

# Over-run brake

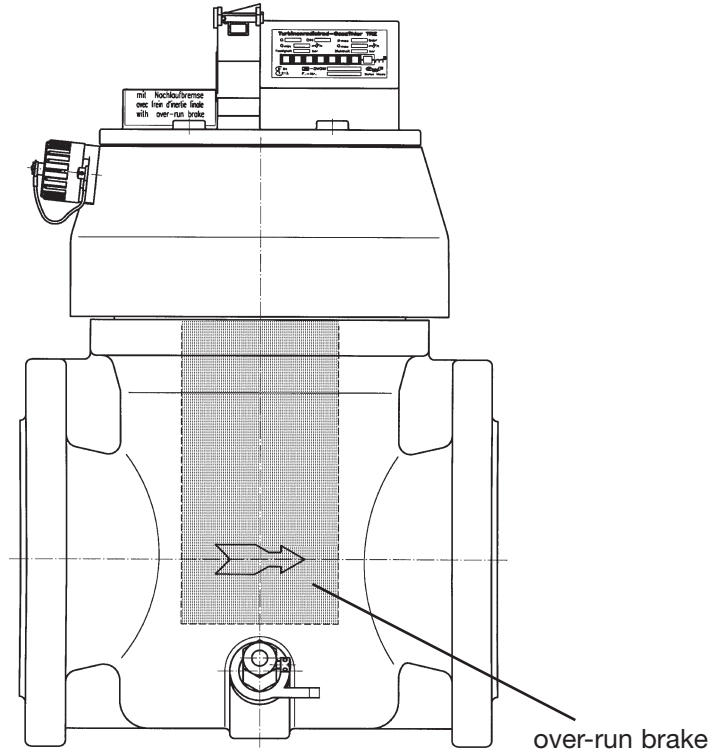
for Radial-Blade Turbine gas meter TRZ DN 50–100  
for Quanto Monopipe EQZ DN 40–100

## Why an over-run brake?

More often axial-blade turbine or radial-blade turbine gas meters are used for measuring consumption of heating gas supply systems. All turbine meters of this construction function according to the principle of velocity measurement.

The advantages of the radial blade turbine gas meter are mainly to be found in its simple installation, small size, light weight, in any installation arrangement and low cost. However, gas meters with the velocity measuring principle are not ideal for intermittent operation.

When an energy consuming installation is suddenly switched off (e.g. in a heating installation), the meter does not respond immediately. The freely moving turbine wheel continues to rotate at a slowly decreasing speed, and will produce an error. This error must be eliminated.



## Effect of an over-run brake

When the flow rate varies, the low-mass turbine wheel adapts itself very rapidly to the new gas velocity. In this case, the brake remains

inoperative. However, if the gas flow is stopped by closure of a valve (e.g. a heating burner switching off) the brake is immediately

actuated and stops the turbine wheel within a few seconds.

## Effect of over-run brake on measuring behaviour of meter

The over-run brake has no effect on the measuring behaviour of the meter. The braking action is ini-

tiated when the flow has dropped below 0,5 of the minimum flow rate ( $Q_{min}$ ). The measuring

range of the meter thus remains unaffected.



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## Fitting of the over-run brake

The construction of our radial-blade turbine or quanto monopipe gas meters **(1)** allows the fitting of an over-run brake **(2)** without any

mechanical changes involved. This means that the gas meter can be equipped with an over-run brake subsequently. The complete

unit (gas meter with over-run brake) will be then mounted on the monopipe adaptor **(3)** in the same way.

## Assembly dimension

The over-run brake is fully integrated inside the monopipe adaptor. Therefore, it is important to take the corresponding expandable

height in account for disassembling the meter with over-run brake from the installation:

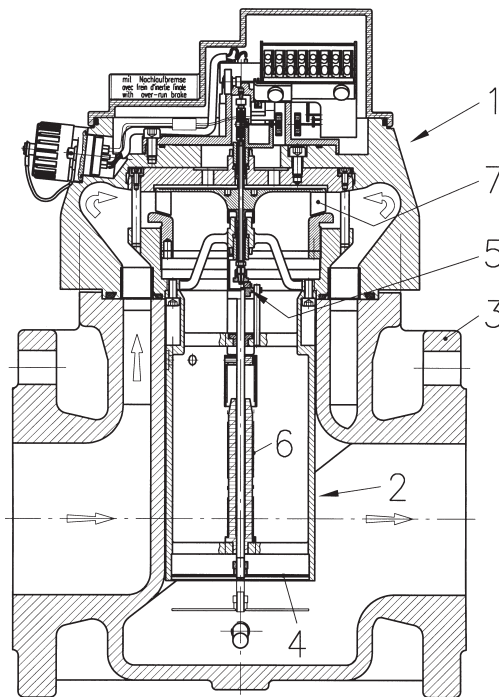
- DN 40: +115 mm
- DN 50: +115 mm
- DN 80: +155 mm
- DN 100: +165 mm

## Operating principle of the over-run brake

If there is no flow (gas consumption), a spring **(6)** places the brake on the turbine wheel. As soon as

gas consumption starts, the gas flows through the monopipe adaptor. The floating plate **(4)** gets

pressed down by the flow pressure which releases the brake **(5)** on the turbine wheel **(7)**.



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