

Operator's Manual

This manual contains important warnings and instructions

Read and retain for future reference

DIRT KILLER PRESSURE WASHERS

1708 WHITEHEAD ROAD, STE. 103
BALTIMORE, MD 21207

410.944.9966

800.544.1188

FAX 410.944.8866

EMAIL INFO@DIRTKILLER.COM

WWW.DIRTKILLER.COM

IMPORTANT SAFETY INSTRUCTIONS

WARNING - When using this product basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. To reduce the risk of injury, close supervision is necessary when the product is used near children.
3. Know how to stop the product and bleed pressures quickly. Be thoroughly familiar with the controls.
4. Stay alert - watch what you are doing.
5. Do not operate the product when fatigued or under the influence of alcohol or drugs.
6. Keep operating area clear of all persons.
7. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
8. Follow the maintenance instructions specified in the manual.
9. Some Models of Electric Pressure Washer Are Provided With A Ground Fault Circuit Interrupter Built Into The Power Cord Plug. If Replacement Of the Plug Or Cord Is Needed, Use Only Identical Replacement Parts.
10. Never leave the unit unattended while running.

WARNING -

Risk of Injection or Severe Injury

Keep Clear of Nozzle

Do Not Direct Discharge Stream at Persons

This Product Is To Be Used Only By Trained Operators.

Always wear eye, ear and body protection when using a pressure washer.

Use caution when using cleaning chemicals. Read the MSDS sheets before using any cleaning chemical.

Always wear protective clothing, gloves and face shield when using cleaning chemicals.

SAVE THESE INSTRUCTIONS

GROUNDING INSTRUCTIONS

If the pressure washer is electrically powered it must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER – Improper connection of the equipment-grounding conductor can result in a risk of electrocution. Check with a qualified electrician or service personnel if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician. Do not use any type of adaptor with this product.

GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

Some models of electric pressure washers are provided with a ground-fault circuit-interrupter (GFCI) built into the plug of the power-supply cord. This device provides additional protection from the risk of electric shock. Should replacement of the plug or cord become necessary, use only identical replacement parts that include GFCI protection.

IMPORTANT SAFETY INSTRUCTIONS

EXTENSION CORDS

Use only 3-wire extension cords that have 3-prong grounding-type plugs and 3-pole cord connectors that accept the plug from the product. Use only extension cords that are intended for outdoor use. These extension cords are identified by a marking "Acceptable for use with outdoor appliances; store indoors while not in use." Use only extension cords having an electrical rating not less than the rating of the product. Do not use damaged extension cords. Examine extension cord before using and replace if damaged. Do not abuse extension cord and do not yank on any cord to disconnect. Keep cord away from heat and sharp edges. Always disconnect the extension cord from the receptacle before disconnecting the product from the extension cord.

WARNING – *To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.*

AVOID CAVITATION DAMAGE

Cavitation is the formation and collapse of gaseous cavities in a liquid causing severe wear or eroding of the metal surfaces in the pump. The most common cause of cavitation is when the pump is starved for water or if leaks are allowing air to get into the pressure washer pump. The most obvious sign of cavitation is a hammering noise. This noise can be either constant or intermittent depending upon the degree of cavitation and damage to the pump. Persistent cavitation will eventually cause flow and pressure to decrease. It is important to carefully check your system during assembly and operation to avoid the serious damage that can be caused by cavitation. Check your system for these conditions which may contribute to, or directly cause, cavitation:

1. Inadequate inlet line size
2. Insufficient inlet flow or excessive suction
3. Excessive inlet line length
4. Rigid inlet plumbing
5. Too many elbows and/or fittings
6. Excessively hot inlet water
7. Air leak in inlet plumbing
8. Agitation in supply reservoir
9. Clogged inlet filters

ACCESSORIES INCLUDED

Gunjet Lance

High Pressure Hose

Injector

Nozzles - See model type for list:

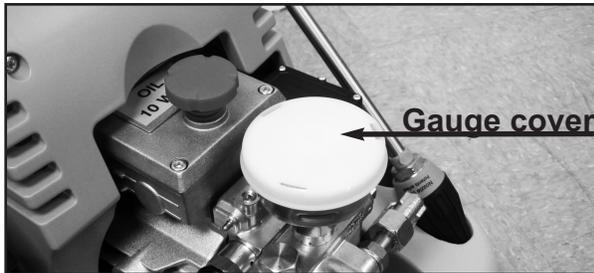
Models: H200 / H260 / H357 - *Vario Jet Nozzle, Dirt Killer Nozzle*

Models: H360 / E300 - *Flat Tip Nozzle Set (0, 15, 40, Soap), Industrial Dirt Killer Nozzle*

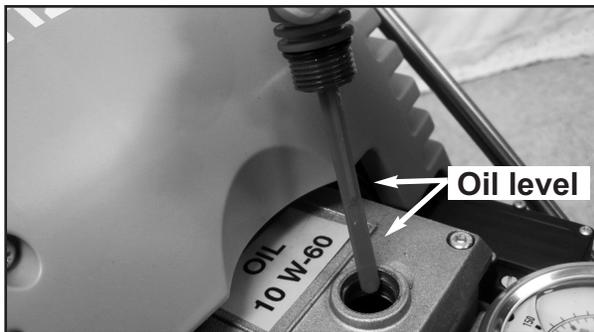
Models: E3000 / H3612 - *Flat Tip Nozzle Set (0, 15, 40, Soap)*

INSTALLATION INSTRUCTIONS

1. Remove pressure gauge cover. You will notice that the pressure gauge is filled with liquid. This is glycerin, not water. The glycerin dampens the movement of the pressure gauge needle to insure long life.



2. Check the oil level on your pressure washer. Do this by checking the dip stick on the top of the pressure washer pump. The oil level must be between the flat blade of the dip stick. If the oil is milky or very dark in color consult a technician before operating the pressure washer



2. If the pressure washer is equipped with a hose reel, unroll the hose from the hose reel insuring that there are no kinks. Insure that the high pressure hose is not a tripping hazard.

(WARNING - High pressure hose can be damaged if run over by a heavy object such as a vehicle).

3. Connect your gun jet onto the high pressure hose. Insure that all quick couplers have o-rings or your pressure washer will leak from the quick coupler connector.

WARNING - Insufficiently tightened fittings may tear o-rings and leak when the pressure washer is operating.

4. Insure a water filter is installed on the water inlet. Check the water filter to insure that it is free of dirt or debris. Connect your unit to a water hose making sure that your supply hose is at least 5/8" diameter and has no leaks, or kinks. (For pressure washer of greater than 3.5 gallons per minute use a 3/4" garden hose to insure proper inlet water flow). If there are leaks make necessary repairs. Insure that you turn on the water spigot completely so that the full flow is obtained. The inlet water should be cold; the temperature may not exceed 140 F. Be sure your unit receives its full water flow requirement.

WARNING - Insufficient inlet water flow can cause cavitation resulting in pump damage.

5. If using cleaning chemical with your pressure washer, mix your cleaning agents in a separate clean container adhering to manufacturer's recommended dilution ratios. Submerge the chemical pickup line into the solution.

6. If you are using an electric pressure washer, be aware of the voltage and amperes stamped on motor. Unroll the power cord completely. Insure the power cord is not in a place where it will be a tripping hazard or will get wet. Plug the cord into an outlet that will provide sufficient voltage and amperage to the unit. On 110 volt machines always use ground 12-3 gauge UL approved extension cords. Never run more than 50 feet of extension cord from the source.

INSTALLATION INSTRUCTIONS (continued)

Dirt Killer endorses the use of UL approved ground fault interrupters (GFI). (Warranty will be void if a GFI equipped model has the GFI plug cut off).

7. If your pressure washer is gasoline driven, always check and fill the gas tank prior to starting.

WARNING - Filling the gasoline tank while the pressure washer is running may ignite the fuel and cause a fire. Never fuel a pressure washer while it is running!

8. If your pressure washer is a fuel-fired hot water pressure washer, make sure burner fuel tank is filled with diesel fuel.

OPERATING INSTRUCTIONS

1. Turn on the inlet water and purge air from the system by squeezing the gun trigger.

2. **For gas powered pressure washers:** Turn gas valve on, close choke lever per manufacturers instructions, advance throttle lever approximately 1/3 of the way open, and turn the engine switch to ON. Start engine with the pull cord. (For easier starting, squeeze the trigger on spray gun as you start the unit). Note - if unit has optional electric start turn switch to start and crank the engine until it runs. Allow the machine to warm-up a few seconds. Advance the throttle to full. You are now ready to clean.

For electrically powered pressure washers:

When starting an electric pressure washer **pull the gunjet trigger** as you turn on the machine to insure longer motor life. To operate the pressure washer turn or press the switch to the ON position. If the pressure washer does not come on when switched on, and the pressure washer is equipped with a the ground fault circuit interrupter (GFCI), then reset the GFCI by pressing the Reset button located on the GFCI.

3. Pull the trigger on the gun jet to clean with the pressure washer.

4. If the pressure washer is equipped with a thirty second time delay. After releasing the trigger, the

pressure washer motor will run for 30 additional seconds and then shut off. To turn the pressure washer on again, re-trigger the gun jet.

WARNING - if the pressure washer equipped with auto on/off is leaking at any place in the system (gun jet, hose, water inlet, etc.) this auto-shut off system will not function properly. Fix the leaks immediately or consult with a technician before using the pressure washer.

For hot water pressure washers: After starting either the gas engine or electric motor, allow the machine to warm-up before switching on the burner. Adjust the temperature control knob to desired temperature (Max. water temp is 210°) on hot water burner units.

3. Dirt Killer pressure washers are equipped with downstream, low pressure soap injectors. To draw chemical/detergent, be sure the pick-up tube is inserted into the chemical container with the tube submerged in the solution. Change nozzle to the soap nozzle (nozzle with black plastic cover and large orifice); or if using a Variojet nozzle, push the nozzle body to the forward position and squeeze the gunjet trigger. The gauge will register a couple hundred pounds of pressure and chemical/soap will mix into water stream at a 10-1 ratio. Soap will take several seconds to pass through the high pressure hose. Always allow the cleaning chemical time to dwell on the surface to be cleaned to insure that the chemical's active ingredients can do their job.

WARNING - Do not let the chemical dry on the surface to be cleaned. Chemicals that are allowed to dry on the surface may cause damage.

CHEMICALS

The exit side or down stream chemical injector allows you to apply chemical without the chemicals coming into contact with the pump. Use the downstream injector to apply soap, pesticides, acids, alkaline and plant protective agents. Contact your local Dirt Killer distributor regarding use of the correct chemical for your Dirt Killer Pressure Washer

OPERATING INSTRUCTIONS (continued)

UNLOADER



To adjust the pressure turn the unloader handle. Rotate handle in a counter-clockwise direction to reduce pressure. Rotate in a clockwise direction to increase the pressure back to the maximum.

(Maximum pressure is set at the factory. Tampering with the setting will void pump warranty).

DIRT KILLER NOZZLE



When cleaning hard surfaces such as concrete, steel, etc, you may achieve better and faster cleaning results by using the Dirt Killer or Industrial Dirt Killer rotary nozzle.

The Dirt Killer and Industrial Dirt Killer nozzles hit much harder than regular spray nozzles and should be used carefully to avoid damage to surfaces to be cleaned. To insure long life of your Dirt Killer nozzle follow these simple rules: 1) always point the nozzle down when starting to spray, 2) do not use with water hotter than 160 degrees F., 3) keep dirt out of the nozzle.

WARNING - Do not use a rotary nozzle on wooden or painted surfaces. It may damage the wood or remove the paint.

VARIOJET NOZZLE



Models H200, H357, H260, come equipped with the Variojet nozzle. For high pressure spray pull back on the nozzle body. For low pressure application of soap/chemical, push the nozzle body forward. To vary the fan spray angle twist the nozzle body to desired angle.

twist the nozzle body to desired angle.

SPECIAL INSTRUCTIONS FOR HOT WATER PRESSURE WASHERS

PRESSURE SWITCH

Dirt Killer hot water pressure washers use a pressure switch to control burner ignition. When the gunjet trigger is pulled the pressure switch detects the pressure in system and ignites the burner. When the gunjet is closed, and the pump is in by-pass mode and no pressure is registered on gauge; the pressure switch shuts down the burner. At no time should the burner be on when the gunjet is closed. If this occurs, shut off the pressure washer immediately and consult a service technician.

H3612 OPERATIONS

These units are equipped with a 12 volt burner. This burner is powered by both a rectifier on the Honda engine and the battery installed on the pressure washer when operating in the hot water mode. The system can operate for 12 hours in the hot water mode before the battery needs to be recharged. This 12 hours can be continuous or through periodic operation. When the battery is depleted the burner will no longer run. Recharge the battery with a slow trickle charger with automatic shut-off. An overnight charge should completely recharge the battery. The battery will also recharge when operating as a cold water unit; the rectifier of the Honda engine provides a charge to the battery. However, this process is much slower than a battery recharger.

SHUT DOWN INSTRUCTIONS

For gas powered pressure washers:

1 Move throttle lever to idle position, the turn engine switch to off. Shut off gas to the carburetor by moving valve to the left.

For electrically powered pressure washers:

1. Turn motor switch to off.

After turning the pressure washer off:

2. Turn water source off.
3. Squeeze gunjet trigger to relieve remaining pressure in the high pressure hose.

SHUT DOWN INSTRUCTIONS (continued)

WARNING - Failure to release the pressure will prevent you from disassembling the hose, gunjet and nozzle.

4. Apply safety catch on the gunjet.
5. Disconnect water supply hose and disassemble the hose, gunjet and nozzle. Roll up the hose onto the hose reel, if applicable.
6. Pull the plug from the socket and wind up the power cord.
7. Check and clean the water filter
8. In colder climates it is necessary to protect the pump from freezing (refer to freeze protection).

USER-MAINTENANCE INSTRUCTIONS

1. The pump has an oil bath in the pump transmission. Check to oil before every use to insure that there is sufficient oil and that the oil is not discolored. Remove the dip stick. The oil level should be within the flat area on the dip stick. Use synthetic oil, 5-W50. Change the oil after the first 50 hours of operation and every 200 hours thereafter.
2. Check the water inlet filter of debris. Clean out

the filter as necessary.

3. Check the unit for water leaks. Any leak in the inlet garden hose, hose connection, gunjet, lance, or nozzle will allow air to get into the pressure washer pump and cause malfunction and damage. Leaks will also cause the pressure switch to cycle, confusing the auto on/off switch. Fix any leaks immediately.

FREEZE PROTECTION

Pressure washers equipped with the Kränzle pump can be run dry without damage. To protect your pump from freeze damage, disconnect the high pressure hose and water hose from the pump and run the pressure washer for thirty seconds or until all the water is ejected from the pump. If you have a hot water pressure washer, or a pressure washer equipped with a float tank we recommend the use of antifreeze to protect hot water coil from freezing. Simply hook up suction hose from inlet water connection to container of anti-freeze. Run the unit long enough to fill the coil with the anti-freeze mixture. The mixture should be full strength - but no less than 50% solution.

TROUBLESHOOTING TABLE

PROBLEM	DIAGNOSIS	REMEDY
Low Pressure	Worn nozzle	Replace nozzle
	Air leak in inlet plumbing	Disassemble, reseal and reassemble
	Inlet suction strainer clogged	Clean and check frequently
	Worn packing	Check and replace packing
	Inadequate water supply	Check water supply for sufficient flow and obstructions in inlet filter
	Fouled or dirty inlet discharge valves	Check and replace valves
	Leaky discharge hose	Check and replace hose

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PROBLEM	DIAGNOSIS	REMEDY
Pump Runs Rough	Restricted inlet Air leaks: air in plumbing	Check for proper size inlet plumbing Tighten plumbing; fix leaks; insure an air tight seal Make sure high pressure soap valve is closed
Pump Pulsates	Stuck inlet or discharge valve Inadequate water supply	Clean out foreign material Replace worn valves Check water supply for sufficient flow and obstructions in inlet filter
Slight Water Leakage From Underneath Pump	Worn packings	Install new packings
Packing Failure	Scored, damaged or worn plunger Overpressure to inlet manifold Abrasive material in inlet water Excessive minerals in water Excessive temperature. or pressure of inlet water	Replace plungers Reduce inlet pressure Install proper filtration Soften inlet water Reduce inlet water temperature and/or pressure
No Water Comes Out	Nozzle plugged / clogged Water hose kinked	Clean or replace nozzle Un-kink hose
Oil Leak Between Pump Head and Pump Transmission	Oil seal leaking Chipped plunger	Replace oil seal Replace plunger
Oil Leak From Bottom Or Back of Motor	Shaft seal worn	Replace shaft seal
Water in Oil (Milky Color)	Worn packing Water condensation in transmission housing Chipped plunger	Change packings Change oil Replace plunger and packings

PROBLEM	DIAGNOSIS	REMEDY
Motor is Hot	Using extension cord that is too thin or too long	Get larger gauge extension cord. Get a shorter extension cord; stop using extension cord
	Unloader sticking	Clean or replace unloader
	Too small nozzle orifice size	Install proper nozzle
Oil Leak From Transmission Housing	Drain plug o-ring leaks	Replace o-ring or tighten drain plug
	Oil sight glass leaks	Replace oil sight glass

TOOL CHART					
	valve cap	pump head	y strainer	bolt torque	pump oil capacity
AP PUMP	13 mm wrench	6 mm allen wrench	20 mm wrench	225 in lbs.	.5 quarts
APG PUMP	19 mm wrench	6 mm allen wrench	20 mm wrench	225 in lbs.	.5 quarts
AQ PUMP	22 mm wrench	10 mm allen wrench	20 mm wrench	250 in lbs. (engine mount) 300 in lbs. (pump manifold)	1.0 quarts
AZ PUMP	13 mm wrench	6 mm allen wrench	NA	225 in lbs.	.3 quarts

MOVING AND STORAGE INSTRUCTIONS

Store the pressure washer in a heated facility to prevent freeze damage. Any water remaining in the hose, hose reel, pump head, float tank or hot water coil after use that becomes frozen can cause extensive damage. Run unit with anti-freeze even if in heated storage. For gas units - run carburetor dry of gasoline by shutting off the gas valve while running until the unit shuts down. The storage procedure should be performed any time the unit is not going to be used for a period longer than thirty days.

WARRANTY

Dirt Killer Pressure Washers warrants all parts of your new pressure washer to be free from manufacturing defects in materials and workmanship for a period of one (1) year from the date of original purchase. Some components may have longer warranty periods over and above the basic one-year limited warranty. For example :Kränzle pump manifold (10 years).

Defective parts not subject to normal wear and tear will be repaired or replaced at our option during the warranty period.

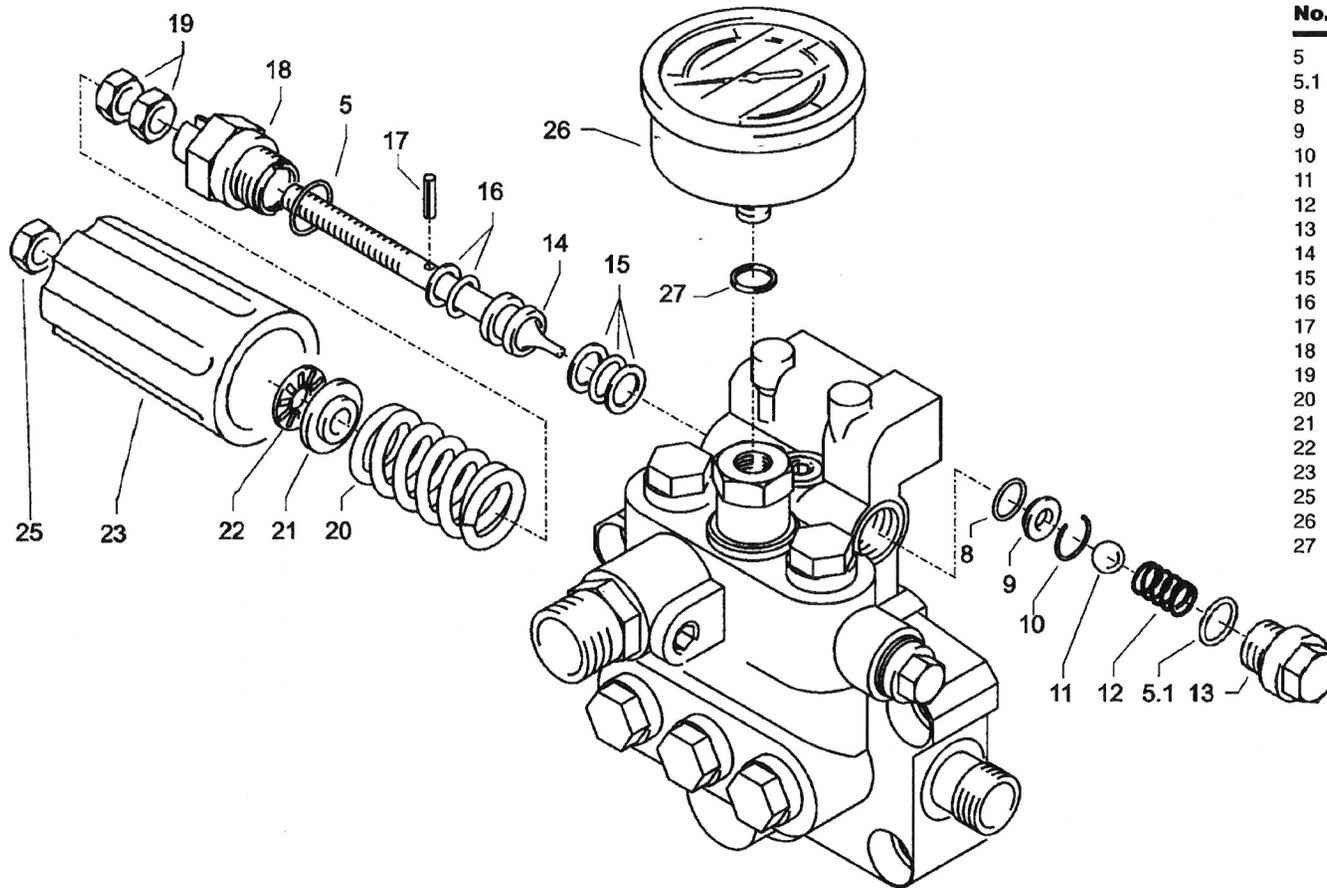
Exclusions: This warranty does not cover parts damaged due to normal wear, misapplication, misuse, or operation at other than recommended speeds, pressures or temperatures. Any misuse, abuse, alteration or improper installation or improper operation will void warranty. Determining whether a part is to be replaced or repaired is solely the decision of Dirt Killer Pressure Washers.

Parts damaged or worn because of the use of caustic liquids or by operation in abrasive or corrosive environments or under conditions causing pump cavitation are not warranted.

Failure to follow recommended operating and maintenance procedures or failure to use authorized Kränzle parts also voids warranty.

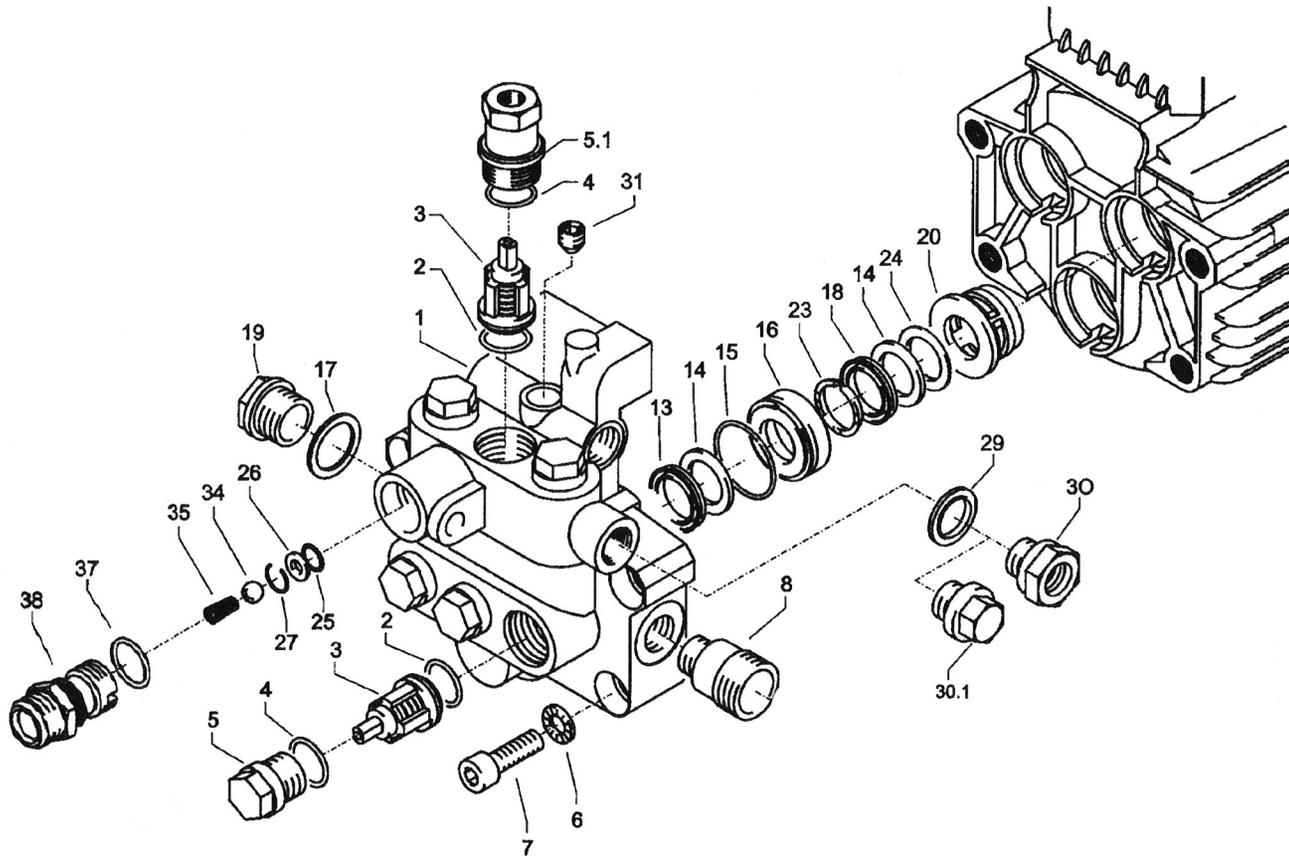
Products and parts returned, prepaid to our factory or to a Dirt Killer authorized service center, will be inspected repaired or replaced free of charge if found to be defective and subject to warranty. There are no warranties that extend beyond the description on the face hereof. This warranty applies only to the original owner and is not transferable. Under no circumstances shall Dirt Killer Pressure Washers bear a responsibility for loss of the unit, loss of time or rental, inconvenience, commercial or consequential damages.

AQ - 2012 Internal K-Style Unloader Valve



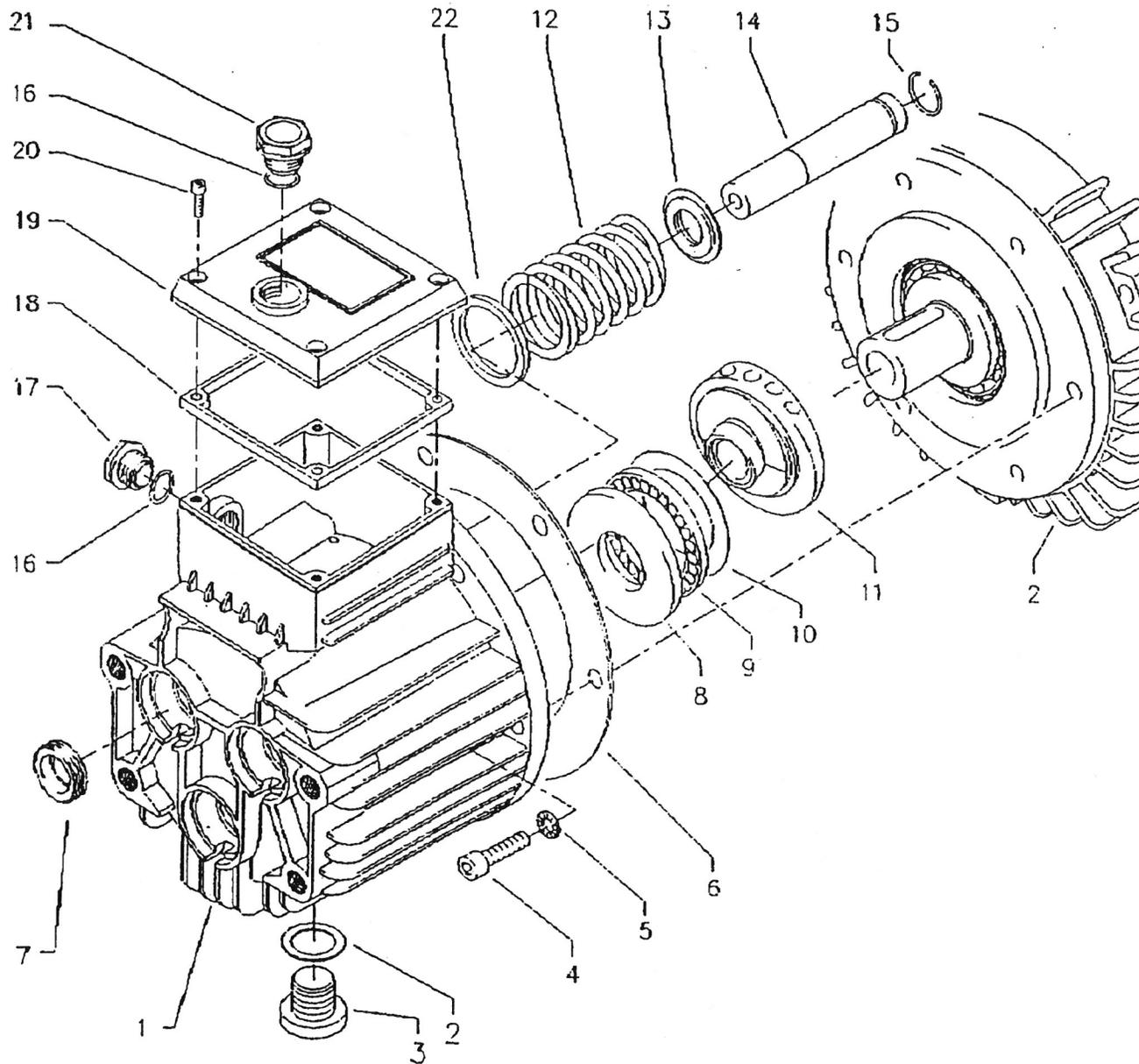
No.	Description	Qty.	Ord.-No.
5	O-Ring 16 x 2	1	13.150
5.1	O-Ring 13,94 x 2,62	1	42.167
8	O-Ring 11 x 1,44	1	12.256
9	Edelstahlsitz	1	14.118
10	Sicherungsring	1	13.147
11	Edelstahlkugel	1	13.148
12	Edelstahlfeder	1	14.119
13	Verschlusschraube	1	14.113
14	Steuerkolben	1	14.134
15	Parbaks 16 mm	1	13.159
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

AQ - 2012 Internal K-Style Unloader Valve Housing



No.	Description	Qty.	Ord.-No.
1	Ventilgehäuse AQ mit integr. UL ohne integr. Druckschalter	1	40.521
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
8	Sauganschluss R 1/2" AG	1	41.016 1
9	WassereingangsfILTER	1	41.046 2
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
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
29	Dichtring 17 x 22 x 1,5 (Kupfer)	1	40.019
30	Anschlussmuffe 3/8" AG x 3/8" IG bei Ausführung mit Drehzahlregulierung	1	13.136
30.1	Verschlusschraube 3/8" AG bei Ausführung ohne Drehzahlregulierung	1	40.018
31	Dichtstopfen M 10 x 1	1	43.043
34	Edelstahlkugel Ø10	1	12.122
35	Rückschlagfeder „K“	1	14.120 1
37	O-Ring 18 x 2	1	43.446
38	Ausgangsstück Injektor ST30 M22x1,5	1	40.522 1
48	Gummidichtung für Steckkupplung	1	41.047 1
49	Steckkupplung für Wassereingang	1	41.047 2
49.1	Steckkupplung kpl. Pos. 48 - 50	1	41.047 4
50	O-Ring	1	41.047 3
Repair kit sleeves			40.065 1
consisting of: 3x No. 13; 6x No. 14; 3x No. 15; 3x No. 16; 3x No. 18; 3x No. 20; 3x No. 23			
Repair kit sleeves without brassparts consisting of: 3x No. 13; 6x No. 14; 3x No. 15; 3x No. 18; 3x No. 23			40.517
Repair kit Valves consisting of: 6x No. 2; 6x No. 3; 6x No. 4			40.062 1

AQ - 2012 Internal K-Style Unloader Electric Transmission Housing Diagram



AQ - 2012 Internal K-Style Unloader Electric Transmission Housing Parts List

Pos.	Code No.	Description	No. off
1	40501	Oil housing	1
2	40052	Cooper rearing ring	1
3	40051	Oil outlet screw	1
4	40053	Hexagon socket screw M8 x25	6
5	40054	Retaining washer	6
6	40511	Flat seal	1
7	400441	Oil seal 20 x 38 x 7	3
8	40043	Shaft washer	1
9	40040	Axial roll cage	1
10	40041	Outer washer	1
		Swash plate	
11	400421	Please state the degree specification when ordering.	1
12	40506	Plunger spring	3
13	40510	Spring pressure washer	3
14	40505	Plunger 20mm (length)	3
15	40048	Snap ring	3
16	43445	O-ring 14 x 2	2
17	420181	Oil sight glass M 18 x 1,51	
18	410193	Flat seal	1
19	410231	Cover	1
20	410194	Hexagon socket screw M 5 x 12	4
21	410221	Oil screw M 18 x 1,5	1
22	40513	Holding disc for plunger spring	3
		11/7/96	