

SYSTEM FLOW CHART

MAQUET

PERFUSION
JOSTRA HL 20

CARDIOPULMONARY



JOSTRA HL 20 HEART-LUNG MACHINE SYSTEM FLOW CHART, REVISION 12

2-pumps

CONSOLE BASE

4-pumps

5-pumps

HL 20, 2-pumps console

Left oriented control panel 70 36 93

Right oriented control panel 70 36 95

Console base and upper part

- Including:
 - Console base with connections for 2 pumps.
 - Drawer under the console base.
 - Four wheels (lockable).
 - Four masts - two with height adjustable infusion poles.
 - Mast-mounted console rack with shelf.
 - Mast-mounted control panel.
 - Flexible arm spotlight.
 - Adjustment screwdriver, 4 pcs.
 - Hand crank for single pump (92 33 91), 2 pcs.
 - Ultrasonic gel dispenser (45 00 06).
- Can be equipped with Cardioplegia monitor unit under the control panel (see below).

HL 20, 4-pumps console base
91 77 41

- Including:
 - Console rack with connections for 4 pumps.
 - Drawer under the console rack.
 - Four wheels (two with total lock, two with direction lock).
 - Adjustment screwdriver, 4 pcs.
 - Hand crank for single pump (92 33 91), 2 pcs.
 - Ultrasonic gel dispenser (45 00 06).

HL 20, 5-pumps console base
91 77 51

- Including:
 - Console rack with connections for 5 pumps.
 - Drawer under the console rack.
 - Four wheels (two with total lock, two with direction lock).
 - Adjustment screwdriver, 4 pcs.
 - Hand crank for single pump (92 33 91), 2 pcs.
 - Ultrasonic gel dispenser (45 00 06).

UPPER PART

Middle oriented upper part, HL 20
4-pumps, left oriented control panel 70 32 65

4-pumps, right oriented control panel 70 32 67

- Including:
 - Four masts - two with height adjustable infusion poles.
 - Fixed top shelf with swivel-mounted control panel below.
 - Flexible arm spotlight.
- Can be equipped with Cardioplegia monitor unit under the control panel (see below).

Side oriented upper part, HL 20
4/5-pumps, left oriented 93 15 21

4/5-pumps, right oriented 93 15 11

- Including:
 - Three masts - two with height adjustable infusion poles.
 - Side guard.
 - Side-mounted folding control panel with desk.
 - Flexible arm spotlight.
 - Prepared for swivel-mounted System monitor unit on a mast.

Middle/side oriented upper part, HL 20
5-pumps, middle/left oriented 70 32 69

5-pumps, middle/right oriented 70 32 71

- Including:
 - Three masts - two with height adjustable infusion poles.
 - Side guard.
 - Fixed top shelf with swivel-mounted control panel below.
 - Flexible arm spotlight.
- Can be equipped with Cardioplegia monitor unit under the control panel (see below).

Middle/side oriented upper part, HL 20
4-pumps, middle/left oriented 70 32 61

4-pumps, middle/right oriented 70 32 63

- Including:
 - Three masts - two with height adjustable infusion poles.
 - Side guard.
 - Fixed top shelf with swivel-mounted control panel below.
 - Flexible arm spotlight.
- Can be equipped with Cardioplegia monitor unit under the control panel (see below).

Middle oriented upper part, HL 20
5-pumps, left oriented control panel 70 32 73

5-pumps, right oriented control panel 70 32 75

- Including:
 - Four masts - two with height adjustable infusion poles.
 - Fixed top shelf with swivel-mounted control panel below.
 - Flexible arm spotlight.
- Can be equipped with Cardioplegia monitor unit under the control panel (see below).

Note! Not all products listed here are available in all countries. For details contact your sales representative.



= and/or



= box for ordered quantity



= standard system configuration

MAST SHELF

Mast shelf for 4-pump console, HL 20
90 46 81

- Height adjustable along the console masts.

Mast shelf for 5-pump console, HL 20
90 46 91

- Height adjustable along the console masts.

CROSS MAST

Cross mast (Ø 25 mm) for 4-pump console, HL 20
96 21 41

- 25 mm bar with end holders
- Height adjustable along the console masts.

For attachment of extra equipment.

Cross mast (Ø 25 mm) for 5-pump console, HL 20
96 21 51

- 25 mm bar with end holders
- Height adjustable along the console masts.

For attachment of extra equipment.

Cross mast (Ø 25 mm) for 2-pump console, HL 20
96 24 31

- 25 mm bar with end holders
- Height adjustable along the console masts.

For attachment of extra equipment.

Vertical mast, short (500 mm, Ø 25 mm), HL 20
96 82 51

For attachment under the Cross mast.

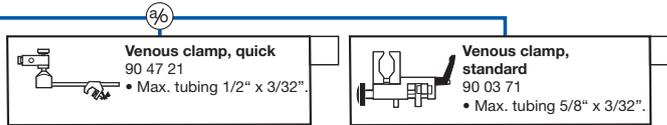
Vertical mast, short (500 mm, Ø 25 mm), HL 20
96 82 51

For attachment under the Cross mast.

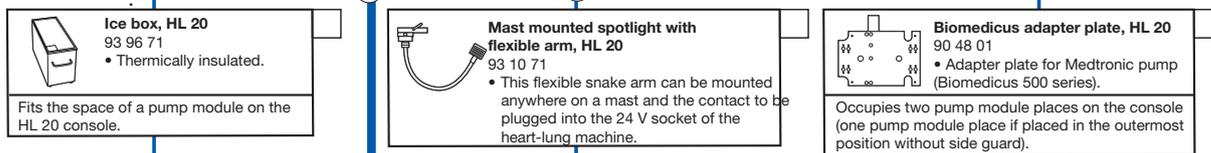
COUNTRY KIT

Country kit, HL 20				
English	230V/50Hz	European power plug	70 34 33	
English	230V/50Hz	Great Britain power plug	70 37 47	
English	240V/50Hz	Great Britain power plug	70 32 33	
English/USA	115V/60Hz	North Am. power plug	70 32 31	
English	115V/60Hz	North Am. power plug	70 38 99	
German	230V/50Hz	European power plug	70 32 27	
French	230V/50Hz	French power plug	70 32 19	
Spanish	110V/60Hz	North Am. power plug	70 49 95	
Spanish	230V/50Hz	European power plug	70 43 39	
Italian*	230V/50Hz	European power plug	70 32 21	
Swedish*	230V/50Hz	European power plug	70 32 23	
Danish*	230V/50Hz	European power plug	70 32 17	
Dutch*	230V/50Hz	European power plug	70 32 25	
Portuguese*	230V/50Hz	European power plug	70 32 29	
Greek*	230V/50Hz	European power plug	70 32 35	
Chinese*	220V/50Hz	AS 3112/China power plug	70 45 55	
Japanese*	100V/50-60Hz	North Am. power plug	70 34 31	
*User interface in English, language specific user manual.				
• Including:				
- User manual.				

VENOUS CLAMP



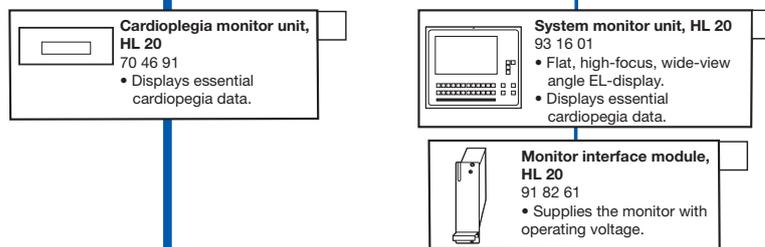
CONSOLE ACCESSORIES



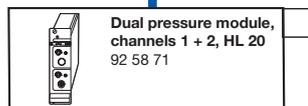
MONITOR UNIT

Together with all HL 20 except those with side oriented upper part (93 15 21 and 93 15 11)

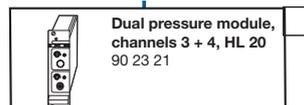
Only together with HL 20 with side oriented upper part (93 15 21 and 93 15 11)



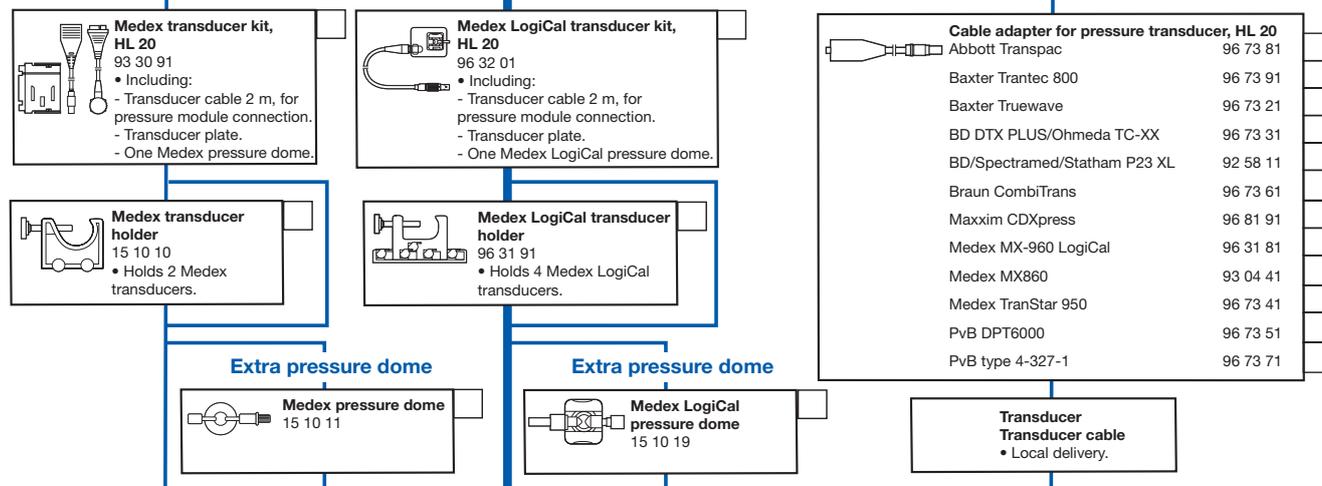
PRESSURE MONITORING SYSTEM Two pressures



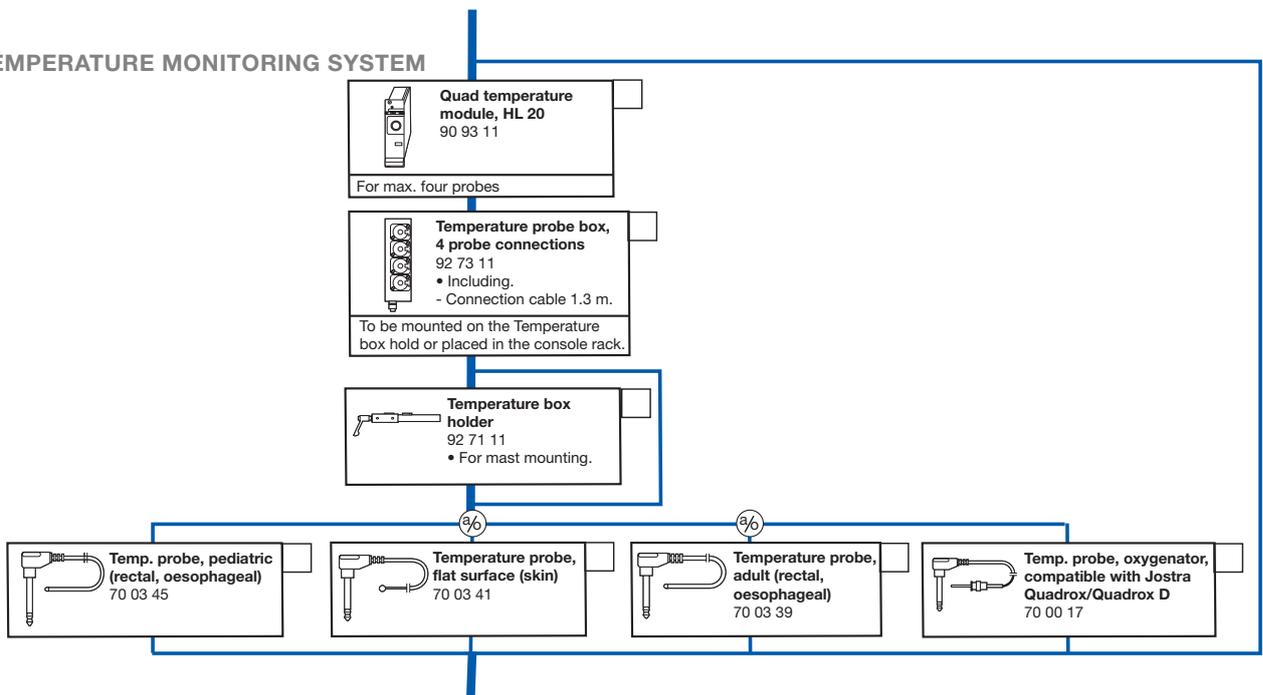
Two additional pressures



PRESSURE TRANSDUCER

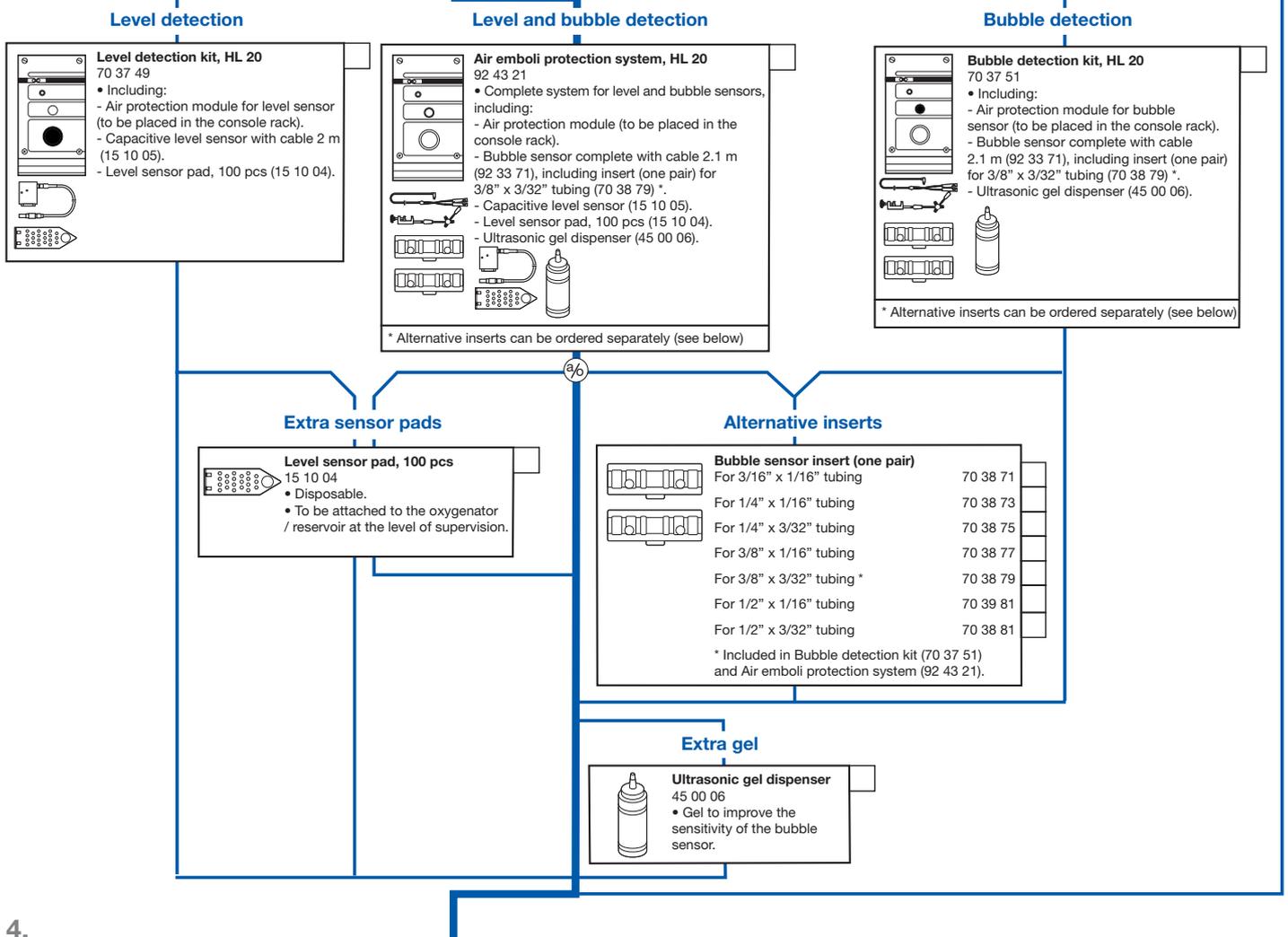


TEMPERATURE MONITORING SYSTEM



3.

AIR EMBOLI PROTECTION



PUMP MODULE

Occlusive roller pumps

RotaFlow centrifugal pump system

ROTAFLOW CENTRIFUGAL PUMP SYSTEM AS STAND-ALONE UNIT:

Single pump

Twin pump

Single roller pump module, HL 20	
English	
Anti-clockwise, rear connections, red	70 32 37
Anti-clockwise, left side connection, red	70 32 53
Anti-clockwise, right side connections, red	70 32 45
Clockwise, rear connections, red	70 32 85
Clockwise, left side connections, red	70 33 01
Clockwise, right side connections, red	70 32 93
English/US	
Anti-clockwise, rear connections, red	70 32 39
Anti-clockwise, left side connections, red	70 32 55
Anti-clockwise, right side connections, red	70 32 47
Clockwise, rear connections, red	70 32 87
Clockwise, left side connections, red	70 33 03
Clockwise, right side connections, red	70 32 95
German	
Anti-clockwise, rear connections, red	70 32 41
Anti-clockwise, left side connections, red	70 32 57
Anti-clockwise, right side connections, red	70 32 49
Clockwise, rear connections, red	70 32 89
Clockwise, left side connections, red	70 33 05
Clockwise, right side connections, red	70 32 97
French	
Anti-clockwise, rear connections, red	70 32 43
Anti-clockwise, left side connections, red	70 32 59
Anti-clockwise, right side connections, red	70 32 51
Clockwise, rear connections, red	70 32 91
Clockwise, left side connections, red	70 33 07
Clockwise, right side connections, red	70 32 99
<ul style="list-style-type: none"> • Occlusive full-flow roller pump module. • No cables to connect. • Including: <ul style="list-style-type: none"> - Sets of insert for 3 sizes of tubing: <ul style="list-style-type: none"> - 1/4" x 1/16" (70 38 85) - 3/8" x 1/16" (70 38 87) - 1/2" x 1/16" (70 38 89) 	

Twin roller pump module, HL 20	
English	
Anti-clockwise, red	70 32 77
Clockwise, red	70 33 15
English/US	
Anti-clockwise, red	70 32 79
Clockwise, red	70 33 17
German	
Anti-clockwise, red	70 32 81
Clockwise, red	70 33 19
French	
Anti-clockwise, red	703283
Clockwise, red	703321
<ul style="list-style-type: none"> • Two small occlusive roller pumps, independent of each other, in a common module housing. • No cables to connect. • Including: <ul style="list-style-type: none"> - (2 sets) Inserts for 1/4" tubing (96 51 51). - Hand crank for twin pump (90 80 31). 	

Alternative tube inserts

Single tube insert set for twin pump module, HL 20	
For 1/8" x 1/16" tubing (black)	96 51 31
For 3/16" x 1/16" tubing (white)	96 51 41
For 1/4" x 1/16" tubing (black) *	96 51 51
* 2 sets are included with each twin pump module.	
• Each set includes 4 pieces.	
Two sets are required for one complete twin pump module.	

Alternative tube inserts

Single tube insert set for single pump module, HL 20	
For 1/8" x 1/16" tubing (white)	70 38 83
For 1/4" x 1/16" tubing (black)*	70 38 85
For 3/8" x 1/16" tubing (natural)*	70 38 87
For 1/2" x 1/16" tubing (grey)*	70 38 89
For 5/8" x 1/16" tubing (white)	70 38 91
* Included with each single pump module.	
• Each set includes 4 pieces.	
One set is required for one single pump.	

Double tube insert set for single pump module, HL 20	
For 1/8" x 1/16" tubing (black)	70 38 93
For 3/16" x 1/16" tubing (black)	70 38 95
For 1/4" x 1/16" tubing (white)	70 38 97
• Each set includes 2 pieces.	
Two sets are required for one single pump (one pair for each tubing dimension).	

RotaFlow pump module, HL 20		
English, European power cable, red	230V/50Hz	70 31 61
English/UK, Gt Britain power cable, red	240V/50Hz	70 31 63
English/US, North Am. power cable, red	115V/60Hz	70 31 59
German, European power cable, red	230V/50Hz	70 31 73
French, European power cable, red	230V/50Hz	70 31 67
Spanish*, European power cable, red	230V/50Hz	70 31 77
Italian*, European power cable, red	230V/50Hz	70 31 69
Danish*, European power cable, red	230V/50Hz	70 31 65
Dutch*, European power cable, red	230V/50Hz	70 31 71
Portuguese*, European power cable, red	230V/50Hz	70 31 75
Greek*, European power cable, red	230V/50Hz	70 52 23
Japanese*, North Am. power cable, red	100V/50-60Hz	70 31 57
*User interface in English, language specific user manual.		
• Including:		
- Internal battery.		
- Mains power inlet cable.		
- Ultrasonic contact paste.		
- User manual.		

RotaFlow drive unit, red, HL 20	
96 76 21	
Disposable pump head must be ordered separately.	

RotaFlow emergency drive unit, red, HL 20	
70 28 65	
• Manual drive (hand crank) with speed indicator.	

Extra contact paste

Ultrasonic contact paste	
49 10 03	
• Contact paste to improve contact for RotaFlow pumps.	

Capacitive level sensor, HL 20	
15 10 05	
<ul style="list-style-type: none"> • Heavy-duty reusable sensor. • With cable 2 m. 	
Level sensor pad, 100 pcs	
15 10 04	
<ul style="list-style-type: none"> • Disposable. • To be attached to the oxygenator / reservoir at the level of supervision. 	

JOCAP XL DATA MANAGEMENT SYSTEM



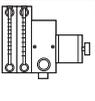
JOCAP XL Data management system
See separate System Flow Chart ("JOCAP XL Data management system", document Reg QUG: MCP-FC-100006006-EN).

EXTERNAL DEVICES POWER SUPPLY

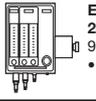


Mains power connection cable (IEC power cable),
2.0 m 35 00 12
2.5 m 35 00 13
Max. 4 cables per machine; < 900 VA.

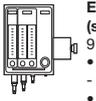
GAS CONTROL EQUIPMENT



Sechrist gas blender, 2 tubes
51 01 19
Without gas hoses.



Electronic gas blender, 24 V. HL 20
91 00 01
• Not available in USA.
Without gas hoses.



Electronic gas blender (stand-alone) 230V/50Hz
91 00 11
• Including:
- Mains power inlet cable.
• Not available in USA.
Without gas hoses.

VACUUM CONTROLLER



JOSTRA-VAVD CONTROLLER
96 55 61



JOSTRA sterile tubing kit
50 00 50
• Including:
- Moisture trap.



Hanger for pole mounting
51 01 62

DISPOSABLES

Disposables
• To be ordered separately from MAQUET.

HEATER-COOLER EQUIPMENT



JOSTRA HCU 20 heater-cooler
See separate System Flow Chart ("JOSTRA HCU 20", document art. no: 70 38 61).
• Not available in USA.



JOSTRA HCU 30 heater-cooler
See separate System Flow Chart ("JOSTRA HCU 30", document art. no: 70 38 63).

INSTALLATION



Installation
• The equipment must be installed by a MAQUET certified technician.
• To be quoted separately.

SERVICE



Service contract
• To be specified by technical dept.

TRAINING



Technical training
• For details contact your local representative.



Application training
• For details contact your local representative.

Contents

- Console base
- Upper part
- Mast shelf
- Cross mast
- Country kit
- Venous clamp
- Console accessories
- Monitor unit
- Pressure monitoring system
- Pressure transducer
- Temperature monitoring system
- Air emboli protection
- Pump module
 - RotaFlow centrifugal pump system as stand-alone unit
- JOCAP XL data management
- External devices power supply
- Gas control equipment
- Vacuum controller
- Disposables
- Heater-Cooler equipment
- Installation
- Service
- Training

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Please visit our website
www.maquet.com

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