kränzle®

GB

High Pressure Cleaners

quadro 11/140 TST
11 l/min / 140 bar

quadro 12/150 TST
12 l/min / 150 bar

quadro 9/170 TST
9 l/min / 170 bar

CE

made in Germany

Operating manual

Read and conform safety instructions before use

Technical data

Technical data	quadro 9/170 TST	quadro 11/140 TST	quadro 12/150 TST
Operating pressure, steplessly adjustable	10 - 170 bar	10 - 140 bar	10 - 150 bar
max. permissible overpressure	190 bar	155 bar	165 bar
(*1) Water output at nominal pressure	8.7 l/min	11.0 l/min	12.0 l/min
Nozzle size (Flat jet) (Dirt killer)	2503 030	25045 045	25045 045
Volume Water tank	7 l	7 l	7 l
Inlet water temp. to water tank	max. 60 °C	max. 60 °C	max. 60 °C
(*2) Max. temp. for direct suction	60 °C	60 °C	60 °C
Direct suction height	2.5 m	2.5 m	2.5 m
Hose drum	yes	yes	yes
High pressure hose	15 m	15 m	15 m
Electrical ratings	230 V/50 Hz, 14 A	230 V/50 Hz, 14 A	400 V/50 Hz, 7 A
Motor speed adjust.	1400 rpm	1400 rpm	1400 rpm
Connect.wattage Inp. Output	P1: 3.1 kW P2: 2.3 kW	P1: 3.1 kW P2: 2.3 kW	P1: 3.1 kW P2: 2.5 kW
Weight (incl. access. with empty water tank)	45 kg	45 kg	45 kg
Dimensions incl. handle L x W x H in mm	590 x 360 x 850	590 x 360 x 850	590 x 360 x 850
Sound level acc. to DIN 45 635 (reg. working place)	84 dB (A)	84 dB (A)	88 dB (A)
with dirtkiller	89 dB (A)	89 dB (A)	90 dB (A)
Guaranteed sound level L_{WA}	88 dB (A)	88 dB (A)	88 dB (A)
Vibrations at lance	2,0 m/s²	2,0 m/s²	2,1 m/s²
Recoil at lance	approx. 20 N	approx. 20 N	approx. 20 N

Permissible tolerance for figures ± 5 % in acc. with VDMA uniform sheet 24411

(*1) Min. water quantity to be supplied to the high pressure cleaner! (2-8 bar admission pressure)

(*2) Direct suction is possible through by-passing of water tank! (see page 13)

Description

Dear customer

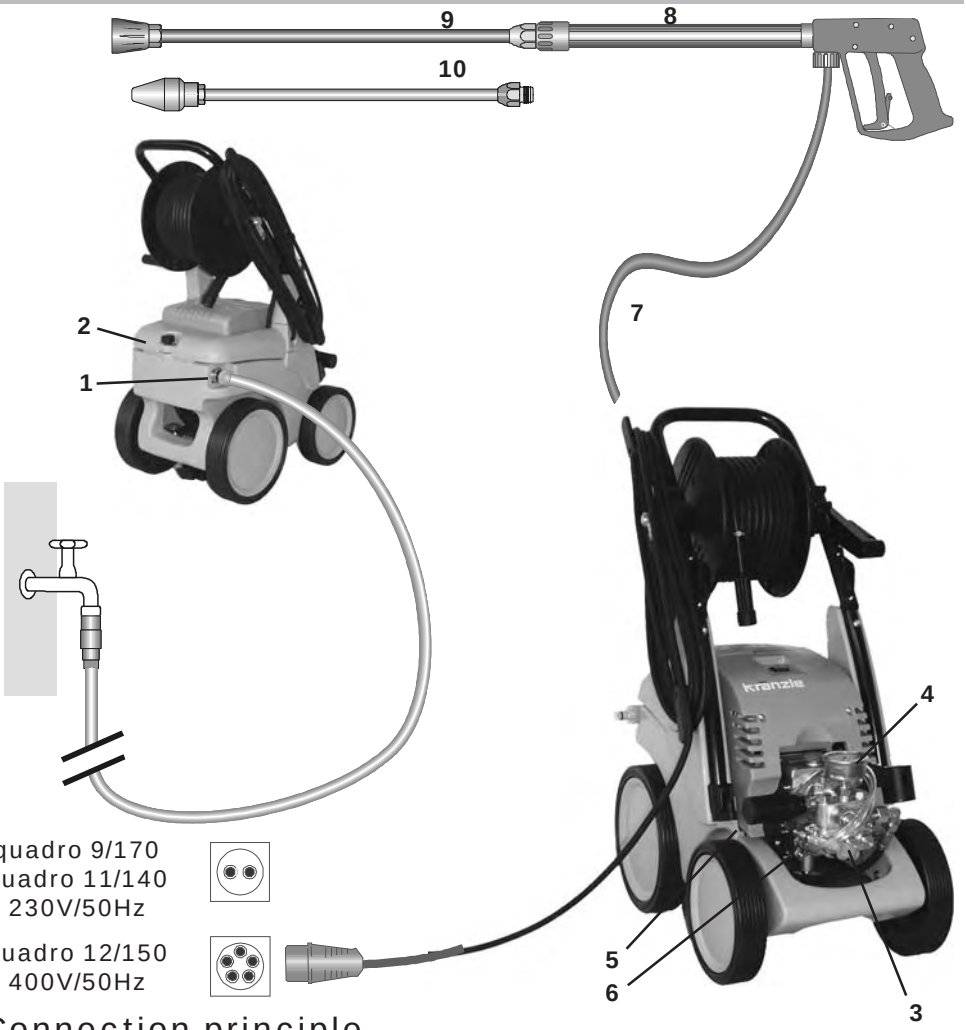
We would like to congratulate you on your new high pressure cleaner with integrated water tank and to thank you for the purchase.

To ease your introduction to the use of the cleaner, we have provided the following pages of explanations, tips and hints, which we ask you to read before using it for the first time.

The equipment will assist you professionally in all cleaning tasks, e.g.:

- facades
- flagstones
- terraces
- vehicles of all types
- stables
- machines etc.
- barrels and containers
- channels

Contents



Connection principle

The KRÄNZLE quadro 9/170; 11/140 and 12/150 - high pressure cleaners are mobile machines with hose drum and 20 m industrial hose.

The connection principle can be seen from the illustration.

Components

1 **Water inlet connection with filter**
2 **Cover for water tank**
3 **High pressure pump**
4 **Press. gauge with glycerin filling**
5 **Unloader valve - safety valve**
6 **Detergent valve**
7 **High pressure hose**
8 **Spray gun**
9 **Interchangeable lance with flat jet nozzle and nozzle protection**
10 **Interchangeable lance with dirtkiller**

Water supply system

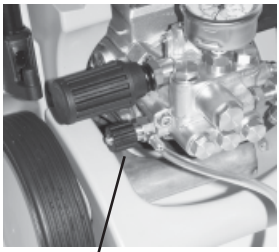
The water must be lead to the high pressure cleaner under pressure (2 – 8 bar admission pressure). A float valve regulates the water inlet. Then, the water is sucked by the high pressure pump from the water tank and supplied to the lance under the set pressure. The high pressure jet is formed by the nozzle at the end of the lance.

Detergent and caring system

The high pressure pump can also suck a detergent/caring agent and mix it with the high pressure jet. The additive is sucked through the pump and brought in with the set pressure.

Insert the detergent hose into the detergent container and open the detergent valve (6). The detergent must have the ph-value 7-9 neutral.

The detergent discharges with the water at the high pressure nozzle.



Only open the dosing valve, if the chemistry sieve is placed in a liquid. Sucked air leads to destruction of the pump seals !!!

The rules concerning the environment, refuse and ground water protection must be complied with!

Lance with spray gun

The machine can only be operated when the safety trigger is squeezed.

When the lever is squeezed, the spray gun opens. The liquid is then pumped to the nozzle. The spray pressure increases and quickly reaches the selected operating pressure. For the deairing of the system open and close the gun quickly a few times. When the trigger is released, the trigger gun closes and any further spraying of liquid from the lance is stopped and the pressure gauge must show 0 bar.

The increase in pressure when the trigger gun is closed causes the unloader valve-safety valve to open. The pump remains switched on and continues to pump liquid through the pump at reduced pressure. When the spray gun is opened, the unloader valve - safety valve closes and the pump ressumes spraying from the lance with the selected operating pressure.

The spray gun is a safety device. Repairs should only be performed by qualified persons. Should replacement parts be required, use only components authorized by the manufacturer.

High pressure hose and spraying device

The high pressure hose and spraying device supplied with the machine are made of high grade material. They are also optimized for the machine and marked as required by the appropriate regulations.

If replacement parts are required, only such parts that are authorized by the manufacturer and which bear the markings required by the appropriate regulations may be used. The high pressure hose and spraying device must be connected in a pressure-tight manner.
The high pressure hose may not be driven over, pulled excessively or twisted. Hose lines are wear parts. Guarantee is accepted only for manufacturing errors, not for external damages.
High pressure hose lines and spraying equipment must not be repaired, but replaced by a new hose or spraying equipment.

Unloader valve - safety valve

The unloader valve - safety valve protects the machine from a build up of excess pressure, and is designed not to permit an excess pressure to be selected for operation. The limit nut on the handle is sealed with a spray coating.

The operating pressure and spray rate can be steplessly adjusted by turning the handle.
Replacements, repairs, new adjustments and sealing should only be performed by qualified persons.

Take care that all screw connections are pressure-tight. A leakage of gun, high-pressure hose or hose drum has to be repaired at once. Leakages lead to an increased wear and to a possible malfunction of the delayed motor cut-out.

Operator's task:
Prior to each usage of this liquid spraying device, the operator is obliged to check if all safety relevant parts are in perfect working condition. (e.g. safty valves, high-pressure hose, cables and connections, spraying devices, etc.)

With Total-Stop-System

The Kränzle quadro 9/170 TS, 11/140 TS und 12/150 TS - high pressure cleaners are equipped with a Total-Stop-System.

If the main switch is switched on, the motor is started by means of a pressure switch as soon as the gun is operated. The pump quickly reaches the set operating pressure. When the gun is closed the motor is cut off immediately.

Replacements and inspection work should only be performed by qualified persons when the machine is disconnected from the power supply, i.e. the plug pulled out from the electrical socket.

Setting up

Location

Neither set up and operate the machine in rooms where there is a risk of fire or explosion nor put it into puddles. Do not use the machine under water. The device must not stand in the spray area of the high pressure jet.

CAUTION !

Never suck in liquid containing solvents such as paint thinners, petrol, oil or similar liquid matter. Pay attention to the instructions of the manufacturers of the cleaning agents. The seals in the machine are not resistant to solvents! The spray of solvents is inflammable, explosive and poisonous.

CAUTION !

When running your high pressure cleaner with hot water of 60° C raised temperatures occur. Do not touch the machine without safety gloves!

quadro 9/170
quadro 11/140
230V/50Hz

quadro 12/150
400V/50Hz

Electrical connection

The machine is supplied with an electrical power cord with plug.

The mains plug must be fitted to a standard grounded socket with a 30mA residual current operated device. The socket must be protected with a 16A delay action fuse on the mains side.

KRÄNZLE quadro 9/170 TST, 11/140 TST = 230 Volt / 50 Hz
KRÄNZLE quadro 12/150 TST = 400 Volt / 50 Hz

(phase-sequence not significant)

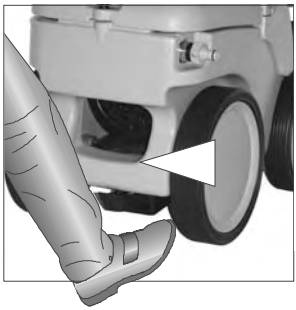
When using an extension cable, this must have a grounded lead which is properly connected to the socket. The conductors in the extension cable must have a minimum cross section of 1.5 mm². Plug connections must be of a spray-proof design and may not be located on a wet floor.

CAUTION !

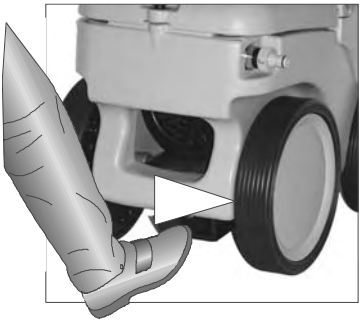
The use of extension cables which are too long may lead to malfunctions and start up difficulty. If the extension cable is longer than 10 m it must have a minimum cross section of 2.5mm².

When using a cable drum, always keep the cable unwound as far as possible.

Brake



Brake not applied



Brake applied

Brief operating instructions:

1. **Connect high pressure hose with spray gun.**
2. **Connect to suitable water supply.**
3. **Connect current (see page 8).**
4. **Switch on machine, operate gun and start cleaning.**
5. **After having completed the cleaning process, put main switch in zero position and by opening the gun, reduce the pressure in the high pressure hose.**

   Then, the high pressure hose can be rolled up.

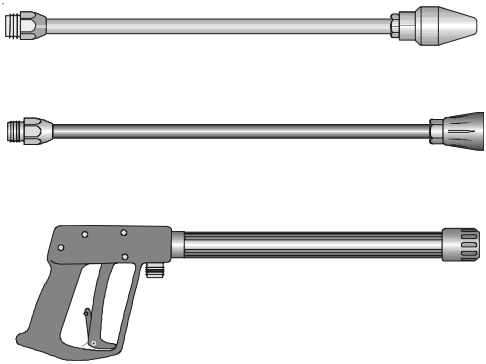
   - Only use clean water ! Protect from frost !

CAUTION !

Please pay attention to the regulations of your waterworks company.

Due to the water tank, the device can be connected to any drinking water line without any difficulties.

This is what you've purchased:



1. Dirtkiller

Lance with nozzle protection and high pressure nozzle
Flat jet 25°

2. Spray gun PICO with insulated handle and screw connection

3. KRÄNZLE - High pressure cleaners quadro 9/170, 11/140 and 12/150 TST with hose drum and 15 m HP hose NW 6 with steel reinforcement

4. Operating manual

5. HP hose 15 m NW 6 with hose drum

6. Collapsible crank for hose drum (already installed)

7. Plug-in connection of water inlet parts and filter (already installed)

To control the high pressure cleaner
put
1. the foot against the tilt bases and
2. then pull the device towards you.

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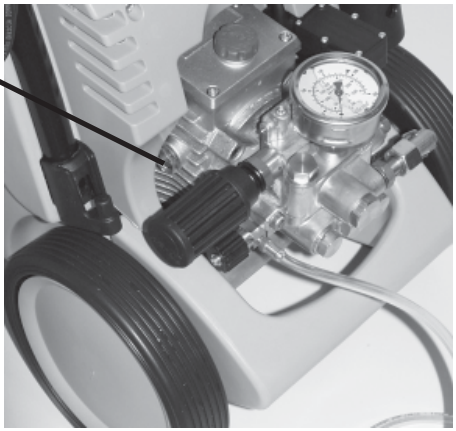
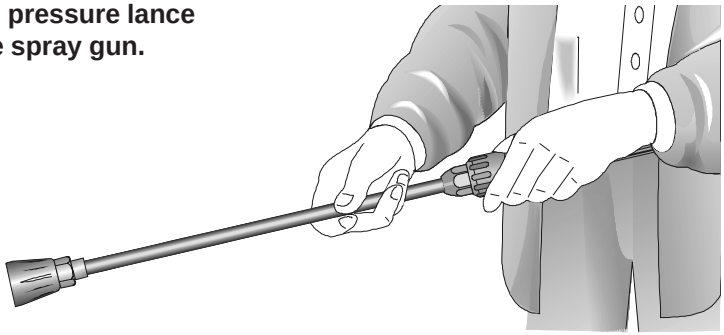
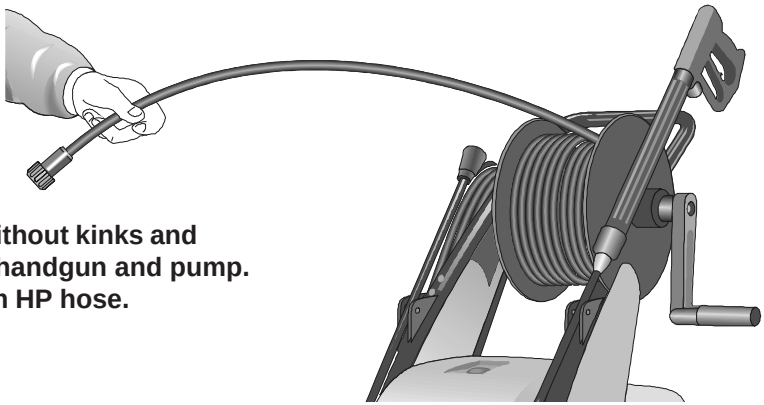
1. Check oil level.

Oil must be visible in the viewing window

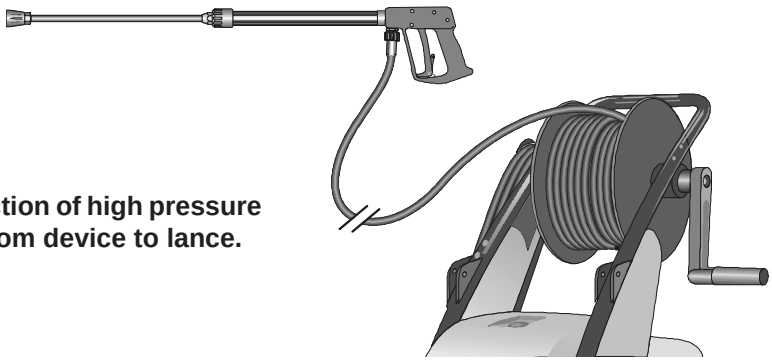


2. Connect the high pressure lance or dirtkiller to the spray gun.





3. Unroll hose without kinks and connect with handgun and pump. Use max. 20 m HP hose.

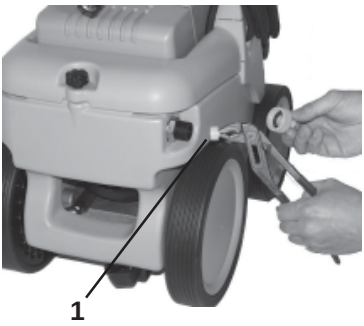


4. Connection of high pressure hose from device to lance.

5. The machine must be connected to the water line with cold water or up to 60° C warm water (see page 2).

The hose cross section must be at least 3/4" = 16 mm (free passage). Filter 1 must always be clean.

Please make sure that the filter is clean before using your high pressure cleaner.

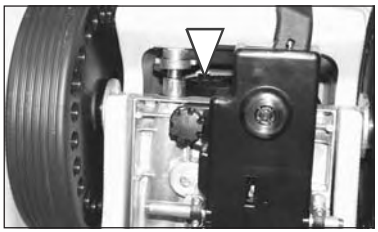


CAUTION !

When running your high pressure cleaner with hot water of 60° C raised temperatures occur.

Do not touch the pump without safety gloves!

External suction



Undercarriage

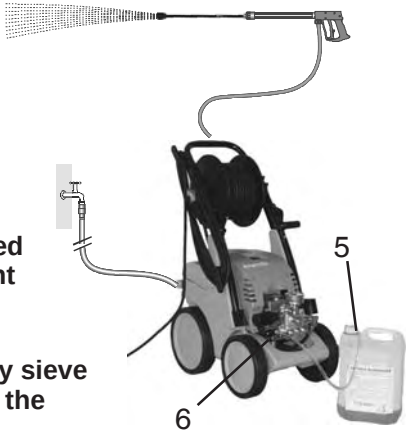
If water is to be sucked from an external container for the high pressure cleaner, the connection hose between the high pressure pump and the water tank must be screwed off and the suction hose must be connected via a double nipple 3/4“ (Order no.: 46.004) to the connection hose. Make sure that the water is clean. Use the Kränzle suction hose with suction filter. (Order no. 15.038 3)

Undercarriage

Maximum suction height 2.5 m, maximum water temperature for direct suction: 60°C
(see technical data on page 2)

Suction of detergents

Put chemistry sieve number 5 into the detergent container. Open the detergent valve (6), then the detergent is sucked in. When closing the detergent valve, the chemistry supply is automatically closed. Allow detergent to act and then wash off. (see page 5).



Note that you must always comply with the instructions provided by the manufacturer of the detergent (e.g. safety clothing) and the water protection regulations!

Only open the valve, if the chemistry sieve is in a liquid. Sucked in air leads to the destruction of the pump seals !!!
Damages to the pump caused by sucked in air are not covered by the guarantee.

To shut down the pump:

1. Switch off the machine. Switch to „0“ position.
2. Cut off the water supply.
3. Open the spray gun briefly until the pressure is released.
4. Apply the safety catch on the spray gun.
5. Remove the water hose and spray gun.
6. Pull the plug from the socket.
7. Winter: store the pump in rooms above 0°C.
8. Clean the water filter.

Frost protection

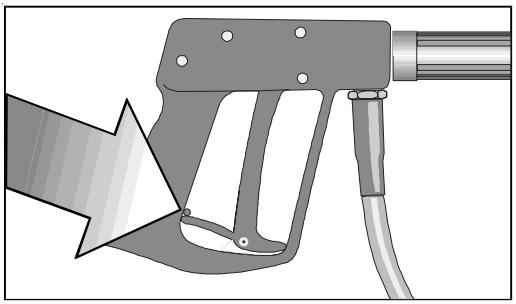
Normally after operation, there is still some water in the device. Thus, you must take special measures to protect the device from frost.

- **Completely drain the device**
  For this purpose, separate the device from the water supply. Then, turn on the main switch and open the gun. Now, the pump presses the remaining water out of the water tank and the pump. However, do not allow the device to operate without water for longer than one minute.
- **Fill the device with antifreeze agent**
  If the device is not operated for longer periods, especially over the winter, you should pump an antifreeze agent through the device. For this purpose, fill the antifreeze agent into the water box and turn on the device. Wait with opened gun, until the agent spurts out of the nozzle.

However, the best way to protect the device from frost is to store it at a frost-free location.

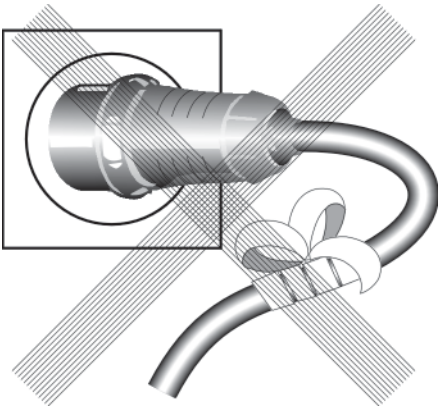
As to the recoil -
see notice on page 2!

Apply the safety catch on the spray gun after each use, in order to prevent unintentional spraying!



This is prohibited !

Never direct the water jet at people or animals !



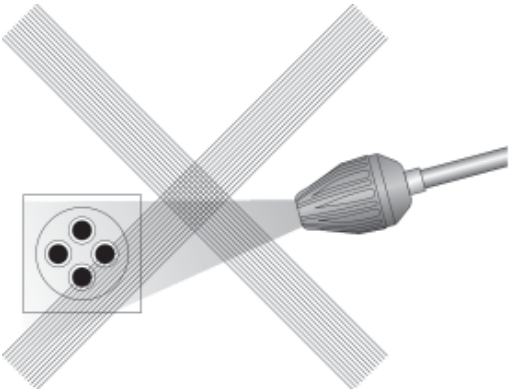
Do not damage the power cable or repair it incorrectly!

Never pull the high pressure hose if it has formed kinks or “nooses”!
Never pull the hose over sharp edges !

This is prohibited !

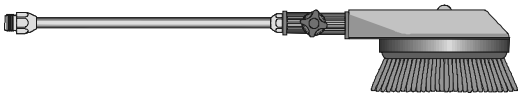
Never allow children to use the high pressure cleaner !

Never direct the water jet at the machine itself !

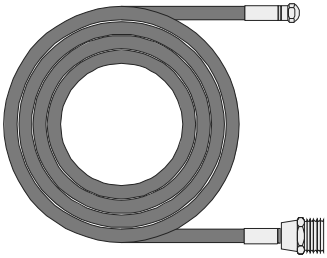


Never direct the water jet at a power socket !

Additional accessories for ... (on demand)



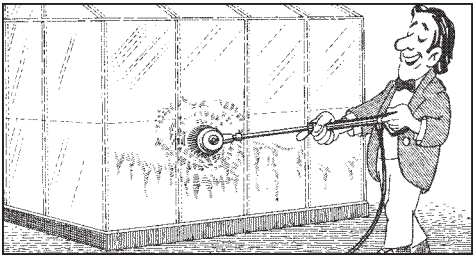
Rotary scrubbing brush
Order No. 41.050 1



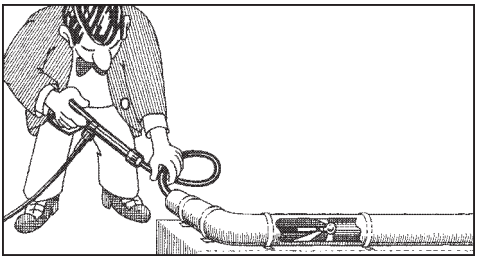
Drain and pipe cleaning hose
10 m - Order No. 41.058.1
15 m - Order No. 41.058

Environmental, refuse disposal and water protection regulations must be observed when using the accessories!

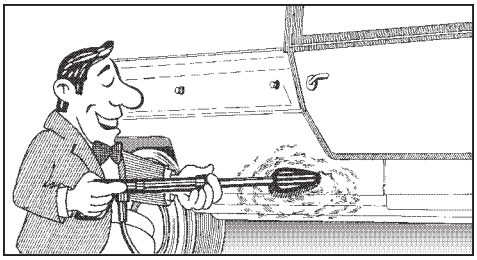
... further combination possibilities



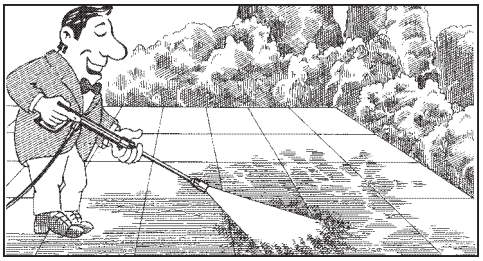
Car cleaning, glass, caravan, boat etc.: rotary washing brush with 40 cm extension and ST 30 nipple M22 x 1.5



Cleaning pipes, channels and drains: pipe cleaning hose with KN nozzle and ST 30 nipple M22 x 1.5



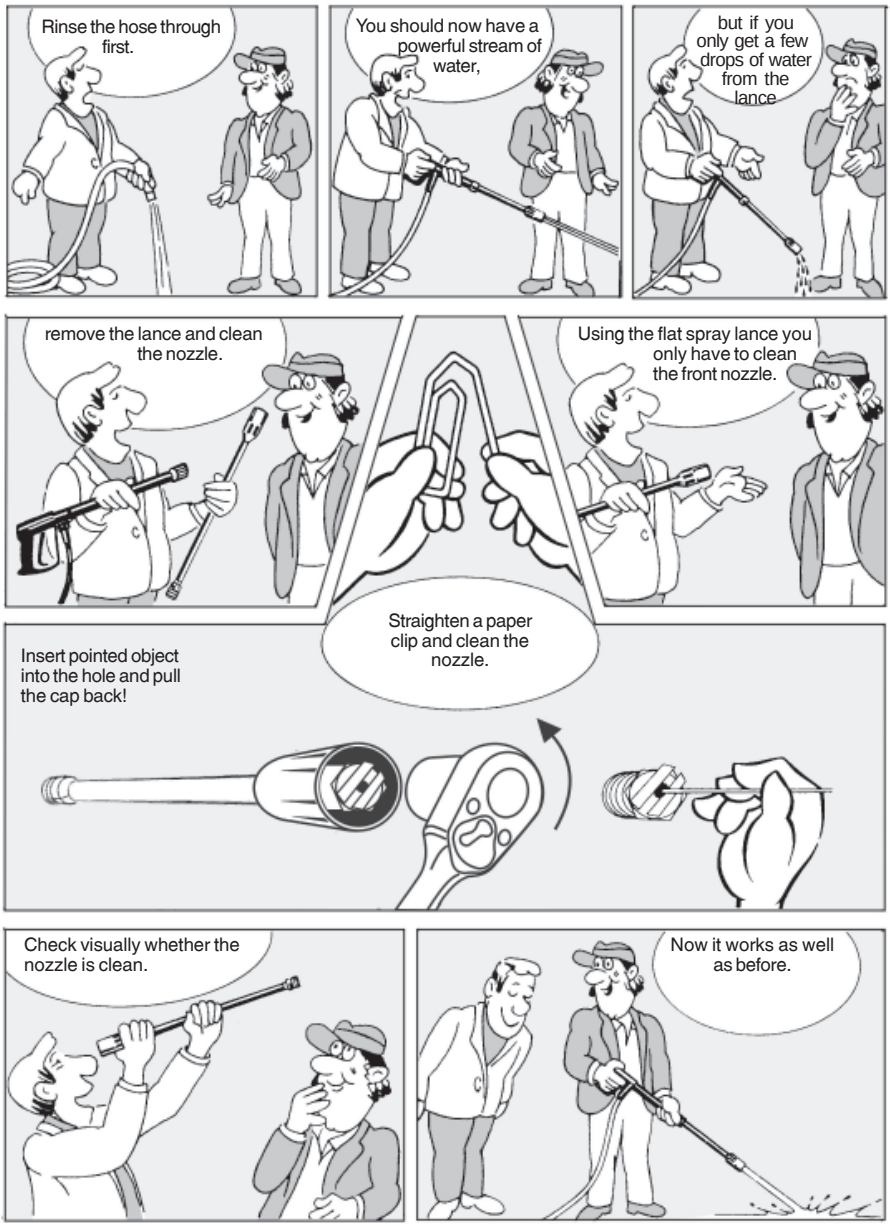
Cleaning cars and all smooth surfaces: brush with ST 30 nipple M22 x 1.5



Rotary point sprayer for extreme soiling: Turbokiller with 40 cm extension and ST 30 nipple M22 x 1.5

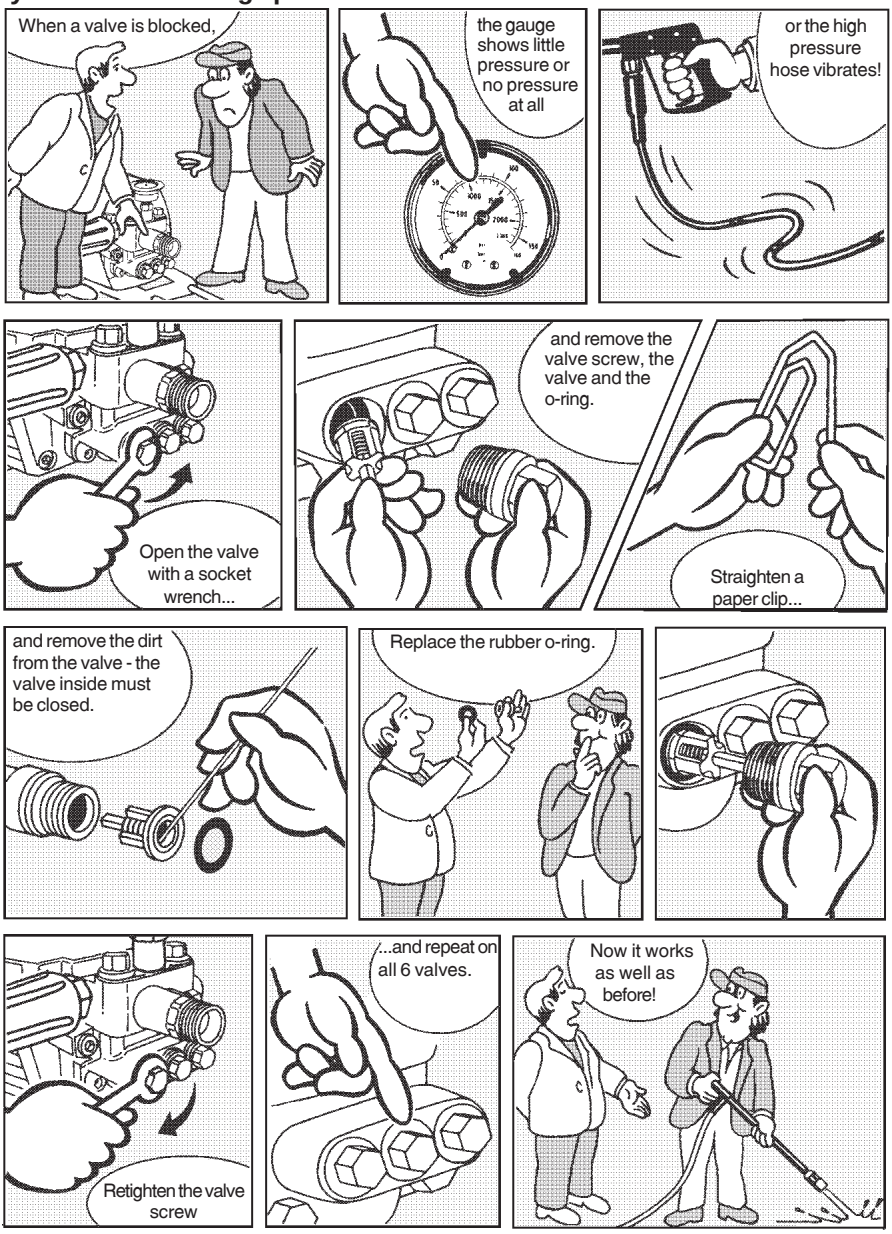
The nozzle is blocked!

● **No water but the gauge shows full pressure !**

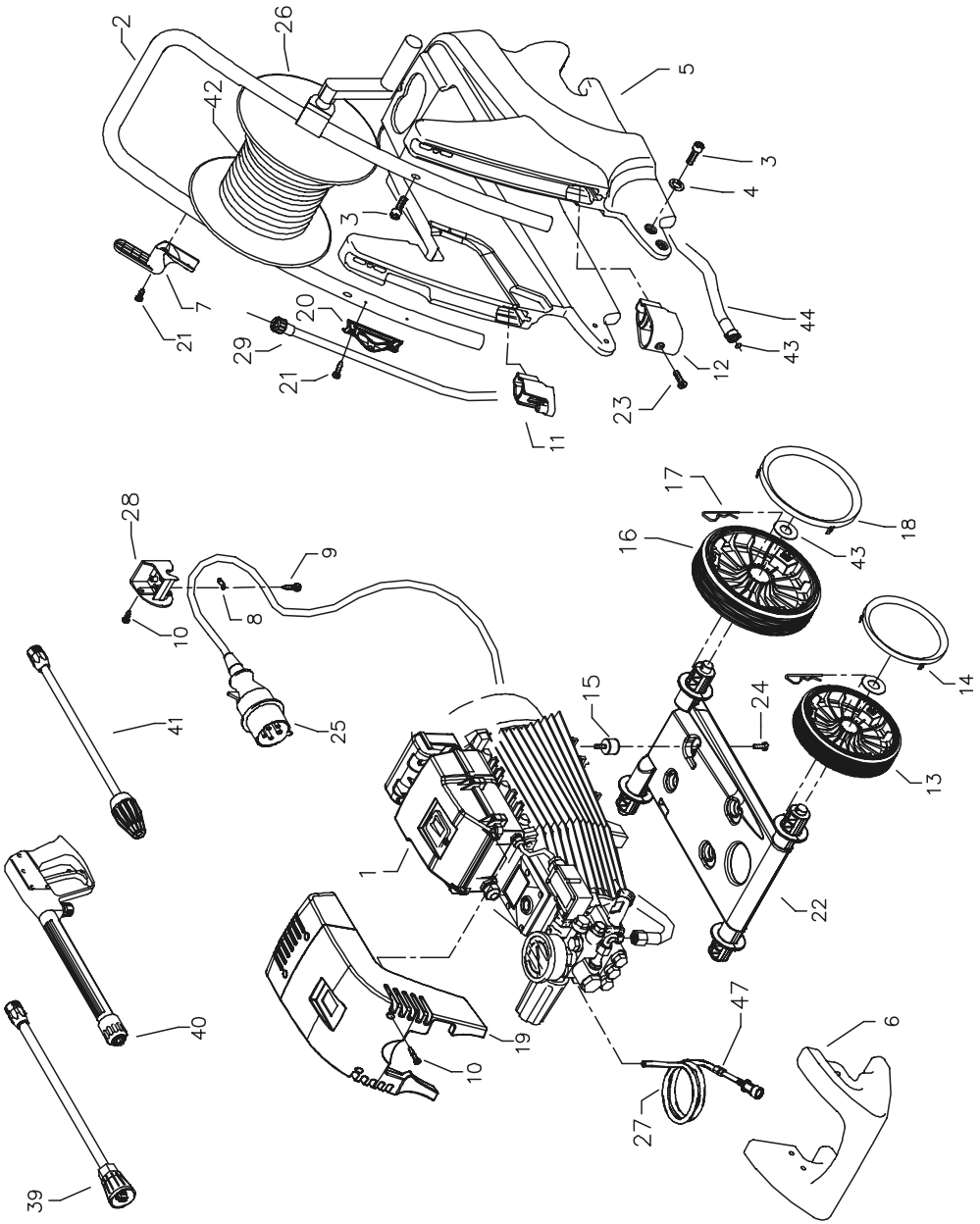


Nozzle dirty or sticky!

- **Pressure gauge does not show full pressure**
- **The high-pressure hose vibrates.**
- **Water comes out in spurts.**
- **If you do not use the high-pressure cleaner for some time the valves can stick.**



Complete Assembly

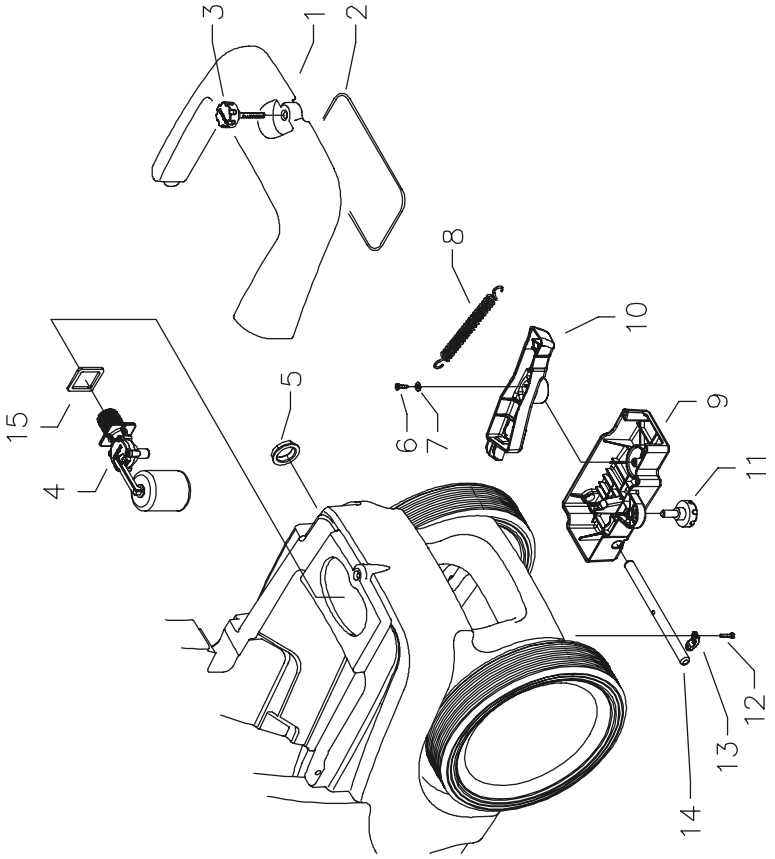


Spare parts list KRÄNZLE quadro 9/170 - 11/140 - 12/150 TST
Complete assembly

No	Description	Qty.	Ord.-No
	Motor-Pumpe ohne Elektrik		
1.1	für quadro 9/170 TST	1	46.582 1
1.2	für quadro 11/140 TST	1	46.582 2
1.3	für quadro 12/150 TST	1	46.582 3
	Motor-Pumpe mit Elektrik		
1.4	für quadro 9/170 TST	1	46.583 1
1.5	für quadro 11/140 TST	1	46.583 2
1.6	für quadro 12/150 TST	1	46.583 3
2	Schubbügel	1	46.504
3	Schraube M6x35 DIN6912	6	46.024
4	Scheibe 6,4 DIN125	4	50.189
5	Wasserkasten	1	46.510
6	Rammschutz vorn	1	46.511
7	Kabelaufwicklung	1	46.507
8	Zugentlastung	1	43.431
9	Kunststoffschraube 4,0 x 16	2	43.417
10	Kunststoffschraube 5,0 x 30	2	41.412
11	Lanzenständer	1	46.502
12	Köchertopf	1	46.503
13	Rad d210	2	44.538
14	Radkappe d210	2	46.011
15	Gummipuffer 20 x 25	4	46.534
16	Rad d250	2	46.508
17	Federstecker	4	40.115 1
18	Radkappe d250	4	46.509
19.1	Frontplatte quadro 9/170 TST	1	46.535 1
19.2	Frontplatte quadro 11/140 TST	1	46.535 2
19.3	Frontplatte quadro 12/150 TST	1	46.535 3
20	Lanzenhalter	2	42.610
21	Blechschraube 3,5x16 DIN7981	8	44.161
22	Fahrgestell	1	46.501

No	Description	Qty.	Ord.-No
23	Schraube M6x12	2	43.421
24	Schraube M6x12	4	44.090 1
25	Netzanschlusskabel 5,75m	1	41.092
	Wechselstrom (quadro 9/170 - 11/140)		
25.1	Netzanschlusskabel 8m	1	44.036
	Drehstrom (quadro 12/150)		
26	Schlauchtrommel kpl.	1	46.581
27	Chemiesaugschlauch (Gewebe) mit Filter	1	42.621
28	Kabelführung mit Zugentlastung	1	46.506
29	Verbindungsschlauch Schlauchtrommel	1	46.537
39.1	Lanze mit Flachstrahldüse für 9/170 TST	1	12.392 5-M20030
39.2	Lanze mit Flachstrahldüse		
	für 11/140 TST und 12/150 TST	1	12.392 5-M20045
	bitte Düsengröße mit angeben		
40	Midi -Pistole mit Verlängerung	1	12.160
41.1	Schmutz-Killer 030 bei quadro 9/170 TST	1	41.073 8
41.2	Schmutz-Killer 045		
	bei quadro 11/140 TST und 12/150 TST	1	41.072 5
42	Hochdruckschlauch 15 m NW6	1	40.170
43	O-Ring 13 x 2,6	2	13.272
44	Verbindungsschlauch Wasserkasten	1	46.536
47	Rückschlagventil für Chemiesaugschl.	1	44.240

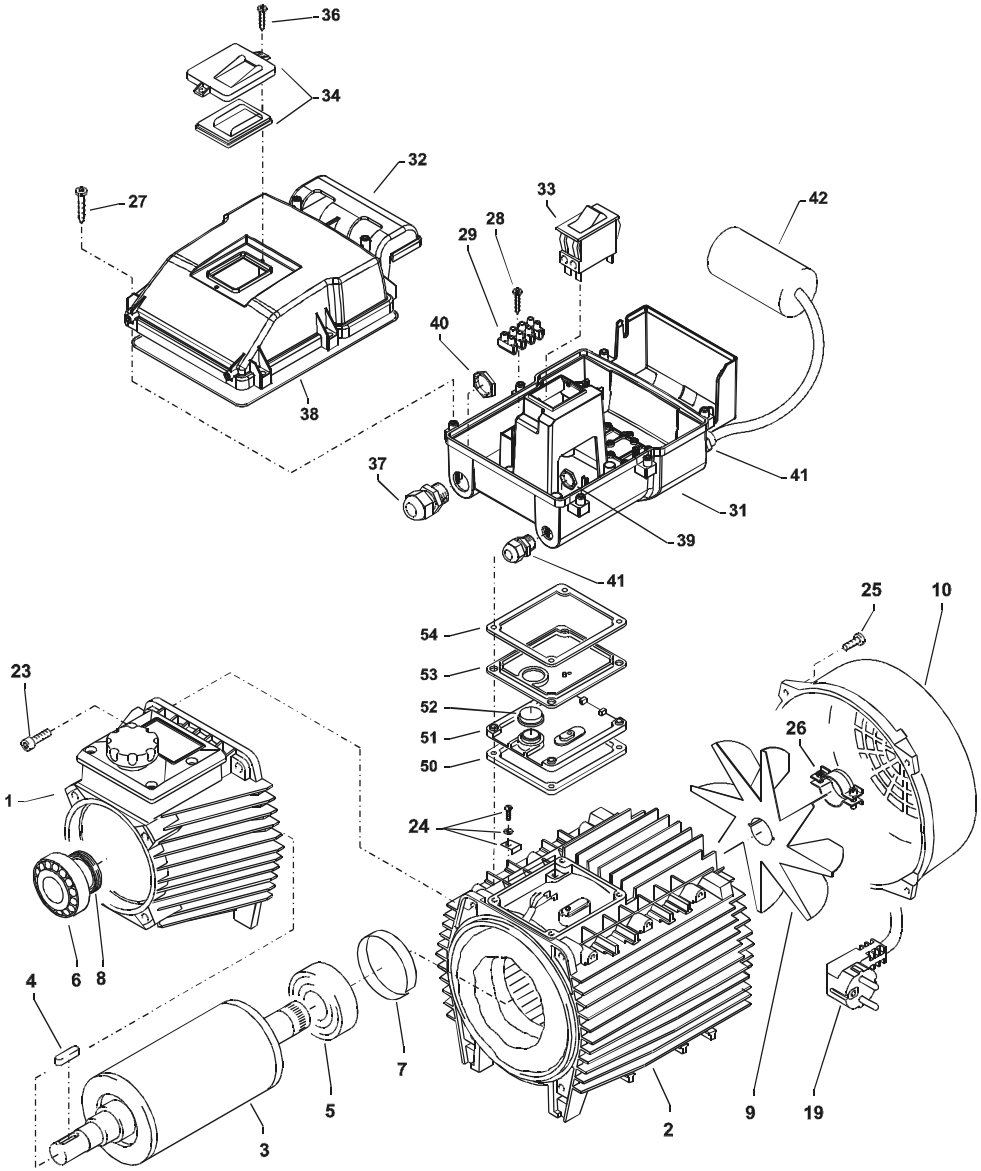
Water inlet and brake



Spare parts list KRÄNZLE quadro 9/170 - 11/140 - 12/150 TST
Water inlet and brake

No	Description	Qty.	Ord.-No
1	Revisionsdeckel	1	46.512
2	Dichtung Revisionsdeckel	1	46.513
3	Sterngriffschraube M6	1	46.031
4	Schwimmerventil	1	46.250 1
5	Mutter R3/4“	1	46.258
6	Kunststoffschraube 5x14	1	43.426
7	Scheibe 5,3 DIN9021	1	50.152
8	Zugfeder	1	46.020
9	Deckel Bremse	1	46.016
10	Hebel Bremse	1	46.505
11	Sternschraube M8	1	50.168
12	Innensechskantschraube M4x10	4	46.002
13	Schelle	2	43.431
14	Bolzen für Bremse	1	46.018
15	Dichtung für Schwimmerventil	1	46.261

Pump motor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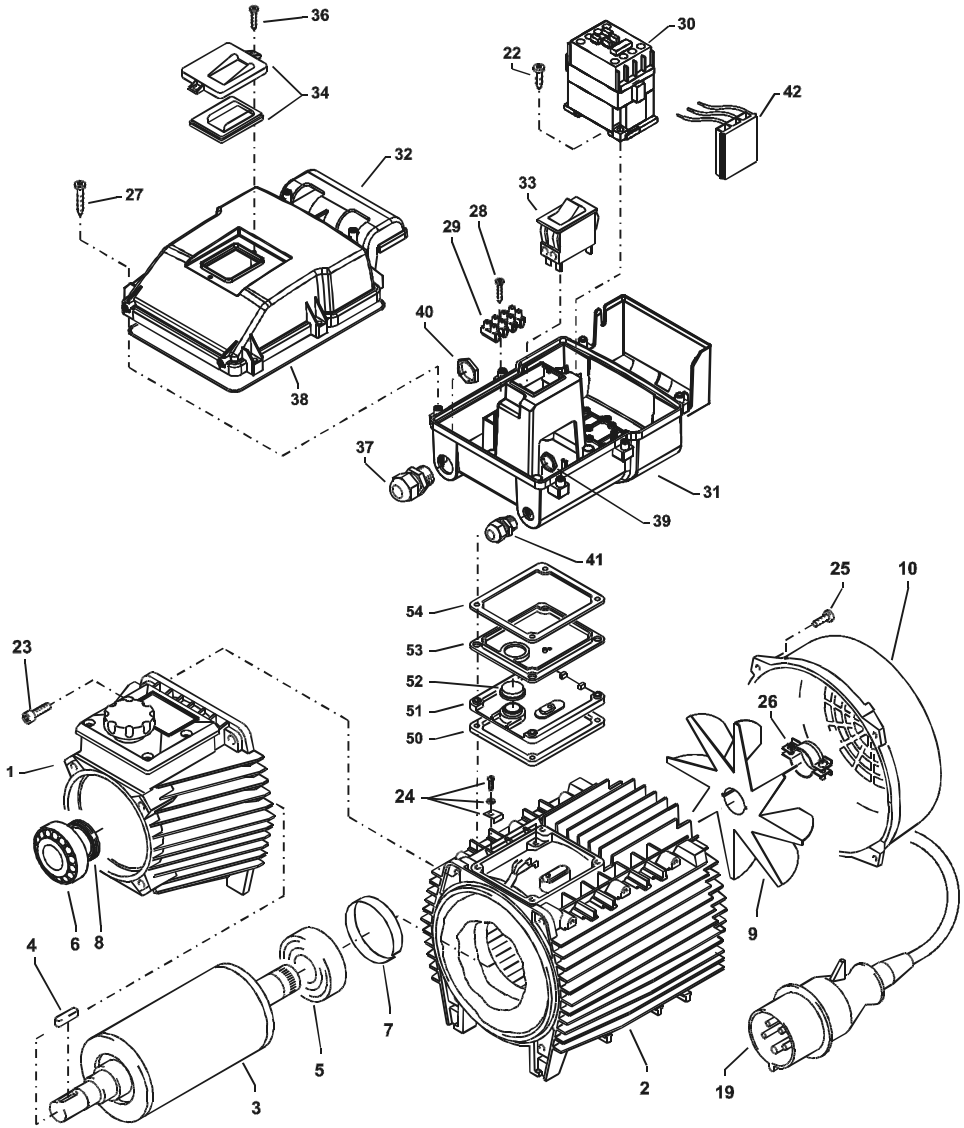
Spare parts list KRÄNZLE quadro 9/170 - 11/140 TST
Pump motor

No	Description	Qty.	Ord.-No
1	Ölgehäuse für AP	1	46.530 1
2	Motorgehäuse mit Stator Wechselstrom	1	46.528
3	Rotor mit Motorwelle Wechselstrom	1	43.316
4	Paßfeder 6 x 6 x 20	1	41.483 1
5	Motor-Lager B-Seite 6205 - 2Z	1	43.317
6	Motor-Lager A-Seite Schulterlager 7304 BEP	1	41.027
7	Toleranzhülse	1	43.330 1
8	Öldichtung 25 x 35 x 7	1	41.024
9	Lüfterrad BG 90	1	43.319
10	Lüfterhaube BG 90	1	43.320
19	Kabel mit Stecker	1	41.092
23	Innensechskantschraube M 6 x 30	4	43.037
24	Erdungsschraube kmpl.	1	43.038
25	Schraube M 4 x 12	6	41.489
26	Schelle für Lüfterrad	1	43.454
27	Kunststoffschraube 5,0 x 25	6	41.414 1
28	Kuststoffschraube 3,5 x 20	2	43.415
29	Lüsterklemme 5-pol.	1	43.326 1
31	Schaltkasten Unterteil	1	46.012
32	Schaltkasten Deckel	1	46.013
33	Schalter 14,5 A Amazonas	1	41.111 6
34	Klemmrahmen mit Schalterabdichtung	1	43.453
36	Blechschraube 3,5 x 16	2	44.161
37	PG 16-Verschraubung	1	41.419 1
38	Dichtung für Schaltkastendeckel	1	42.525
39	Gegenmutter für PG9-Verschraubung	2	41.087 1
40	Gegenmutter für PG16-Verschraubung	1	44.119
41	PG 9 - Verschraubung	2	43.034
42	Kondensator 70µF	1	43.322
50	Gummidichtung für Schalterdistanzstück	1	41.111 3
51	Unterteil für Schalterdistanzstück	1	41.111 1
52	Runddichtung für Schalterdistanzstück	1	41.111 5
53	Oberteil für Schalterdistanzstück	1	41.111 2
54	Flachdichtung für Schalterdistanzstück	1	41.111 4
	Switch box compl. items 22 - 54		**46.585**
	Motor compl. without switch items 1 - 22		**46.586**

Pump motor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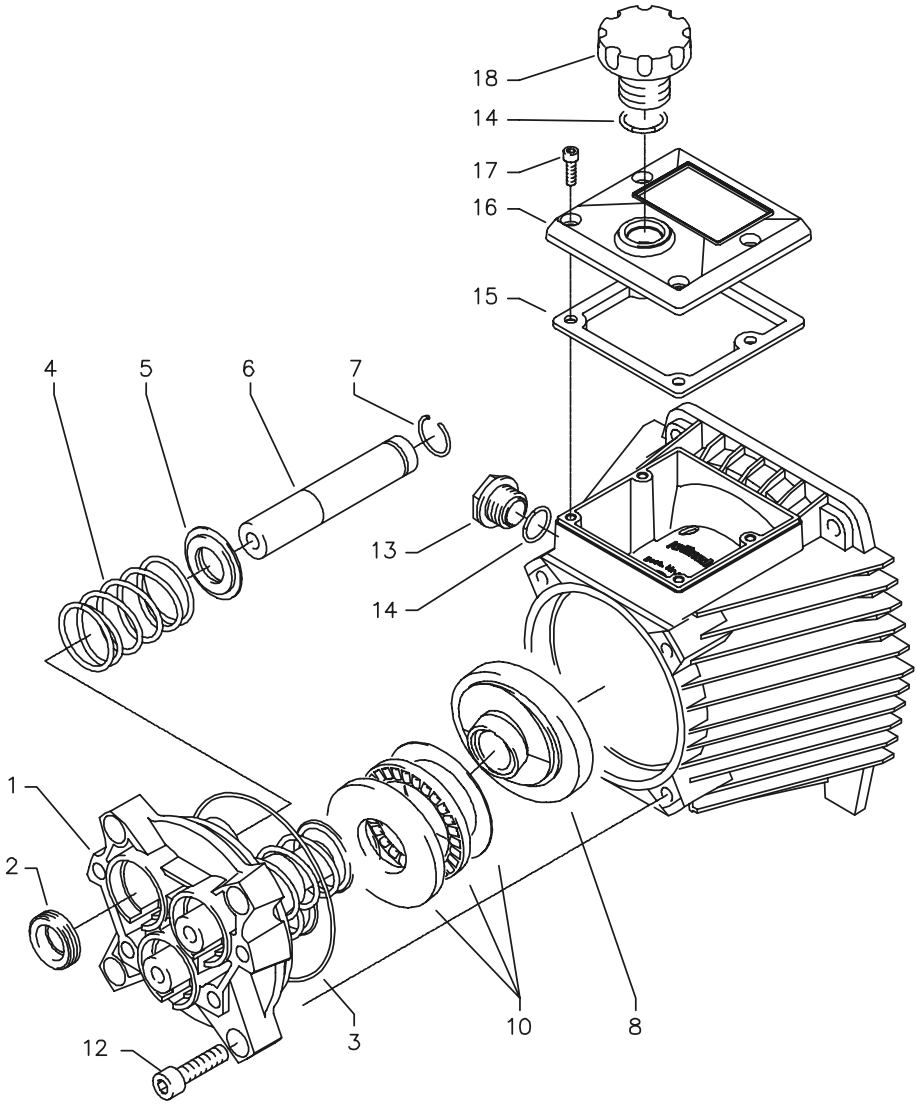
Spare parts list KRÄNZLE quadro 12/150 TST
Pump motor

No	Description	Qty.	Ord.-No
1	Ölgehäuse für AP	1	46.530 1
2	Motorgehäuse mit Stator Drehstrom	1	46.529
3	Rotor mit Motorwelle Drehstrom	1	43.316
4	Paßfeder 6 x 6 x 20	1	41.483 1
5	Motor-Lager B-Seite 6205 - 2Z	1	43.317
6	Motor-Lager A-Seite Schulterlager 7304 BEP	1	41.027
7	Toleranzhülse	1	43.330 1
8	Öldichtung 25 x 35 x 7	1	41.024
9	Lüfterrad BG 90	1	43.319
10	Lüfterhaube BG 90	1	43.320
19	Kabel mit Stecker Drehstrom	1	44.036
22	Kunststoffschraube 4,0 x 16	2	43.417
23	Innensechskantschraube M 6 x 30	4	43.037
24	Erdungsschraube kmpl.	1	43.038
25	Schraube M 4 x 12	6	41.489
26	Schelle für Lüfterrad	1	43.454
27	Kunststoffschraube 5,0 x 25	6	41.414 1
28	Kuststoffschraube 3,5 x 20	2	43.415
29	Lüsterklemme 5-pol.	1	43.326 1
30	Schütz 100-C12KN10 3x400V 50/60 Hz	1	46.005 1
31	Schaltkasten Unterteil	1	46.012
32	Schaltkasten Deckel	1	46.013
33	Schalter 14,5 A Amazonas	1	41.111 6
34	Klemmrahmen mit Schalterabdichtung	1	43.453
36	Blechschraube 3,5 x 16	2	44.161
37	PG 16-Verschraubung	1	41.419 1
38	Dichtung für Schaltkastendeckel	1	42.525
39	Gegenmutter für PG9-Verschraubung	2	41.087 1
40	Gegenmutter für PG16-Verschraubung	1	44.119
41	PG 9 - Verschraubung	2	43.034
42	Überstromauslöser 3-polig 8,5A	1	46.040
50	Gummidichtung für Schalterdistanzstück	1	41.111 3
51	Unterteil für Schalterdistanzstück	1	41.111 1
52	Runddichtung für Schalterdistanzstück	1	41.111 5
53	Oberteil für Schalterdistanzstück	1	41.111 2
54	Flachdichtung für Schalterdistanzstück	1	41.111 4

Switch box compl. items 22 - 54 **46.584**
Motor compl. without switch items 1 - 22 **46.587**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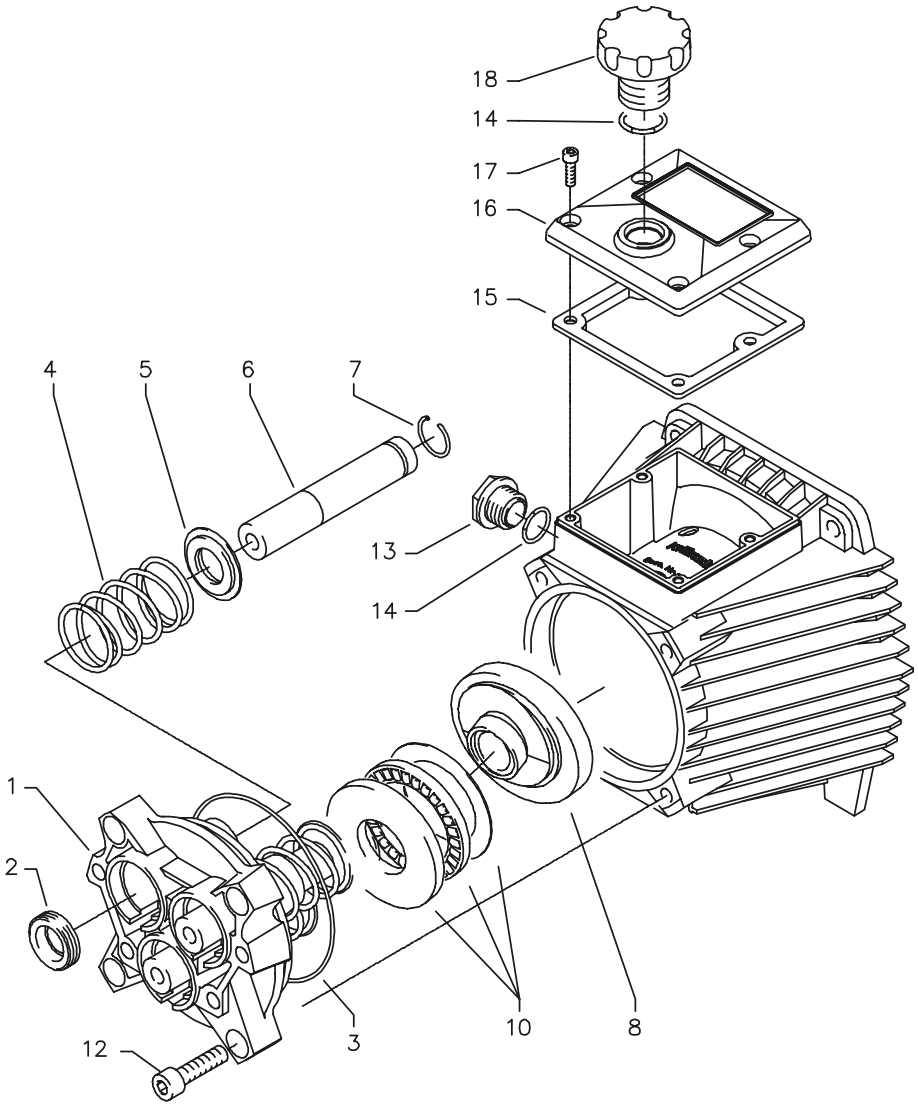
Spare parts list KRÄNZLE 9/170 TS T
Pump with plunger, diameter 15 mm

No	Description	Qty.	Ord.-No
1	Gehäuseplatte für 15 mm Plunger	1	42.906
2	Öldichtung 15 x 24 x 7	3	42.907
3	O-Ring Viton 88 x 2	1	41.021 1
4	Plungerfeder	3	41.033
5	Federdruckscheibe 15 mm	3	42.909
6	Plunger 15 mm	3	42.908
7	Sprengring 15 mm	3	42.910
8	Taumelscheibe 14,5°	1	46.542-14,5
	bitte Taumelwinkel mit angeben		
10	Axial-Rollenlager 3-teilig	1	46.543
12	Innensechskantschraube M 8 x 30	4	41.036 1
13	Ölschauglas	1	42.018 1
14	O-Ring 14 x 2	2	43.445
15	Dichtung für Deckel	1	46.531
16	Deckel für Ölgehäuse	1	46.532
17	Schraube M5x12	4	41.019 4
18	Ölverschlussschraube	1	46.514
	AP pump complete with 15mm plungers for quadro 9/170 consisting of: items 1-18		46.588-14,5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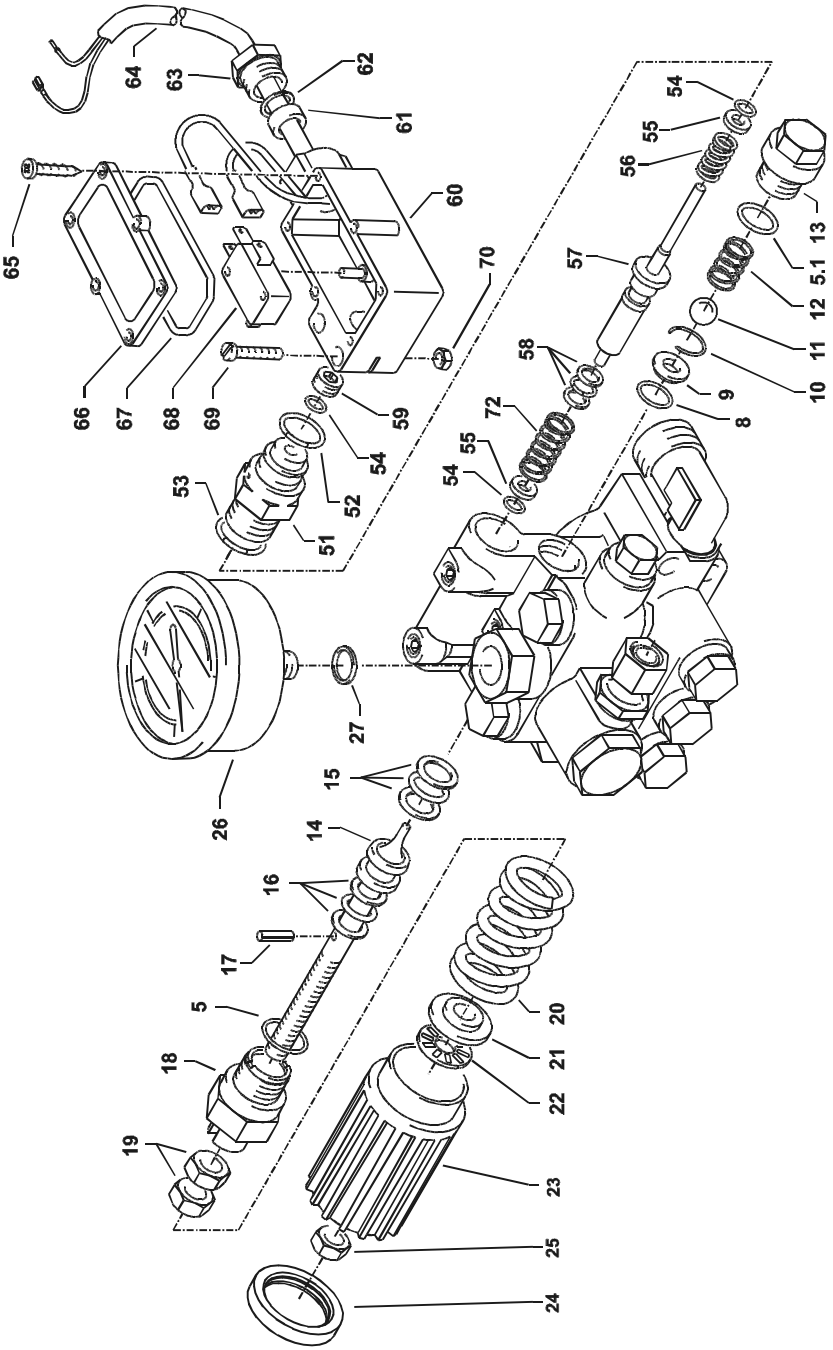
Ersatzteilliste KRÄNZLE 11/140 - 12/150 TS T
Pump with plunger, diameter 18 mm

No	Description	Qty.	Ord.-No
1	Gehäuseplatte für 18 mm Plunger	1	41.020 2
2	Öldichtung 18 x 28 x 7	3	41.031
3	O-Ring Viton 88 x 2	1	41.021 1
4	Plungerfeder	3	41.033
5	Federdruckscheibe 18 mm	3	41.034
6	Plunger 18 mm	3	41.032 1
7	Sprengring 18 mm	3	41.035
8	Taumelscheibe 12,5° (quadro 11/140 TST)	1	46.542-12,5
8.1	Taumelscheibe 13,75° (quadro 12/150 TST) bitte Taumelwinkel mit angeben	1	46.542-13,75
10	Axial-Rollenlager 3-teilig	1	46.543
12	Innensechskantschraube M 8 x 30	4	41.036 1
13	Ölschauglas	1	42.018 1
14	O-Ring 14 x 2	3	43.445
15	Dichtung für Deckel	1	46.531
16	Deckel für Ölgehäuse	1	46.532
17	Schraube M5x12	4	41.019 4
18	Ölverschlussschraube	1	46.514
	AP pump complete with 18mm plungers for quadro 11/140 consisting of: items 1-18		46.589-12,5
	AP pump complete with 18mm plungers for quadro 12/150 consisting of: items 1-18		46.589-13,5

Unloader valve and pressure switch



Spare parts list KRÄNZLE quadro 9/170 - 12/150 TST

Unloader valve and pressure switch

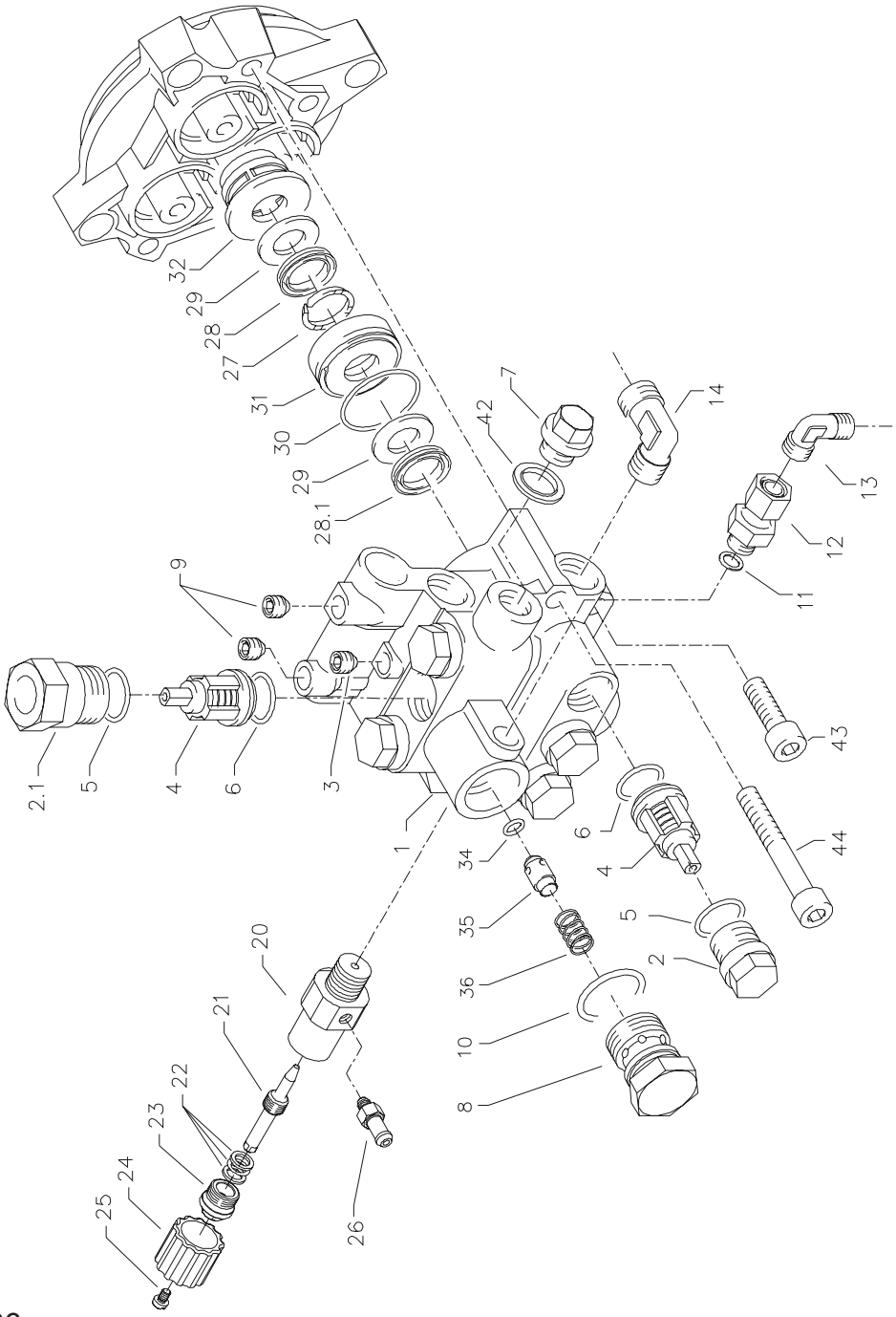
No	Description	Qty.	Ord.-No
5	O-Ring 16 x 2	1	13.150
5.1	O-Ring 13,94 x 2,62	1	42.167
8	O-Ring	1	12.256
9	Edelstahlsitz	1	14.118
10	Sicherungsring	1	13.147
11	Edelstahlkugel 8,5 mm	1	13.148
12	Edelstahlfeder	1	14.119
13	Verschlussschraube	1	14.113
14	Steuerkolben	1	14.134
15	Parbaks 16 mm	1	13.159
16	Parbaks 8 mm	1	14.123
17	Spannstift	1	14.148
18	Kolbenführung spezial	1	42.105
19	Mutter M 8 x 1	2	14.144
20	Ventilfeder schwarz	1	14.125
21	Federdruckscheibe	1	14.126
22	Nadellager	1	14.146
23	Handrad	1	40.457
24	Kappe Handrad	1	40.458
25	Elastic-Stop-Mutter	1	14.152
26	Manometer 0-250 bar	1	15.039
27	Aluminium - Dichtring	2	13.275

No	Description	Qty.	Ord.-No
51	Führungsteil Steuerstößel	1	15.009 1
52	O-Ring 12,3 x 2,4	1	15.017
53	O-Ring 14 x 2	1	43.445
54	O-Ring 3,3 x 2,4	3	12.136
55	Stützscheibe	2	15.015 1
56	Edelstahlfeder	1	15.016
57	Steuerstößel lang	1	15.010 2
58	Parbaks	1	15.013
59	Stopfen M10x1 (durchgebohrt)	1	13.385 1
60	Gehäuse Elektroschalter	1	15.007
61	Gummimanschette PG 9	1	15.020
62	Scheibe PG 9	1	15.021
63	Verschraubung PG 9	1	15.022
64	Kabel 2 x 1,5 mm² für 9/170 - 11/140 TS	1	46.515
64.1	Kabel 2 x 1,0 mm² für quadro 12/150 TS	1	46.516
65	Blechschraube 2,8 x 16	6	15.024
66	Deckel Elektroschalter	1	15.008
67	O-Ring 44 x 2,5	1	15.023
68	Mikroschalter	1	15.018
69	Zylinderschraube M 4 x 20	2	15.025
70	Sechskant-Mutter M 4	2	15.026
72	Druckfeder 1 x 8,6 x 30	1	40.520

Rep.-kit Pressure switch mech. **15.009 3**
consisting of: 1x items 51; 1x items 52;
1x items 53; 3x items 54; 1x items 55; 1x items 56;
1x items 57; 1x items 58; 1x items 59

Guide piston compl. w. hand wheel 40.490
items 5, 14-25

Valve housing



Spare parts list KRÄNZLE 9/170 TS T
Valve housing APG for plunger diameter 15 mm

No	Description	Qty.	Ord.-No
1	Ventilgehäuse	1	42.163 3
2	Ventilstopfen	5	41.714
2.1	Ventilstopfen mit R1/4" IG	1	42.026 1
3	Dichtstopfen M 10 x 1	1	43.043
4	Ventile (grün) für APG-Pumpe	6	41.715 1
5	O-Ring 16 x 2	6	13.150
6	O-Ring 15 x 2	6	41.716
7	Dichtstopfen R1/4" mit Bund	1	42.103
8	Ausgangsteil	1	42.161
9	Dichtstopfen M 8 x 1	2	13.158
10	O-Ring 18 x 2	1	43.446
11	Aluminium - Dichtring	3	13.275
12	Ausgangsteil Pumpe R1/4" x 12	1	46.039
13	Ermeto-Winkel 12 L x 12 L	1	42.630
14	Ermetowinkel R3/8“ x 12L	1	44.092
20	Grundteil Eckventil	1	46.600
21	Ventilnadel	1	46.601
22	Parbaks 6 mm	1	15.013
23	Führungsteil	1	46.602
24	Handrad	1	46.603
25	Schraube M4x8 Messing	1	46.604
26	Saugzapfen M6	1	46.605
27	Stützring rot 15 mm	3	42.913
28	Manschette weich 15mm	3	42:902
28.1	Manschette Gewebe 15mm	3	42:9021
29	Backring 15 x 24	6	42.903
30	O-Ring 28,3 x 1,78	3	40.026

No	Description	Qty.	Ord.-No
31	Leckagering 15 mm	3	42.905
32	Zwischenring 15 mm	3	42.904 1
34	O-Ring 6 x3	1	14.121
35	Rückschlagkörper	1	14.122
36	Rückschlagfeder	1	14.120
42	Kupferring	1	42.104
43	Innensechskantschraube M 8 x 30	2	41.036 1
44	Innensechskantschraube M 8 x 55	2	41.017 1
45	Sicherungsring	4	40.054

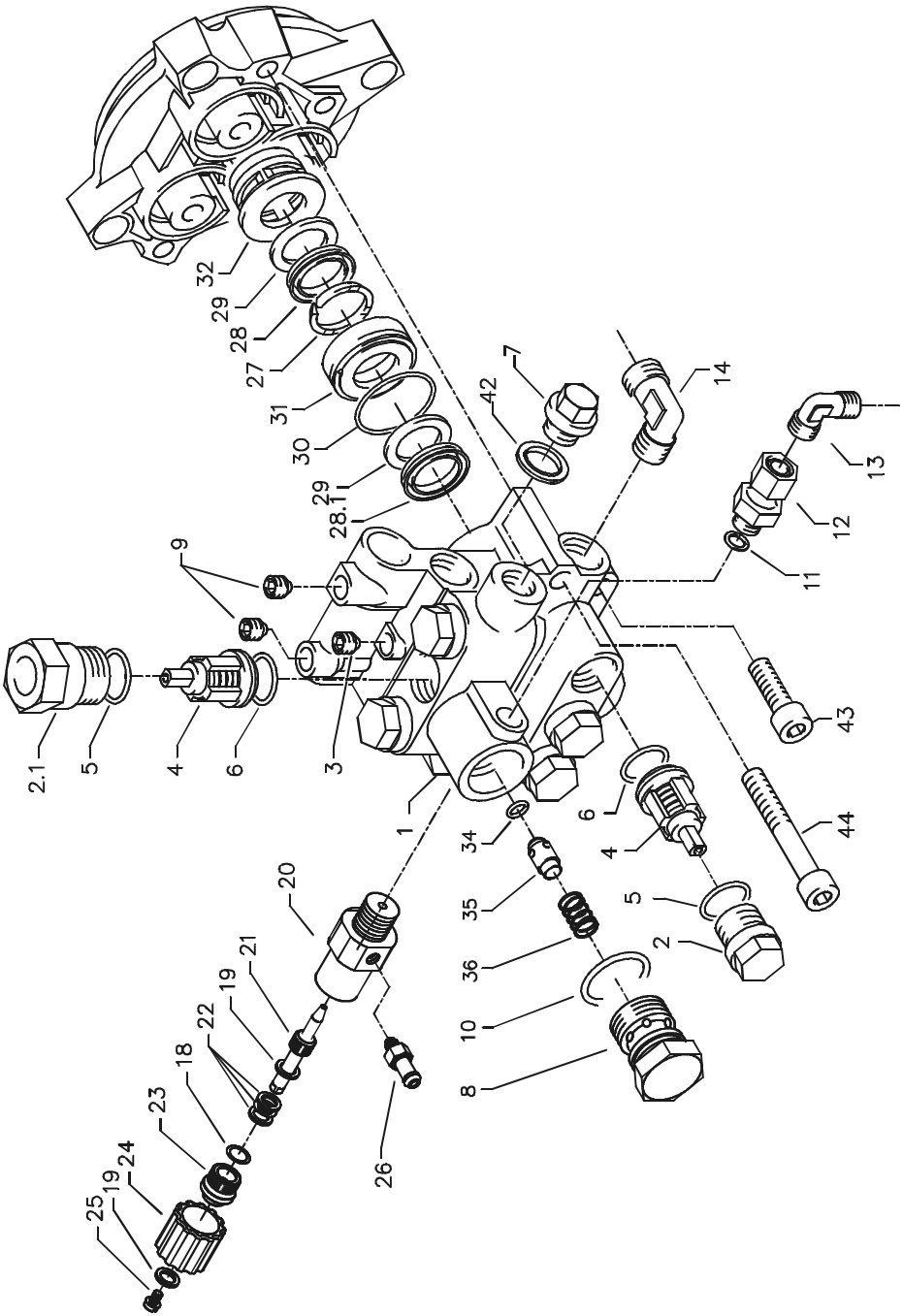
Rep.-kit valves for APG-pump 41.748 1
consisting of: 6x items 4; 6x tems 5; 6x tems 6

Repair kit for sleeves 15 mm 42.911
consisting of 3x items 27; 3x items 28;
3x items 28.1; 6x tems 29; 3x items 30

Valve housing compl. 15 mm 46.590
with integr. ULH and pressure switch

Chemical valve compl. 46.610
consisting of: 1x items 20-26

Valve housing



Spare parts list **KRÄNZLE 11/140 - 12/150 TS T**
Valve housing APG for plunger diameter 18 mm

No	Description	Qty.	Ord.-No
1	Ventilgehäuse	1	42.160 3
2	Ventilstopfen	5	41.714
2.1	Ventilstopfen mit R1/4" IG	1	42.026 1
3	Dichtstopfen M 10 x 1	1	43.043
4	Ventile (grün) für APG-Pumpe	6	41.715 1
5	O-Ring 16 x 2	6	13.150
6	O-Ring 15 x 2	6	41.716
7	Dichtstopfen R1/4" mit Bund	1	42.103
8	Ausgangsteil	1	42.161
9	Dichtstopfen M 8 x 1	2	13.158
10	O-Ring 18 x 2	1	43.446
11	Aluminium - Dichtring	3	13.275
12	Ausgangsteil Pumpe R1/4" x 12	1	46.039
13	Ermeto-Winkel 12 L x 12 L	1	42.630
14	Ermetowinkel R3/8“ x 12L	1	44.092
18	O-Ring 11 x 1,5	1	12.256
19	Scheibe 6 mm	2	43.045
20	Grundteil Eckventil	1	46.600
21	Ventilnadel	1	46.601
22	Parbaks 6 mm	1	14.123 2
23	Führungsteil	1	46.602
24	Handrad	1	46.603
25	Schraube M4x8 Messing	1	46.604
26	Saugzapfen M6	1	46.605
27	Druckring	3	41.018
28	Manschette 18 x 26 x 4/2	3	41.013
28.1	Gewebemanschette 18 x 26 x 4/2	3	41.013 1
29	Backring 18 x 26	6	41.014
30	O-Ring 28,3 x 1,78	3	40.026
31	Leckagering 18 mm	3	41.066

No	Description	Qty.	Ord.-No
31	Leckagering 15 mm	3	42.905
32	Zwischenring 15 mm	3	42.904 1
34	O-Ring 6 x 3	1	14.121
35	Rückschlagkörper	1	14.122
36	Rückschlagfeder	1	14.120
42	Kupferring	1	42.104
43	Innensechskantschraube M 8 x 30	2	41.036 1
44	Innensechskantschraube M 8 x 55	2	41.017 1
45	Sicherungsring	4	40.054

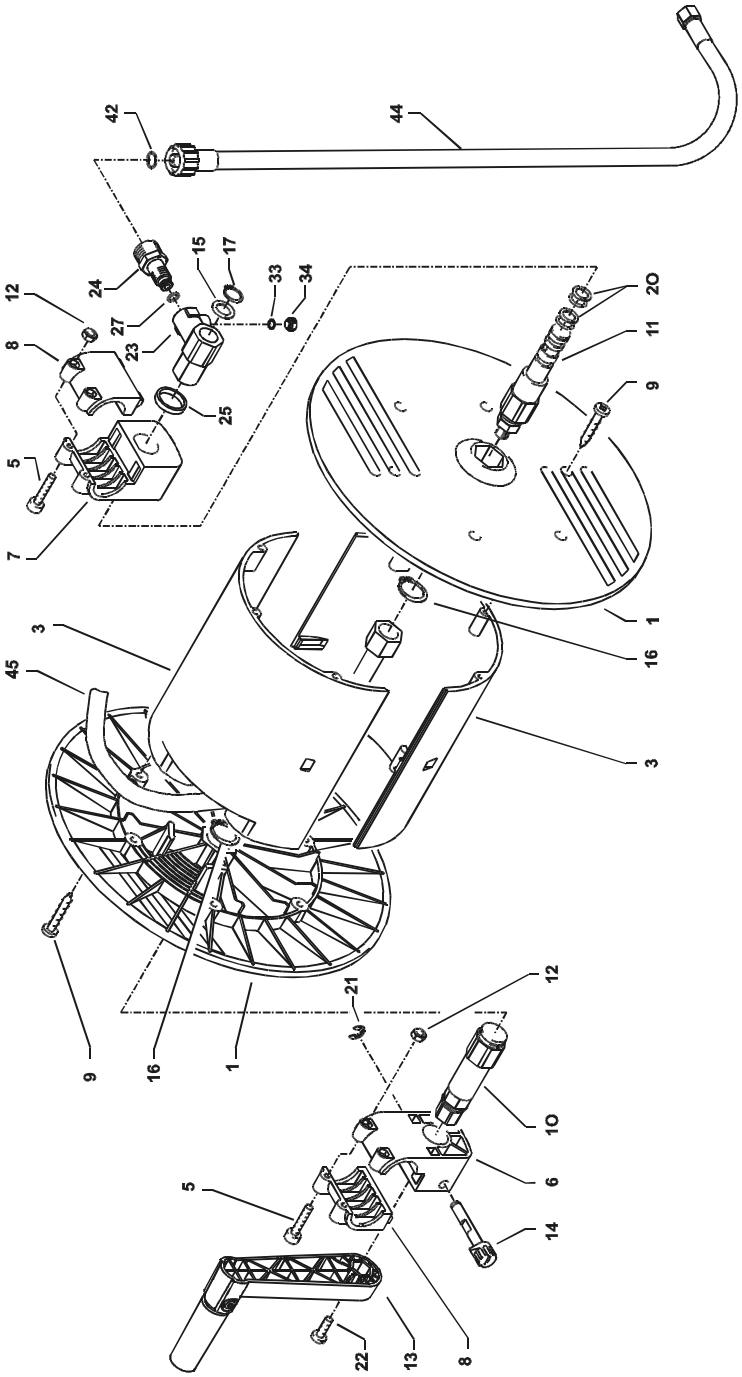
Rep.-Satz Ventile für APG-Pmpe **41.748 1**
bestehend aus je 6x Pos. 4; 6x Pos. 5; 6x Pos. 6

Rep.-Satz Manschetten 18 mm **41.049 1**
bestehend aus je 3x Pos. 27; 3x Pos. 28;
3x Pos. 28.1; 6x Pos. 29; 3x Pos. 30

Ventilgehäuse kpl. mit integr. ULH und Druckschalter **46.591**

Chemieventil kpl. 46.610
bestehend aus je 1x Pos. 18-26

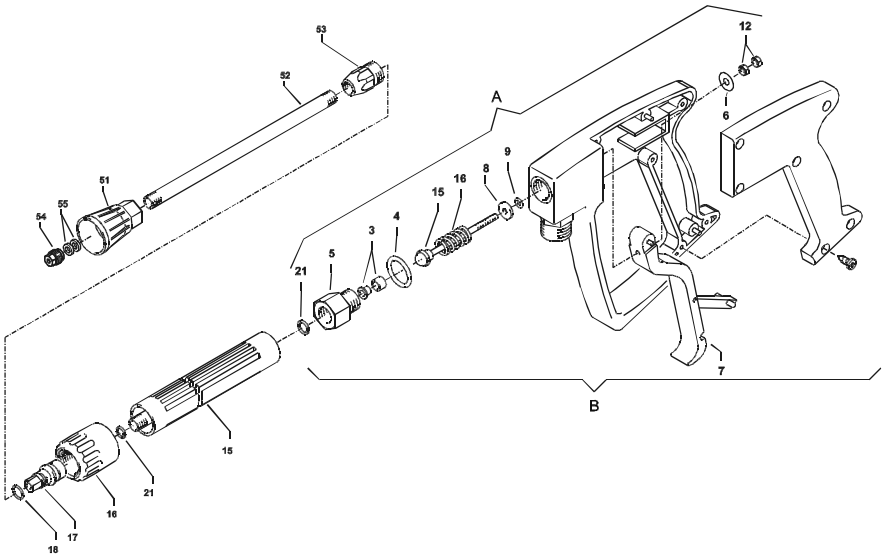
Hose drum



Spare parts list KRÄNZLE quadro 9/170 - 11/140 - 12/150 TST
Hose drum

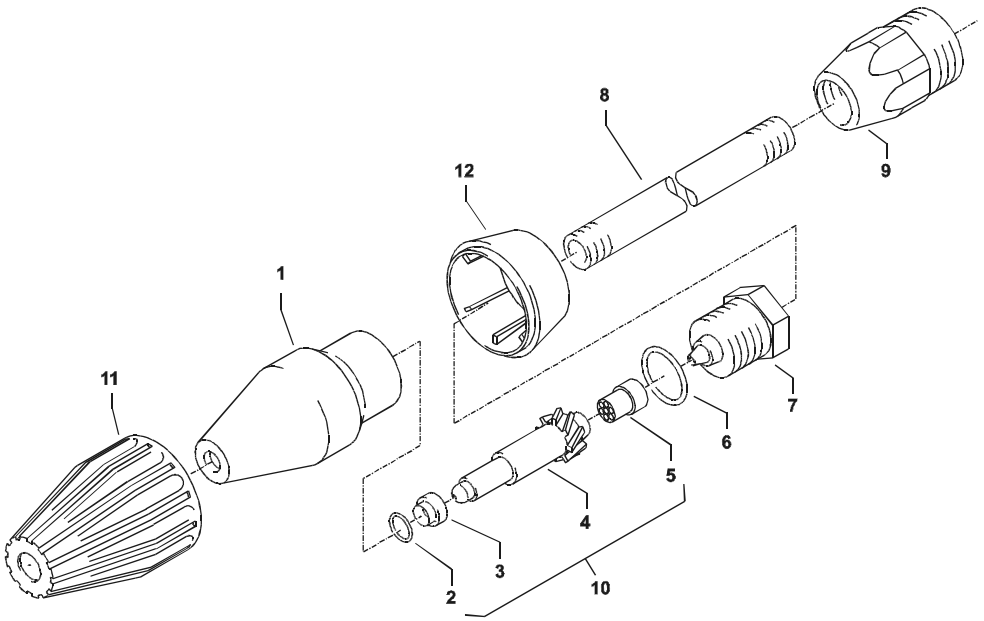
No	Description	Qty.	Ord.-No
1	Seitenschale	2	46.201
3	Trommelteil	2	46.202
5	Innensechskantschraube M 4 x 25	4	40.313
6	Lagerklotz mit Bremse	1	40.306 1
7	Lagerklotz links	1	40.305 1
8	Klemmstück	2	40.307 1
9	Kunststoffschraube 5,0 x 20	12	43.018
10	Antriebswelle	1	46.204
11	Welle Wasserführung	1	46.203 1
12	Elastic-Stop-Mutter M 4	4	40.111
13	Handkurbel	1	40.320 0
14	Verriegelungsbolzen	1	40.312
15	Scheibe MS 16 x 24 x 2	1	40.181
16	Wellensicherungsring 22 mm	2	40.117
17	Wellensicherungsring 16 mm	1	40.182
20	Parbaks 16 mm	2	13.159
21	Sicherungsscheibe 6 DIN6799	1	40.315
22	Schraube M 5 x 10	1	43.021

No	Description	Qty.	Ord.-No
23	Drehgelenk	1	40.167
24	Anschlussteil	1	40.308 1
25	Distanzring	1	40.316
27	O-Ring 6,86 x 1,78	1	40.585
33	O-Ring 6 x 1,5	1	13.386
34	Stopfen M 10 x 1	1	13.385
42	O-Ring 13 x 2,6	2	13.272
44	Verbindungsschlauch Schlauchtrommel	1	46.537
45	Hochdruckschlauch 15 m NW6	1	40.170
	Hose drum compl. without hose consisting of items 1 - 34		46.581



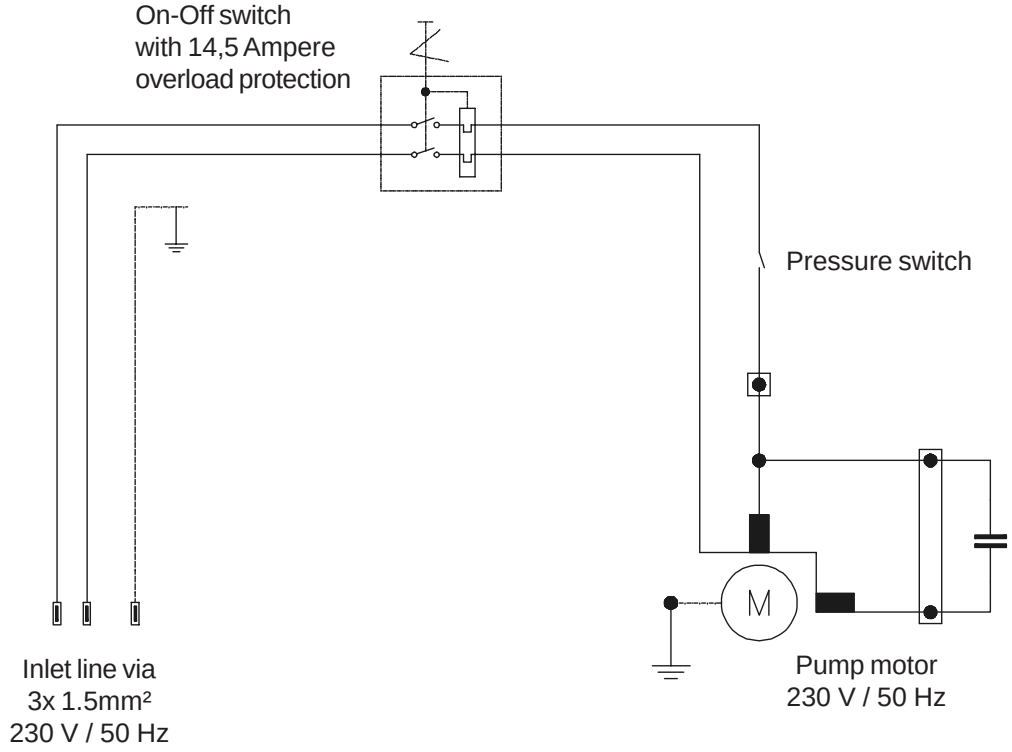
No	Description	Qty.	Ord.-No
5	Rohranschlußteil R1/4" incl. Pos. 3, 4, 21	1	12.125
6	Scheibe 5,3 DIN9021	1	50.152
7	Abzug-Hebel kpl.	1	12.144 1
15	Rohr kunststoffumspritzt bds. R 1/4" AG	1	15.004 2
16	Überwurfmutter ST 30 M22 x 1,5 IG	1	13.276 1
17	Außen-Sechskant-Nippel R 1/4" IG	1	13.277 1
18	O-Ring 9,3 x 2,4	1	13.273
28	Aluminium Dichtring	6	13.275
51	Düsenschutz weiß (bei quadro 599)	1	26.002 2
51.1	Düsenschutz gelb (bei quadro 799)	1	26.002 3
52	Rohr 600 mm; bds. R1/4"	1	12.385 2
53	ST 30 Nippel M 22 x 1,5 / R1/4" m. ISK	1	13.370
54	Flachstrahldüse 2003 (bei quadro 9/170)	1	M20030
54.1	Flachstrahldüse 20045 (bei quadro 11/140; quadro 12/150)	1	M20045
55	Aluminium-Dichtring 8,3x11,3x2	2	13.275 1
A	Rep.-Kit Pos: 3, 4, 5, 8, 9, 12, 15, 16; 21		12.158
B	Griff komplett		12.164

Midi-Pistole mit Verlängerung	12.160
Lanze kpl. mit HD-Düse M20030	12.392 5-M20030
Lanze kpl. mit HD-Düse M20045	12.392 5-M20045

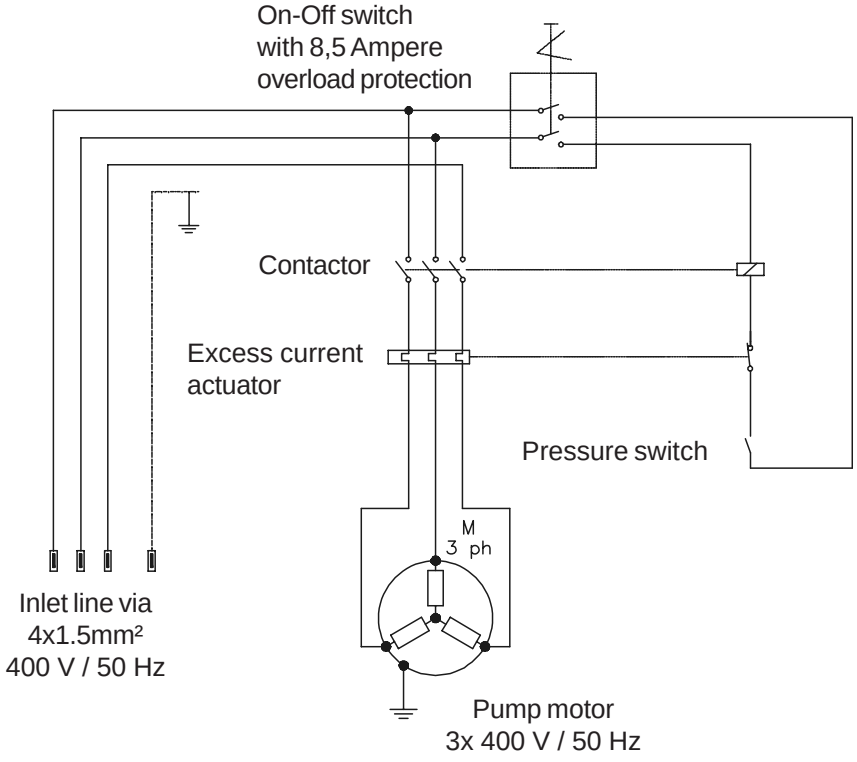


Spare parts list KRÄNZLE quadro 9/170 - 12/150 TST
Dirtkiller

No	Description	Qty.	Ord.-No
1	Sprühkörper	1	41.520
2	O-Ring 6,88 x 1,68	1	41.521
3	Düsensitz	1	41.522
4	Nozzle 03 (quadro 9/170)	1	41.523 4
4.1	Nozzle 045 (quadro 11/140, 12/150)	1	41.523
5	Stabilisator	1	41.524
6	O-Ring	1	40.016 1
7	Sprühstopfen M12x1 IG	1	41.526
8	Rohr 400 mm lang; bds. M12x1	1	15.002
9	ST 30 Nippel M 22 x 1,5 / R1/4" m. ISK	1	13.363
11	Front cap for Dirtkiller	1	41.528 1
12	Rear cap for Dirtkiller 03	1	41.542 1
12.1	Rear cap for Dirtkiller 045	1	41.540 2
	Rep.-kit Dirtkiller 03		41.096 1
	Rep.-kit Dirtkiller 045		41.097
	consisting of: 1x 2; 3; 4; 5		
	Dirtkiller 03 with lance 400mm		41.073 8
	Dirtkiller 045 with lance 400mm		41.072 5



Wiring diagram for KRÄNZLE quadro 9/170 + 11/140 TST 230 Volt / 50 Hz



Wiring diagram for KRÄNZLE quadro 12/150 TST 400 Volt / 50 Hz

Inspections

The machine must be inspected according to the “Guidelines for Liquid Spray Devices” at least once every 12 months by a qualified person, to ensure that continued safe operation is guarateed.
The results of the inspection are to be recorded in writing. (see pages 48-49)

Accident prevention

The machine is designed for accidents to be impossible if used correctly.
The operator is to be notified of the risk of injury from hot machine parts and the high pressure water jet. The “Guidelines for Liquid Spray Devices” must be complied with. (see pages 16 - 17).

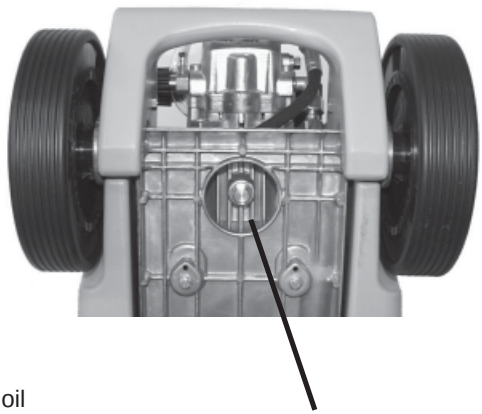
Check the oil level at the oil dip stick prior to each use (see also page 11). (Ensure horizontal position!)

Oil change:

The first oil change should be carried out after approximately 50 operating hours, then every year or after 1000 operating hours. If the oil turns grey or white, you must change the oil of your high pressure pump in any case.
Place the device over a collection resevoir and open the oil discharge screw at the bottom.

Ensure a horizontal position to drain the oil completely. The oil is to be caught in the reservoir and disposed of in an approved manner.

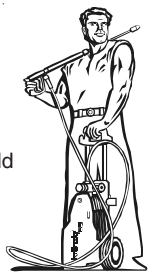
New oil: 0,8 l
Motor oil: Castrol 10 W-60 SAE halfsynthetic oil



Oil discharge screw

High-pressure-cleaners
Hochdruckreiniger
Nettoyeurs À Haute Pression

I. Kränzle GmbH
Elpke 97 . 33605 Bielefeld



EC declaration of conformity

We hereby declare, that the high-pressure models:	**Kränzle quadro 9/170 TST** **Kränzle quadro 11/140 TST** **Kränzle quadro 12/150 TST**
(techn. documentation available from):	**Manfred Bauer, Fa. Josef Kränzle** **Rudolf-Diesel-Str. 20, 89257 Illertissen**
comply with the following guidelines and specifications and their amendments for high-pressure cleaners:	**Machine guideline 89/392/EEC** **Low voltage guideline 73/23 EEC** **Specification for electromagnetic compatibility 89/336 EEC** **Outdoor noise directive 2000/14/EC,** Art. 13, High-pressure water jet machines Appendix 3, part B, chapter 27
Sound power level measured: guaranteed:	**86 dB (A)** **88 dB (A)**
Applied specifications and standards:	**EN 60 335-2-79 / A1:2001** **EN 55 014-1 / A2:2002** **EN 55 014-2 / A1:2001** **EN 61 000-3-2 / A14:2000** **EN 61 000-3-3 / A1:2001**

Bielefeld, den 08.09.05

Droitsch
(Managing Director)

Inspection report for HP cleaners

Professionally used high pressure cleaners must be inspected by an expert every 12 months**!**

Inspection report on annually carried out Labour Safety Inspection (UVV) according to the Guidelines for Liquid Spray Equipment. (This inspection sheet serves as proof for the completion of the retest and must be kept carefully!)

Owner: _____ Type: _____ Built: _____

Address: _____ Serial no.: _____

_____ Rep.-order-no.: _____

Scope of inspection:	ok		repair-ed
	yes	no	
Type plate (on hand)			
Operating manual (on hand)			
Protective covering, -device			
Pressure line (tightness)			
Pressure gauge (function)			
Float valve (tightness)			
Spraying device (marking)			
HP-hose/ connector (damage, marking)			
Safety valve opens at 10% / 20% exceeding of operating pressure			
Power cable (damage)			
Power plug (damage)			
Protective conductor (connected)			
On/Off-switch			
Used chemicals			
Allowed chemicals			

Inspection data:	determ. value	set value
High-pressure nozzle		
Operating pressure .....bar		
Cutting-off pressure.....bar		
Conductor resist. not exceeded / value:		
Insulation		
Leakage current:		
Gun locked		

Inspection result (tick):

◯ The appliance was checked by an expert according to the Guidelines for Liquid Spray Equipment, the defects found have been rectified so that the Labour Safety can be confirmed.

◯ The appliance was checked by an expert according to the Guidelines for Liquid Spray Equipment. The Labour Safety cannot be confirmed unless the defects found are rectified by repair or replacement of the faulty parts.

The next retest according to the Guidelines for Liquid Spray Equipment has to be carried out by:

Month: _____ Year: _____

Place, Date: _____

Signature: _____

Inspection report for HP cleaners

Professionally used high pressure cleaners must be inspected by an expert every 12 months**!**

Inspection report on annually carried out Labour Safety Inspection (UVV) according to the Guidelines for Liquid Spray Equipment. (This inspection sheet serves as proof for the completion of the retest and must be kept carefully!)

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Float valve (tightness)			
Spraying device (marking)			
HP-hose/ connector (damage, marking)			
Safety valve opens at 10% / 20% exceeding of operating pressure			
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Power plug (damage)			
Protective conductor (connected)			
On/Off-switch			
Used chemicals			
Allowed chemicals			

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Operating pressure .....bar		
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Insulation		
Leakage current:		
Gun locked		

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◯ The appliance was checked by an expert according to the Guidelines for Liquid Spray Equipment. The Labour Safety cannot be confirmed unless the defects found are rectified by repair or replacement of the faulty parts.

The next retest according to the Guidelines for Liquid Spray Equipment has to be carried out by:

Month: _____ Year: _____

Place, Date: _____

Signature: _____

Warranty

This warranty covers material and/or workmanship related defects only and does not extend to ordinary wear.

Machine must be operated according to enclosed operating instructions which are part of present warranty conditions.

All products sold directly to private customers are warrantied for a period of 24 months, whereas the warranty period for industrial purchases is limited to 12 months.

In case of any warranty claims, please have your HP cleaner together with accessories and your purchase document ready and contact your nearest dealer or authorized service point which can also be looked up in the internet at www.kraenzle.com .

Warranty is void in case of attempts to modify any of the safety devices or in the event of exceeding temperature or rpm limits - this also applies to undervoltage, low water and/or polluted water. Gauge, nozzle, valves, sealing gaskets, high pressure hose and spray equipment are considered wear parts and do not fall under this warranty.

Notes

Order No.: 30.602 1