

In our large-scale series we have taken advantage of the advanced technology of the pneumatic model. We have increased the scale to 100–300 lt or have made the large volumes an independent assembly in a three-legged design.

## Great quality with a unique staging!

We are pleased to present the details of the "hyper", our flagship reactor from the premex company

### "hyper" high pressure reactor viewed at close range

#### Basic data:

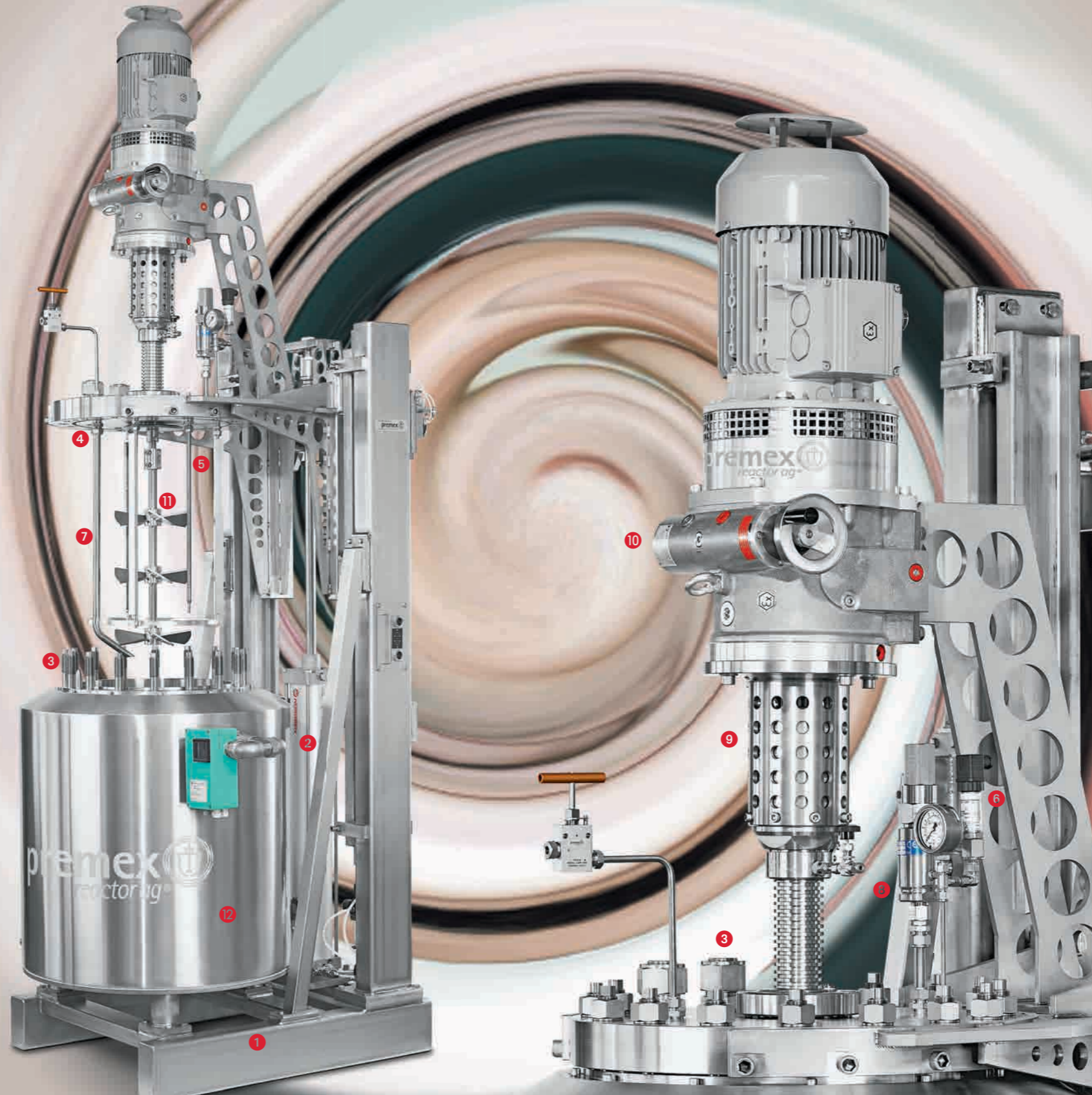
- "hyper" high pressure reactor hpm
- 200 bar
- 100 lt (other volumes on request)
- 300°C
- in Mat. No. 1.4571 (AISI 316Ti) WNr. 2.4602 (HC22) or other materials (versions) upon request

#### Design:

- Welded construction of three forged parts (round base, cylindrical pipe, flange ring)
- Our example shows a floor model on three legs attached to the base. **1**
- The reactor cover is lifted by a pneumatic cylinder. **2**
- Closure by means of stud bolts and nuts **3**
- Flange seal as an O-ring or a flat seal **4**

#### Fittings or bores in the cover:

- 1x immersion pipe for temperature sensor in the medium **5**
- 1x manometer
- 1x pressure sensor. Both manometer and pressure sensor are available in Ex (option). **6**
- 1x valve with immersion pipe to the base for sampling **7**
- 1x bore for product inlet
- 1x bore for pressure relief
- 1x bore for gas feed
- 1x bore with spring pressure safety valve or a rupture safeguard (version) **8**
- Additional bores according to specifications of the customer



#### Magnetic stirrer drive

- Magnetic stirrer drive mrk 54.2 "isodrive" (40 Nm). (Drives from 2 Nm up to 400 Nm possible). **9**
- Planetary roller gear with speed adjustment by a hand wheel (Ex as option) **10**
- Our example provides a planetary roller gear. A three-phase motor controlled by a potentiometer via a frequency convertor is also possible (version)
- Output speed 0 – 1'500 rpm
- Sealing medium from MRK for the reactor cover with an O-ring or metal on metal seal (version)
- Ball bearing on the drive shaft. Other bearings upon request (version)
- Stirrer shaft attachment with two half shells
- Drive shaft equipped with a centrifugal disc (option)
- 3x slanted stirrer blades on the same shaft. All stirrers can be individually selected (version). **11**
- 3x baffles in the form of a flat bar mounted below the cover (option).

#### Heating/cooling element:

- Heating 3x 400 V, heat output approx. 30 kW in our example
- Water cooling in the outer jacket through a cooling coil
- The entire reactor with heating/cooling manifold is insulated on the back and is covered with a chromium steel jacket in Mat. No. 1.4301 (AISI 316). **12**
- Temperature sensor in the heating/cooling manifold
- Cooling water valve is mounted outside the insulation jacket, 24 V (NO) (Ex option)
- Our example provides electric heating. However, a double-jacket design is also possible (version). The temperature control is then carried out with heat transfer oil regulated by using hot/cold thermostats.

#### Safety and Acceptances:

- The entire autoclave system can be built with Ex-protection
- A complete Atex acceptance for the system is possible.
- The guidelines for the calculations are based on TÜV and Electrosuisse.

# hyper high pressure reactor hpm