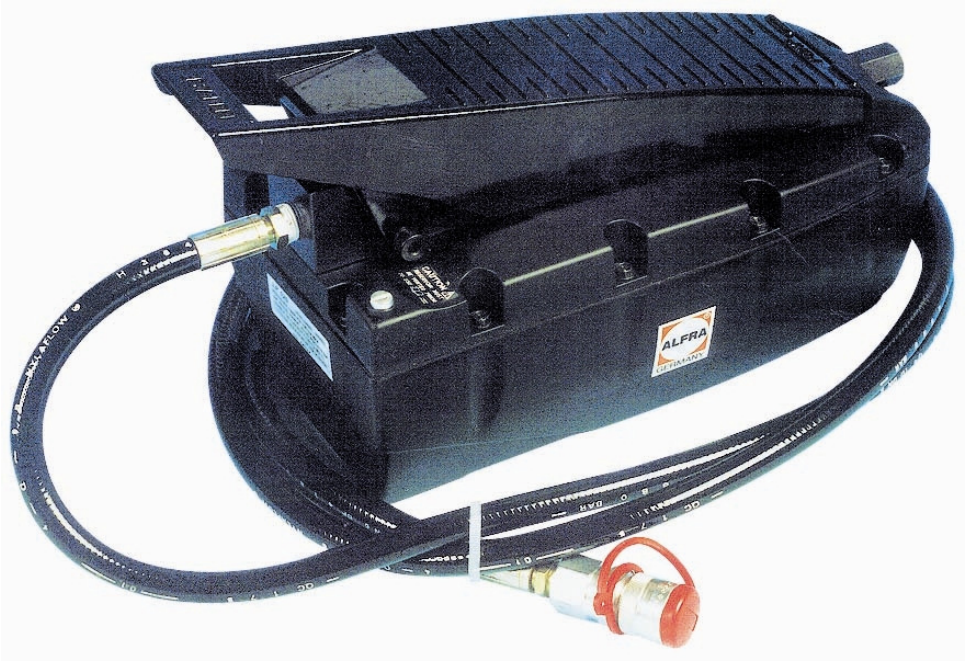
Bedienungsanleitung / Operation Instructions

LHP 700

DE Lufthydraulikpumpe
GB Air-Hydraulik Pump

Artikel Nr. 02140 / Prod.-No. 02140 / N° de produit 02140



Safety instructions

The hydraulic pump is designed for a pressure of 700 bar (ca. 10.000 p.s.i.). Ensure that all connected components (connections, cylinders, valves) are compatible with this maximum pressure rating.

The dismantling, the re-assembly and the operation of the pump are only to be carried out by trained personnel who know the system.

Any work on the hydraulic hoses connected to the pump has to be made when there is no pressure in those components. The air supply has to be closed and all hoses have to be relieved.

The reservoir of the air-hydraulic pump should be filled with oil only when the cylinders are in fully retracted position. If not, oil flowing back will overcharge the reservoir and cause damage or even destroy the pump.

Specified conditions of use

This device, with a maximum operating pressure of 700 bar, is destined to drive single acting hydraulic cylinders.

Technical data

Maximum operating pressure:	700 bar
Air pressure:	2.8 – 8.0 bar
Output flow:	0.8 – 0.1 l/min
Oil volume usable	
Laying down:	2.4 - 2.1 L
Standing up:	2.2 - 1.5 L
Air connection:	G ¼"
Oil connections:	3/8" – 18 NPTF
Weight:	7 kg
Noise level:	75 dB (A)
Length of the hydraulic hose:	2.8 m

Commissioning

Pneumatic connection

The air-hydraulic pump is designed for an air pressure of 2.8 – 8,0 bar; higher pressure should not be used; if pressure is lower, the pump will not start working. The air admission port is equipped with a connection thread G ¼", in which a corresponding pneumatic unit can be screwed in. The air supply should have a filter and a pressure controller.
An oiler is not necessary.

Hydraulic connection

The air-hydraulic pump is equipped with a hydraulic hose which is sealed by the tapered threads. You should use suitable sealing material (eg. Teflon strip). At no circumstance the sealing material should enter into the hydraulic system; this may result in damage and failure of the unit. When connecting hydraulic hoses, attention has to be paid to cleanliness to avoid dirt entering into the hydraulic system.

Ventilation

There are two ways of ventilating the hydraulic system. If possible, the pump unit should be placed at the highest point of the system. The system will be automatically ventilated if the cylinders are operated several times without any load. If pumps and cylinders are fixed and ventilation is not possible that way, you have to install bleeder valves within the system itself.

Operation

After the pneumatic and hydraulic hoses have been connected, the air-hydraulic pump is ready for use. To ventilate and deaerate the reservoir, the air bleeder plug (27) in the pump plate has to be opened for about 3-4 turns. If the pump is mounted in vertical position (oil port downwards), the reservoir's ventilation has to be done by pulling out the filler neck (48).

When actuating the pedal on the side marked "PUMP" the air admission valve will be opened and the cylinder advances. Unless the pedal is actuated again, the cylinder will hold its position. If the pedal is actuated on the side marked "Release", the release valve opens and the cylinder retracts.

Cleaning of the air-breather

In the inner of the pneumatic connection (8) you find the air-breather (7). Use a flat screwdriver to loosen the breather and take it out. Clean the breather with compressed air and put it back. Do not turn the screw too hard for not damaging the threads. If the breather is very dirty, you have to replace the breather filter.

Maintenance

After approx. 250 hours operation or in the event of dirt invading the system, the hydraulic oil should be changed. The used oil should be drained by the filler neck and new oil has to be filled in also through the neck. The hydraulic oil should be of a viscosity class HLP46. A mixture of different oil types should be avoided. Concerning the quantity of oil please look in the Technical Data sheet.

What to do if...?

...the pump doesn't start working?
The air supply of the pump is faulty. The pump requires an air pressure of 2.8 – 8,0bar and has an air consumption of approximately 400 Nl / min.

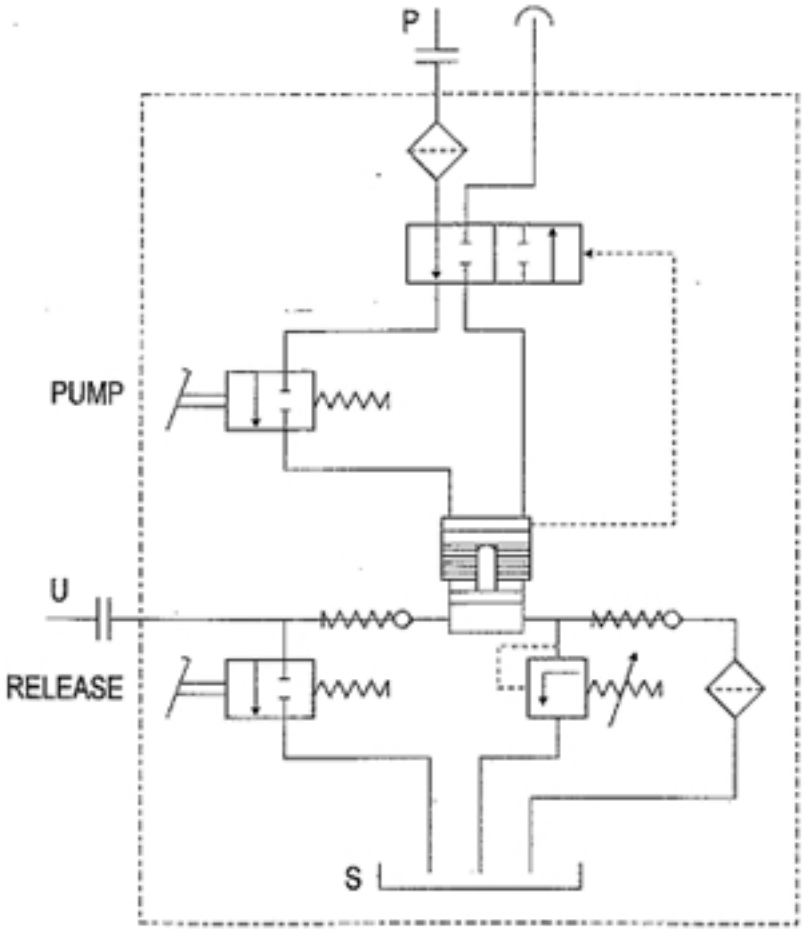
...the pump can't achieve the necessary pressure?
The air pressure is not sufficient. The pump needs an air pressure of 7 bar to reach the maximum operating pressure of 700 bar.

- The system is leaking. Leakage has to be repaired.
- Air is in the hydraulic system. The system has to be vented.
- There is not enough oil in the reservoir. Refill oil when the cylinders are retracted.

...the pump does not pump oil?

- The reservoir is not ventilated.
- There is not enough oil in the reservoir. Refill oil when the cylinders are retracted.
- Venting the pump. Put the pump in horizontal position on a stable underground. Push the pedal where you find the marking "RELEASE", and with the other hand, press the bottom underneath the marking "PUMP". Keep them pressed for about 15 seconds.

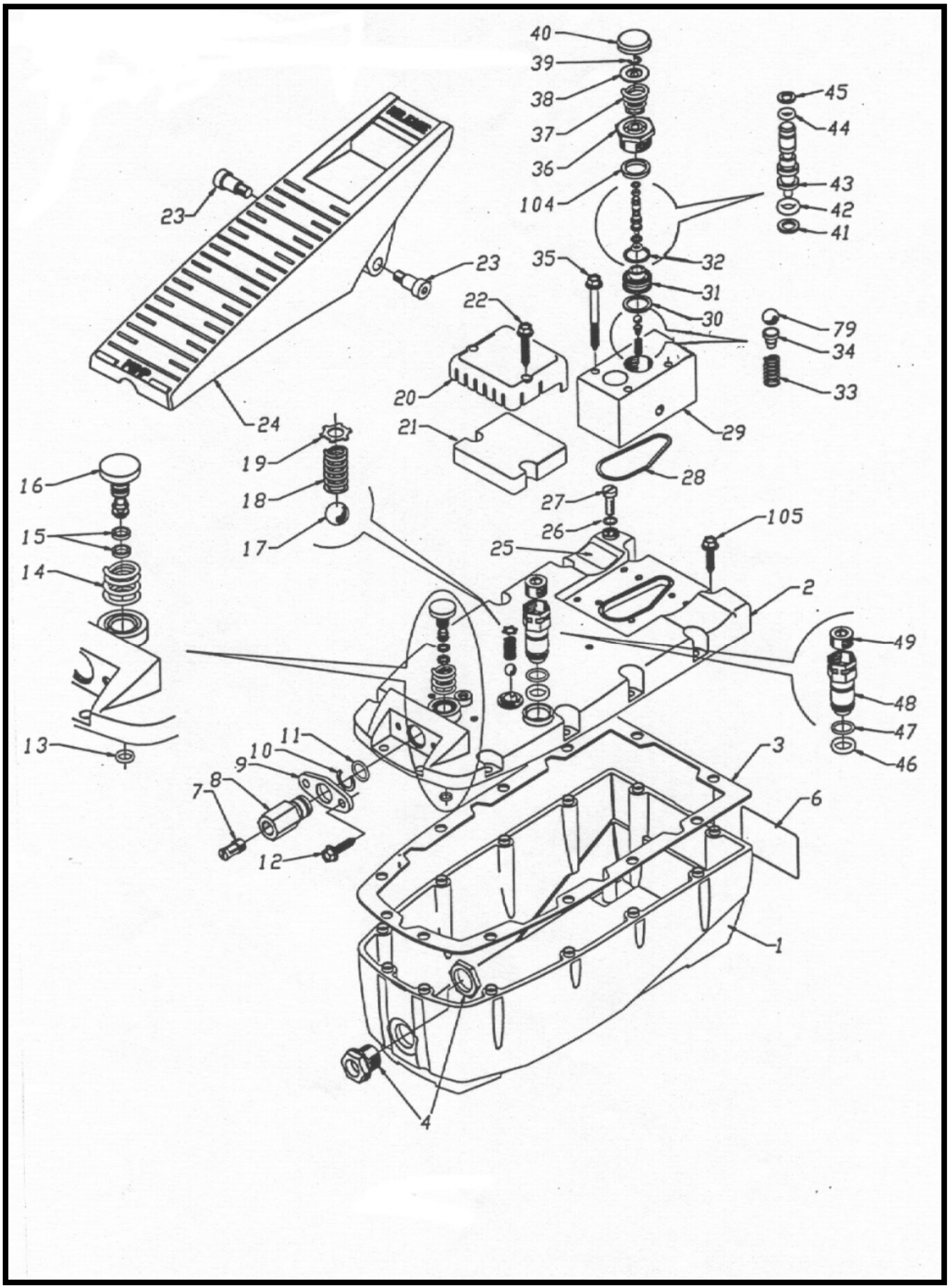
Betriebsschema / operating diagram



P = Lufteintritt
U = Ölverwendung
S = Öltank

P = Air inlet
U = Using oil
S = Oil reservoir

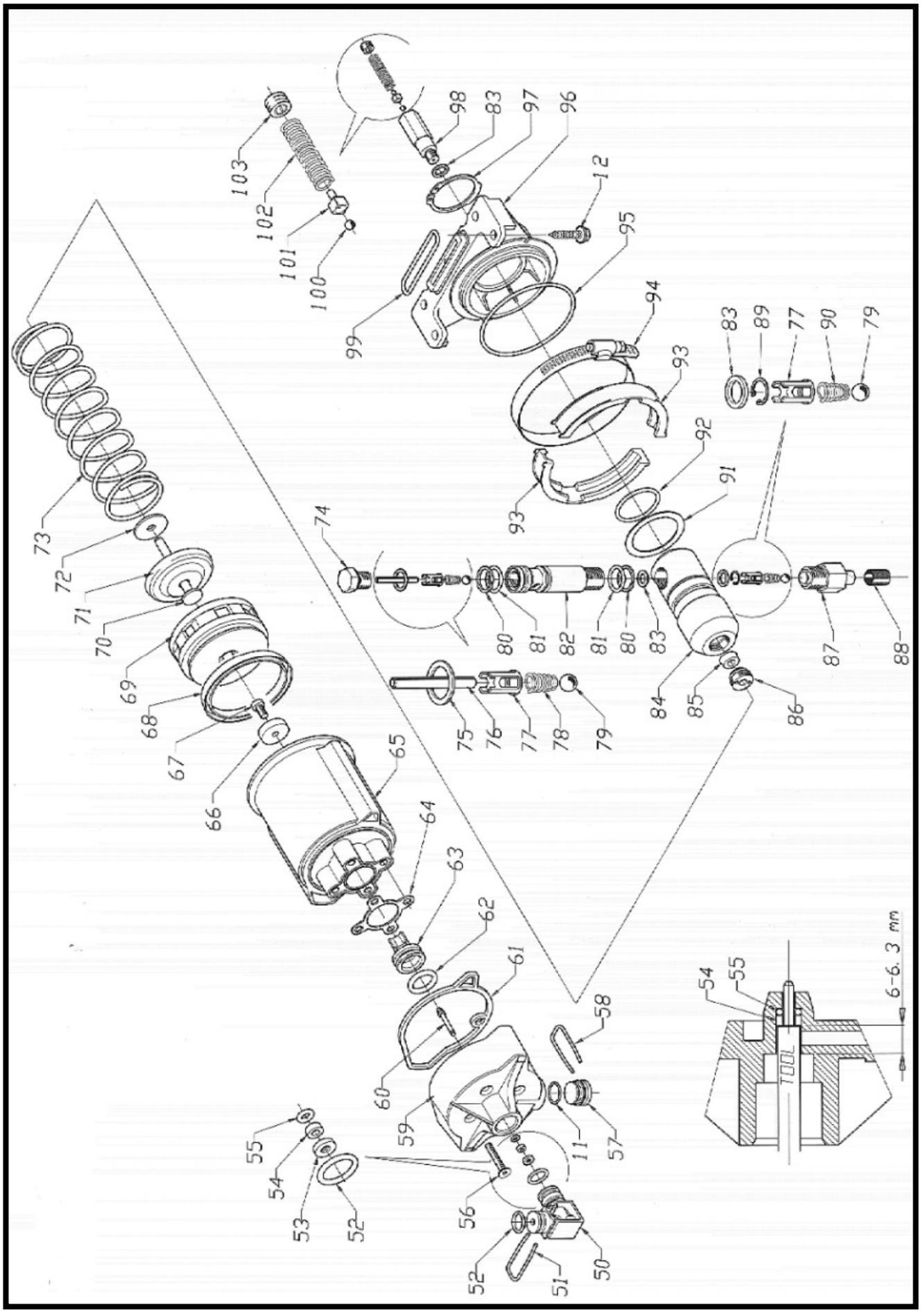
Explosionszeichnung Pumpengehäuse / Exploded drawing pump body



Ersatzteilliste - Pumpengehäuse / Spare part list - pump body

Pos.	Beschreibung	Description	Description
1	Tank	Reservoir	Réservoir
2	Pumpenplatte	Cover	Plaque de pompe
3	Dichtung f. Pumpenplatte	Cover seal	Joint pour plaque
4	Ölschauglas	Oil level	Regard de niveau d'huile
6	Typenschild	Identification label	Étiquette d'article
7	Luftfilter	Air filter	Filtre d'air
8	bewegliche Kupplung	Swivel coupler	Raccord mobile
9	Kupplungsflansch	Swivel coupler flange	Collerette de raccord
10	Klemmring	Retaining ring	Bague de serrage
11	O-Ring	O-ring	O-ring
12	Schraube, selbstschneidend	Thread-forming screw	Vis, auto coupante
13	O-Ring	O-ring	O-ring
14	Feder	Spring	Ressort
15	Quad-ring	Ring	O-ring
16	Stift	Pin	Goupille
17	Kugel	Ball	Bille
18	Feder	Spring	Ressort
19	Federscheibe	Retaining ring	Rondelle
20	Deckel	Cover	Couverture
21	Luftfilter	Filter	Filtre d'air
22	Schraube, selbstschneidend	Thread-forming screw	Vis auto coupante
23	Befestigungsschraube f. Fußpedal	Attachment screw for foot pedal	Vis d'attachement de la pédale
24	Fußpedal	Foot pedal	Pédale
25	Aufkleber Tankbelüftung	Label "Reservoir ventilation"	Étiquette d'aération du réservoir
26	O-Ring	O-ring	O-ring
27	Schraube	Screw	Vis
28	Dichtung, Ventilblock	Cover adjusting block seal	Joint de bloc de valve
29	Ventilblock	Adjusting block	Bloc de valve
30	Kupferdichtung	Copper washer	Joint en cuivre
31	Ablaßventil, Sitz	Release valve, seat	Valve de dépression
32	Kupferdichtung	Copper washer	Joint en cuivre
33	Feder	Spring	Ressort
34	Kugelführung	Ball guide spring	Guide de la balle
35	Schraube, selbstschneidend	Thread-forming screw	Vis, auto coupante
36	Führung, Ablaßventil	Guide, release valve	Guide de valve de dépression
37	Feder	Spring	Ressort
38	Dichtung	Seal	Joint
39	Federring	Retaining ring	Rondelle
40	Deckel	Cover	Couverture
41	Federring	Retaining ring	Rondelle
42	O-Ring	O-ring	O-ring
43	Stift	Pin	Goupille
44	O-Ring	O-ring	O-ring
45	Federring	Retaining ring	Rondelle
46	O-Ring	O-ring	O-ring
47	O-Ring	O-ring	O-ring
48	Einfüllstutzen	Filter plug	Tubulure de remplissage
49	Stopfen	Taper plug	Bouchon
67	Schraube	Screw	Vis
79	Kugel	Ball	Bille
104	PTFE Ring	PTFE ring	Bague PTFE
105	Schraube, selbstschneidend	Thread-forming screw	Vis auto coupante

Explosionszeichnung Pumpeneinheit / Exploded drawing pump unit



Ersatzteilliste - Pumpeneinheit / Spare part list - pump unit

Pos.	Beschreibung	Description
11	O-Ring	O-ring
12	Schraube, selbstschneidend	Thread-forming screw
50	Anschlußwinkel	Cover-head adapter
51	Klammer	Locking-adapter staple
52	O-Ring	O-ring
53	Dichtung	Seal
54	Buchse	Bushing
55	O-Ring	O-ring
56	Schraube	Screw
57	Stopfen	Head plug
58	Klammer	Locking head staple
59	Gehäusekopf	Head
60	Stift	Pin
61	Dichtung	Seal
62	Nutring	Nut ring
63	Kolbenführung	Piston
64	Dichtung	Seal
65	Gehäuse	Body
66	Dichtung	Seal
67	Schraube	Screw
68	Dichtung	Seal
69	Luftkolben	Piston
70	Kolben	Piston
71	Dichtung	Seal
72	Puffer	Buffer
73	Feder	Spring
74	Schraube	Screw
75	Kupferring	Copper washer
76	Stift	Pin
77	Kugelführung	Ball guide
78	Feder	Spring
79	Kugel	Ball
80	Federring	Retaining ring
81	O-Ring	O-ring
82	Konnektor	Connector
83	Kupferring	Copper washer
84	Pumpenkörper	Body
85	Dichtung	Seal
86	Stopfen	Plug
87	Saugfilteranschluß	Suction filter adapter
88	Ölfilter	Oil filter
89	Federring	Retaining ring
90	Feder	Spring
91	Dichtring	Seal ring
92	O-Ring	O-ring
93	Halterung	Strap support
94	Klammer	Pipe clamp
95	O-Ring	O-ring
96	Deckel	Cover
97	Federring	Retaining ring
98	Druckbegrenzungsventil	Pressure relief valve
99	Dichtung	Seal
100	Kugel	Ball
101	Kugelführung	Ball guide
102	Feder, Druckbegrenzungsventil	Spring, pressure relief Valve
103	Stopfen	Plug

Inhalt Ersatzteilpaket / Contents spare part kit

Pos.	Bezeichnung	Description	Stück / Qty.
No. 3	Dichtung Pumpenplatte	Cover seal	1
No. 7	Luftfilter	Air filter	1
No. 11	O-Ring	O-ring	2
No. 13	O-Ring	O-ring	1
No. 15	Quad-Ring	Ring	2
No. 26	O-Ring	O-ring	1
No. 28	Dichtung Ventilblock	Cover adj. block seal	1
No. 46	O-Ring	O-ring	1
No. 47	O-Ring	O-ring	1
No. 52	O-Ring	O-ring	2
No. 53	Dichtung	Seal	1
No. 55	O-Ring	O-ring	1
No. 61	Dichtung	Seal	1
No. 62	Nutring	Lip seal	1
No. 64	Dichtung	Seal	1
No. 66	Dichtung	Washer seal	1
No. 68	Dichtung	Seal	1
No. 75	Kupferring	Copper washer	1
No. 80	Federring	Lock washer	2
No. 81	O-Ring	O-ring	2
No. 83	Kupferring	Copper washer	3
No. 85	Dichtung	Seal	1
No. 92	O-Ring	O-ring	1
No. 95	O-Ring	O-ring	1
No. 99	Dichtung	Seal	1

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12/2011