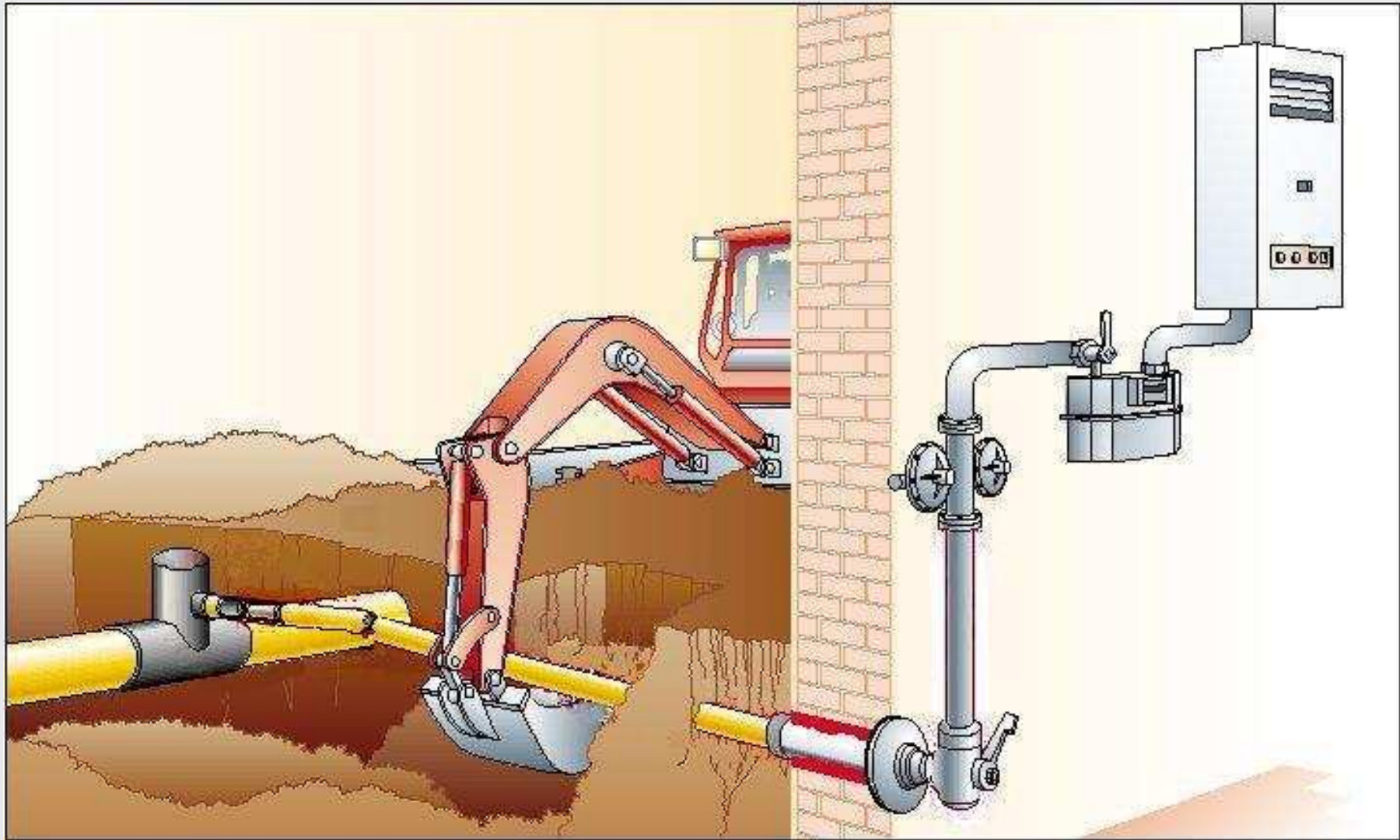


GERMAN SAFETY PHILOSOPHY FOR SERVICE LINES AND GAS INSTALLATION

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GERMAN SAFETY PHILOSOPHY FOR SERVICE LINES AND GAS INSTALLATION

The philosophy of DGVW is based on three pillars:

- ▶ Prevention of unauthorised interference by a third party
- ▶ Identification of damage at an early stage
- ▶ Limitation of damage and defence against manipulation

Prevention of unauthorised interference by a third party

- ▶ Looking for service lines prior to excavating
 - excavation company:
obliged to ask all affected network operators for the location of their grid
 - network operator:
take care of up-to-dateness of data

- ▶ Sufficient cover of pipes
 - service line min. 50 cm
 - mains: usual 80 cm, min. 60 cm

Identification of damage at an early stage

- ▶ Leakage survey
 - includes mains
 - and service lines

No. of Leakages / km	$\leq 0,1$	$\leq 0,5$	≤ 1
Operation pressure in bar	Period of survey in years		
$\leq 0,1$	6	4	2
$> 0,1$ to ≤ 1	4	2	1
> 1	4	1	0,5

Identification of damage at an early stage

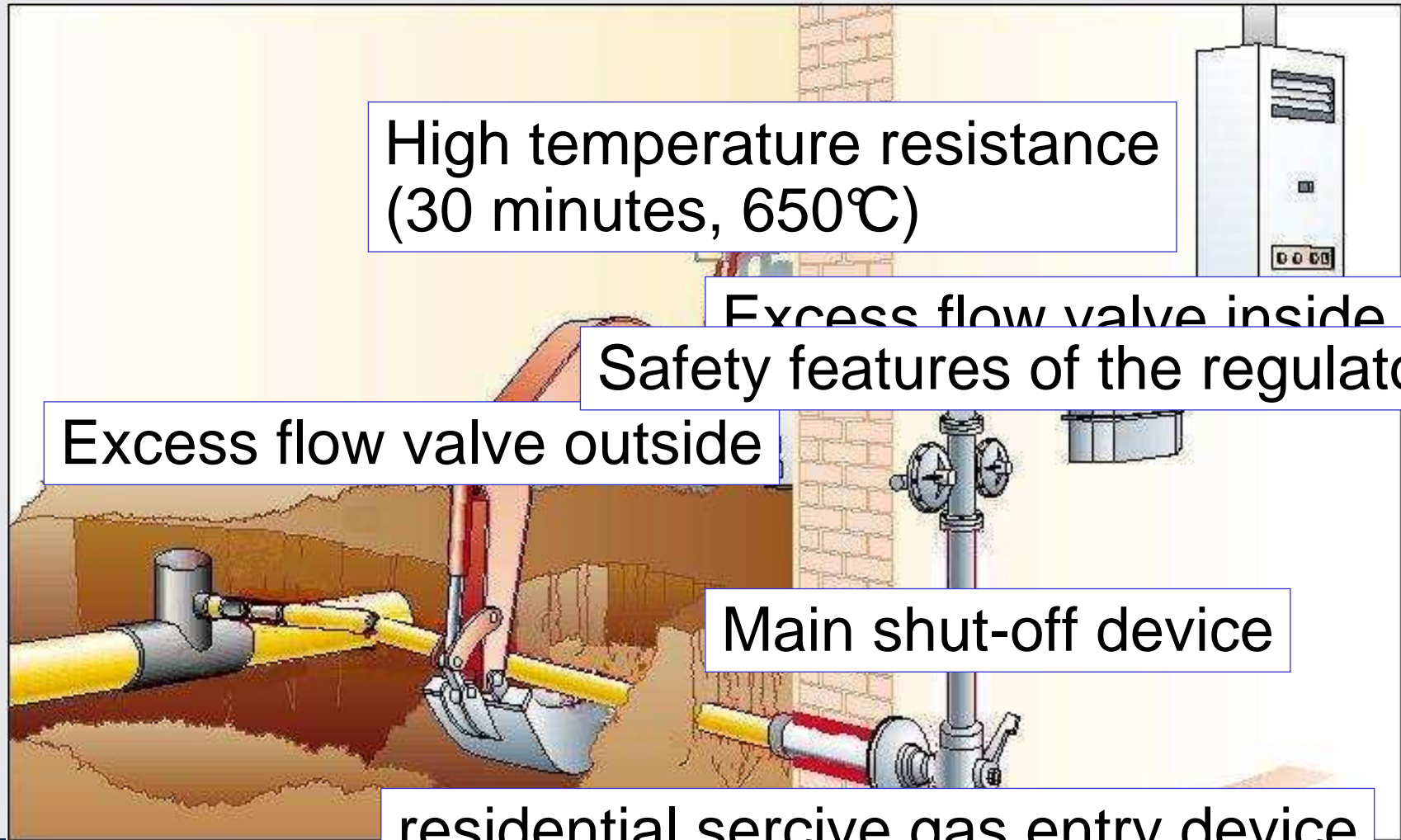
▶ Odourisation

- odourant, added in the outlet of the gas pressure regulation station
- operability of the equipment has to be monitored
- requirement of a threshold concentration at any customer has to be tested regularly

▶ Testing prior to commissioning

- service line: pressure test
- installation: leak tightness and functional ability of main shut-off device and regulator

Limitation of damage and defence against manipulation



High temperature resistance
(30 minutes, 650°C)

Excess flow valve inside

Safety features of the regulator

Excess flow valve outside

Main shut-off device

residential service gas entry device

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- ▶ The measures described in the standards of DVGW ensure the safe operation of the service lines and the gas installation.