Mounting Equipment for Eddy-Current Probes

KS016-AX-BX-CXXX-DX-EX

Product Information and **Instructions for Use**

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Contents

Scope of Supply

1x **Probe Holder Base KS016-A1** Stainless steel 1.4301 or adequate; Wrench size: 36 mm; G3/4" male for mounting on machined reference face; M16 x 1 mm female for Adjusting Sleeve; **O-ring / NBR or adequate** **(28 x 2.0 mm)**	
1x **Reference Face Adapter KS016-B1** Stainless steel 1.4301 or adequate; Wrench size: 36 mm; 3/4"NPT male for mounting on machine housing; G3/4" female for Probe Holder Base	
1x **Adjusting Sleeve KS016-CXXX-DX** Stainless steel 1.4301 or adequate; M16 x 1 mm male for Probe Holder Base; M16 x 1 mm male for protective cap; Female thread (e.g. M10 x 1, 3/8", …) for corresponding probe male thread; **2 O-rings / NBR or adequate** **(approx. 13.4 x 1.8 mm);** **Protective screw-on cap / POM-C**	
2x **Lock Nut** Stainless steel 1.4301 or adequate; M16 x 1 female for Adjusting Sleeve Wrench size: 24 mm	
1x **Connection Head KS016-E2** **POM-C housing with screw-on cover** Height: 78 mm; diameter: 97 mm with 3 female threads: 1x M16 x 1 mm (Adjusting Sleeve) 2x M16 x 1,5 mm (cable gland /conduit fitting) **O-ring / NBR or adequate (76 x 2.0 mm)** or 1x **Hexagonal Adapter KS016-E1** Stainless steel 1.4301 or adequate; Length: 36 mm, Wrench size: 27 mm with 2 female threads: 1x M16 x 1 mm (Adjusting Sleeve) 1x M16 x 1,5 mm (cable gland /conduit fitting)	

Not included in the scope of supply:
proximity probes, cable glands / conduit fittings, protective conduit, anti-seize lubricant, thread-locking fluid, sealant, insulating tape

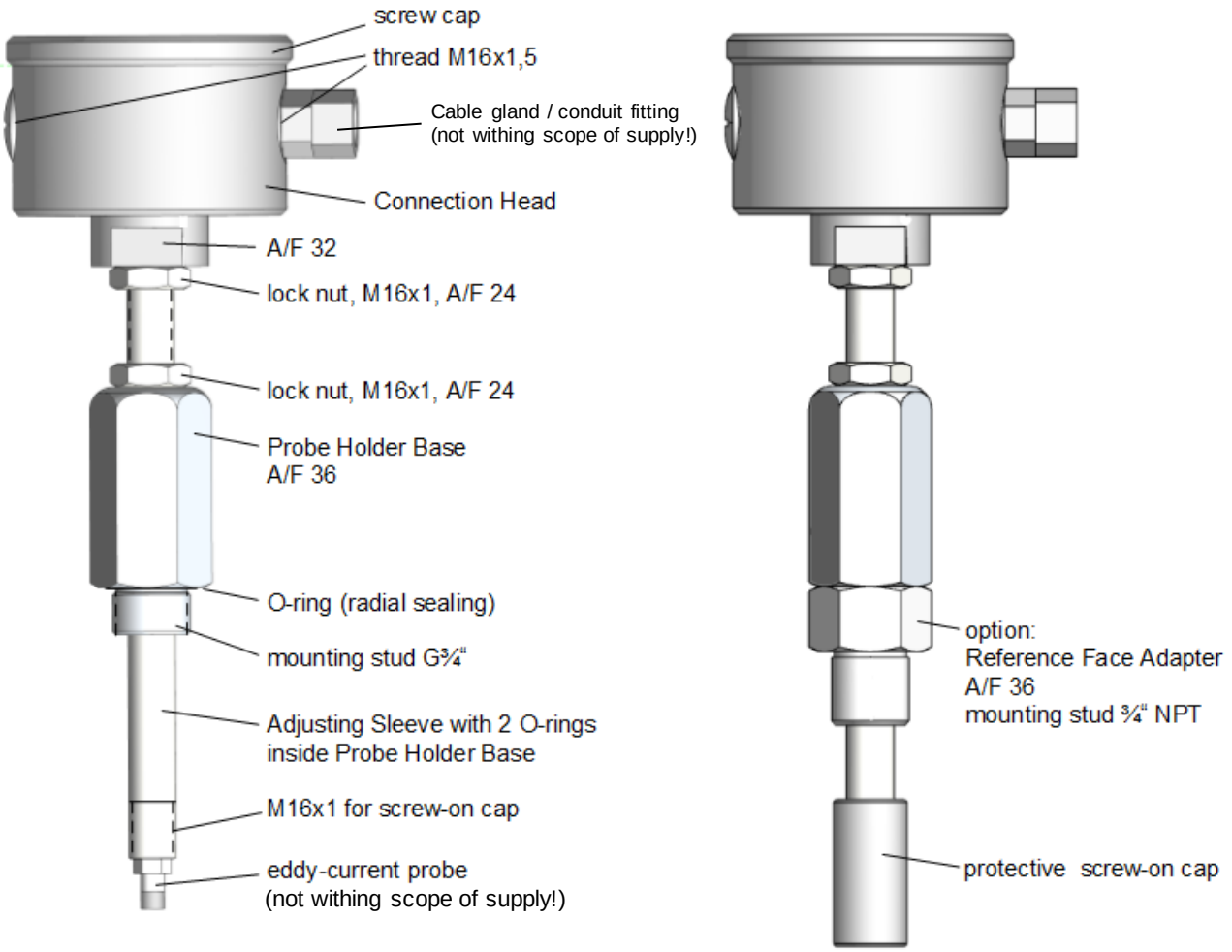
General

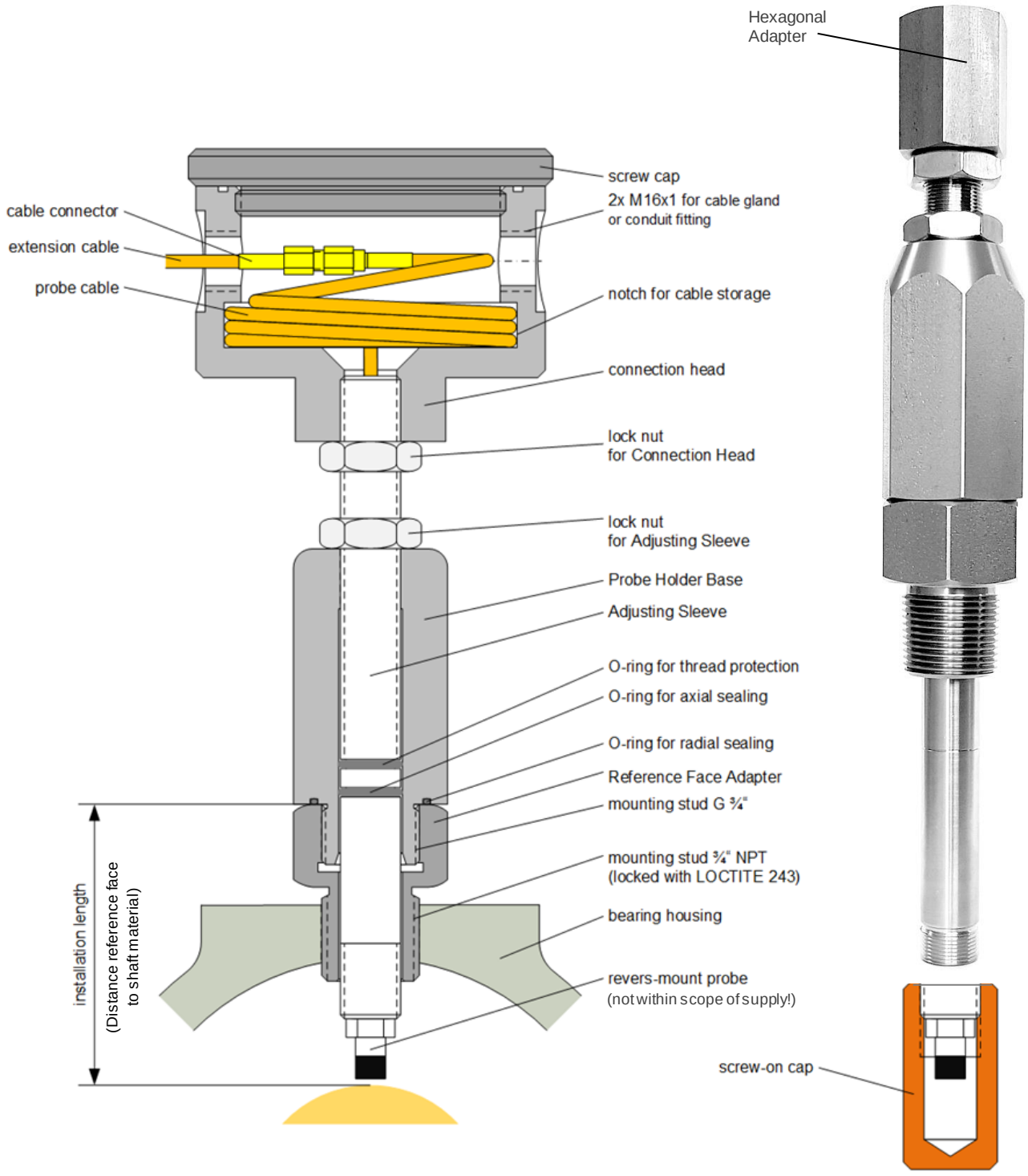
Eddy-current proximity probes are used for the contactless measurement of vibrations, axial position, absolute and relative strain and the detection of rotation pulses. The probes have to be adjusted in a distance of ~1.5 mm against the measuring object.

With respect to simplified spare part management, the use of reverse-mount probes, which have to be screwed into probe mounts with adjusted sleeve lengths, is recommendable.
KS016 offers several benefits (e.g. solid design, large adjustment range, one reference adjustment for multiple reinstallations, reliably oil-tight, protective sleeves for removed probes) and is designed for a fast, convenient installation and adjustment of probes with a probe thread of M10 x 1 mm**,** 3/8" - 24 UNF or M12 x 1 mm.

Except for the plastic connection head on top, the probe holder consists of screwed together stainless steel parts. If a machined mounting surface is present, the probe holder is screwed directly into the machine housing using the adjustment block (G 3/4"); otherwise the direct connection to the machine housing is accomplished by means of the housing screw (3/4" NPT).

Design

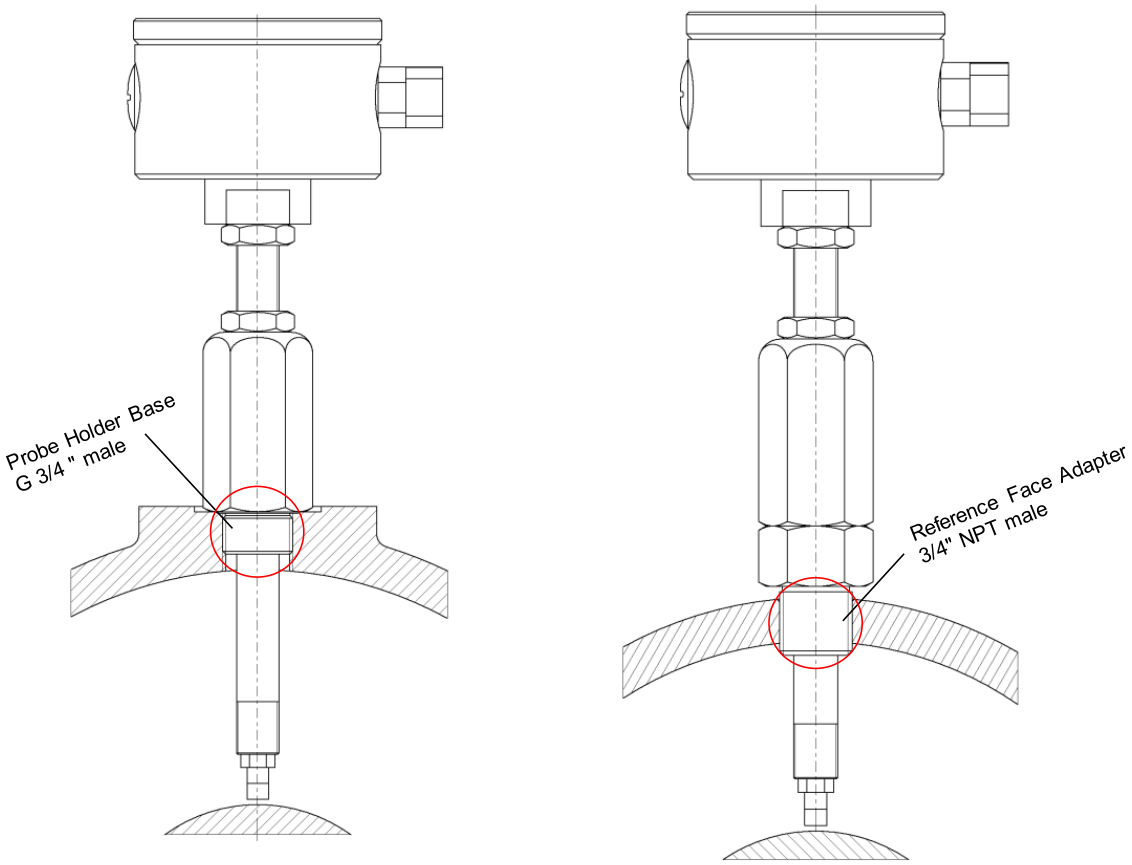




Material Properties

Material	Operating Temperature
Stainless steel 1.4301 / 1.4305	-50°C...+200°C
POM-C	-40°C...+100°C
NBR	-30°C...+100°C
HNBR	-30°C...+150°C
MVQ	-55°C...+200°C

Installation



1. For the installation of the Probe Holder Base of the Probe Mount KS016, a thread hole G 3/4" in the bearing housing, exactly positioned to the measuring point, and a machined mounting surface are required.

   If there is no suitable, plane surface on the bearing housing available, the use of the Reference Face Adapter is recommended. For the mounting stud of the Reference Face Adapter, a thread hole 3/4" NPT in the bearing housing is required. **The Reference Face Adapter, which does not have to be removed again, can be fixed permanently (e.g. suitable thread locker).**

2. The next step is to measure the required Installation Length. The Installation Length is the distance between reference face and rotor. Either the machined mounting surface of the bearing housing or the upper edge of the Reference Face Adapter serves as reference face.

   Now select the standard Adjusting Sleeve with the corresponding adjusting range:

	Installation lengths / Adjusting Range without Reference Face Adapter [with Reference Face Adapter]		
Adjusting Sleeve	**MIN (mm)**	**MAX (mm)**	**Sleeve Length (mm)**
CXXX=C090 "S"	40	90	177
CXXX=C140 "M"	90	140	227
CXXX=C190 "L"	140	190	277
CXXX=C240 "XL"	190	240	327
CXXX=C290 "XXL"	240	290	377
CXXX=C340 "XXXL"	290	340	427

   Roll the two O-rings (13.4 x 1.8 mm) along the Adjusting Sleeve into the prepared notches.

3. Now insert the cable of a suitable probe into the Adjusting Sleeve and screw in the reverse-mount probe considering the manufacturer-recommended torque.

In order to protect the sensitive probe tip, screw on the protective cap!

In order to prevent seizure (cold welding) of stainless steel connections, make sure that all threads are clean! The use of suitable anti-seize lubricant is recommendable.

4. Insert the Adjusting Sleeve through the mounting stud of the Probe Holder Base and pre-adjust it to the measured insertion depth less 1.5 mm. Then fix it with the lock nut.
   With this adjustment you can be sure that, when fully screwing in the Probe Holder Base, the probe doesn't touch the rotor and it should already be within the linear range of the driver
5. Place the O-ring (28 x 2.0 mm) into the groove on the bottom of the Probe Holder Base.
   If required, it can be fixed with suitable sealant.
6. After removing the screw-on protective cap, screw in the preadjusted unit with a torque of maximum 100 Nm directly into the bearing housing or into the Reference Face Adapter.
   The GAP between probe and rotor should now be roundabout 1.5 mm.
7. At first commissioning the GAP has to be adjusted by sensitive turning of the Adjusting Sleeve.
   Screw the second lock nut and the open Connection Head (without screw cap) or the Hexagonal Adapter on the Adjusting Sleeve and fix it.
   Connect probe cable and extension cable outside of the Connection Head and power the driver or transmitter. At the corresponding terminals you will measure the distance proportional GAP signal.
   The fixed Connection Head (or the Hexagonal Adapter) now conveniently serves as "handwheel" for the fine adjustment. Use a wrench in the other hand for loosening and retightening the lock nut of the sleeve at the final position.
8. Loosen the lock nut of the Connection Head, turn it to the desired position and fix it again.
9. Release the connection between probe and extension cable.
   Wind the excess length of the probe cable into the notch inside the Connection Head.
10. Depending to the kind of installation, use one or two cable glands / conduit fittings.
11. Insert the extension cable through gland / fitting into the Connection Head and connect it with the probe cable.

It is recommended to store the protective screw-on cap inside the Connection Head, so in case of dismounting the probe holder it is available to protect the probe tip.

12. Place the O-ring (76 x 2.0 mm) into the groove on top of the Connection Head and close it with the screw cap. Herewith, the installation and adjustment of the probe mount is completed.
13. For disassembly of the probe holder, proceed in reverse order.

The lower nut locks the Adjusting Sleeve in the Probe Holder Base and should NOT be released! As long as the Adjusting Sleeve is kept in the same position, the adjusted GAP will be the same at reassembly, and after screwing in the probe holder no readjustment is necessary.

After disassembly of the probe holder, remember to use the screw-on cap in order to protect the sensitive probe tip!

Ordering Information / KS016-A1-B1-CXXX-DX-E1

KS016: **Stainless Steel Mounting Kit**

for reverse-mount proximity probes; including protective screw-on cap

A1: **Mounting Stud of Probe Holder Base**

A1: G 3/4" male for bearing housing or Reference Face Adapter;
M16 x 1 mm female for Adjusting Sleeve; wrench size (A/F) 36 mm

BX: **Reference Face Adapter**

B0: Not required, if a plane machined mounting surface available
B1: 3/4" – 14 NPT male for bearing housing, G 3/4" female for Probe Holder Base

Note:
Using the Reference Face Adapter increases insertion depth by ~27 mm; consider while choosing Adjusting Sleeve length (CXXX)!

CXXX: **Adjusting Sleeve / Installation Length**

For selecting the right adjusting sleeve, at first the Installation Length (**=** distance from the shaft to the top edge of the casing or of the Reference Face Adapter) needs to be determined (e.g. 115 mm).
Then the adjusting sleeve can be selected, which enables the corresponding adjusting range (e.g. C140 for installation lengths from 90 to 140 mm).

Standard Adjusting Sleeves:

C090:	Type "S" (Sleeve length: 177 mm)	Adjusting range*****: 40 … 90 mm
C140:	Type "M" (Sleeve length: 227 mm)	Adjusting range*****: 90 … 140 mm
C190:	Type "L" (Sleeve length: 277 mm)	Adjusting range*****: 140 … 190 mm

Special Adjusting Sleeves:

C240:	Type "XL" (Sleeve length: 327 mm)	Adjusting range*****: 190 … 240 mm
C290:	Type "XXL" (Sleeve length: 377 mm)	Adjusting range*****: 240 … 290 mm
C340:	Type "XXXL" (Sleeve length: 427 mm)	Adjusting range*****: 290 … 340 mm

Note:
The adjusting range of the Adjusting Sleeves amounts 50 mm without Reference Face Adapter (BX=B0). ***If the Reference Face Adapter is used (BX=B1), the possible installation lengths are reduced by 27 mm (e.g. 63 … 113 mm for C140), whereas the shortest possible installation length is 40 mm (e.g. 40 … 63 mm for C090).***

DX: **Probe Thread** (others on request)

D1: M10 x 1 mm
D2: 3/8" – 24 UNF
D5: M12 x 1 mm

E1: **Connection Type** (others on request)

E1: Stainless Steel Hexagonal Adapter (Length: 36 mm, Wrench size: 27 mm) with female thread (M16 x 1.5 mm) for cable gland / conduit fitting; Operating temperature: -50°C … +200°C

E2: Plastic (POM-C) Connection Head (78 mm x ∅ 97 mm) with female thread (M16 x 1.5 mm) for cable gland / conduit fitting Operating temperature: -20°C … +100°C