



## INSTRUCTIONAL DATA SHEET “EXB” (QUANTUM®) SERIES

### FOR DRILLING & TAPPING OF CONDUIT OPENINGS IN U.L. LISTED, CSA CERTIFIED, CAST ALUMINUM BOXES FOR HAZARDOUS LOCATIONS

#### GENERAL INSTRUCTIONS & REQUIREMENTS FOR DRILLING & TAPPING IN FIELD.

- 1.) Standard NPT threads (with a 3/4” per foot taper) **must** be used for all conduit openings.
- 2.) Field drilling and tapping of the side walls of blank boxes may be done, provided the location of conduit openings meets the specifications of Chart 1, and minimum wall thickness meets the dimensions shown on Charts 2 & 3. Use Chart 1 to determine the maximum quantity and size of conduit openings permitted.
- 5.) After the size of conduit openings has been determined for specific enclosures, measure the wall thickness and refer to the specific chart per the following steps:
  - A.) 5 Full Thread Reference Chart 2.
  - B.) 3-1/2 Full Thread Reference Chart 3.
- 6.) If insufficient wall thickness is encountered, consult the factory.

**NOTE:** 1/2” trade size is the minimum allowable size for any conduit opening. Refer to Chart 4 for maximum allowable conduit sizes.

- 3.) **CLASS I, DIVISION 1 & CLASS II LOCATIONS** require boxes with a wall thickness sufficient to provide a minimum of five (5) full threads. (See Chart 2)

**NOTE:** Conduit opening gaging requirement “+1/2 to +3-1/2 turns deeper than nominal” in lieu of the “+1 turn of nominal” described in ANSI / ASME B1.20.1

- 4.) **CLASS II LOCATIONS, WHEN THE BOX IS NOT SUPPORTED BY THE CONDUITS** require a wall thickness sufficient to provide a minimum of 3-1/2 full threads. (See Chart 3)

#### INSTALLATION PRECAUTIONS

- 1.) **For proper procedure to be used for opening box/cover joint, refer to the general installation sheet, Form K0983.**
- 2.) Before closing the enclosure, be sure to wipe the ground flange surfaces with a clean cloth to remove any dirt or foreign particles. Any dirt on the flanges can prevent a tight seal of the enclosure. The flanges should then be given a light coating of Killark “LUBG” lubricant.
- 3.) **Always** install **all cover bolts** to secure the enclosure. Missing bolts can result in explosions in hazardous areas.

**REMEMBER TO SAVE ONE OF THESE  
SHEETS FOR MAINTENANCE  
PERSONNEL.**

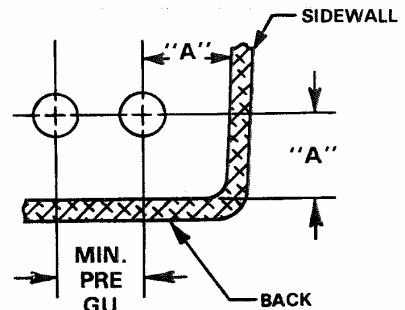
Chart 1: Minimum Centers for Drilled & Tapped Openings for Conduits.  
(Allows for locknut, bushing & union clearance)

SIZE	FORM	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
1/2	(1) MIN	1 3/16											
	(2) PRE	1 3/8											
	(3) GU	1 5/8											
3/4	(1) MIN	1 3/8	1 1/2										
	(2) PRE	1 1/2	1 5/8										
	(3) GU	1 3/4	1 13/16										
1	(1) MIN	1 1/2	1 3/4	1 13/16									
	(2) PRE	1 3/4	1 7/8	2									
	(3) GU	1 7/8	2	2 1/8									
1 1/4	(1) MIN	1 11/16	1 15/16	2 1/16	2 5/16								
	(2) PRE	1 5/8	2 1/16	2 1/4	2 1/2								
	(3) GU	2 1/16	2 1/4	2 5/16	2 1/2								
1 1/2	(1) MIN	1 5/8	2 1/16	2 3/16	2 1/2	2 5/8							
	(2) PRE	2 1/8	2 1/4	2 3/8	2 5/8	2 3/4							
	(3) GU	2 3/16	2 9/32	2 7/16	2 5/8	2 3/4							
2	(1) MIN	2 1/4	2 3/8	2 9/16	2 13/16	2 15/16	3 3/16						
	(2) PRE	2 3/8	2 1/2	2 3/4	3	3 1/8	3 3/8						
	(3) GU	2 1/2	2 19/32	2 3/4	3	3 1/8	3 3/8						
2 1/2	(1) MIN	2 7/16	2 9/16	2 3/4	3	3 3/8	3 3/8	3 5/8					
	(2) PRE	2 5/8	2 3/4	3	3 1/4	3 3/8	3 3/8	4					
	(3) GU	3 1/8	3 7/32	3 3/8	3 9/16	3 11/16	4	4 5/8					
3	(1) MIN	2 33/16	2 15/16	3 1/16	3 5/16	3 7/16	3 3/4	4	4 5/16				
	(2) PRE	3	3 1/8	3 3/8	3 3/8	3 3/4	4	4 3/8	4 3/4				
	(3) GU	3 9/16	3 21/32	3 13/16	4	4 1/8	4 7/16	5 1/16	5 1/2				
3 1/2	(1) MIN	3 1/8	3 1/4	3 3/8	3 5/8	3 3/4	4 1/16	4 5/16	4 5/8	4 15/16			
	(2) PRE	3 3/8	3 1/2	3 5/8	3 7/8	4	4 3/8	4 5/8	5	5 3/8			
	(3) GU	3 7/8	4	4 1/8	4 1/4	4 1/2	4 3/4	5	5 1/4	5 5/8			
4	(1) MIN	3 7/16	3 9/16	3 11/16	3 15/16	4 1/16	4 3/8	4 5/8	4 15/16	5 1/4	5 9/16		
	(2) PRE	3 3/4	3 7/8	4	4 1/4	4 3/8	4 3/4	5	5 3/4	5 5/8	6		
	(3) GU	4 1/8	4 1/4	4 3/8	4 5/8	4 3/4	5	5 1/4	5 5/8	6	6 3/16	6 13/16	
5	(1) MIN	4 1/8	4 1/4	4 3/8	4 5/8	4 3/4	5	5 1/4	5 5/16	5 7/8	6 3/16	6 13/16	
	(2) PRE	4 3/8	4 1/2	4 5/8	4 7/8	5	5 3/8	5 5/8	6	6 1/4	6 5/8	7 1/4	
	(3) GU	4 7/8	5	5 1/8	5 1/4	5 1/2	6	6 1/4	6 3/8	6 7/8	7 1/4	7 5/8	
6	(1) MIN	4 3/4	4 7/8	5	5 1/4	5 3/8	5 5/8	5 7/8	6 3/16	6 1/2	6 13/16	7 1/8	8 1/8
	(2) PRE	5	5 1/8	5 1/4	5 1/2	5 5/8	6	6 1/4	6 3/8	6 7/8	7 1/4	8	8 5/8
	(3) GU	5 1/2	5 5/8	5 3/4	6	6 1/4	6 3/8	6 7/8	7 1/8	7 1/2	7 5/8	8 1/4	8 7/8
Approx. O.D. of:	LOCKNUT	1 1/4	1 1/8	1 11/16	2 3/16	2 7/16	3	3 7/16	4 3/16	4 13/16	5 3/8	6 11/16	7 15/16
	BUSHING	1	1 1/4	1 1/2	1 5/16	2 13/16	2 5/8	3 7/32	3 3/8	4 7/16	5	6 1/4	7 3/8
	CONDUIT	7/8	1 1/16	1 3/8	1 11/16	1 15/16	2 3/8	2 7/8	3 1/2	4	4 1/2	5 5/16	6 5/8

- (1) Minimum spacing required to provide clearance over locknuts and bushings.
- (2) Preferred - More liberal spacings between centers of conduits to be used whenever possible.
- (3) GU - When Listed "GU" series unions (1/2" thru 3") are used, additional spacing between conduits will be required, as specified above.

Conduit Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Dim. "A" *	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 7/8	4 3/8

\* Note: If Listed "GU" series unions are being used (1/2" thru 3"), additional space for clearance may be required. Check dimensions of fittings being used.



**Chart 2: Required wall thickness for five (5) full threads engagement per U.L. 886 Standards.**

Class I, Division I  
Class II Supported by Conduit

CONDUIT SIZE	MINIMUM NUMBER OF FULL THREADS	MINIMUM WALL THICKNESS
½" & ¾"-14	5 (1)	3/8"
1", 1¼", 1½" & 2"-11½	5 (1)	7/16"
2½", 3", 3½", 4", 5" & 6"-8	5 (1)	5/8"

(1) A box used may have thicker walls than required. For thicker walled boxes, the inner end of each conduit opening shall be smooth and well-rounded, as shown below.

**Chart 3: Required wall thickness for 3-1/2 full threads engagement.**

Class II Locations Not Supported by Conduit

CONDUIT SIZE	MINIMUM NUMBER OF FULL THREADS	MINIMUM WALL THICKNESS
½" & ¾"-14	3½ (1)	¼"
1", 1¼", 1½" & 2"-11½	3½ (1)	5/16"
2½", 3", 3½", 4", 5" & 6"-8	3½ (1)	7/16"

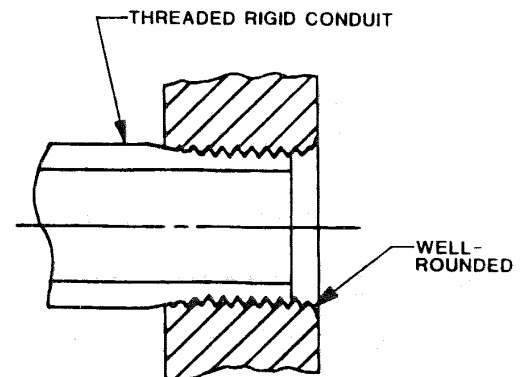
(1) Same as shown for Chart 2.

**NOTE:**

- 1) Conduit openings must be tapped to a depth which allows the conduit to be fully engaged.
- 2) Do not over-tap conduit openings; the conduit must tighten fully **without** bottoming-out on the unthreaded area of the conduit.
- 3) Conduit opening gaging requirement: "+1/2 to +3-1/2 turns deeper than nominal".

**RECOMMENDED TAP DRILL**

TAPPED HOLE SIZE - NPT	TAP DRILL SIZE (DIA.)
1/2" - 14 3/4" - 14	23/32" 59/64"
1" - 11-1/2 1-1/4" - 11-1/2 1-1/2" - 11-1/2 2" - 11-1/2	1-5/32" 1-1/2" 1-47/64" 2-7/32"
2-1/2" - 8 3" - 8 3-1/2" - 8 4" - 8 5" - 8 6" - 8	2-5/8" 3-1/4" 3-3/4" 4-1/4" 5-5/16" 6-23/64"



CONDUIT OPENING WITHOUT CONDUIT STOP

CHART 4: MAXIMUM CONDUIT SIZE.

U.L. LISTED EXB SERIES	MAXIMUM CONDUIT SIZE											
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"
CAT NO.												
EXB-684 N34												
EXB-664 N34												
EXB-6124 N34												
EXB-8104 N34												
EXB-886 N34												
EXB-8106 N34												
EXB-8126 N34												
EXB-10106 N34												
EXB-10146 N34												
EXB-12126 N34												
EXB-12186 N34												
EXB-12246 N34												
EXB-14146 N34												
EXB-16166 N34												
EXB-18186 N34												
EXB-8128 N34												
EXB-10108 N34												
EXB-10148 N34												
EXB-12128 N34												
EXB-12188 N34												
EXB-12248 N34												
EXB-12368 N34												
EXB-14148 N34												
EXB-16168 N34												
EXB-16248 N34												
EXB-18188 N34												
EXB-18248 N34												
EXB-18308 N34												
EXB-18368 N34												
EXB-24248 N34												
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EXB-24368 N34												
EXB-123610 N34												
EXB-162410 N34												
EXB-182410 N34												
EXB-183610 N34												
EXB-203611 N34												
EXB-242410 N34												
EXB-243610 N34												
EXB-122412 N34												