

# Installation Instructions


## **Wire drum, measuring wire unit, Servo**

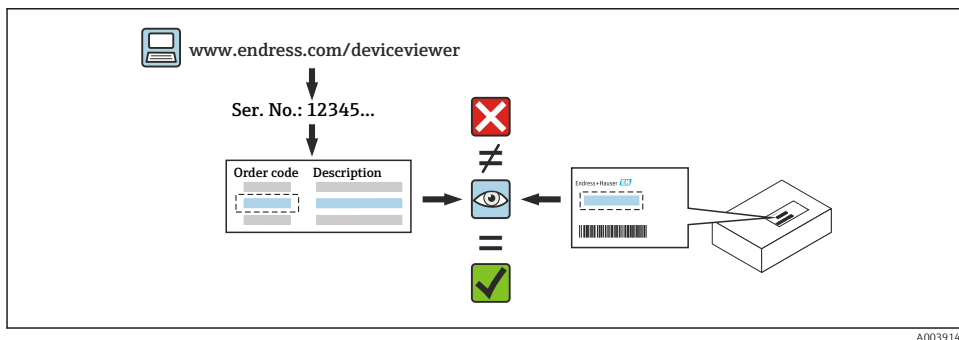
Proservo NMS8x



# 1 Intended use

- A defective unit can only be replaced with a functioning unit of the same type.
- Only use original parts from Endress+Hauser.
- Check in the W@M Device Viewer if the spare part is suitable for the existing measuring device.


 A spare parts overview is located in the interior of some measuring devices. If the spare parts kit is specified on this list, no inspection is required.



# 2 Personnel authorized to carry out repairs

Technical staff must comply with the following requirements for repair, mounting, electrical installation and commissioning of the measuring devices:

- Specialized technical staff must be trained in instrument safety.
- They must be familiar with the individual operating conditions of the devices.
- In the case of Ex-certified measuring devices, they must also be trained in explosion protection.

 Technical staff carrying out work are responsible for ensuring that the work is carried out safely and to the required quality standard. They must also guarantee the safety of the device following repair.

# 3 Safety instructions

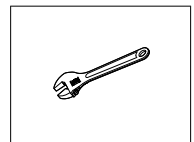
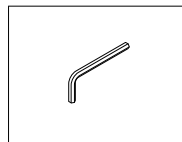
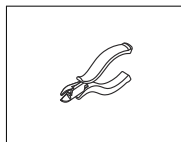
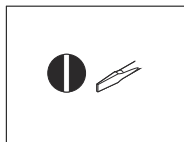
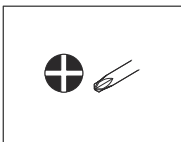
- Comply with national regulations governing mounting, electrical installation, commissioning, maintenance and repair procedures.
- The device is energized! Risk of fatal injury from electric shock. Open the device only when the device is de-energized.
- For devices intended for use in hazardous locations, please observe the guidelines in the Ex documentation (XA).

- In the case of devices in safety-related applications in accordance with IEC 61508 or IEC 61511: Commission in accordance with Operating Instructions after repair. Document the repair procedure.
- Before removing the device: set the process to a safe state and purge the pipe of dangerous process substances.
- Hot surfaces! Risk of injury! Before commencing work: allow the system and device to cool down to a touchable temperature.
- In the case of devices in custody transfer, the custody transfer status no longer applies once the seal has been removed.
- Follow the Operating Instructions for the device.
- Risk of damaging the electronic components! Ensure you have a working environment protected from electrostatic discharge.
- After removing the electronics compartment cover: risk of electrical shock due to missing touch protection!  
Turn the device off before removing internal covers.
- Modifications to the device are not permitted.
- Only open the housing for a brief period. Avoid the penetration of foreign bodies, moisture or contaminants.
- Replace defective seals only with original seals from Endress+Hauser.
- If threads are damaged or defective, the device must be repaired.
- Do not lubricate threads (e.g. of electronics compartment cover or connection compartment cover).
- If spacing is reduced or the dielectric strength of the device is not guaranteed during repair work, perform a test on completion of the work (e.g. high-voltage test in accordance with the manufacturer's instructions).
- Service plug:
  - Do not connect in explosive atmospheres.
  - Only connect to Endress+Hauser service devices.
- Observe the instructions for transporting and returning the device outlined in the Operating Instructions.



In case of questions, please contact the local [Endress+Hauser service organization](#).

## 4 Tools list



# 5 Spare parts list

This installation instruction is valid for the following spare part sets.

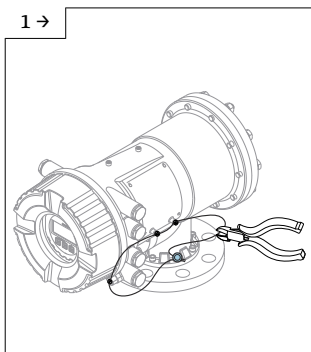
Wire drum with measuring wire

Spare part	Order number			Usage
XPN0006	005	Product	C	NMS80
			D	NMS81
			E	NMS83
	110	Measuring range; Wire: Diameter	A3	16 m (52.49 ft); PFA>; 0.4 mm (0.016 in)
			C2	22 m (72.18 ft); AlloyC276; 0.2 mm (0.008 in)
			D1	28 m (91.86 ft); 316L; 0.15 mm (0.006 in)
			F1	36 m (118.11 ft); 316L; 0.15 mm (0.006 in)
			G1	47 m (154.2 ft); 316L; 0.15 mm (0.006 in)
			H1	55 m (180.45 ft); 316L; 0.15 mm (0.006 in)
			Y9	Special version, TSP-no. to be spec.
	130	Process sealing	A1	HNBR -30 to 150 °C (-22 to 302 °F)
			B1	FKM GLT -40 to 200 °C (-40 to 392 °F)
			C1	CR Chloroprene -30 to 150 °C (-22 to 176 °F)
			E1	VMQ silicon
			Y9	Special version, TSP-no. to be spec.

Measuring wire ordered separately

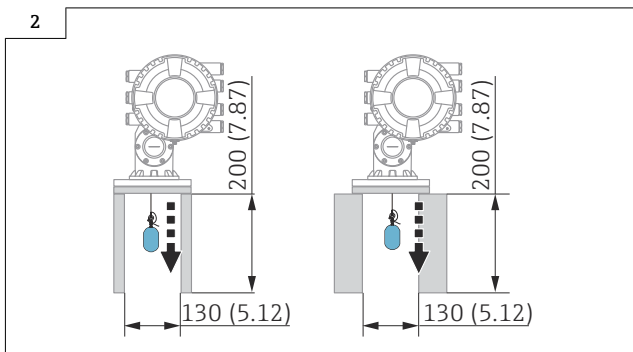
Spare part	Order number		Usage
71273740	XPNMS8-A	Measuring wire	60 m (196.85 ft); 316L; 0.15 mm (0.006 in)
71273742	XPNMS8-A		22 m (72.19 ft); AlloyC; 0.2 mm (0.008 in)
71273743	XPNMS8-A		16 m (52.5 ft); PFA>316L; 0.4 mm (0.016 in)

## 6 Replacing the wire drum



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- Loosen seal (for custody transfer applications only).

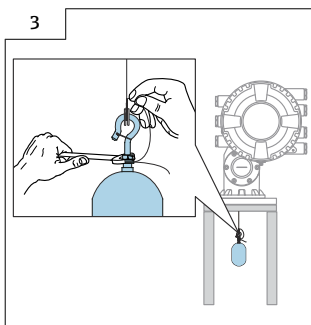


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- Secure the NMS8x on the blocks or pedestal.



- After turning on the power, move the displacer down using the **Move displacer** wizard.
- If the 50 mm (1.97 in) is being used, it can be replaced by accessing from the calibration window.



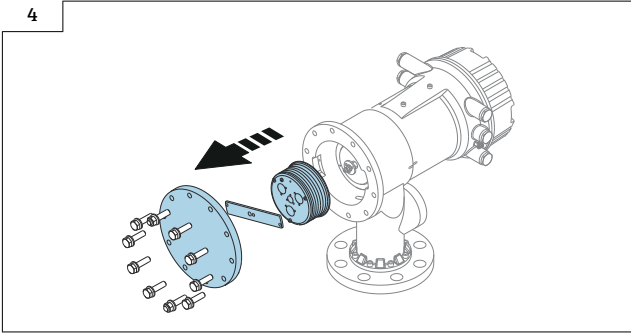
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- Remove the grounding wire, measuring wire, and displacer from the ring.
- Turn off the power after removing the displacer.



Because NMS83 has no grounding wire, there is none to detach.

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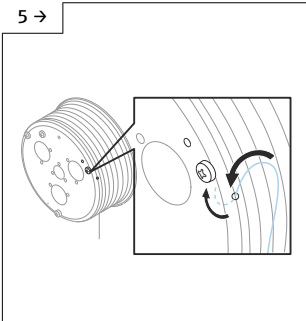


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- Remove the drum housing cover, bracket and wire drum.

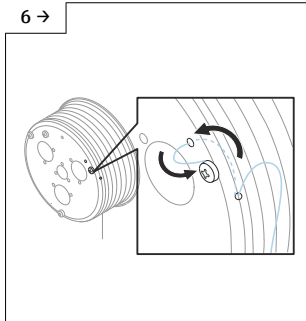
To wind the measuring wire onto the wire drum, attach the end of the wire to drum by passing it through the holes and securing the end with the screw (Available only for purchasing of measuring wire separately).

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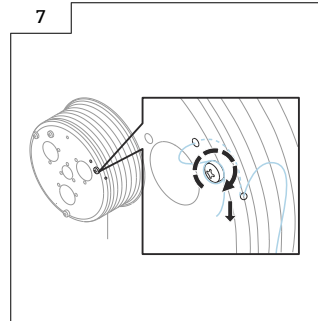
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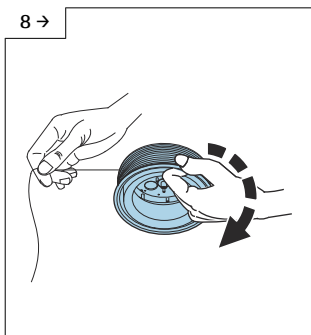


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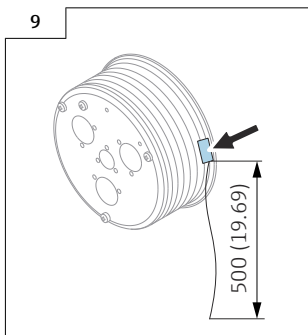


- To store the measuring wire in a box, use a box approximately 300 mm (11.81 in) (w) x 300 mm (11.81 in) (d) x 50 mm (1.97 in) (h) for wire storing.
- Do not twist the measuring wire when putting it in the box.
- Wind the end of the wire once around the screw and secure it with the screw and the washer.

Rotate the new wire drum to wind the wire into the groove and secure it with masking tape (Available only for purchasing of measuring wire separately).



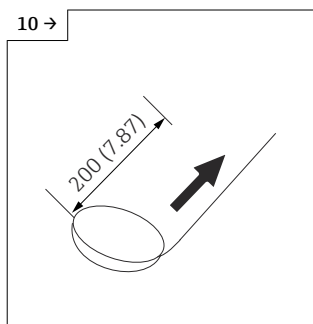
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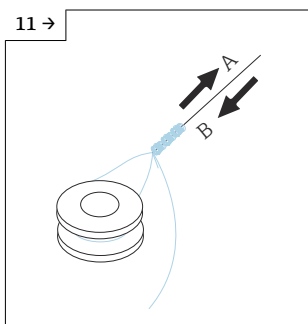
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 Apply tension to secure the wire in the groove.

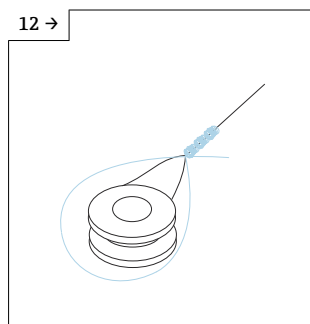
Wind the wire on the wire ring (Available only for purchasing of measuring wire separately).



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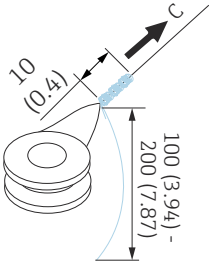
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► Wind the wire 2 times.

- Keep a space as a triangle shape and wind the wire 10 times toward arrow A and B.
- Wind the wire 10 times toward arrow B and keep a certain amount of tension to the ring.
- Wind the wire 10 times again.

► Wind the wire 1 times on the wire ring.

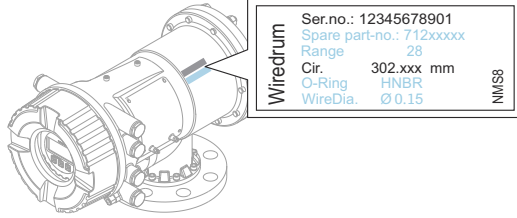
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- ▶ Wind the wire 20 times the direction toward arrow C.
- ▶ Leave the wind to mount it on the displacer.

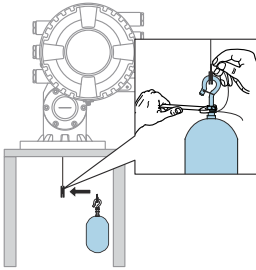
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- ▶ Replace the label attached to the housing to the new one (Available only for purchasing of wire drum).

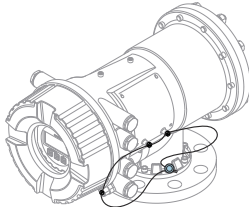
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- ▶ Mount the displacer on the wire ring and attach the new measuring wire and grounding wire to the displacer.

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- ▶ Seal device (for custody transfer applications only).



After installing the assembly, reference, sensor, and drum calibrations must be required.



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