

# Adjustable Feed Hopper Level Switch

720097

Quick Sheet

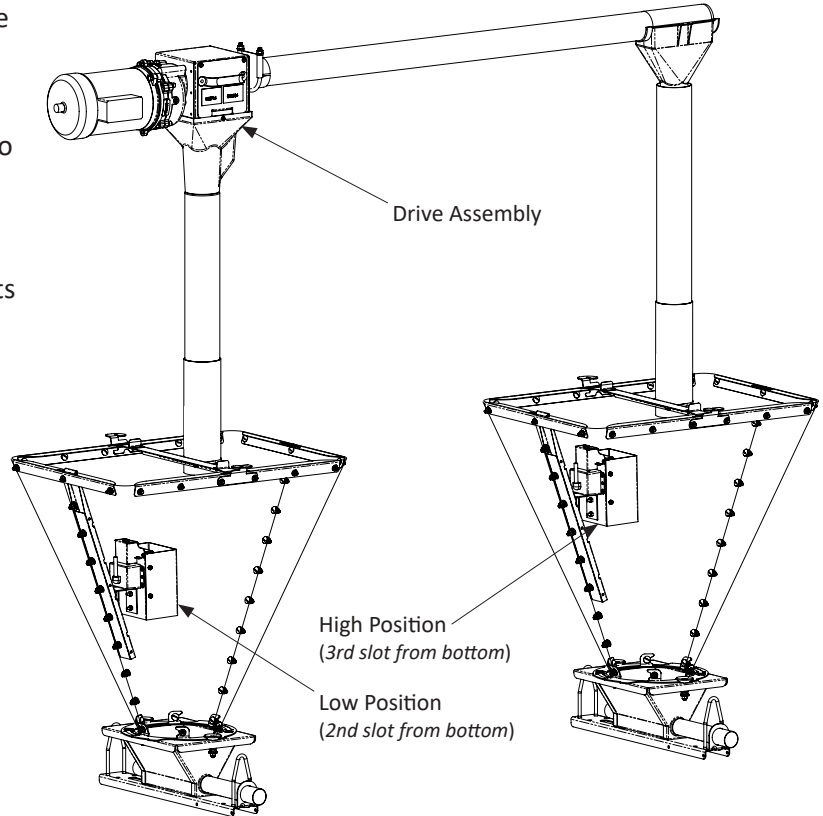
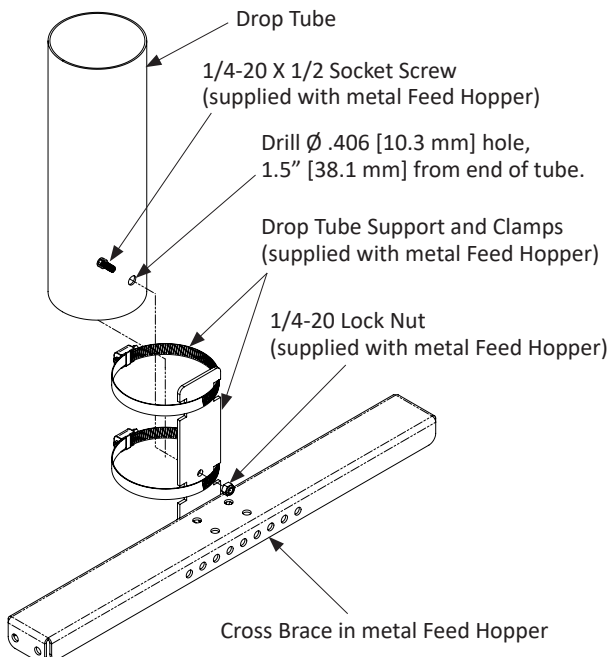
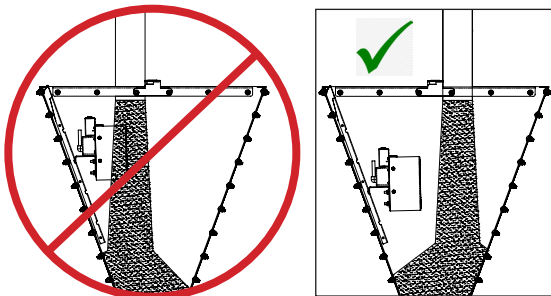


**Check switch function with feed after install. The switch must be vertical. Slightly bend the mounting bracket, if necessary, to get the switch in a vertical position.**

## Introduction

If using multiple hopper level switches, place the switch closest to the drive assembly in the low position. This will reduce the risk of feed filling up the drop tube and shutting off the discharge head safety switch before the hoppers nearest to the feed bin have a chance to fill.

Make sure to place drop tube so feed from drop tube does not directly hit hopper level switch. Feed should fall into switch as the pile reaches its full position.



## Drop Tube Installation

For poly hoppers: Use an s-hook, hose clamps, or customer supplied hardware to mount drop tube.

To mount drop tube to metal hoppers: Drill a  $\varnothing$  .406" [10.3 mm] hole through one side of the tube 1.5" [38.1 mm] from the end. Place the  $\varnothing$  .406" [10.3 mm] diameter hole over the 1/4-18 x 1/2" socket screw on the drop tube support supplied with the hopper. Clamp in place using hose clamps also supplied with hopper. When installed correctly the end of the drop tube should be even with the top of the hopper.

Locate the drop tube support on the feed hopper cross brace so that a distance of 1.5" to 2.0" [38.1 - 50.8 mm] is maintained between the hopper level switch and the drop tube.

990088

REV [E]

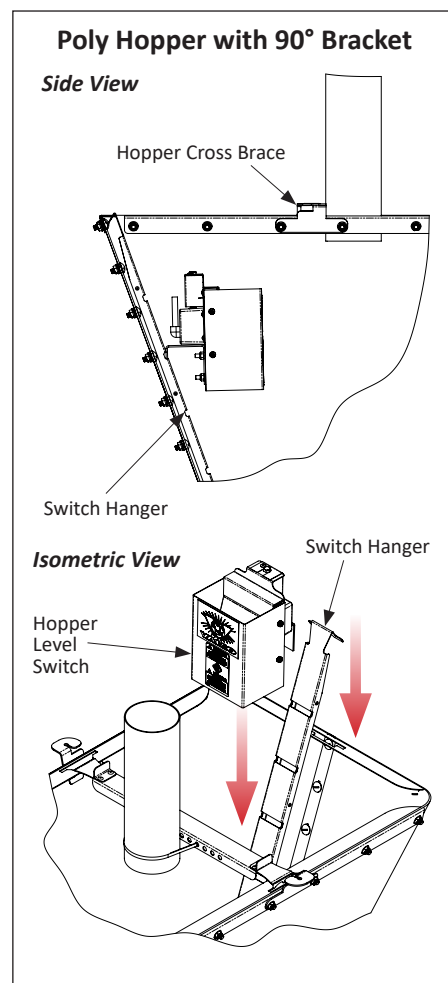
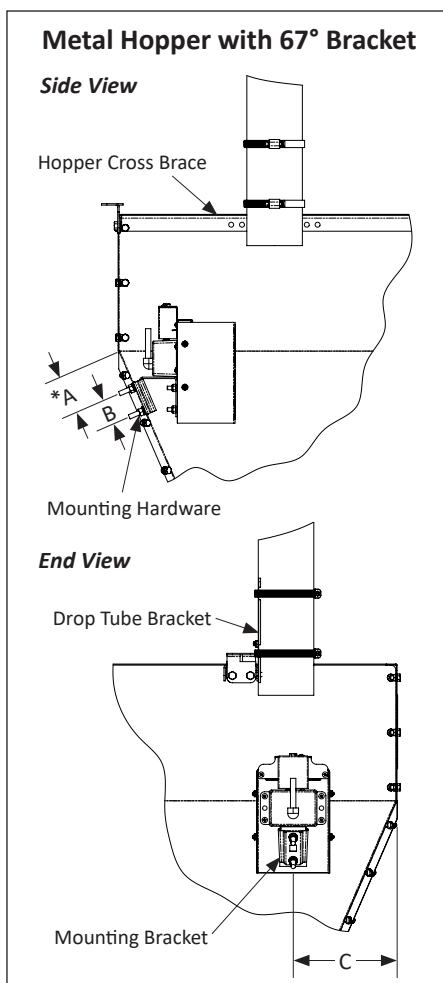
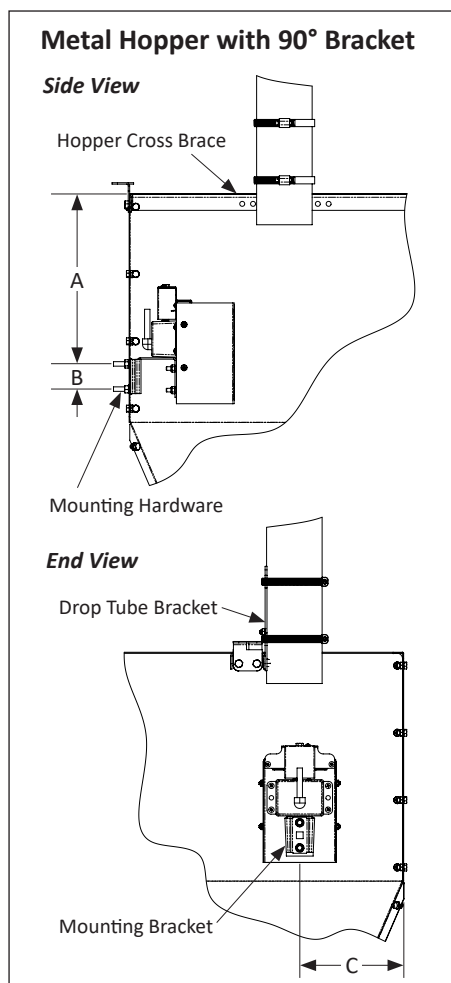
## Switch Installation Instructions - Metal Hopper

1. Determine the correct mounting position of the switch by using the images and table below as a guide.  
**NOTE:** Every application is different and feed flow and switch function must be checked and adjusted as needed.
2. Using the dimensions shown, drill (2) 11/32" [8.74 mm] diameter holes.
3. Secure the switch mounting bracket to the hopper using 5/16" hardware (included).
4. Slide the switch into the mounting bracket.
5. Attach the drop tube to the drop tube bracket, as shown on the previous page.
6. Install power cord to proper electric circuit using **Wiring diagrams** on the following page.  
**NOTE:** If drop tube cannot be installed vertically, adjustment to the switch mounting and drop tube mounting locations must be made. To prevent premature switch failure, feed should never fall directly into the switch.
7. Test proper switch mounting location, drop tube position, and switch sensitivity before normal operation. To adjust switch sensitivity, refer to **Sensitivity Adjustment** instructions on the following page.

## Switch Installation Instructions - Poly Hopper

1. Install the Poly Hopper Switch Hanger (451364) into the slot of the top bracket. Install Hopper Level Switch into slot of the Hanger that is closest to the Fill system motor and lower than the other Hopper Level Switches if you are using multiple Hopper Level Switches. If switch is not completely vertical and level, bend bracket mounted on switch until switch is vertical. Switch could fail to activate correctly if not vertical.  
**NOTE:** 451364 is an add-on part (not included with switch or hopper).

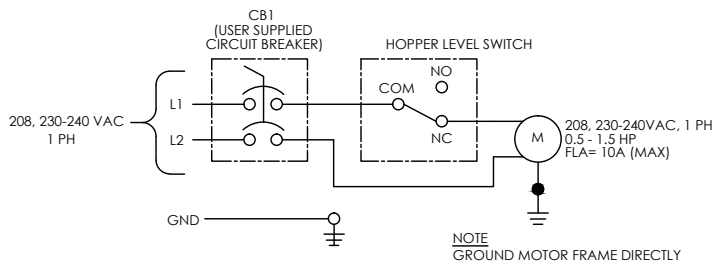
Hopper and Position	Bracket Locating Dimensions			
	Bracket	"A"	"B"	"C"
100lb Metal Hopper, Low Position	67°	*2.75" (69.9mm)	1.75" (44.5mm)	7.25" (184.2mm)
100lb Metal Hopper, High Position	90°	7.25" (184.2mm)	1.75" (44.5mm)	7.25" (184.2mm)
200lb Metal Hopper, Low Position	90°	11.88" (301.6mm)	1.75" (44.5mm)	7.25" (184.2mm)
200lb Metal Hopper, High Position	90°	7.25" (184.2mm)	1.75" (44.5mm)	7.25" (184.2mm)
200lb Metal Hopper & 100lb Extension, Low Position	90°	13.00" (330.2mm)	1.75" (44.5mm)	7.25" (184.2mm)
200lb Metal Hopper & 100lb Extension, High Position	90°	7.25" (184.2mm)	1.75" (44.5mm)	7.25" (184.2mm)



## Wiring Instructions

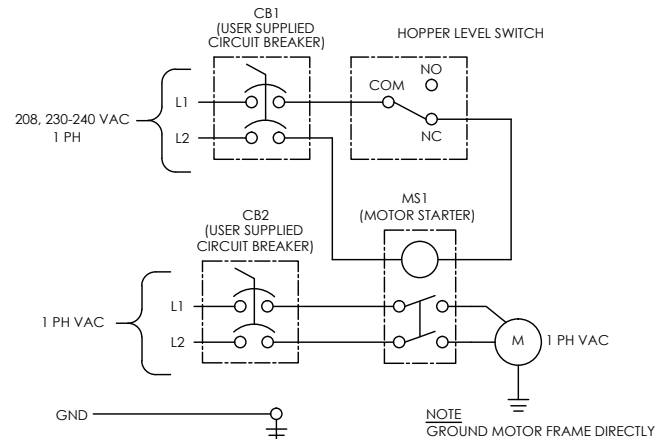
1. This unit should only be wired to a VAL-CO discharge head. If wired to another unit, consult that unit's wiring diagram.
2. Wire all switches in parallel so any one switch can start the system.
3. All local electrical codes **must** be followed.
4. Wiring **must** be done by a code certified electrician.

### WIRING DIAGRAM - SINGLE PHASE

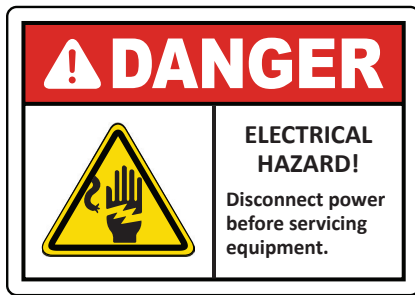
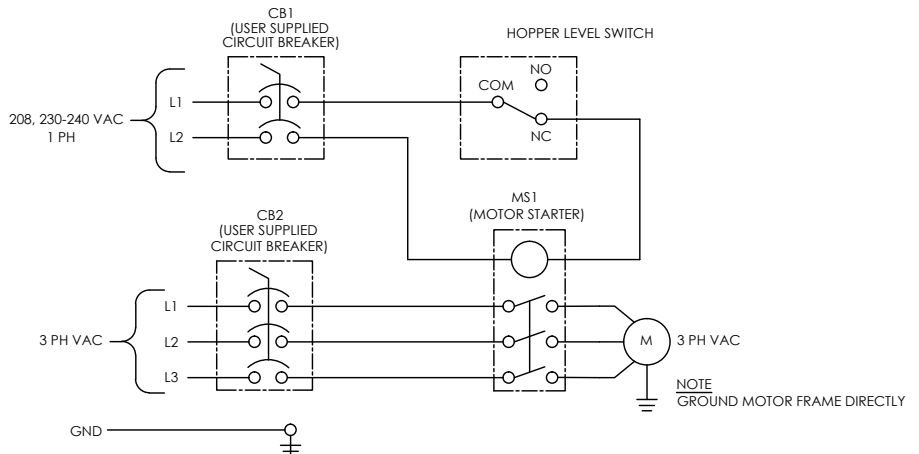


### WIRING DIAGRAM - SINGLE PHASE

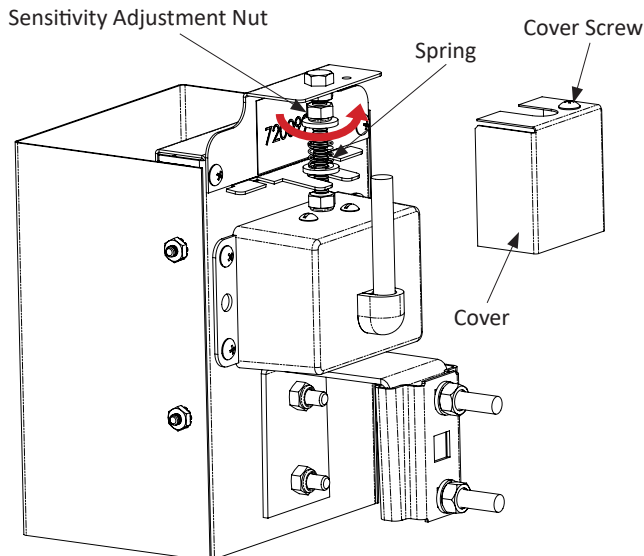
#### RECOMMENDED



### WIRING DIAGRAM - 3 PHASE



**NOTE:** Turn nut in direction shown below for more sensitivity.



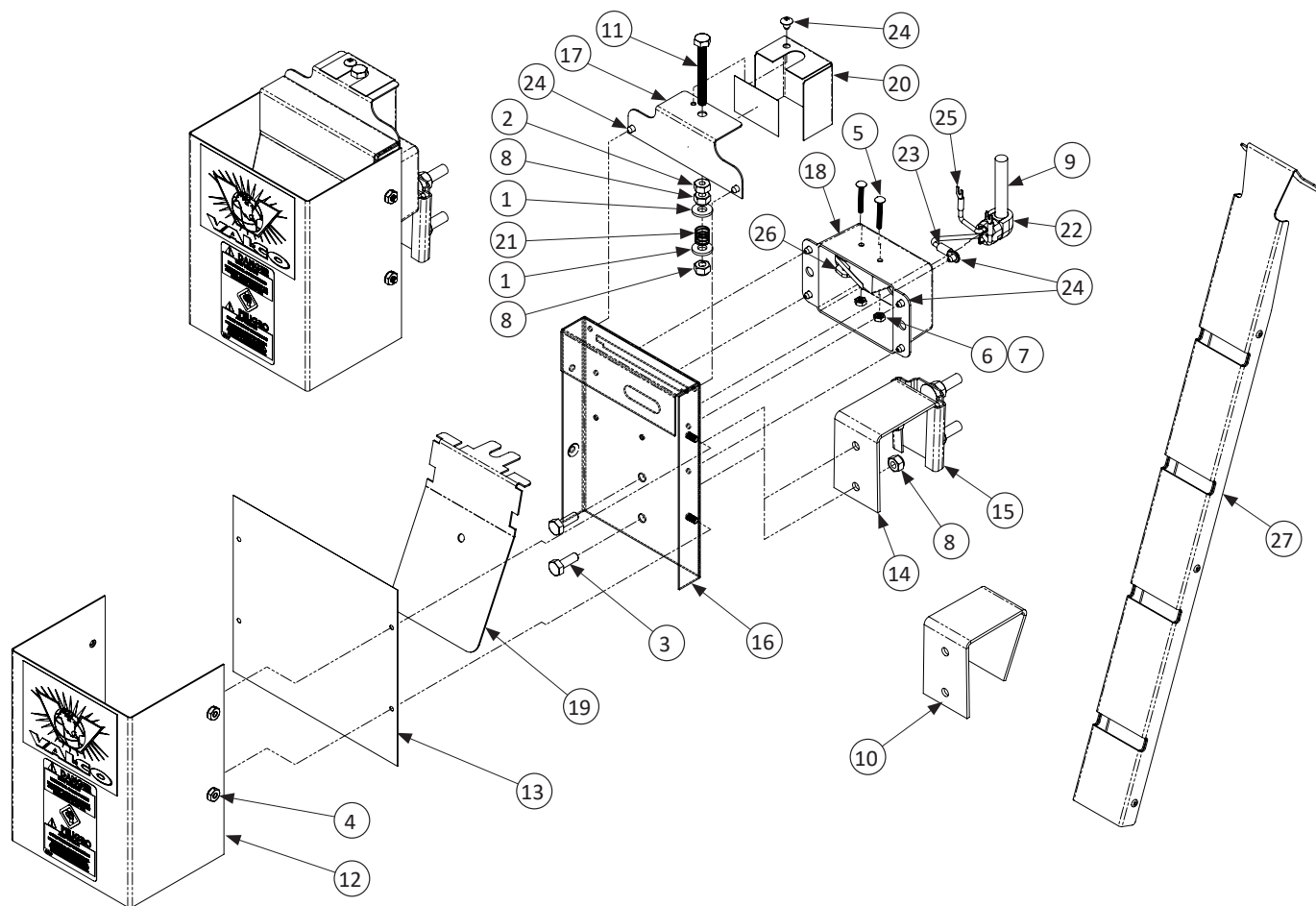
## Sensitivity Adjustment

This adjustable feed hopper switch is set at the factory for sensitivity. If additional adjustment is needed, follow the steps below.

1. Loosen cover screw and remove cover.
2. Hold the head of the bolt with a wrench to keep from spinning.
3. To decrease sensitivity, turn sensitivity adjustment nut clockwise to compress spring.
4. To increase sensitivity, turn sensitivity adjustment nut counter clockwise to relax spring.

**NOTE:** Since movement of the nut has a considerable effect on sensitivity, adjust sensitivity in small increments of a quarter turn or less to start.

## Adjustable Feed Hopper Level Switch - Exploded Drawing and Parts List



ITEM #	PART #	QTY	DESCRIPTION
720097 MECHANICAL HOPPER LEVEL SWITCH - PARTS LIST			
1	010424	2	1/4" FLAT WASHER
2	010602	1	1/4-20 HEX NUT
3	010617	2	1/4-20 X 3/4" HEX HEAD BOLT
4	012408	4	#10-24 HEX KEP NUT
5	012570	2	#6-32 X 1" ROUND HEAD SCREW
6	012731	2	#6-32 MACHINE NUT
7	012732	2	#6 LOCK WASHER
8	012793	4	1/4-20 NYLOCK NUT
9	412381	8	14/3 BLACK SJTOW WIRE
10	451017	1	67 DEGREE HANGER BRACKET
11	690159	1	1/4-20 X 2-1/4" HEX SCREW
12	720015	1	SWITCH SHIELD
13	720018	1	7" X 6.5" DIAPHRAM
14	720020	1	90 DEGREE HANGER BRACKET
15	720023	1	MOUNTING BRACKET

ITEM #	PART #	QTY	DESCRIPTION
720097 MECHANICAL HOPPER LEVEL SWITCH - PARTS LIST			
16	720092	1	BODY ASSEMBLY, ADJUSTABLE SWITCH
17	720093	1	TENSIONER BRACKET
18	720094	1	ELECTRIC BOX, ADJUSTABLE SWITCH
19	720095	1	SWITCH PLATE, ADJUSTABLE SWITCH
20	720096	1	TENSIONER COVER
21	720098	1	.028" X .437" X .75" SPRING
22	720100	1	STRAIN RELIEF, 90 DEGREE FOR 14/3
23	730058	1	16-14AWG, #10 BLUE RING TERMINAL
24	730516	8	10-32 X 1/4 PAN HEAD SCREW
24	730521	2	16-14AWG, #6 BLUE SPADE TERMINAL
26	730989	1	MICRO SWITCH, SPDT 20A, 250VAC

ITEM #	PART #	QTY	DESCRIPTION
ADD-ONS			
27	451364	1	HANGER, POLY HOPPER LEVEL SWITCH

### North America:

Phone: 800.99VALCO; 800.998.2526

Fax: 419.678.2200

Email: [sales@val-co.com](mailto:sales@val-co.com)

990088

REV [E]

### International:

Phone: (+1) 419.678.8731

Fax: (+1) 419.678.2200

Email: [intl.sales@val-co.com](mailto:intl.sales@val-co.com)