IKA® Laboratory reactors
Modular and expandable

Configuration example LR-2.ST

The systems LR-2.ST and LR 2000 are modularly expandable laboratory reactors, designed and planned for reproducing and optimizing chemical reaction processes as well as mixing, dispersing and homogenization processes at laboratory scales.

Some examples for these processes are:

- Manufacturing of cremes, lotions, emulsions, and liposome preparations in the pharmaceutical and cosmetic sector
- Mixing of solids such as calcium carbonate, talc, titanium oxide, etc. into liquid polymers
- Mixing of additives and solid polymer compounds into mineral oils
- Grinding and disintegrating of solids and fibers in liquids and polymers

The cost efficient LR-2.ST laboratory reactors are available for vacuum applications.

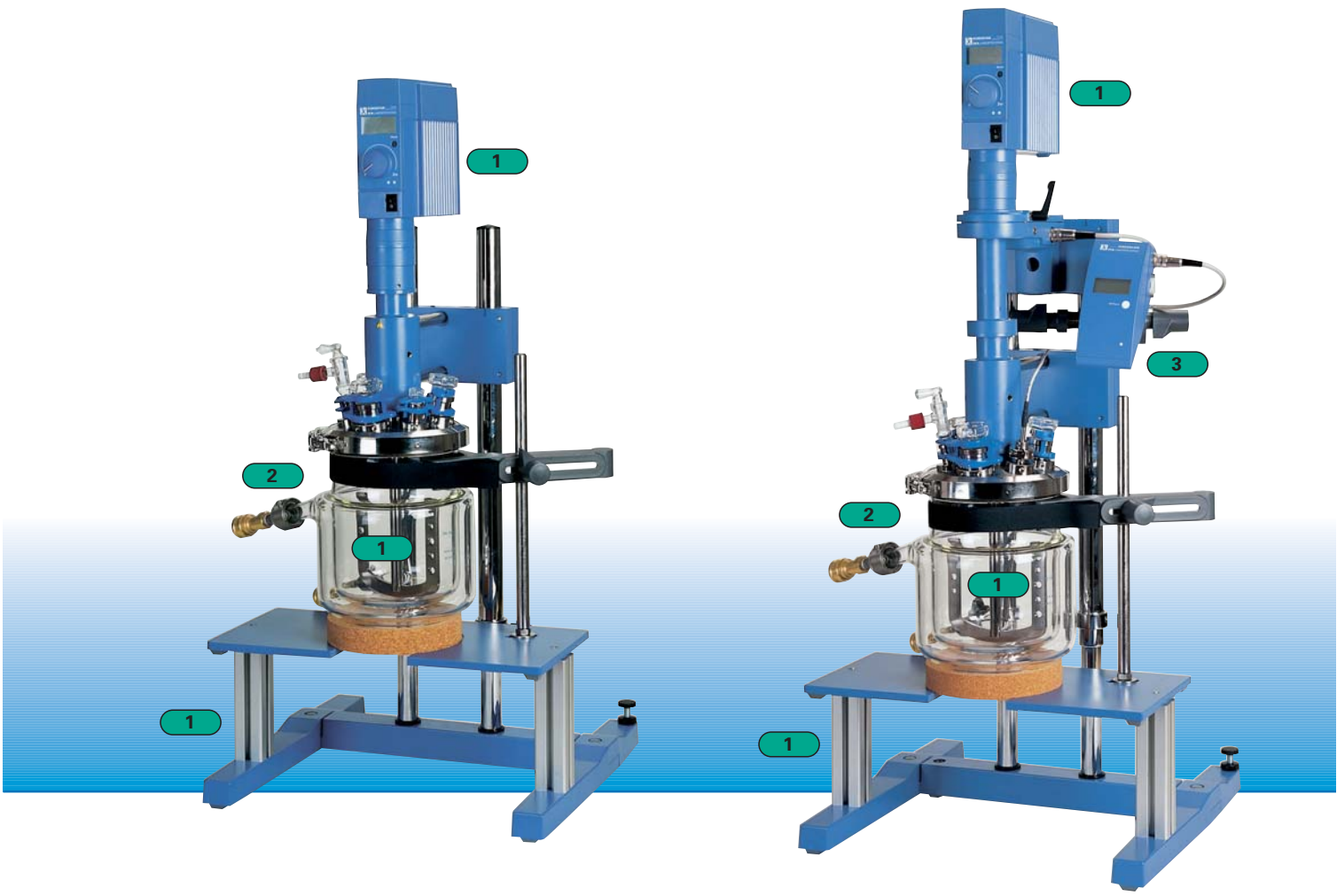
The laboratory reactors of the series LR 2000 P (pressure) and LR 2000 V (vacuum) are especially designed for the use in the pharmaceutical and cosmetic sector.

The systems can be adapted individually to a wide range of different applications and specific requirements. **IKA®** laboratory devices, e.g. temperature measuring instruments, laboratory stirrers and dispersing instruments, pumps and thermostats can be combined and controlled via PC using labworldsoft®. The torque measuring instruments VK 600 control VISCOKLICK® or VM 600 basic allow for evaluation of rhelogical properties.

The **IKA®** laboratory reactors features among others are:

- Modularly expandable to accommodate interchangeable instruments for various applications (3 x NS 29 and 2 x NS 14 ground joints)
- Single- and double-walled jacketed 2 liter vessels available made of borosilicate glass or stainless steel, with or without bottom discharge valve
- Sealing materials (FFPM) resist solvents and temperatures for applications up to 230 °C

IKA® Laboratory reactors
LR-2.ST system variants



LR-2.ST Version 1

1 **LR-2.ST**
Unit with reactor cover
(sealing material: FFPM)
consisting of:
- Stand system LR-2.ST
- LR-2.SI Safety disconnection
- EUROSTAR power control-visc P7
- LR 2000.11 Anchor stirrer with flow borings

2 **LR-2000.1**
Double-walled reactor vessel,
page 124.

LR-2.ST Version 2

1 **LR-2.ST**
Unit with reactor cover
(sealing material: FFPM)
consisting of:
- Stand system LR-2.ST
- LR-2.SI Safety disconnection
- EUROSTAR power control-visc P7
- LR 2000.11 Anchor stirrer with flow borings

2 **LR-2000.1**
Double-walled reactor vessel,
page 124.

3 **VM 600 basic**
Visco module, page 126.

IKA® Laboratory reactors
LR-2.ST system variants

LR-2.ST Version 3

1 **LR-2.ST**
Unit with reactor cover
(sealing material: FFPM)
consisting of:
- Stand system LR-2.ST
- LR-2.SI Safety disconnection
- EUROSTAR power control-visc P7
- LR 2000.11 Anchor stirrer
  with flow borings

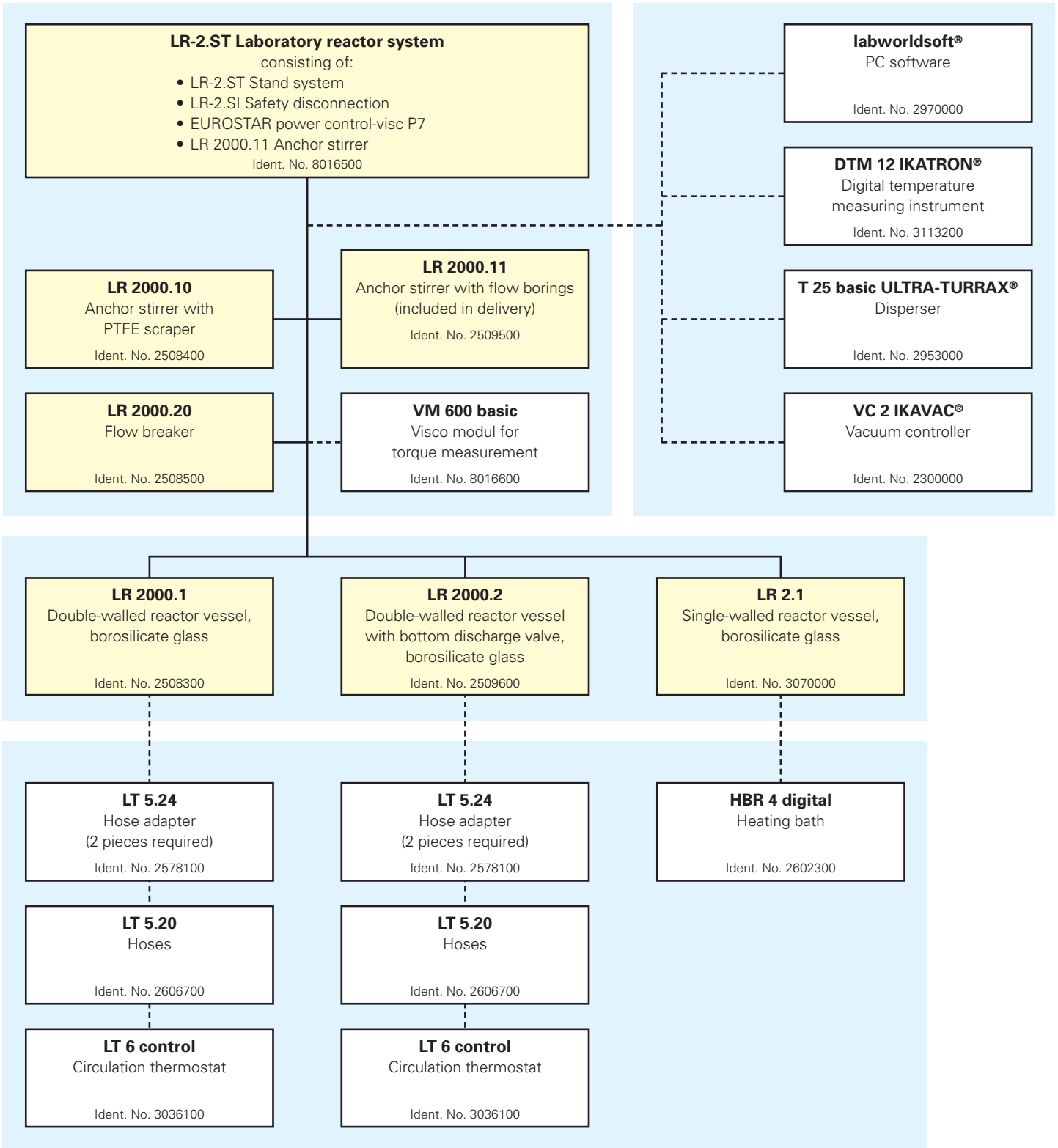
2 **HBR 4 digital**
Heating bath,
page 85.

3 **LR 2.1**
Single walled reactor vessel,
page 124.

Min. volume (anchor stirrer)	500 ml
Min. volume (T 25 basic)	800 ml
Max. volume	2.000 ml
Max. temperature Kalrez	230 °C
Attainable vacuum	25 mbar
Max. viscosity	
Visco module VM 600 basic	150.000 mPas
Speed range	
(EUROSTAR power control-visc P7)	8-290 rpm
Height of telescopic stand	620 -1.010 mm
Dimensions (W x D x H)	460 x 420 x 1.240 mm
Materials in contact with medium	stainl. steel (AISI 316L) Kalrez (FFPM) borosilicate glass 3.3
Safety accessory LR-2.SP Splinter protection (126)	

IKA® Laboratory reactors
LR-2.ST system variants

Configuration possibilities:

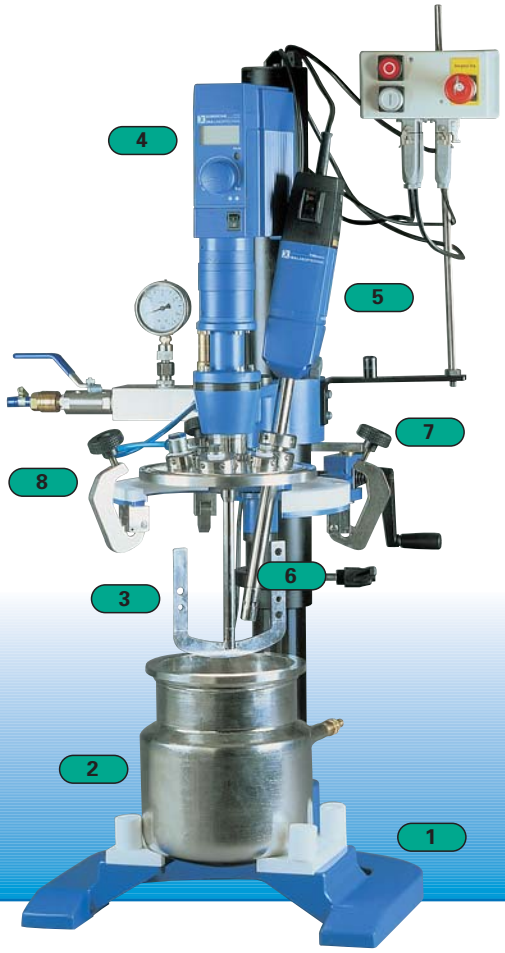


Please contact IKA® for further configuration recommendations for your specific applications.

Optional components
see pages 127/128

IKA® Laboratory reactors

LR 2000 P system variant (pressure)



System variant - pressure:

1 **LR 2000.75**
Stand for pressure variant.

2 **LR 2000.3**
Double-walled reactor vessel, stainless steel, page 124.

3 **LR 2000.11**
Anchor stirrer with flow borings, page 123.

4 **EUROSTAR power control-visc P7**
Overhead stirrer, page 33.

5 **T 25 basic**
Disperser, page 59.

6 **S 25 KV - 18 G**
Appropriate dispersing element, page 63.

7 **LR 2000.40**
Shaft receptacle, page 125.

8 **LR 2000.85**
Reactor cover, page 123.

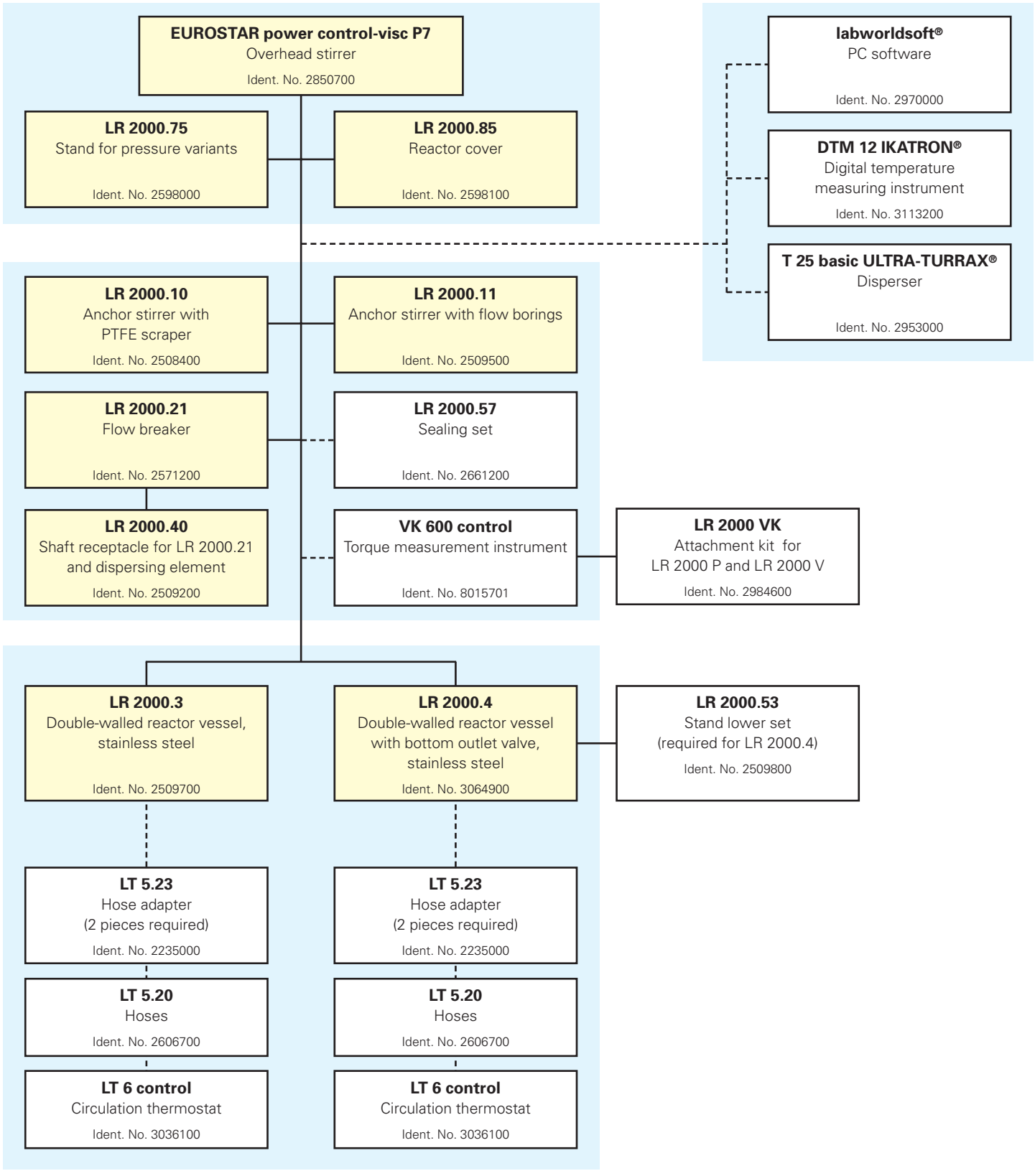
Min. volume (anchor stirrer)	500 ml
Min. volume (T 25 basic)	800 ml
Max. volume	2.000 ml
Max. temperature FFPM	230 °C
Attainable pressure	6 bar
Max. viscosity	150.000 mPas
Speed range (EUROSTAR power control-visc P7)	8 - 290 rpm
Lift of telescopic stand	260 mm
Dimensions (W x D x H)	500 x 500 x 1.350 mm
Weight of basic device	30 kg
Materials in contact with medium	stainl. steel (AISI 316L) Kalrez (FFPM)

Please contact **IKA®** or your local dealer for a detailed quotation.

IKA® Laboratory reactors

LR 2000 P system variants (pressure)

Configuration possibilities:

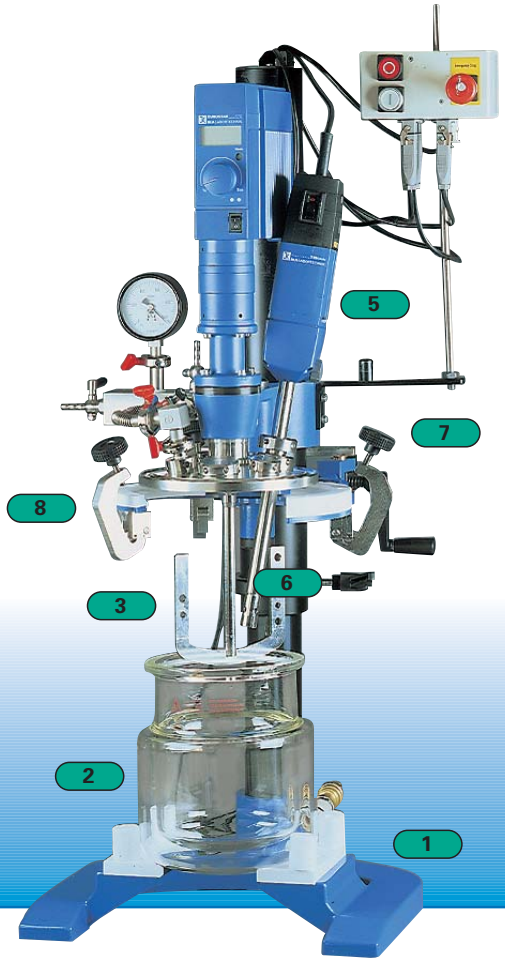


Please contact IKA® for further configuration recommendations for your specific applications.

Optional components
see pages 127/128

IKA® Laboratory reactors

LR 2000 V system variant (vacuum)



System variant - vacuum:

1 **LR 2000.70**
Stand for vacuum variant.

2 **LR 2000.1**
Reactor vessel,
page 124.

3 **LR 2000.11**
Anchor stirrer with flow borings,
page 123.

4 **EUROSTAR power control-visc P7**
Overhead stirrer,
page 33.

5 **T 25 basic**
Disperser,
page 59.

6 **S 25 KV - 18 G**
Appropriate dispersing element,
page 63.

7 **LR 2000.40**
Shaft receptacle,
page 125.

8 **LR 2000.80**
Reactor cover,
page 123.

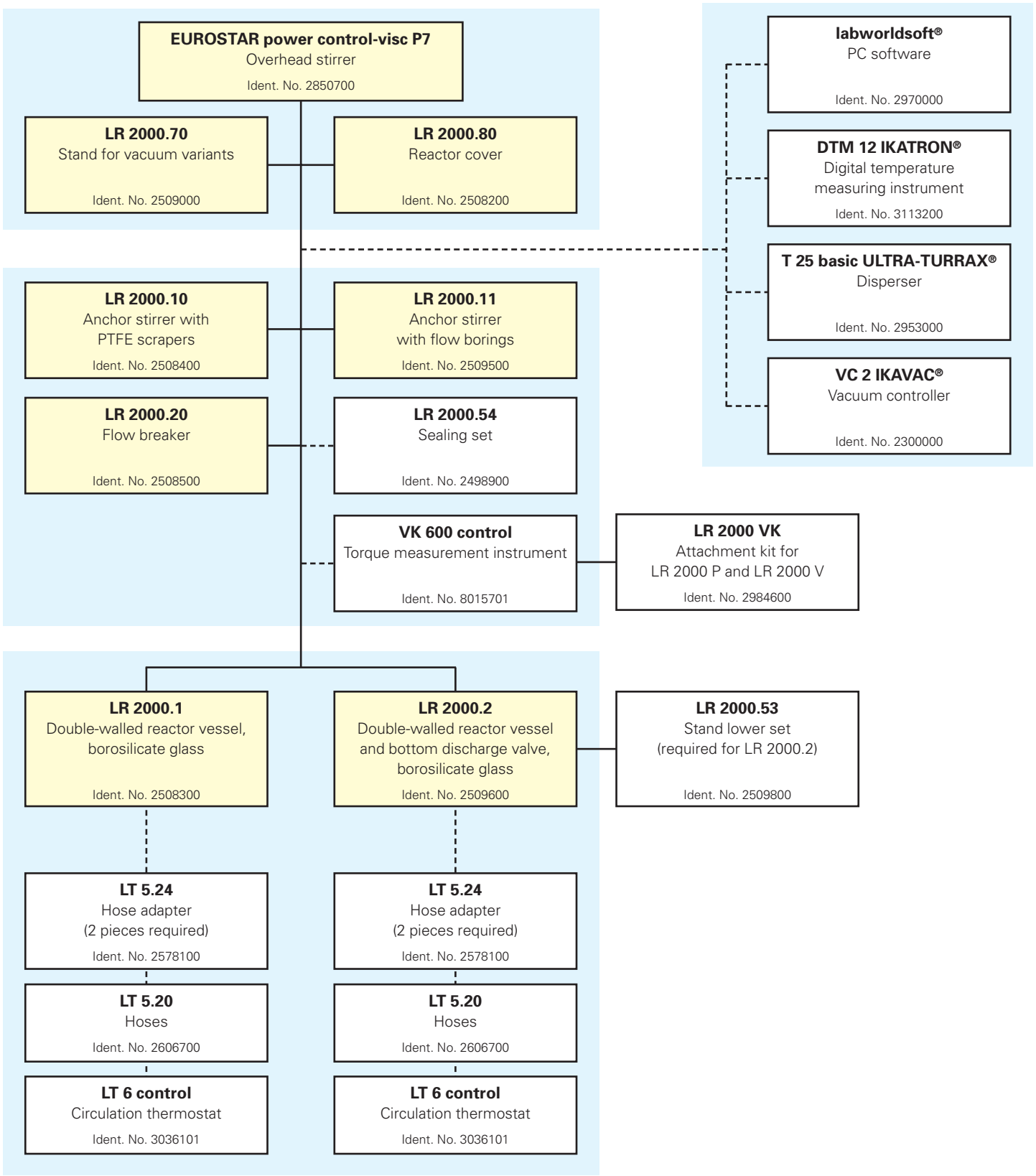
Min. volume (anchor stirrer)	500 ml
Min. volume (T 25 basic)	800 ml
Max. volume	2.000 ml
Max. temperature, FFPM	230 °C
Attainable vacuum	25 mbar
Max. viscosity	150.000 mPas
Speed range (EUROSTAR power control-visc P7)	8 - 290 rpm
Lift of telescopic stand	260 mm
Dimensions (W x D x H)	500 x 500 x 1.350 mm
Weight of basic device	30 kg
Materials in contact with medium	stainl. steel (AISI 316L) Kalrez (FFPM) borosilicate glass 3.3

Please contact **IKA®** or your local dealer for a detailed quotation.

IKA® Laboratory reactors

LR 2000 V system variants (vacuum)

Configuration possibilities:



Please contact IKA® for further configuration recommendations for your specific application.

Optional components
see pages 127/128

Laboratory reactors accessories

LR 2000.80 Reactor cover
For LR 2000 V (stand LR 2000.70).
Incl. 3 x NS 29 and 2 x NS 14/23 ground joints.

Accessories (Page):
LR 2000.54 Sealing set (123)

Material of threaded seal	FFPM

LR 2000.85 Reactor cover (without fig.)
For LR 2000 P (stand LR 2000.75).

Accessories (Page):
LR 2000.57 Sealing set (123)

Material of threaded seal	FFPM

LR 2000.54 Sealing set
Spare. For LR 2000 V.

LR 2000.57 Sealing set
Spare. For LR 2000 P.

Ident. No.	
2508200	LR 2000.80
2598100	LR 2000.85
2498900	LR 2000.54
2661200	LR 2000.57

LR 2000.10 Anchor stirrer
With PTFE scraper, for all laboratory reactors.

Material	stainl. steel (AISI 316L), PTFE

LR 2000.11 Anchor stirrer
With flow borings, for all laboratory reactors.

Material	stainl. steel (AISI 316L),

LR 2000.20 Flow breaker
Only for LR 2000 V and LR-2.ST.

Material	stainl. steel (AISI 316L),
Installation length	180 mm

LR 2000.21 Flow breaker
Only for LR 2000 P in connection with LR 2000.40 (page 125).

Material	stainl. steel (AISI 316L),
Installation length	180 mm

Ident. No.	
2508400	LR 2000.10
2509500	LR 2000.11
2508500	LR 2000.20
2571200	LR 2000.21

IKA® Laboratory reactors

Laboratory reactors accessories

LR 2.1 Reactor vessel (without fig.)
Single-walled, for LR-2.ST.

LR 2000.1 Reactor vessel
Double-walled, with quick-action connectors, for LR-2.ST and LR 2000 V.

LR 2000.2 Reactor vessel (without fig.)
Double-walled, with quick-action connectors and bottom discharge valve, for LR-2.ST and LR 2000 V.

Accessories (Page):
LR 2000.53 Stand lower set (124),
LT 5.24 Hose adapter (2 pieces required) (90),
LT 5.20 Hose (90)

Useful volume	2.000 ml
Material	borosilicate glass 3.3
Max. temperature	230 °C

Ident. No.	
2508300	LR 2000.1
3070000	LR 2.1
2509600	LR 2000.2

LR 2000.3 Reactor vessel
Double-walled for LR 2000 P (Stand LR 2000.75).

LR 2000.4 Reactor vessel (without fig.)
Double-walled with bottom outlet valve, for LR 2000 P (Stand LR 2000.75).

Accessories (Page):
LR 2000.53 Stand lower set (124),
LT 5.23 Hose adapter (2 pieces required) (90),
LT 5.20 Hose (90)

Useful volume	2.000 ml
Material	stainl. steel (AISI 316L)
Max. temperature	230 °C

Ident. No.	
2509700	LR 2000.3
3064900	LR 2000.4

LR 2000.53 Stand lower set
To raise the laboratory reactor vessels LR 2000.2 and LR 2000.4. Only in connection with LR 2000.70 and LR 2000.75.

Ident. No.
2509800

Laboratory reactors accessories

LR 2000.40 Shaft receptacle
To install the dispersing elements S 25 KV (page 63) and the flow breaker LR 2000.21 (page 123).

Material of seal	FFPM

Ident. No.
2509200

LR 2000.60 Sensor receptacle
To install the temperature sensors PT 100.25 (page 109) and PT 100.5 (page 90).

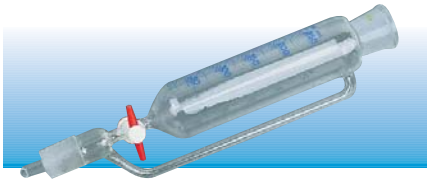
Material of seal	FFPM

Ident. No.
2509300

LR 2000.30 Vacuum gauge
Only for LR 2000 V.
Alternative to the vacuum controller VC 2 IKAVAC® (page 112).

Material of seal	FFPM
Measuring range	0 - 1.020 mbar
Measuring accuracy acc. to DIN 16005	class 1
Max. temperature	60 °C

Ident. No.
2509400



LR 2000.90 Drip funnel
For dosing, with ground joint NS 29.
Only for LR-2.ST and LR 2000 V.

Volume	250 ml

Ident. No.
2277000

LR 2000.52 Tool set
Spare. Included in the packages of the laboratory reactors.

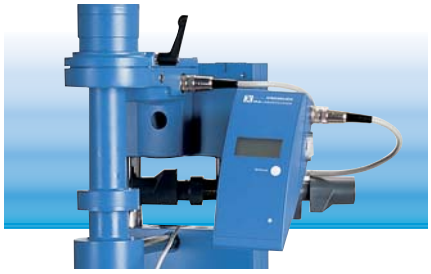
Ident. No.
2508800

Laboratory reactors accessories

LR 2000.VK Attachment kit
For LR 2000 V and LR 2000 P.

Accessories (Page):
Torque measurement instrument
VK 600 control VISCOKLICK® (129)

Ident. No.
2984600



VM 600 basic visco module
Torque measurement instrument for LR-2.ST, consisting of adapter kit and VK 600 control VISCOKLICK® (page 129).

Ident. No.
8016600

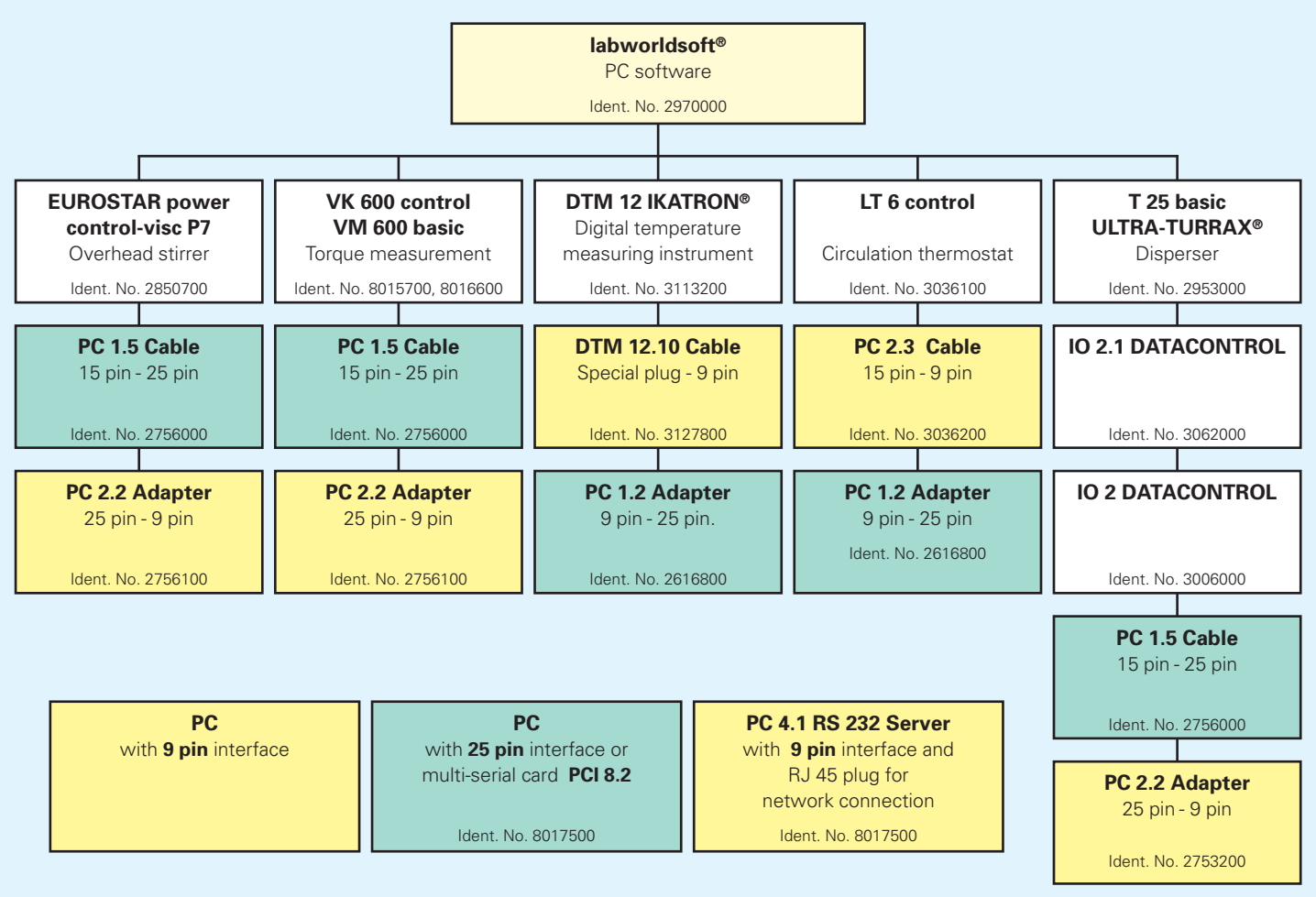
LR-2.SP Splinter protection
Prevents potential injuries caused by broken glass and burns as a result of accidentally touching the hot reactor vessel.

Ident. No.
3326400

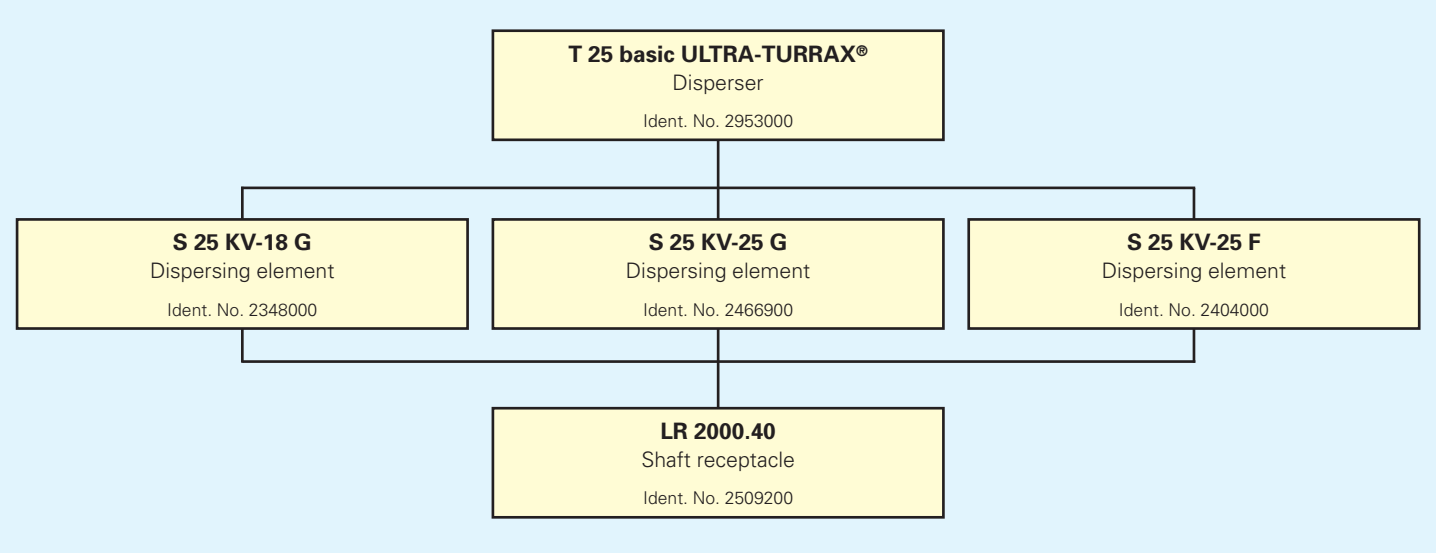
IKA® Laboratory reactors

Optional components

Data processing: software, cable and adapters (see also page 137 - 139)

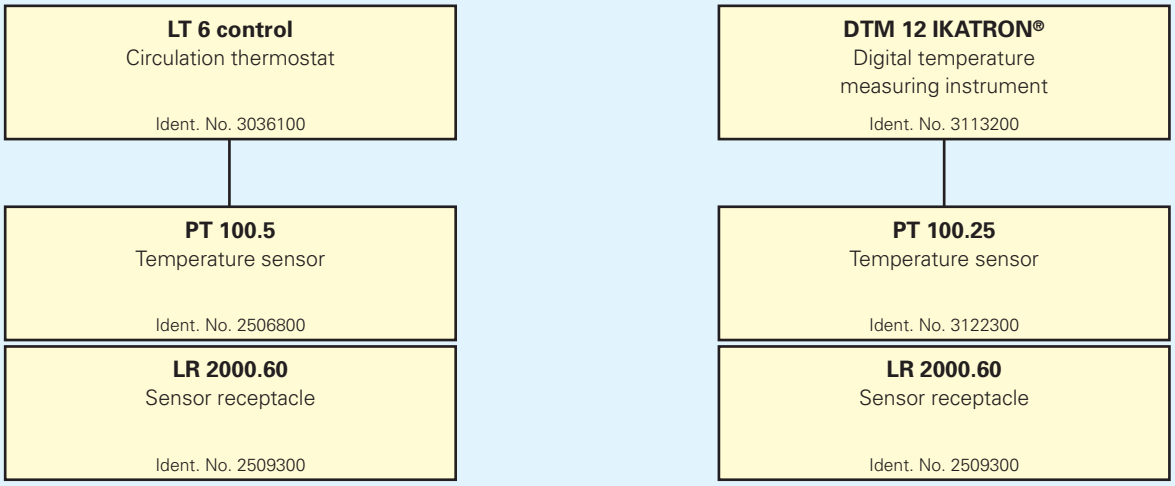


Dispersing / Homogenizing



IKA® Laboratory reactors
Optional components

Temperature control resp. temperature measurement



Vacuum