotates in the reverse direction while this signal is being "ON."
6	X2	[M0]	This signal is used to select the operation data.
5	C1	IN-COM1	Input signal common (For internal power supply: 0 V)
4	Y0+	[SPEED-OUT]	30 pulses are output with each revolution of the motor output shaft.
3	Y0-		
2	Y1+	[ALARM-OUT1]	This signal turns OFF when an alarm generates (normally closed).
1	Y1-		



Wiring Input Signals

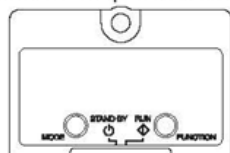
Inputs are wired using a standard 5 pin M12 female cord set, using the below wiring diagram as reference.



Setting The "External Operation Signal Input" Parameter

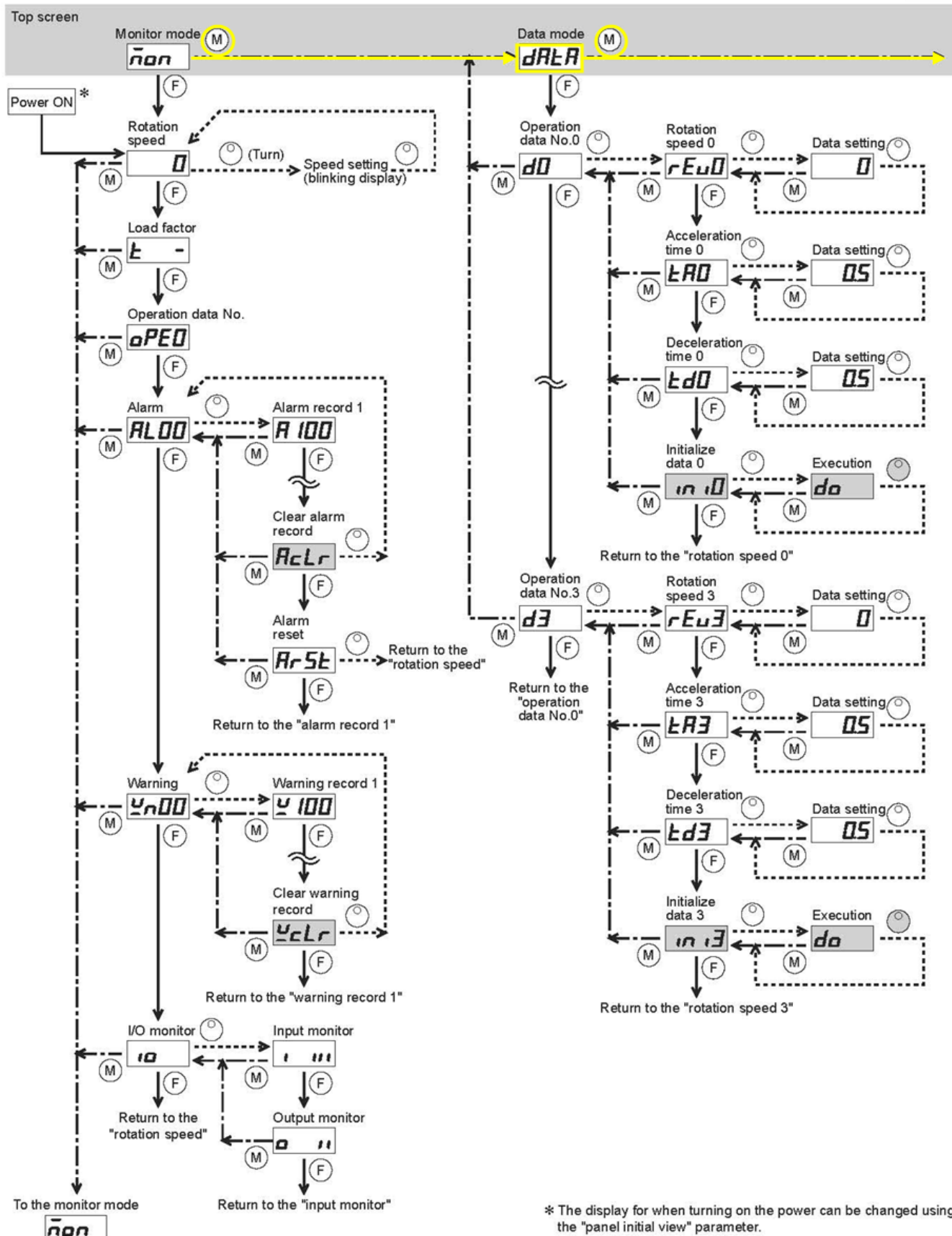
Operating via remote input requires switching the external operation signal Input (IOEN) parameter to "on", and the OPAL parameter to "off", using the below diagram as reference.

When the front panel is removed ■ How to use screen transitions

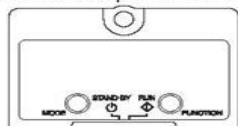


- : Press the setting dial.
The value changes with turning the setting dial.
- (M) : MODE key
- (F) : FUNCTION key

- : It cannot be performed while operating. "Err" was displayed.
- : If operations are limited by the lock function, the screen in gray is not shown.

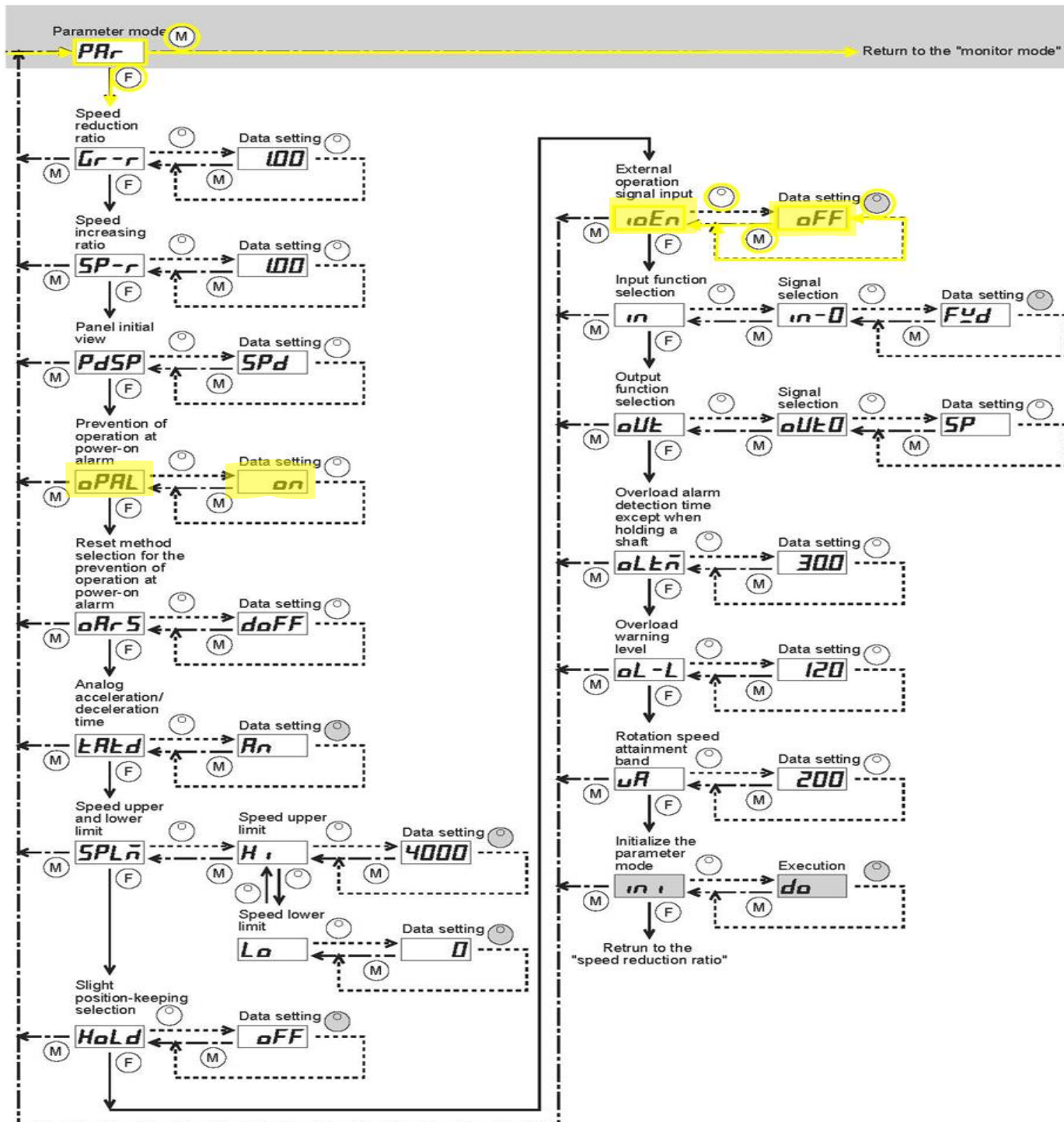


When the front panel is removed ■ How to use screen transitions



- : Press the setting dial. The value changes with turning the setting dial.
- (M) : MODE key
- (F) : FUNCTION key

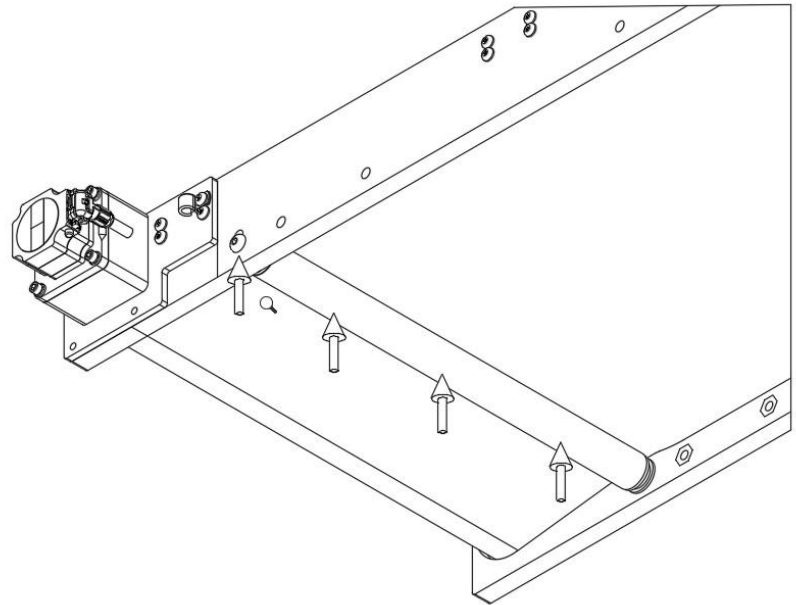
- : It cannot be performed while operating. "Err" was displayed.
- : If operations are limited by the lock function, the screen in gray is not shown.



MAINTENANCE

DynaPro Conveyors are designed to be maintenance free. However, we recommend periodically inspecting the frame, motor, and belt paths for wear.

DynaPro conveyors have an initial wear in period of approximately 200hrs. During this time, it is normal for the belt to stretch up to 3% and adjustments to the underside belt tensioner may be necessary to keep proper sprocket engagement. Indications that adjustments to the belt tensioner are required include the belt chugging or if experiencing skipping over the sprockets. In the event that the belt tensioner does not adequately take up the increased belt length, removing a couple of links in the belt may be required. See below “Belt Removal” instructions.



Belt Tensioner

Routine Inspection

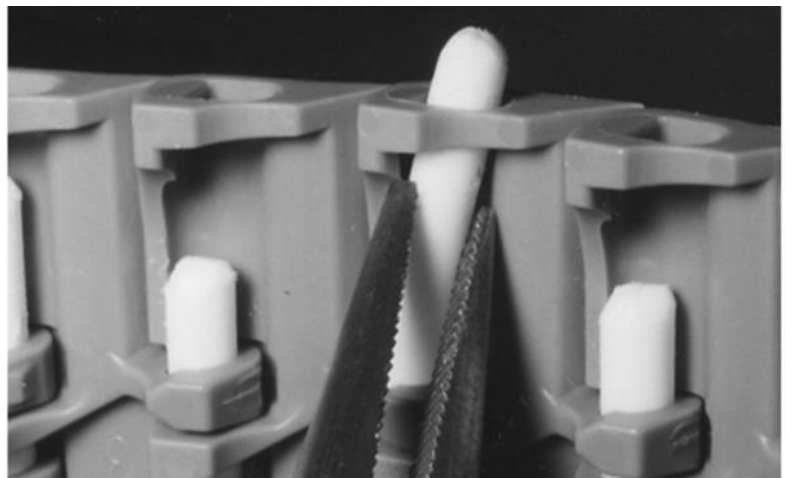
The belt and belt paths should be visually inspected on a periodic basis to ensure that there is not accumulation of dust, debris, abrasives, liquids, oils, or any other foreign debris on the belt and belt path which can lead to premature wear of the belt and belt paths. If this is found, it should be removed with an air blow down or wiped off with a clean damp cloth.

When operating in dirty or greasy environments, a more frequent inspection along with periodic cleaning of the belt, belt paths, and belt supports is recommended. In some cases, this will require removal of the belt which can be done with ease by following the below instructions.

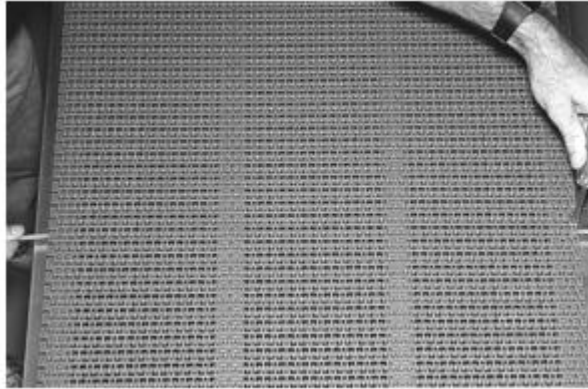
Belt Removal

Step 1 – Insert a flathead screwdriver between the two flush edges

Step 2 – Twist the screwdriver to bend and push the rod through the retention feature and out of the belt.



Step 3 – Use a screwdriver and / or pair of pliers to push the rod out from the opposite side of the belt. Once the head of the rod is exposed, it may be easiest to pull the remaining section of the rod out with a pair of pliers.



Belt Installation

To reinstall the belt, the belt is placed onto the conveyor through the belt path, and the lacing rod is replaced into the links in the opposite direction it was removed. The lacing rod should be pushed into place with a screwdriver to ensure it is properly seated in its retainer.



5980 Grand Haven Road
Norton Shores, MI USA 49441
www.dynamicconveyor.com

main: 231.798.1483
fax: 231.798.9583