

# S2VT Operator Switches and IP66 Cable Installation

Essential items that work together to operate S2VT valves

## Doc DM89

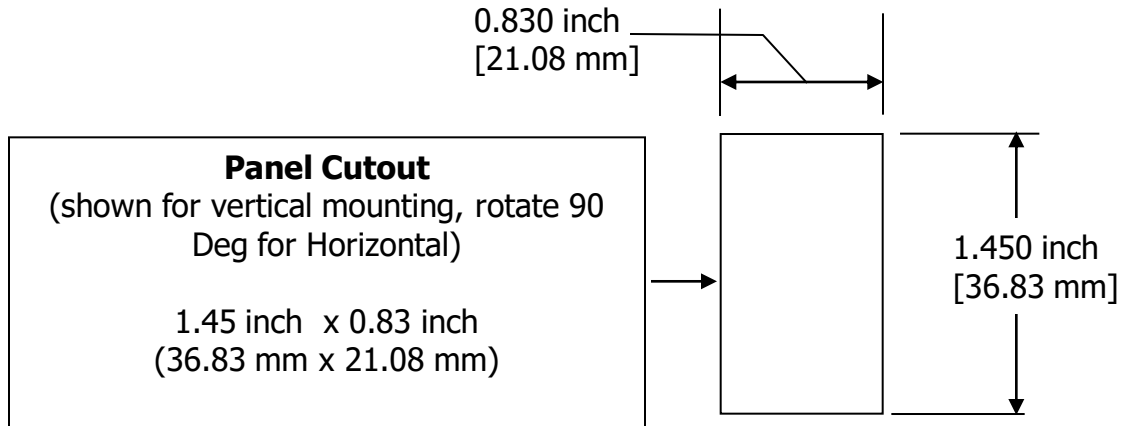
### *Covers .....*

- DM PN 5787- DM30 - SVT Single switch install – Pages 2-5
- DM PN 5847- RV Dbl SW PNL Double switch panel install – Pages 6-7
- DM PN 5846-IP66 20' Rnd. Cable Ass. install – Pages 8-11
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# S2VT Operator Switches and IP66 Cable Installation

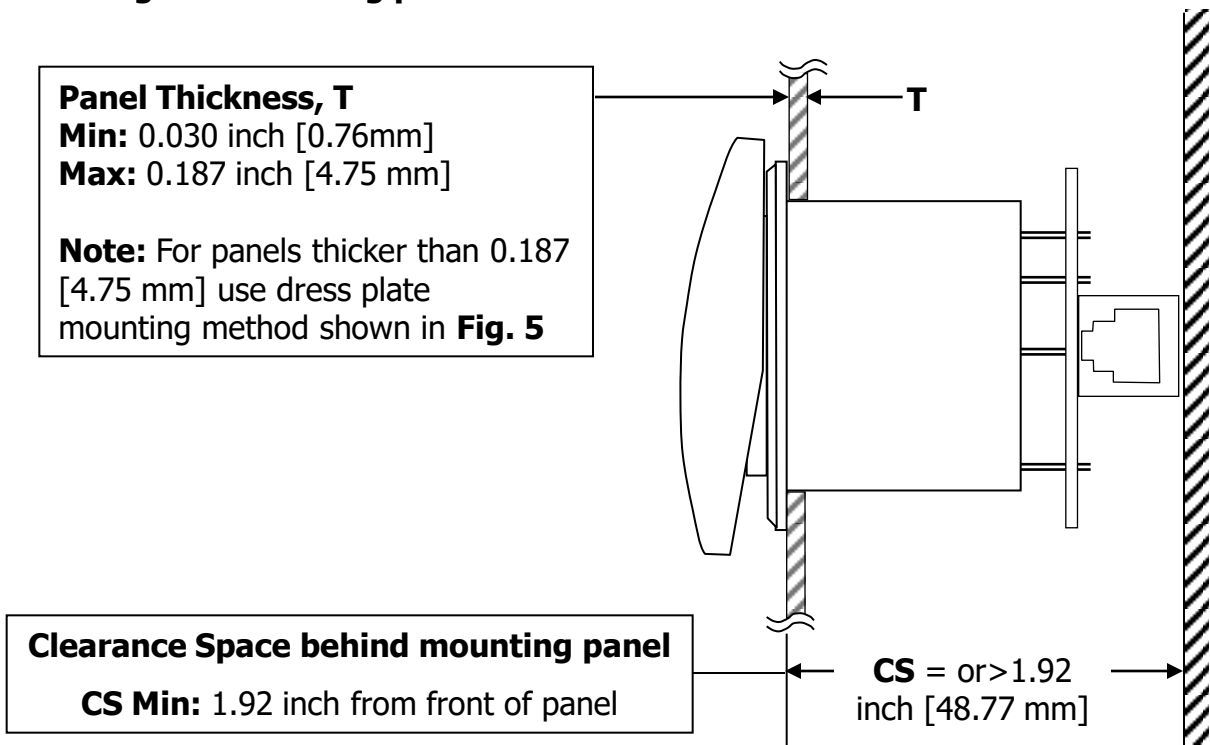
## 1. Direct Panel Mounting - Single Switch, DM PN 5787- DM30 - SVT

### 1.1 Fig. 1 – Panel Cutout



**Fig 1.**

### 1.2 Fig. 2 – Mounting panel thickness and rear clearance



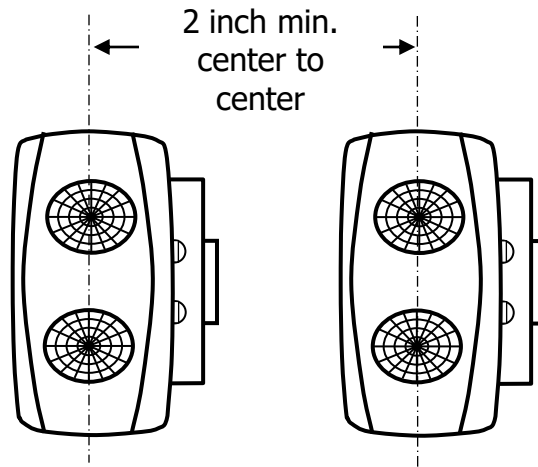
**Fig 2.**

# S2VT Operator Switches and IP66 Cable Installation

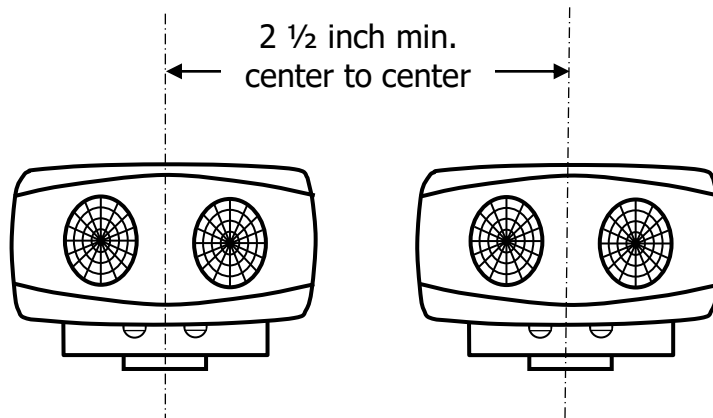
## 1.2 Multi Switch interspacing using direct panel mounting:

**Fig. 3 and 4** show minimum centre to centre requirements for 2 orientations: Vertical Layout (**Fig. 3**) is the prevalent industry practice.

Horizontal Orientation (**Fig. 4**) (use if space limitations restrict vertical mounting)



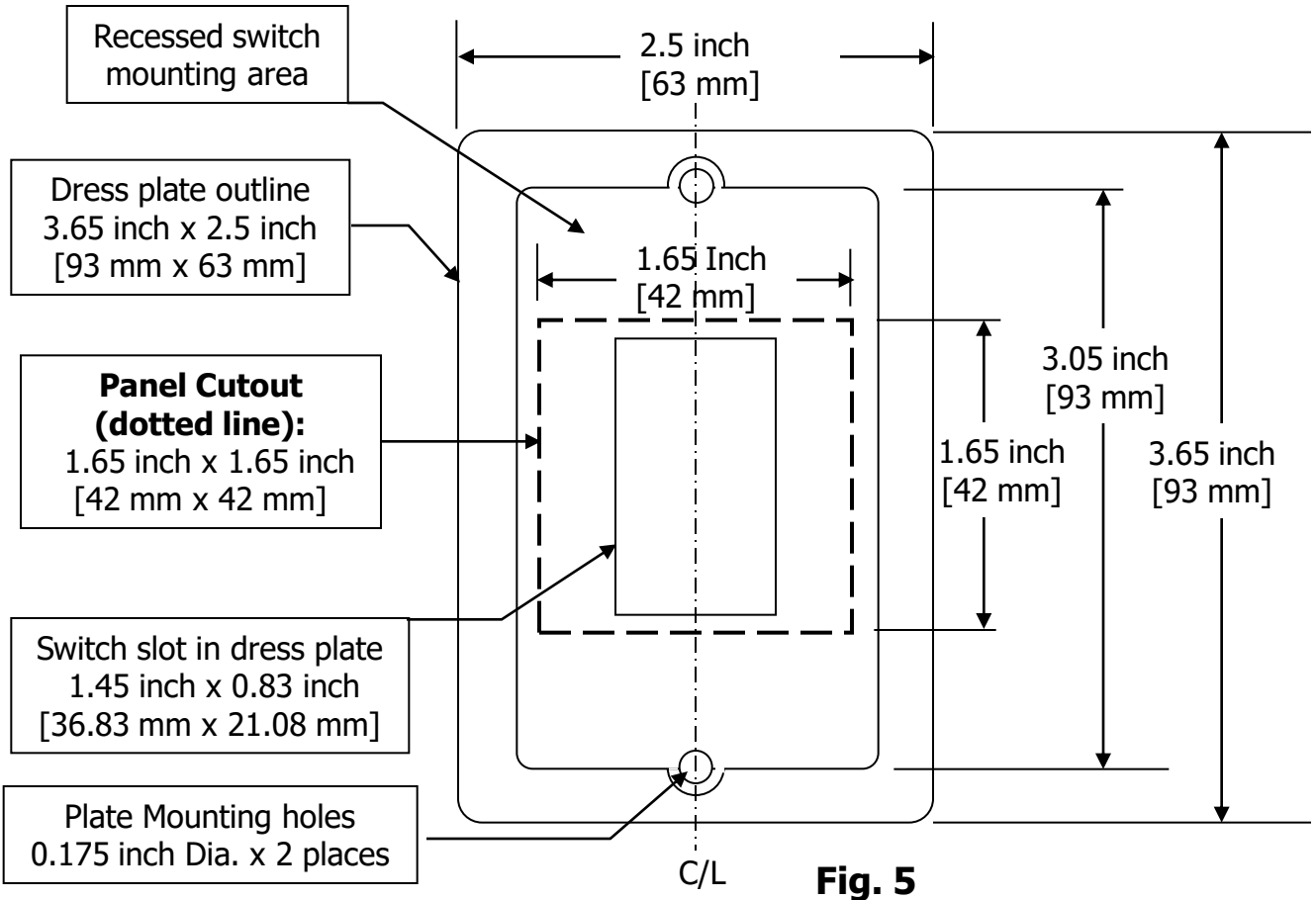
**Fig. 3 VERTICAL**



**Fig. 4 HORIZONTAL**

## 2. Single Switch PN 5787 - DM30 - SVT Mounting using Dress Plate

### 2.1 Fig. 5 – Panel cutout and dress plate dimensions:



#### Panel Thickness:

Min: Not specified – Panel thickness must adequately support dress plate  
Max: 1 inch [25 mm]

### 2.2 Multi switch interspacing using dress plate:

**Vertical mounting** is prevalent industry practice - requires center to center > **2.5 inch**  
**Horizontal Mounting** (use if space limitations restrict vertical mounting) requires center to center > **3.65 inch**

# S2VT Operator Switches and IP66 Cable Installation

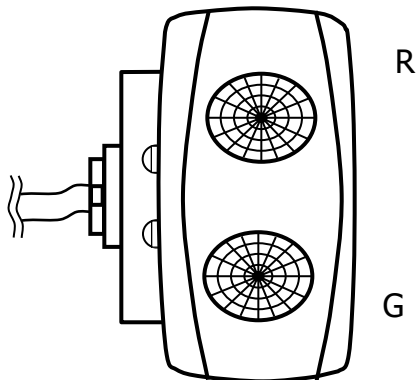
## **3. Switch Operating Orientation: Fig 6 A, B and 7 A, B (applies to both direct panel mounting or using dress plate)**

The RED LED ('Valve Open') indicator is on the 'Press to Operate' side.  
Vertical mounting with **bottom press** RED LED down as in **Fig 6 B** is the industry accepted practice and recommended.

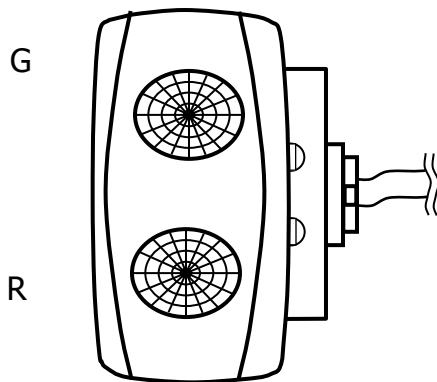
**R-Red LED G-Green LED**

### **VERTICAL**

Top Press Operation



**Fig. 6 A**

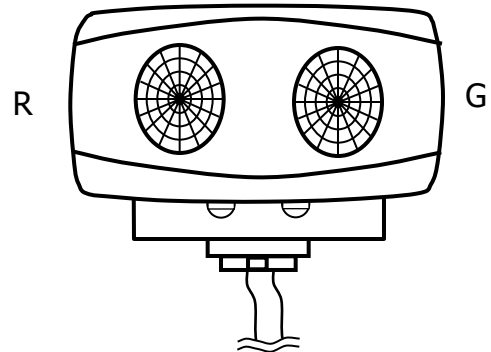


Bottom Press Operation

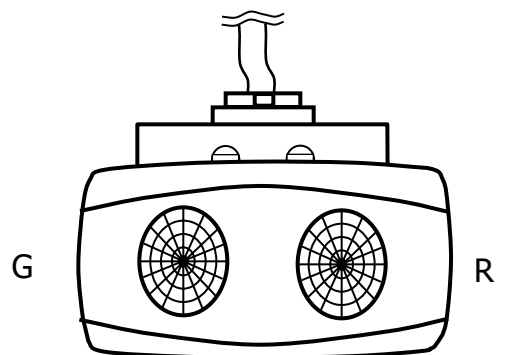
**Fig. 6 B**

### **HORIZONTAL**

Left Press Operation



**Fig. 7 A**



Right Press Operation

**Fig. 7 B**

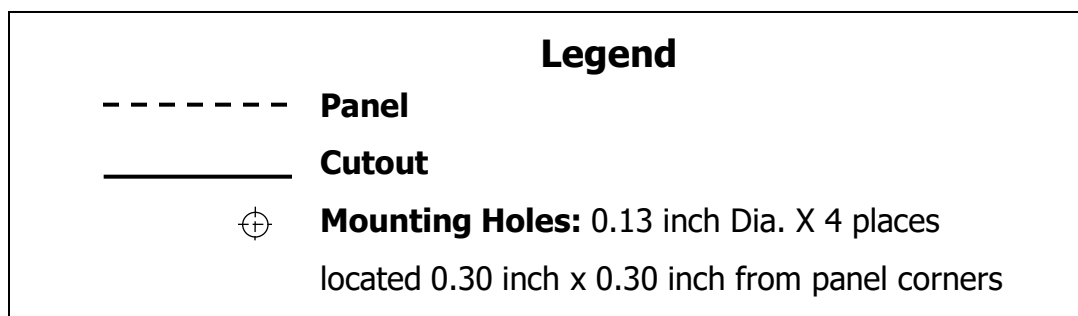
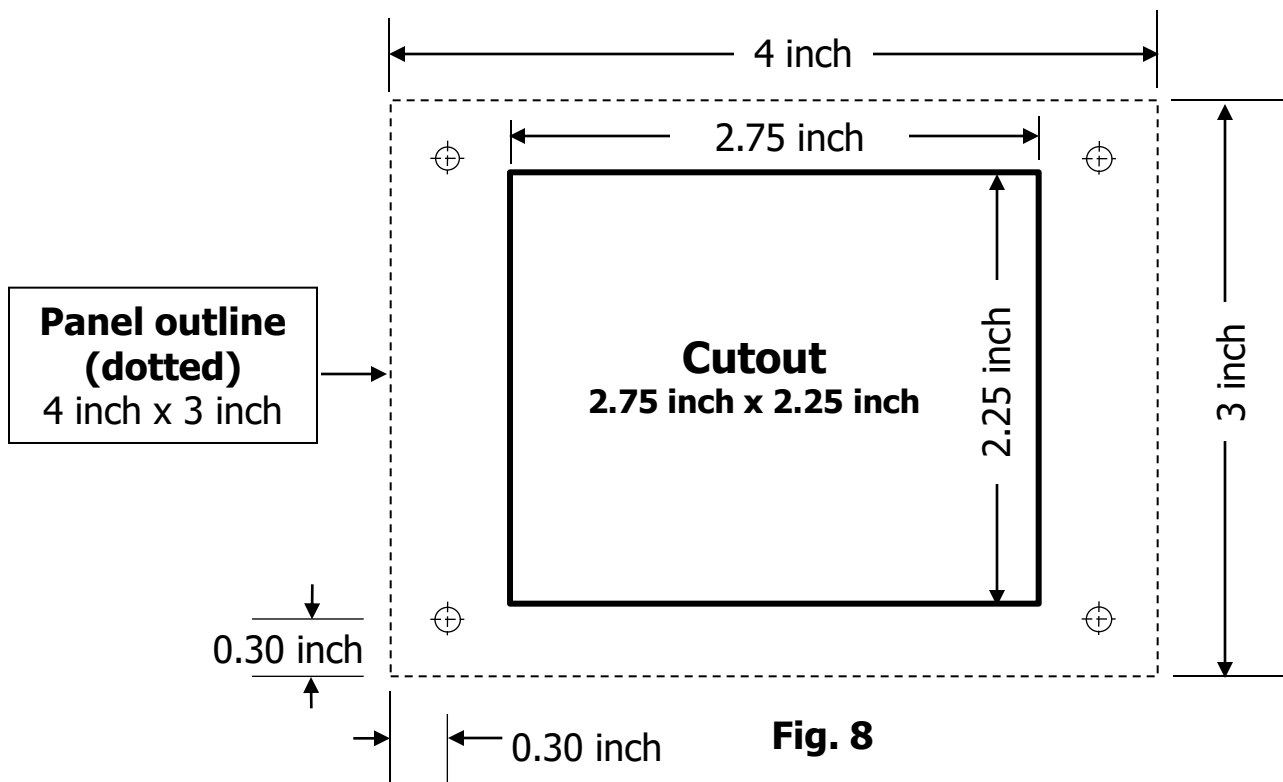
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## 4. Double Switch Panel Mounting DM PN 5847- RV Dbl SW PNL

**4.1 Important:** Double switch panel is ideal for 2 valves operated from inside the RV. It is also great on outside RV panels or compartments protected from direct water exposure. Modest water contact, such as droplets, condensation or operating the switches with wet fingers is OK. The graphics are water, UV and wear resistant.

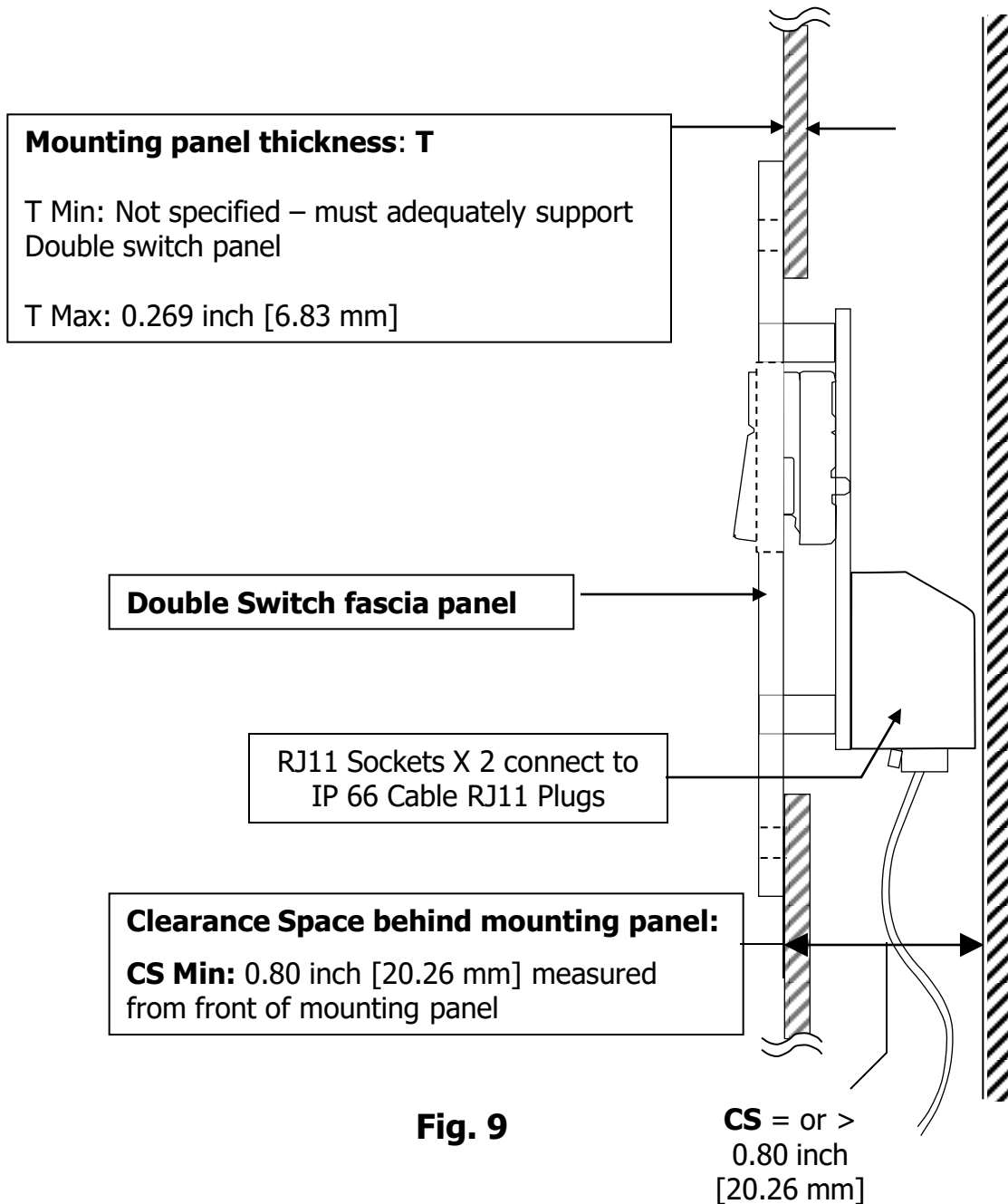
*Use DM PN 5787- DM30 - SVT (IP66 compliant Switch) where water exposure is expected and unavoidable.*

**4.2 Fig. 8 -** Cutout provides ¼" relief all around the circuit board behind the panel.



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## 4.3 Fig. 9 – Double Switch Panel DM PN 5847- RV Dbl SW PNL- Mounting panel thickness and rear clearance



**Fig. 9**

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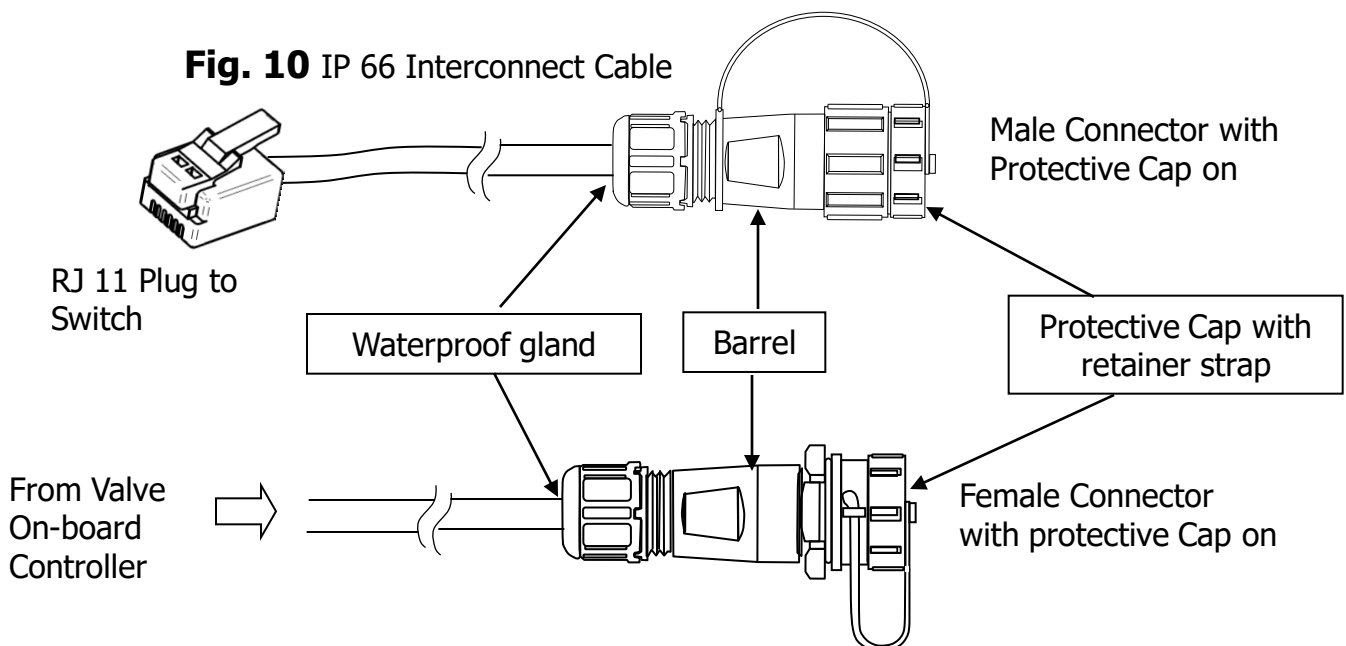
## 6. IP66 Interconnect Cable DM PN 5846-IP66 20' Rnd. Cable Ass.

**6.1 Cable Connections – Fig. 10:** IP 66 interconnect cable DM PN 5846-IP66 20' Rnd. Cable Ass. comes with a waterproof (IP 66 rated) 4 pin Male connector at one end an RJ11 plug on the other.

S2VT Valve On-board Controller has 2 port cables each with a 4 pin female connector (**Fig. 11**) also waterproof, IP 66, which connects to the IP 66 cable male. The IP 66 cable RJ 11 plugs into the operator switch socket.

To operate the valve a switch must be connected to a port via the IP 66 cable. A 2<sup>nd</sup> switch (or Double switch panel if used for 2 valves) may be included at initial install or added later. Switch operation and LED indications work identically from each switch; switches and cables are completely interchangeable and compatible making servicing very convenient.

**6.2 IMPORTANT: Both male and female connectors come with protective waterproof screw on caps; leave the caps on until ready to use. Caps are retained by a strap; do not cut or discard. Recap finger-tight (3 - 4 Inch Lbs Torque) when disconnected for any servicing.**



**Fig. 11** Port Cable from valve on-board controller (only 1 shown)



# S2VT Operator Switches and IP66 Cable Installation

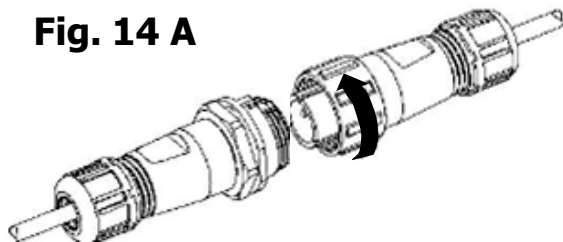
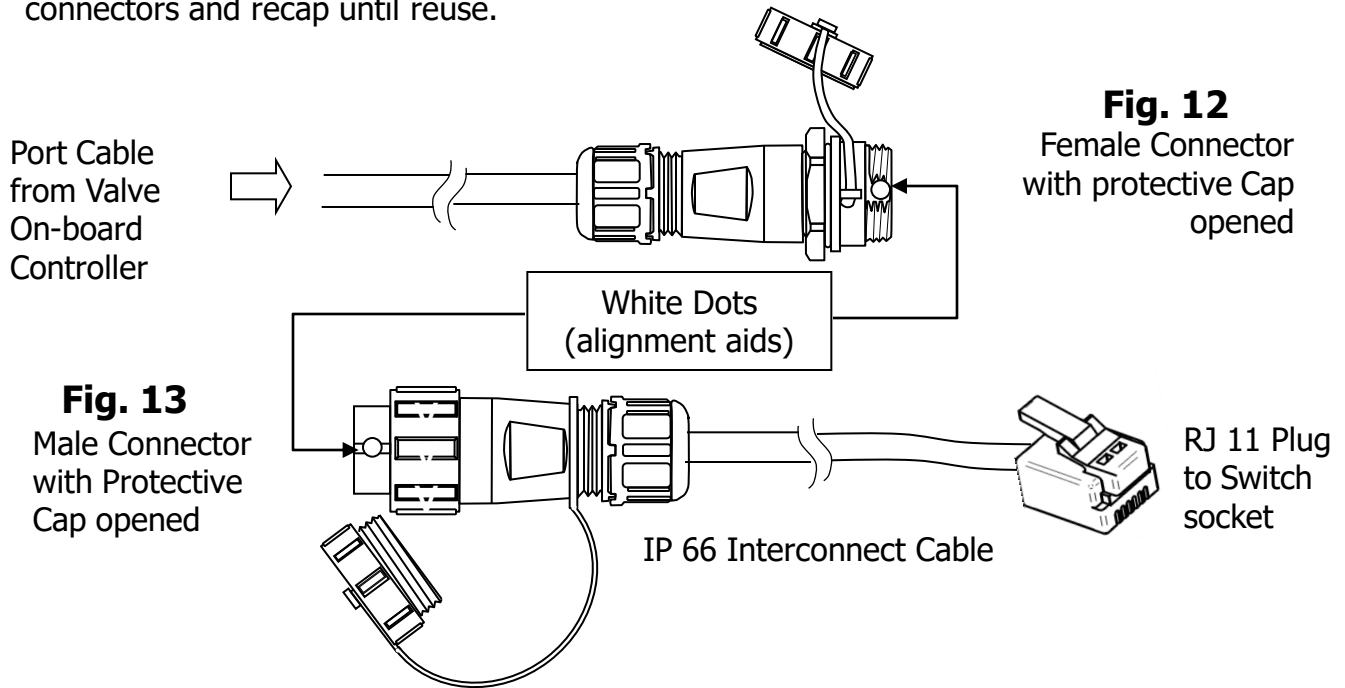
## 7. Mating IP66 Connectors

### 7.1 Coupling - Fig. 12, Fig. 13

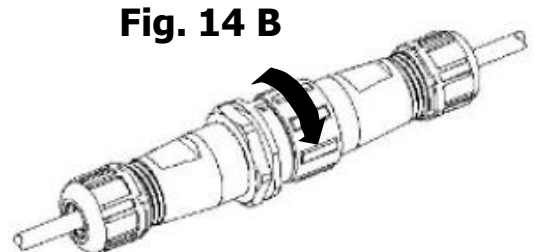
**Important: Complete IP 66 cables routing and securing before final mating.**

- Unscrew protective caps, **Fig. 12** and **Fig. 13**.
- Connectors are keyed and will engage only in the correct orientation.
- For user convenience white alignment dots are marked on male and female.
- Rotate connectors till the marks line up and engage them firmly till fully seated.
- Tighten the collar on the male in the direction as shown in **Fig. 14 A**, Finger tight. (Torque 4 -5 In Lbs). To ensure waterproof sealing be sure its NOT cross-threaded.

**7.2 Decoupling – Fig. 14 A and B :** Unscrew the collar in the direction as shown, separate connectors and recap until reuse.



**Fig. 14 A**



**Fig. 14 B**

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## 8. IP 66 WIRE ROUTING:

### 8.1 Option 1– Routing from Valve towards the switch:

Approach works favorably for switches or double switch panel installed on the outside of the RV where rear is accessible after install


- Start from valve, route IP 66 cable out through to behind the cutout.
- Install switch or switch panel; plug the RJ 11 into the switch socket (rear access required)
- Mate the Waterproof connectors on the valve side.

### 8.2 Option 2 – Routing from Switch towards valve:

Approach works favorably for switches or double switch panel on inside RV wall panel, for example, or where switch rear access is usually possible before switch install

- Route IP 66 cable through the switch cutout and out to the valve.
- Plug the RJ 11 into the switch socket; then install the switch or double switch panel  
*[If the rear however is accessible, the RJ 11 plug may optionally be plugged into the switch socket after switch install]*
- Mate the waterproof connectors on the valve side.

### 8.3 Routing DO's (Sec 9. Pg 11 Examples: Fig.17 A – C and Fig. 18 A – C)

- Mark 'B' and 'G' on wire ends to eliminate guess work during insertion into switch! 
- Pre-plan the routing path - IP 66 sheathed wire is easy to layout & retains its form
- Protect wires over by automotive split sheathing
- Harness +12 V Power and IP 66 sheaths along the routing, closer to the valve, for ease
- Stress relieve using clamps & tie wraps; secure excess wire

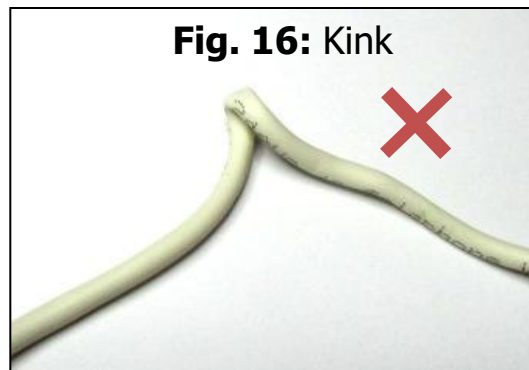
### 8.4 Routing DONT's

- Don't yank or pull wire from the RJ 11 or 4 Pin Connector
- Don't damage the RJ 11 or 4 Pin Connector during layout
- Don't let excess wire weigh down on the RJ 11 socket or connectors
- Don't put sharp bends or kinks in the wire as shown in **Fig. 15** and **Fig. 16**

**Fig. 15:** Sharp bend

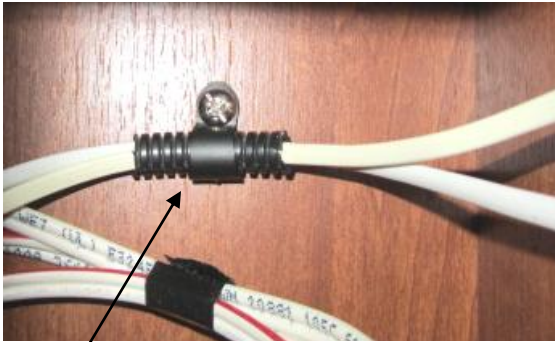


**Fig. 16:** Kink

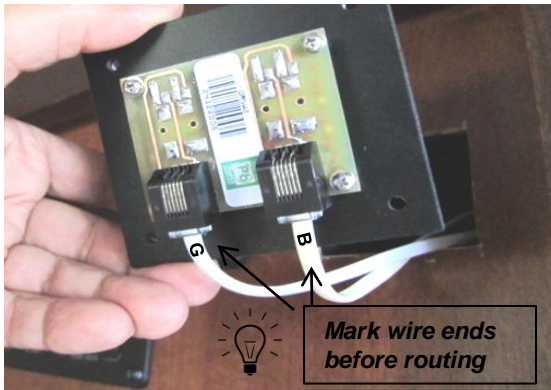


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## 9. Routing DO's Examples: Figs 17 and 18



**Fig. 17 A** Outgoing wires to switches secured behind cutout with P-clamp



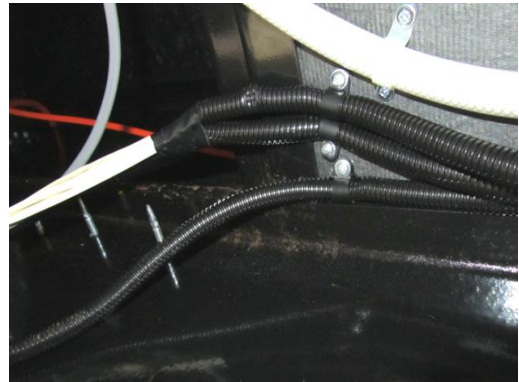
**Fig. 17 B** RJ 11 ends exit from cutout and plugged into switch panel



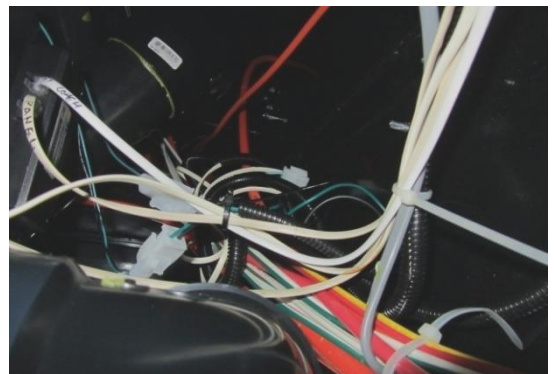
**Fig. 17 C** Double switch panel mounted (Note: no rear access after mounting)



**Fig. 18 A** IP 66 wire pairs and 12V supply wires sheathed over and tie wrapped



**Fig. 18 B** P-Clamped for stress relief



**Fig. 18 C** Tie wrapped, labeled and excess wire secured adjacent to valve

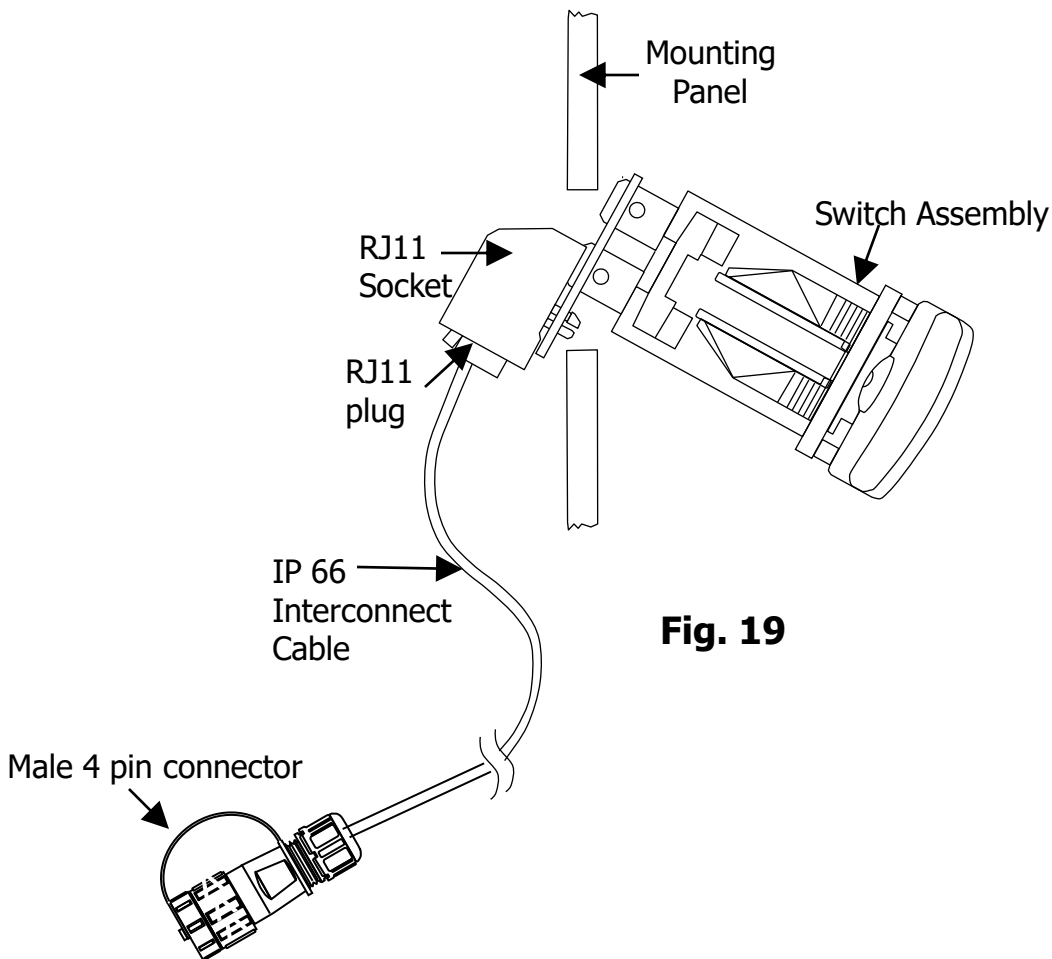
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## 10. Single Switch Insertion:

**10.1 IMPORTANT:** Before proceeding determine if the RJ11 plug is to be plugged into the switch socket before or after switch installed. If rear access to the switch is not available plug in RJ11 first.

### 10.2 Step 1

- Angle switch as shown in **Fig. 19** to begin entry to the panel.

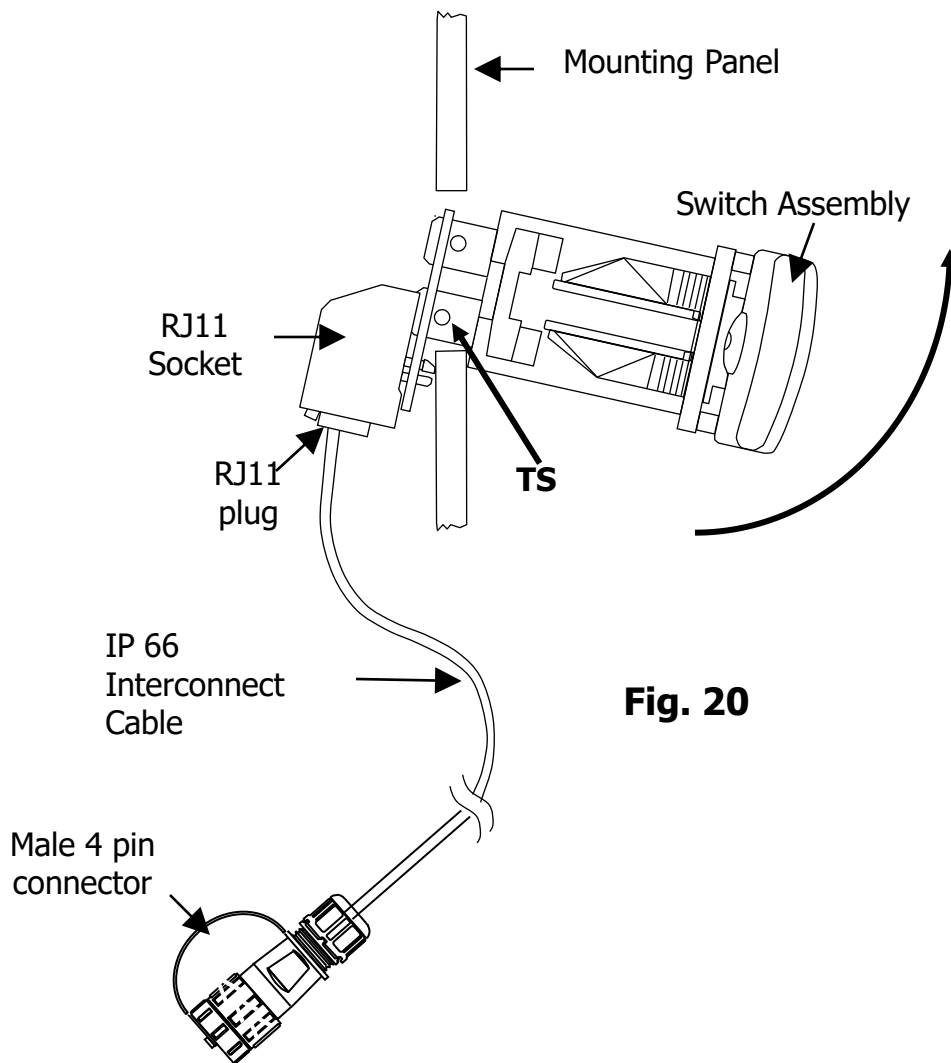


**Fig. 19**

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## 10.3 Step 2

- Rotate switch assembly into the slot as shown in **Fig. 20**
- Lower switch assembly in so mounting panel edge resides in the tab space **TS**
- From this position ease switch assembly into the slot - it will slide in\*  
(\* For maximum allowable panel thickness refer panel dimensions page 1 sec 1.2)



**Fig. 20**

# S2VT Operator Switches and IP66 Cable Installation

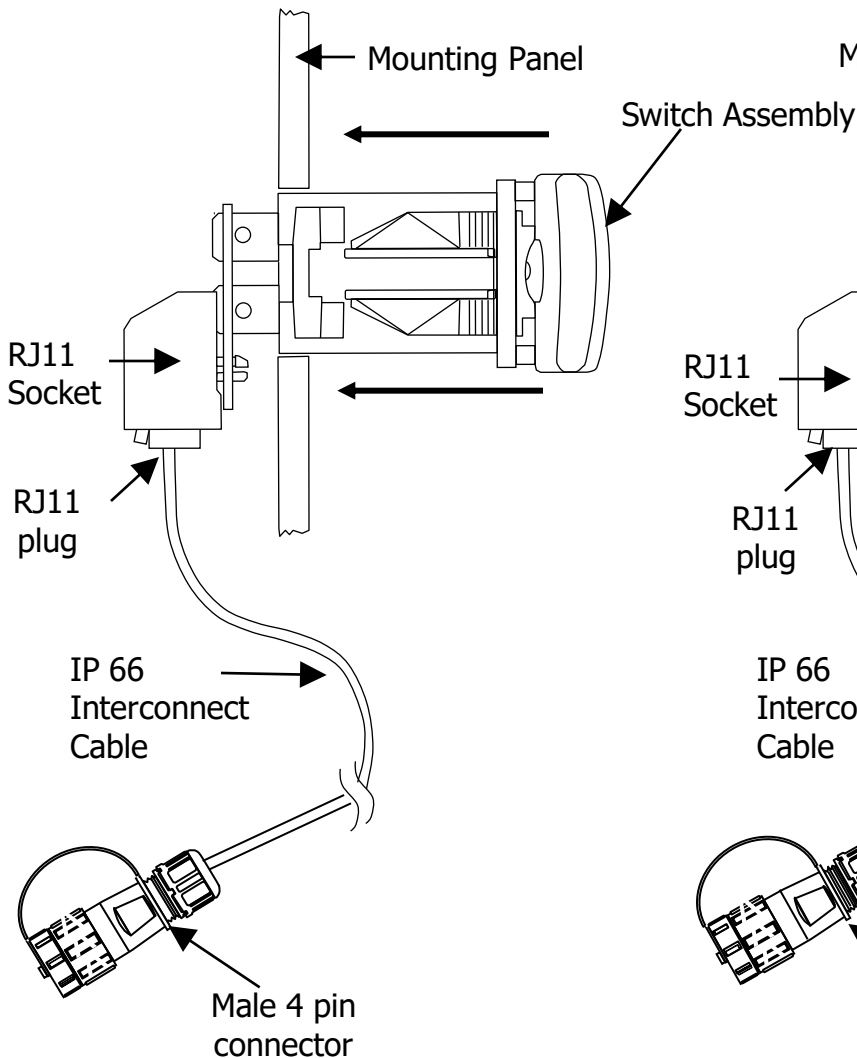
## 10.4 Step 3 A and B

Unless rear is accessible, switch removal may prove difficult, requiring a special tool - be sure for complete readiness before proceeding with step 3

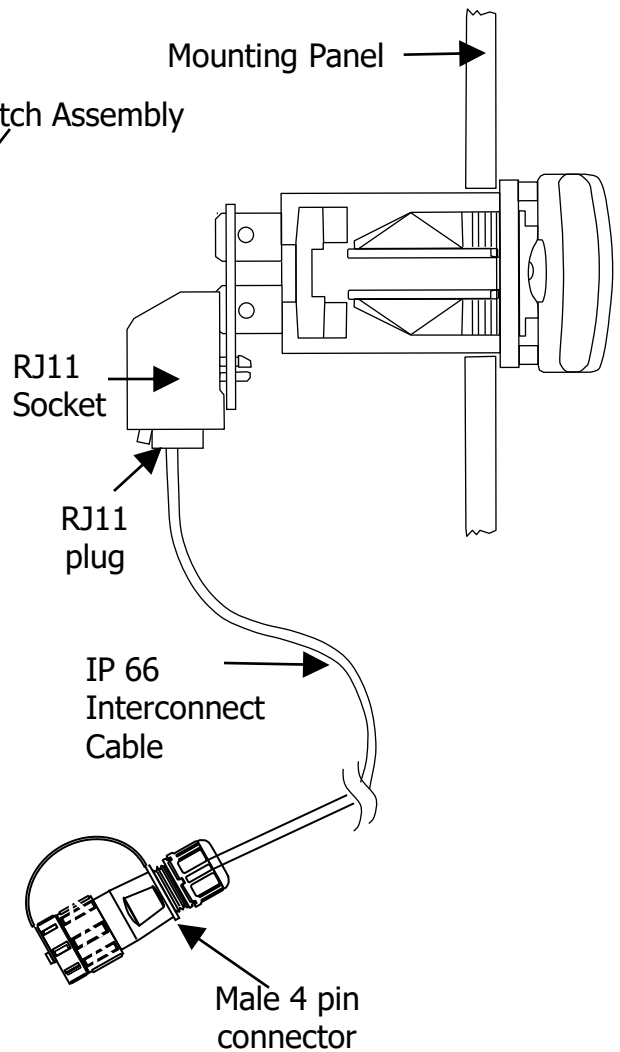
- Continue pushing the assembly into the Panel slot. **(Fig. 21 A)**
- Slide in firmly – towards the end resistance is felt
- Push in firmly till seated flush.
- Splines on the switch body secure it in place. **(Fig. 21 B)**

**This completes your S2VT Switch and IP66 wiring install.  
Refer to Doc DM 88 S2VT Install Instructions for final system test.**

**Fig. 21 A**



**Fig. 21 B**



## S2VT Operator Switches and IP66 Cable Installation

Download or view S2VT companion documents in PDF format from 'Product Manuals' at our website

- DM88 S2VT Install Instructions
- DM90 S2VT Valve Configuration Guide
- DM91 S2VT Wiring Diagram
- DM93 System Master Switch Installation

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