

# Nijl

NEO WAVE<sup>®</sup>

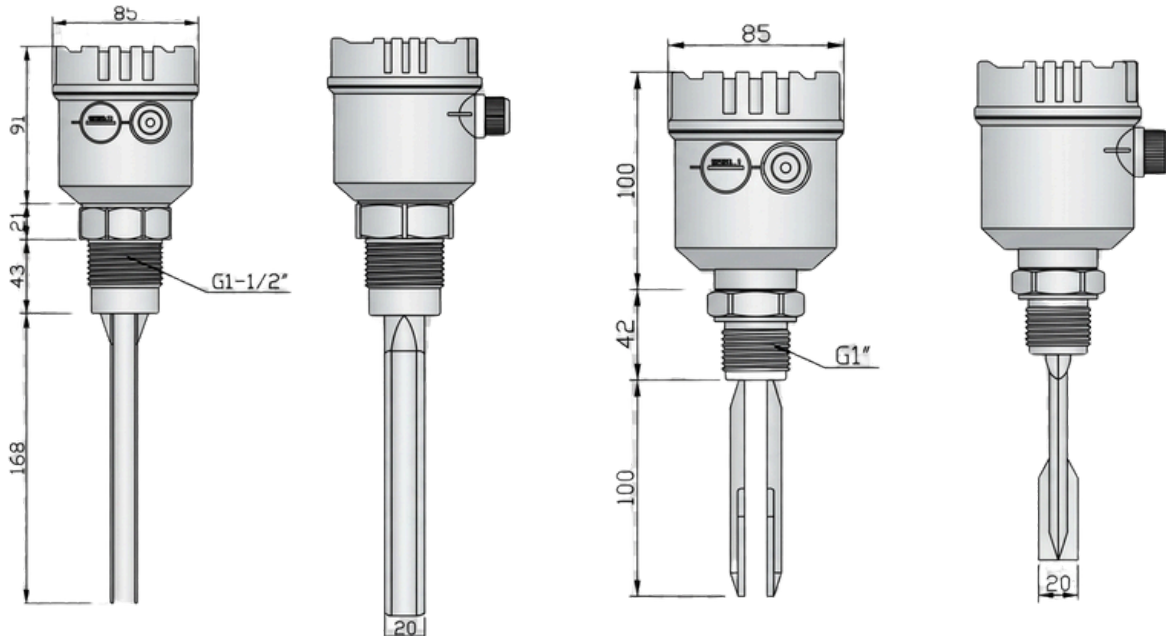
## User Manual

# Tuning fork level switch

## TxVF79



## Dimensions



## Operation Instructions

1. Insert the fork into the material about 10 mm.
2. Press and hold the SET button.
3. The red and green LEDs will flash alternately.
4. Wait until the red LED flashes more than twice consecutively, then release the SET button immediately.
5. The red LED will flash continuously.
6. Press the SET button again:
  - The red and green LEDs will flash alternately.
  - Then both LEDs will turn ON at the same time.
7. Remove the fork from the material:
  - The green LED turns ON, and the red LED turns OFF.
  - (NO-COM: Disconnected / NC-COM: Connected)
8. Insert the fork back into the material:
  - Both LEDs turn ON simultaneously.
  - (NO-COM: Connected / NC-COM: Disconnected)

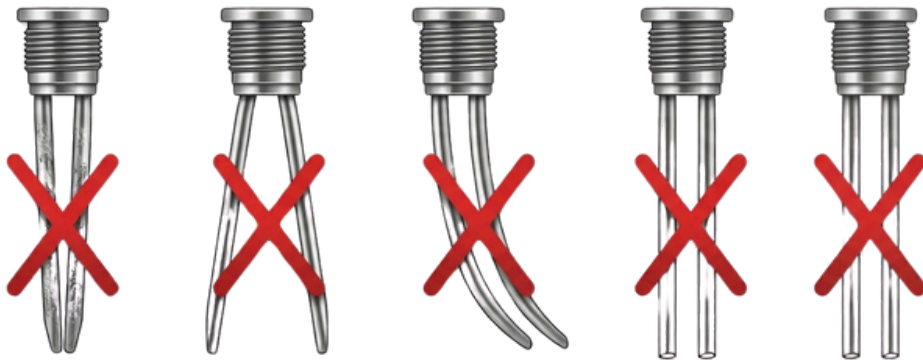


### Note:-

- The device is factory pre-set.
- Re-adjustment is not required unless there is a fault.

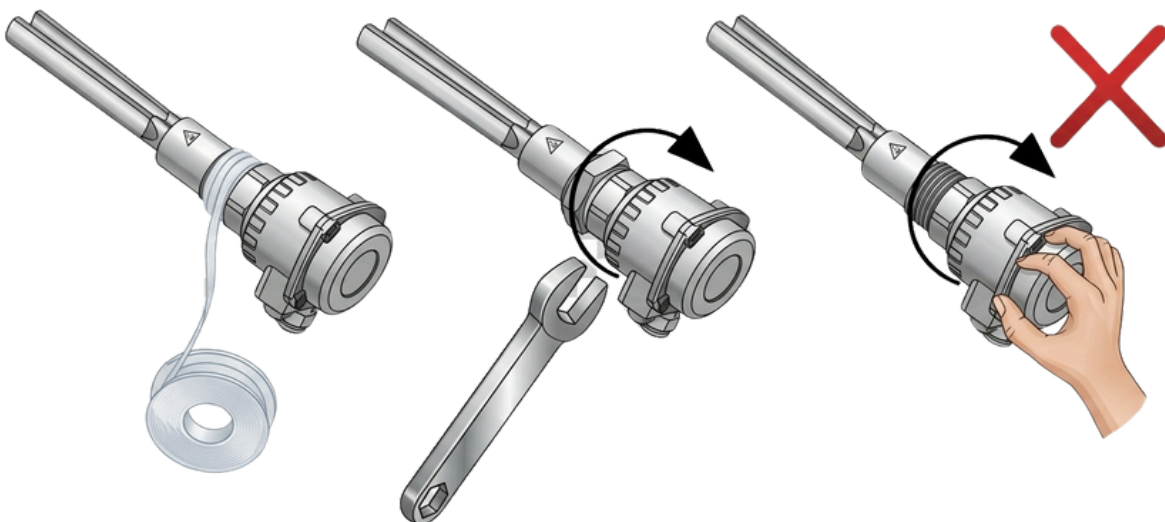
### Special instructions

1. The smart tuning fork includes a self-check function designed to compensate for vibration absorption after installation on the tank wall, while also minimizing noise interference and preventing malfunction.
2. The product is factory-calibrated based on the density of water (1 g/cm<sup>3</sup>) as the reference for state switching. If the measured material has a density lower than 1 g/cm<sup>3</sup>, the self-check must be performed again.
3. The sensitivity is set to the highest level by default, making it suitable for stable material conditions. If the material surface experiences significant fluctuations, the sensitivity should be reduced to avoid false alarms.
4. During installation, avoid areas with strong vibrations to prevent malfunction. If such conditions cannot be avoided, perform a self-check at the installation site or restore the factory settings.



Do not: damage the vibrator; Bending vibrator;  
Cut short vibrator; Extended vibrator

\*Seal with raw material tape. Tighten evenly using a wrench, then finish tightening by hand.



## Technical parameters

Parameter	Specification
Supply voltage	20...60 VDC / 20...250 VAC 50/60 Hz
Switching time	About 2 seconds when covered by media, about 3 seconds when no media
Ambient temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Medium temperature	-40...+150 °C
Operating pressure	-1...+40 bar
Tested material	Powder & granules $\geq 10$ mm, density $> 0.1$ g/cm <sup>3</sup> Liquid, viscosity $\leq 10000$ mm <sup>2</sup> /s, density $> 0.7$ g/cm <sup>3</sup>
Connection	G1-1/2", G1"
Electrical interface	M12 2×P1.0 connector
Housing material	ABS / Aluminum alloy
Fork material	Stainless steel S304 / Stainless steel S316
Output	Relay output: AC250V/4A, DC60V/4A Open collector (NPN): 400 mA Open collector (PNP): 400 mA
Power consumption	3 W max (DC supply), 15 W max (AC supply)

## Storage Tank Installation – Dimensions, Examples & Precautions

### A. General Installation Precautions

1. The switch can be installed horizontally with a 15–20° downward angle to reduce material impact and prevent material build-up.
2. Keep the switch as far as possible from the feed port to avoid material impact and false alarms. If unavoidable, install a partition (baffle) plate between the feed port and the material level switch.
3. The wire entry port of the junction box must face downward, and the fixing nut must be properly tightened.
4. When working inside the tank, it is strictly prohibited to use the device for climbing or to hang ropes or any objects.

## **B. Correct Installation Methods**

### **1. Top Installation**

- Install vertically downward.
- Can be installed at any position on the top (preferably away from the feed opening).

### **2. Horizontal Installation**

- Install with a 15–20° downward tilt to reduce material impact and prevent material build-up.

### **3. Horizontal Installation with Baffle**

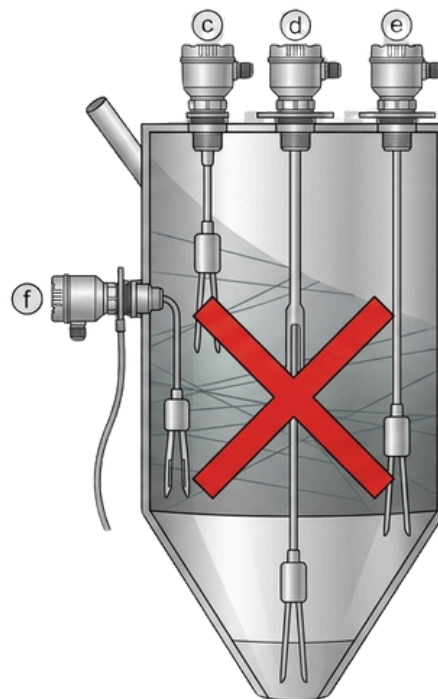
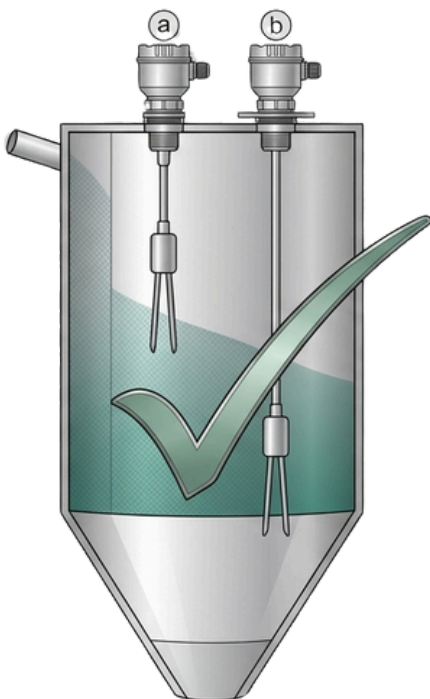
- Install with a 15–20° downward tilt.
- Install a baffle above the material level switch.
- Baffle size: approx. 250 mm (10") length × 200 mm (8") width.
- Prevents improper accumulation of material around the switch.
- Reduces material movement and impact on the switch.

### **4. Unloading Hopper Installation**

- The distance between the bottom of the screw thread and the tank wall must not exceed 60 mm (2.4").
- Prevents false alarms caused by improper material accumulation.

### **5. Clearance and Protection**

- Maintain sufficient distance between the material level switch and the silo/tank wall.
- Install a protective plate between the material inlet and the switch when required.
- Helps reduce false alarms caused by material flow.



### **C. Improper Installation Examples**

- Installed horizontally on the filling wall or below the feed opening.
- Installed too close to the feed port.
- Installed on surfaces exposed to direct material impact.
- Incorrect installation angle, leading to high load pressure during feeding and unloading and possible failure.
- Non-vertical installation (for cable extension type material level switch).
- Installed below the center point of the discharge hopper.
- Distance between the bottom of the screw thread and the tank wall exceeds 60 mm (2.4"), causing improper operation.

### **D. Additional Installation Requirements / Protection**

- A protective plate should be used to prevent the impact of material from affecting normal operation.
- Sufficient space must be reserved for installation and debugging.
- Maintain adequate clearance between the switch and surrounding equipment.
- Use a protective shield to prevent condensation inside the housing.

### **Terminal diagram**

