Conduit Drilling and Tapping Guidelines

When drilling & tapping enclosures for conduit, proper installation requires compliance with the following:

1. Must be tapped with at least 5 full NPT threads in enclosure back or sides only; min. ½" conduit size for XJF and XCE series.
2. Depth of NPT holes must be plus ½ turn min. to plus 2 turns max. past standard NPT plug gage notch.
3. Inner end of conduit openings shall be smooth and well-rounded.

TABLE I

THREAD SIZE OF CONDUIT	MINIMUM WALL THICKNESS AT CONDUIT ENTRANCE EXCLUDING XCEX
Inches (NPT)	Explosionproof
½ - ¾	⅜ inch
1 - 2	7⁄16 inch
2 ½ - 5	⅝ inch

TABLE II

Conduit size, inches (NPT) / metric	½ /m16	¾/m16	1/m25	1¼/m32	1½/m46	2/m56	2 ½/m 63	3/m75	3 ½	4	5
Minimum Distance from conduit CL to inside corner or back of box	1 5⁄16	1 7⁄16	1 9⁄16	1 ¾	1 7⁄8	2 ⅛	2 ⅜	2 11⁄16	2 15⁄16	3 ¼	3 7⁄8
Approximate diameter of union	1 7⁄8	1 7⁄8	2 1⁄16	2 7⁄8	3 ¼	3 7⁄8	4 7⁄8	5 ½	6	6 ½	7 ½

TABLE III

SIZE	5	4	3 ½	3	2 ½	2	1 ½	1 ¼	1	¾	½
½/m16	4 ½	3 ⅝	3 ⅜	3	2 ⅝	2 ⅜	2	1 ⅞	1 ¾	1 ⅝	1 ½
¾/m20	4 ¾	3 ¾	3 ½	3 ⅛	2 ¾	2 ½	2 ⅛	2	1 ⅞	1 ¾	
1/m25	4 ⅞	4	3 ⅝	3 ¼	3	2 ⅝	2 ⅜	2 ¼	2		
1 ¼/m32	5 ⅛	4 ⅛	3 ⅞	3 ½	3 ⅛	2 ⅞	2 ½	2 ⅜			
1 ½/m40	5 ½	4 ¼	4	3 ⅝	3 ¼	3	2 ⅝				
2/m50	5 ¾	4 ⅝	4 ¼	3 ⅞	3 ⅝	3 ¼					
2 ½/m63	6	4 ⅞	4 ⅝	4 ¼	3 ⅞						
3/m75	6 ¼	5 ⅜	5	4 ⅝							
3 ½	6 ½	5 ⅝	5 ¼								
4	6 ¾	5 ⅞									
5	7 ¼										

NOTES
1. This information is compiled from data which we believe is reliable and is given in good faith. Since the methods of application and conditions under which our products are used are beyond our control, we are not able to guarantee the application and/or use of same. The user assumes all risks and liability in connection with the application and use of our products.
2. Dimensions are in inches.
3. Metric threads available from factory for most applications – Consult Factory.
4. Consult Factory for special spacing arrangements. Hydro test may be required.

Auxiliary Device Drilling & Tapping Guidelines

Spacing For Auxiliary Devices Installed in Box Walls Of Control Panel Enclosures Used In Hazardous Locations.

When using an Auxiliary Device in the box wall of an enclosure used in hazardous locations, proper installation requires compliance with the following:

1. A minimum of (5) thread engagement, class 2 fit, required for group C & D applications.
   A minimum of (7) thread engagement, class 2 fit, required for group B applications.

2. Table I shows minimum box wall thickness for Auxiliary Device threads.

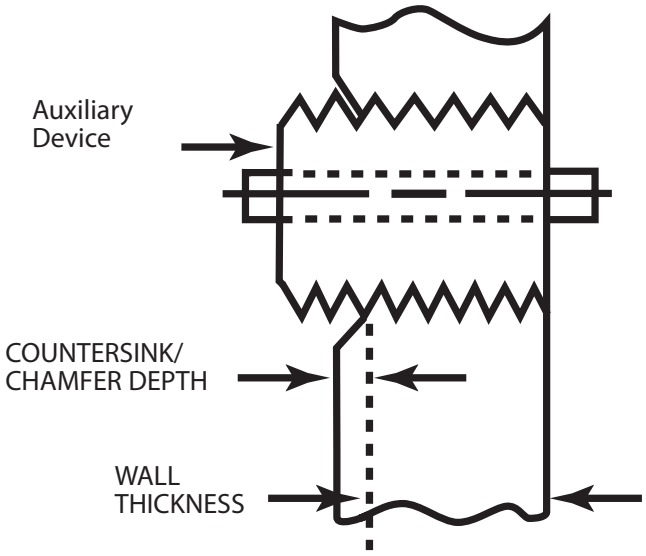
TABLE I

REQUIRED MINIMUM BOX WALL THICKNESS				
Thread Size (In.)	Group C & D min. (5) thread engagement	Group B min. (7) thread engagement	Typical Auxiliary Devices	Drill Dia.
½ -14 NPSM	⅜ Inch	½ Inch		.747/.759
¾ -14 NPSM	⅜ Inch	½ Inch	XBO, XHPB, XHSS, Standard Operators	.958/.970
1 -11 ½ NPSM	7/16 Inch	⅝ Inch	XCBH Large Handle Assembly	1.201/1.211
⅜ - 18 NPSM	9/32 Inch	13/32 Inch	XCBH Small Handle Assembly	.603/.612
⅜ – 16 UNC	5/16 Inch	7/16 Inch	XMOB, XMOSS, Mini Operators	5/16

3. If Auxiliary Device contains undercut in engaging threaded section, the minimum wall thickness shown in Table I must increase to maintain the minimum required thread engagement. (Fig. A)

(continued next page)

FIG. A
SEE NOTE 3



Auxiliary Device Drilling & Tapping Guidelines

Spacing For Auxiliary Devices Installed in Box Walls Of Control Panel Enclosures Used In Hazardous Locations.

When using an Auxiliary Device in the box wall of an enclosure used in hazardous locations, proper installation requires compliance with the following (continued from previous page):

4. Table II provides the minimum distance an Auxiliary Device center can be placed from inside corner or back of box.

TABLE II

	⅜ - 16 UNC	⅜ NPSM	½ NPSM	¾ NPSM	1 NPSM
Minimum Distance from auxiliary Device CL to corner or back of box	1 ½	1 ⅝	1 ¾	1 ⅞	2

5. Table III shows minimum spacing between conduit and Auxiliary Device entrances.

TABLE III

AUXILIARY DEVICE THREAD (In.)	5	4	3-½	3	2-½	2	1-½	1-¼	1	¾	½
⅜	4 ½	3 ⅝	3 ⅜	3	2 ⅝	2 ⅜	2	1 ⅞	1 ¾	1 ⅝	1 ½
½	4 ⅝	3 ¾	3 ½	3 ⅛	2 ¾	2 ½	2 ¼	2 ⅛	2	1 ⅞	1 ¾
¾	4 ¾	4	3 ⅝	3 ¼	2 ⅞	2 ⅝	2 ⅜	2 ¼	2 ⅛	2	1 ⅞
1	5	4 ¼	3 ⅞	3 ½	3	2 ¾	2 ½	2 ⅜	2 ¼	2 ⅛	2

6. Table IV shows minimum spacing between auxiliary device entrances.
   NOTE: Increase distance between devices as required to maintain minimum through air spacing of contacts required by electrical codes.
7. Double all distances in Table III and IV for holes located in back wall.

TABLE IV

MIN. SPACING BETWEEN AUX. DEVICE OF VARYING THREAD SIZES (INCHES)				
	⅜	½	¾	1
⅜	1 ½	1 ½	1 ½	2 ½
½	1 ½	2	2	2 ½
¾	1 ½	2	2	3
1	2 ½	2 ½	3	3 ½