External dimensions

Reactor frame with pneumatic system and drive
A = height 1300 mm
B = depth 520 mm
C = width 560 mm

Basic information

Nominal volume	*700 ml*
Excess operating pressure	*300 bar*
Operating temperature	*400°C*
Speed	*4'500 rpm*
Material	*Nimonic 90 for reaction vessel and cover*

Flange lock

with high tensile bolts made of Nimonic 90 and nuts made of CrMo5 (5).

Seal

Conical metal-to-metal seal.

Heating

12 electrical heating elements, 250 Watt each (3000 Watt), ø 12.5 x 100 mm inserted into the reactor wall (8).

Temperature sensor

Temperature sensor, type K or type N, inserted into the reactor wall.

Cooling

Double shell for air or water cooling (10)

Drive

Electrical motor with nominal power of 1.1 kW, 3 × 240/400 V, 2-pole, 2,800 rpm, activated by frequency converter. The speed is adjusted with a potentiometer, from 200–4,500 rpm as the maximum limit. (1)

Magnetic stirrer design

The magnetic stirring drive features a streamlined design for high speeds. The torque of the magnetic coupling is 6 Nm (11). The pressure shell between the inner and outer magnets is manufactured as a double shell for the water cooling system (2). There is another cooling zone on the carrier section of the MRK. Gas supply to the magnetic stirrer (4) and speed reducer (3) are included in the standard.

Bearings

Stainless steel ball bearings are used to mount the driven shaft, made of Mat. no. 1.4980.

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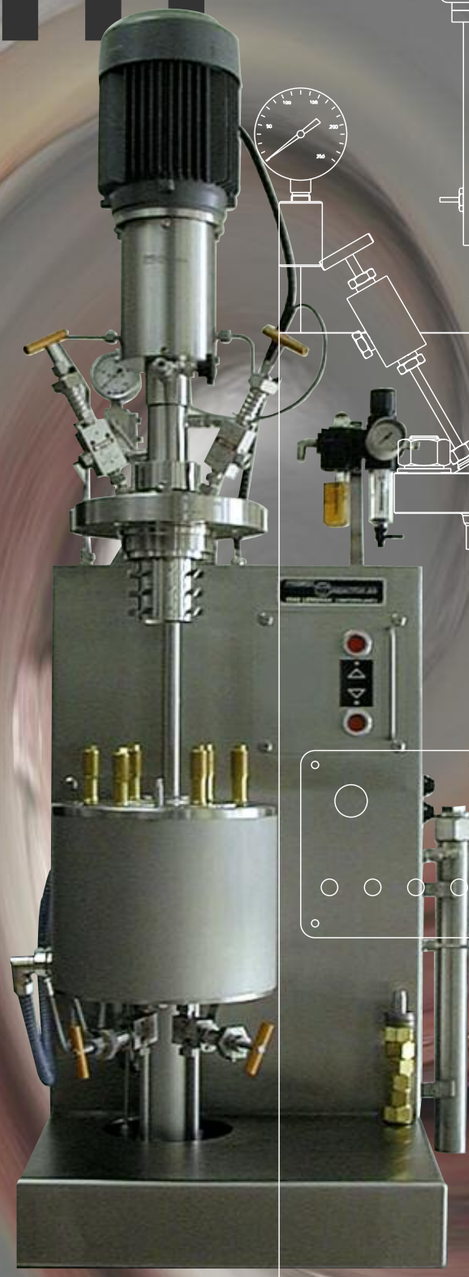
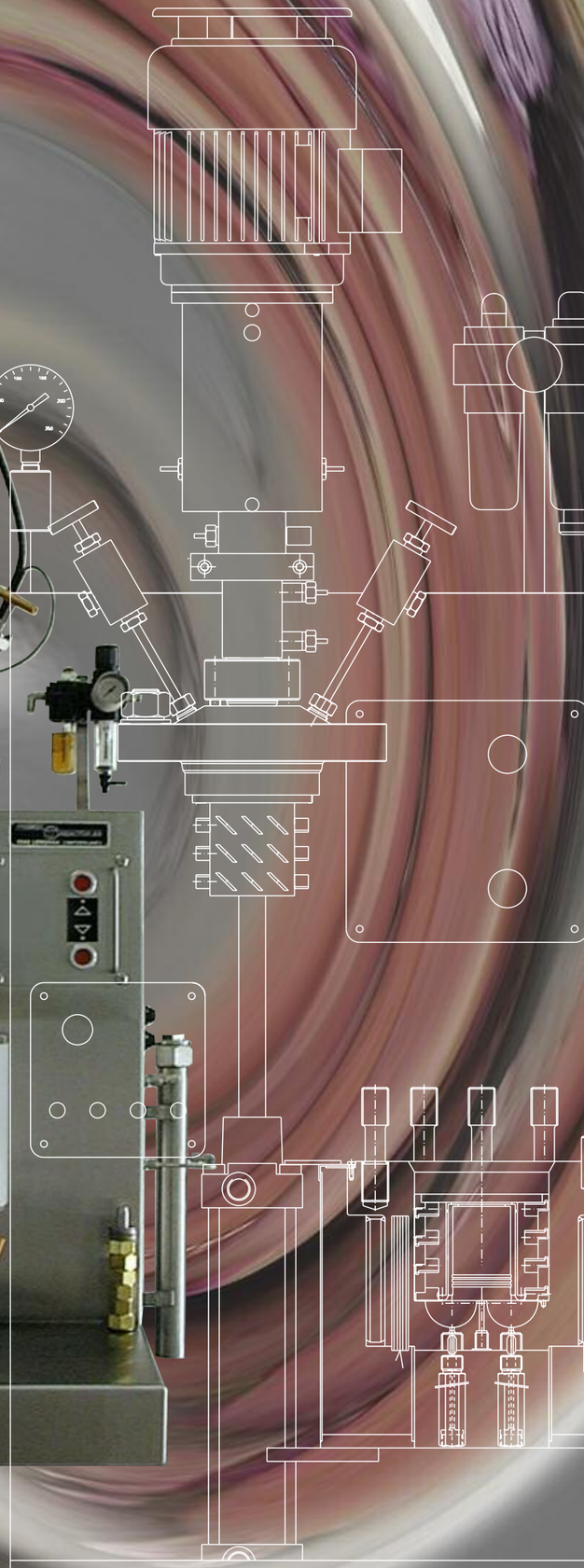
hpm

turbo





premex reactor ag®

4-stage turbo reactor with the same basic structure for the frame and pneumatic system as type hpm-p. This model «turbo» is fitted with a pneumatic cylinder so that the reaction vessel can be lifted towards the cover.

A turbo reactor can generally be used for gas and multi-phase reactions. It is an important advantage in kinetic studies, the studies of catalyst deactivation and catalyst screening.

The design of the catalyst cage has been chosen so that it can easily be adapted to the quantity of solid material. The rotor and the stator – the key elements of the turbo reactor – make it possible to achieve an enormous stirring effect, at a maximum of 4'500 rpm. With a 4-stage gas phase, the stirring system (the rotor and the stator) ensure optimal gas intake into the medium, which in turn creates the conditions for optimum utilisation of the catalyst (at the appropriate speed). The interior structure of the reactor has been designed for internal recirculation.

The «turbo» reactor can be used as a batch system or for continuous reactions.

Bore holes on the reactor cover

- *Two M16 x 1.5 mm bore holes for Sitec valves, with cooling zone*
- *One M16 x 1.5 mm bore hole in front, to move the rotor into the working position*
- *One M16 x 1.5 mm bore hole for burst disc safety valve*
- *One M16 x 1.5 bore hole for pressure gauge and pressure transducer*
- *One M16 x 1.5 mm bore hole with plug (reserve)*

autoclave the turbo

hpm-tr

Bore holes on the reactor base

- *Two M16 x 1.5 mm bore holes for Sitec valves, with cooling zone*
- *1/4" bore hole with vertical pipe into the interior of the reactor, for thermal sensor type K (medium temperature)*

1. *Electrical motor*
2. *Connection for water cooling on the magnetic stirring drive*
3. *Speed reading point*
4. *Gas supply on the magnetic stirring drive*
5. *high tensile bolts and nuts*
6. *Rotor paddles*
7. *Stator*
8. *Electrical heating elements*
9. *Temperature sensor in the medium*
10. *Double shell for cooling*
11. *Magnetic coupling*
12. *Autoclave vessel with base connections*
13. *Autoclave cover with all fittings*