



KILLARK®

INSTRUCTIONAL DATA SHEET

**“EXB” (QUANTUM®) SERIES
FOR DRILLING & TAPPING OF CONDUIT OPENINGS IN
U.L. LISTED, CSA CERTIFIED, CAST ALUMINUM BOXES
FOR HAZARDOUS LOCATIONS**



“EXB” (QUANTUM®) SERIES

CAUTION:

Before installing, make sure you are compliant with area classifications, failure to do so may result in bodily injury, death and property damage. Do not attempt installation until you are familiar with the following procedures. All installation must comply with the applicable Electrical Code.

Make sure that the circuit is de-energized before starting installation or maintenance.

Verify that the installation is grounded. Failure to ground will create electrical shock hazards, which can cause serious injury and or death.

Technical information, advice and recommendations contained in these documents is based upon information that Killark believes to be reliable. All the information and advice contained in these documents is intended for use only by persons having been trained and possessing the requisite skill and know-how and to be used by such persons only at their own discretion and risk. The nature of these instructions is informative only and does not cover all of the details, variations or combinations in which this equipment may be used, its storage, delivery, installation, check out, safe operation and maintenance. Since conditions of use of the product are outside of the care, custody and control of Killark, the purchaser should determine the suitability of the product for his intended use, and assumes all risk and liability whatsoever in connection therewith.

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3940 Dr. Martin Luther King Drive
St. Louis, MO 63113

P/N 00912089 FORM NO. K1156 R10/08 (ECO 2-072-08)

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1. 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.

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)
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.

2. 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.

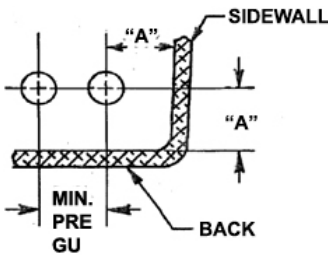


Chart 1:

Minimum centers for drilled & Tapped openings for conduits. (Allows for locknut, bushing & union clearance)

SIZE	FORM	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
½	(1) MIN	1⅜											
	(2) PRE	1⅜											
	(3) GU	1⅜											
¾	(1) MIN	1⅜	1½										
	(2) PRE	1⅜	1⅜										
	(3) GU	1⅜	1⅜ _o										
1	(1) MIN	1½	1¾	1⅜ _o									
	(2) PRE	1¾	1¾	2									
	(3) GU	1¾	2	2⅜									
1¼	(1) MIN	1⅞	2⅞	2⅞	2⅞								
	(2) PRE	2⅞	2⅞	2¾	2¾								
	(3) GU	2⅞	2¾	2⅞	2¾								
1½	(1) MIN	2⅞	2⅞	2⅞	2½	2½							
	(2) PRE	2⅞	2¾	2¾	2¾	2¾							
	(3) GU	2⅞	2⅞ ₂	2⅞	2¾	2¾							
2	(1) MIN	2¾	2¾	2¾	2⅞	2⅞	3⅞						
	(2) PRE	2¾	2¾	2¾	3	3	3⅞						
	(3) GU	2¾	2⅞ ₂	2¾	3	3	3⅞						
2½	(1) MIN	2⅞	2⅞	2¾	3	3	3⅞	3⅞					
	(2) PRE	2⅞	2¾	3	3¾	3¾	3¾	4					
	(3) GU	3⅞	3⅞ ₂	3⅞	3⅞	3⅞	3⅞	4	4⅞				
3	(1) MIN	2⅞	2⅞	3⅞	3⅞	3⅞	3¾	4	4⅞				
	(2) PRE	3	3⅞	3⅞	3⅞	3¾	4	4⅞	4⅞				
	(3) GU	3⅞	3⅞ ₂	3⅞	4	4⅞	4⅞	5⅞	5⅞				
3½	(1) MIN	3⅞	3¾	3⅞	3⅞	3¾	4⅞	4⅞	4⅞	4⅞			
	(2) PRE	3⅞	3¾	3⅞	3⅞	4	4⅞	4⅞	5	5⅞			
4	(1) MIN	3⅞	3⅞	3⅞	3⅞	4⅞	4⅞	4⅞	4⅞	5⅞	5⅞		
	(2) PRE	3¾	3⅞	4	4⅞	4⅞	4⅞	5	5⅞	5⅞	6		
5	(1) MIN	4⅞	4⅞	4⅞	4⅞	4⅞	5	5⅞	5⅞	5⅞	6⅞	6⅞	
	(2) PRE	4⅞	4⅞	4⅞	4⅞	5	5⅞	5⅞	6	6⅞	6⅞	7⅞	
6	(1) MIN	4⅞	4⅞	5	5⅞	5⅞	5⅞	5⅞	6⅞	6⅞	6⅞	7⅞	8⅞
	(2) PRE	5	5⅞	5⅞	5⅞	5⅞	6	6⅞	6⅞	7	7⅞	8	8⅞
Approx. O.D. of:	LOCKNUT	1¼	1⅞	1⅞	2⅞	2⅞	3	3⅞	4⅞	4⅞	5⅞	6⅞	7⅞
	BUSHING	1	1¼	1½	1⅞	2⅞	2⅞	3⅞	3⅞	4⅞	5	6⅞	7⅞
	CONDUIT	¾	1⅞	1¾	1⅞	1⅞	2⅞	2⅞	3⅞	4	4⅞	5⅞	6⅞

- (1) Minimum spacing required to provide clearance over locknut and bushings.
- (2) Preferred - more liberal spacings between centres 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	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Dim. "A" *	1	1	1⅞	1⅞	1½	1¾	2⅞	2⅞	2⅞	3⅞	3⅞	4⅞

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



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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
1/2" & 3/4" - 14	5 (1)	3/8"
1", 1 1/4", 1 1/2" & 2"-11 1/2	5 (1)	7/16"
2 1/2", 3", 3 1/2", 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 (5) full threads engagement

Class II Locations Not Supported by Conduit

CONDUIT SIZE	MINIMUM NUMBER OF FULL THREADS	MINIMUM WALL THICKNESS
1/2" & 3/4" - 14	3 1/2 (1)	1/4"
1", 1 1/4", 1 1/2" & 2"-11 1/2	3 1/2 (1)	5/16"
2 1/2", 3", 3 1/2", 4", 5" & 6"-8	3 1/2 (1)	7/16"

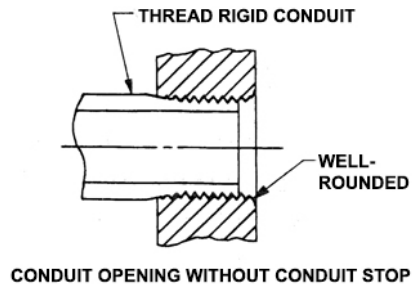
(1) Same as shown for Chart 2

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	23/32"
3/4" - 14	59/64"
1" - 11-1/2	1-5/32"
1-1/4" - 11-1/2	1-1/2"
1-1/2" - 11 1/2	1-47/64"
2" - 11-1/2	2-7/32"
2-1/2" - 8	2-5/8"
3" - 8	3-1/4"
3-1/2" - 8	3-3/4"
4" - 8	4-1/4"
5" - 8	5-5/16"
6" - 8	6-23/64"



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CHART 4: MAXIMUM CONDUIT SIZE

U.L. LISTED EXB SERIES CAT NO.	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"
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												
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EXB-182410 N34												
EXB-183610 N34												
EXB-203611 N34												
EXB-242410 N34												
EXB-243610 N34												
EXB-122412 N34												



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