



# CONVEYOR COMPONENTS COMPANY

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## MODEL VA & VA-X: BUCKET ELEVATOR CONTROL INSTALLATION INSTRUCTIONS

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## I. Application

The *Belt Alignment Control* is designed to protect elevator legs from the severe damage that results from misalignment of vertical conveyor belts. When used in pairs, these explosion proof switches can be wired to give signals such as turning on a warning device and/or can be connected directly into the starter motor circuit to stop the conveyor unit.

## II. How it Operates

The *Belt Alignment Control's* main components are a conveyor roller with sealed bearings, a four bar linkage, and the explosion proof Micro Switch. The switch has double pole/double throw circuitry. The four bar linkage connects the roller's pivot shaft to the switch actuator. The roller is held into position by roll pins and set screws.

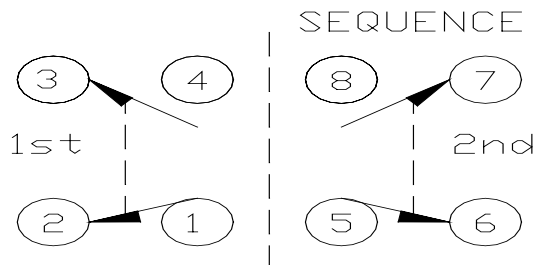
When the roller is displaced 15°, the first pole of the switch is triggered. This pole can be wired to sound a warning alarm, light an indicator light, or stop the conveyor. The second pole is triggered after the roller is displaced an additional 10°. This pole could also be wired to stop the conveyor motor. **Figure2: Allowable Roller Travel** shows a range of roller orientations and the allowable travel for each stage.

## III. Specifications

Electrical Output: Explosion Proof Micro Switch

- Meets NEMA Standards: 1, 3, 4, 6, 7, 9, and 13
- Class I, Div. 1, Groups B, C, and D
- Class II, Div. 1, Groups E, F, and G
- UL Listed and CSA Certified
- Double Pole/ Double Throw
- 10 Amp - 120, 240, 480 VAC
- 0.8 Amp - 120 VDC
- 0.4 Amp - 240 VDC
- Conduit Connection: 3/4 inch NPT

Wiring Schematic:



Sequential. Pole 1 Operates before Pole 2

## IV. Installation

The *Belt Alignment Controls* should be mounted in a location that allows them to be directly across from each other. This will give the most accurate alignment reading. See **Figure 4: Installation** for an illustration.

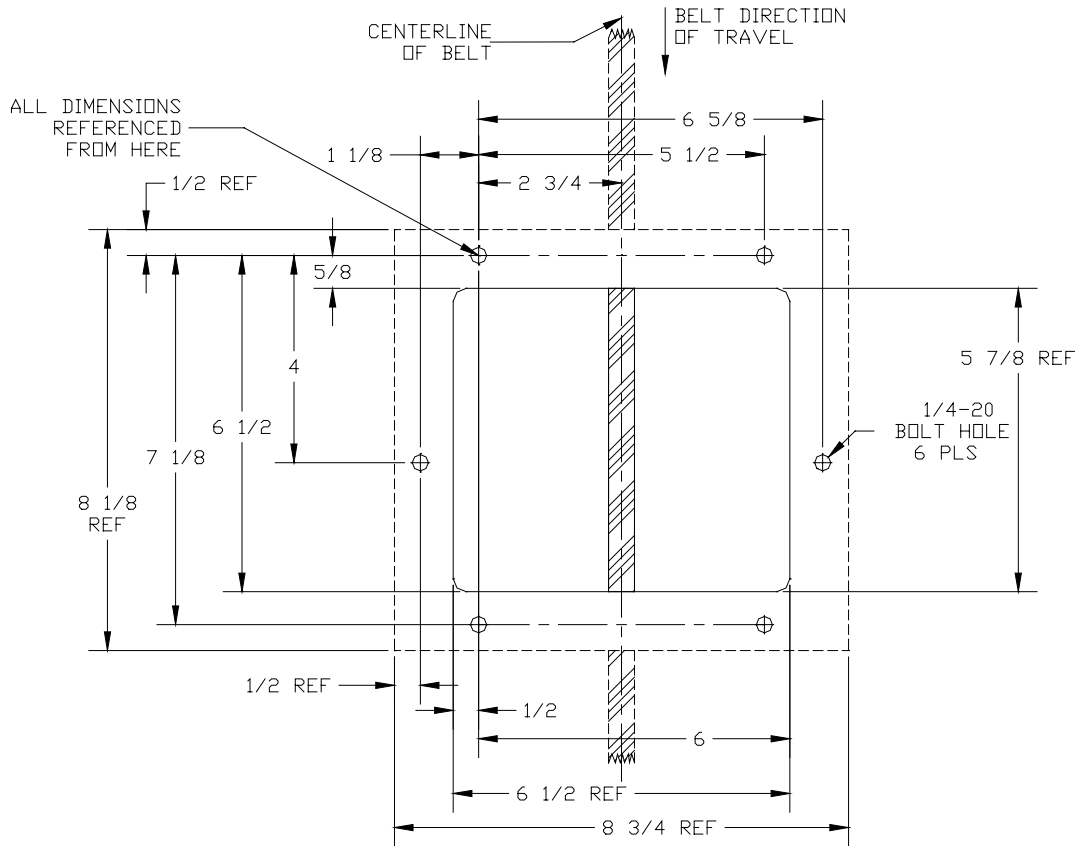
Preparing the Chute:

- 1.** The Vertical Bucket Elevator Control is mounted directly onto the chute.
- 2.** Locate the Centerline of the Conveyor belt on the Return Side of the Conveyor System. Project this point onto the chute walls.
- 3.** Using the projected Centerline and **Figure 1: Mounting Dimensions**, mark off all hole locations.

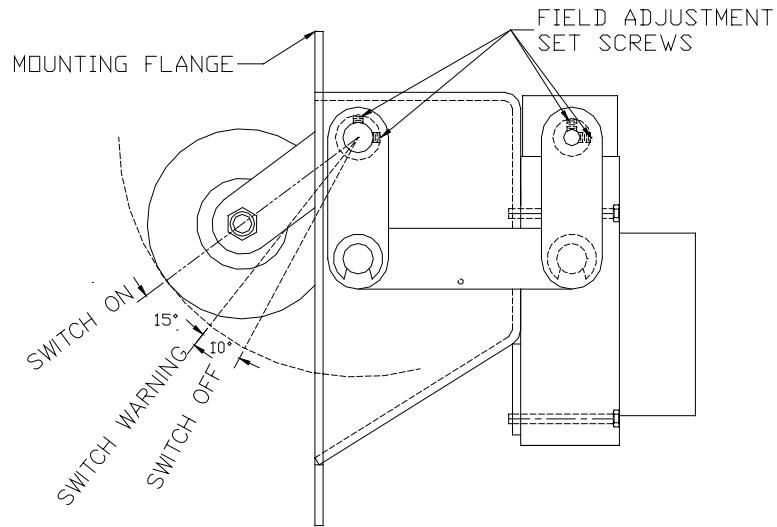
Mounting the Unit:

- 1.** Measure Distance between Chute and Conveyor Belt Edge.
- 2.** Adjust Conveyor Roller to rest about 1/4 - 1/2 inch from Conveyor Belt Edge.
- 3.** With the Housing Gasket in place, line up the switch's holes with the holes on the chute.
- 4.** Place the 1/4-20 bolts through the holes and tighten with wrench.
- 5.** Wire according to Schematic on previous page.

**Figure 1: Mounting Dimensions**

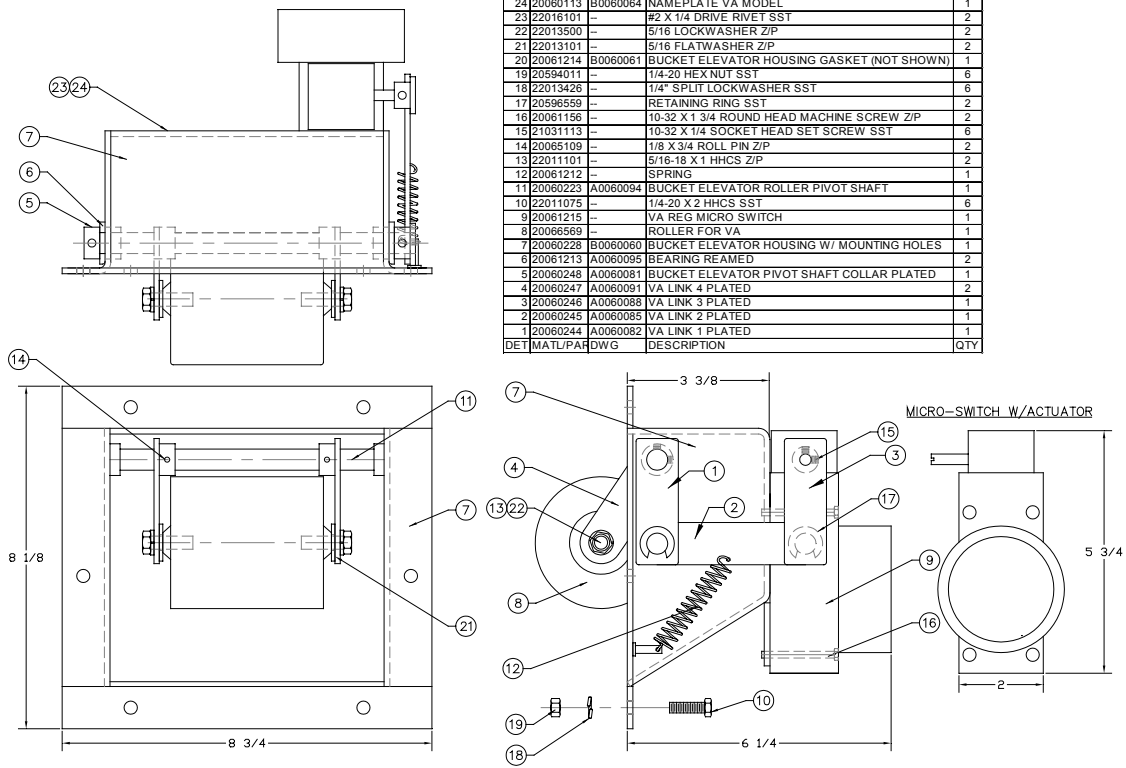


**Figure 2: Allowable Roller Travel**



ANGLE FROM ROLLER ARM TO MOUNTING FLANGE	"ON" DISTANCE FROM FLANGE TO BELT CONTACT	TRAVEL DISTANCE FROM BELT CONTACT TO "WARNING"	TRAVEL DISTANCE FROM BELT CONTACT TO SWITCH "OFF"
80	3 3/16	3/16	3/8
70	3 1/16	1/4	9/16
60	2 15/16	5/16	3/4
50	2 11/16	1/2	13/16
40	2 3/8	9/16	15/16
30	2 1/16	5/8	1
20	1 11/16	5/8	1
10	1 1/4	5/8	1

**Figure 3: Assembly**



**Figure 4: Installation**

