

kraenzle bully 980 TS

P: 200 Bar / 20 MPa
 P max: 220 Bar / 22 MPa
 Q: 16 l/min
 T max: 60° C **02-15**

3~380 Volt	60 Hz	12 A
1700 rpm	I. Kl.: F	IP 55
P1: 7,0 kW	P2: 5,0 kW	

Serial-No.: **kraenzle**
BA-30097342 Made in Germany

I. Kränzle GmbH
 Elpke 97
 D - 33605 Bielefeld

Subject to technical modifications. Order no 30.606.1

Reprint only allowed with the authorisation of Kränzle.

As date of 24.01.2014

■ Made
 ■ in
 ■ Germany

Original operating manual
High-pressure cleaners

- GB -

bully 980 TS
bully 980 TS T
bully 1180 TS
bully 1180 TS T



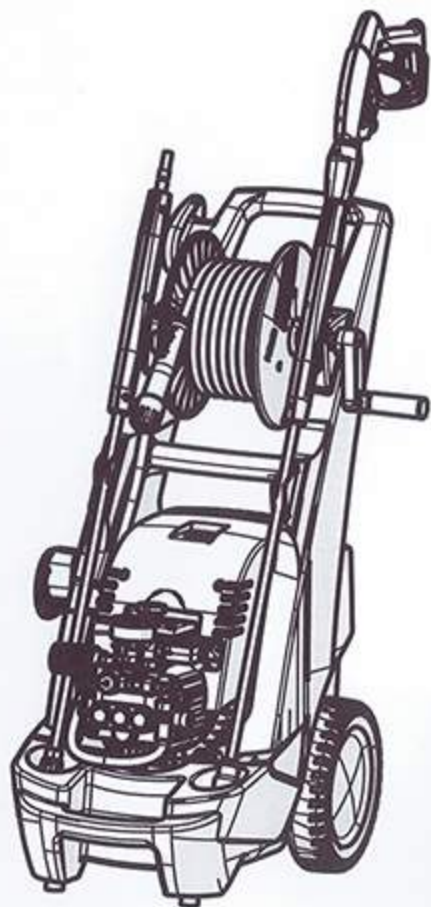
Read and conform safety instructions before use!

Keep instructions in a safe place for later use and pass them on to any future user.



2 Description of appliance

bully 980 TS T, bully 980 TS,
bully 1180 TS T, bully 1180 TS



High-pressure gun with and
quick-change system

Interchangeable lance with Dirtkiller nozzle

Interchangeable lance with washing lance

Ergonomically shaped handle

Hose drum with 15 m steel-weave
high-pressure hose, NW 8
(only available for TST models)

Hand crank

Receptacle for gun with spray lance

On/Off switch with motor protection

Cable reel with 7,5 m cable

Large stainless steel manometer

Continuously adj. pressure control

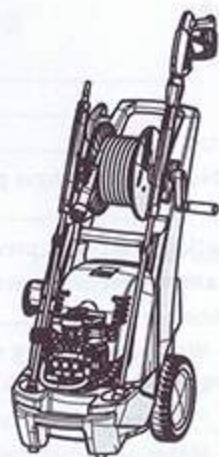
Large, integrated trolley that takes
rough ground in its stride

Receptacle for Dirtkiller and washing lance

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4 Technical data



	Kränzle bully 980 TS T	Kränzle bully 1180 TS T
Operating press. continuously adj.	3 - 18 MPa (30-180bar)	3 - 16 MPa (30 - 160 bar)
Nozzle size	055	075
Permissible overpressure	16 MPa	19,5 MPa
Water output	at 1.400 r.p.m. 16 l/min	at 1.400 r.p.m. 19 l/min
max. water intake pressure	1.0 MPa	1.0 MPa
Inlet water temperature	max. 60 °C	max. 60 °C
Suction height	2.5 m	2.5 m
Hose drum	yes	yes
Steel-weave high-pressure hose	15 m	15 m
Total stop system	yes	yes
Connected load	3~ 400 V / 50 Hz, 11.5 A	3~ 400 V / 50 Hz, 11.5 A
Power input	P 1 - 7.0 kW	P 1 - 7.0 kW
Power output	P 2 - 5.0 kW	P 2 - 5.0 kW
Weight	68 kg	68 kg
Dim. incl. pulling handle in mm	730 x 425 x 970	730 x 425 x 970
Sound level acc. to DIN 45 635	89 dB (A)	89 dB (A)
Sound level with Dirtkiller	91 dB (A)	91 dB (A)
Acoustic power L_{WA}	91 dB (A)	91 dB (A)
Recoil at lance	approx. 25 N	approx. 25 N
Vibration at lance	2.2 m/s ²	2.2 m/s ²

Permissible tolerance for figures ± 5 % acc. to VDWA uniform sheet 24411



	Kränzle bully 980 TS	Kränzle bully 1180 TS
Operating press. continuously adj.	3 - 18 MPa (30-180bar)	3 - 16 MPa (30 - 160 bar)
Nozzle size	055	075
Permissible overpressure	16 MPa	19,5 MPa
Water output	at 1.400 r.p.m. 16 l/min	at 1.400 r.p.m. 19 l/min
max. water intake pressure	1.0 MPa	1.0 MPa
Inlet water temperature	max. 60 °C	max. 60 °C
Suction height	2. m	2,5 m
Hose drum	no	no
Steel-weave high-pressure hose	10 m	10 m
Total stop system	yes	yes
Connected load	3~ 400 V / 50 Hz, 11.5 A	3~ 400 V / 50 Hz, 11.5 A
Power input	P 1 - 7.0 kW	P 1 - 7.0 kW
Power output	P 2 - 5.0 kW	P 2 - 5.0 kW
Weight	65 kg	65 kg
Dim. incl. pulling handle in mm	730 x 425 x 970	730 x 425 x 970
Sound level acc. to DIN 45 635	89 dB (A)	89 dB (A)
Sound level with Dirtkiller	91 dB (A)	91 dB (A)
Acoustic power L_{WA}	91 dB (A)	91 dB (A)
Recoil at lance	approx. 25 N	approx. 25 N
Vibration at lance	2.2 m/s ²	2.2 m/s ²

Permissible tolerance for figures ± 5 % acc. to VDWA uniform sheet 24411

6 This is what you have purchased



- 1.** Kränzle high-pressure cleaner bully 980 TST, bully 1180 TST with hose drum and 15 m steel-weave high-pressure hose, NW 8

or



- Kränzle high-pressure cleaner bully 980 TS, bully 1180 TS without hose drum, with 10 m steel-weave high-pressure hose, NW 8



- 2.** Gun with safety catch with plug-in coupling



- 3.** Dirtkiller lance with 1000 mm stainless steel pipe, plug-in nipple and recessed handles



- 4.** Flat jet nozzle with lance, 1000 mm stainless steel pipe, plug-in nipple and recessed handles



- 5.** Operating manual

General rules

Range of application

Use machines for cleaning tasks with high-pressure water jet and detergents or with high-pressure water jet without detergents only.

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. For inspection reports see pages 24 - 25.



High-pressure cleaners used for commercial purposes have to be checked by a qualified person at least every 12 months!

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 8 and 9).

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.

Put the machine into a horizontal position, then open the oil discharge screw at the bottom of the device over a collection reservoir. The oil is to be caught in the reservoir and disposed of in an approved manner.

New oil: 1,0 l - Kränzle high-performance gear oil (Article No.: 40.093 2)



Oil leakage: If oil leaks contact your nearest after-sales service (dealer) at once. (Ecological damage, damage to the transmission)

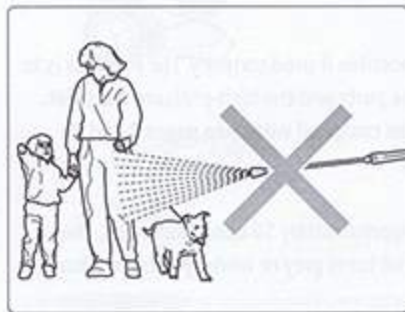


In case of increased humidity or fluctuations in temperature development of condensed water is possible; if the oil turns grey, you must change it.

8 Safety precautions



Bear in mind that during cleaning tasks with a high-pressure water jet a significant recoil at the lance arises (see technical data on page 4).



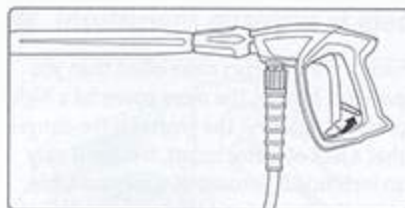
Never direct the high-pressure jet at yourself or at others, not even to clean clothes or shoes. Do not direct the water jet at people or animals because high-pressure jets can be dangerous when used incorrectly.



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

Safety precautions – This is prohibited!

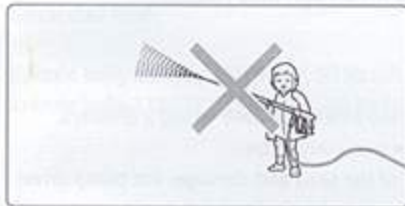
9



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



Only use power cables which are in perfect working order! Do not damage the power cable or repair it incorrectly!

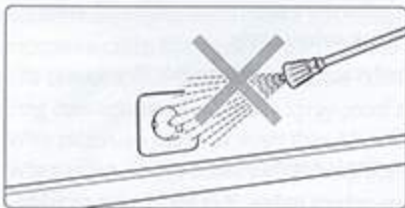


Never allow children to use the high-pressure cleaner!



Never direct the water jet at the machine itself!

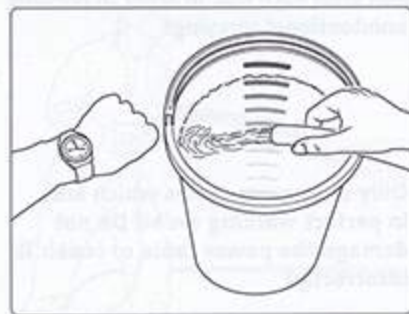
The machine may not be placed within reach of the water jet spray mist!



Do not direct the water jet at power sockets or live electrical equipment!

10 Please note - important!

■ Lack of water



Lack of water occurs more often than you probably believe. The more powerful a high pressure cleaner is the greater is the danger that a lack of water occurs. If there is only an insufficient amount of water available, cavitation arises inside the pump, which is normally noticed too late or even not at all. The pump will be destroyed!
Please check the available quantity of water by filling a bucket with litre scale for one minute.

The following minimum quantity of water is necessary for a safe and problem-free operation of the high-pressure cleaner:

Kränzle bully 980 TS / TST: 16 l/min

Kränzle bully 1180 TS / TST: 19 l/min



If the metered quantity of water is too small, you have to use a different water connection, guaranteeing the necessary output.
A lack of water leads to swift wear of the seals and damages the pump drive!
(no guarantee)

■ Water supply



Please pay attention to the regulations of your waterworks company.

In accordance with DIN EN 61770, the machine may not be directly connected to the public drinking water supply lines.

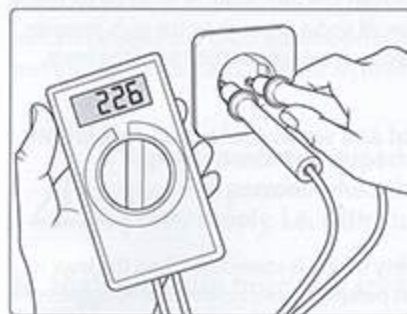
A brief connection however is permissible according to DVGW (German Association for Gas and Water Affairs) if a non-return valve with tube ventilator (Kränzle order no. 41.016 4) is built into the water supply.

Also indirect connection to the public drinking water supply lines is permissible by way of free emission in accordance with EN 61770; e.g. by using a reservoir with a float valve.

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

Once the water has passed through the non-return valve, it is no longer considered to be drinking water.

■ Insufficient quantity of electricity



If there are too many collectors in your proximity connected to the network at the same time, the available voltage and the current intensity may decline. Consequently the motor of the high-pressure cleaner does not start or even blows. The power supply may also be insufficient if the power cable is too long or too thin. If extension cables are too long, this may lead to a voltage drop causing malfunctions or start-up difficulties.

Connected load:

Kränzle bully 980 TS / TST: 400 V, 50 Hz (phase-sequence not significant)

Kränzle bully 1180 TS / TST: 400 V, 50 Hz (phase-sequence not significant)



Check the line fusing and have the voltage and the available current intensity checked by an expert in case of uncertainty.

■ Electrical connection

The machine is supplied with an electrical power cable 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. 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 mm². 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 minimum cross section must be 2.5 mm². When using a cable drum, always keep the cable wound as far as possible.

12 Kränzle technology

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 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. When the trigger is released, the trigger gun closes and any further spraying of liquid from the lance is stopped. The pressure gauge must show 0 bar.

The increase in pressure when the trigger gun is closed causes the pressure control valve-safety valve to open. The motor is switched off by the pressure switch. When the trigger gun is opened, the pressure control valve - safety valve closes, the motor is started and the pump resumes pressure spraying from the lance with the selected operating pressure.



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.

Pressure control valve - safety valve

The pressure control 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.

Motor protection switch

The motor is protected from overload by a motor protection switch, which 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 11).



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

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 optimised for the machine and marked as required by the appropriate regulations.



If replacement parts are required, only such parts that are authorised by the manufacturer and which bear the markings required by the 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.

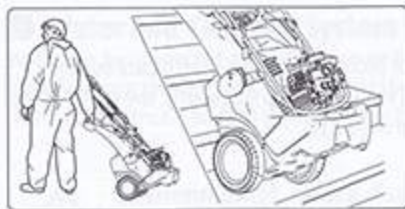
Total stop system

The Kränzle bully are equipped with an electrical Start/Stop control. Having connected the high-pressure cleaner to the water supply and having connected the HP hose, switch the machine "on" using the On/Off switch. A red light in the switch flashes.

The motor is started by opening the gun. The motor is switched off after the gun has been closed. The high-pressure cleaner works in stand-by until the On/Off switch is switched to "Off". The red light in the switch goes out.

Having switched off the machine shortly press the trigger to release the pressure to be able to unfasten the HP hose.

14 Putting into operation



1. Move high-pressure cleaner to the job site.

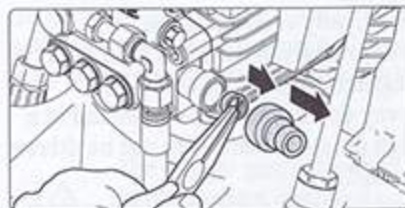
The Kränzle bully are movable machines with sturdy trolley ideally suited for difficult terrain.

Never pull the machine if the water supply hose is still connected!

Setting up – Location



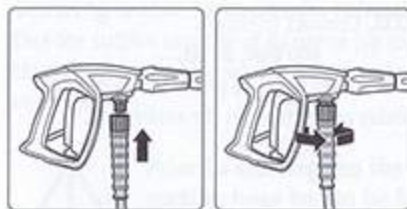
Neither set up or operate the machine in rooms where there is a risk of fire or explosion nor put it into puddles. Do not use the machine under water.



2. Check water inlet filter for cleanliness prior to putting the machine into operation. Manually unscrew hose attachment. Take out the serial water inlet filter using needle nose pliers and clean if filter is soiled.

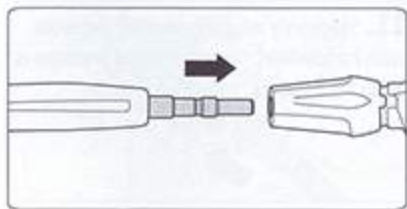


3. Each time check oil level at the oil dipstick prior to putting the HP cleaner into operation. (Take care that cleaner is in horizontal position!) The oil level must show between the two markings.



4. Push on HP hose to gun.

5. Screw together HP hose and gun.

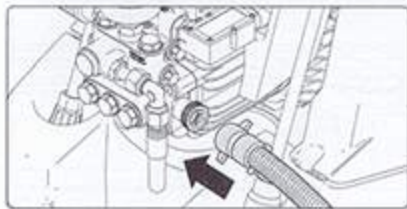


6. Push on lance or Dirtkiller lance to gun.

7. Allow the slide-on sleeve to click into position.



8. Unwind HP hose from hose drum without kinks and nooses.



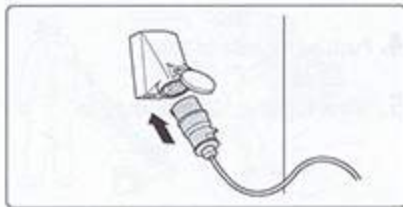
9. Connect water hose to water tank. The cleaner may be connected to water mains with cold or 60°C warm water. Alternatively water can be sucked in from a container (see page 17).

Be careful when using hot water!



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

16 Putting into operation



- 10.** Connect to circuit.
400 Volt, 50 Hz.

The socket must be protected with a 16A delay action fuse on the mains side.



- 11.** Steplessly adjust operating pressure with handwheel. The maximum pressure is adjusted ex work



- 12.** Ventilation of the machine: Pull and release the trigger several times. Switch on high-pressure cleaner with opened spray gun. Start cleaning task.

Pictogram used on the unit



High-pressure jets can be dangerous when used incorrectly. The jet must not be directed at people, animals, live electrical equipment, or the machine itself (see pages 8 and 9).

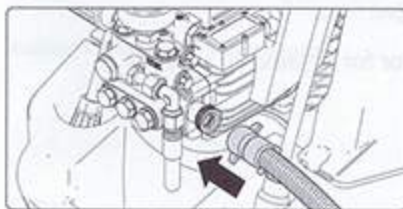
Direct suction

Drawing water from ponds, rainwater tanks, etc.

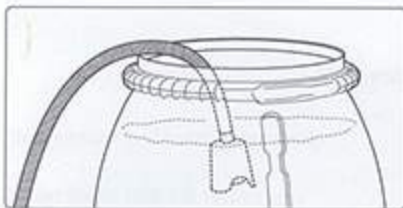
Due the suction capacity of its pump (up to 2.5 m suction height, max. hose length 3 m) this high-pressure cleaner can suck in water for cleaning purposes from separate containers or ponds.



Prior to starting the first suction the pump resp. the suction hose has to be filled with water.

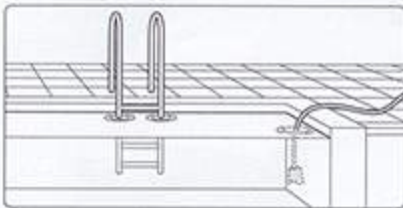


- 1.** Mount suction hose with suction filter (Kränzle accessories No. 15.038 3). When using other hoses the inner cross section of the hose must be at least 3/4" = 16 mm.



- 2.** Fill suction hose with water

- 3.** Put filled suction hose into the container and start the cleaning job.



Use clean water only!
Never suck in water containing chlorine.

Note

Depending on the water quality it may occur after a prolonged standstill that the valves get sticky. Consequently the machine cannot properly suck in water from a container.

In this case connect a hose with pressurized water to the pump inlet. Having started the machine the pressurized water opens the valves and the machine resumes sucking in water from the container. Now you can carry on with your cleaning task as usual.

18 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 spray gun
6. Drain the pump: switch on the motor for approx. 20 seconds
7. Pull the plug from the socket
8. Clean HP hose and wind up
9. Clean power cable and wind up
10. Clean water filter
11. Winter: store the pump in rooms above 0°C

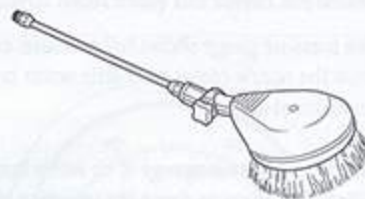
Store in a place-saving manner



Due to their compact and space saving design these Kränzle bully 980 TST and bully 1180 TST cleaners can be stored practically anywhere.

Versatile due to Kränzle accessories

19

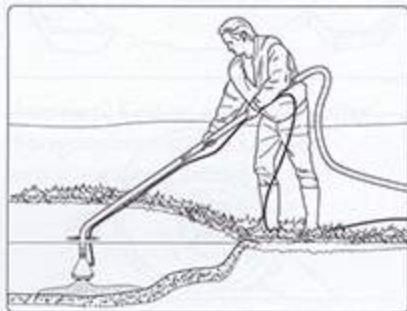


Rotating washing brush with extension



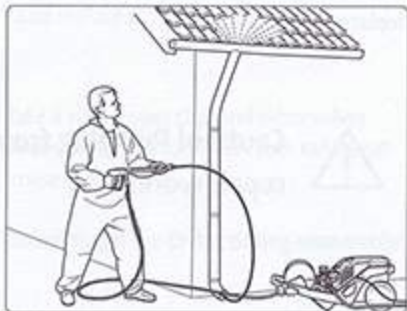
Sludge sucker made of stainless steel,

Sludge sucker with 3 m suction hose



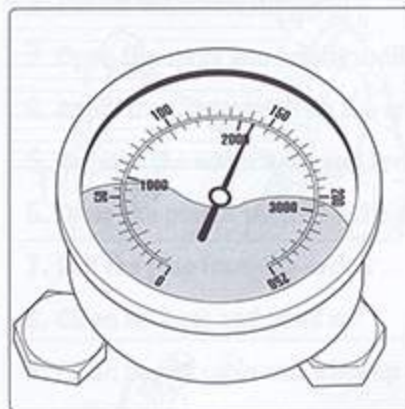
Pipe cleaning hose with nozzle,

10 m
20 m
25 m
30 m



20 Small repairs do it yourself!

■ No water from the nozzle but the gauge shows full pressure:
Most likely the nozzle is blocked.



The pressure gauge shows full pressure, but from the nozzle comes only little water or no water at all.

(Inside the pressure gauge is no water but a filling with glycol to damp the vibration of the pointer.)

Switch off the cleaner. Pull plug from the socket. Operate gun several times to decrease the pressure.

First unscrew gun and lance, then rinse hose from any residues.

Check water inlet filter for soiling.

If the problem still exists, take wire (paper clip) and push through nozzle opening.

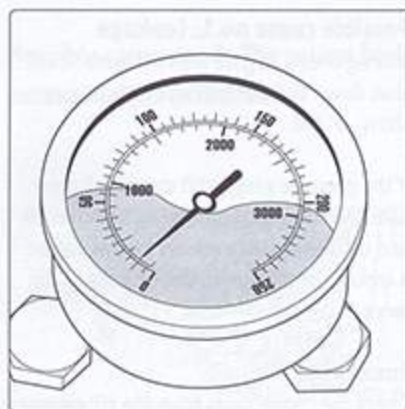


If this procedure is not successful, the nozzle has to be dismantled and cleaned or even replaced, if necessary.



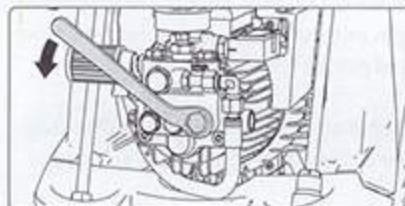
Caution! Pull plug from socket prior to starting any repair work!

■ Pressure gauge shows little pressure, the water from the nozzle comes in squirts: Most likely the valves are soiled or sticky.

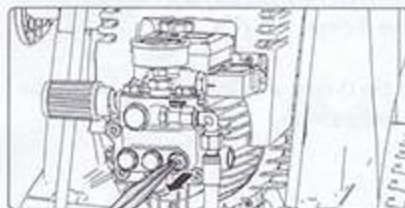


The pressure gauge shows little pressure despite fully turned up pressure regulation. The water from the lance comes in squirts. The HP hose vibrates.

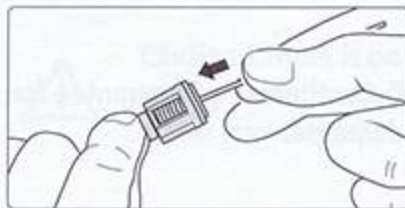
(Inside the pressure gauge is no water but a filling with glycol to damp the vibration of the pointer.)



Unscrew all 6 valves, one after the other (hexagonal brass screws, 3 in a row, vertically and horizontally)



Take out valve body (with green or red plastic coating) and O-ring by means of needle nose pliers. Check O-ring for damage. In case of a damage the O-ring has to be replaced.



Take a wire (paper clip) and clean valves under running water. Also clean valve seat inside the pump.

Do not forget the O-ring during reassembly!

22 Small repairs do it yourself!

■ The pressure gauge shows full pressure although the gun has been closed. The pressure switch valve switches constantly.



Possible cause no.1: Leakage

Having closed the gun, the HP cleaner must shut down and the pressure gauge must show „0“ bar.

If the pressure gauge still shows full pressure and the motor constantly switches on and off, the possible reason for this can be a leakage of the pump, the HP hose or the lance.

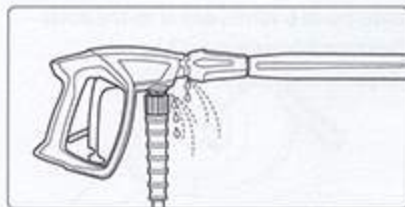
Proceeding:

Check the connections from the HP cleaner to the HP hose, from the hose to the gun and also the connection between lance and gun for tightness.

Switch off the cleaner. Shortly pull the trigger of the gun to decrease the pressure.

Unscrew HP hose, gun and lance and check the O-rings.

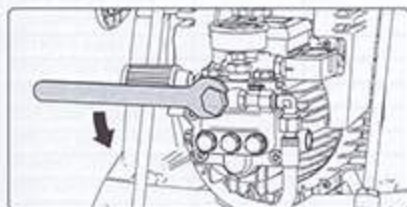
If the O-rings are damaged they have to be replaced.



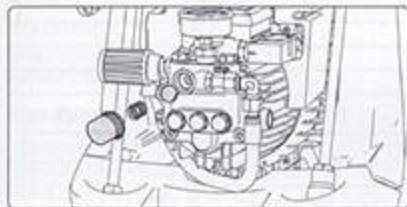
Caution! In case of a leakage there is no guarantee for possible consequential damages.

■ The pressure gauge shows full pressure although the gun has been closed. The pressure switch valve switches constantly.

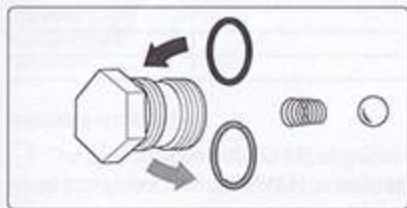
Possible cause no. 2: The return body is soiled or the sealing ring on the return body is defective.



Unscrew pump outlet.



Take out check ball and check for soiling or damage of ball or stainless steel seat inside the pump housing.



Replace non-return valve if necessary.



Caution! There is no guarantee if the pump is damaged by defective O-rings due to air induction or lack of water (cavitation).

24 Inspection report for HP cleaners

HP cleaners for industrial use have to be checked 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!)

Kränzle test seals: Order no. UVV200106

Owner: Type:
 Address: Serial no.:
 Rep. order no.:

Scope of inspection	o.k.	yes	no	repaired
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 pr.				
Power cable (damage)				
Protective conductor (connected)				
On / Off switch				
Used chemicals				
Allowed chemicals				

Inspection data	determined value	set value
High-pressure nozzle		
Operating pressure.....bar		
Switch 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.....

25 Inspection report for HP cleaners

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Operating manual (on hand)				
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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 pr.				
Power cable (damage)				
Protective conductor (connected)				
On / Off switch				
Used chemicals				
Allowed chemicals				

Inspection data	determined value	set value
High-pressure nozzle		
Operating pressure.....bar		
Switch off pressure.....bar		
Conductor resist. not exceeded / value		
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Leakage current		
Gun locked		

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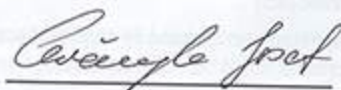
Place, date..... Signature.....

26 EC declaration of conformity

Hereby we declare that:	Kränzle bully 980 TS / TST, Kränzle bully 1180 TS / TST,
technical specifications available from:	Manfred Bauer, Fa. Josef Kränzle Rudolf-Diesel-Str. 20, 89257 Illertissen
Nominal volume flow rate:	Kränzle bully 980 TS / TST: 960 l/h Kränzle bully 1180 TS / TST: 1140 l/h
comply with the following guidelines and their amendments for high-pressure cleaners:	Machinery directive 2006/42/EC EMC-directive 2004/108/EC, Noise directive 2005/88/EC, Art.13 HP water spraying machines annex 3, part B, chapter 27
Sound level measured:	89 dB (A)
Sound level guaranteed:	91 dB (A)
Applied conformity evaluation procedures	Annex V, noise directive 2005/88/EC
Applied specifications and standards:	EN 60 335-2-79 :2009 EN 55 014-1 :2006 EN 61 000-3-2 :2006 EN 61 000-3-3 :2008

I. Kränzle GmbH
Elpke 97 D - 33605 Bielefeld

Bielefeld, 18.11.2013



Kränzle Josef
(Managing director)

Guarantee

■ The guarantee is only valid for material and manufacturing errors. Wearing does not fall within this guarantee.

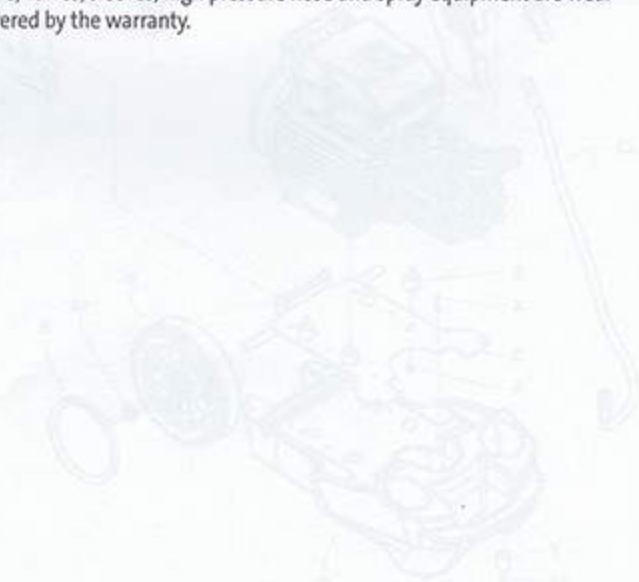
The instructions in our operating manual must be complied with. The operating instructions form part of the guarantee. A guarantee only applies if original Kränzle accessories and original Kränzle spare parts are used correctly.

For high-pressure cleaners sold to the user the guarantee period is 24 month.
For high-pressure cleaners sold for industrial use the guarantee period is 12 month.

In the case of a guarantee please contact your dealer or authorized seller delivering accessories and your purchase receipt. You can find them in the internet under www.kraenzle.com.

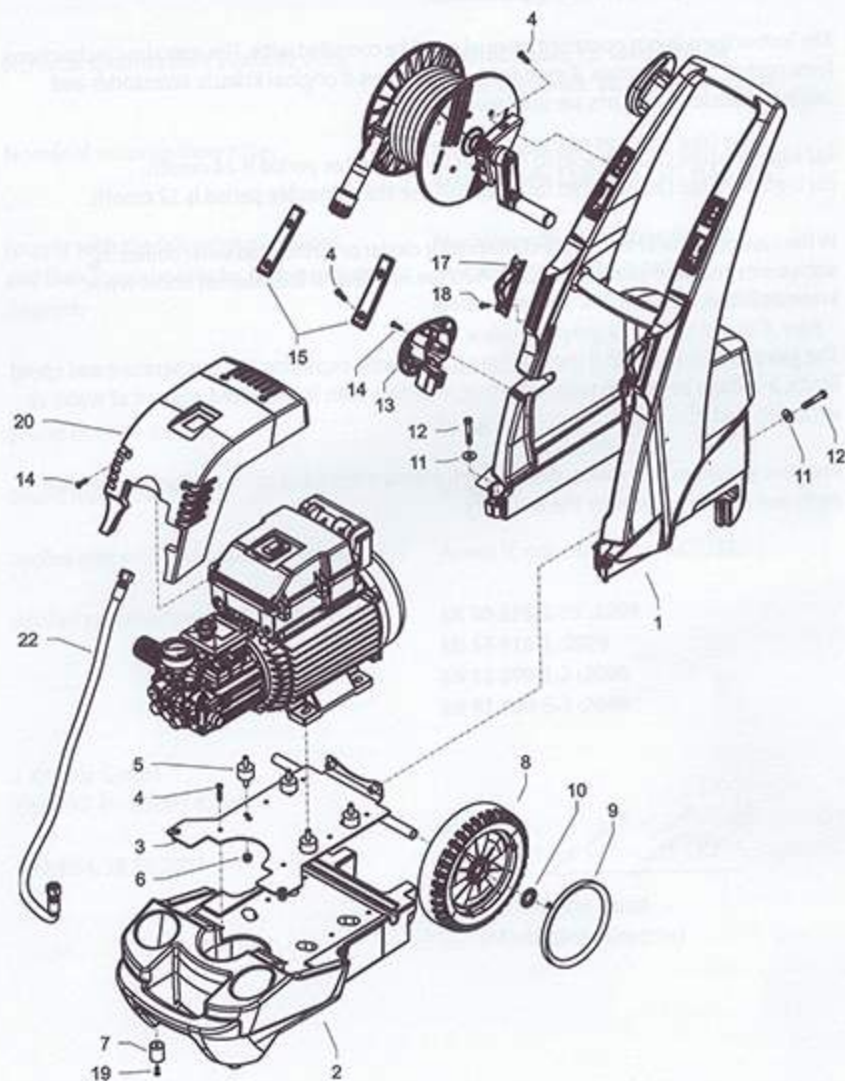
The guarantee is also void if the machine is used with exceeding the temperature and speed limits, a voltage below the required rating, with less than the required amount of water or with dirty water.

Pressure gauge, nozzle, valves, sleeves, high pressure hose and spray equipment are wear parts and are not covered by the warranty.



Spare parts list

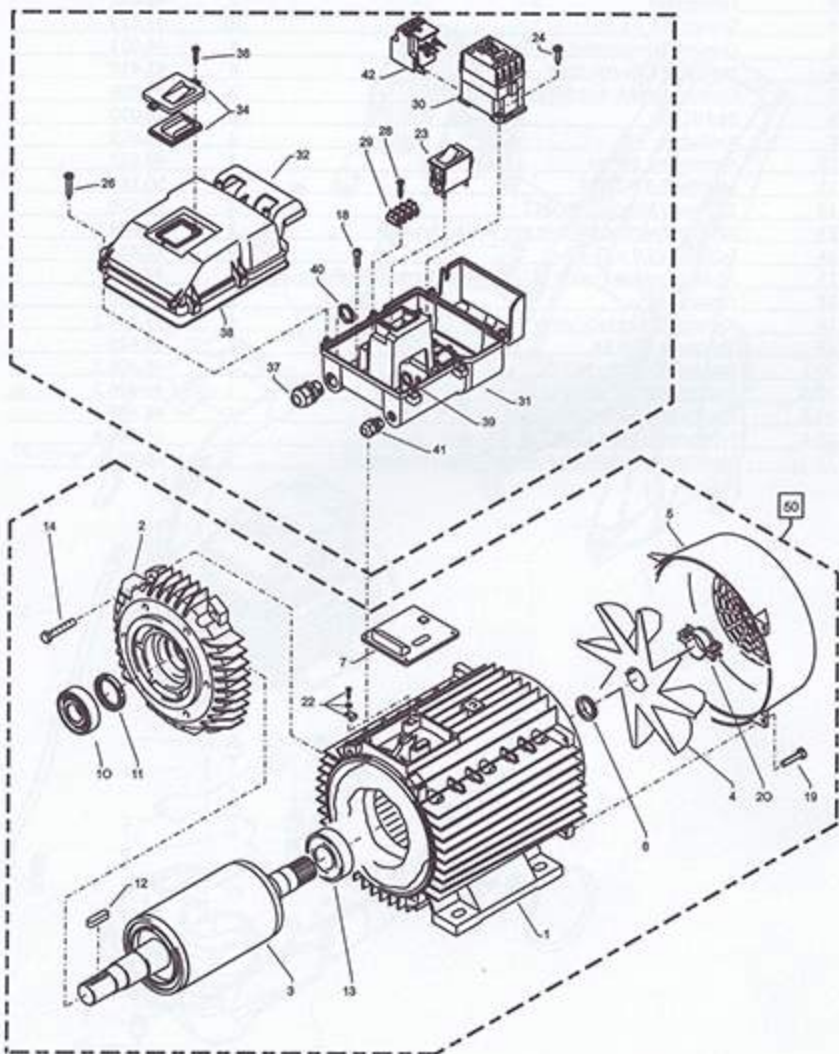
Kränzle bully 980 TST; bully 1180 TST



Complete assembly

Position	Description	Qty.	Ord.-No
1	Fahrbehälter	1	46.400
2	Fahrgestellbehälter	1	46.401
3	Fahrgestell	1	46.402
4	Schraube 6,0 x 30	10	43.423
5	Gummi-Schwingmetall 30 x 20	4	46.023
6	Mutter M8 Elastic-Stop	4	41.410
7	Gummi-Metall-Anschlagpuffer 25 x 30	2	49.010
8	Rad d250	2	46.010
9	Radkappe	2	46.011
10	Klemmring 18mm	2	43.820
11	Scheibe 8,4 DIN125	4	50.186
12	Schraube M8x50 DIN6912	4	42.620
13	Kabelaufwicklung unten mit Schlauchhalter	1	46.304 1
14	Schraube 5,0 x 25	6	41.414 1
15	Abdeckung links+rechts für Schlauchtrommelbefestigung	1	48.006
17	Lanzenthalter	2	42.160
18	Kunststoff-Senkschraube 5,0 x 20	4	45.421 1
19	Schraube 5,0 x 14	2	43.426
20.1	Frontplatte bully 980 TS	1	46.406 1
20.2	Frontplatte bully 980 TS T	1	46.406 2
20.3	Frontplatte bully 1180 TS	1	46.406 3
20.4	Frontplatte bully 1180 TS T	1	46.406 4
22	Verbindungsschlauch Pumpe-Schlauchtrommel	1	46.405

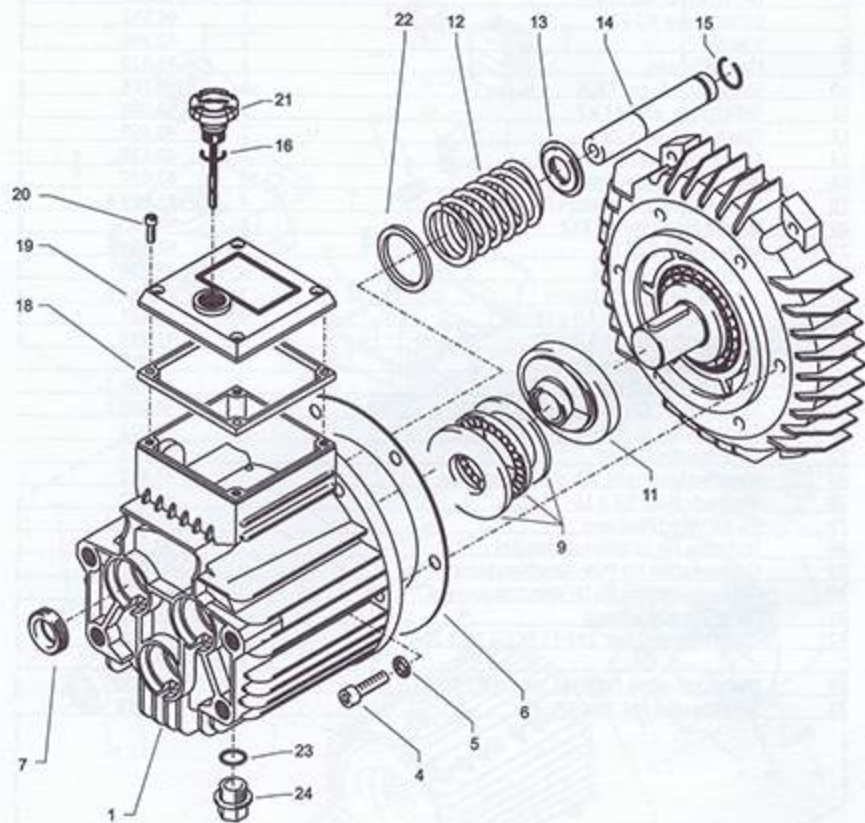
30 Spare parts list
Kränzle bully 980 TS / TST
Kränzle bully 1180 TS / TST



Pump motor

Position	Description	Qty.	Ord.-No
1	Stator 112 5,5kW 3x 400V / 50Hz	1	40.540
2	A-Lager Flansch	1	40.530
3	Rotor 112	1	40.531 5
4	Lüfterrad für BG 112	1	40.532
5	Lüfterhaube BG 112	1	40.533
6	V-Seal	1	40.545
7	Flachdichtung	1	43.030
10	Schrägguggellager 7306	1	40.704
11	Öldichtung 35 x 47 x 7	1	40.080
12	Passfeder 8 x 7 x 28	1	40.459
13	Kugellager 6206 - 2Z	1	40.538
14	Innensechskantschraube M 6 x 30	4	43.037
18	Innensechskantschraube M 5 x 12	4	41.019 4
20	Schelle für Lüfterrad 112	1	40.535
21	Schraube M 4 x 12	4	41.489
22	Erdungsschraube kpl.	1	43.038
23	Schalter 14,5 A Amazonas	1	41.111 6
24	Kunststoffschraube 4,0 x 16	4	43.417
26	Kunststoffschraube 5,0 x 25	6	41.414
28	Kunststoffschraube 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
34	Klemmrahmen mit Schalterabdichtung	1	43.453
36	Blechschrabe 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	1	41.087 1
40	Gegenmutter für PG16-Verschraubung	1	44.119
41	PG 9 - Verschraubung	1	43.034
42	Überstromauslöser 193-T1 AC16 11,3-16A	1	42.641
50	Motor kpl. ohne Schalter 3x 400V / 50Hz		24.060
51	Schaltkasten kpl. Pos. 23 - 42		42.631

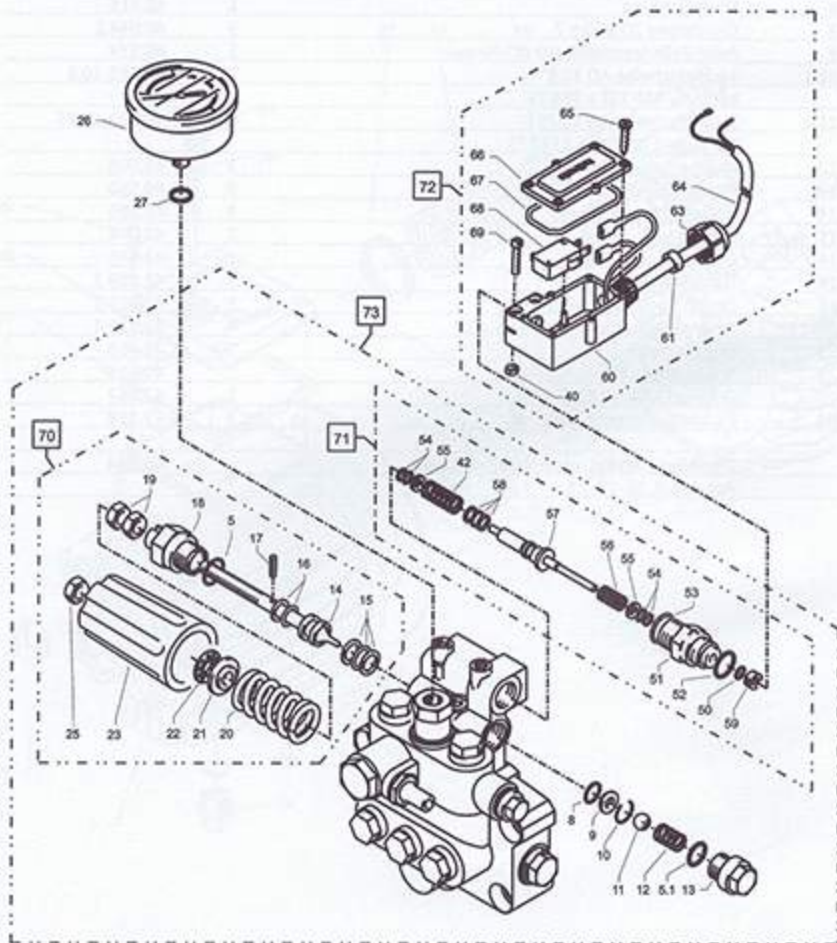
32 Spare parts list
Kränzle bully 980 TS / TST
Kränzle bully 1180 TS / TST



Pump transmission unit for AQ-Pump

Position	Description	Qty.	Ord.-No
1	Ölgehäuse	1	40.501
4	Innensechskantschraube M 8 x 30	6	41.036 1
5	Sicherungsscheibe	6	40.054
6	Flachdichtung	1	40.511
7	Öldichtung 20 x 30 x 7	3	40.044 1
9	Axial-Zylinderrollenlager AQ-Pumpe	1	40.524
11.1	Taumelscheibe AQ 10,8" bei bully 980 TST + 980 TS	1	40.523-10,8
11.2	Taumelscheibe AQ 12,75" bei bully 1180 TST + 1180 TS	1	40.523-12,75
12	Plungerfeder	3	40.506
13	Federdruckscheibe	3	40.510
14	Plunger 20 mm (lang)	3	40.505
15	Sprengring	3	40.048
16	O-Ring 14 x 2	1	43.445
18	Flachdichtung	1	41.019 3
19	Deckel flach für Ölgehäuse	1	41.023 1
20	Innensechskantschraube M 5 x 12	4	41.019 4
21	Ölmessstab AQ	1	40.463
22	Stützscheibe für Plungerfeder	3	40.513
23	O-Ring 13,94 x 2,62	1	42.167
24	Ölablassstopfen R 3/8"	1	42.019
Ölgehäuse AQ kpl. ohne Taumelscheibe			40.514
Pos. 1, 4-7, 12-17, 22			

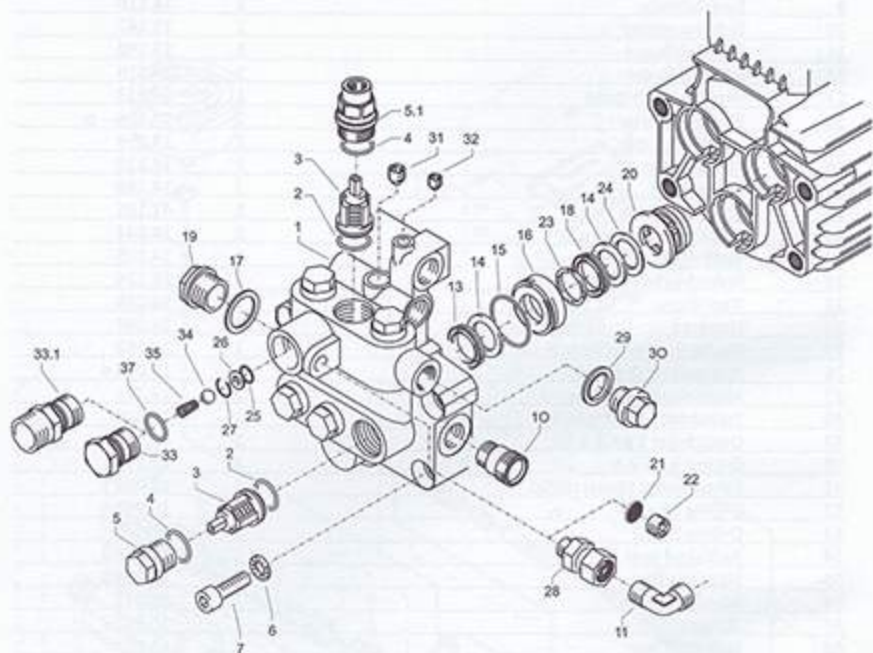
34 Spare parts list
Kränzle bully 980 TS / TST
Kränzle bully 1180 TS / TST



35 Unloader valve and pressure switch

Position	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 11 x 1,44	1	12.256
9	Edelstahlsitz	1	14.118
10	Sicherungsring	1	13.147
11	Edelstahlkugel	1	13.148
12	Edelstahlfeder	1	14.119
13	Verschlusschraube	1	14.113
14	Steuerkolben	1	14.134
15	Parbaks 16 mm	1	13.159
16	Parbaks 8 mm	1	14.123
17	Spanstift	1	14.148
18	Kolbenführung spezial	1	42.105
19	Kontermutter 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	14.147
25	Elastic-Stop-Mutter M 8 x 1	1	14.152
26	Manometer 0-400 Bar	1	15.039 4
27	Aluminium-Dichtring	2	13.275
40	Sechskant - Mutter M 4	2	15.026
42	Druckfeder 1 x 8,6 x 30	1	40.520
50	O-Ring 3,3 x 2,4	1	12.136
51	Führungsteil Steuerstößel	1	15.009 1
52	O-Ring 13 x 2,6	1	15.017
53	O-Ring 14 x 2	1	43.445
54	Parbaks 4 mm	2	12.136 2
55	Stützscheibe	2	15.015 1
56	Edelstahlfeder	1	15.016
57	Steuerstößel	1	15.010 2
58	Parbaks 7 mm	1	15.013
59	Stopfen M 10 x 1 (durchgebohrt)	1	13.385 1
60	Gehäuse Elektroschalter	1	15.204
61	Gummimanschette	1	15.202
63	Überwurfmutter PG 11	1	15.203
64	PVC-Kabel 2x 1,0 mm ²	1	42.505
65	Blechschrabe 2,8 x 16	6	15.024
66	Deckel Elektroschalter	1	15.201
67	O-Ring 44 x 2,5	1	15.023
68	Mikroschalter	1	44.262
69	Zylinderschraube M 4 x 20	2	15.025
Reperatur - Sätze:			
70	Steuerkolben kpl.		43.444
71	Reperatur-Satz Druckschaltermechanik		15.009 3
72	Druckschalter kpl. Pos. 54 - 70		41.300 5
73.1	Ventilgehäuse kpl. bully 980 TS, 1180 TS		46.407 1
73.2	Ventilgehäuse kpl. bully 980 TST, 1180 TST		46.407 2

36 Spare parts list
Kränzle bully 980 TS / TST
Kränzle bully 1180 TS / TST



Valve housing AQ 20mm

Position	Description	Qty.	Ord.-No
2	O-Ring 18 x 2	6	40.016
3	Einlaß- / Auslaß- Ventil	6	42.024
4	O-Ring 21 x 2	6	42.025
5	Ventilstopfen	5	42.026
5.1	Ventilstopfen mit R 1/4" IG	1	42.026 2
6	Sicherungsring	4	40.032
7	Innensechskantschraube M 12 x 45	4	40.504
10	Wassereingang R1/2" AG	1	41.016 1
11	Winkel 12L x 12L	1	42.630
13	Gewebemanschette	3	40.023
14	Backring 20 mm	6	40.025
15	O-Ring 31,42 x 2,62	3	40.508
16	Leckagering 20 x 36 x 13,3	3	40.509
17	Cu-Dichtring 21 x 28 x 1,5	1	42.039
18	Gummimanschette	3	40.512
19	Verschlusschraube R 1/2"	1	42.032
20	Distanzring mit Abstützung	3	40.507
21	Aluminium-Dichtring bei bully TS	2	13.275
22	Verschlußstopfen bei bully TS	1	13.181
23	Druckring 20 mm	3	40.021
24	Zwischenring 20 mm	3	40.516
25	O-Ring 11 x 1,5	1	12.256
26	Edelstahlsitz Ø 7	1	14.118
27	Sprengring	1	13.147
28	Ausgangsteil Pumpe R1/4" x 12	1	44.215
29	Dichtring 17 x 22 x 1,5 (Kupfer)	1	40.019
30	Stopfen 3/8"	1	40.018
31	Dichtstopfen M 10 x 1	1	43.043
32	Dichtstopfen M 8 x 1	2	13.158
33	Ausgangsteil bei bully TST	1	40.522
33.1	Ausgangsteil M22x1,5 bei bully TS	1	40.522 1
34	Edelstahlkugel Ø10	1	12.122
35	Rückschlagfeder „K“	1	14.120 1
37	O-Ring 18 x 2	1	43.446

Reparatur - Sätze:

Ventilgehäuse kpl. bully 980 TS, 1180 TS **46.407 1**

Ventilgehäuse kpl. bully 980 TST, 1180 TST **46.407 2**

Reparatur-Satz Manschetten **40.065 1**

bestehend aus: 3x Pos. 13; 6x Pos. 14; 3x Pos. 15;
 3x Pos. 16; 3x Pos. 18; 3x Pos. 20; 3x Pos. 23

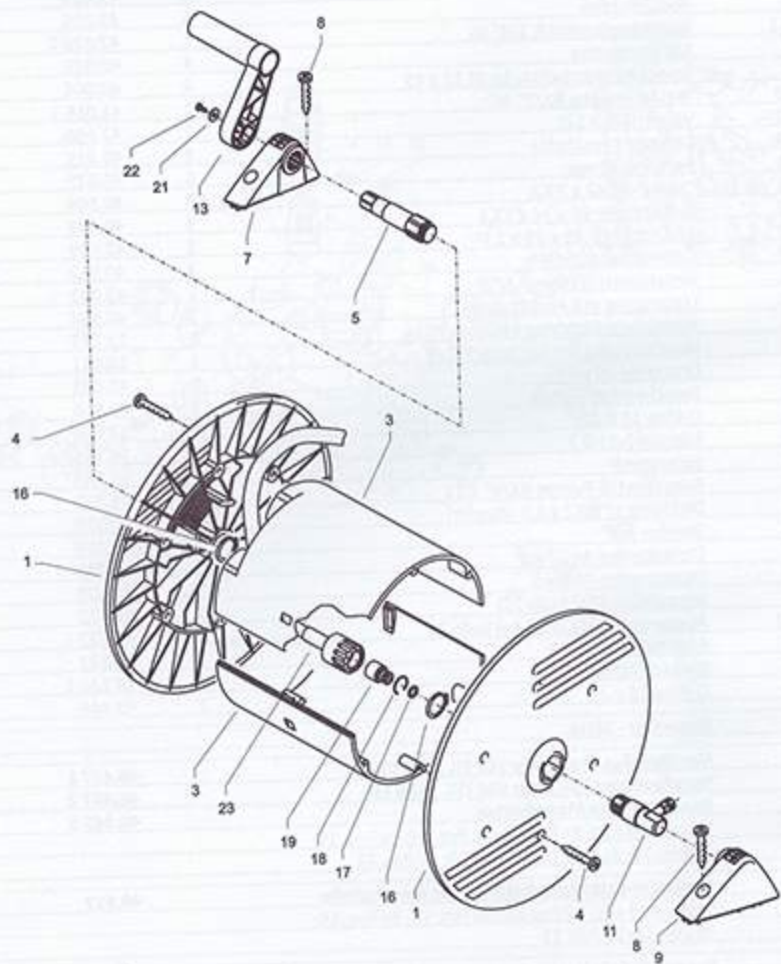
Reparatur-Satz Manschetten ohne Messingteile **40.517**

bestehend aus: 3x Pos. 13; 6x Pos. 14; 3x Pos. 15;
 3x Pos. 18; 3x Pos. 23

Reparatur-Satz Ventile **40.062 1**

bestehend aus: 6x Pos. 2; 6x Pos. 3; 6x Pos. 4

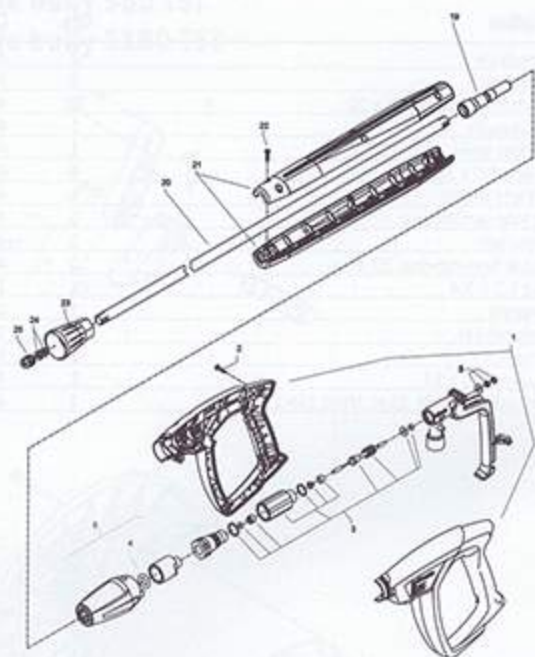
38 Spare parts list
Kränzle bully 980 TST
Kränzle bully 1180 TST



Hose drum

Position	Description	Qty.	Ord.-No
1	Seitenschale	2	46.201
2	Trommelteil	2	46.202
3	Trommelteil	12	43.018
4	Kunststoffschraube 5,0 x 20	1	46.404
5	Antriebswelle	1	43.810
7	Lagerklotz links	4	43.423
8	Schraube 6,0 x 30	1	43.811
9	Lagerklotz rechts	1	46.403
11	Welle Wasserführung	1	48.108
13	Handkurbel	2	40.117
16	Wellensicherungsring 22 mm	1	13.273
17	O-Ring 9,3 x 2,4	1	13.405
18	Sprengring	1	13.406
19	Drehnippel kpl.	1	50.152
21	Scheibe 5,3	1	40.536
22	Schraube M 5 x 14	1	44.879
23	Hochdruckschlauch 15m NW8 1SN1	1	

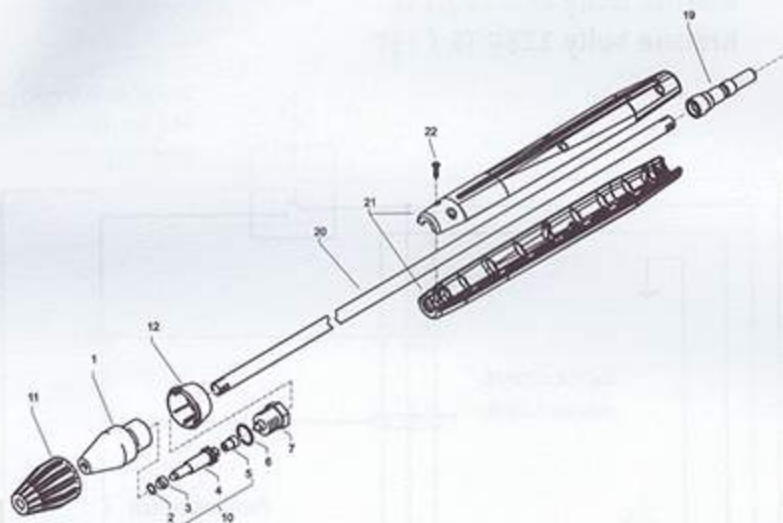
40 Gun with Vario-Jet lance



Position	Description	Qty.	Ord.-No
1	Pistolenschale re+li	1	12.450
2	Schraube 3,5 x 14	6	44.525
3	Reparatursatz M2000		12.454
4	O-Ring 11,0 x 4,0	1	13.460
5	Steckkupplung	1	13.451
19	Stecknippel Edelstahl gehärtet R1/4" IG	1	13.470
20	Rohr 965 lang, bds. R1/4" AG	1	13.519
21	Griffschalen Lanze	1	12.406
22	Schraube 3,5 x 14	6	44.525
25.1	Flachstrahldüse 25055 (bei bully 980)	1	D25055
25.2	Flachstrahldüse 25075 (bei bully 1180)	1	D25075
M2000-Pistole kurz kpl. Mit Steckkupplung			12.492
Lanze kpl. mit Flachstrahldüse D25055 (bully 980)			12.420-D25055
Lanze kpl. mit Flachstrahldüse D25075 (bully 1180)			12.420-D25075

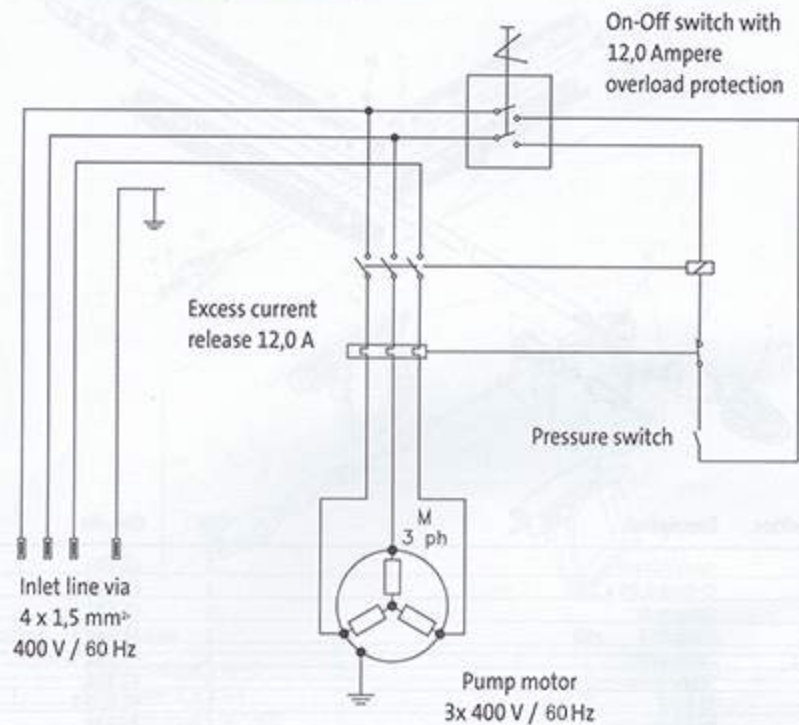
41 Dirtkiller with lance

41



Position	Description	Qty.	Ord.-No
1	Sprühkörper	1	41.520
2	O-Ring 6,86 x 1,78	1	41.521
3	Düsensitz	1	41.522
4	Düse 055	1	41.523 3
4.1	Düse 075	1	41.523-075
5	Stabilisator	1	41.524
6	O-Ring	1	40.016 1
7	Sprühstopfen	1	41.526
8	Rohr 500 mm 2x M 12 x 1	1	41.527 1
9	ST 30-Nippel M 22 x 1,5 / M 12 x 1 ISK	1	13.363
11	Kappe vorn für Schmutzkiller	1	41.528 1
12	Kappe hinten für Schmutzkiller 055	1	41.540 1
12.1	Kappe hinten für Schmutzkiller 075	1	41.542-075
10	Rep.-Satz Schmutzkiller 055		41.097 8
	bestehend aus je 1x 2; 3; 4; 5		
10.1	Rep.-Satz Schmutzkiller 075		41.096 3
	bestehend aus je 1x 2; 3; 4; 5		
	Lanze kpl. mit Schmutzkiller 055 (bully 980)		12.425-055
	Lanze kpl. mit Schmutzkiller 075 (bully 1180)		12.425-075

42 **Wiring diagram**
 Kränzle bully 980 TS / TST
 Kränzle bully 1180 TS / TST



Notes