Installation and Operating Instructions
Flange Operated Disconnect Switches

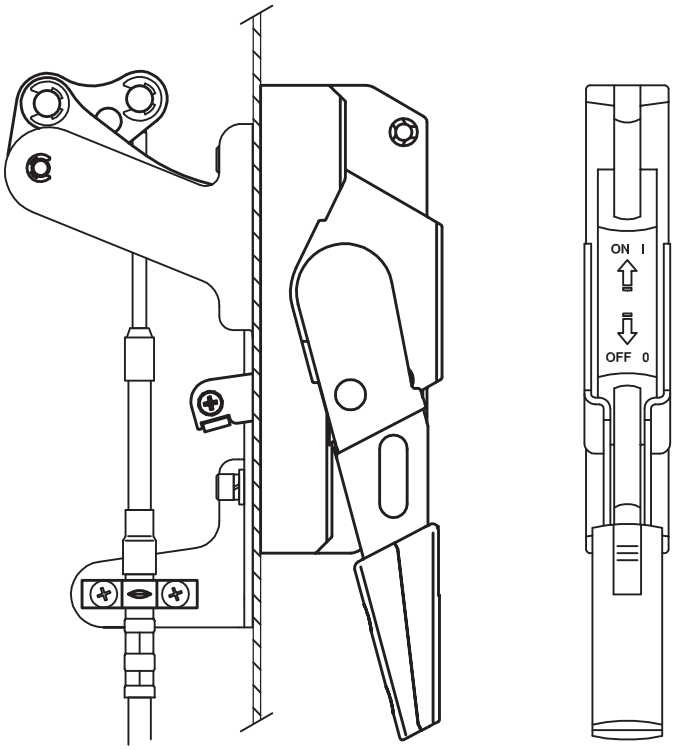
30-200A non-fused series switches
30-200A fused series switches

These instructions cover the installation and adjustment of flange handle operated disconnect switches.

Handles and mechanisms are UL Recognized, disconnect switches are UL Listed.

Overview of Function:
The disconnect switch is operated ON and OFF by means of an enclosure mounted flange handle. A flexible push-pull cable connects the handle to the switch, transfering the vertical motion of the handle to the rotary motion required to operate the switch.

Features:
- Padlockable in OFF position
- Provides door interlock in ON position
- Meets NFPA79 requirements



Warning:
This equipment should be installed only by qualified personnel in accordance with accepted safety practices.

The following components are required for a complete flange operated switch assembly:
1. Flange Mechanism Kit - FOMx
2. Flange Handle - FHCxx
3. Flexible Cable - CABLEx
4. Disconnect Switch - MxxxJx
5. Switch Lug Kit (optional)

1. Flange Mechanism Kits:
- FOM1 for use with M30U3, M60U3, M100U3
- FOM2 for use with M30J12, M30CC12
- FOM3 for use with M60J12
- FOM4 for use with M60J30, M100Jxx, M200xxx

2. Flange Handles:
- FHC12 UL Type 1, 3R & 12
- FHC4X UL Type 1, 3R, 4, 4X & 12

3. Flexible Cable (length):
- CABLE36 36 in.
- CABLE48 48 in.
- CABLE60 60 in.
- CABLE72 72 in.
- CABLE84 84 in.
- CABLE96 96 in.
- CABLE108 108 in.

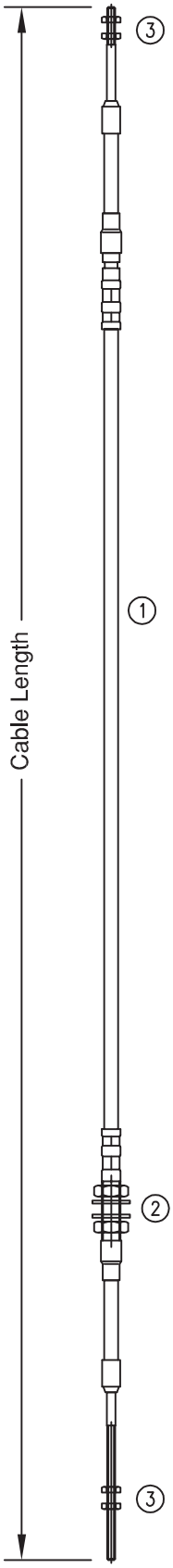
4. Disconnect Switches
3 pole, non-fused:
- M30U3 30A
- M60U3 60A
- M100U3 100A
- M200U30 200A

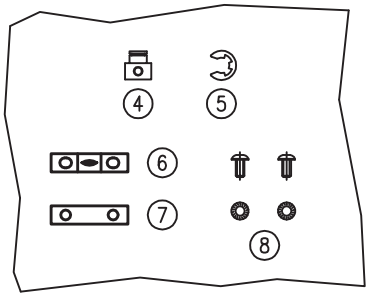
3 pole, fused:
- M30J12 30A, class J fuse
- M30CC12 30A, class CC fuse
- M60J12, M60J30 60A, class J fuse
- M100J30
- M200J30 200A, class J fuse

5. Switch Terminal Lug Kits:
M200xxx switches require optional terminal lug kits, p/n: LUG200
All other switches have integral lugs.

Required tools for installation:
- #2 Phillips head screwdriver
- 3/16" Allen hex wrench
- (2) 5/16" open end wrenches
- (2) 11/16" open end wrenches
- Standard socket wrench set
- 7/16" socket
- Pliers
- Drill and tap for 1/4-20 hardware

Flexible Cable



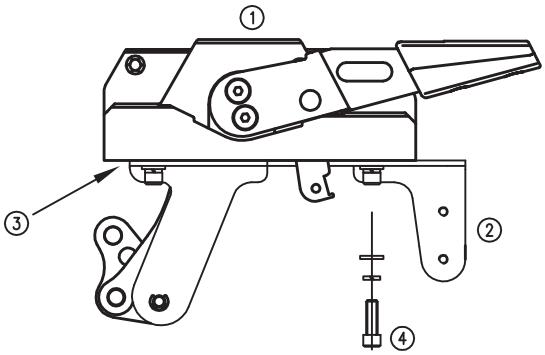


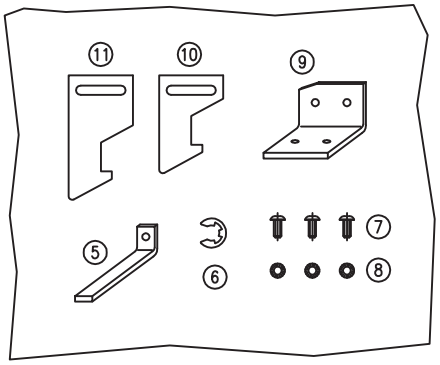
(bagged hardware)

Flexible Cables
Cables are furnished with the components illustrated:

1. Cable
2. Cable Housing Nuts / Washers
3. (4) #10-32 hex nuts (installed on cable ends)
4. Cable Bearing
5. "E" retaining ring (for item 4)
6. Cable Clamp
7. Cable Clamp Shim Plate
8. Cable Clamp hardware
   - (2) #10-32x3/8" Pan hd screw
   - (2) #10 lock washer

Flange Handle





(bagged hardware)

Flange Handle:
Handles are furnished partially assembled with the components illustrated:

1. Flange Handle
2. Handle Bracket
3. Door gasket (not shown)
4. Mounting hardware
   - (2) 1/4-20x3/4" socket hd cap screw
   - (2) 1/4" split lockwasher
   - (2) 1/4" flat washer

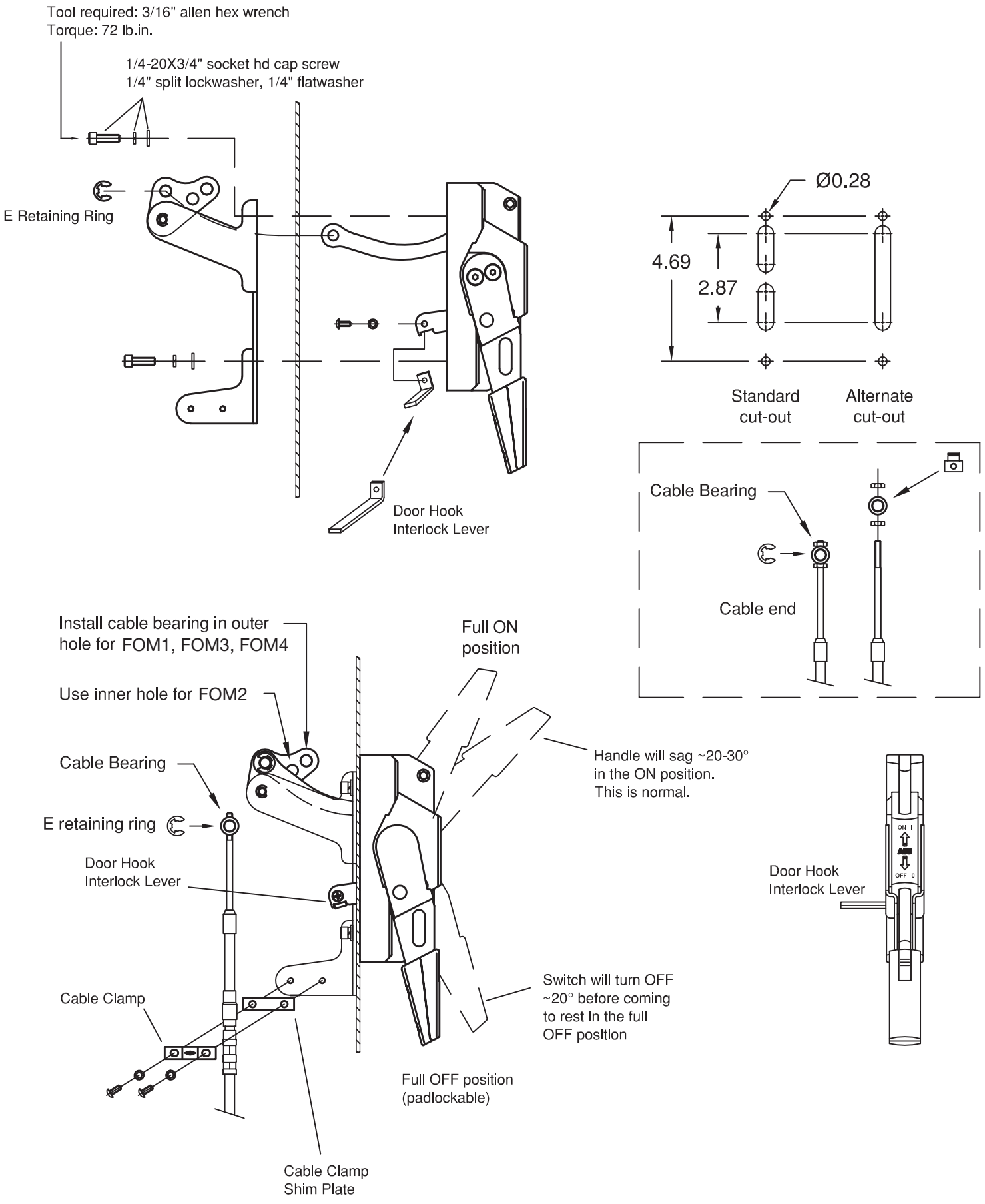
Additonal components and hardware provided in a separate plastic bag:

5. Door Hook Interlock Lever
6. "E" Retaining Ring
7. (3) #8-32x3/8" Phillips hd screw
8. (3) #8 lockwasher
9. Door Hook Weld Bracket
10. Door Hook, Short
11. Door Hook, Long

Items 9, 10 and 11 may not be needed if the enclosure used is already equipped with a door hook or hook mounting bracket.

Item 9 is intended to be spot welded to the rear surface of the enclosure door and serve as a mounting base for the door hook.

Flange Handle Assembly

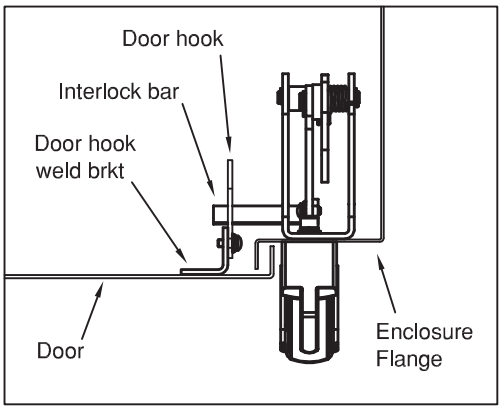


Flange Handle Door Interlock

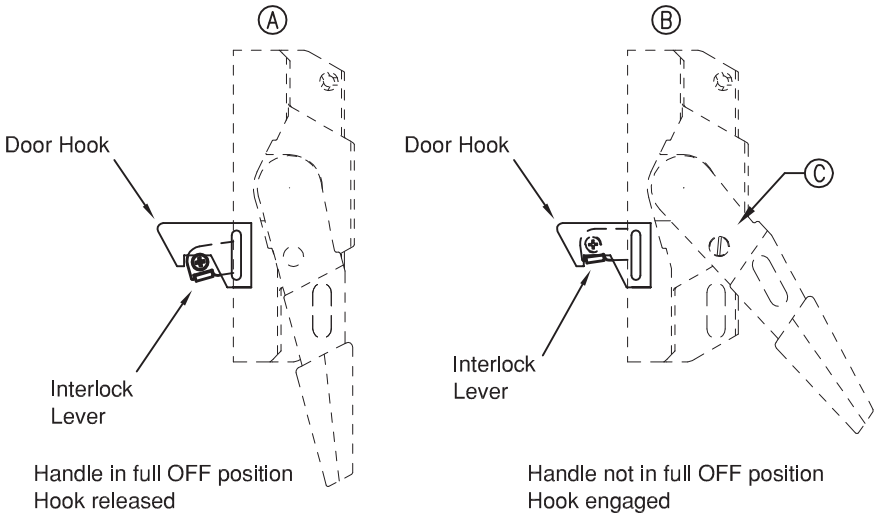
The flange handle is equipped with a door interlock feature, preventing the enclosure door from being opened if the handle is not in the full OFF position. Also, the handle includes an interlock defeat mechanism, allowing access to the enclosure with the use of a tool when the handle is in the ON position.

During installation, the proper function of the door interlock feature must be adjusted and verified. This is achieved by alignment of the door hook with the interlock lever and may require adjustment of the position of the hook and/or slight bending of the interlock lever.

The specific enclosure used may already be equipped with the door hook

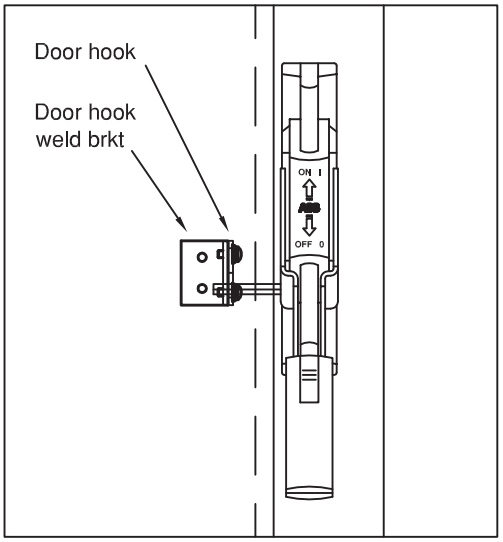


Top view (looking down from above)



Handle in full OFF position
Hook released
Door may be freely opened

Handle not in full OFF position
Hook engaged
Door is interlocked with handle



Front view

Operation:

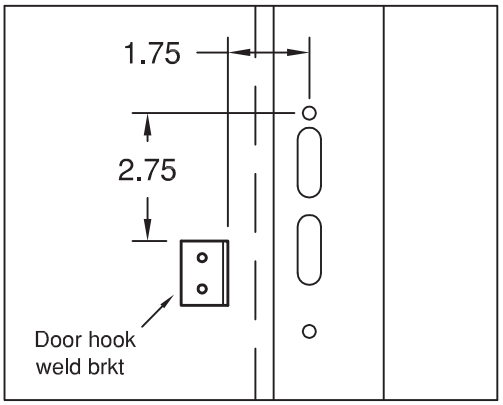
The HANDLE INTERLOCK LEVER rises when the handle is moved away from the full OFF position, engaging the DOOR HOOK and preventing the door from being opened.

Two DOOR HOOKs (long and short) are included with the handle, along with a HOOK MOUNTING BRACKET, in the event that the actual enclosure used does not include a door hook. The mounting bracket is designed to be spot welded to the inside surface of the door, but may be drilled and screwed to the door if desired.

A. Interlock bar moves downward when the handle is moved to the full OFF positon, disengaging the door hook and allowing the door to be freely opened.

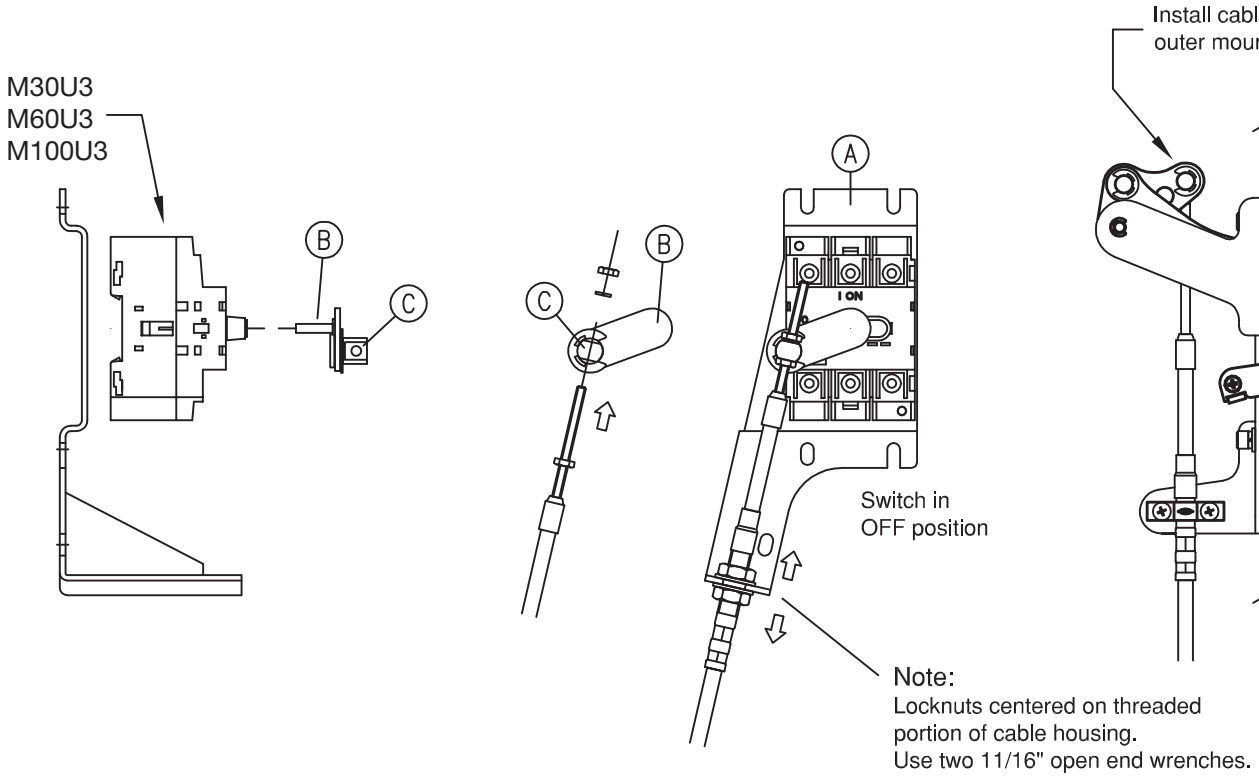
B. If the handle is raised, the interlock bar moves upward and engages the door hook. The enclosure door is now interlocked to the handle and cannot be opened.

C. The interlock defeat mechamism can be operated using a tool (flat blade screwdriver) to release the door hook and allow the door to be opened, even if the handle is ON.



Front view - DOOR HOOK BRACKET location

FOM1
Flange Oprated Switch Mechanism Kit
for use with switches: M30U3, M60U3 and M100U3



Assembly Procedure

Before installing switch, install handle and cable together in the enclosure flange cut-out. See pages 3 & 4 of this document for assembly and installation instructions. Place handle in full OFF position before proceeding with switch installation.

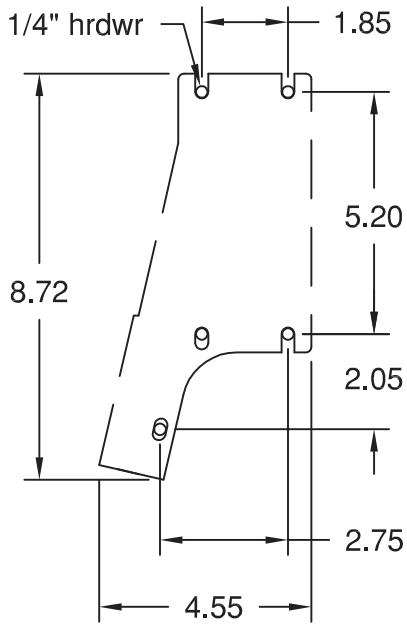
1. Install M30U3, M60U3 or M100U3 switch on FOM1 BASE PLATE (A) using the included hardware.

2. Install the OPERATING LEVER (B) into the switch rotary mechanism as far as possible and tighten the switch set screw. Torque: 9 lb.in., (2.5mm Allen hex wrench)

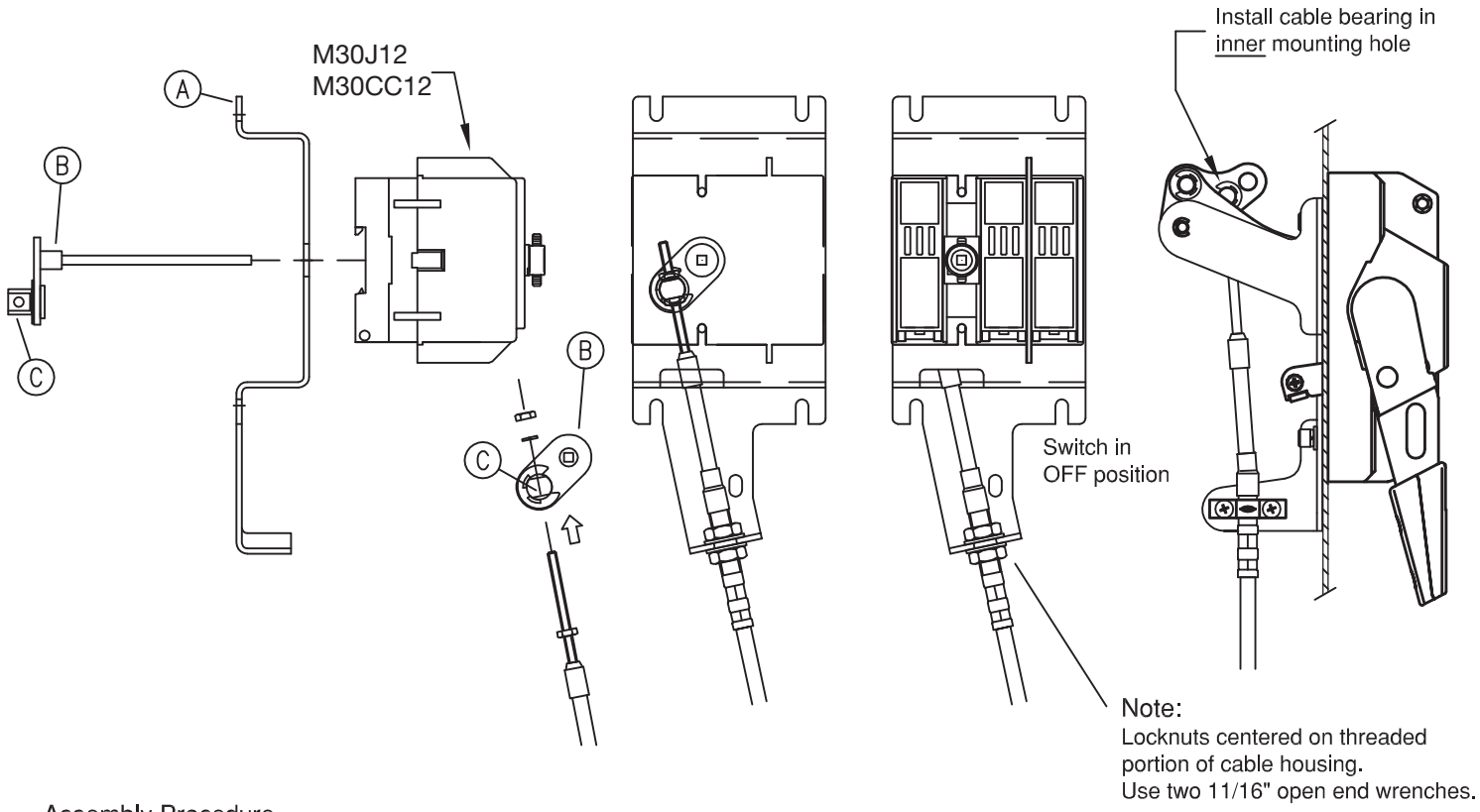
3. Install the free end of the cable into the PIVOT POST (C) and install the cable housing into the open slot in the BASE PLATE, tighten the two lock nuts on the cable housing. Note: the two lock nuts should be centered on the threaded portion of the cable housing to allow for later adjustment.

4. Install the cable hardware as shown above and tighen onto the PIVOT POST. Make certain that both the flange handle and the switch are in the full OFF position.

5. Operate the switch ON and OFF several times. If adjustment is required, loosen the two lock nuts on the cable housing and adjust their positions to alter the cable travel. Use two 11/16" open end wrenches to adjust and tighten the lock nuts.



FOM2
Flange Operated Switch Mechanism Kit
for use with switches: M30J12 & M30CC12



Assembly Procedure

Before installing switch, install handle and cable together in the enclosure flange cut-out. See pages 3 & 4 of this document for assembly and installation instructions. Place handle in full OFF position before proceeding with switch installation.

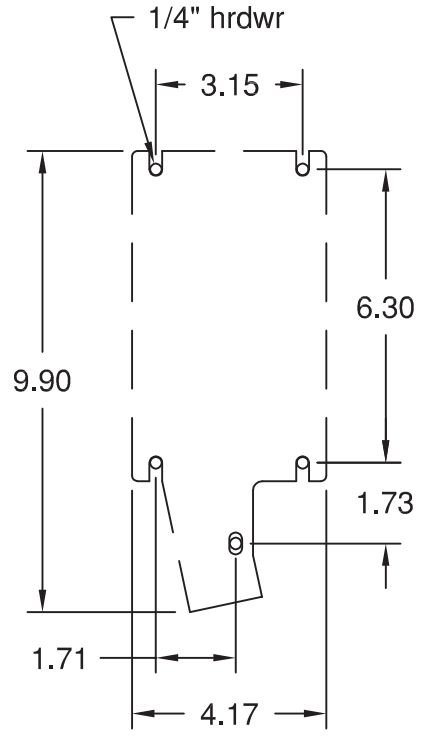
1. Install M30J12 or M30CC12 switch on FOM2 BASE PLATE (A) using the included hardware.

2. Install the OPERATING LEVER (B) into the switch rotary mechanism from underneath the BASE PLATE. Fully insert the operating lever and orient as shown above. Tighten the two set screws at the top of the switch using a small flat blade screwdriver to retain the OPERATING LEVER. Torque: 9 lb.in.

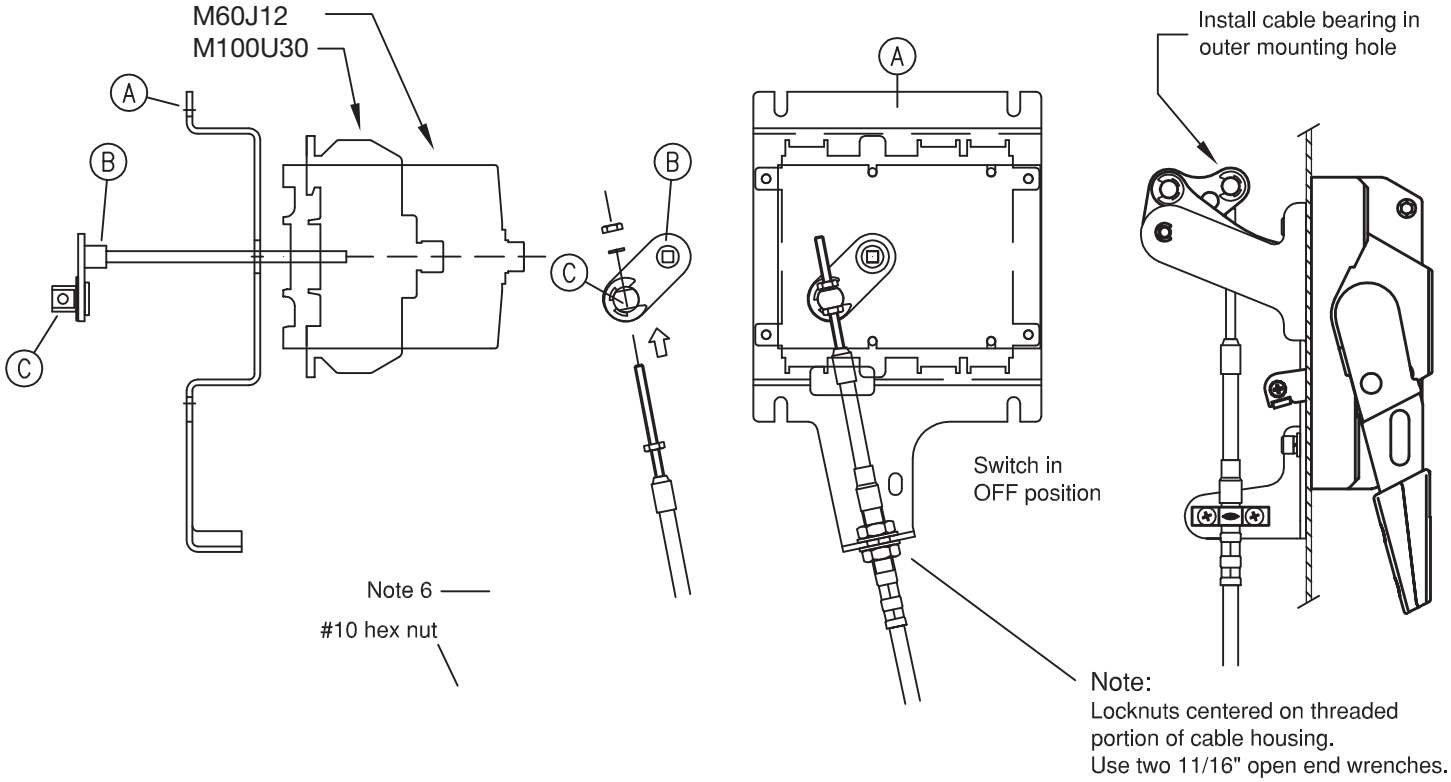
3. Install the free end of the cable into the PIVOT POST (C) and install the cable housing into the open slot in the BASE PLATE, tighten the two lock nuts on the cable housing. Note: the two lock nuts should be centered on the threaded portion of the cable housing to allow for later adjustment.

4. Install the cable hardware as shown above and tighen onto the PIVOT POST. Make certain that both the flange handle and the switch are in the full OFF position.

5. Operate the switch ON and OFF several times. If adjustment is required, loosen the two lock nuts on the cable housing and adjust their positions to alter the cable travel. Use two 11/16" open end wrenches to adjust and tighten the lock nuts.



FOM3
Flange Oprated Switch Mechanism Kit
for use with switches: M60J12, M100U30



Assembly Procedure

Before installing switch, install handle and cable together in the enclosure flange cut-out. See pages 3 & 4 of this document for assembly and installation instructions. Place handle in full OFF position before proceeding with switch installation.

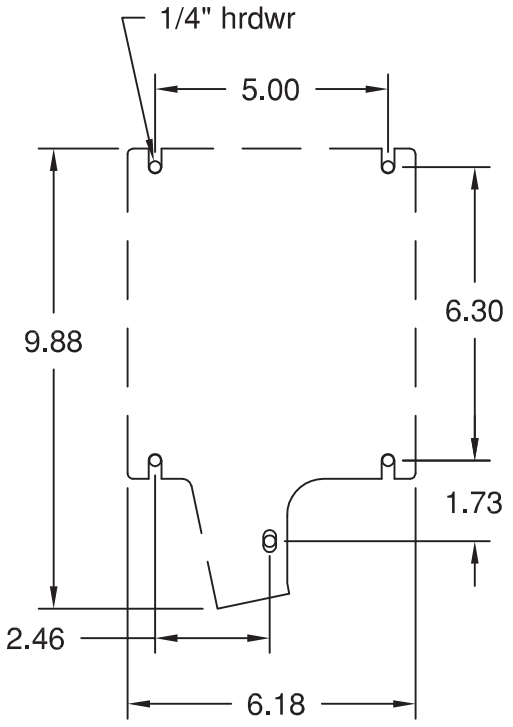
1. Install M60J12 or M100U30 switch on FOM3 BASE PLATE (A) using the included hardware.

2. Install the OPERATING LEVER (B) into the switch rotary mechanism from underneath the BASE PLATE. Fully insert the operating lever and orient as shown above. Tighten the two set screws at the top of the switch using a small flat blade screwdriver to retain the OPERATING LEVER. Torque: 9 lb.in.

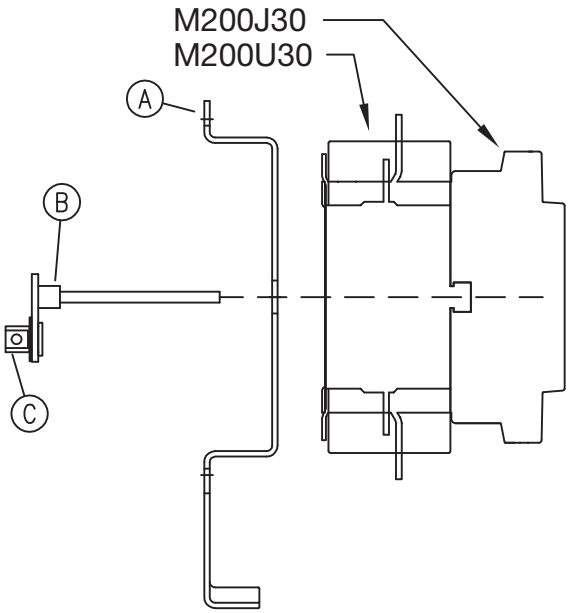
3. Install the free end of the cable into the PIVOT POST (C) and install the cable housing into the open slot in the BASE PLATE, tighten the two lock nuts on the cable housing. Note: the two lock nuts should be centered on the threaded portion of the cable housing to allow for later adjustment.

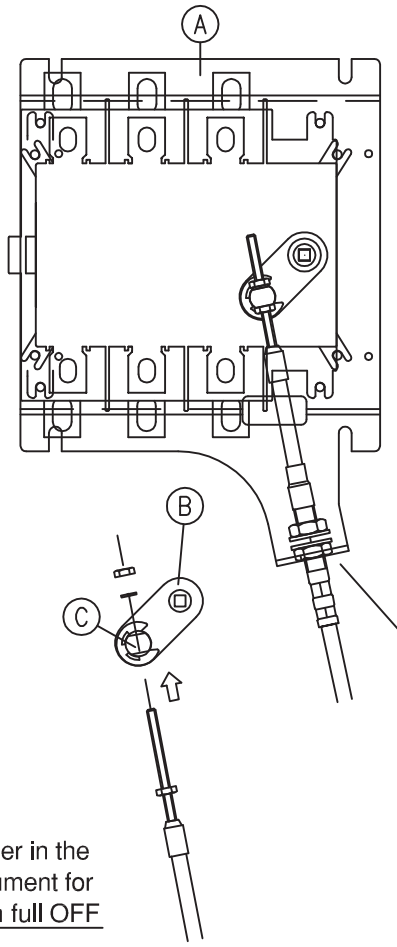
4. Install the cable hardware as shown above and tighen onto the PIVOT POST. Make certain that both the flange handle and the switch are in the full OFF position.

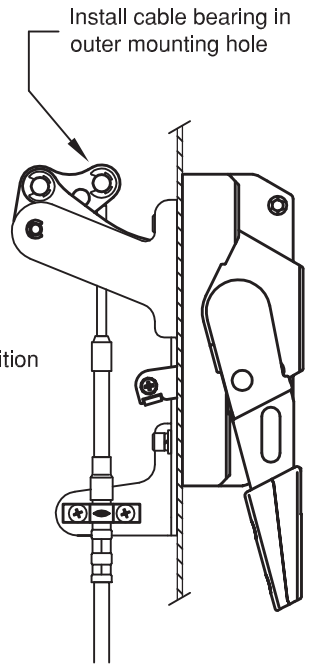
5. Operate the switch ON and OFF several times. If adjustment is required, loosen the two lock nuts on the cable housing and adjust their positions to alter the cable travel. Use two 11/16" open end wrenches to adjust and tighten the lock nuts.



FOM4
Flange Oprated Switch Mechanism Kit
for use with switches: M60J30, M100J30, M200J30, M200U30







Note:
Locknuts centered on threaded portion of cable housing.
Use two 11/16" open end wrenches.

Assembly Procedure

Before installing switch, install handle and cable together in the enclosure flange cut-out. See pages 3 & 4 of this document for assembly and installation instructions. Place handle in full OFF position before proceeding with switch installation.

1. Install M60J30, M100J30, M200J30 or M200U30 switch on FOM4 BASE PLATE (A) using the included hardware.

2. Install the OPERATING LEVER (B) into the switch rotary mechanism from underneath the BASE PLATE. Fully insert the operating lever and orient as shown above. Tighten the two set screws at the top of the switch using a small flat blade screwdriver to retain the OPERATING LEVER. Torque: 9 lb.in.

3. Install the free end of the cable into the PIVOT POST (C) and install the cable housing into the open slot in the BASE PLATE, tighten the two lock nuts on the cable housing. Note: the two lock nuts should be centered on the threaded portion of the cable housing to allow for later adjustment.

4. Install the cable hardware as shown above and tighen onto the PIVOT POST. Make certain that both the flange handle and the switch are in the full OFF position.

5. Operate the switch ON and OFF several times. If adjustment is required, loosen the two lock nuts on the cable housing and adjust their positions to alter the cable travel. Use two 11/16" open end wrenches to adjust and tighten the lock nuts.