Alfa Laval

MIB 303 AC Separation System, Module

System Reference

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Contents

1 Technical Data

1.1 Separation System

Separator MIB 303 S-13/S-33

Application Cleaning of oil used for marine and power diesel engines, with a maximum density of 920 kg/m³ at 15 °C.
Cleaning of steam turbine lubricating oil.

Capacity and separation temperature

	Viscosity	Max. rec. capacity	Max. separation temp.
	cSt/40 °C	l/h	°C
Lube oil	≤150	300 l/h at 50Hz 360 l/h at 60Hz	70
Marine diesel oil	≤ 14	630 l/h at 50 Hz 760 l/h at 60 Hz	40

Sealing Water

Temperature	5 – 70 °C
Maximum hardness	180 ppm ($CaCO_3$ 10 °dH)
Minimum pH value	6
Salinity	maximum 60 ppm chloride (equivalent to 100 ppm NaCl)

Normal working counter pressure 0.4 – 0.6 kPa

Maximum counter pressure See diagrams on pages 4 and 5

Low pressure switch set point 30 kPa

Total power consumption Max. 700 W

Shipping data	Net weight	72	kg
	Gross weight	102	kg
	Volume	0.58	m^3

Manufacturing materials	Separator Frame	aluminium alloy
	Separator Bowl	aluminium and plastics
	Module Frame	iron

1.2 Separator

		50 Hz	60 Hz
Speed	Drive motor	7300 rpm	7300 rpm
	Bowl spindle max.	7300 rpm	7300 rpm

Miscellaneous	Starting time max.	40	seconds
	Stopping time with built-in electric brake max.	1	minute
	Maximum operating time without oil feed	120	minutes
	Motor power	450	W
Bowl data	Sludge space	0.3	litres

1.3 Counter Pressure in Oil Outlet

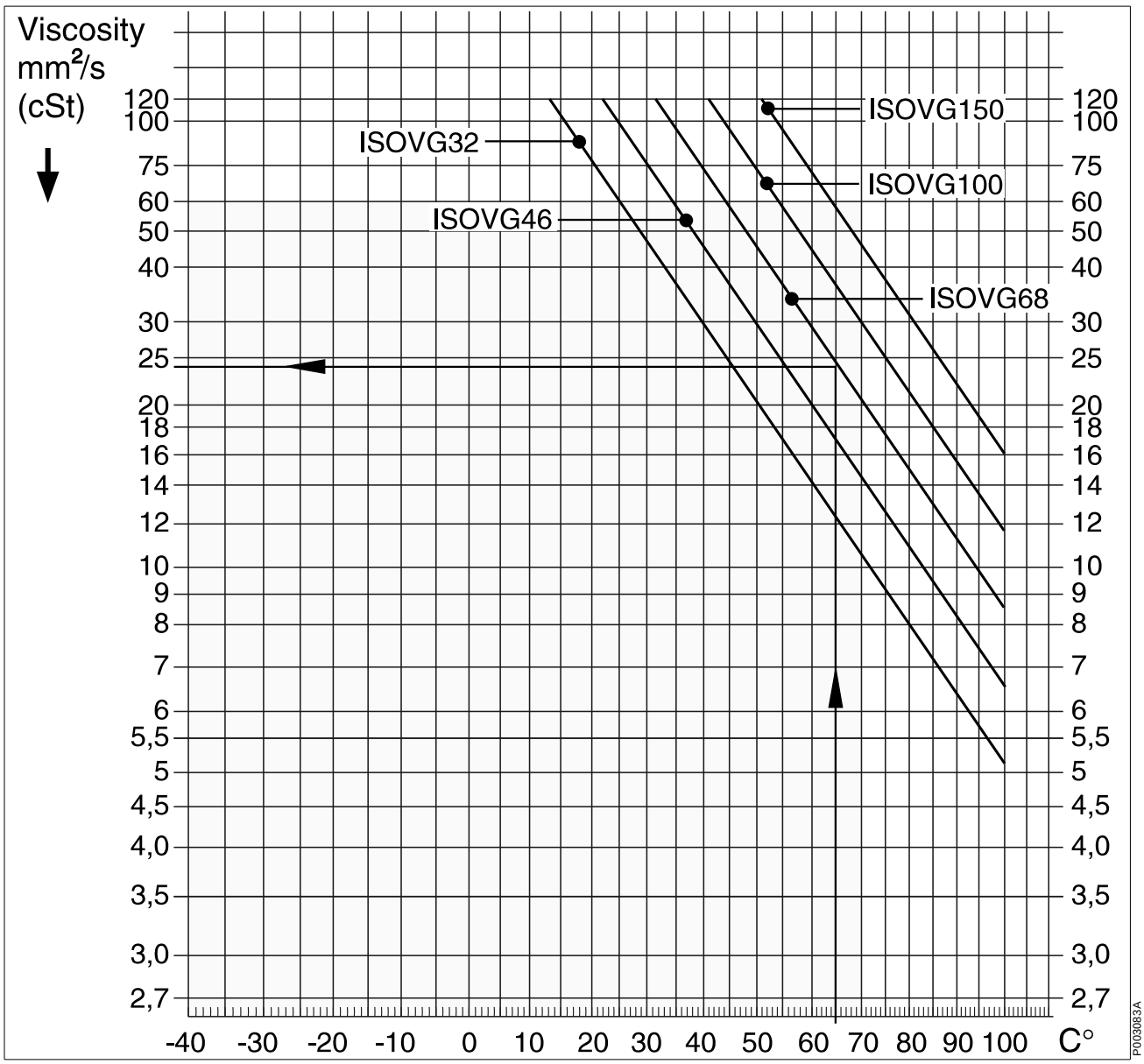
1.3.1 Determining max. counter pressure in oil outlet, lube oil

To determine the max. counter pressure in the oil outlet, e.g in cases of high delivery height, first measure the working temperature in the actual lube oil. Refer to ‘‘Viscosity/ Temperature Diagram’’ on page 4 to determine the oil viscosity at working temperature. ‘‘Viscosity/Counter Pressure Diagram.’’ on page 5 gives the max. value in kPa of the counter pressure suitable for this viscosity and flow. If a higher counter pressure is applied, the separator will overflow.

Example:

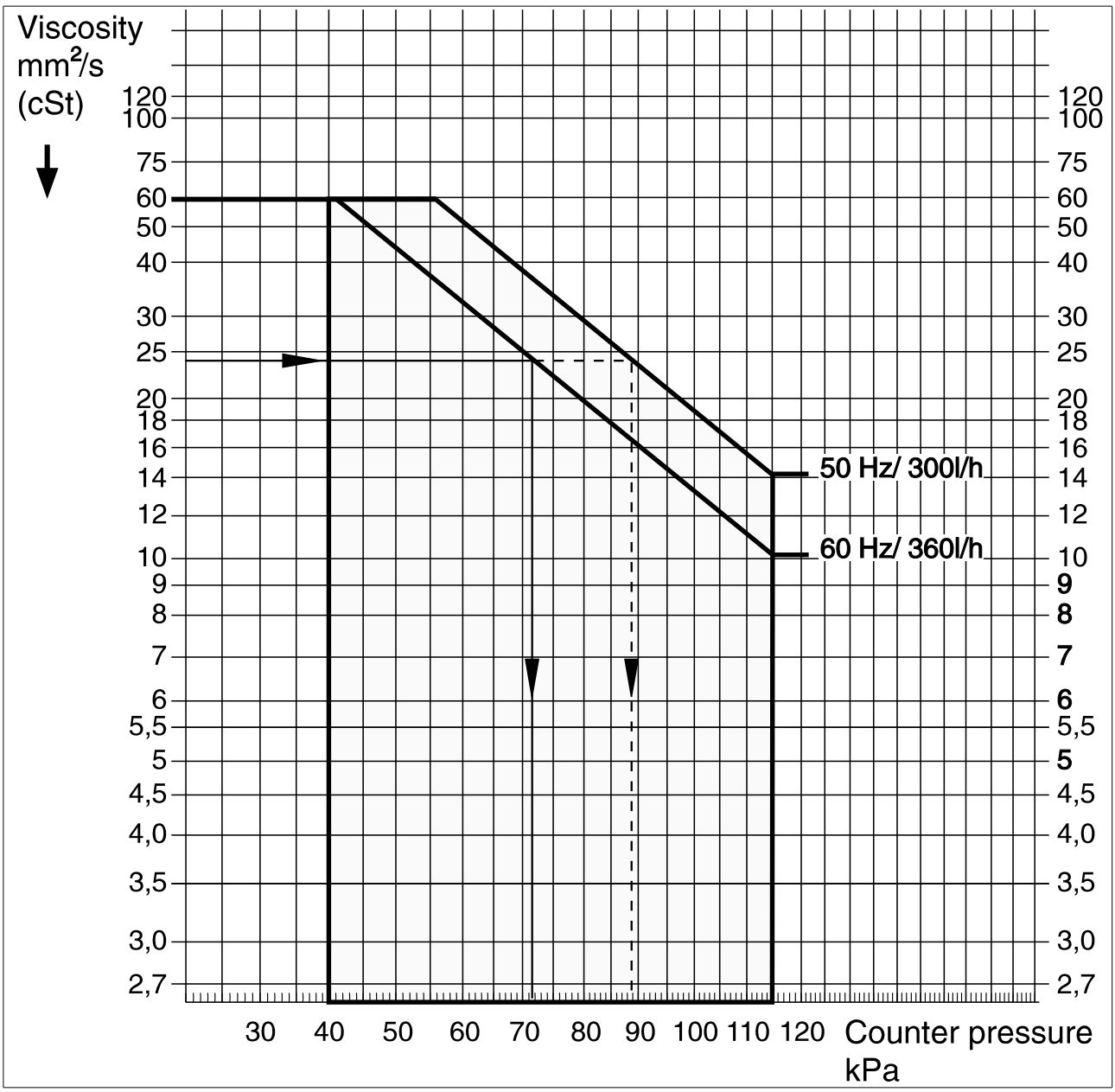
ISO VG 68 is to be used at separation temperature 65 °C. The Viscosity/ Temperature diagram on page 4 gives a viscosity of 24 cSt. This is used to determine the max. counter pressure in the oil outlet with the help of the Viscosity/Counter Pressure diagram on page 5. In this case 89 kPa for a flow of 380 l/h, and 72 kPa for a flow of 450 l/h.

1.3.2 Viscosity/Temperature Diagram



The shaded area shows the relevant working intervals.

1.3.3 Viscosity/Counter Pressure Diagram.

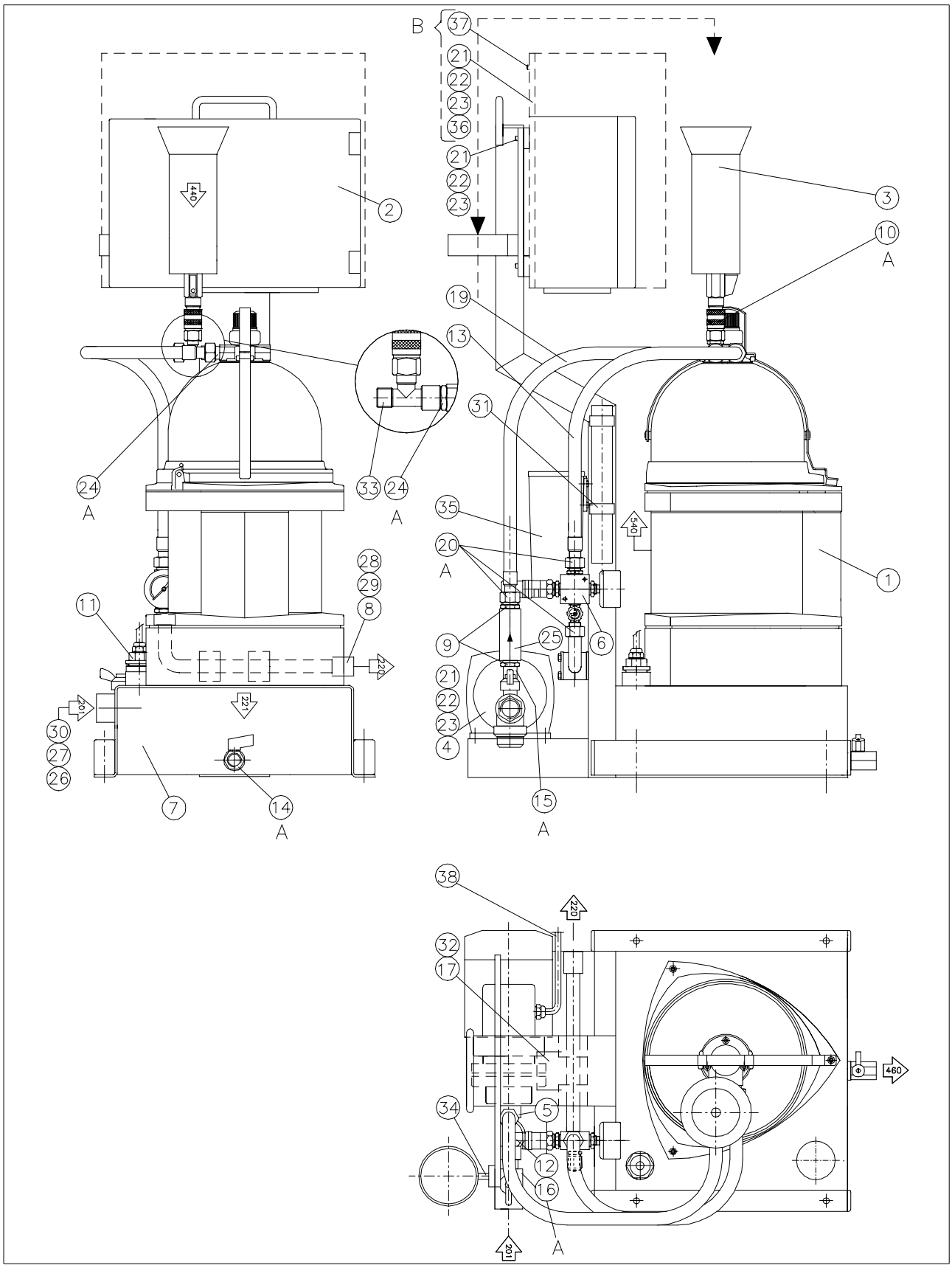


The shaded area shows the relevant working intervals.

2 Drawings

2.1 Assembly Drawings

2.1.1 Assembly Drawing



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Item Description

Legend

	Flow
201	Oil inlet
220	Clean oil outlet
221	Water outlet (to collecting tank)
440	Water for water seal
460	Drain
540	Ventilation
XS2	Emergency stop (optional)
	Wheel set (optional)
A	Sealed with LOCTITE 542
B	Only for 24V DC separator

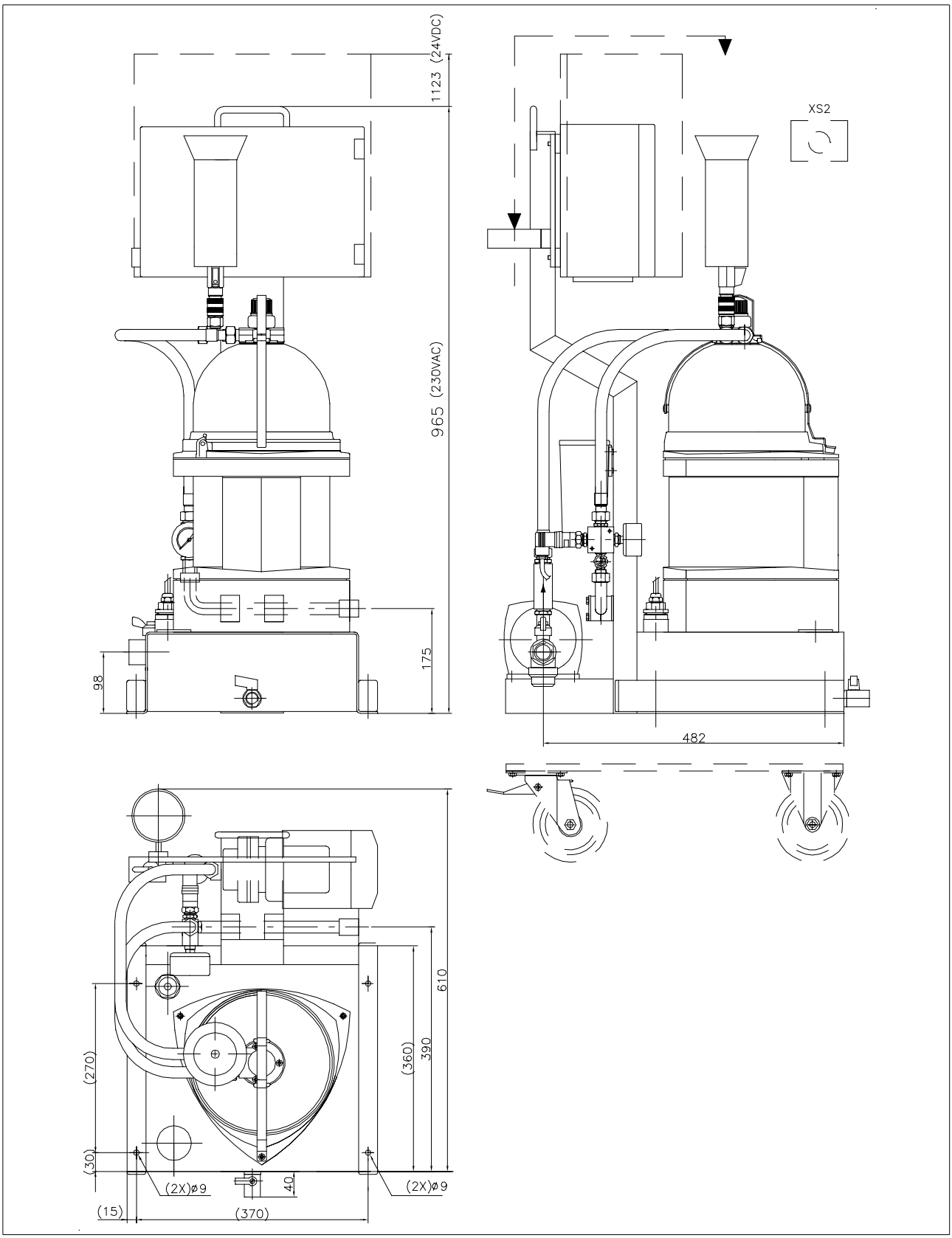
Basic Equipment

Item	**Description**	**Qty.**	**Article no.**
1	Separator MIB 303 S-13/S-33	1	881176-06-01
2	Starter/control unit	1	1764566-01
3	Funnel complete (Purifier only)	1	1764481-80
4	Pump incl. motor and capacitor; According to order	1	1764696-80
4	Pump incl. motor and capacitor; According to order	1	1764696-81
5	Nipple	1	1765126-01
6	Outlet piece with pressure switch	1	1764732-80
7	Frame	1	1764642-80
8	Pipe bend	1	1764229-80
9	Nipple	2	1764373-02
10	Quick-coupling with non-return valve (Purifier only)	1	1764716-01
11	Level switch	1	1764646-01
12	Strainer	1	1763904-01
13	Flexible hose	2	1764241-01
14	Ball valve	1	1764474-01

Item	Description	Qty.	Article no.
15	Angular nipple	1	1764751-01
16	Ball valve	1	1764589-01
17	Product label	1	1765250-01
19	Gasket	2	546229-30
20	Rectangular ring	3	546229-07
21	Screw	8	221030-49
22	Nut	8	221803-02
23	Washer	8	223101-47
24	Nipple	2	1764491-01
25	Non-return valve	1	1764588-01
26	Label “IN”	1	1763111-01
27	Label “OIL”	2	1763111-05
28	Label “OUT”	1	1763111-02
29	Protection plug	1	1764382-01
30	Protection plug	1	1764382-02
31	Cable protection	1	1764656-01
32	Drive screws	4	66169
33	T-pipe	1	1763699-02
34	Support for funnel	1	1764722-01
35	Tool box	1	1764726-80
38	Cable for pump motor	1	1765129-01

2-38	Ancillary kit	1	1765785-21

2.1.2 Basic Size



Ref. 1765784 Rev. 0

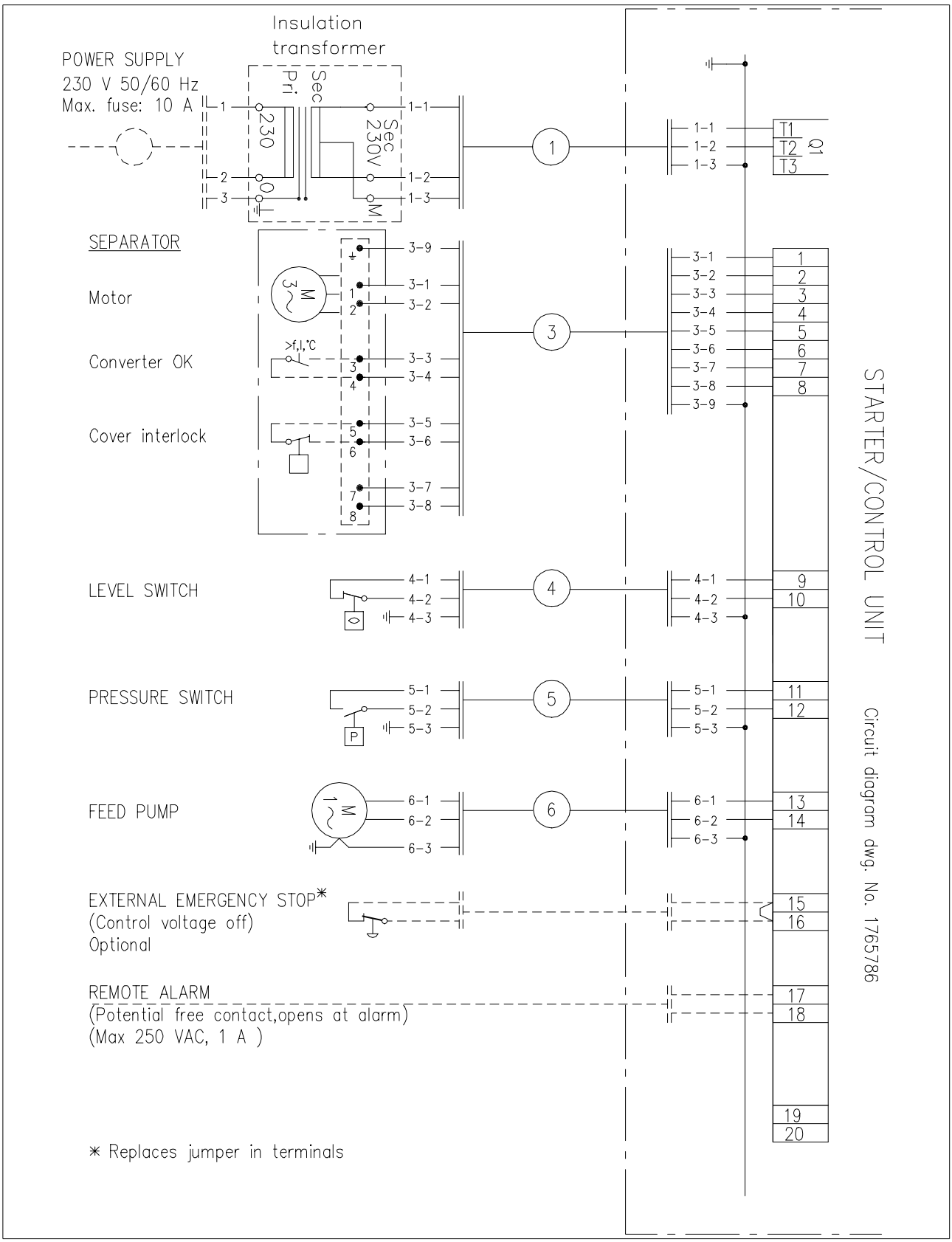
2.2 Interconnection and Circuit Diagrams

2.2.1 Cable List

No.	Type		Connection point A	Instruction	Connection point B	Remarks
1	RCOP	3 x 1.5	Mains supply		Starter/CU	Max. fuse 10 A
3		9 x 1.5	Separator		Starter/CU	Supplied with separator
4	RADOX 125	3 x 0.75	Starter/CU		Level switch	
5	RADOX 125	3 x 0.75	Starter/CU		Pressure switch	
6	RADOX 125	3 x 0.75	Starter/CU		Feed pump	

Other equivalent and approved cables may be used.

2.2.2 Starter/Control Unit Interconnection Diagram



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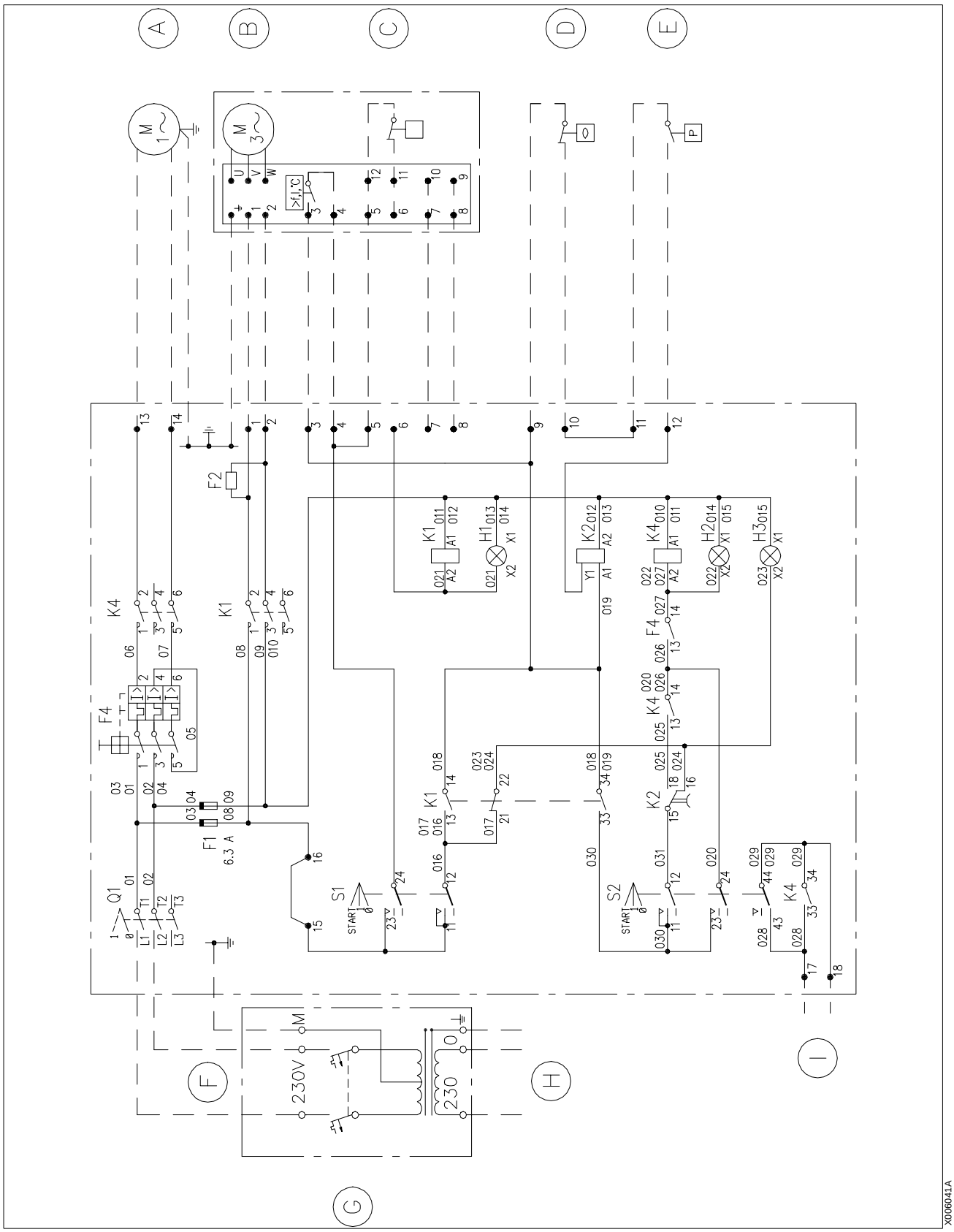
2.2.3 Starter/Control Unit Circuit Diagram



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Circuit Diagram Description

Item	Description
A	Feed pump
B	Separator
C	Cover interlock
D	Level switch (optional)
E	Pressure switch (optional)
F	Secondary power supply (optional)
G	Insulation transformer (optional)
H	Primary power supply 230V 50/60 Hz, fuse 10 A
I	Remote alarm