ABB MEASUREMENT & ANALYTICS | INFORMATION | INF14/154-EN REV. B

Aztec ADS430110 and ADS430120

Floating ball assembly and floating ball assembly kit

Aztec ADS430110 and ADS430120 floating ball assembly and floating ball assembly kit

Installation procedures

Measurement made easy

1 Introduction

This publication details installation procedures for the ADS430110 floating ball assembly and ADS430120 floating ball assembly kit used to mount ADS430 (RDO-PRO-X) optical dissolved oxygen probes. The procedures must be carried out by a trained technician.

Tools required

- Flat-bladed screwdriver
- Adjustable spanner
- Solvent cement

2 For more information

Further information is available from:
www.abb.com/analytical

or by scanning these codes:

Sales

Service

3 Identification

Contents are shown in Tables 3.1 and 3.2:

Description	Part no.
Floating ball assembly, comprising: boom, floating ball, sensor tube, elbow union, end cap with split gland	ADS430110
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Table 3.1 Floating ball assembly ADS430110

Description	Part no.
Floating ball assembly kit, comprising: floating ball, sensor tube, elbow union, end cap with split gland, 2 x O-rings (1 per pipe size), adaptor (ADS430109) for 1½ NB pipe	ADS430120
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Table 3.2 Floating ball assembly kit ADS430120*

*Boom to be user-supplied:
metric requirements: ABS pipe, 50 mm OD x 3.3 w.t. (PN10)
or
imperial requirements: ABS pipe 1½ in. NB x 4.5 w.t. Class E

3.1 Optional mounting brackets

Description	Part no.
Tilt-only (standard):	
for max. handrail diameter 42 mm (1.65 in.)	ADS430125
for max. handrail diameter 50 mm (1.97 in.)	ADS430128
Swivel / Tilt:	
for max. handrail diameter 42 mm (1.65 in.)	ADS430130
for max. handrail diameter 50 mm (1.97 in.)	ADS430135

Table 3.3 Optional mounting brackets – tilt and swivel / tilt

IMPORTANT (NOTE)
– The mounting bracket fixing procedures in Section 5, page 4 are applicable to ABB-supplied brackets (above) only. For non-ABB mounting brackets, follow the manufacturers' mounting instructions.

4 Fitting the floating ball and probe

IMPORTANT (NOTE)
Floating ball assembly ADS430110:
– refer to Section 4.1

Floating ball assembly kit ADS430120:
– refer to Section 4.2 for 50 mm OD pipe
– refer to Section 4.3 for 1½ in. NB pipe

4.1 ADS430110 – removing end cap assembly from pipe assembly

Referring to Fig. 4.1:
1. Unscrew self-tapping screw (A), remove end cap (B) and O-ring (C) from end of pipe (D).
2. Proceed to Section 4.4.

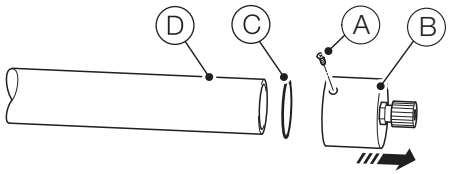

Fig. 4.1 ADS430110 – removing end cap assembly from pipe assembly

4.2 ADS430120 – bonding 50 mm OD pipe to sensor pipe

Referring to Fig. 4.2:
1. Clean mating surfaces of elbow union (A) and pipe (B) thoroughly and use solvent cement (not supplied) to bond the two items together.

IMPORTANT (NOTE) Leave solvent cement to cure for at least 12 hours.

2. Proceed to Section 4.4.

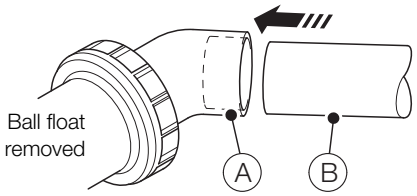

Fig. 4.2 ADS430120 – bonding 50 mm OD pipe to sensor pipe

4.3 ADS430120 – bonding 1½ in. NB pipe to sensor pipe

Referring to Fig. 4.3:
1. Clean mating surfaces of elbow union (A), adaptor (B) (ADS430109) and 1½ in. NB pipe (C) thoroughly and use solvent cement (not supplied) to bond the three items together.

IMPORTANT (NOTE) Leave solvent cement to cure for at least 12 hours.

2. Proceed to Section 4.4.

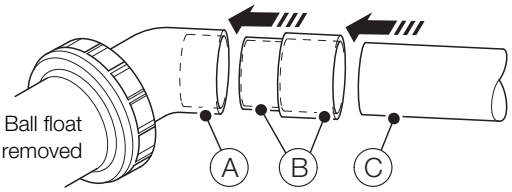

Fig. 4.3 ADS430120 – bonding 1½ in. NB pipe to sensor pipe

4.4 Fitting the probe to the floating ball assembly

Referring to Fig. 4.4:

1. Unscrew union nut (A) (leave in place on elbow union (B)) and withdraw ball float (C).
2. Pass probe cable (D) through sensor pipe (E), elbow union (B) and boom (F).
3. Wrap PTFE tape (or similar) around thread (G) and screw probe (H) onto thread. Ensure cable (D) is not twisted.

> **IMPORTANT (NOTE)** Do not overtighten to avoid damage to probe or sensor pipe.

4. Refit ball float (C) and secure using union nut (A).
5. Unscrew gland nut (I) and remove internal (split) rubber grommet and plastic seat (not shown) from split gland body (J).
6. Pass probe cable (D) through (correct) O-ring* (K), end cap (L) and split gland body (J).
7. Fit O-ring* (K) and end cap (L) over end of boom (F) and secure using self-tapping screw (M).
8. Position (split) rubber grommet and plastic seat over the cable, slide them into split gland body (J) and refit gland nut (I).
9. Proceed to Section 5, page 4 to mount the assembly on a handrail.

*For ADS430110 refit existing O-ring. For ADS430120, 2 x O-rings are supplied: 1 suitable for 50 mm OD pipe, 1 suitable for $1^1/_2$ in. NB pipe

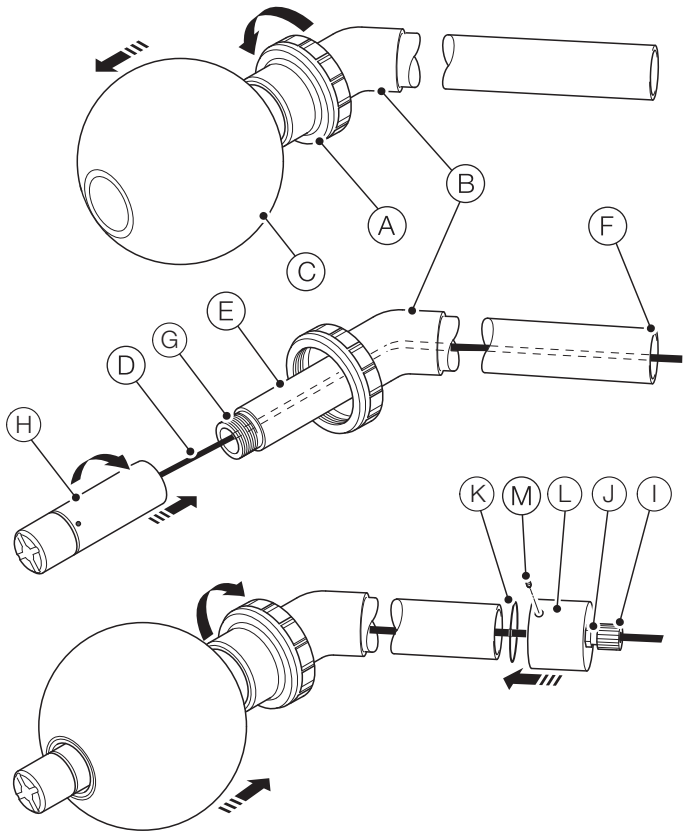

Fig. 4.4 Fitting the probe to the floating ball assembly

5 Mounting

IMPORTANT (NOTE)
– Ensure the temperature sensor (see Fig. 4.1) is below the free surface of the liquid being monitored before securing the boom in the operating position.

5.1 Installing optional ABB mounting brackets (tilt or swivel / tilt)

1. Select the required position for the floating ball system on the handrail. When locating the boom, allow sufficient cable slack for positioning / servicing.

Referring to Fig. 5.1 (tilt bracket) or Fig. 5.2 (swivel / tilt bracket):

2. Fit handrail clamps (A) around handrail (B) and secure boom saddle assembly (C) to the handrail in the horizontal position. Leave nuts (D) finger-tight for later adjustment.
3. Fit boom clamps (E) around the floating ball assembly boom (F) using nuts (tilt bracket) or bolts (swivel / tilt bracket) (G).

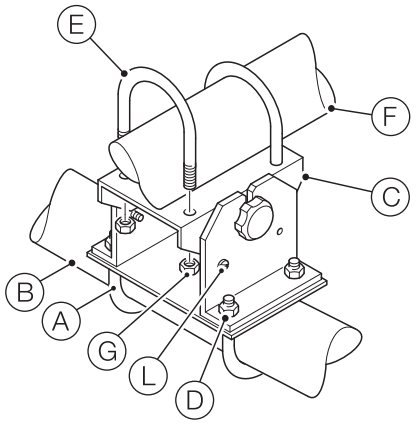

Fig. 5.1 Fitting tilt bracket assembly ADS430125 and ADS430128

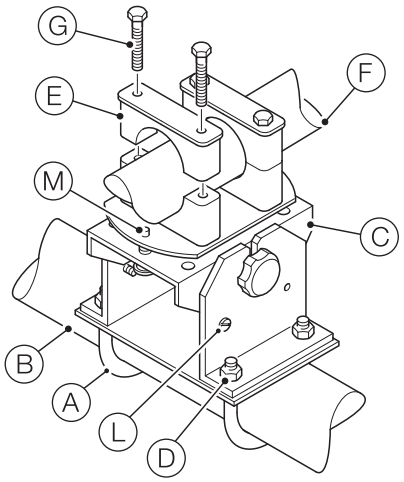

Fig. 5.2 Fitting swivel / tilt bracket assembly ADS430130 and ADS430135

Referring to Fig. 5.3:

4. Adjust the centre line of the handrail clamp until it is at right angles (H) to the boom with the ball (I) at rest on undisturbed monitored liquid (J) to ensure equal maximum fluctuations of the boom (up and down) when the handrail clamps are tightened.
   In applications with excessive air bubbles, the boom (F) can be rotated in the clamps through an angle not greater than 30° (K). This avoids accumulation of bubbles around the sensor.
5. Tighten the 4 handrail clamp securing nuts (D).

IMPORTANT (NOTE) Do not overtighten.

6. On swivel / tilt bracket assemblies, use swivel locknut (M) to lock the bracket horizontally.
7. Connect M12 probe cable connector (N) to the AWT440 transmitter.

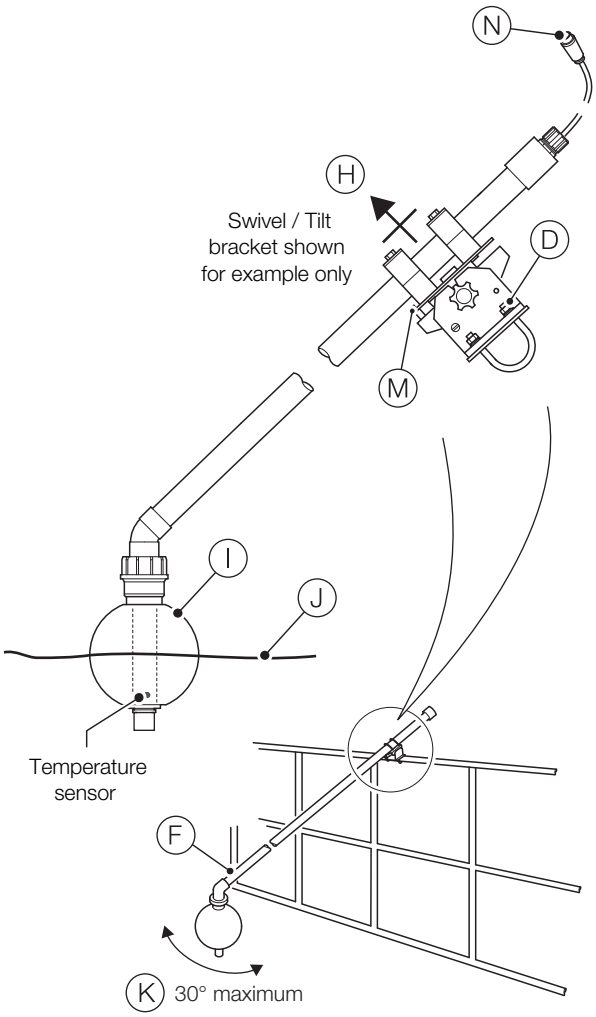

Fig. 5.3 Adjusting the floating ball assembly position

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