

## DIFFERENCE BETWEEN SINGLE AND MULTI-JET METERS

In single-jet water meters the principle of operation is given by the incidence of a single tangential stream of water with a turbine mounted in a radial position within the body of the meter. The rotation of the turbine transmits the motion to the reading mechanism allowing the measurement of the volume of water passing through the meter. The rotation speed of the turbine is proportional to the water flow in inlet and any variation in the relationship between the characteristics of the turbine and the water flow would entail an alteration of the error curve of the meter. In multi-jet water meters the principle of operation is to force the passage of the inlet water flow through a series of ducts open in a capsule called distributor, containing the turbine. The entrance of the water through the ducts generates a series of symmetrical water jets that impact the turbine keeping it in perfect balance.



## DIFFERENCE BETWEEN DRY-DIAL, WET-DIAL AND SEMI-DRY DIAL WITH PROTECTED ROLLS METERS

The dry dial water meter has the reading mechanism hermetically separated from the water flow chamber. In this case the transmission to the reading mechanism gears takes place via magnetic coupling between the turbine and the reading mechanism itself. The wet dial water meters has the reading mechanism the reading mechanism completely immersed in the water and the transmission is direct from the turbine to the gears of the mechanism itself. The semi dry dial water meter has the reading mechanism completely immersed in the water but the dial is partially separated from it remaining dry and the rollers are protected in a sealed capsule. The transmission from the turbine to the gears of the reading mechanism is direct.



## DIFFERENCE BETWEEN THE PRECISION CLASS AND ACCURACY CLASS OF A WATER METER

The precision class of a water meter is determined by the ratio between its nominal flow ( $Q_3$ ) and the minimum flow ( $Q_1$ ). Taking as an example a DN15 meter with nominal flow  $Q_3 = 2,5 \text{ m}^3/\text{h}$  and minimum flow  $Q_1 = 25 \text{ l/h}$ , result will be  $Q_3/Q_1=100$  that is the value indicating the range or precision class of the meter itself in accordance with the provisions of the 2004/22/CE MID norm. The accuracy class of a water meter determines the maximum permissible error, during normal conditions of use, of a water meter and must be maintained over time. The accuracy Classes are 1 and 2 but, while Class 2 covers the vast majority of water meters available on the market, the Class 1 shall apply to special meters having  $Q_3 > 100 \text{ m}^3/\text{h}$ . The accuracy class 2 requires that the values of the metrological curve of a given water meter determined according to its caliber, are within the limits of a maximum margin of error of  $\pm 1\%$  at  $Q_1$  and  $\pm 2\%$  from  $Q_2$  to  $Q_4$ .

