

# TECHNICAL DATA

## SCREW COMPRESSOR UNIT

### KAB\*COM RB-2BD

Client	:	
Year of construction	:	1994
Refrigerant	:	Ammonia
Refrigerator oil	:	as agreed with KAB
Evaporator temperature	:	-20 °C
Condenser temperature	:	+35 °C
Refrigerating capacity	:	442 kW
Power input	:	163 kW

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**1. Ambient conditions**

- Ambient temperature max.40 °C  
min.5 °C
- free from liquid condensates

**2. Planed operating conditions**

Saturation temperature - compressor suction pressure $t_0$	-20 °C
Suction superheat	5 K
Saturation temperature - discharge pressure $t_k$	+35 °C
Compressor supercharging	no

**3. Maximal allowable working pressures**

Refrigerant circuit	18 bar g.p.
Oil circuit	18 bar g.p.

**4. Setting values for safety valves**

Safety valve (3.1) on oil separator DN 15 Dual safety valve	18 bar g.p.
Overflow valve (1.1) (between discharge and suction) DN 20	17 bar g.p.

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**5. Setting values for safety devices to prevent unacceptable pressures**

<b>Safety pressure limiter (15.1)</b>	
Reset inside shutt-off pressure	>16 bar g.p.
<b>Safety pressure limiter (15.1)</b>	
Reset outside shutt-off pressure	>15 bar g.p.
<b>Pressure switch (15.8)</b>	
compressor discharge side shutt-off pressure	>14 bar g.p.
<b>Suction pressure switch (15.7)</b>	
shutt-off pressure	<0,5bar g.p.
<b>Differential pressure switch (15.9)</b>	
oil circuit monitoring shutt-off pressure	≤ 1 bar
<b>Differential pressure switch (15.10)</b>	
oil filter monitoring shutt-off pressure	≥ 2 bar

**6. Setting values for devices to prevent unacceptable temperatures**

Temperature switch for discharge temperature (17.4) shutt-off temperature	≥ 100 ± 5°C
Oil temperature switch (17.5) shutt-off temperature	≥ 70 - 5°C
Temperature limiter (3.10) oil heater shutt-off temperature	≥ 150°C
Thermostat (3.9) oil heater setting value	70°C

**7. Setting values of devices and fittings (excl. safety devices)**

Oil pressure control valve (8.0)	3,5+0,5 bar
Stop valve (18.2) for gas vibration protection	closed

**8. Guide values for operation of compressor unit**

Minimum adjustment times for capacity control slide from min. to max. stop position and vice versa under constant operating conditions 30s

Optimum adjustment times for capacity control slide from min. to max. stop position and vice versa under constant operating conditions 60s

During start-up procedures and when the oil is cold and there are low pressure differentials between the final compression pressure and intake pressure, adjustment times are longer than under operating conditions.

**Discharge temperature t**

optimum value t	80°C
maximum value t <sub>max</sub>	95°C

**Oil temperature t<sub>oil</sub>**

admissible value for oil temperature t <sub>oil</sub>	35-65°C
optimum value for oil temperature t <sub>oil</sub> automatic set by 3-way-valve (4.6)	43-54°C

**Auxiliary and control supply voltage**

Safety pressure limiter	220 V,~
Solenoid valves for capacity control	220 V,~
Monitoring devices for pressure and temperature	24 V,GS
Position transductor for slide position	24 V,GS
Oil heating power	380 V 2 phase

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9. Main components data

Denomination	Type/ manufacturer
Compressor	R-2, KAB
Capacity adjusting device	MV-Block S 31, Concordia
Drive motor	KN 7 315M ABO, 200 kW, AEG
Coupling	168 E 70 Dm 70, P.I.V. Tschan
Oil pump	LG 2/65, ZPM
Heater	600-380-2000, Helios
Oil separator	Dm 711 (7), KAB
Oil cooler	EST 8-2, KAB
Suction filter	175/150-40.2, KAB
Oil filter 1	FE 90x42 / 558 NH3/ KAB
Oil filter 2	FE140x34 / 459 NH3/ KAB
Compressor control device	KCC-2, SER
Software	SER

10. Sensors

Denomination	type/ manufacturer
Safety pressure limiter	KP 7 ABS, Danfoss
Suction pressure cut out	RT 1A, Danfoss
Suction pressure for capacity control	AKS 33, Danfoss
Discharge pressure	RT 6AW Danfoss
Differential oil pressure, oil circuit monitoring	RT 260 A, Danfoss
Differential oil pressure, oil filter monitoring	RT 260 A, Danfoss
Discharge temperature	KP 79, Danfoss
Oil temperature	KP 81, Danfoss
Position transducer primary slide	HDT, Technikzentrum Hydraulik Markranstädt
Current rating control	Current transmitter and measuring transmitter have to be contained in the switch box
Drive motor temperature	PTC is contained in motor