

# WIRECON SELF-CONTAINED WIRING DEVICES

## GENERAL INFORMATION

**CAUTION: RISK OF ELECTRICAL SHOCK. Disconnect power before installing. Never wire energized electrical components.**

**NOTICE:** For installation by a qualified electrician in accordance with all national and local electrical codes.

- Read these installation instructions before installing Self-Contained Devices (SCD).
- Use only nonmetallic-sheathed cable with equipment grounding conductor, types NMB, NMC, NMD and NMD90 (CSA designation) having copper wire sizes # 14 and # 12 AWG.
- Do not join two (2) different wire sizes within the same SCD.
- Only one cable at a time can be installed.

**Wall Cutout** - recommended wall openings dimensions:

- Single gang, 2" x 3 1/2"; Two gang, 3 5/8" x 3 1/2"; Three gang, 5 1/2" x 3 1/2"
- Best way to ensure proper wall cutout size is to use the WT800 series templates. The minimum clearance from the stud to cutout is 3/4".

### Wiring, Rough:

- For in-line installations there must be a minimum 12-inch length of cable available on the room side of the wall cutout to permit cable preparation and possible future SCD replacement.
- For end-of-line, power tap or splice installations a minimum 6-inch length of cable must be available on the room side of the wall cutout to permit cable preparation and possible future SCD replacement.
- For all installations the cable must be secured within 12-inch of the wall opening.

## CABLE PREPARATION

**MAXIMUM NUMBER OF INSTALLED CONDUCTORS:** Wirecon SCD **maybe** wired with a maximum number of three layers of conductors from NM sheathed 14-2/G or 12-2/G cables. Stripping the insulation off the first and second installed conductors is permitted. The third and last installed conductor must be insulated. Because the type and amount of conductor insulation can vary stripping is permitted. Stripping the conductors will aid in assembling the cover to the enclosure.

The maximum number of cables that can exit the ends of a SCD is two.

**Cable Sheathing and Paper Filler:** When a single in-line cable runs through a receptacle, it is permitted to install it with the sheathing and paper filler left in place. In all other installations the sheathing and paper must be removed.

### Beveled Corners, Cover and Enclosure:

1. Install the black insulated conductor on the beveled corner side of the SCD.
2. The beveled corner is a positioning guide and the SCD should be mounted in the wall with the beveled corner up.

The sheathing on an installed cable must penetrate the SCD enclosure by a 1/4 inch.

Bend the knockout tab outward when a cable will enter the SCD from the knockout opening.

The cable strip lengths and conductor lengths given in the figures are an approximation. Form the conductors with your fingers. See Fig. 6.

## SCD INSTALLATION TOOLS CAT. NOS. WT824 AND WT825

**GENERAL:** These tools are used for installing Wirecon SCD onto 14-2/G and 12-2/G NM sheathed cables.

## WT824:

- Tool is comprised of two major parts, a slitter assembly (A) for preparing the cable, and a frame with compression jaws (B) for joining the SCD's cover to its enclosure. Place prepared cable on cover. See Fig. 1.
- Use the slitter as follows.
  1. Fully open the tool's handles and place a straight and flat cable section into the cable nest (C).
  2. Close and open the handles fully. Remove the slit and formed cable. See Fig. 2.
- To install a SCD onto a prepared cable do the following.
  1. Place conductors onto the cover's pusher fingers. See Fig. 3.
  2. Align SCD beveled corners and guide cover latches into enclosure assembly tracks until pre-latch engages.
  3. Center the SCD in tool with faceplate (A) toward the operator. When the device is a toggle switch the toggle (B) is placed through the hole in the compression jaw. See Fig. 4.
  4. Close the handles until the SCD latches are locked into position; a double click will be heard. See Fig. 3.
  5. Only one cable at a time can be installed.
- To reopen the SCD for installation of an additional cable, insert a screwdriver blade under the latches, twist slightly and remove the unlatched cover. Repeat the above procedure for installation of up to three layers of conductors.

## WT825:

- Tool is comprised of two major parts, the wire pushers (A), and the frame with device cradle (B) and compression jaw (C). See Fig. 5. The wire pushers are used to push the conductors into the insulation displacement contacts. There are two wire pushers – the switch it is dyed "RED" with a stamped "S" and the receptacle it is dyed "BLACK" with a stamped "R". The wire pusher is placed on the compression jaw and held in position with a ball detent. The device cradle supports and aligns the SCD with the wire pusher on the compression jaw. This tool is used with device series WDSU, WDSU, WDRU and WDRDU. This tool does not have a cable slitter. Prepare the cable by removing the sheathing and forming the conductors to align with the SCD contacts. Do not damage the conductor insulation when preparing the cable.
- To install a SCD onto a prepared cable do the following.
  1. Place the enclosure (D) onto the cradle pegs (E) with the beveled corner positioned toward the frame and then push the enclosure onto the pegs.
  2. Position the formed conductors over the contacts in the enclosure with the black conductor on the beveled corner side.
  3. Push the tool handles together until the wire pusher fully joins the enclosure.
  4. Open the handles and inspect that the conductors are captured in the contacts.
  5. Repeat the above procedure for installation of up to three layers of conductors.
  6. Only one cable at a time can be installed.
  7. Remove the wire pusher. Guide the cover latches into the enclosure assembly tracks until the pre-latch engages. Close the handles together until the SCD latches are locked into position; a double click will be heard.

## RECEPTACLE INSTALLATION

- Use Wirecon installation tools WT824 or WT825 to install a receptacle on the prepared cables below.
- For a single in-line cable - cable sheathing and paper filler can remain. In all other installations the sheathing and paper must be removed 1/4" for in-line and 1/2" for all other installations.

- In the figures that follow, WHT identifies a white conductor and BLK a black conductor.

## IN-LINE INSTALLATION

1. See Fig. 7 for dimensions to pre-form cable's conductors.
2. See Fig. 8 for placement of cable into a receptacle enclosure. Align pre-formed conductors with enclosure contacts or cover pushers.

## END-OF-LINE INSTALLATION

1. See Fig. 9 for dimensions to pre-form conductors.
2. See Fig. 10 for placement of cable into a receptacle enclosure. Align pre-formed conductors with enclosure contacts or cover pushers.

## POWER TAP and SPLICE

1. A power tap or splice is the joining of in-line and end-of-line cables in a receptacle. The cables can be joined in any sequence.
2. See Fig. 11 for a typical power tap and splice installation. "B" identifies an in-line cable and "C" an end-of-line cable.
3. When three cables are installed there is the **optional** to strip conductor installation. Strip off a 1 1/8" of insulation from the conductors for the first and second cables installed.

## SWITCH INSTALLATION

- Use Wirecon installation tools WT824 or WT825 to install a switch on the prepared cables below.
- Remove the cable sheathing and paper filler 2 3/4" for end-of-line and 1 3/4" for all other installations.
- In the figures that follow, WHT identifies a white conductor and BLK a black conductor.

## IN-LINE INSTALLATION

1. See Fig. 12 for dimensions to pre-form conductors.
2. See Fig. 13 for placement of cable into a switch enclosure. Align pre-formed conductors with enclosure contacts or cover pushers.

## END-OF-LINE INSTALLATION

1. See Fig. 14 for dimensions to pre-form conductors.
2. See Fig. 15 for placement of cable into a switch enclosure. Align pre-formed conductors with enclosure contacts or cover pushers.

## POWER TAP

1. Power tapping is the joining of additional cables to an in-line cable within the switch. The tapped power can be switched, unswitched or both.
2. See Fig. 16 for dimensions to pre-form conductors for an unswitched power tap.
3. See Fig. 17 for placement of cable into a switch enclosure for an unswitched power tap. Align pre-formed conductors with enclosure contacts or cover pushers. When ganging switches together it is recommended that if a jumper is needed in between switches that it be installed before a power tap.
4. The dimensions to pre-form conductors for a switched power tap are the same as shown in Fig. 16 except cut black conductor 7/8 inch and white 1.0 inch.
5. See Fig. 18 for placement of cable into a switch enclosure for a switched power tap. Align pre-formed conductors with enclosure contact or cover pushers.
6. When three cables are installed there is the optional to strip the white conductor installation. Strip off 1.0 inch of white insulation from the conductors for the first and second cables installed.

**GANGED INSTALLATION**

- Use the procedure below to install ganged SCD. See Fig. 20. **DO NOT OVER TIGHTEN PAWL SCREWS**
- 1. Install the right most SCD (A) into the wall cutout and tighten both pawls screws (B).
- 2. Insert the adjacent SCD (C) by rotating the bottom pawl downward to hook the bottom of the wall cutout and then push the top of the SCD into the opening. Tighten both pawls screws (D).
- Finish the installation by using a snap-on or screw-on wall plate.

**3-WAY SWITCH INSTALLATION**

- Figure 19 shows two 3-way switches and associated wiring. Feature (F) is the beveled corner on the enclosure. Use the diagram in Fig. 19 to install 3-way Wirecon switches. The conductor insulation color code is White (WHT), Black (BLK), Red (RED).
- The branch circuit power cable runs to the load fixture junction box (A).

- The grounding wires, bare copper or green color insulation, are cut off even with the cable sheathing at both ends of the cables connected to 3-way switches.
- A two-wire cable (B) runs to the first 3-way switch (C). This cable's white conductor connects to the branch circuit black conductor and its black conductor connects to the load. The dimensions for the conductors at the switch are the same as shown in Fig. 16 except cut the grounding wire off even with cable sheathing and the white conductor remains straight.
- A three-wire cable (D) runs between the first (C) and second (E) 3-way switches. See Fig. 21 for the dimensions to pre-form the conductors at the first switch and Fig. 22 for the dimensions to pre-form the conductors at the second switch.

**DEVICE CRADLE REPLACEMENT**

- Remove 3/32" hexagon socket head screws (A). See Fig. 23.
- Install device cradle (B) with text "WHITE" (C) facing away from frame (D).
- Apply a medium grade of thread-locking adhesive to the screws (E) and install and tighten.

Fig. 1

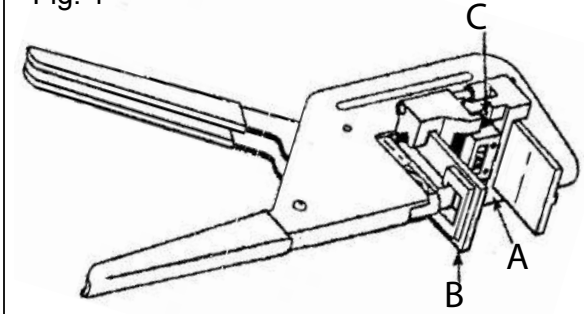


Fig. 2



Fig. 3

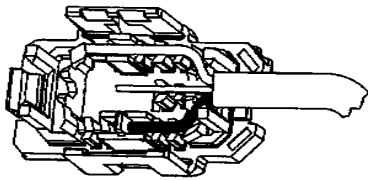


Fig. 4

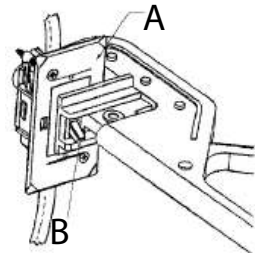


Fig. 5

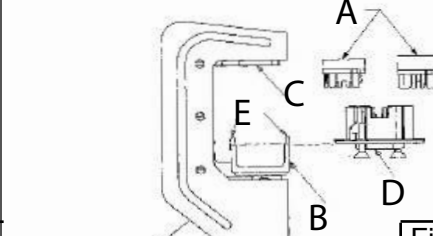


Fig. 6

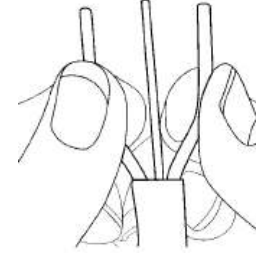


Fig. 7

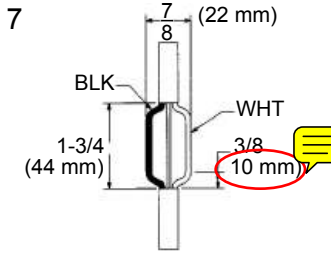


Fig. 8

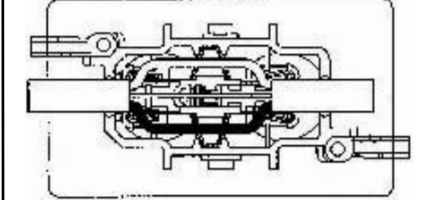


Fig. 9

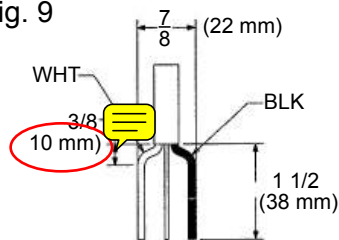


Fig. 10

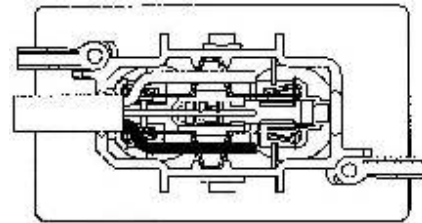


Fig. 11

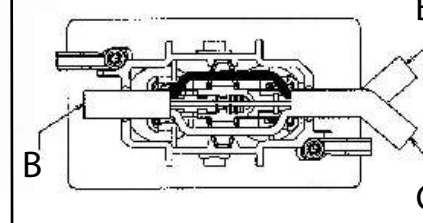


Fig. 12

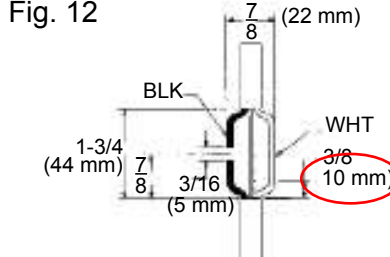


Fig. 13

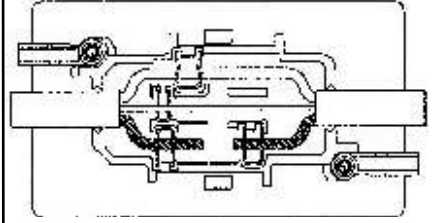


Fig. 14

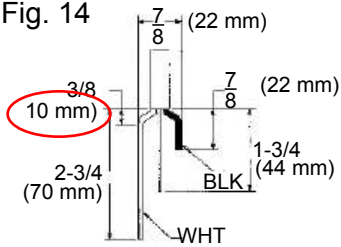


Fig. 15

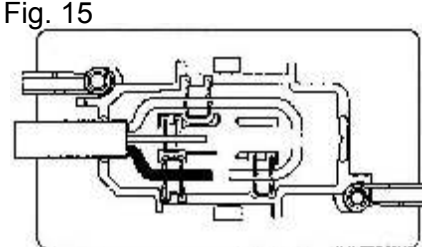


Fig. 16

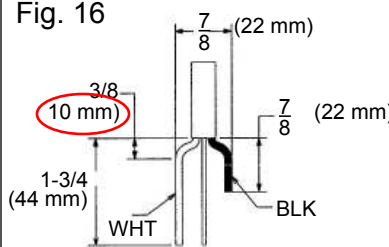


Fig. 17

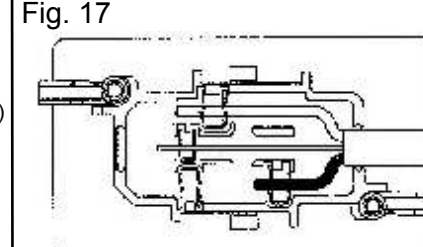


Fig. 18

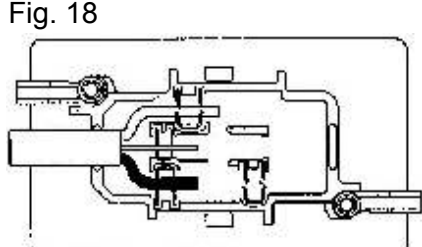


Fig. 19

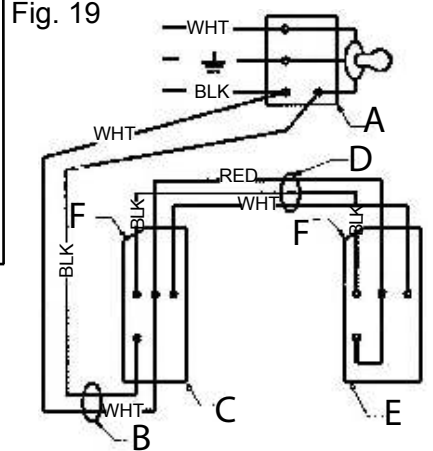


Fig. 20

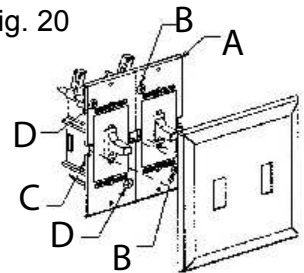


Fig. 21

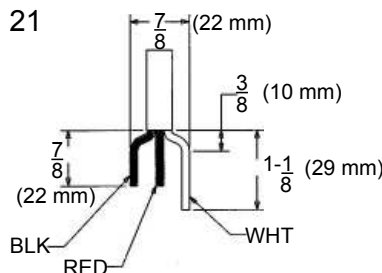


Fig. 22

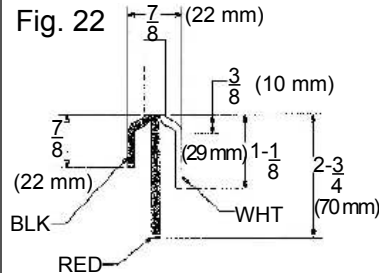


Fig. 23

