

DURAPAC

ENGINEERED FOR RELIABILITY

Instruction Manual

Manual Hydraulic Toe Jack
Model – TJ Series



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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 Toe Jacks are engineered to meet Industrial Standards for Performance and Safety. The TJ Series of toe jacks are a premium range ideally suited to lifting heavy machinery or equipment when access height is restricted. Toe lift capacities range from 2 - 25 ton and all models (except the TJ-2) feature a spring return piston.

- Chrome plated steel piston rod resists corrosion and extends life
- All jacks have been designed for ease of use and handling
- Carbon steel base is welded to ensure increased resistance to high pressure and provide greater durability
- Operating handle is included with all models
- 360° rotating pump handle on models 2 - 15 ton
- Internal stroke limiter prevents piston rod over-extension
- Lifting toe has been manufactured from high strength alloy steel

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 toe jack's suitability for a particular application.

2.0 Receiving Instructions

Open packing and confirm that the jack and handle are present and undamaged.

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 toe jack 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 toe jack 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 Toe Jacks

- Do NOT exceed the rated capacity of the jack or any equipment in the system
- Do NOT tamper with the adjustment of the jacks internal relief valve screw. To do so may cause the jack to fail
- Do NOT use in an unstable or hazardous position
- Always use the jack on solid and level surface that is capable of carrying the load. If used to lift a vehicle, set the vehicle's parking brake and block the tyres
- Keep the load stable during lifting. An unstable load may cause the jack or load to slip
- Centre the load on the jack. Off centre loads can damage seals and cause hydraulic failure
- Keep non-essential personnel at a safe distance when using the jack
- Do NOT carry the jack by the jacking lever
- Do NOT lift people or loads with people on them
- Do NOT lift a load on the end of the toe. Fully engage the load with the toe and where practical ensure that the top of the vertical face "head-toe" attachment is also engaged with the load.
- Ensure that the jack is undamaged and in good working order. Do not use the jack if it is damaged
- Do NOT use the jack for any purpose other than that for which it is intended
- Keep the jack clean, particularly the head-toe attachment
- Do NOT operate the system with bent or damaged couplers or damaged threads
- Do NOT subject the jack and its components to shock loads
- Use only Durapac approved accessories and components

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

4.0 Installation

- 4.1 Familiarise yourself with the specifications and illustrations in this owner's manual. Know your toe jack, its limitations and how it operates before attempting to use. Refer to the specification chart below or if in doubt, contact a Durapac representative.

Model No.	Toe Lift Capacity ton*/kN		Jack Width x Depth (mm)	Toe Length x Width (mm)	Collapsed Height (mm)	Min. Toe Height (mm)	Stroke (mm)	Weight (kg)
TJ-2	2	19.9	145 x 185	45 x 50	235	14	118	9
TJ-5	5	49.0	185 x 270	55 x 70	295	25	123	23
TJ-10	10	98.0	230 x 295	60 x 80	330	30	141	32
TJ-15	15	147.0	250 x 315	58 x 100	340	28	165	48
TJ-25	25	245.1	280 x 345	65 x 145	382	38	129	80

* Nominal Jack Capacity in ton - see kN values for actual capacity

- 4.2 Check oil level in reservoir before operating the jack
- 4.2.1 Open release valve with the handle (not more than two counter-clockwise turns) and press down on the head-toe attachment to ensure the piston is fully down.
 - 4.2.2 Remove the oil filler plug.
 - 4.2.3 The oil should be level with the bottom of the filler hole. Adjust level as necessary and replace plug.
- 4.3 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 the jack be required, please follow the steps in 6.2 – Bleeding Air from the System in the Maintenance Section.
- 4.4 Lubrication - Oil the pivots of the manual pump mechanism.

5.0 Operation



IMPORTANT:

- Do NOT lift a load on the end of the toe. Fully engage the load with the toe and where practical ensure that the top of the vertical face "head-toe" attachment is also engaged with the load
- When lifting by the toe, wedge the head of the jack on the load to avoid bending the column

5.1 Raising the Jack

- 5.1.1 Close the release valve (clockwise) with the jacking handle.
- 5.1.2 Position the jack so that the toe or head is under the load point. Do not use the handle in the release valve to move the jack. Damage will occur.
- 5.1.3 Pump the jacking lever in an up and down motion.

5.2 Lowering the Jack

- 5.2.1 Check beneath the load for any obstructions and remove any mechanical supports.
- 5.2.2 Slowly open the release valve (counter clockwise) with handle. Control the rate of descent by smoothly opening or closing the valve.
- 5.2.3 To stop the jack from lowering the load, close the release valve (clockwise).
- 5.2.4 **Note:** The release valve should not be closed abruptly (except in an emergency) since this shock loads the hydraulic system.
- 5.2.5 After use, the jack should be stored with the load piston and pump piston both fully retracted.

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 jack, hose, and application. We recommend Durapac Hydraulic Oil or equivalent
- Equipment must only be serviced by a qualified hydraulic technician. For repair service, contact your local Durapac authorised service centre

The greatest single cause of failure in hydraulic systems is dirt; keep the jack clean and well lubricated to prevent foreign matter from entering the system. If the jack has been exposed to rain, snow, sand or grit, it must be cleaned before and after each use.

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 Open release valve with handle (not more than two counter-clockwise turns).
- 6.1.2 Press down on head to ensure piston is fully down.
- 6.1.3 Remove the oil filler plug.
- 6.1.4 Use a small funnel to fill the reservoir level with the bottom of the filler hole.
- 6.1.5 Bleed air from system if necessary.
- 6.1.6 Close the release valve (turn clockwise).
- 6.1.7 Wipe up any spilled fluid and reinstall the oil filler plug.

6.2 Bleeding Air from the System

- 6.2.1 Repeat Steps 6.1.1 to 6.1.4 (above), if required.
- 6.2.2 Actuate the pump handle 12 times. Air will be released into the jack reservoir.
- 6.2.3 Recheck oil level after removing air.
- 6.2.4 Close the relief valve (turn clockwise).

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 6.1.3 (above).
- 6.3.2 Pour used fluid into a sealable container.
- 6.3.3 Repeat Steps 6.1.4 to 6.1.7 (above).
- 6.3.4 Dispose of fluid in accordance with local regulations.

6.4 Lubrication

Oil the pivots of the manual pump mechanism.

6.5 Storage

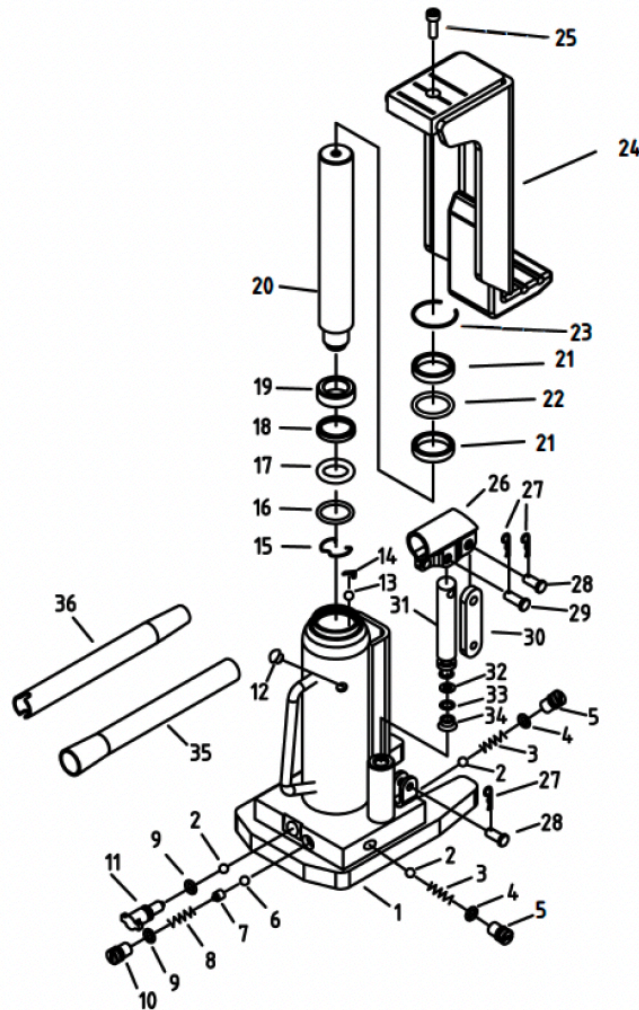
- 6.5.1 When not in use, the jack should be stored with the piston and the pump rods both fully retracted.
- 6.5.2 Wipe thoroughly clean and store in a clean, dry environment. Avoid temperature extremes.

7.0 Troubleshooting

Problem	Cause	Solution
Jack will not lift load	Release valve not fully closed	Close valve firmly
	No oil or low oil level	Top-up to correct level
	Air-locked system	Refer to 6.2 - Bleeding Air from the System
	Load is above capacity of system	Use correct equipment
Erratic Action	Air in system	Refer to 6.2 - Bleeding Air from the System
	Viscosity of oil too high	Change to lower viscosity oil
	Internal leakage in cylinder	- Replace worn seals - Check for excessive contamination or wear
	Cylinder sticking or binding	- Check for dirt, gummy deposits or leaks - Check for misalignment, worn parts or defective seals
Jack will not lift smoothly or to full height	Oil level low	Top-up to correct level
	Air in system	Refer to 6.2 - Bleeding Air from the System
	Cylinder sticking or binding	- Check for dirt, gummy deposits or leaks - Check for misalignment, worn parts or defective seals
Jack advances slowly	Pump not working correctly	Rework pump
	Leaking seals	Replace seals
Jack advances but does not hold load	Pump check valve not working correctly	Clean/replace check valve
	Cylinder seals are leaking	Replace seals
	Overload valve leaking or not adjusted correctly	Replace / adjust overload valve
Jack leaks oil	Worn or damaged seals	Replace seals
Jack will not retract or retracts slowly	Release valve is closed	Open release valve
	Cylinder damaged internally	Send to a Durapac authorised service centre for repair
	Reservoir too full	Drain oil to correct level

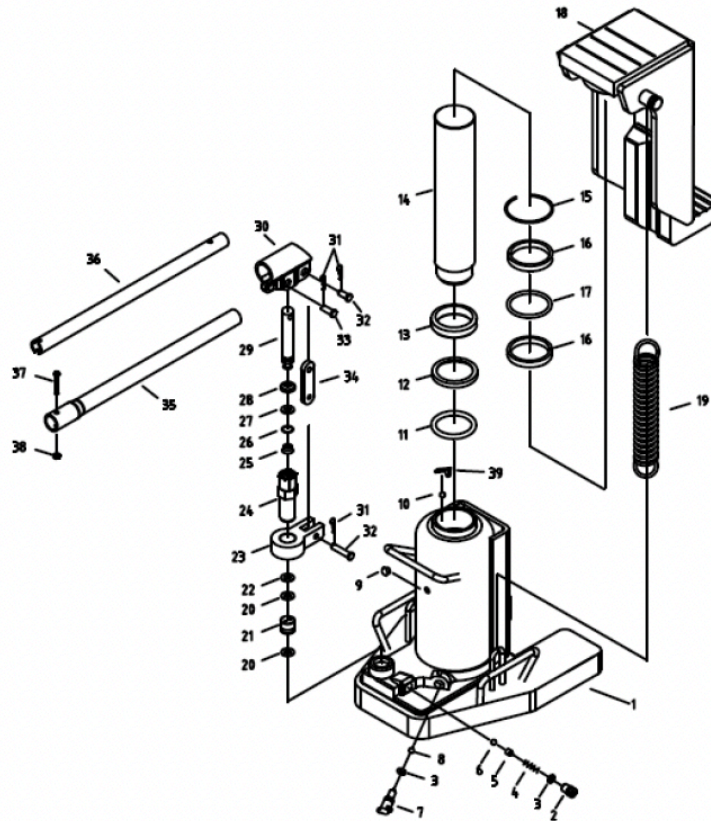
8.0 Parts Breakdowns and Lists

8.1 TJ-2 Parts Breakdown and List



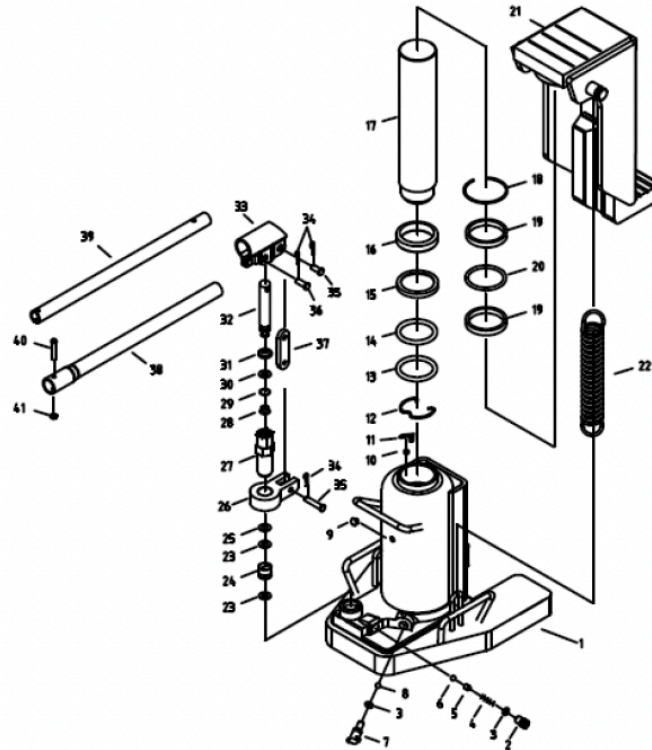
Item	Description	Qty	Item	Description	Qty	Item	Description	Qty
1	Complete body	1	13	Steel ball	1	25	Hexagon socket bolt	1
2	Steel ball	3	14	Ball stop	1	26	Handle	1
3	High and low press. spring	2	15	Axle collar	1	27	Bolt	3
4	Copper pad	2	16	Piston head	1	28	Connecting rod pin	2
5	Screw	2	17	Piston o-ring	1	29	Pump cotter	1
6	Steel ball	1	18	Bowl pad	1	30	Connecting rod	1
7	Ball seat	1	19	Piston ring	1	31	Pump cotter	1
8	Relief valve spring	1	20	Piston pad	1	32	Pump collar	1
9	Sealing o-ring	2	21	Retainring ring	2	33	Pump core o-ring	1
10	Pressure screw	1	22	Piston rod o-ring	1	34	Pump core y-ring	1
11	Drain screw	1	23	Wire collar	1	35	Back handle tube	1
12	Oil plug	1	24	Foot assembly	1	36	Front handle tube	1

8.2 TJ-5 & 15 Parts Breakdown and List



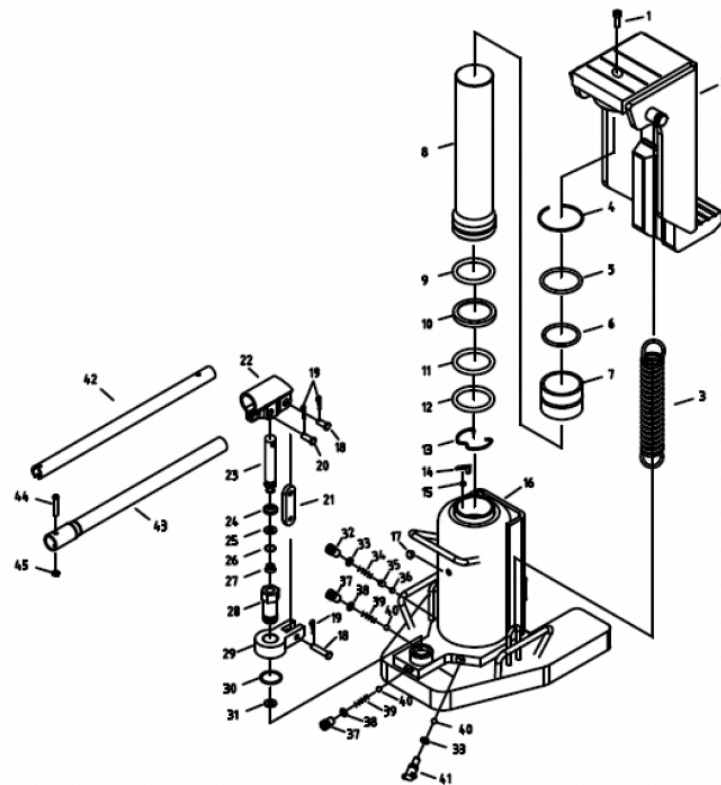
Item	Description	Qty	Item	Description	Qty	Item	Description	Qty
1	Complete body	1	14	Piston rod	1	27	Pump collar	1
2	Pressure screw	1	15	Wire collar	1	28	Dust ring	1
3	Sealing o-ring	2	16	Retainning ring	2	29	Pump core	3
4	Relief valve spring	1	17	Piston o-ring	1	30	Handle	1
5	Ball seat	1	18	Foot assembly	1	31	Bolt	3
6	Steel ball	1	19	Tension spring	2	32	Connecting rod pin	2
7	Drain screw	1	20	Copper pad	2	33	Pump cotter	1
8	Steel ball	1	21	Body assembly	1	34	Connecting rod	1
9	Oil plug	1	22	Nylon collar	1	35	Back handle tube	1
10	Steel ball	1	23	Connecting rod seat	1	36	Front handle tube	1
11	Piston o-ring	1	24	Pump body	1	37	Screw	1
12	Bowl pad	1	25	Pump core y-ring	1	38	Nut	1
13	Piston ring	1	26	Pump core o-ring	1	39	Ball stop	1

8.3 TJ-10 Parts Breakdown and List



Item	Description	Qty	Item	Description	Qty	Item	Description	Qty
1	Complete body	1	15	Bowl pad	1	29	Pump core o-ring	1
2	Pressure screw	1	16	Piston ring	1	30	Pump collar	1
3	Sealing o-ring	2	17	Piston rod	1	31	Dust ring	1
4	Relief valve spring	1	18	Wire collar	1	32	Pump core	1
5	Ball seat	1	19	Retaining ring	2	33	Handle	1
6	Steel ball	1	20	Piston rod o-ring	1	34	Bolt	3
7	Drain screw	1	21	Foot assembly	1	35	Connecting rod pin	2
8	Steel ball	1	22	Tension spring	2	36	Pump cotter	1
9	Oil plug	1	23	Copper pad	2	37	Connecting rod	1
10	Steel ball	1	24	Body assembly	1	38	Back handle tube	1
11	Ball stop	1	25	Nylon collar	1	39	Front handle tube	1
12	Axle collar	1	26	Connecting rod seat	1	40	Screw	1
13	Piston head	1	27	Pump body	1	41	Nut	1
14	Piston o-ring	1	28	Pump core y-ring	1			

8.4 TJ-25 Parts Breakdown and List



Item	Description	Qty	Item	Description	Qty	Item	Description	Qty
1	Hexagon socket bolt	1	16	Complete body	1	31	Copper pad	1
2	Foot assembly	1	17	Oil plug	1	32	Pressure screw	1
3	Tension spring	2	18	Connecting rod pin	2	33	Sealing o-ring	2
4	Wire collar	1	19	Dead bolt	3	34	Relief valve spring	1
5	Retaining ring	1	20	Pump cotter	1	35	Ball seat	1
6	Piston rod o-ring	1	21	Connecting rod	1	36	Steel ball	1
7	Retaining ring	1	22	Handle	1	37	High pressure screw	2
8	Piston rod assembly	1	23	Pump core	1	38	Copper pad	2
9	Piston rod o-ring	1	24	Dust ring	1	39	High & low press. Spring	2
10	Bowl pad	1	25	Pump collar	1	40	Steel ball	3
11	Piston head o-ring	1	26	Pump core o-ring	1	41	Drain stem	1
12	Piston head	1	27	Pump core y-ring	1	42	Back handle tube	1
13	Axle collar	1	28	Pump body	1	43	Front handle tube	1
14	Ball stop	1	29	Connecting rod seat	1	44	Screw	1
15	Steel ball	1	30	Pump body o-ring	1	45	Nut	1