

High pressure cleaner

Operating instructions
Read and confirm before use

Description

Dear Customer

We would like to congratulate you on your new high pressure cleaner 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.

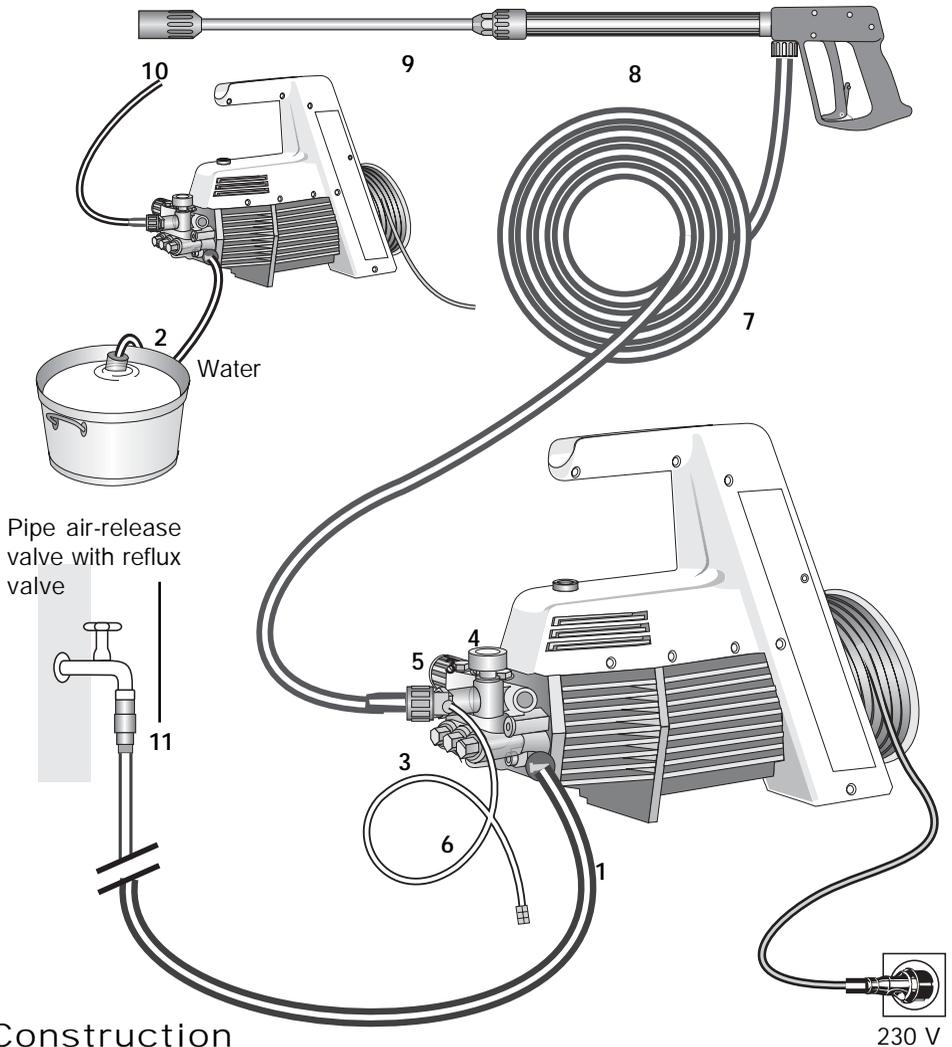
The equipment will assist you professionally in all cleaning tasks, e.g.:

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

Technical specifications	Kränzle 105
operating pressure	105 bar
permissible overpressure	120 bar
water output	10 l/min at 2800 rpm
hot water input	max. 60 °C
electrical ratings	230 V ; 50 Hz ; 10 A
connected wattage	input: 2,3 kW output: 1,65 kW
fuse protection	16 A (slow fuse)
weight	17,5 kg packing excluded 20 kg packing included
dimensions	length 550 mm width 230 mm height 380 mm
sound level accord. to DIN 45 635	87 dB 88 dB
with dirtkiller	approx. 19 Nm
recoil at lance torque	20 Nm (assumed length at lance: 0,9 m)

Permissible tolerance for figures $\pm 5\%$ in accordance with VDMA uniform sheet 24411

Description



Construction

The Kränzle 105 high pressure cleaner is a portable machine. The design can be seen from the diagram.

Item

- | | |
|--|---|
| 1. Water inlet connection with filter | 6. High pressure hose for washing agents |
| 2. Suction hose with filter (special accessory) | 7. High pressure hose |
| 3. High pressure pump | 8. Spray gun |
| 4. Pressure gauge | 9. Interchangeable lance |
| 5. Overflow safety valve | 10. Regulator nozzle |
| | 11. Tube ventilator with check valve |

Description

Water and Cleaning System

Water can be connected at mains pressure to the high pressure pump or it can be sucked directly from a storage tank. The water is then forced under pressure by the high pressure pump to the lance.

The high pressure jet is formed by the nozzle at the end of the lance.



Environmental, refuse disposal and water protection regulations must be observed !

Lance with trigger gun

The machine can 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.

When the trigger is released, the trigger gun closes and any further spraying of liquid from the lance is stopped.

The increase in pressure when the trigger gun is closed causes the unloader valve - safety valve closes and the pump resumes pressure spraying from the lance.



The trigger 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.

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 of the unloader valve is sealed with a spray coating.

The operating pressure and spray rate can be steplessly adjusted by adjusting the turn handle.



Replacements, repairs, new adjustments and sealing should only be performed by qualified persons !

Description



Motor protection switch

The motor is protected from overload by a motor protection switch, which automatically cuts out the motor in the event of overload.

However, should the switch trip frequently, the cause of the malfunction should be located and rectified (see page 6).



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

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.

CAUTION !



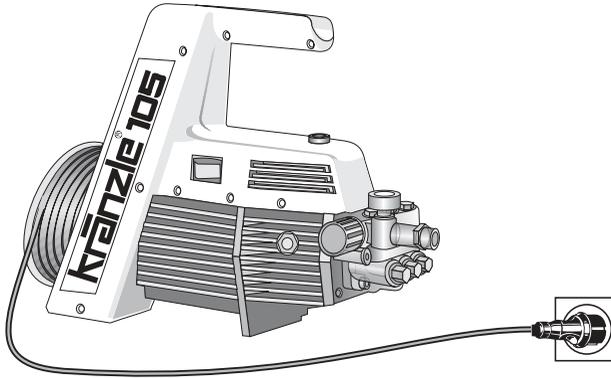
Never use liquid containing solvents such as paint thinners, petrol, oil or similar liquid matter.
Pay attention to the instructions of the manufacturer of the cleaning agents. The seals in the machine are not resistant to solvents. The spray of solvents is inflammable, explosive and poisonous.

CAUTION !



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

Description



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 **30 mA** residual current operated device. The socket must be protected with a **16 A slow fuse** on the mains inside.*



KRÄNZLE 105 - 230 Volt 50 Hz

When using an extension cable, this must have an earthed lead which is properly connected to the socket. The conductors in the extension cable must have a minimum cross section of $1,5 \text{ mm}^2$. Plug connections must be of a spray proof design, and may not be located on a wet floor.

(With extension cables of more than 10 m the conductor must have cross section of at least $2,5 \text{ mm}^2$.)

CAUTION !

The use of extension cables which are too long may lead to malfunctions and start-up difficulty.

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

Description



Brief operating instructions
are fitted to the machine (numbers 1 - 6)

1. Connect the high pressure hose with spray gun and machine.
2. Connect the suitable water supply.
3. Flush the air from the pump (open and close the spray gun several times).
4. Make the electrical connection (230 Volt AC).
5. Switch on the machine while the spray gun is open and commence cleaning.
6. After completing the work, completely empty the pump. (switch the motor on for approx. 20 sec. without the suction and pressure hoses).
 - Only use clean water ! Protect from frost !

CAUTION !

Please pay attention to the regulations of your waterworks company.

In accordance with DIN 1988, the machine may not be directly connected to the public drinking water supply lines.

A brief connection however is permissible according to DVGW (German Association for Gas and Water Affairs) if a tube ventilator with reflux valve (Kränzle Order-No. 41.016 4) is built into the water supply.

Also indirect connection to the public drinking water supply lines is permissible by way of free emission in accordance with DIN 1988, part 4; e.g. by using a reservoir with a float valve.

Direct connection to a non-drinking water supply line is permissible.

High pressure hose and spray 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 appropriate regulations.

If replacement parts are required, only such parts that are authorized by the manufacturer and which bear the markings required by appropriate regulations may be used. The high pressure hose and spray device must be connected in a pressure-tight manner. The high pressure hose may not be driven over, pulled excessively, or twisted. The hose may under no circumstances be pulled over sharp edges, since otherwise the guarantee is automatically void.

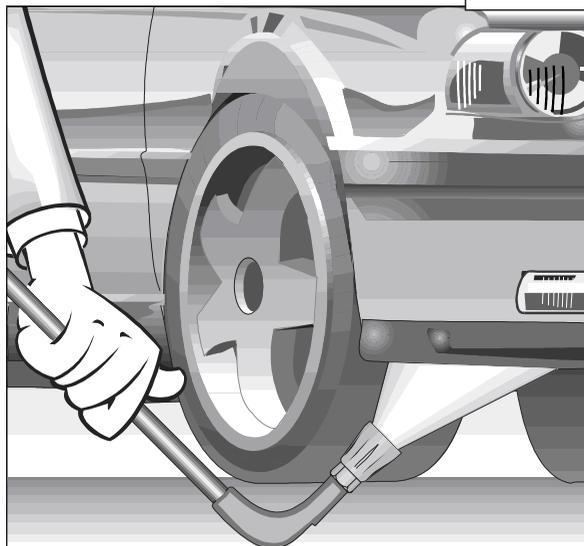
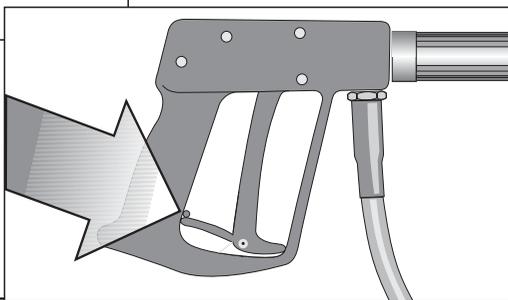


Safety notes



The recoil is less than 20 Nm.

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



Always aim the underbody lance. Note, when using an angled underbody lance, like for example lance No. 41.075, that there is a certain amount of torque (twisting motion) in the recoil. (See also notice on page 2).

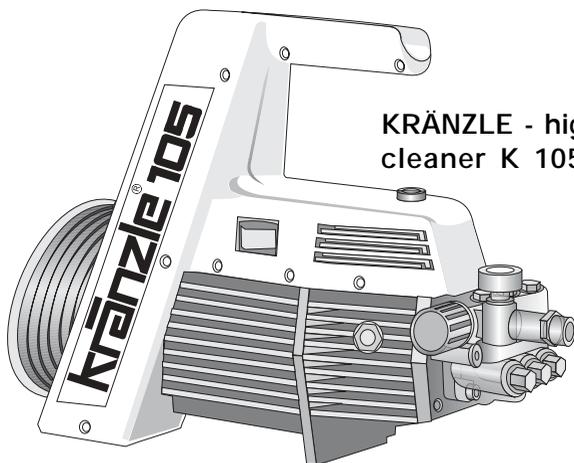
This is what you've purchased:



Spray lance with regulator and high pressure nozzle, flat spray 25045



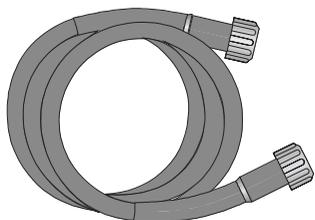
Spray gun with insulated pistol grip and screw connection



KRÄNZLE - high pressure cleaner K 105

Operating instructions

High pressure hose, 8 m



Washing powder specimen

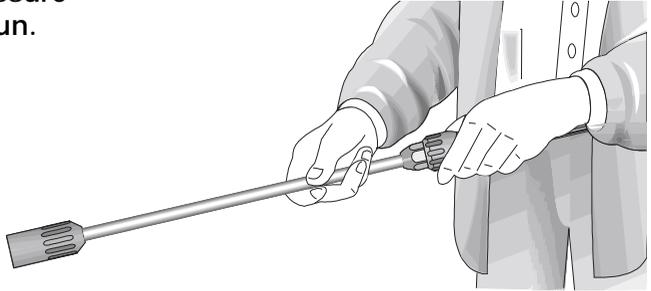


Water inlet components
(filter already installed)



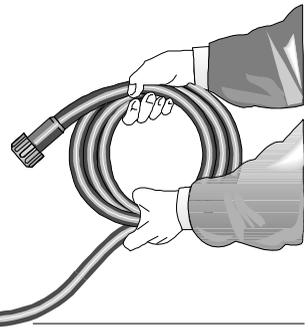
Preparation for use

Connect the high pressure lance to the spray gun.

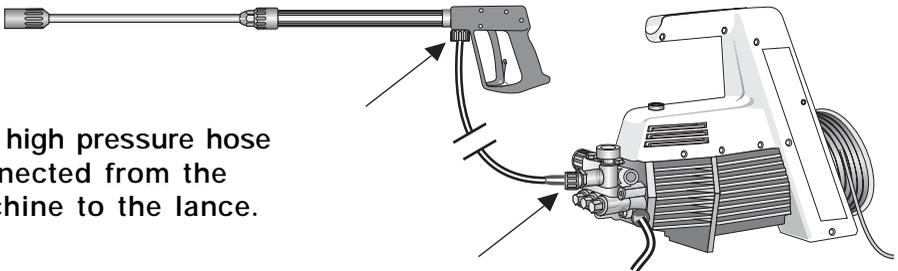


Unwind the high pressure hose without leaving kinks or "nooses" and connect it to the spray gun and pump.

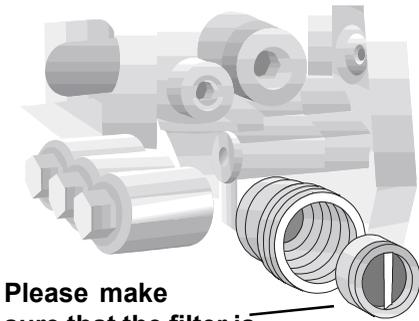
When using extension hoses, use max. 20 m high pressure hose, or 2x 8 m with hose connectors.



The high pressure hose connected from the machine to the lance.



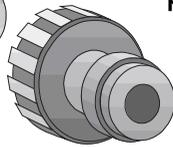
Preparation for use



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

The machine can be connected to a pressurised water line with cold or 60 °C hot water. Ensure that the water supply is clean when sucking from external sources. The hose cross section must be at least 1/2" = 12.7 mm (free passage).

Filter 1 must always be clean.

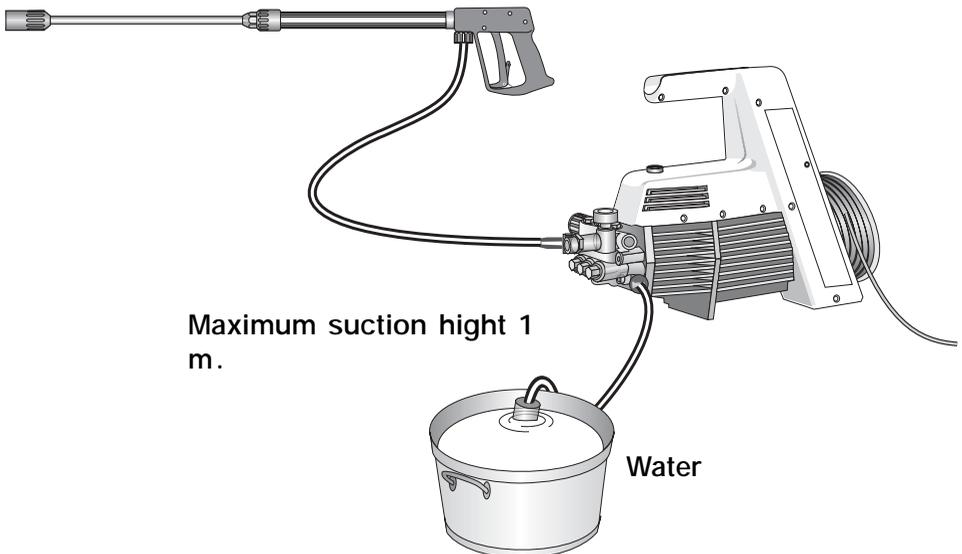


CAUTION !



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

Do not touch the machine without safety gloves.



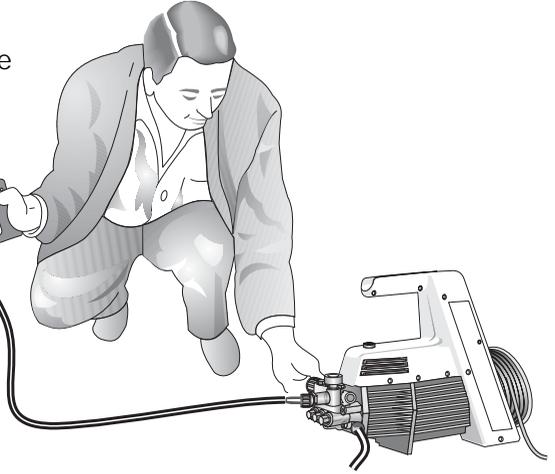
Maximum suction height 1 m.

Water

Preparation for use

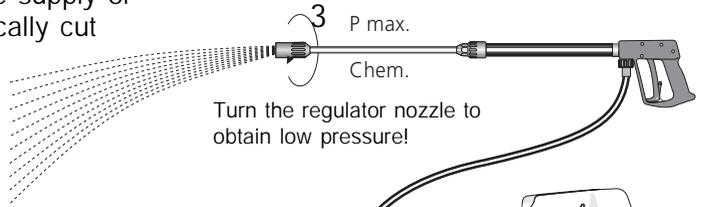
Adjusting the pressure

This is accomplished by turning the handwheel. The default setting is maximum pressure.

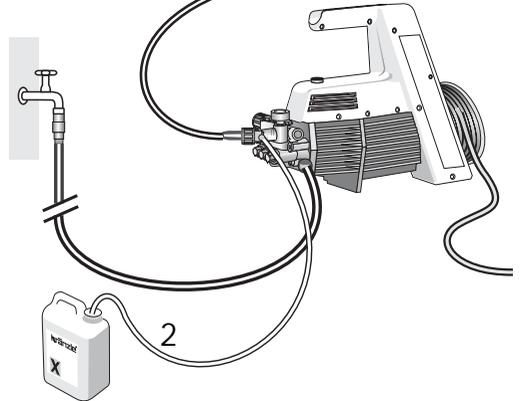


When using cleansing agents:

Place chemical filter no. 2 in the reservoir with the cleansing agent. Open the regulator nozzle no. 3 to enable the injector to induct the cleansing agent. When the regulator nozzle is closed by turning, the supply of chemical is automatically cut off. Allow the cleansing agent to take effect and then remove with high pressure spray.



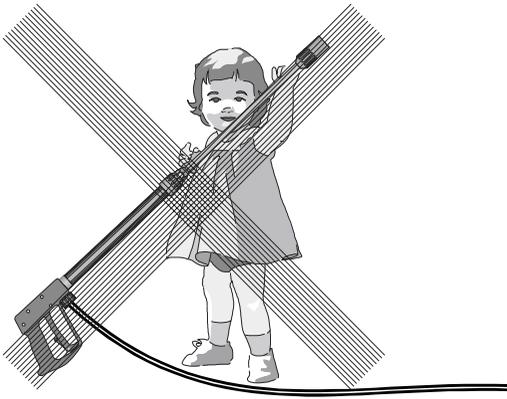
Note that you must always comply with the instructions provided by the manufacturer of the cleansing agent (e.g. instructions concerning safety clothing) and the water protection regulations.



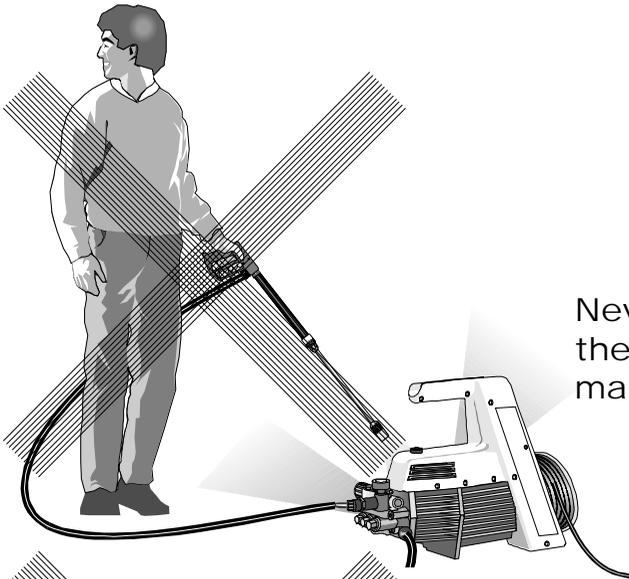
To shut down the pump:

1. Switch off the machine.
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 high pressure hose.
6. Drain the pump: switch on the motor for approx 20 sec. .
7. Pull the plug from the socket.
8. Winter: store the pump in rooms above 0 °C.
9. Clean the water filter.

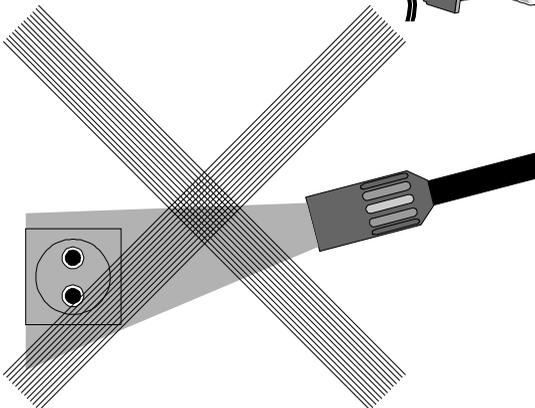
This is prohibited !



Never allow children to use the high pressure cleaner !

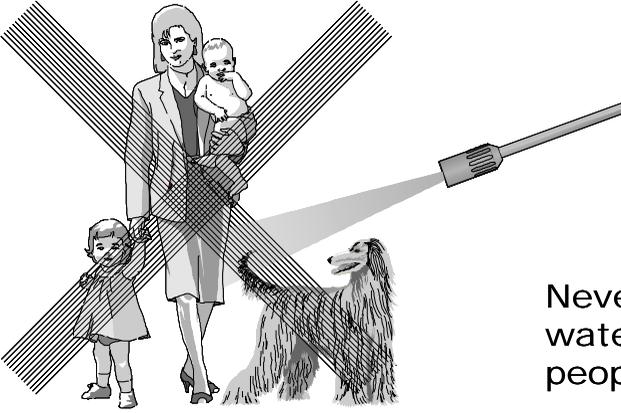


Never direct the water jet at the machine itself !

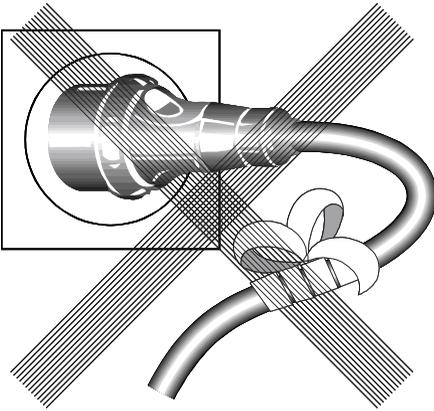


Never direct the water jet at a power socket !

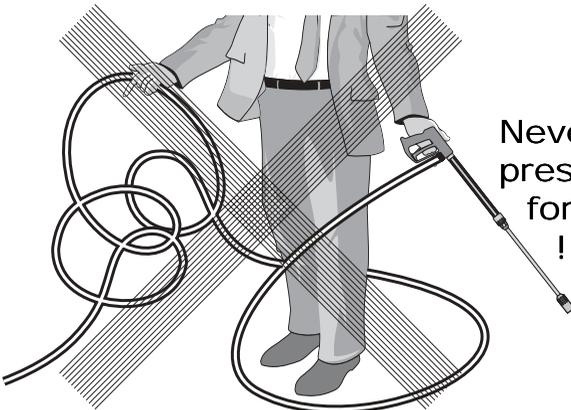
This is prohibited !



Never direct the water jet at people or animals !



Do not damage the power cord or repair it incorrectly !



Never pull the high pressure hose if it has formed kinks or "nooses" !

Never pull the hose over sharp edges !

General rules

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 guaranteed. The results of the inspection are to be recorded in writing. This may be done in any form.

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 page 13 + 14)

Please pay attentions to the regulations of your waterworks company. (Reflux valve with tube ventilation according to DIN 1988)

**Check the oil level at the oil sight glass prior to each use.
(Ensure horizontal position !)**

Oil change:

No oil change is required during the working life of the machine. We would suggest though to change the oil after having used the high pressure cleaner for a longer period of time to ensure its longevity. Should it be necessary to change the oil the oil sight glass is to be opened over a reservoir and the machine to be emptied. The oil is to be caught in the reservoir and disposed of in the approved manner.

New oil: 0,25 l - Motor oil W 15/40

Guarantee

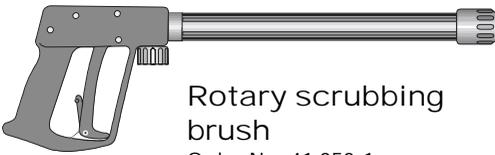
The guarantee period is 24 months according to VDMA. (except for wearing parts.)

The guarantee is void if changes are made to the safety devices or if the machine is used at excess temperatures or speeds. The guarantee is also void if the machine is used with a voltage below the required rating, with less than the required amount of water, with dirty water and **external** damage to the pressure gauge, nozzle, pressure hose and spray device.

Wearing parts are: hoses, spraying devices, nozzles, pressure gauges, packings, valves and gaskets.

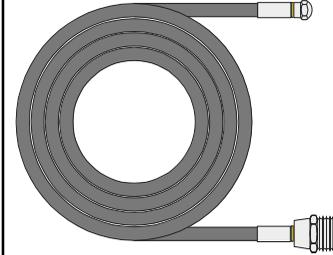
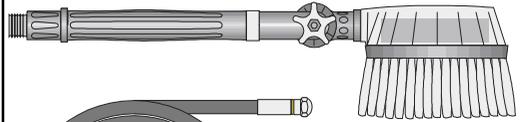
Our operating instructions must be complied with.

Additional KRÄNZLE-accessories

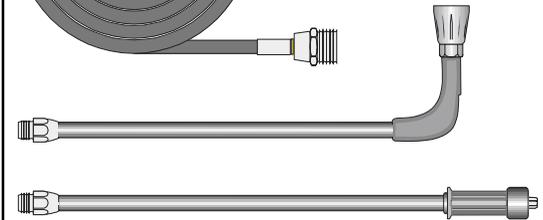


Rotary scrubbing
brush
Order No. 41.050 1

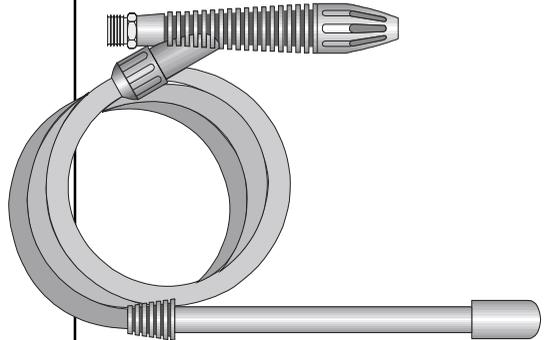
Pipe cleaning hose
10 m - Order No. 41.058 1
15 m - Order No. 41.058



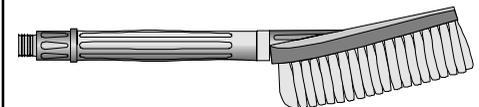
Underfloor lance
Order No. 41.075



Sandblaster
Order No. 41.068 1



Flat brushes
Order No. 41.073

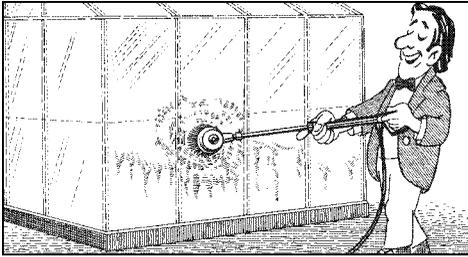


Dirt killer
Order No. 41.072 5

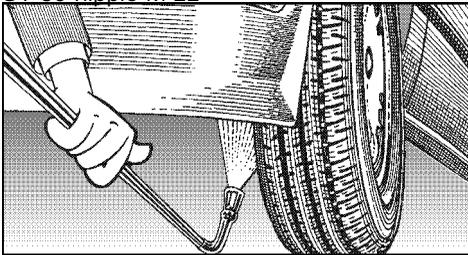


Environmental, refuse disposal water protection regulations must be observed when using the accessories.

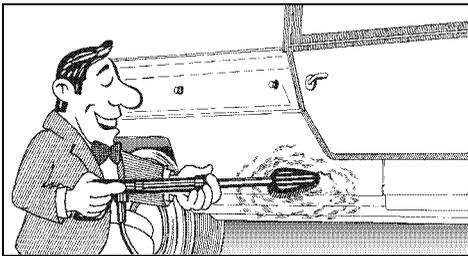
for further combination possibilities



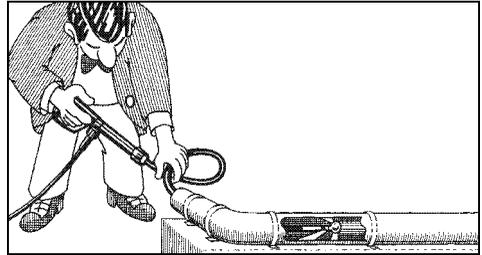
Car cleaning, glass, caravan, boat etc.:
rotary washing brush with 40 cm extension
and
ST 30 nipple M 22



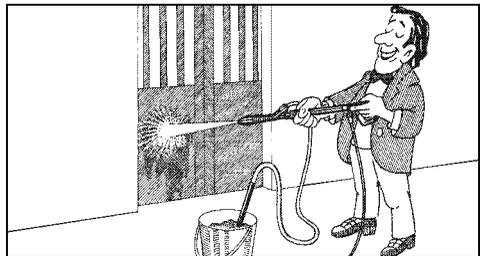
Underbody cleaning of cars, trailers and
equipment: lance 90 cm with high pressure
nozzle and ST 30 nipple. The lance must be
aimed when spraying.



Cleaning cars and all smooth surfaces:
brush with ST 30 nipple M 22.



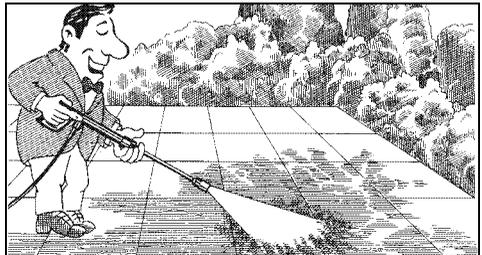
Cleaning pipes, channels and drains: pipe
cleaning hose with KN nozzle and ST 30
nipple M 22 x 1,5



Blasting old paint, rust and facades:
sandblasting injector with suction lance and
3 m PVC-hose and ST 30 nipple M 22 x 1,5



**When sandblasting you must
wear protection clothes! Pay
attention to the instructions of
the manufacturer of the
abrasive.**



Rotary point sprayer for extreme soiling: dirt
killer with 40 cm extension and
ST 30 nipple M 22.

Small repairs -

You only get a weak flow of water or no water at all

!

- The pressure gauge shows a 10% higher pressure than the working pressure.

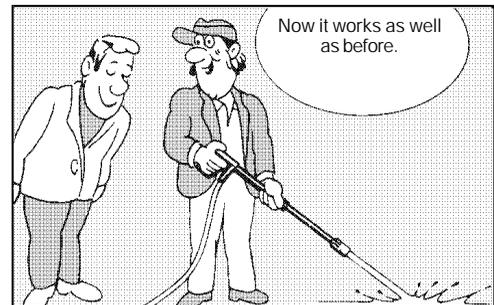
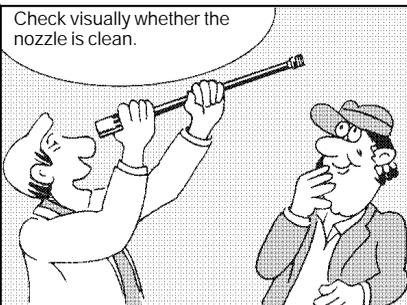
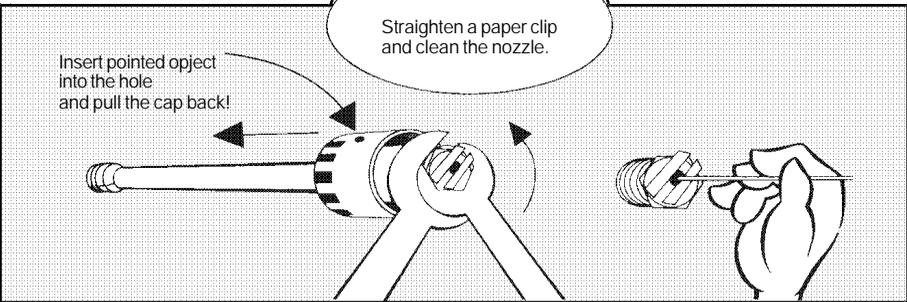
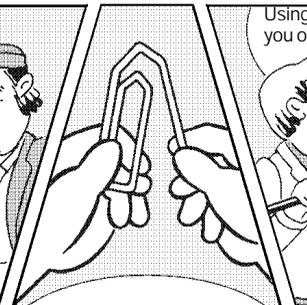
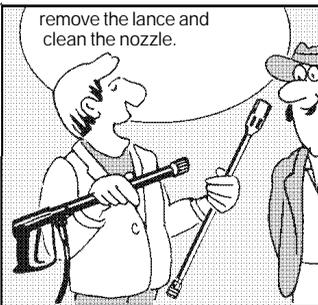
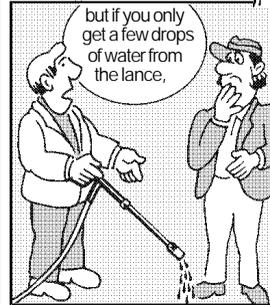
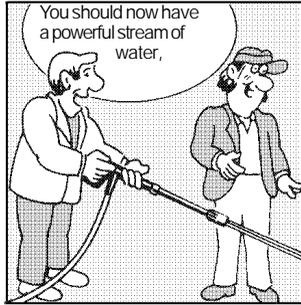
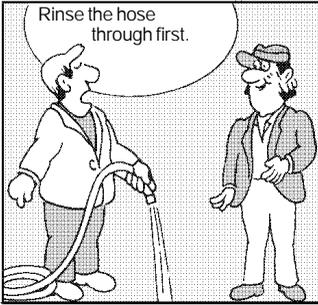


- do it yourself !



The nozzle is blocked !

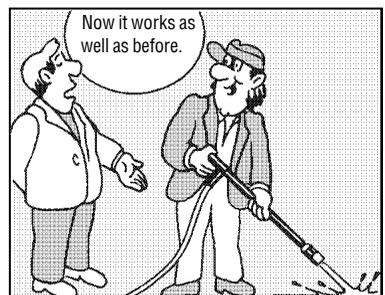
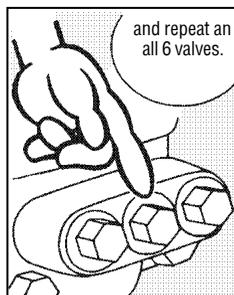
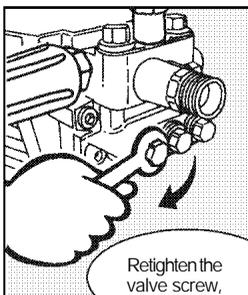
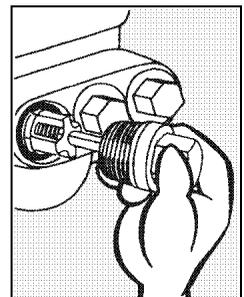
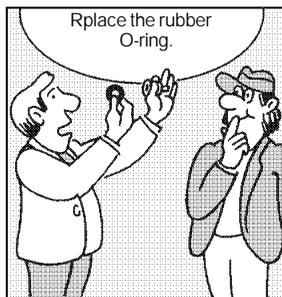
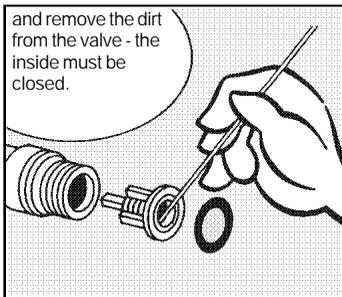
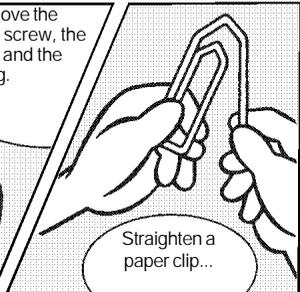
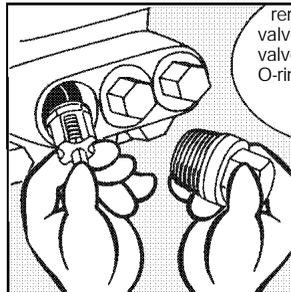
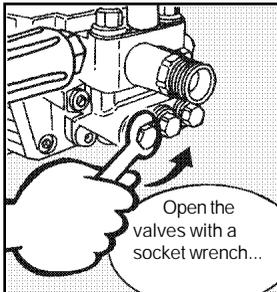
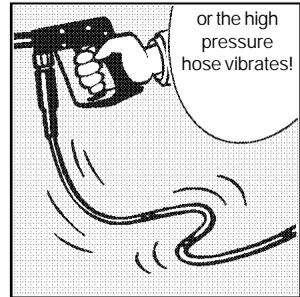
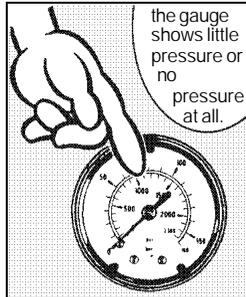
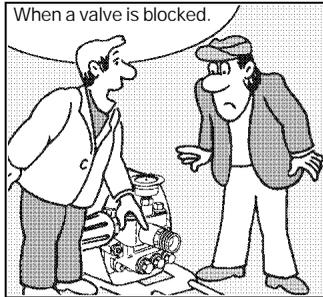
● No water but the gauge shows full pressure.



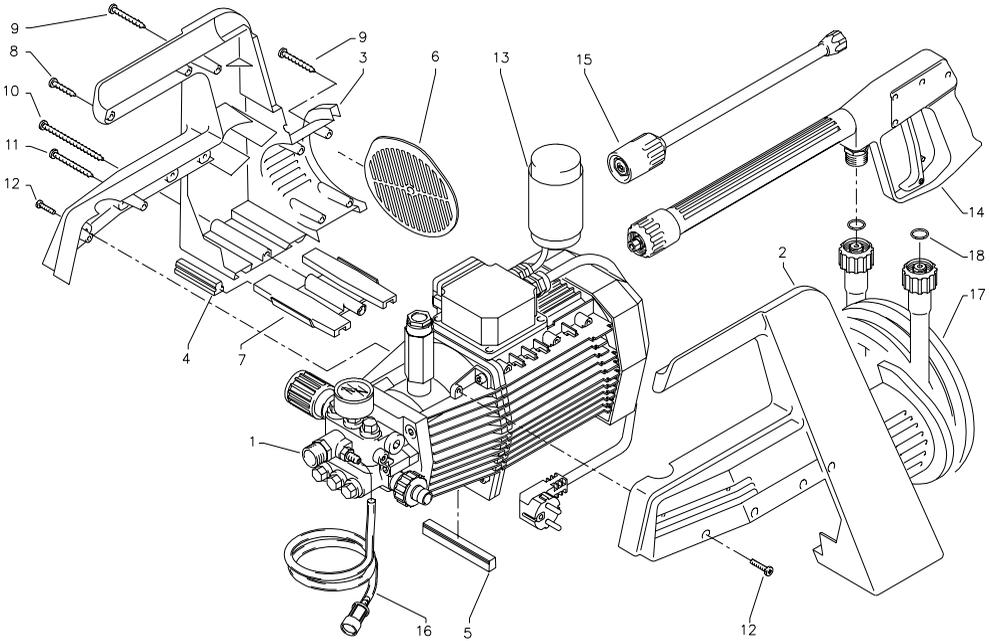
Small repairs - do it yourself !

A Valve dirty or sticky !

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

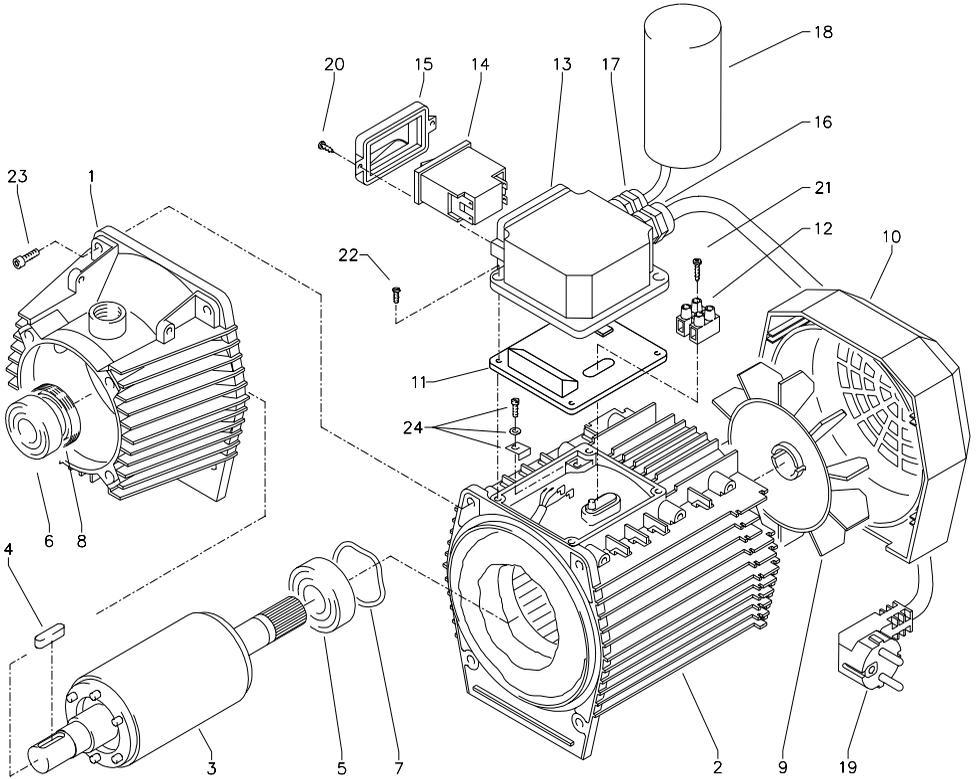


Complete Assembly



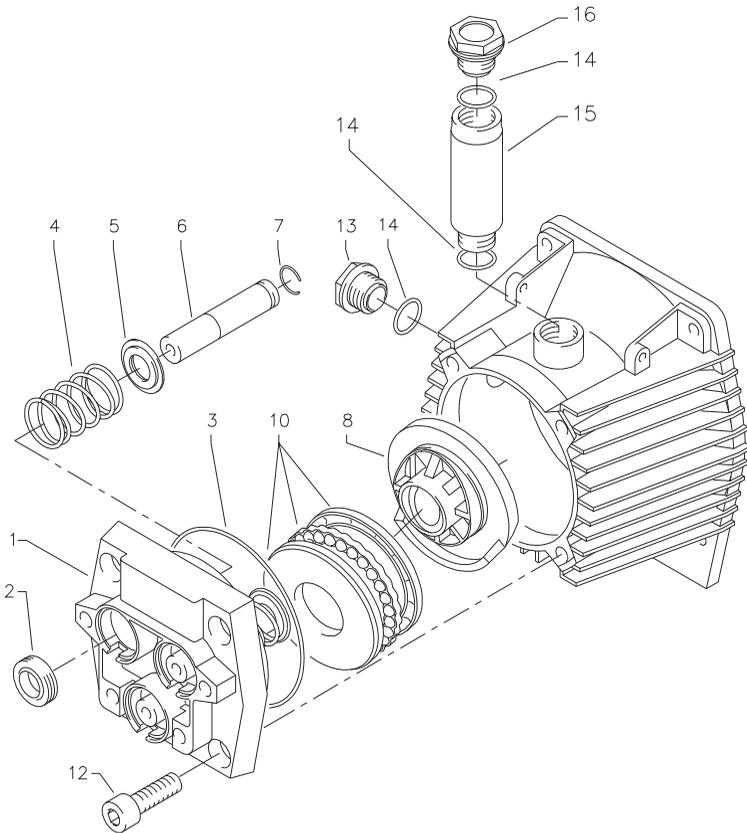
No.	Description	Qty.	Order No.
1	Motor compl. with oil enclosure and fan wheel without switch	1	43.001
2	Gehäusehälfte rechts	1	43.013
3	Gehäusehälfte links	1	43.014
4	Gummidämpfer klein	4	43.015
5	Gummidämpfer groß	1	43.016
6	Lüfterblende	1	43.017
7	Motoraufgabe	1	43.012
8	Kunststoffschraube 5,0 x 20	2	43.018
9	Kunststoffschraube 5,0 x 50	5	41.411
10	Kunststoffschraube 5,0 x 120	1	43.309
11	Senkkopfschraube 3 x 45	1	43.020
12	Blechschrabe 4,8 x 13	8	44.112
13	Schaumstoffrohr	1	41.418
14	Pico-Pistole mit Verlängerung	1	41.053 1
15	Regeldüse mit Lanze und HD-Düse 25045	1	43.440
16	Chemikaliensaugschlauch mit Filter	1	15.038
17	Schlauch Polypenco 150 bar	1	41.054 1
18	O-Ring 9,3 x 2,4	2	13.273

Motor



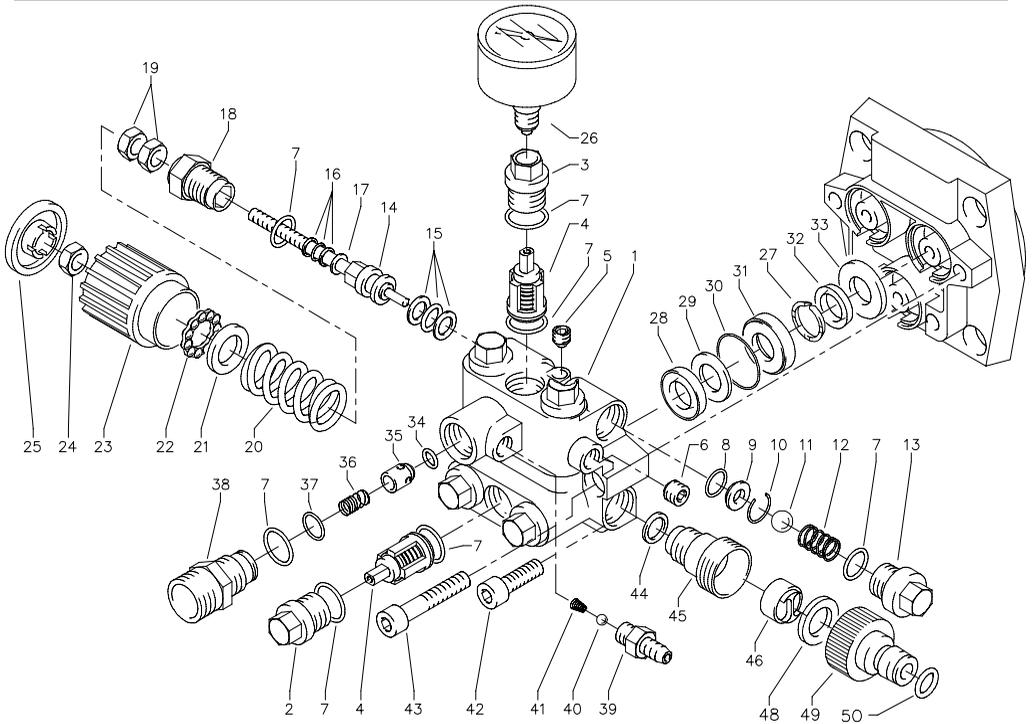
No.	Description	Qty.	Order No.	No.	Description	Qty.	Order No.
1	Ölgehäuse	1	43.006	16	Kabelverschraubung PG 11	1	41.419
2	Motorgehäuse mit Stator	1	43.023	17	Kabelverschraubung PG 9 (3-t.)	1	43.034
3	Motorwelle mit Rotor	1	43.024	18	Kondensator 40 µF	1	43.035
4	Paßfeder 6 x 6 x 20	1	41.483	19	Kabel mit Stecker	1	41.092
5	Motor-Lager B-Seite Z-Lager	1	43.025	20	Blechschrabe 3,5 x 9,5	2	41.088
6	Motor-Lager A-Seite Schulterl.	1	43.026	21	Blechschrabe 2,9 x 16	1	43.036
7	Federausgleichsscheibe	1	43.027	22	Schraube M 4 x 12	4	41.489
8	Öldichtung 25 x 35 x 7	1	41.024	23	Innensechskantschr. M 6 x 30	4	43.037
9	Lüfterrad	1	43.028	24	Erdungsschraube kpl.	1	43.038
10	Lüfterhaube	1	43.029				
11	Flachdichtung	1	43.030				
12	Lüsterklemme	1	43.031				
13	Schaltergehäuse	1	43.032				
14	Schalter mit 12 A-Überstromauslöser	1	43.033				
15	Klemmrahmen mit Schalterabdichtung	1	41.110	5			

Transmission unit



No.	Description	Qty.	Order No.
1	Gehäuseplatte	1	43.003
2	Öldichtung 14 x 24 x 7	3	41.631
3	O-Ring 83 x 2	1	43.039
4	Plungerfeder	3	43.040
5	Federdruckscheibe 14 mm	3	43.041
6	Plunger 14 mm	3	43.005
7	Sprengtring 14 mm	3	41.635
8	Taumelscheibe 9,5° please specify angle when ordering	1	41.028-9,5
10	Axial-Rillenkugellager 3-teilig	1	43.486
12	Innensechskantschraube M 8 x 25	4	40.053
13	Ölschauglas	1	42.018 1
14	O-Ring 12 x 2	3	15.005 1
15	Öleinfüll-Stutzen	1	43.011
16	Ölverschlußschraube rot	1	43.437

Valve housing

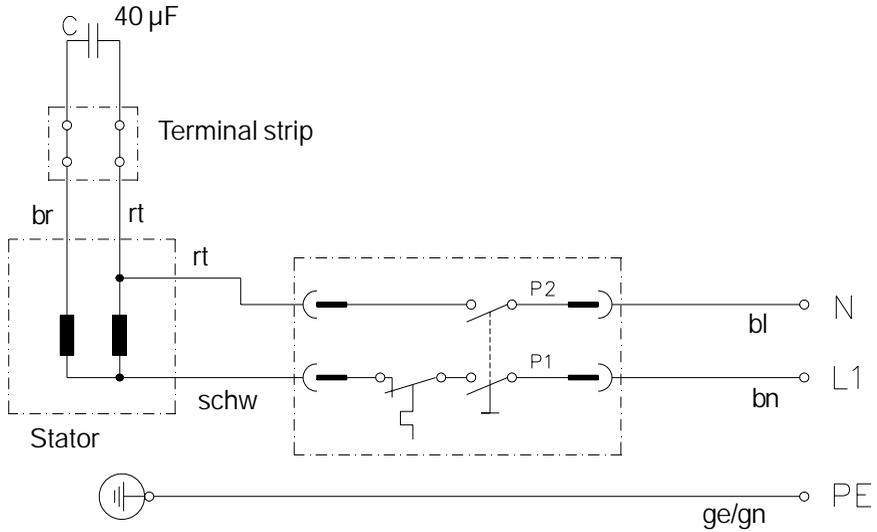


No.	Description	Qty.	Order No.	No.	Description	Qty.	Order No.
1	Ventilgehäuse AZ 14mm	1	43.007	28	Gewebemanschette 14x24x5	3	41.613 1
2	Ventilstopfen	5	41.011	29	Backring 14 x 24	3	41.614
3	Ventilstopfen mit R1/8" IG	1	43.042	30	O-Ring 26 x 2	3	43.052
4	Ventile (rot)	6	41.612	31	Leckagering	3	43.053
5	Dichtstopfen M 8 x 1	1	13.158	32	Manschette 14 x 20 x 4/2	3	43.054
6	Dichtstopfen M 10 x 1	1	43.043	33	Zwischenring mit Abstützung	3	43.055
7	O-Ring 12 x 2	15	15.005 1	34	O-Ring Viton 5,23 x 2,62	3	43.056
8	O-Ring 11 x 1,5	1	12.256	35	Rückschlagkörper	1	43.009
9	Edelstahlsitz	1	14.118	36	Rückschlagfeder	1	43.057
10	Sicherungsring	1	13.147	37	O-Ring 12 x 1,5	1	43.058
11	Edelstahlkugel 8,5 mm	1	13.148	38	Ausgangsst. Inj. ST30 M22x1,5	1	43.008
12	Edelstahlfeder	1	14.119	39	Saugzapfen Schlauchanschluß	1	13.236
13	Verschlußschraube	1	14.113	40	Edelstahlkugel 5,5 mm	1	13.238
14	Steuerkolben 6 mm für AZ	1	43.044	41	Edelstahlfeder	1	13.239
15	Parbaks für Kolben 14 mm	1	14.123 1	42	Innensechskantschr. M 8 x 25	2	40.053
16	Parbaks für Spindel 6 mm	1	14.123 2	43	Innensechskantschr. M 8 x 40	2	43.059
17	MS-Scheibe	1	43.045	44	Dichtring Kupfer	1	14.149
18	Kolbenführung 6 mm	1	14.130 1	45	Sauganschluß	1	41.016
19	Mutter M 6	2	14.127 1	48	Gummi Dichtring	1	41.047 1
20	Feder schwarz für AZ-Pumpe	1	43.046	49	Steckkupplung	1	41.047 2
21	Federdruckscheibe	1	43.047	50	O-Ring	1	41.047 3
22	Kugellager	1	43.048		Repair kit valve		41.648
23	Handrad M 6 für AZ-Pumpe	1	43.049		Repair kit sleeve		43.060
24	Mutter M 6 mit SW 8	1	43.010		Valve housing compl.		43.007 1
25	Kappe für Handrad AZ-Pumpe	1	43.050		Control spindle with Parbaks		43.044 1
26	Manometer	1	43.051		Control spindle with Handwheel		43.044 2
27	Stützring	3	43.091				

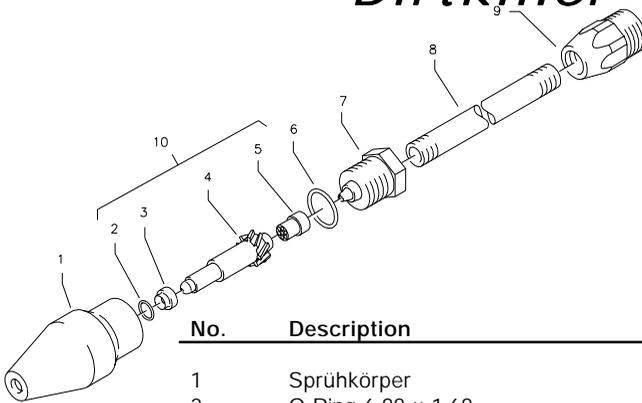
Spray gun with lance

No.	Description	Qty.	Order No.	No.	Description	Qty.	Order No.
1	Handgriff mit Ventilkörper	1	12.165	19	ST 30 - Nippel	1	13.363
2	Abdeckung seitlich	1	12.166		M 22 x 1,5 / M 12 x 1 ISK		
3.1	Rohranschlußteil	1	12.125	1	20 Rohr 400 mm 2x M 12 x 1	1	15.002
3a+b	Messinghülse mit Teflonsitz	1	12.127	21	Kolbenstange mit Kolben	1	12.143
4	O-Ring 12 x 2	1	15.005	1	22 Druckfeder	1	12.145
5	Abdeckung unten	1	12.167	23	Kunststoff-Hülse	1	13.202
6	Druckplatte	1	12.168	24	Regeldüse ohne Hülse	1	43.439
7	Abzug-Hebel	1	12.169	25	Sprengring	1	43.441
8	Messingscheibe	1	12.135	28	Aluminium Dichtring	6	13.275
9	O-Ring 3,3 x 2,4	1	12.136	31	HD-Düse 25045	1	26.001
10	Sicherungshebel	1	12.170				
11	Stift 3 x 17	1	12.171				
12	Kontermutter M 4	2	12.138		Repair kit PICO		12.158
13	Schraube 3,9 x 9,5	4	12.172		consisting of 1x		
14	ST 30-Nippel	1	13.365		3.1; 3a+b; 4; 8; 9; 12; 21; 22		
15	M 22 x 1,5 / R 1/4" AG Rohr kunststoffumspritzt bds. R1/4" AG	1	15.004	2	Regulation nozzle compl. with lance and HP-nozzle 25045		43.440
16	Überwurfmutter ST 30 M 22 x 1,5 IG	1	13.276	1	PICO-Gun compl. with extention		41.0531
17	Nippel R1/4" IG	1	13.277	1			
18	O-Ring 9,3 x 2,4	1	13.273				

Wiring diagram



Dirtkiller



No.	Description	Qty.	Order No.
1	Sprühkörper	1	41.520
2	O-Ring 6,88 x 1,68	1	41.521
3	Düsensitz	1	41.522
4	Düse 045	1	41.523
5	Stabilisator	1	41.524
6	O-Ring	1	40.016 1
7	Sprühstopfen	1	41.526
8	Rohr 400 mm 2x M 12 x 1	1	41.527
9	ST 30-Nippel M 22 x 1,5 / M 12 x 1 ISK	1	13.363

Repair kit dirtkiller 045
consisting of 1x 2; 3; 4; 5

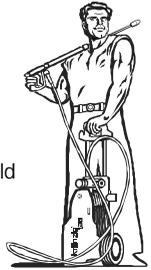
41.097

Dirtkiller 045 with lance

41.072 5

kränzle®

Hochdruckreiniger
High-pressure-cleaners
Nettoyeurs À Haute Pression



I. Kränzle GmbH
Elpke 97 · 33605 Bielefeld

EC declaration of conformity
as defined by machinery directive 89/392/EEC, Annex II A

Herewith we
declare that

Kränzle K 105

complies with the following
provisions applying to it

91/368 EWG Anh. I Nr. 1
73/23 EWG
79/113 EWG 81/1051 EWG
89/336 EWG

Applied
harmonized standards
in particular

EN 292 T 1 und T 2
EN 60 204 T 1
EN 50 082-2
EN 61 000 3-2 3-3
EN 55 014
EN 55 104

Applied national technical
standards and specifications
in particular

DIN VDE 0700 Teil 265

Notified body ¹⁾ within the
meaning of Annex VII

TÜV Hannover

engaged for ²⁾

- safe keeping of the file as defined by Annex VI
- verification of correct application of harmonized standards and certification of adequacy of the file as defined by Annex VI
- EC type-examination (EC type-examination certificate No. ...)

Bielefeld, den 10.10.97

A handwritten signature in black ink, appearing to read 'Droitsch', written over a horizontal line.

Droitsch
(Geschäftsführer)

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