

3300XL Transducer Accessories

Datasheet

Bently Nevada Machinery Condition Monitoring

145668 Rev. H



Description

Accessories contribute to a reliable transducer system. Installing proximity probes during outages usually requires one or more mounting accessories to help simplify the task.

These accessories allow you to quickly and efficiently install proximity probes and route the associated cables out of the machine case. These parts also help shield the cables from electrical noise and adverse environmental conditions. Having the proper mounting hardware on-site during the probe installation saves time and money for those responsible for the project.

Junction boxes

Junction boxes are normally mounted on or near the exterior of a machine case and enclose electrical connections in weatherproof or explosion-proof environments.

Sealtite™ flexible conduit

Flexible conduit routes probe cables safely to the sensor housing and then back to the monitors. The conduit protects transducer wiring from damage that splashing liquids or accidental contact with other equipment can cause.

Sealtite flexible conduit consists of a galvanized steel core with an extruded thermoplastic cover. Pipe fittings are made of steel with a zinc-plated, chromate finish and are compatible with fittings found on our watertight equipment enclosures

Probe mounting brackets

Probe mounting brackets attach internally mounted proximity probes to the machine case. Supplied mounting bolts attach the bracket to the bearing or other location inside the machine casing. The bracket holds the probe and allows for adjustment of the probe tip relative to the observed surface.

For most installations, use the standard 137492 non-clamping aluminum probe bracket. When using the 137491 brackets for 3/8-inch diameter smooth case probes, tightening the bolts will compress the probe hole around the probe and lock the probe into its preset gapped position. If your application requires additional electrical isolation from the mounting location (as in some generator and electric motor bearing locations), use the 27474 phenolic

probe bracket. These mounting brackets are compatible with our 3300 and 3300 XL proximity probe systems, including 5 mm, 8 mm and NSv™ probes.

To ensure that the brackets screws remain fastened within the machine, secure the screws with safety wire. Each mounting bracket includes special screws with holes drilled for safety wire.

Cable Seal

The optional 10076 Cable Seal is mainly for use in cable routing applications. It restrains the coaxial cable from movement, prevents abrasion, and provides splash protection. One end of the cable seal has a 1/4-18 NPT thread that allows you to thread it into a 4190-36 Adapter.

The cable seal has an aluminum body and an oil-resistant, slit grommet so that you can install it over armored or non-armored cable without removing the connectors.

Adapter

The optional 4190 Adapter attaches a junction box to the machine case. It also allows mounting of the proximity probe in some instances.

The adapter offers a variety of threads and configurations. Adapter threads and configurations that are not listed in this data sheet may be available. Please contact your sales representative for more information.

Explosion-proof fittings

Explosion-proof fittings provide seals for housings in Division 1 and in Zone 0 and 1 hazardous areas. The fittings include sealing compound, packing fiber, and the appropriate adapter. Fitting kits are available. Refer to Explosion-Proof Fittings on page 6 for details and part numbers.

Low-pressure cable seal

The 43501 Low-Pressure Cable Seal provides egress for up to 4 75Ω and/or 95Ω 3300XL, 3300 and 7200 cables, or up to 2 25mm DE or 50mm

DE transducer cables, through a single hole in a machine case or other barrier.

The cable seal is constructed of 303 stainless steel and a molded silicon rubber grommet and prevents leakage of fluids along the outer jacket of the cable. The seal has threads on both ends and fits into a tapped hole on the machine case or barrier. External pipe threads enable the seal to mate to conduit or housings.

You can use the low-pressure cable seal only with non-armored cables. Its design seals pressures up to 345 kPa (50 psi) when properly installed.

High-Temperature Cable Ties

The 173873 high-temperature cable tie is an economical alternative to metal brackets in high-temperature applications. These cable ties are molded from VICTREX® PEEK™ polymer for multiple uses in extreme environments up to +180°C (+356°F).

Specifications

Junction Boxes

Cylindrical Junction Box P/N 03818016

Components	
Main body and blank cover	Dimensions
Overall Height	76 mm (3.0 in)
Body Diameter	89 mm (3.5 in)
Hub-to-Hub	121 mm (4.75 in)
Base to Hub Center	16 mm (0.64 in)
Fittings	3/4-14 NPT 5 places
Material	Aluminum

Optional Extension for 03818016 P/N 03818022

Components	
Main body	Dimensions (Extension only)
Overall Height	93mm (3.7 in)
Body Diameter	90mm (3.6 in)
Hub-to-Hub (flats)	91 mm (3.6 in)
Total Extended Height	150 mm (5.90 in)
Material	Aluminum

Rectangular Junction Box P/N 03818065

Components	
Main body and cover	Dimensions
Overall Height	27.9 mm (1.10 in)
Width of Body	38.1 mm (1.50 in)
Length of Body	95.3 mm (3.75 in)
Fittings	1/2-14 NPT 2 places
Material	Aluminum

Rectangular Junction Box P/N 03818066

Components	
Main body and cover	Dimensions
Overall Height	61.0 mm (2.40 in)
Width of Body	44.5 mm (1.75 in)
Length of Body	102 mm (4.00 in)
Fittings	3/4-14 NPT 2 places
Material	Aluminum

Sealtite Flexible Conduit

Components	Refer to Figure 4.
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Fitting Options	1/2-14 NPT 3/4-14 NPT
Length	As ordered

Brackets

Clamp Mounting Bracket for 3/8-inch diameter smooth body probes

Dimensions	Refer to Figure 5.
Mounting Screw Thread Size Options	10-24 UNC-2A M5 x 0.8-6g
Material	Aluminum

Non-Clamping Mounting Bracket for threaded case probes

Dimensions	Refer to Figure 6.
Mounting Screw Thread Size	10-24 UNC-2A or M5 x 0.8-6g
Material	Aluminum

Probe Lock Nut

Thread Sizes	3/8-24 UNF-2B M10 x 1-6H
Features	Lock nut with holes to attach safety wire.

Cable Seal (P/N 10076)

Components	Refer to Figure 7
Overall length (assembled)	35mm (1.4 inches) in tightened condition

Adapters

Features	Refer to Figure 8
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4190-01

Dimensions	
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Internal Diameter	9.53 mm (0.375 in)
Internal thread type	1/4-18 NPT
External thread type	1/2-14 NPT
Overall Length	38.1 mm (1.50 in)

4190-03

Internal Diameter	11.1 mm (0.437 in)
Internal thread type	1/4-18 NPT
External thread type	3/4-14 NPT
Overall Length	46.0 mm (1.81 in)

4190-04

Internal Diameter	7.14 mm (0.281 in)
Internal thread type	1/4-28 UNF-2B
External thread type	1/2-14 NPT
Overall Length	38.1 mm (1.50 in)

4190-06

Internal Diameter	10.3 mm (0.406 in)
Internal thread type	3/8-24 UNF-2B
External thread type	1/2-14 NPT
Overall Length	38.1 mm (1.50 in)

4190-16

Internal Diameter	10.3 mm (0.406 in)
Internal thread type	3/8-24 UNF-2B
External thread type	3/4-14 NPT
Overall Length	46.0 mm (1.81 in)

4190-20

Internal Diameter	16.7 mm (0.656 in)
Internal thread type	5/8-18 UNF-2B
External thread type	3/4-14 NPT
Overall Length	46.0 mm (1.81 in)

4190-34

Internal Diameter	7.14 mm (0.281 in)
Internal thread type	1/4-28 UNF-2B
External thread type	3/4-14 NPT
Overall Length	56.1 mm (2.21 in)

4190-36

Internal Diameter	10.3 mm (0.406 in)
Internal thread type	1/4-18 NPT 3/8-24 UNF-2B
External thread type	3/4-14 NPT
Overall Length	56.1 mm (2.21 in)
Material	304 Stainless Steel

Explosion-Proof Fittings

29368-01 Optional Fitting Kit

Kit contains the following:

03818056	Hazardous area 3/4" sealing fitting, conduit
04576120	4 OZ adhesive sealant
20892-02	fiber seal
03839246	.750" aluminum plug

72340 Fitting Kit

Kit contains the following:

03839246	.750" aluminum plug
03850021	3/4 to 1/2 reducer thread fitting
49871-01	cable grip assembly
03839153	grommet sealing 250-312 ring
03839154	grommet sealing 312-375 ring
20892-02	fiber seal

03818056	3/4 conduit fitting
03839155	ring cable fitting
04576127	8 OZ adhesive sealant
04576120	4 OZ adhesive sealant
04760000	string tag label

Features

Refer to Figure 9.

Dimensions	
03818055	
Conduit size	1/2-14 NPT
Overall Length	69.9 mm (2.75 in)
Width	49.3 mm (1.94 in)
Min. turn radius	63.5 mm (2.50 in)
03818056	
Conduit size	3/4-14 NPT
Overall Length	69.9 mm (2.75 in)
Width	49.3 mm (1.94 in)
Min. turn radius	63.5 mm (2.50 in)
03818058	
Conduit size	1-1/4 NPT
Overall Length	102 mm (4.00 in)
Width	54.1 mm (2.13 in)
Min. turn radius	57.2 mm (2.25 in)
Material	Aluminum

Low Pressure Cable Seal

Dimensions	Refer to Figure 10
Fitting Options	1/2-14 NPT 3/4-14 NPT

High Temperature Cable Ties

Temperature	Up to +180°C (+356°F)
Material	VICTREX PEEK polymer

Ordering Information



For the detailed listing of country and product specific approvals, refer to the *Approvals Quick Reference Guide* (108M1756) available from Bently.com.

Sealtite Flexible Conduit

14847-AXX

3/4-14 NPT Assembly

14848-AXX

3/4-14 NPT assembly

1/2-14 NPT Assembly

A: Length Option in feet

Order in Increments of 1.0 ft (305mm)

Minimum length: 1 foot

Maximum length: 99 feet

Example:
 01 = 1 foot
 99 = 99 feet

Aluminum Clamp Mounting Bracket for 3/8-inch Diameter Smooth Body Probes

137491-AXX

A: Mounting Screw Thread Size

01	10-24 UNC-2A mounting screws
02	M5 x 0.8-6g mounting screws

Aluminum Non-Clamping Mounting Bracket for Threaded Case Probes

137492-AXX

A: Thread Size Option

01	3/8-24 UNF-2B
02	1/4-28 UNF-2B
03	M8 x 1-6H
04	M10 x 1-6H



The -01 and -02 option are supplied with two 10-24 UNC-2A mounting screws with safety wire holes. The -03 and -04 options are supplied with two M5 x 0.8-6g mounting screws with safety wire holes.

Phenolic Mounting Bracket

27474-AXX

A: Thread Size Option

01	3/8-24 UNF-2B
02	1/4-28 UNF-2B
03	M8 x 1-6H
04	M10 x 1-6H



The -01 and -02 options are supplied with two 10-24 UNC-2A mounting screws with safety wire holes. The -03 and -04 options are supplied with two M5 x 0.8-6g mounting screws with safety wire holes. The dimensions are identical to the aluminum mounting bracket 137492.

Cable Seal

10076-AXX

A: Cable Size Option

01	50 Ω, without armor
02	75/95 Ω, without armor
03	75/95 Ω, with armor
04	50 Ω, with armor

Adapter

4190-AXX

XX	See Specifications section for dimension details.
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Additional sizes and configurations available in both standard product and special modifications. Contact your local sales representative for details.

Low Pressure Cable Seal

43501 – AXX – BXX – CXX

A: High Pressure Side Thread Size

01	1/2-14 NPT
02	3/4-14 NPT

B: Cable Grommet and Washer

00	Solid grommet (no holes). Holes must be punched in grommet.
02	Grommet will accommodate up to two 25mm and 50mm DE cables. One hole is punched and one is partially pre-drilled.
04	Grommet will accommodate up to 4 cables. One hole is punched and three are partially pre-drilled.

C: Low Pressure Side Thread Size

01	1/2-14 NPT
02	3/4-14 NPT

Junction Boxes

03818016	Cylindrical Junction Box.
03818022	Optional Extension for Cylindrical Junction Box.
03818065	Rectangular Junction Box. Dimensions (W x L x D) 38.1mm x 95.3mm x 29.7mm (1.10in x 1.50in x 3.75in x 1.10in).
03818066	Rectangular Junction Box. Dimensions (W x L x D) 44.5mm x 102mm x 61.0mm (1.75in x 4.00in x 61.0in).

Explosion-Proof Fittings

03818055	1/2-14 NPT Fitting
03818056	3/4-14 NPT Fitting
03818057	1 to 1½ NPT Fitting
03818058	1¼ to 1½ NPT Fitting

Probe Lock Nuts

04301007	3/8-24 UNF-2B.
04301008	M10 x 1-6H.

Accessories for Low Pressure Cable Seal

04490104	Punch tool kit for solid grommet option.
43574-04	Replacement grommet. For up to 4 cables.
43575-04	Replacement washer

Field Wiring

02173006	2-conductor, twisted, shielded 18 AWG (1.0 mm ²).
02173008	3-conductor, twisted, shielded 22 AWG (0.5 mm ²).
02173009	3-conductor, twisted, shielded 18 AWG (1.0 mm ²).



Use 2-conductor cable with velocity transducers. Use 3-conductor cable with Proximity Sensors and interface modules. Specify number of feet when ordering.

High Temperature Cable Ties

173873


Bag of 50 Multiple-Use VICTREX PEEK Polymer Cable ties. For extreme environments up to +180°C (+356°F). One or more sizes/quantities available(?), including 7 inches long.

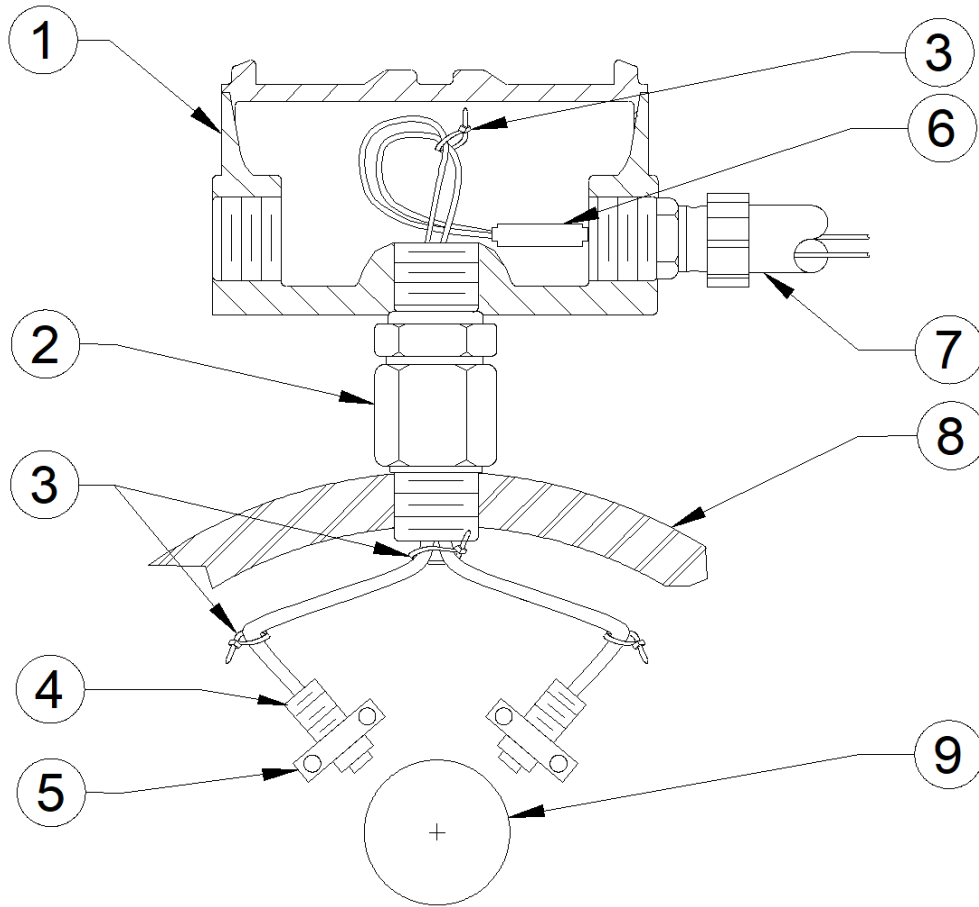
Electrical Isolator

19094-01

7200 Proximity Sensor and Interface Module Isolator. Provides electrical isolation for the 7200 Proximity Sensor, velocity to displacement converters, and accelerometer interface modules.

Graphs and Figures

 All dimensions shown in millimeters (inches) except as noted.



1. Junction Box (03818016)
2. Low Pressure Cable Seal (43501-02-04-02)
3. High Temperature Cable Ties (173873)
4. 3300 XL 8mm Probe (330101)
5. Probe Mounting Brackets (137492-01)
6. Connector Protectors (40113-02)
7. Flexible Conduit (14848)
8. Machine Case
9. Machine Shaft

Figure 1: Typical Internal Mounting Arrangement for an XY Proximity Probe Application

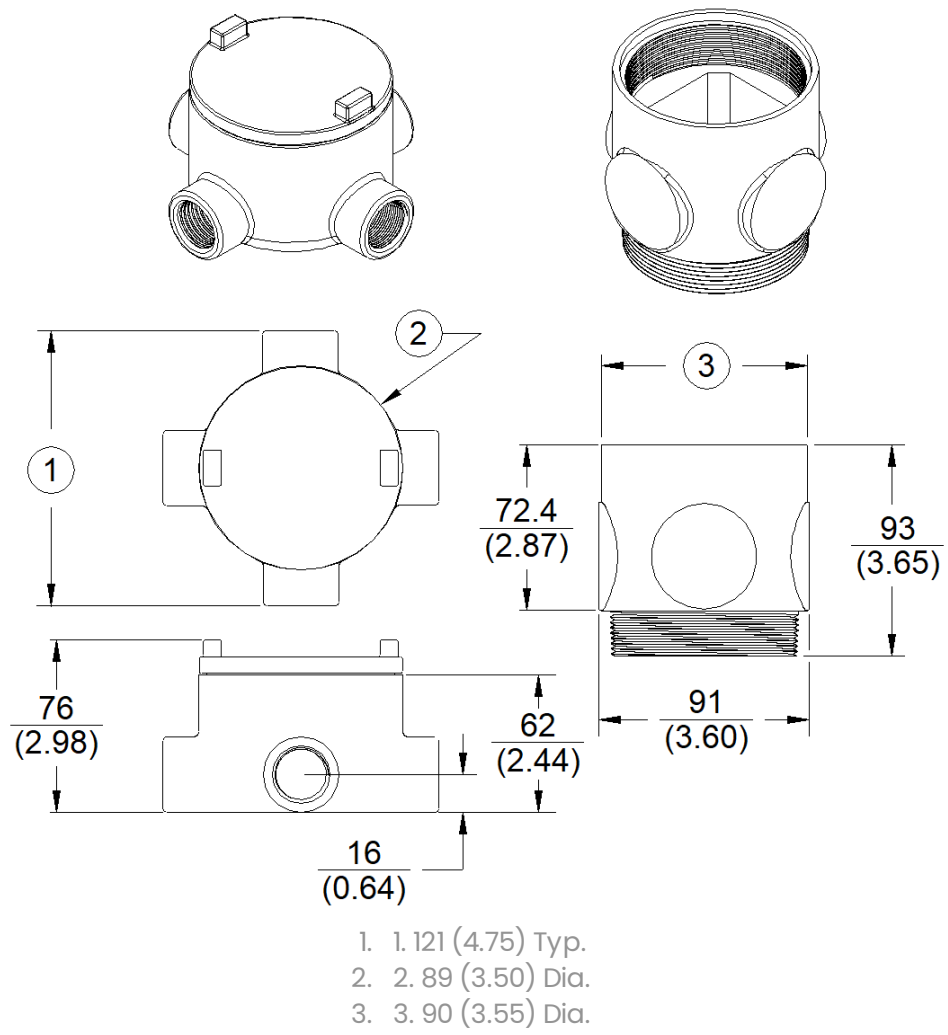


Figure 2: Cylindrical Junction Box and Optional Extension

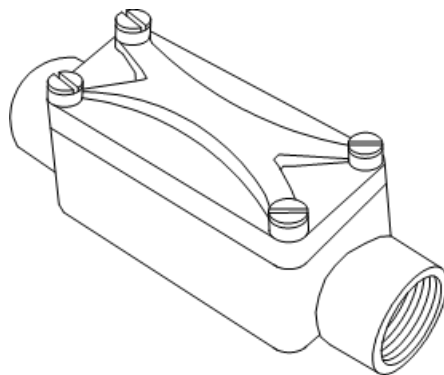
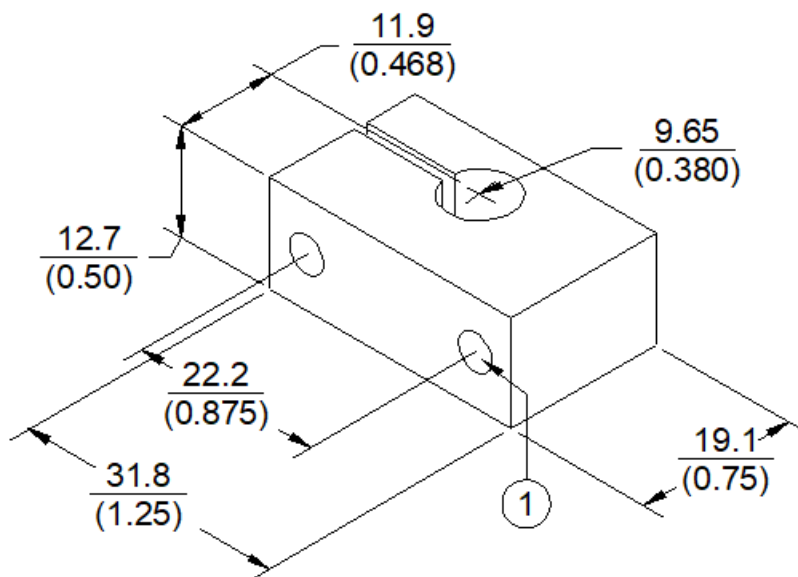


Figure 3: Junction Box



Figure 4: Sealtite™ Flexible Conduit



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Figure 5: Clamping Aluminum Probe Bracket

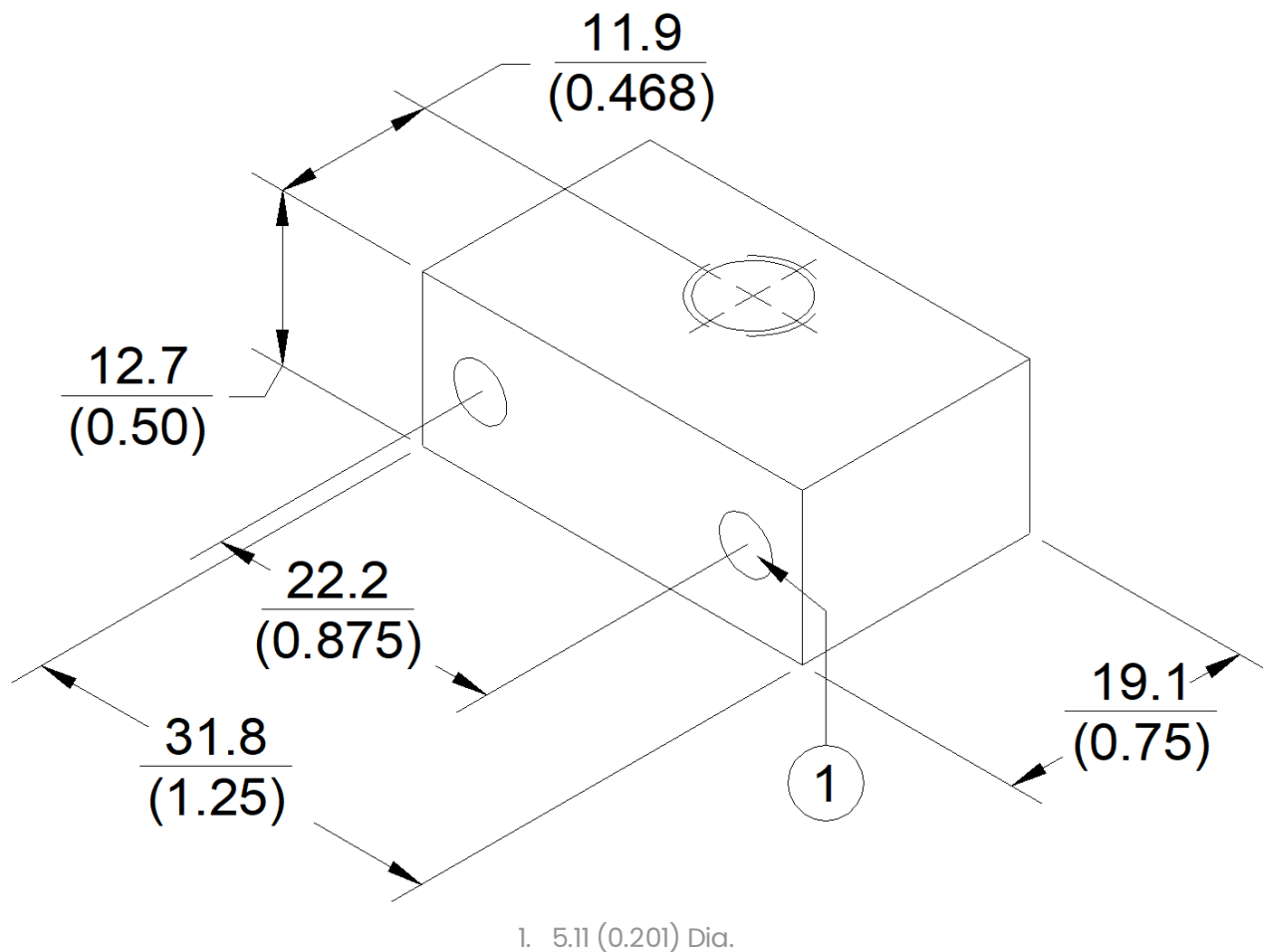
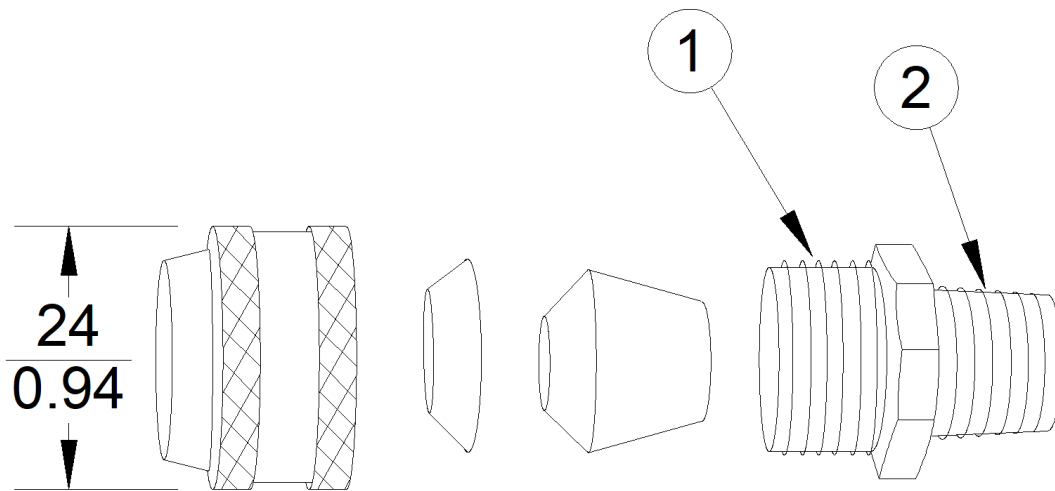
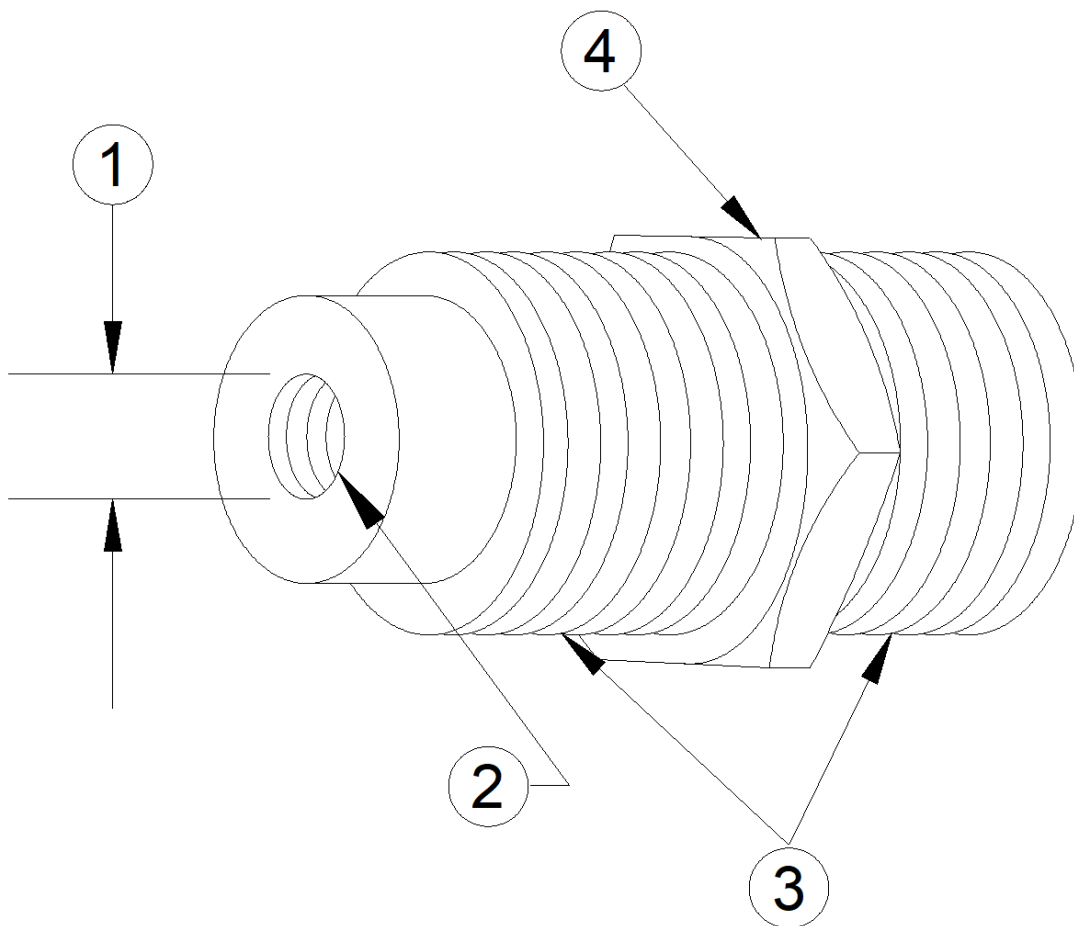


Figure 6: Non-Clamping Aluminum Probe Bracket



- 1. 3/4 Hex
- 2. 1/4 NPT

Figure 7: Cable Seal



- 1. Internal Diameter
- 2. Internal Thread
- 3. External Thread
- 4. 4. 1-1/8 Hex

Figure 8: 4190 Adapter - 304 stainless steel (-34 Shown)

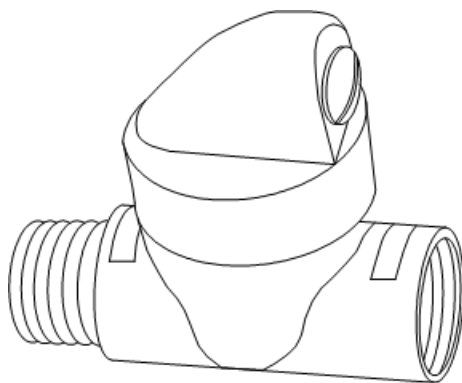


Figure 9: Explosion-proof fitting

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