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Bedienungsanleitung / Operation Manual / Mode d'emploi / Manual de instrucciones

GB Alfra Hydraulic Pump SC05 IIIB

Art.-Nr.: 03852



Safety instructions



Only those persons who have read and understood the instruction manual and who have a corresponding qualification in handling the pump and the tools may independently operate the SC05 III-B hydraulic pump.



The safety equipment must be checked for correct function every time before the pump is put into operation.



All applicable health and safety regulations must be complied with as a matter of principle.



Operators must take care not to endanger themselves and others.



If operating safety is impaired by defects or damage to the hydraulic pump it must be put out of operation immediately and not used again until all hazard sources have been eliminated by an authorised specialist/workshop.



The pump must be set up on level ground so that it cannot be overturned accidentally during use. Oil could escape from the ventilation screw and cause a slip hazard.



Increased injury hazard when working on long power rails.



The pump may only be used on means of transport (hydraulic hoists or vehicles) if suitable safety measures are taken, for example securing against tipping over, falling off, etc.



The workplace must always be adequately lit when working with the hydraulic pump and the connected tools.



The hydraulic pump must be secured against unauthorised use if it is left unattended.

Decommissioning

If the pump is to be decommissioned for a longer period of time the following measures are recommended:



- Apply corrosion protection to all metal parts (plastic bag with hydro-granulate)
- Place the pump in suitable packaging.
- Store only in a dry, warm, well-ventilated room.

Safety equipment

The hydraulic pump is fitted with the following safety equipment:

Overload protection



Once the factory-set maximum working pressure has been reached the pressure build-up is interrupted and the pump continues to run at constant pressure.

Thermal overload protection



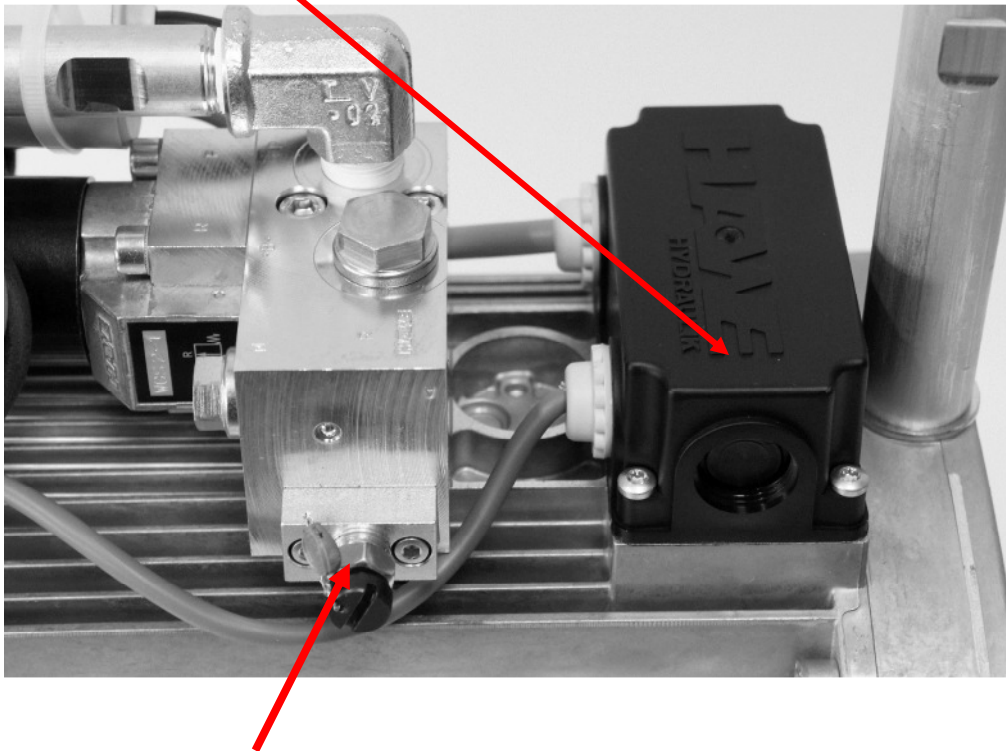
The pump switches off automatically if it overheats due to overloading. It can only be restarted after it has cooled down.

Pressure relief valve on the hydraulic pump



This is set to the permissible maximum pressure by the manufacturer and sealed. Unauthorized readjustment can lead to damage to the pump and the connected tools as well as injury to the operator. In addition, the guarantee is rendered null and void.

Thermal overload protection



Pressure relief valve / overload protection



If special tools, materials or dimensions are required, the advice and written approval of the manufacturer are required.



If special operation cases are planned for the use of the Alfra electro-hydraulic pump, the manufacturer must be consulted and their approval obtained.

Appropriate use

The Alfra SC05 IIIB hydraulic pump can be used for all single-acting Alfra series cylinders up to 620 bar. In addition, a control unit is integrated into the pump with which it can be used as a drive unit for power rail bending and punch press article no. 03200 and for power rail cutting devices such as article nos. 03250 and 03253.

It can also be used with other single-acting cylinders which are used as lifting, pressure or spreader cylinders.

It is suitable for working copper and aluminium materials of max. 160 x 15 mm in size in the pressure range up to a maximum of 620 bar.

It is not suitable for punching and bending high-strength materials.

Technical data

Length: 460 mm

Width: 180 mm

Height: 380 mm

Weight: approx. 27 kg

KAW 261 LT/H 0.47-B1/700-1-11 F-WG 230

Maximum working pressure 620 bar

Hydraulic oils: HL, HLP DIN 51524

Fill volume: 4.5 l

Usable volume: 3.0 l

Electrical connection: 230V / 50 Hz

Motor: $n_N = 2720 \text{ min}^{-1}$

$P_N = 1.1 \text{ KW}$

$I_N = 7.2 \text{ A}$

Operating capacitor: $C_B = 31.5 \mu\text{F} / 240 \text{ VDB}$

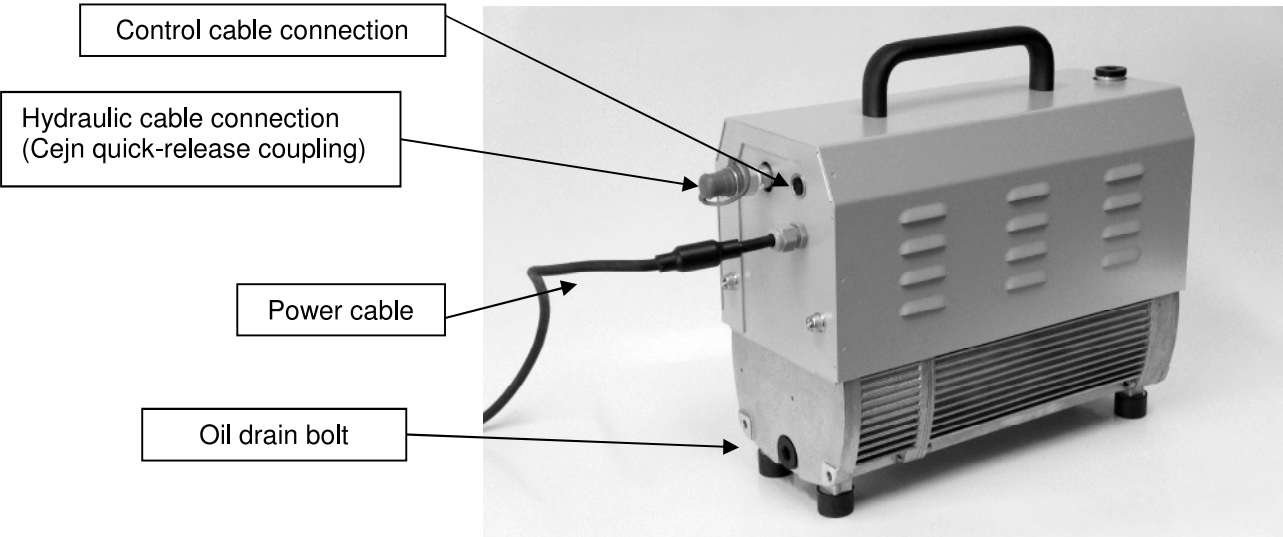
Delivery volume: 0.94 l/min

Circuit board control: control voltage: 12 VDC
Voltage: INPUT 230V / 115V
50 Hz/60; max.10 VA
OUTPUT 12 VDC

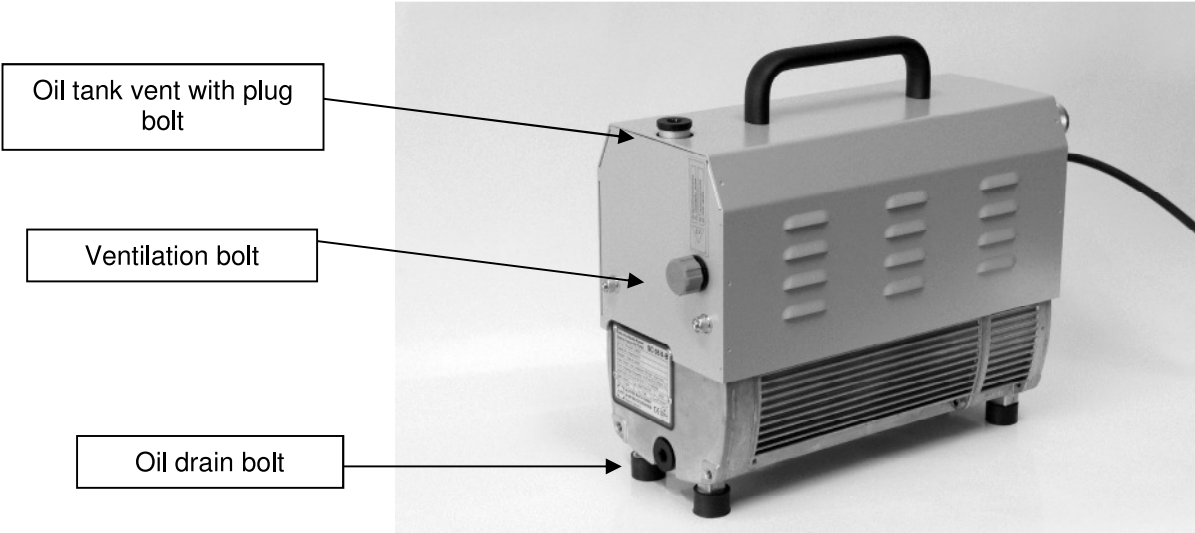
Noise level: below 75 dbA

Brief description of the ALFRA SC05 IIIB hydraulic pump

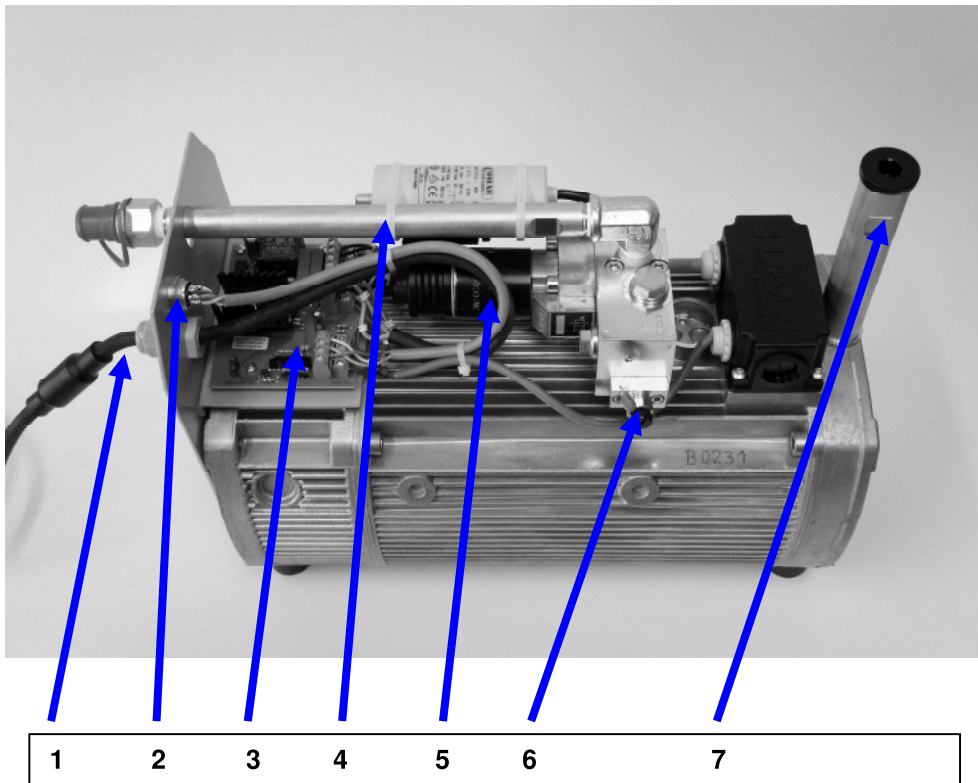
Front view



Rear view



The hydraulic components are integrated into an aluminium housing. The drive comes from a suboil motor and the necessary working pressure is produced with radial piston units.



- 1 Power cable
- 2 control cable
- 3 Circuit board
- 4 High-pressure oil pipe
- 5 Magnetic valve
- 6 Pressure limiter
- 7 Oil tank opening

To prevent transport damage and as a transport aid the pump is partly enclosed with a housing. Below the housing are:

- The circuit board (3)
- The high-pressure oil pipe (4)
- The magnetic valve (5)
- The pressure limiter (6)

The pump is fitted with excess pressure and overheating protection.

The connection for the control cable is easily accessible in the front of the housing next to the connection for the hydraulic hose.

The hydraulic hose is 2 m long and is fitted with 2 Cejn quick-release couplings.

The oil drainage screws are located in the lower part of the front and rear of the pump.

At least one oil drainage bolt must be removed to perform an oil change. Furthermore, adequate ventilation of the tank must be ensured so that the oil can flow out completely. The ventilation bolt should be used or the oil plug bolt removed for this purpose.

An orange-coloured ventilation bolt is attached to the rear of the housing in a drill hole. This must be placed in the tank opening when the pump is in use and replaces the oil plug bolt to guarantee adequate ventilation of the oil tank.



The plug bolt must be replaced when the pump is transported or shipped since oil can escape through the ventilation bolt and cause loss of oil or contamination of the pump.

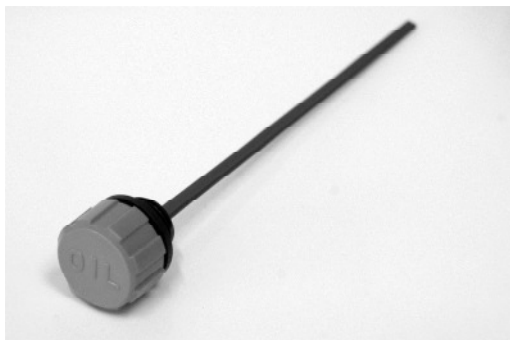


Transport

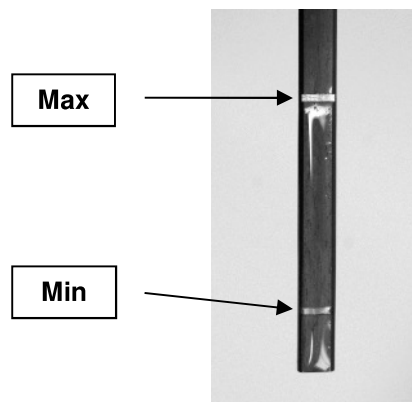


Operation

The oil level in the tank is checked by means of the markings on the ventilation bolt dipstick. Before checking, the dipstick should be cleaned with a dry paper towel. The correct oil level can be read off after the ventilation bolt has been completely screwed into the oil tank opening and back out again. The oil level must be between the two min/max markings for the pump to operate correctly.



Ventilation bolt



Dipstick

Commissioning and function

Before putting the SC05 IIIB pump into operation the hydraulic hose and the control cable must be correctly connected to the pump on the punch or cutting press.

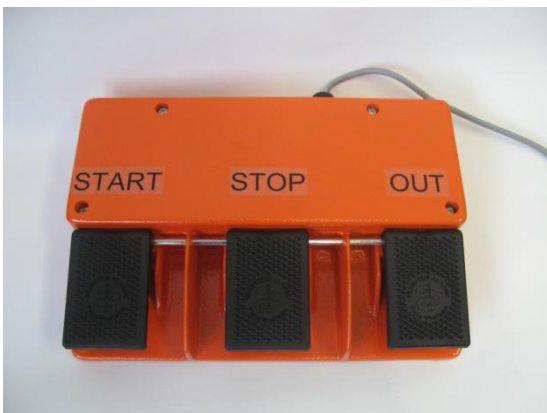


Before connecting the power supply a check must be made that the power connection corresponds to the connection values of the pump.

The Alfra SC05 IIIB hydraulic pump can be additionally controlled by means of the foot pedal for the Start function (1 pedal), article no. 03861, or the Start-Stop-Off pedal (3 pedals), article no.03865.



Foot switch article no.03861



Foot switch article no.03865

Care and maintenance



When operated in the defined operating conditions hydraulic pump SC05 IIIB is mainly maintenance-free.

However, we recommend that the following care measures are taken as a precaution in the interests of constant operational readiness:

- Regular checks of the oil level with the dipstick.
- First oil change after approx. 500 operating hours (approx. 3-5 months depending on intensity)
- Next oil change after 1- 1.5 years.

The quantity and name of the recommended hydraulic oil: 4.5 litres Renolin B 15 HLP 46 to DIN 51524
ISO- VG 46

Equivalent hydraulic oil SAE 15 W 20 W, AGIP 46, ARAL Vitam GF 46, BP Energol HLP-HM 46, DEA Astron HLP 46, ESSO HLPD-OEL 46, SHELL Tellus Oil 46

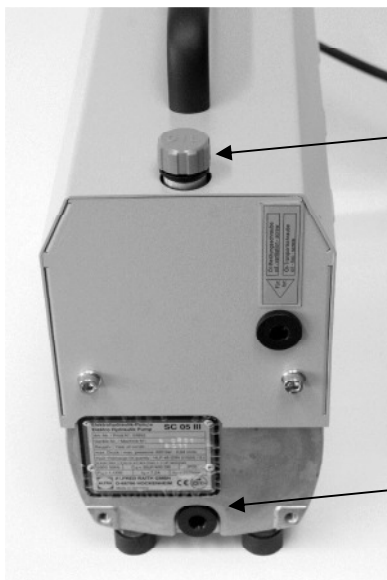


It is not permissible to mix different viscosity classes.



Should you use another suitable hydraulic oil type the tank must be flushed and the complete oil quantity changed.

Oil change



Oil tank ventilation

Oil drainage
screw

The oil drainage screws are located in the lower area of the front and rear of the pump.

At least one oil drainage plug must be removed to perform an oil change. Furthermore, adequate ventilation of the tank must be ensured so that the oil can flow out completely. The ventilation screw should be used or the oil plug screw removed for this purpose.

EC Declaration of Conformity

We,

ALFRA Alfred Raith GmbH
2. Industriestraße 10
68766 Hockenheim

hereby declare that the following product:

Alfra SC05 IIIB hydraulic pump


complies with all relevant provisions of the Machine Directive (2006/42/EC) and the Directive on Electro-magnetic Compatibility (2004/108/EC).

The following harmonised standards were applied:

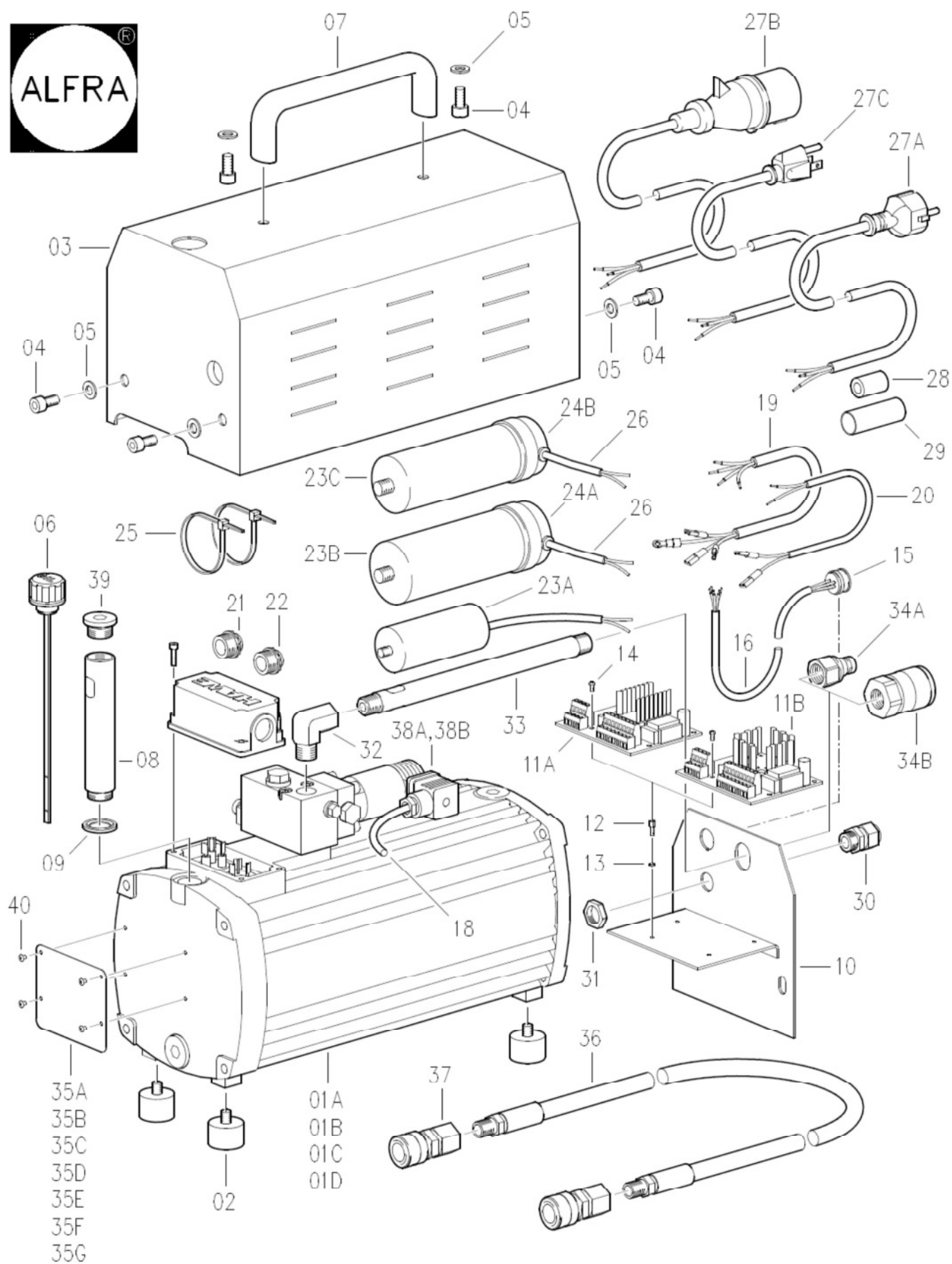
DIN EN 60 034 (IEC 34 – DIN VDE 0530)
DIN VDE 0110

EMV to
EN 20370-1: 2006
EN 50370-2: August 2003

Hockenheim, 15/02/2012



Markus A. Döring
(General Manager)



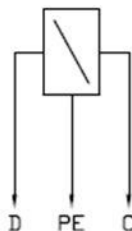
SC 05 III-B / SC 05 II-B

Artikel-Nr. 03852 + 23007

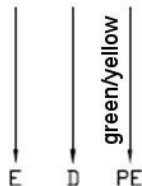
1	2							4	5	6
Item no.	Quantity							Designation	Code number Standard short name	Remark
	03852 230 V 50 Hz	03852 110 V 50 Hz	03852 110 V 60 Hz	23007 230 V 50 Hz	23007 230 V 60 Hz	23007 110 V 50 Hz	23007 110 V 60 Hz			
01A	1			1				KAW 261 LT/H 0.47-B1/700-1-11 F-WG 230	03852-001A	230 V 50 Hz
01B		1				1		KAW 261 LT/H 0.47-B1/700-1-11 F-WG 110	03852-001B	110 V 50 Hz
01C			1				1	KAW 261 LT/H 0.47-B1/700-1-11 F-WG 110	03852-001C	110 V 60 Hz
01D						1		KAW 261 LT/H 0.47-B1/700-1-11 F-WG 230	03852-001D	230 V 60 Hz
02	4	4	4	4	4	4	4	Type D 30x20, M8x10 bearing buffer device foot	03852-002	
03	1	1	1	1	1	1	1	Casing 1	03852-003	RAL 9006 silk matt smooth
04	6	6	6	6	6	6	6	ISO 4762-M8 x 16 – 8.8 cylinder head screw	DIN912-M8x16-8.8	
05	6	6	6	6	6	6	6	DIN 433 – 8.4 – 200 HV washer	DIN433-8.4-200HV	
06	1	1	1	1	1	1	1	Ventilation screw with oil measuring stick	03852-006	
07	1	1	1	1	1	1	1	Handle	03200-037	GN 656-26-179-SW
08	1	1	1	1	1	1	1	Oil inlet pipe	03852-008	Ø25 x 128mm long G1/2"
09	1	1	1	1	1	1	1	DSZ 08 sealing disk	23170-005	
10	1	1	1	1	1	1	1	Casing 2	03852-010	RAL 9006 silk matt smooth
11A	1			1	1			230 V control circuit board	03852-011A	
11B		1	1			1	1	110 V control circuit board	03852-011B	
12	4	4	4	4	4	4	4	Spacer bolts	23005-111	I/A M3x5 mm
13	4	4	4	4	4	4	4	DIN 127 –A3 – FSt spring washer	Din127-A3-FSt	
14	4	4	4	4	4	4	4	ISO 7045 M3 x 4 – 4.8 flat-head screw	DIN7985-M3x4-4.8	
15	1	1	1	1	1	1	1	5-pole flange socket	23005-117	680 09 0316 00 05
16	1	1	1	1	1	1	1	Connection cable for flange socket	03852-016	LiYY 5x0.5 ² 320 mm long
17										
18	1	1	1	1	1	1	1	Connection cable for control valve	03852-018	FLEX JZ 3x0.75 ² 280 long
19	1	1	1	1	1	1	1	Connection cable for motor	03852-019	FLEX JZ 4G x 1.5 ² 350 mm long
20	1	1	1	1	1	1	1	Connecting cable for thermal switch	03852-020	H03VV 2x0.5 ² 370 mm long
21	1	1	1	1	1	1	1	M20x1.5 grey sealing grommet	03852-021	For Ø 7-10 mm
22	1	1	1	1	1	1	1	M20x1.5 grey sealing grommet	03852-022	Closed
23A	1			1	1			31.5µF MKP motor capacitor with cable	03852-023A	31.5µF/450V Ø40x95mm
23B		1				1		100µF MKM capacitor motor	23170-017A	100µF/250V/Alu Ø55x155
23C			1				1	120µF MKP capacitor motor	03852-023C	120µF/250V/Alu Ø50x143

24A		1				1		Cap with grommet	23170-018A	Ø55mm
24B			1				1	Cap with grommet	03852-024B	Ø50mm
25A	2	2	2	2	2	2	2	300x4.8 TR cable tie	23005-027	
26	1	1	1	1	1	1	1	Connecting cable to capacitor	03852-026	FLEX JZ 2Gx1.5 ² 250 long
27A	1			1	1			3000 mm long cable with plug	189480276	
27B		1				1		3000 mm long cable with plug GB	189480276G B	
27C			1				1	3000 mm long cable with plug USA/Camada	189480276U L	
28	1			1	1			Ferrit H8FE-1137-NC	23005-114A	Ø17.5 Ø9.5x28.5mm
29	1			1	1			Heat shrink tube	23005-114B	MDT-A19/6+B 62 mm long
30	1	1	1	1	1	1	1	M16x1.5 cable connection	03950-041	
31	1	1	1	1	1	1	1	M16x1.6 hexagonal nut	03950-042	
32	1	1	1	1	1	1	1	Angled screw-in adaptor	03852-032	A06NM06- NMF90K
33	1	1	1	1	1	1	1	Pressure pipe	03852-033	Ø18/Ø6 x 250 long 3/8" NPT
34A	1	1	1					3/8" 11 series hydraulic nipple	03851-012	
34B				1	1	1	1	3/8" threaded hydraulic nipple	23004-047B	
35A	1							03852-230 V 50 Hz type plate	03852-035A	Al99.5 75x93x0.8 mm
35B		1						03852-110 V 50 Hz type plate	03852-035B	Al99.5 75x93x0.8 mm
35C			1					03852-110 V 60 Hz type plate	03852-035C	Al99.5 75x93x0.8 mm
35D				1				23007-230 V 50 Hz type plate	23007-035D	Al99.5 75x93x0.8 mm
35E					1			23007-230 V 60 Hz type plate	23007-035E	Al99.5 75x93x0.8 mm
35F						1		23007-110 V 50 Hz type plate	23007-035F	Al99.5 75x93x0.8 mm
35G							1	23007-110 V 60 Hz type plate	23007-035G	Al99.5 75x93x0.8 mm
36	1	1	1					Hydraulic hose	03200-108	200 long 2x1/4" NPT AG
37	2	2	2					Hydraulic coupling	03200-109	115 series 1/4" NPT
38A	1			1	1			230 V two-way pilot valve	03852-038A	WGS2-1-WG230
38B		1	1			1	1	110 V two-way pilot valve	03852-038B	WGS2-1-WG110
39	4	4	4	4	4	4	4	G1/2" plug screw	03852-039	
40	4	4	4	4	4	4	4	Flat-headed blind rivet	DIN7337- A3x4-AL-ST	

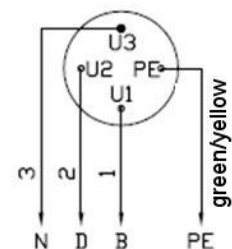
230V two-way pilot valve
Art. No. 03852-038A
110V two-way pilot valve
Art. No. 03852-038B



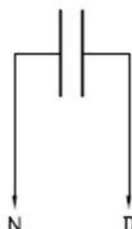
Cable with plug
Art. No. 189480276
Cable with plug GB
Art. No. 189480276GB



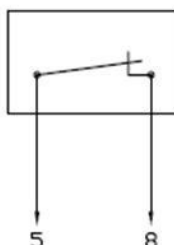
Motor 230V 50Hz
Motor 110V 50Hz
Motor 110V 60Hz



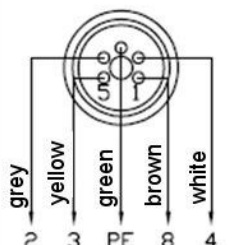
MKP - 31,5µF
Art.Nr.03852-023A
MKP - 100µF
Art.Nr.23170-017A
MKA - 120µF
Art.Nr.03852-023C



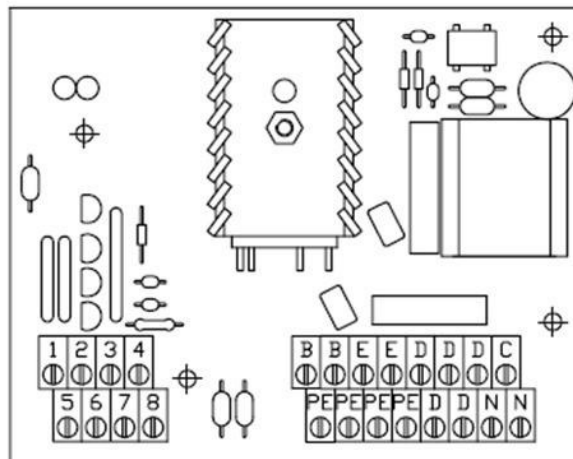
Thermal switch



5-pole flange socket
680 09 0316 00 05
Art. No. 23005-117



230V circuit board Art. No. 03852-011A
110V circuit board Art. No. 03852-011B



(Verwendungsbereich)				(Zul. Abw.) DIN ISO 2768 mittel		(Oberfl.)	Maßstab		(Gewicht)
					Datum	Name	Circuit diagram Art. No. 03852		
					Bearb. 15.09.2008	Kitzmann			
					Gepr.				
					Norm				
							SC 05 III Hydraulic Pump		
							Blatt		
							Blätter		
Zust.	Änderung	Datum	Name	Ursprung	Ersatz für:			Ersatz durch:	



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