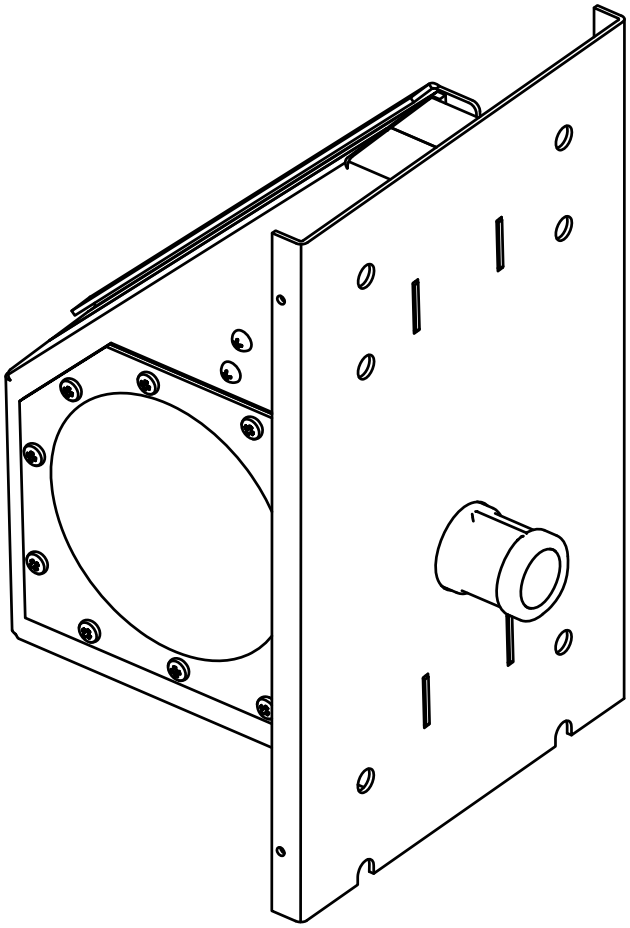
DIAPHRAGM LGSO
(Low Grain Shut Off)
630F-001A



SHIVVERS®

Shivvers Manufacturing, Inc.
614 West English St.
Corydon, IA 50060
Ph. (641)872-1005 ** Fax (641)872-1593
www.shivvers.com

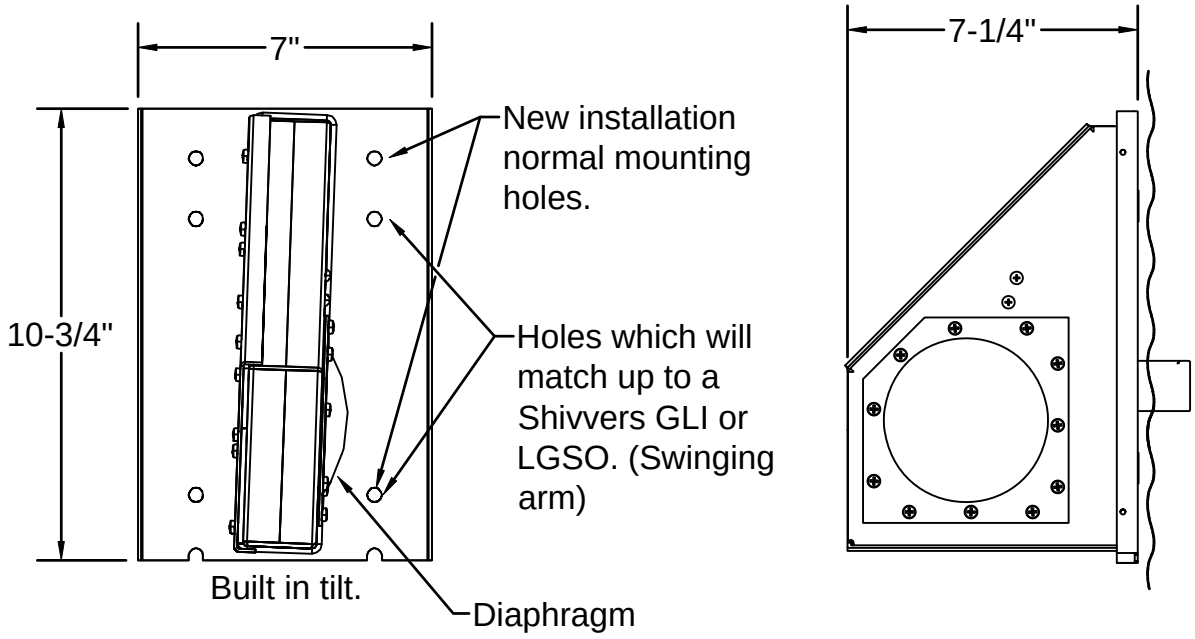
P-12521
4/14/11

Introduction

The Diaphragm LGSO will activate a switch when grain is present. It is built to mount on the inside of a bin wall. The diaphragm is perpendicular to the bin wall to minimize wear on the diaphragm due to spreading grain. It is also built with the diaphragm tilted down to decrease wear on it and also to prevent a buildup of material from causing false activations. Two small air holes are in the bottom of the housing to allow air movement in and out of the diaphragm area. It is critical that these holes remain open for proper operation at all temperature extremes and air pressures.

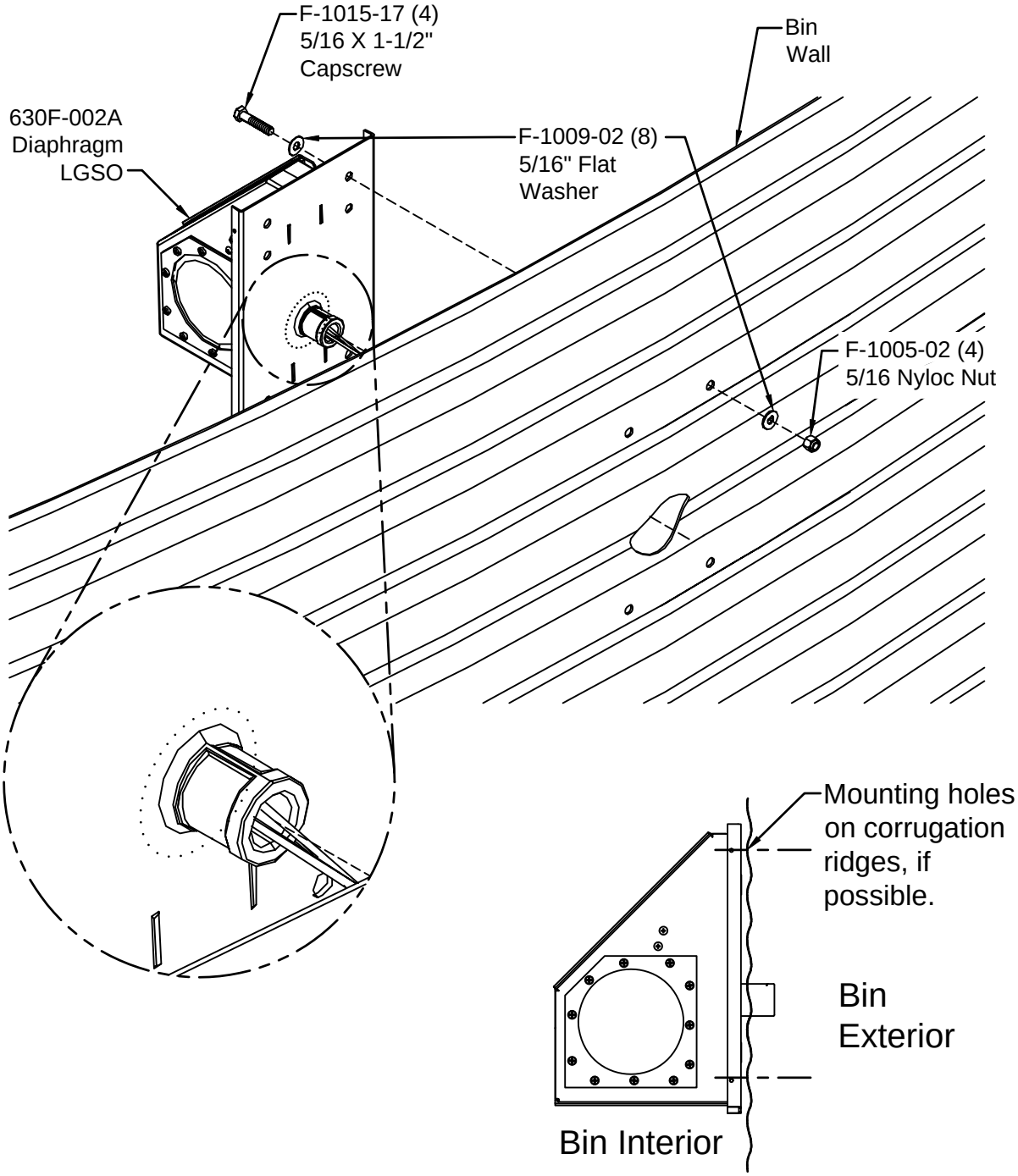
Grain moisture content and density will affect how much grain will have to be above the switch to cause it to actuate. As much as 24" of grain could be required above the switch before it will actuate. Keep this in mind when installing the Diaphragm LGSO. When installed in a Shivvers drying bin, it will normally take less grain above the switch to actuate it if the sweep auger has passed under the switch.

Dimensions



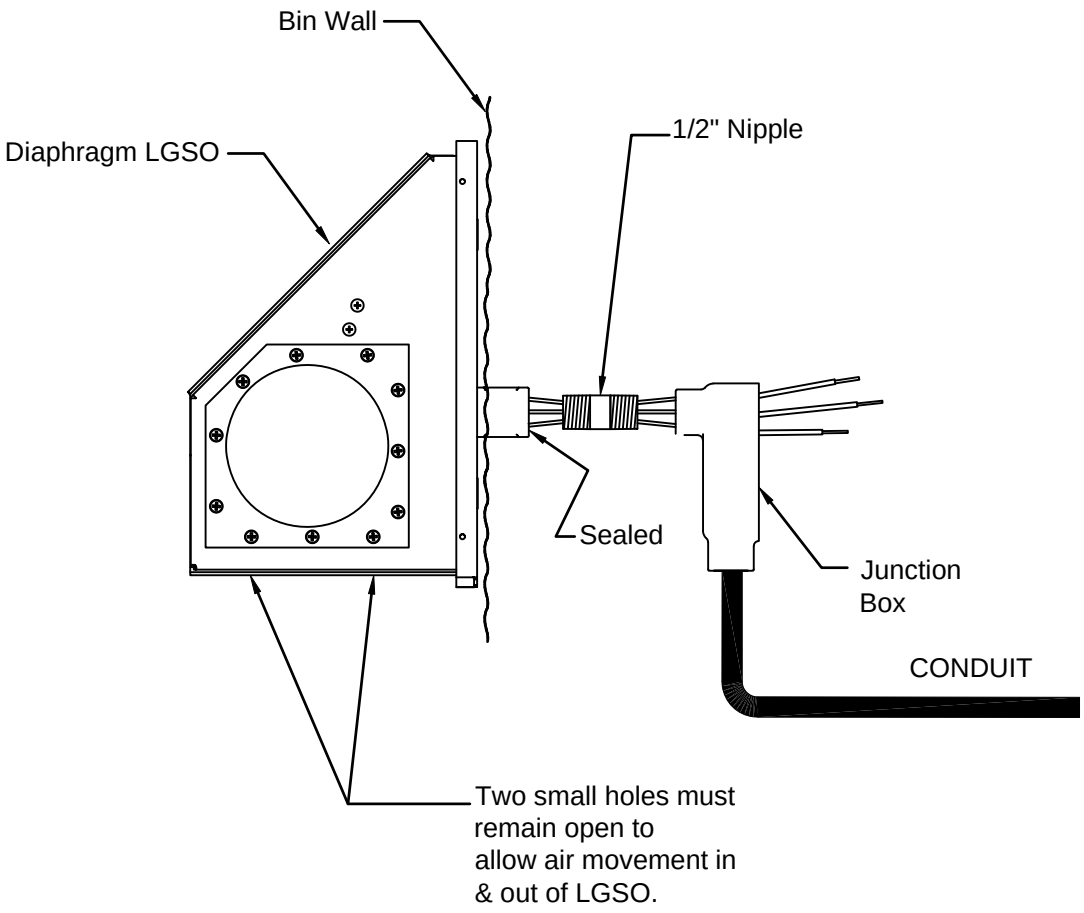
Mounting

Mount the Diaphragm LGSO to the inside of the bin wall with the conduit coupler sticking through the bin wall. A 2" diameter hole should work. Try to position the mounting holes so they line up with the bin corrugation ridges. Use thum-seal around the plate to seal up around the bin wall. Use the hardware provided to mount the Diaphragm LGSO to the bin wall. See illustration below.



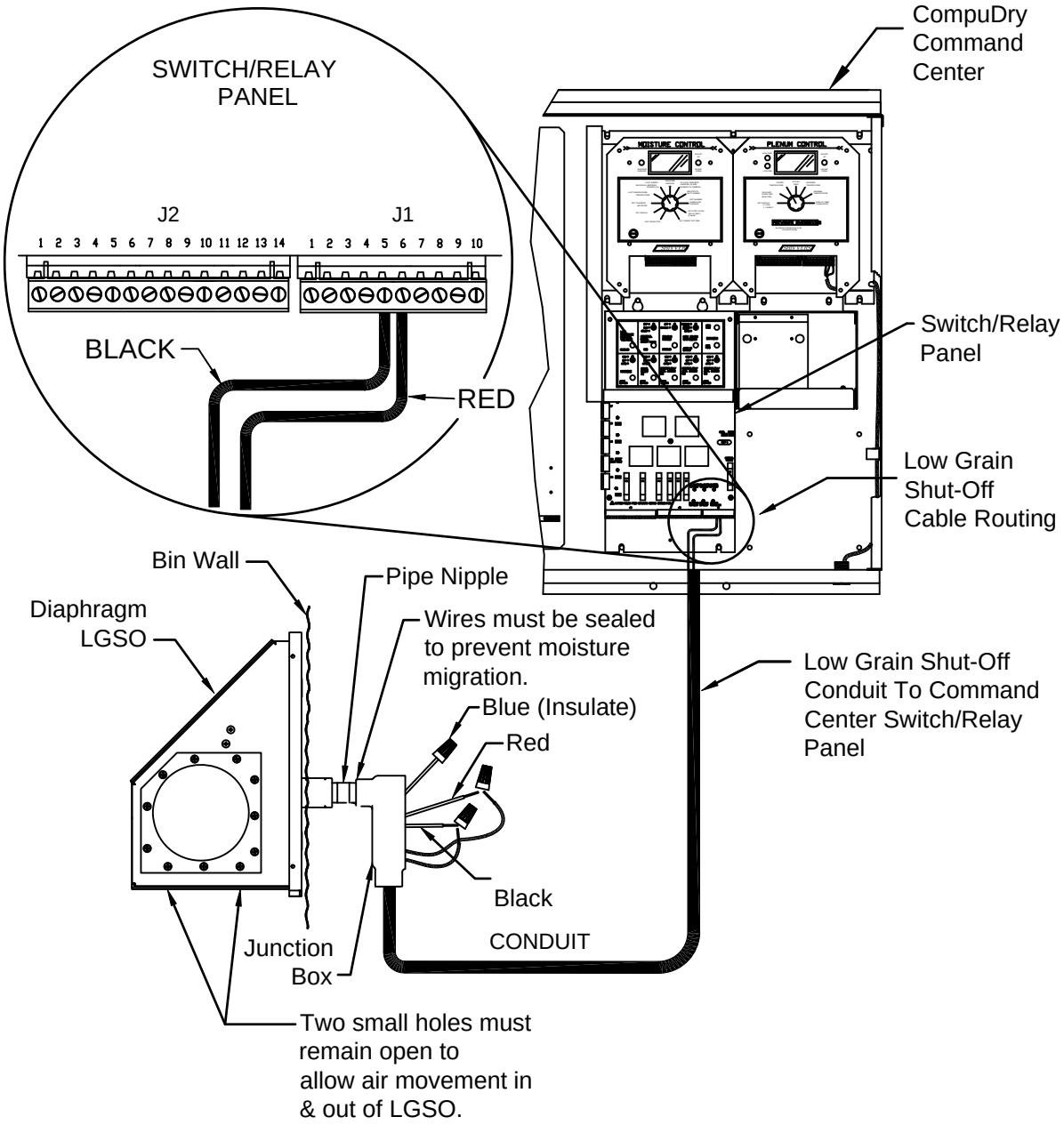
General Wiring

It is very important that the wires that exit the diaphragm LGSO are sealed to prevent moisture migration into the switch and conduit. Thum-seal is applied at the factory, but it will need to be double checked after installation to make sure it is still effective. Additional thum-seal or silicone can also be added after the nipple and junction box are installed. One way to check that the wires are sealed is to plug or cover the two small holes in the bottom of the LGSO (just hold your fingers over them). With the holes covered, there should be a noticable pressure build up in the LGSO cavity when the diaphragm is pressed. The pressure build up will not be there when the holes are open.



Command Center Wiring

Pull 2 or 3 control wires through the conduit to the Junction Box. Use wire nuts to connect the control wires to the wires on the Diaphragm LGSO. Connect the Black wire to J1 terminal 5 and the Red wire to J1 terminal 6. The blue wire is not used, but be sure to insulate the end of the blue wire.



NOTE: Grain could be up to 24" above the Diaphragm LGSO before it actuates. Less grain will be required above it, if the sweep auger has passed under the switch. The switch will release when the grain level falls to about the middle of the diaphragm.

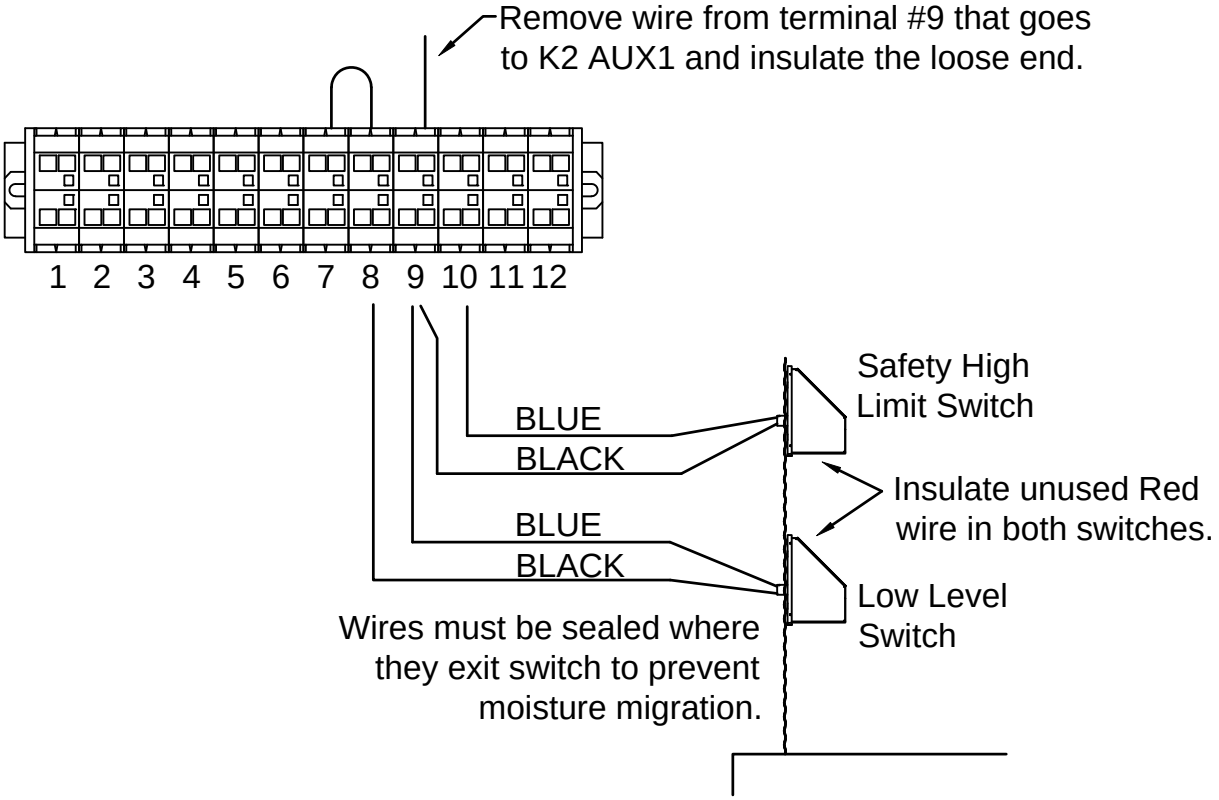
Low Level Control Wiring

When using the diaphragm LGSO for a low level control keep in mind that it can require up to 24" of grain above the switch before it actuates. The actual height will depend on the grain type, density, moisture level, and whether or not the sweep auger has passed under the switch. The switch will normally release when the grain level falls to about the middle of the diaphragm. This can be an advantage when used in a low level setup as only one switch can be used to control the incoming grain. It acts like a switch with a built in time delay. It is recommended to go ahead and use two switches and use the top switch as a safety high limit in case the bottom switch would fail.

Shivvers 630C-001A Low Level Control Box

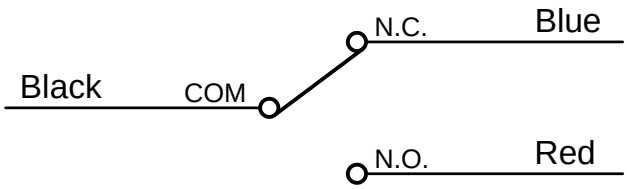
The Low Level switch should have closed contacts between terminals 8 and 9 without grain on the switch. The contacts should open when grain is present.

The Safety High Limit switch should have closed contacts between terminal 9 and 10 without grain on the switch. The contacts open when grain is present.



Internal LGSO Switch Wiring

(For wiring to other controls)



-Insulate unused connection

(Shown in position without grain)