DURAPAC
ENGINEERED FOR RELIABILITY

Instruction Manual

10 Ton Hydraulic Bench Press
Model – HP-10

Maximum Operating Pressure – 700 bar

ABSOLUTE EQUIPMENT PTY LTD – 2/186 Granite Street, GEEBUNG QLD 4034 – Australia
sales@absoluteequipment.com.au – Phone: +61 7 3865 4006 – Fax: +61 7 3102 6288

This is a safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid injury or death

1.0 Product Information

DURAPAC – Hydraulic Bench Presses are engineered to meet Industrial Standards for Performance and Safety. The HP-10 unit incorporates a two speed hydraulic hand pump with force gauge, hose and a 10 ton 152 mm stroke spring return cylinder. The HP-10 bench press is ideal for workshop pressing jobs such as the installation or removal of bearings and gears, repair of electric motors or other press fit parts.

- 10 ton hydraulic cylinder with 152 mm stroke. Longer stroke cylinders available on request
- Press plate set and bushing allows for greater pressing flexibility
- Steel frame provides maximum strength and rigidity
- Press bed has multiple working positions
- 2 speed hand pump with force gauge and 2 metre hose set

Note – DPR-15R air/hydraulic power unit with remote pendant can also be used to operate the HP-10 press.

Special skill, knowledge and training may be required for a specific task and the product may not be suitable for all jobs. The user must ultimately make the decision regarding suitability of the product for any given task and assume the responsibility of safety for all in the work area. Contact a Durapac representative if you are unsure of your bench press' suitability for a particular application.

2.0 Receiving Instructions

It is recommended prior to use that an inspection be done by qualified personnel and that any missing or damaged parts, decals, warning/safety labels or signs are replaced with Durapac authorised replacement parts only. Any bench press that appears to be damaged in any way, is worn, leaking or operates abnormally should be removed from service immediately until such time as repairs can be made. Any bench press that has been or suspected to have been subject to a shock load should be removed from service immediately until inspected by a Durapac authorised service centre. Owners and operators of this equipment should be aware that the use and subsequent repair of this equipment may require specialised training and knowledge.

3.0 Safety

Save these instructions. For your safety, read and understand the information contained within. The owner and operator should have an understanding of this product and safe operating procedures before attempting to use this product. Instructions and safety information should be conveyed in the operator's native language before use of this product is authorised. Make certain that the operator thoroughly understands the inherent dangers associated with the use and misuse of the product. If any doubt exists as to the safe and proper use of this product as outlined in this factory authorised manual, remove from service immediately.

DANGER:

- To avoid personal injury keep hands and feet away from work area during operation

- **Do NOT** handle pressurised hoses. Escaping oil under pressure can penetrate the skin causing serious injury. If oil is injected under the skin, see a doctor immediately
- Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be supported mechanically

WARNING:

- The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system
- Always wear appropriate personal protective equipment (PPE) when operating hydraulic equipment. The operator must take precaution against injury due to failure of the tool or work piece(s)
- **Do NOT** hold or stand directly in line with any hydraulic connections while pressurising
- **Do NOT** attempt to disconnect hydraulic connections under pressure. Release all line pressure before disconnecting hoses
- All personnel must be clear before lowering load or depressurising the system
- **Do NOT** attempt to lift a load weighing more than the capacity of the cylinder

IMPORTANT:

- If at any stage, the safety related decals become hard to read, these must be replaced
- Minimum age of the operator must be 18 years. The operator must have read and understood all instructions, safety issues, cautions and warnings before starting to operate the equipment. The operator is responsible for this activity towards other persons
- **Do NOT** lift hydraulic equipment by the hoses or couplers. Use the carrying handle or other means of safe transport
- Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Durapac authorised service centre in your area. To protect your warranty, use only high quality hydraulic oil

CAUTION:

- **KEEP HYDRAULIC EQUIPMENT AWAY FROM FLAMES AND HEAT.** Hydraulic fluid can ignite and burn. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65°C (150°F) or higher. Protect all equipment from weld spatter
- No alteration should be made to this device

3.1 Hydraulic Presses

- Work pieces must be well supported and aligned so when pressure is exerted; parts being pressed do not slip out or break

- To prevent accidental slippage, do not place work pieces on the press bed, or apply hydraulic force until all bolster pins are in place and all tension has been removed from the bolster lift cables
- **Do NOT** overload equipment. Overloading can cause equipment failure and possible personal injury. The presses are designed for a maximum pressure of 700 bar
- **Do NOT** stress adapters beyond their capacities. Any pushing or pulling adapters used with this press must have a maximum tonnage rating equal to, or higher than, the maximum tonnage rating of the press, or breakage can occur
- It is impossible for Durapac to provide practical "all purpose" shielding because this is a general all-purpose press that can be used in many different applications. The owner of the press must supply shielding that is practical and necessary for each application. Some safety can be provided by wrapping the piece in a protective blanket before applying pressure

3.2 Hydraulic Hoses & Fluid Transmission Lines

- Avoid short runs of straight line tubing. Straight line runs do not provide for expansion and contraction due to pressure and/or temperature changes
- Reduce stress in tube lines. Long tubing runs should be supported by brackets or clips. Before operating the pump, connections should be tightened securely and leak-free. Over tightening can cause premature thread failure or high pressure fittings to burst
- Should a hydraulic hose ever rupture, burst or need to be disconnected, immediately shut off the pump and release all pressure. Never attempt to grasp a leaking pressurised hose with your hands. The force of escaping hydraulic fluid can inflict injury
- **Do NOT** subject the hose to potential hazard such as fire, sharp objects, extreme heat or cold or heavy impact
- **Do NOT** allow the hose to kink, twist, curl, crush, cut or bend so tightly that the fluid flow within the hose is blocked or reduced. Periodically inspect the hose for wear
- Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses also must not come in contact with corrosive materials such as battery acid, creosote-impregnated objects and wet paint. Never paint a coupler or hose

FAILURE TO HEED THESE WARNINGS MAY RESULT IN PERSONAL INJURY AS WELL AS PROPERTY DAMAGE.

4.0 Installation

⚠ Locate the press in an isolated area, or shield the press to minimize danger to others. Hydraulic pressure can cause materials to break, possibly resulting in personal injury

⚠ **Do NOT** adjust safety valve pressure – safety valve pressure is set at 700 bar

4.1 Familiarise yourself with the details and illustrations in this owner's manual. Know your bench press, its limitations and how it operates before attempting to use. If in doubt, contact a Durapac representative.

4.2 Check all system fittings and connections to be sure they are tight and leak free.

4.3 Check oil level in reservoir before operating pump.

4.4 Remove air from the system – Air can accumulate in the hydraulic system during the initial setup or after prolonged use, causing the cylinder to respond slowly or in an unstable manner. Should removal of air from pump be required, please follow the steps in 6.2 – Bleeding Air from the System in the Maintenance Section.

5.0 Operation

⚠ Presses can exert extremely high forces at moderate hydraulic pump pressure. Ensure the included force gauge is closely monitored during all pressing operations

5.1 Positioning the Work bed

5.1.1 Vertical Positioning of the Bolster:

5.1.1.1 Manually support the bolster.

5.1.1.2 Remove pins from frame.

5.1.1.3 Lift or lower bolster until desired position has been reached.

5.1.1.4 Reinsert pins into frame.

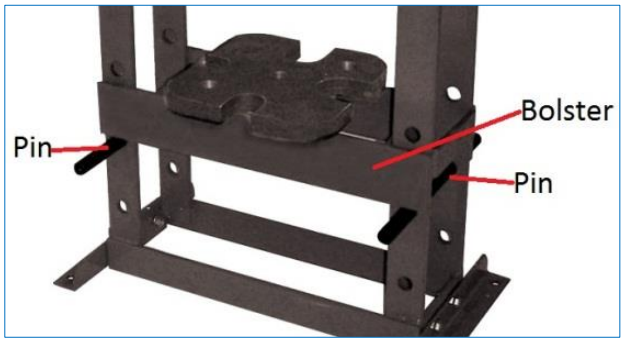


Figure 1 – Vertical Positioning

5.1.2 Horizontal Positioning of the Cylinder:

5.1.2.1 Undo wing nuts on the cylinder base plate, slide left or right to adjust position.

5.1.2.2 Tighten wing nuts once desired position has been reached.

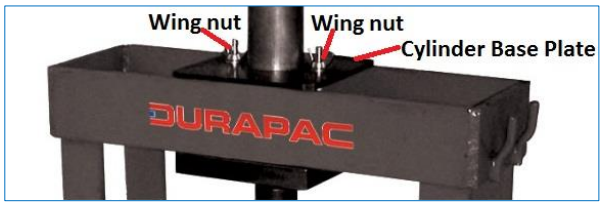


Figure 2 – Positioning the Cylinder Base

5.2 Pump operation

IMPORTANT:

- **Do NOT** add extensions to the pump handle. Extensions cause unstable pump operation
- In certain situations the pump handle can "kick back". Always keep your body to the side of the pump, away from the line of force of the handle
- **Do NOT** operate a pump that is disconnected from application. If operated in this condition, the hose and connections will become pressurised. This increases burst hazard. Damage may occur to pump and its components

The pump may be operated in a horizontal or in a vertical position with the head pointing down as shown.

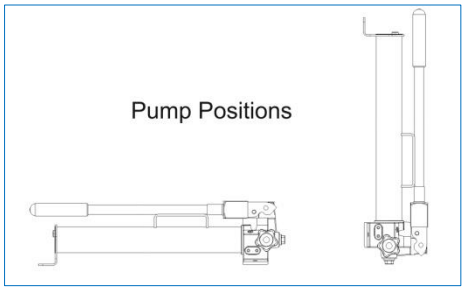


Figure 3 – Hand Pump Operation

5.2.1 Before Using the Pump

5.2.1.1 Check all system fittings and connections to be sure they are tight and leak free.

5.2.1.2 Check oil level in reservoir before operating pump.

5.2.2 Using a Two-Speed Pump

This pump provides 2-stage flow. Under no-load, the pump operates in the high flow first stage for rapid advance. When the load is contacted, the pump automatically shifts to the second stage for building pressure. After the pump shifts, pumping takes less effort.

Note: To reduce handle effort at high pressure, take short strokes. Maximum leverage is obtained in the last 5° of stroke. For best performance, operate pump handle at moderate speed during the high flow first stage. Rapid handle speed in the first stage will prevent the pump from delivering full volume of oil.

5.2.3 Advance and Retraction of Single-Acting Applications

5.2.3.1 Turn the pump's release valve clockwise to a closed position.

⚠ **IMPORTANT**: Only hand tighten the valve. Applying too much force to the valve may damage the valve stem.

5.2.3.2 Work the pump handle up and down to send oil through the hose to the cylinder, causing the piston to extend to the work piece.

5.2.3.3 Monitor the pressure gauge while completing the application.

Note: The pump is equipped with an overload valve that will bypass oil back into the pump reservoir in an overload situation (when the system meets maximum pressure). In this case, continued pumping will have no effect on the system. If an overload situation commonly occurs, a higher capacity set is needed.

5.2.3.4 To release pressure, slowly turn the release valve counter clockwise. The release speed is controlled by how fast the valve is opened.

5.2.4 Relief Valve Adjustment

All pumps contain a factory set relief valve to prevent over-pressurisation of the system.

6.0 Maintenance

IMPORTANT:

- Check oil level regularly
- Use only good quality hydraulic fluid. **Do NOT** use brake fluid, transmission fluid, turbine oil, motor oil, alcohol, glycerine etc. Use of anything other than good quality hydraulic oil will void warranty and damage the press. We recommend Durapac Hydraulic Oil or equivalent
- Cables must run on the pulleys easily, and the pulleys must be free to turn. Careful cable maintenance will help prevent cable breakage

Maintenance is required when wear or leakage is noticed. Periodically inspect all components to detect any problem that may require service and maintenance.

6.1 Adding Hydraulic Fluid

⚠ **WARNING:** Always add oil with cylinders fully retracted (or extended, if pull cylinders) or the system will contain more oil than the reservoir can hold

6.1.1 Depressurise and disconnect hydraulic hose from application/cylinder.

6.1.2 Put the pump in a vertical position (pump head face down); remove oil filler plug located on rear of the pump reservoir.

6.1.3 Use a small funnel to fill the reservoir to approximately 75 mm from the top of the oil filler hole.

6.1.4 Bleed air from system if necessary.

6.1.5 Wipe up any spilled fluid and reinstall the air vent plug/reservoir cap.

6.2 Bleeding Air from the System

6.2.1 Repeat Steps 6.1.1 to 6.1.3 (above), if required.

6.2.2 Invert cylinder and place at a lower level than the pump reservoir.

6.2.3 Extend and retract the cylinder several times without putting a load on the system. Air will be released into the pump reservoir.

6.2.4 Recheck oil level after removing air.

6.3 Changing Hydraulic Fluid

⚠ For best results, change fluid once a year or every 300 hours of use

6.3.1 Repeat Steps 6.1.1 to 6.1.2 (above).

6.3.2 Pour used fluid into a sealable container.

6.3.3 Repeat Steps 6.1.3 to 6.1.5 (above).

6.3.4 Dispose of fluid in accordance with local regulations.

6.4 Lubrication

To extend pump life and improve performance, lubricate the beam pin (A), cross pin (B), and piston head (C) regularly, using roller bearing grease.

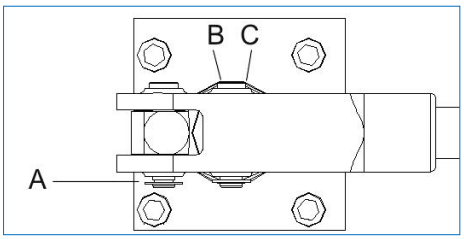


Figure 4 - Lubrication

6.5 Storage

6.5.1 When not in use, depressurise and disconnect the hydraulic pump from the application.

6.5.2 Wipe clean thoroughly and store in a clean, dry environment. Avoid temperature extremes.

6.5.3 Shield pump with a protective cover.

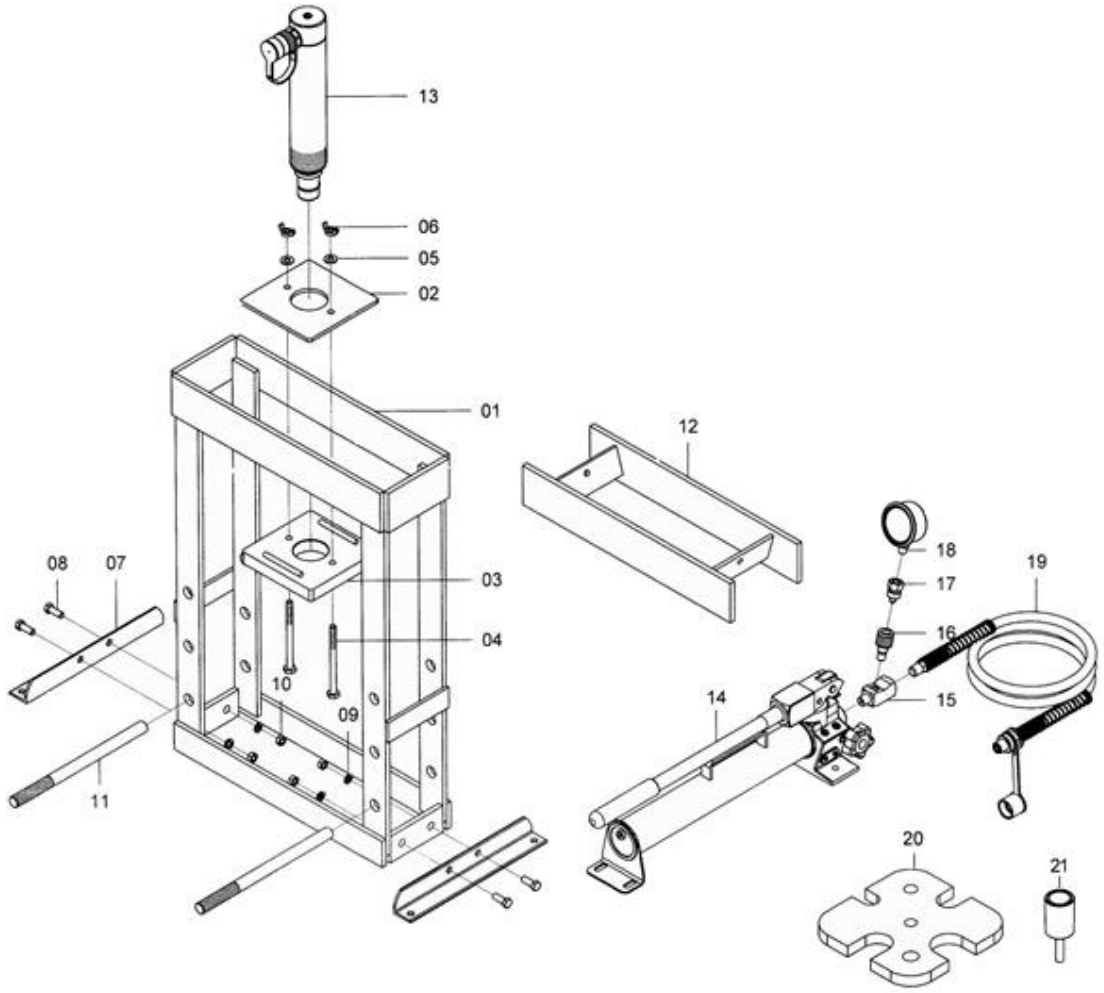
7.0 Troubleshooting

Problem	Cause	Solution
Cylinder moves but does not maintain pressure	Leaking connection	• Clean, reseal with thread sealant and tighten connection
	Leaking cylinder seals	• Replace worn seals • Check for excessive contamination or wear • Replace contaminated fluid as necessary
	Pump/valve malfunctioning	• Check pump or valve operating instructions
Pump does not reach rated capacity	Low fluid level in reservoir	• Check fluid level •
	Leaking system components	• Repair or replace as necessary
	Fluid leaking past inlet or outlet checks	• Repair inlet or outlet checks • Replace high pressure piston seal
Pump handle has a "spongy" feel	Air trapped in system	• Refer to 6.2 – Bleeding Air from the System
	Too much fluid in reservoir	• Check fluid level
Cylinder leaks hydraulic fluid	Worn or damaged seals	• Replace worn seals • Check for excessive contamination or wear • Replace contaminated fluid as necessary
	Loose connections	• Clean, reseal with thread sealant and tighten connection
Cylinder will not retract or retracts slower than normal	Closed pump release valve	• Open pump release valve
	Loose couplers	• Tighten couplers
	Blocked hydraulic lines	• Clean and flush lines
	Weak or broken retraction springs	• Send to a Durapac authorised service centre for repair
	Internally damaged cylinder	• Send to a Durapac authorised service centre for repair
	Pump reservoir too full	• Drain hydraulic fluid to correct level
	Low fluid level in pump reservoir	• Fill and bleed the system as described in the Maintenance Section
Erratic Action	Air in the system or pump cavitation	• Add fluid, bleed air and check for leaks as described in the Maintenance Section

Problem	Cause	Solution
	External leakage	• Replace worn packings • Check for excessive contamination fluid as necessary
	Sticking or binding cylinder	• Check for dirt or leaks • Check for bent, misaligned, worn parts or defective packings
Cylinder does not move	Loose couplers	• Tighten couplers
	Faulty coupler	• Verify that female coupler is not locked up (ball wedged into seat) • Replace both male and female couplers
	Improper valve position	• Close release valve or shift to new position
	Low or no hydraulic fluid in pump reservoir	• Fill and bleed the system as described in the Maintenance Section
	Air-locked pump	• Prime pump as described in 6.2 – Bleeding Air from the System in the Maintenance Section
	Pump not operating	• Check the Operation Section for the pump's operating instructions
	Load is above the capacity of the system	• Use the correct equipment
Cylinder extends only partially	Low or no hydraulic fluid in pump reservoir	• Fill and bleed the system as described in the Maintenance Section
	Load is above the capacity of the system	• Use the correct equipment
	Sticking or binding cylinder	• Check for dirt or leaks • Check for bent, misaligned, worn parts or defective packings
Cylinder moves slower than normal	Loose couplers	• Tighten couplers
	Restricted hydraulic line or fitting	• Clean and replace if damaged
	Pump not operating correctly	• Check the Operation Section for the pump's operation instructions
	Leaking cylinder seals	• Replace worn seals • Check for excessive contamination or wear • Replace contaminated fluid as necessary

8.0 Parts Breakdown and List

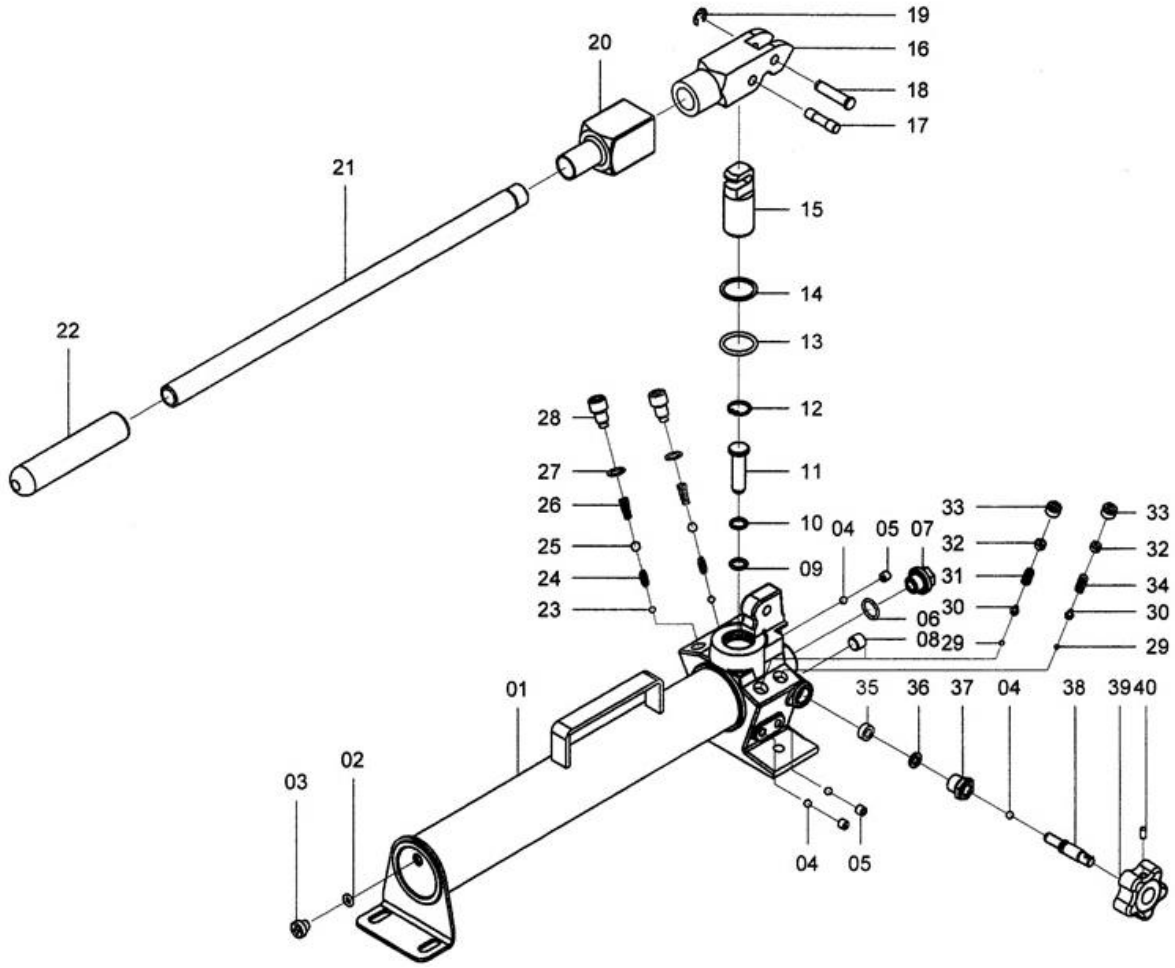
8.1 Hydraulic Press Assembly



Item	Description	Part No.	Qty
1	Frame assembly	ZAL1475	1
2	Upper cylinder fixed base	ZAL1476	1
3	Lower cylinder fixed base	ZAL1477	1
4	Screw	ZAL1478	2
5	Washer	ZAL1479	2
6	Wing nut	ZAL1480	2
7	Frame feet	ZAL1481	2
8	Screw	ZAL1482	4
9	Spring washer	ZAL1483	4
10	Nut	ZAL1484	4
11	Pin	ZAL1485	2

Item	Description	Part No.	Qty
12	Bolster	ZAL1486	1
13	Hydraulic cylinder	HP-10R	1
14	Hand pump	P-260	1
15	Gauge adapter	FGA-1	1
16	Quick coupler	ZAL1487	1
17	Quick coupler	ZAL1488	1
18	Gauge	ZAL1403	1
19	Hose	ZAL1326	1
20	Reaction plate	ZAL1491	1
21	Load cap	ZAL1490	1
	Reaction plate & load cap set	ZAL1489	1

8.2 Pump Assembly – Model P-260 ***Supersedes all previous versions***

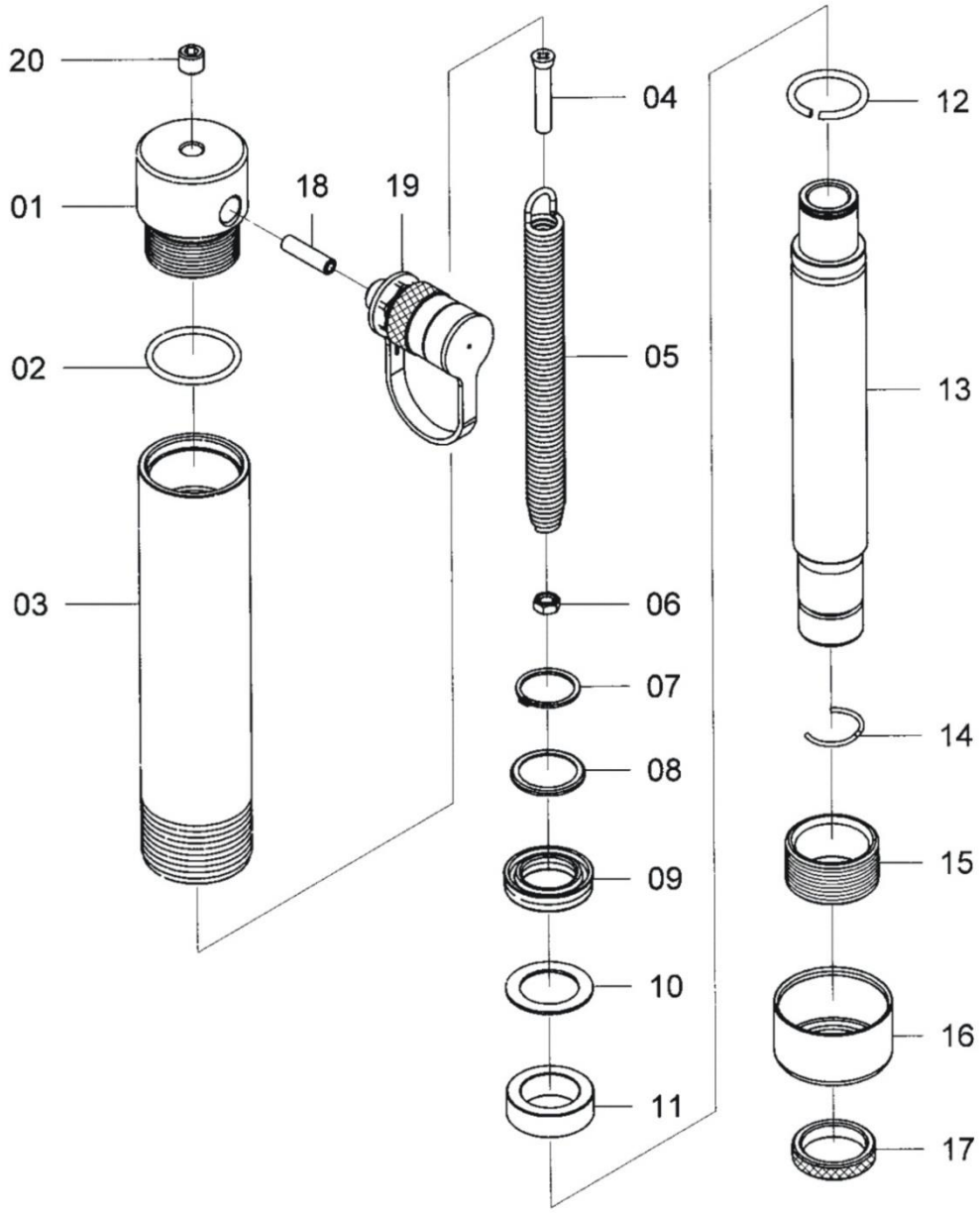


Item	Description	Part No.	Qty
1	Pump housing	ZAL1010	1
2	O-ring*	ZAL1210	1
3	Air release screw	ZAL1285	1
4	Steel ball	ZAL1366	4
5	Screw	ZAL1284	3
6	O-ring	ZAL1229	1
7	Nipple	ZAL1264	1
8	Set screw	ZAL1297	1
9	O-ring*	ZAL1272	1
10	Back-up ring*	ZAL1209	1
11	H.P. piston	ZAL1406	1
12	Snap ring	ZAL1329	1
13	O-ring*	ZAL1277	1
14	Back-up ring*	ZAL1225	1

Item	Description	Part No.	Qty
15	L.P. piston	ZAL1103	1
16	Yoke	ZAL1176	1
17	Piston pin	ZAL1108	1
18	Yoke pin	ZAL1095	1
19	Retaining ring	ZAL1327	1
20	Yoke cover	ZAL1226	1
21	Handle	ZAL1066	1
22	Handle grip	ZAL1263	1
23	Steel ball	ZAL1367	2
24	Spring	ZAL1344	2
25	Steel ball	ZAL1368	2
26	Spring	ZAL1339	2
27	Washer	ZAL1340	2

Item	Description	Part No.	Qty
28	Valve cover screw	ZAL1286	2
29	Steel ball	ZAL1370	2
30	Spring end cap	ZAL1096	2
31	L.P. spring	ZAL1350	1
32	Screw	ZAL1175	2
33	Set screw	ZAL1294	2
34	H.P. spring	ZAL1346	1
35	Oil seal	ZAL1224	1
36	Washer	ZAL1351	1
37	Release nut	ZAL1291	1
38	Release valve screw	ZAL1292	1
39	Release valve	ZAL1388	1
40	Screw	ZAL1290	1
	Repair kit	ZAL1396	1

8.3 Cylinder – Model HP-10R



Item	Description	Part No.	Qty
1	Cylinder base	ZAL1455	1
2	O-ring*	ZAL1456	1
3	Cylinder	ZAL1457	1
4	Screw	ZAL1458	1
5	Spring	ZAL1459	1
6	Nut	ZAL1460	1
7	Snap ring	ZAL1328	1
8	Washer	ZAL1461	1
9	U-cup seal*	ZAL1462	1
10	Back-up ring*	ZAL1463	1
11	Brass bushing	ZAL1464	1

Item	Description	Part No.	Qty
12	Spring ring	ZAL1465	1
13	Piston rod	ZAL1466	1
14	Spring ring	ZAL1467	1
15	Fasten nut	ZAL1468	1
16	Cylinder sleeve	ZAL1469	1
17	Spacer	ZAL1470	1
18	Pin	ZAL1471	1
19	Coupler	ZAL1472	1
20	Set screw	ZAL1297	1
	Repair kit	ZAL1474	1

Items marked with a * are contained within a standard Repair Kit.
Serial number, model and part number need to be quoted when ordering parts.