

Operating Instructions

Pallet Truck 31909



Note: The owner and user MUST read and understand these operating instructions before using this product.



FOREWORD

Before operating this hand pallet truck, read this manual and all safety instructions carefully. Ensure that you fully understand the intended use, operating procedures, and safety requirements before using the product. Failure to follow the instructions and safety precautions may result in serious injury, death, or property damage.

This manual covers different models of hand pallet trucks. Before operating or servicing the truck, ensure that the instructions apply to your specific model. Keep this manual for future reference. If this manual or any safety labels become damaged, illegible, or lost, contact your local dealer for a replacement.

Environmental Protection

- Environmentally hazardous waste, such as batteries, oils, and electronic components, may harm the environment and human health if not handled correctly.
- Waste materials shall be sorted according to local regulations and disposed of through approved waste collection and recycling facilities. Do not dispose of waste materials with household waste or release them into the environment.
- During operation and maintenance, measures shall be taken to prevent environmental contamination. In the event of an oil leak, absorb the spilled oil immediately using suitable absorbent materials.
- Contaminated absorbent materials and other hazardous waste shall be disposed of in accordance with local environmental regulations.

Product Improvements

- The manufacturer reserves the right to make changes to the product design and specifications without prior notice as part of a continuous product improvement program.
- Illustrations, descriptions, and technical data in this manual are provided for guidance only and may differ from the actual product. This manual does not constitute a guarantee of specific product features.

Contact Information

For support, spare parts or product information, please visit www.ajproducts.com and select your local AJ Products office.

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Transportvägen 23
SE-302 30 Halmstad
Sweden

Safety Alert Symbol



The safety alert symbol shown on the left is used to identify potential personal injury hazards. Follow all safety instructions associated with this symbol to avoid serious injury or death.

1. INTENDED USE

This hand pallet truck shall only be used in accordance with the instructions provided in this manual.

The hand pallet truck with integrated weighing scale is designed to:

- Lift palletized loads.
- Transport palletized loads.
- Weigh palletized loads within the specified weighing range and accuracy.
- Operate within the rated capacity specified on the identification plate.

Do not:

- Lift or transport persons
- Exceed the rated capacity
- Use the truck for purposes other than its intended use

Improper use may result in personal injury, equipment damage, or property damage.



WARNING

- The hand pallet truck shall only be used on firm, level, and adequately prepared surfaces.
- Do not operate the hand pallet truck on slopes or inclined surfaces while carrying a load.
- The load shall be stable, in good condition, and positioned centrally between the forks.
Never exceed the rated capacity of the hand pallet truck.

Capacity and Operating Conditions

The rated capacity is specified on the identification plate and, where applicable, on the capacity label. The operator shall observe all warning labels, safety instructions, and operating limitations.

The hand pallet truck is intended for indoor use only and shall be operated at ambient temperatures between -10°C and +40°C. The hand pallet truck is designed for manual handling of palletised goods on smooth and level industrial floors.

Adequate lighting shall be provided during operation. The minimum recommended illumination level is 50 lux.

Modifications

No modifications or alterations that may affect the capacity, stability, operation, or safety of the hand pallet truck shall be made without prior written approval from the manufacturer or an authorized representative.

This includes modifications to braking systems, steering components, visibility-related parts, safety devices, or the addition of attachments.

If a modification is approved, all relevant capacity plates, warning labels, markings, operating instructions, and maintenance documentation shall be updated accordingly.

Failure to comply with these requirements may invalidate the warranty and may adversely affect the safe operation of the hand pallet truck.

2. DESCRIPTION OF THE HAND PALLET TRUCK

a. Main components

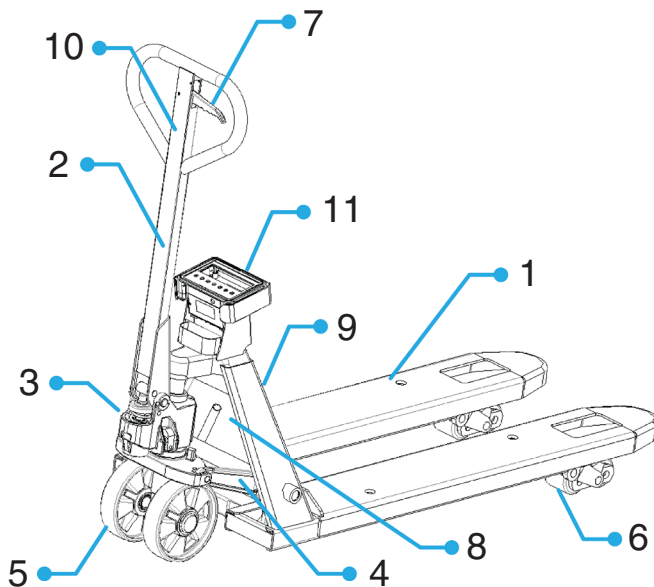


Fig. 1: Overview

No.	Description
1	Chassis
2	Tiller arm
3	Hydraulic pump
4	Lifting mechanism
5	Steering wheels
6	Load wheels (single or tandem)
7	Control lever
8	Identification plate
9	Company logo and/or capacity label
10	Lifting instruction label
11	Display unit

b. Main technical data

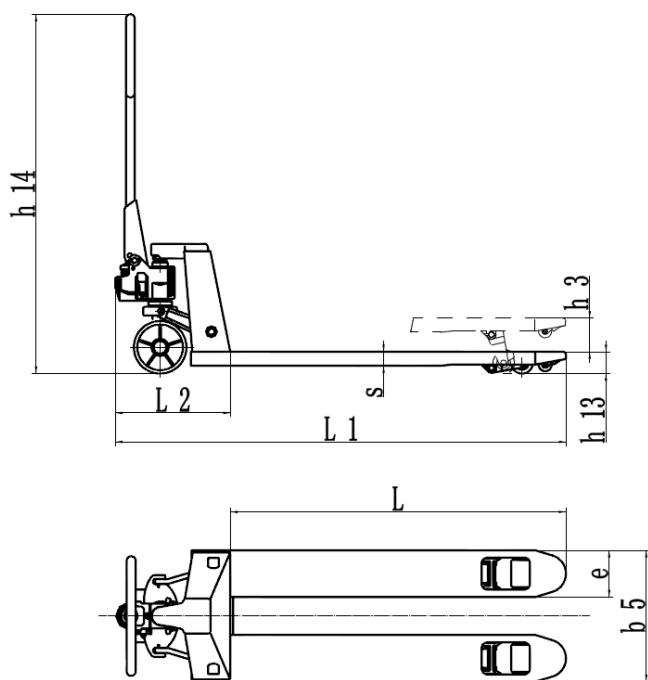


Fig. 2: Technical data

Table 1: Main Technical data for standard version

Type		HPT20S-Li (31909)
Load capacity	Q (kg)	2000
Service weight	kg	100
Steering wheel size	mm	Ø180x50
Load wheel size (single/tandem)	mm	Ø74x70
Wheel configuration (steering/load)		2/4
Tiller height	h14 (mm)	1200
Lowered fork height	h13 (mm)	76
Lift height	h3 (mm)	190
Overall length	L1 (mm)	1600
Fork dimensions	s/e/L (mm)	48/180/1150
Fork outside width	b5	570
Power source		6 V DC
Operating temperature		-10 °C to +40 °C
Weighing accuracy		±1.0 kg at a load of 2000 kg

c. Description of the safety devices and warning labels

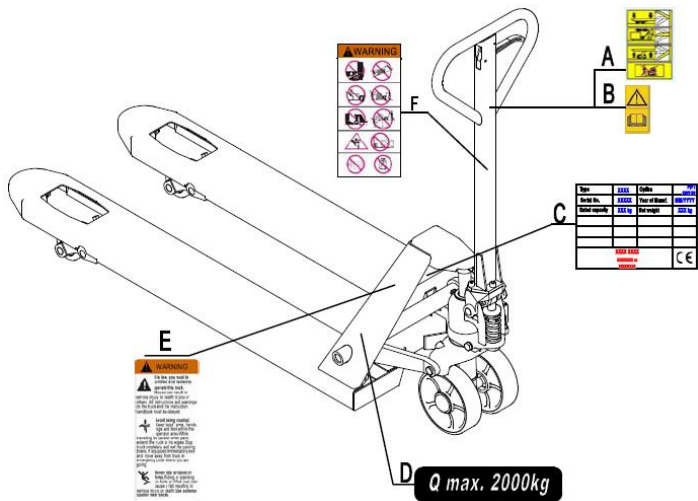


Fig. 3: Safety- and warning labels

No.	Description
A	Operating instruction sticker
B	Sticker to read this instruction
C	Identification plate (ID- plate)
D	Capacity sticker
E	Sign warning stay clear stop truck (only US-market)
F	Sign prohibited use (only US- market)

The safety and warning labels shall be affixed as shown in Figure 3. The information provided on the truck supplements the instructions in this manual and shall be observed at all times. Follow all operating instructions and safety precautions. If any label becomes damaged, illegible, or missing, it shall be replaced immediately.

d. Identification plate

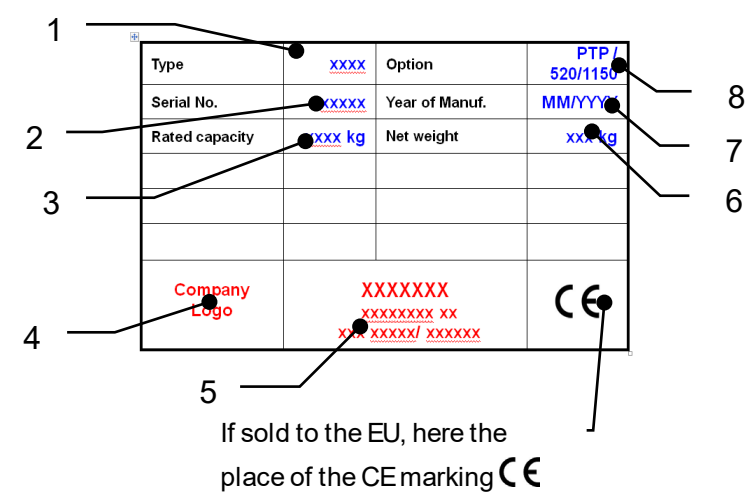


Fig. 4: ID-Plate

No.	Description
1	Model designation
2	Serial number
3	Rated capacity
4	Manufacturer logo (if applicable)
5	Manufacturer name and address
6	Net weight
7	Date of manufacture
8	Optional configuration (wheel configuration, fork length, fork outside width)

3. WARNING AND SAFETY INSTRUCTIONS



WARNING

Failure to follow these instructions may result in serious injury or death.

- Do not allow anyone other than the operator to stand in front of or behind the truck while it is moving or during lifting and lowering operations.
- Do not exceed the rated load capacity.
- Do not place feet in front of moving wheels.
- Do not operate the truck on slopes or inclined surfaces.
- Do not lift or transport persons.
- Do not use the truck with unstable, unbalanced, or loosely stacked loads.
- Do not use the truck in potentially explosive atmospheres.
- Keep hands, feet and other body parts clear of the forks, wheels and lifting mechanism during operation.
- Never place any part of the body under a raised load.
- Stay clear of moving parts during lifting and lowering operations.

Safe Operation

Watch for changes in floor level, uneven surfaces, and obstacles when moving the truck.

Ensure that the load remains stable during operation.

Stop using the truck immediately if the load becomes unstable.

Carry out inspections and maintenance according to the instructions in this manual.

This truck is not water-resistant and shall only be used in dry conditions.

4. TRANSPORT, STORAGE AND PREPARATION FOR USE

4.1 Before first use

- Verify that the truck is complete and free from damage.
- Perform the daily inspection described in Chapter 5.
- Check the operation of the hydraulic system.
- Verify that all safety labels are present and legible.

4.2 Hydraulic Valve Adjustment

Before adjusting the control lever:

- Remove all loads from the forks.
- Lower the forks completely.
- Keep hands clear of moving parts during adjustment.

The control lever on the tiller arm has three positions. If any of the functions do not operate correctly, adjust the valve as described below (see Figure 8).

Position	Function
LOWER	Lowers the forks. When released, the lever returns automatically to the NEUTRAL position.
NEUTRAL	Neutral position for travelling and parking.
RAISE	Raises the forks when the truck is pumped.

Forks rise in the NEUTRAL position

If the forks rise while pumping with the control lever in the NEUTRAL position, turn the adjustment nut clockwise until pumping no longer raises the forks.

Forks lower in the NEUTRAL position

If the forks lower while pumping with the control lever in the NEUTRAL position, turn the adjustment nut counter-clockwise until the forks remain stationary.

Forks do not lower

If the forks do not lower when the control lever is in the LOWER position, turn the adjustment nut clockwise until the forks lower correctly. Then verify that the NEUTRAL position operates correctly.

Forks do not raise

If the forks do not raise when the control lever is in the RAISE position, turn the adjustment nut counter-clockwise until the forks raise correctly. Then verify the operation of both the LOWER and RAISE positions.

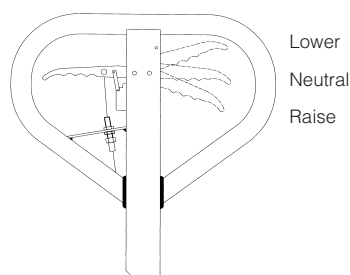


Fig. 5: Lever

4.3 Transport

Remove all loads from the truck before transport.

- Lower the forks completely.
- Ensure that the truck is adequately secured against movement during transport.

To transport the truck:

1. Remove any load from the forks.
2. Lower the forks to the lowest position.
3. Secure the truck using suitable lashing straps or other approved securing devices.
4. Prevent the truck from rolling, tipping, or moving during transport.

4.4 Storage

Before placing the truck in storage:

- Remove all loads from the forks.
- Lower the forks completely.
- Clean the truck and remove dirt, dust and debris.
- Lubricate all lubrication points as described in Chapter 8.

For long-term storage:

- Store the truck in a dry, covered, and frost-free environment.
- Protect the truck against corrosion, moisture, and dust.
- Avoid storing the truck in direct sunlight or near heat sources.
- If possible, relieve the wheels from continuous loading to prevent flat spots during extended storage periods.

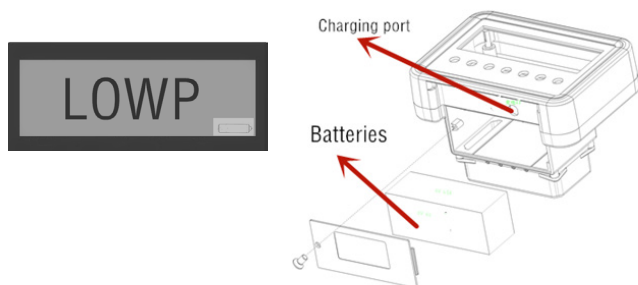
Before returning the truck to service, perform the daily inspection described in Chapter 5.

4.5 Battery charging and replacement

Charge the display regularly to ensure sufficient battery capacity throughout the workday. If the display shows "LOWP", connect the charger to recharge the internal battery.

If the battery needs replacement:

1. Remove the screw securing the battery cover.
2. Remove the battery.
3. Install a new battery of the specified type.
4. Refit the battery cover and tighten the screw.



5. DAILY INSPECTION

Daily inspections help identify wear, damage, or malfunctions before operation and contribute to safe operation and a longer service life of the truck. Perform the following checks before each use:

1. Remove any load from the truck and lower the forks to the lowest position.
2. Check the truck for:
 - Cracks
 - Deformation
 - Excessive wear
 - Damaged components
3. Check the lifting mechanism for abnormal noise, binding, or restricted movement.
4. Check the hydraulic system and hydraulic cylinder for oil leakage.
5. Check that the forks do not lower unintentionally when raised (vertical creep).
6. Check that all wheels rotate freely and move smoothly.
7. Inspect the wheels for damage, excessive wear, embedded debris, or contamination.
8. Check that all bolts, nuts, and fasteners are securely tightened.
9. If fitted, check the operation of the parking brake or service brake.
10. Verify that all safety labels, warning labels, and identification markings are present and legible.
11. Check that the battery has sufficient capacity.



WARNING

*Do not operate the truck if any malfunction, defect, damage, or missing safety label is found.
The truck shall be inspected and repaired before further use.*

6. OPERATING INSTRUCTIONS

Operating conditions

- The hand pallet truck is intended for indoor use only.
- Permitted ambient temperature: -10°C to +40°C.
- The minimum recommended illumination level is 50 lux.
- Do not operate the truck on slopes or inclined surfaces.
- Never leave a loaded hand pallet truck unattended.

6.1 Parking

Do not leave a loaded truck unattended.

When parking the truck:

1. Lower the forks completely.
2. Park the truck on a firm, level surface.
3. Ensure that the truck does not obstruct walkways, exits, or work areas.
4. If fitted, apply the parking brake.

6.2 Lifting

Before lifting a load:

- Ensure that the load is stable.
- Ensure that the load is evenly distributed across both forks.
- Ensure that the load does not exceed the rated capacity.

To lift a load:

1. Position the forks fully under the pallet or load.
2. Push the forks forward until they are fully inserted.
3. Move the control lever to the RAISE position.
4. Pump the tiller arm until the load reaches the required height.

6.3 Lowering

To lower the load:

1. Move the control lever to the LOWER position.
2. Lower the load carefully and in a controlled manner.
3. Release the control lever to stop the lowering movement.
4. When the load has been set down, move the truck away from the load.

6.4 Moving

Before moving the truck:

- Ensure that the load is stable.
- Ensure clear visibility.
- Watch for uneven surfaces and obstacles.

To move the truck:

1. Release the parking brake, if fitted.
2. Push or pull the truck using the tiller arm.
3. Travel at a controlled speed.
4. Maintain clear visibility of the travel path at all times.

If the truck is not equipped with a brake, allow additional stopping distance.

6.5 Malfunctions

If a malfunction occurs:

1. Stop using the truck immediately.
2. Remove the truck from service.
3. Place the truck in a safe location.
4. Inform the responsible supervisor or maintenance personnel.
5. Do not use the truck again until the fault has been corrected.

7. OPERATION OF THE WEIGHING FUNCTION

7.1 Touch panel overview



Button	Name / Function
1	Hold
2	SUM (Summarize)
3	Print
4	O/T (Reset/Tare)
5	ON/OFF (kg/lb)

Fig. 6: Touch panel overview

7.2 Accurate weighing

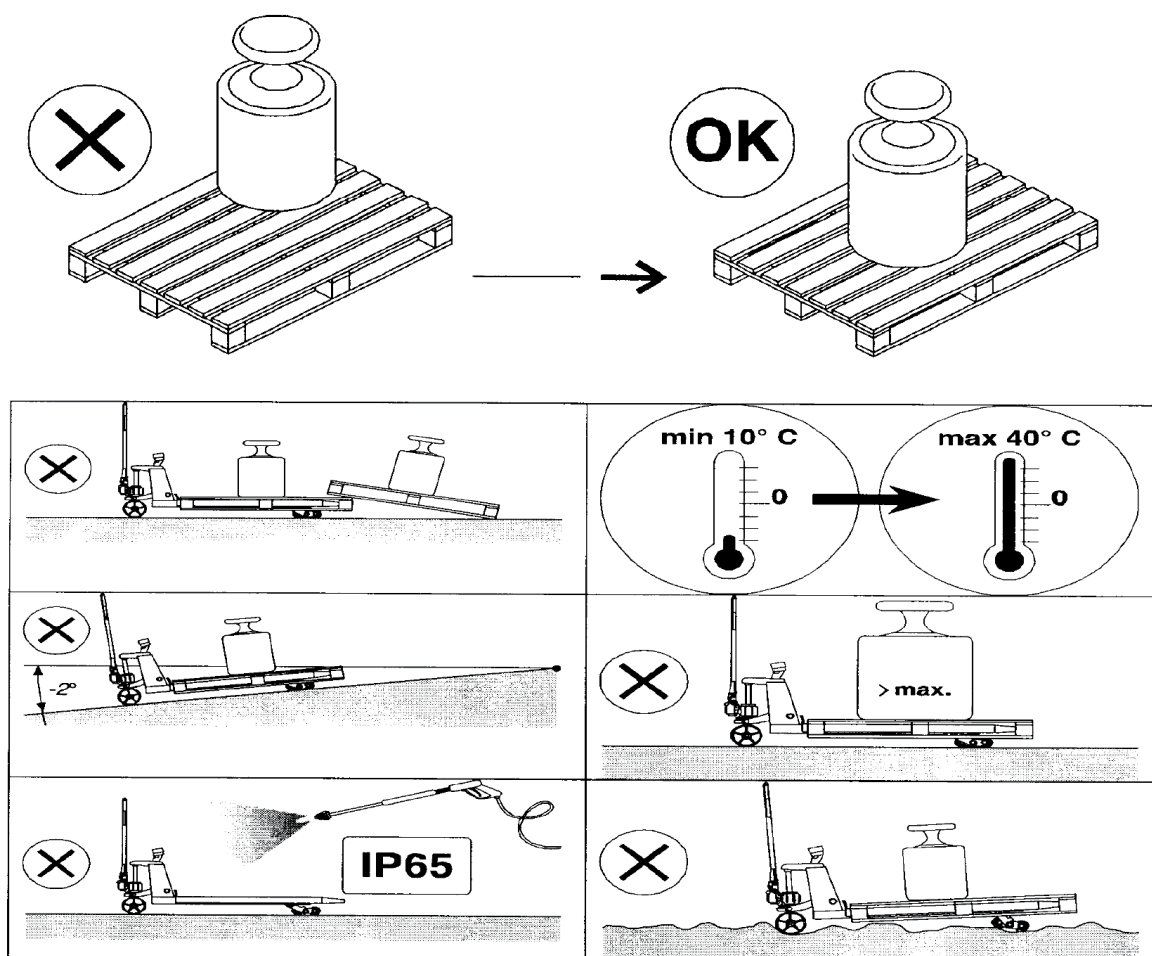


Fig. 7: Accurate weighing guide

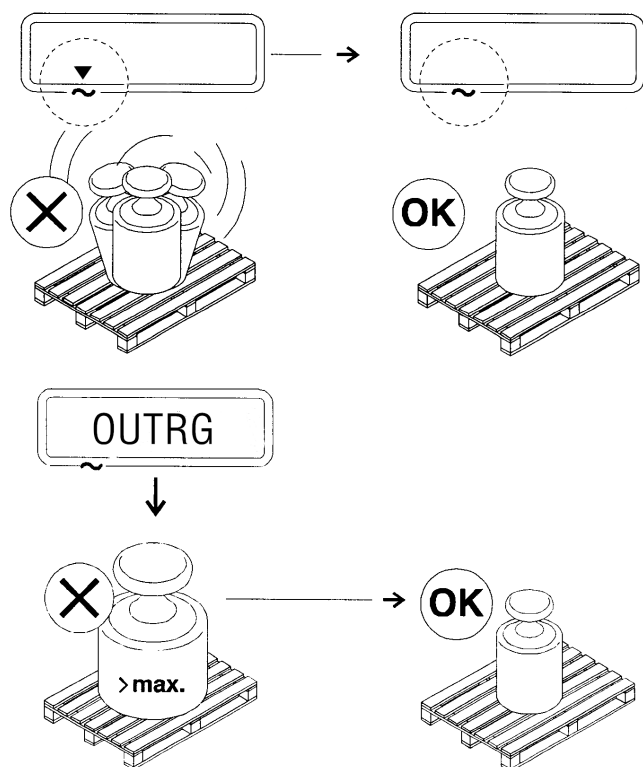


Fig. 8: Accurate weighing guide

7.3 Power ON / OFF

Power on

Press the **ON/OFF** button briefly to switch the scale on.

Power off

Press and hold the **ON/OFF** button until the display turns off

7.4 Select Unit (kg/lb)

When the scale is powered on, press the **ON/OFF (kg/lb)** button briefly to switch between kilograms (kg) and pounds (lb).

7.5 Zero function

Press the **0/T** button briefly to reset the displayed value to zero.

7.6 Tare function

Use this function to exclude the weight of a container from the weighing result.

1. Place the container or load on the scale.
2. Press and hold the **0/T** button to activate the tare function.
3. The display resets to zero. Place the goods to be weighed on the forks.
4. To cancel the tare function, press the **0/T** button briefly.

7.7 Print Function (Optional)

Press the **PRINT** button briefly to print the displayed value.

Note: The print function is only available on models equipped with a printer.

7.8 Sum function

Use this function to calculate the accumulated weight of multiple loads.

1. Place the first load on the scale.
2. Press the **SUM** button briefly.
3. The display alternates between "N-01" and the accumulated weight value.



4. Remove the first load and press the **SUM** button briefly to clear the first value.
5. Place the second load on the scale and press the **SUM** button.



6. The display alternates between "N-02" and the new accumulated weight value.



7. Repeat from Step 4 as required for additional loads.
8. To exit the sum function, press and hold the **SUM** button.

7.9 Hold function

Use this function to freeze the displayed weight.

1. Press the **HOLD** button briefly to freeze the displayed weight value.
2. Press the **HOLD** button briefly again to return to normal weighing mode.

7.10 Calibration

The scale may require calibration if the displayed weight is inaccurate.

IMPORTANT

Calibration shall only be performed using a certified test weight of 1,000 kg or 2,000 kg.

Incorrect calibration may result in inaccurate weighing results.

Before calibration

- Place the truck on a firm and level surface.
- Ensure that the forks are unloaded.
- Switch on the scale and wait until the display has completed its self-test and shows 0.0 kg.

Calibration procedure

1. Place a certified test weight of 1,000 kg or 2,000 kg evenly on the forks.
2. Press and hold the **HOLD** button to enter the function menu.
3. The display shows 01.
4. Press the **SUM** button repeatedly until 04 is displayed.
5. Press the **HOLD** button to enter the calibration mode.
6. The display will show a calibration value.
7. Adjust the displayed value to match the test weight:
 - Press **SUM** to increase the value.
 - Press and hold **SUM** to increase the value rapidly.
 - Press **PRINT** to decrease the value.
 - Press and hold **PRINT** to decrease the value rapidly.
8. Set the displayed value to the actual test weight used (1,000 kg or 2,000 kg).
9. Press the **HOLD** button to confirm the setting and save the calibration.
10. The scale returns to normal weighing mode.

Exiting calibration

At any time during the calibration procedure, press and hold the **ON/OFF** button to exit without saving.

Verification

After calibration, remove the test weight and verify the accuracy of the scale using a known load.

WARNING

An interrupted or incorrect calibration procedure may result in inaccurate weight readings. If accurate weighing cannot be verified, remove the truck from service and contact qualified service personnel.

7.11 Factory Reset

The factory reset function restores the scale to its default factory settings.

IMPORTANT

Restoring the factory settings will erase the current calibration data. The scale must be recalibrated before it is used for weighing.

Factory reset procedure

1. Press and hold the **HOLD** button to enter the function menu.
2. The display shows 01.
3. Press the **SUM** button twice until 03 is displayed.
4. Press the **HOLD** button to confirm the selection.
5. The scale automatically exits to normal weighing mode.
6. The factory settings are restored.

After restoring factory settings

The calibration data stored in the scale is deleted.

Due to manufacturing tolerances and variations between individual pallet trucks, the displayed weight may differ from the actual load weight after a factory reset.

If the weighing results are inaccurate, perform the calibration procedure described in section 7.10 Calibration before using the scale.

WARNING

Do not use the scale for weight measurements until the accuracy has been verified after a factory reset.

8. MAINTENANCE



WARNING

Maintenance and repairs shall only be carried out by trained and qualified personnel.

Before performing maintenance:

- *Remove all loads from the forks.*
- *Lower the forks completely.*
- *Secure the truck against unintended movement.*
- *Keep hands and fingers clear of moving parts.*

Use only approved spare parts and replacement components. Failure to follow these instructions may result in injury or equipment damage.

8.1 General Maintenance

Regular maintenance helps ensure safe operation and extends the service life of the truck.

Inspect the truck regularly and repair any defects before returning the truck to service.

Hydraulic oil leaks may cause equipment failure and create slip hazards.

Dispose of waste materials, including hydraulic oil and worn components, in accordance with local regulations.

8.2 Maintenance Schedule

Daily

Perform the daily inspection described in Chapter 5.

Monthly

- Check the hydraulic oil level.
- Inspect the truck for wear and damage.
- Clean all lubrication points.
- Lubricate all bearings, shafts, and pivot points.
- Remove dirt and debris before lubrication.

Every 6 Months

Replace the hydraulic oil.

More frequent oil changes may be necessary if:

- the oil becomes contaminated.
- the oil has significantly darkened.
- the oil feels gritty.

Use:

Hydraulic oil: ISO VG 32

Oil volume: approximately 0.4 L

NOTE!

If the hydraulic oil appears milky white, water has entered the hydraulic system. Replace the oil immediately.

8.3 Removing Air from the Hydraulic System

Air may enter the hydraulic system during:

- transportation
- operation on uneven surfaces
- storage
- handling in a tilted position

Symptoms may include difficulty raising the forks.

To remove air from the hydraulic system:

1. Move the control lever to the LOWER position.
2. Pump the tiller arm several times.
3. Verify that the lifting function operates normally.

8.4 Adding Hydraulic Oil

Before adding hydraulic oil:

1. Lower the forks completely.
2. Park the truck on a level surface.

To add hydraulic oil:

1. Place the truck on its side with the drain plug facing upward.
2. Remove the drain plug.
3. Fill with hydraulic oil until the oil level is flush with the bottom of the filler opening. Reinstall the drain plug.
4. Return the truck to its normal operating position.
5. Test the lifting and lowering functions.

9. TROUBLESHOOTING

Table 2: Troubleshooting

Number	Symptom	Possible Causes	Corrective Action
1	Forks don't raise, don't raise fully, or raise slowly	a) Low hydraulic oil level or impurities in oil. b) Control lever is out of adjustment. c) Load exceeds the rated capacity, causing the over-load relief valve to activate. d) Temperature is too low, causing the hydraulic oil to become too viscous. e) Air in the hydraulic oil.	a) Add approved hydraulic oil or replace the hydraulic oil as described in Chapter 8. b) Follow the procedure for adjusting the control lever in Chapter 4. c) Reduce load. d) Move the truck to a warmer location. e) Remove air from the hydraulic system (see Chapter 8).
2	Forks don't lower or don't lower fully	a) An obstacle is located under the truck, in the fork mechanism, or elsewhere in the lifting mechanism. b) Control lever is out of adjustment. c) Forks have been left in a raised position for an extended period, causing the exposed piston rod to corrode. d) The piston rod or pump is deformed due to over-loading or uneven loading.	a) Carefully remove the obstacle. b) Follow the procedure for adjusting the control lever in Chapter 4. c) Keep the forks in the lowest position when not in use and keep the piston rod well lubricated. d) Replace the piston rod or hydraulic pump.
3	Forks lower without putting the control lever in the "lower" position	a) Contaminants in the hydraulic oil are preventing the release valve from fully closing. b) Some hydraulic components or seals are cracked or worn. c) Control lever is out of adjustment.	a) Drain and replace the hydraulic oil with approved hydraulic oil as described in Chapter 8. b) Inspect and replace components as needed. c) Follow the procedure for adjusting the control lever in Chapter 4.
4	Oil leakage	a) Worn or damaged seals. b) Other damaged, cracked, or worn components.	a) Replace seals. b) Replace damaged components.
5	Scale operates abnormally	The platform is scraping against the fork.	Lift and realign the platform.
6	Nothing is displayed on the terminal	The battery is discharged.	Charge the unit or replace batteries.

9.3 Hydraulic Pump Unit

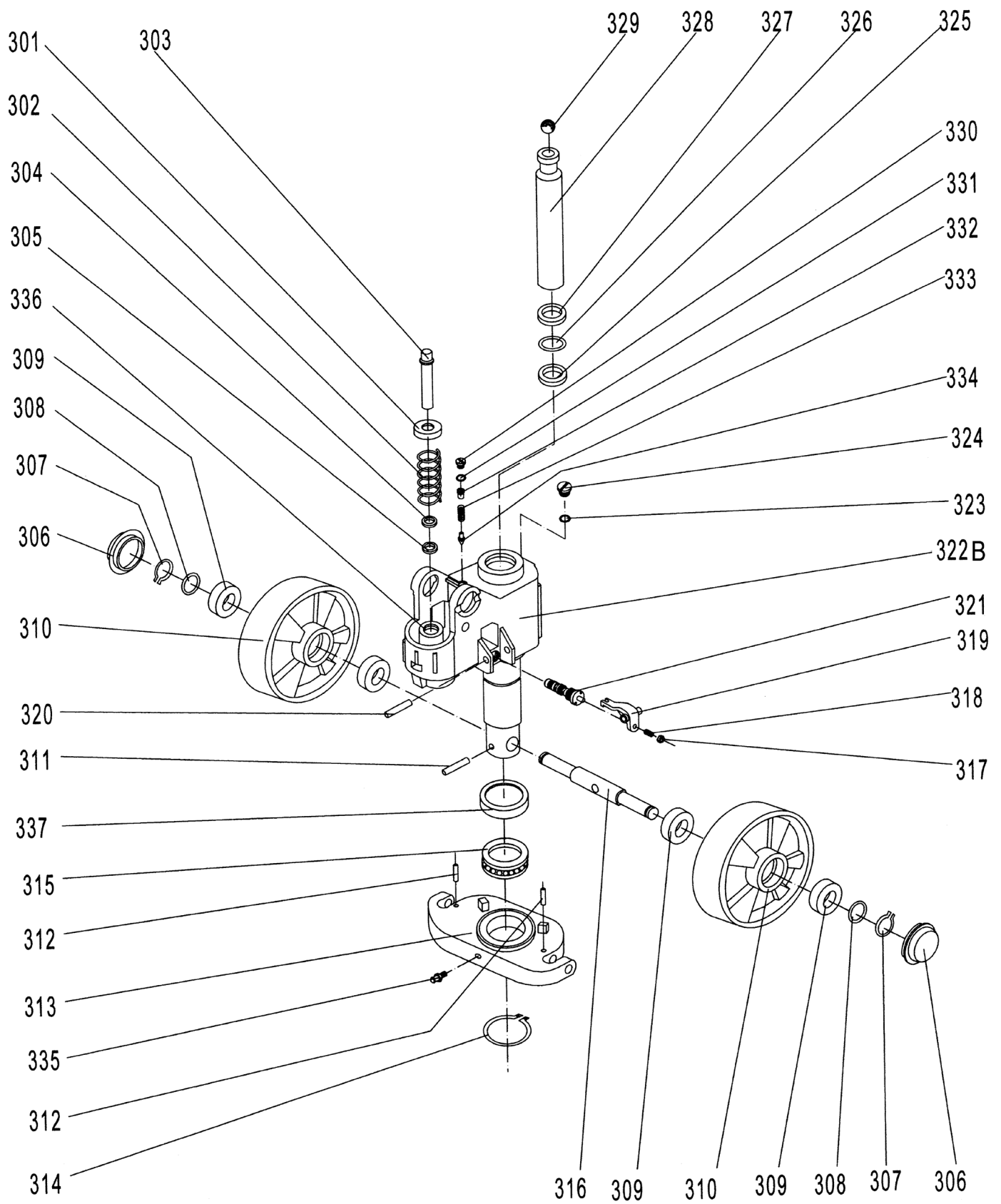


Fig. 11: Hydraulic Pump Unit diagram

9. PARTS DIAGRAM

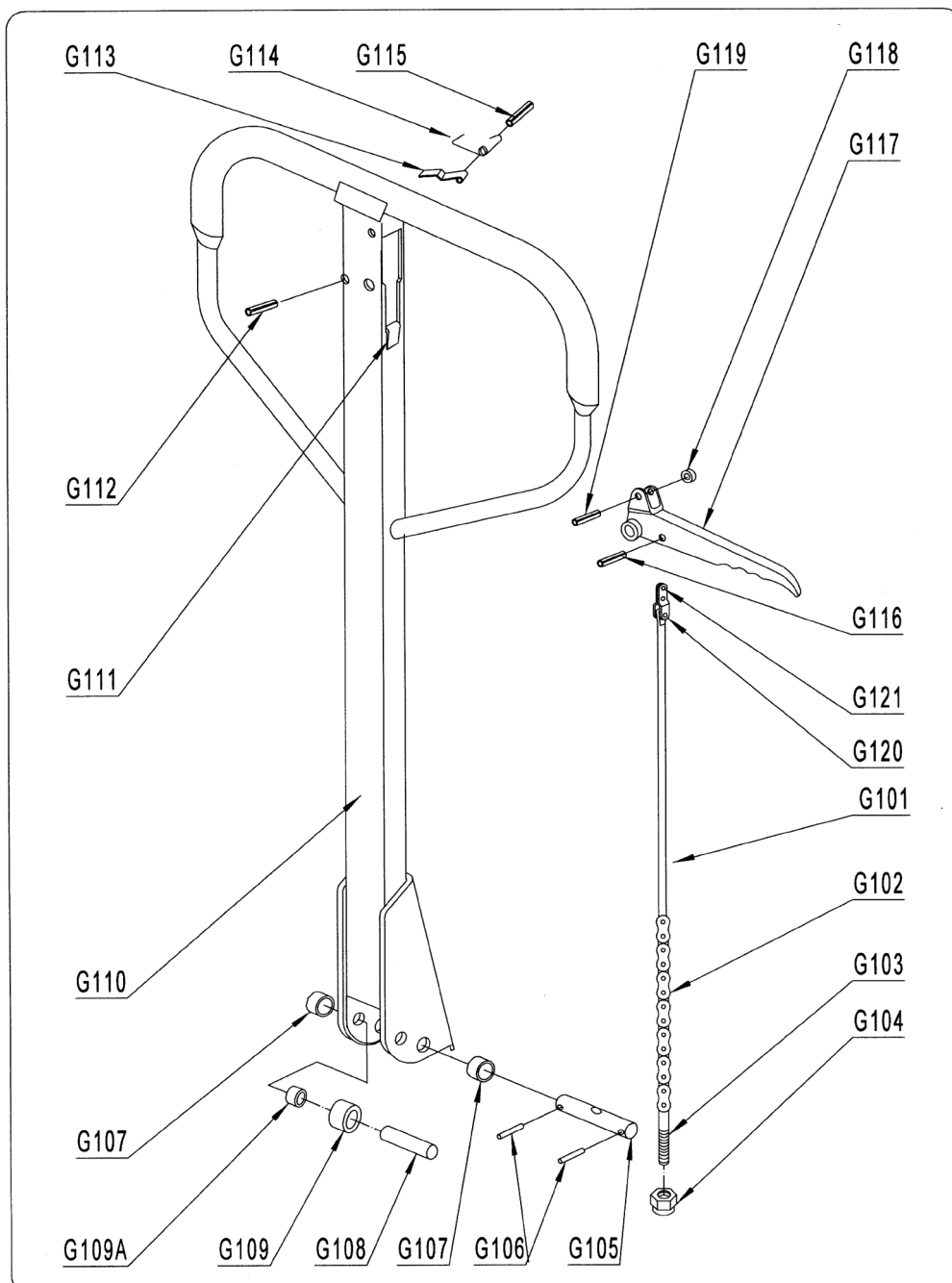


Fig. 9: Tiller arm diagram

9.1 Tiler components

No.	Description	Qty.
G101	Release Rod	1
G102	Chain	1
G103	Adjusting Bolt	1
G104	Adjusting Nut	1
G105	Axle with Hole	1
G106	Elastic Pin	2
G107	Bushing	2
G108	Roller Pin	1
G109	Pressure Roller	1
G109A	Bushing	1
G110	Tiller bar	1

No.	Description	Qty.
G111	Stop Rubber	1
G112	Elastic Pin	1
G113	Blade Spring	1
G114	Spring	1
G115	Elastic Pin	1
G116	Elastic Pin	1
G117	Finger tip control	1
G118	Roller	1
G119	Elastic Pin	1
G120	Pin	1
G121	Linking plate	1

9.2 Chassis components

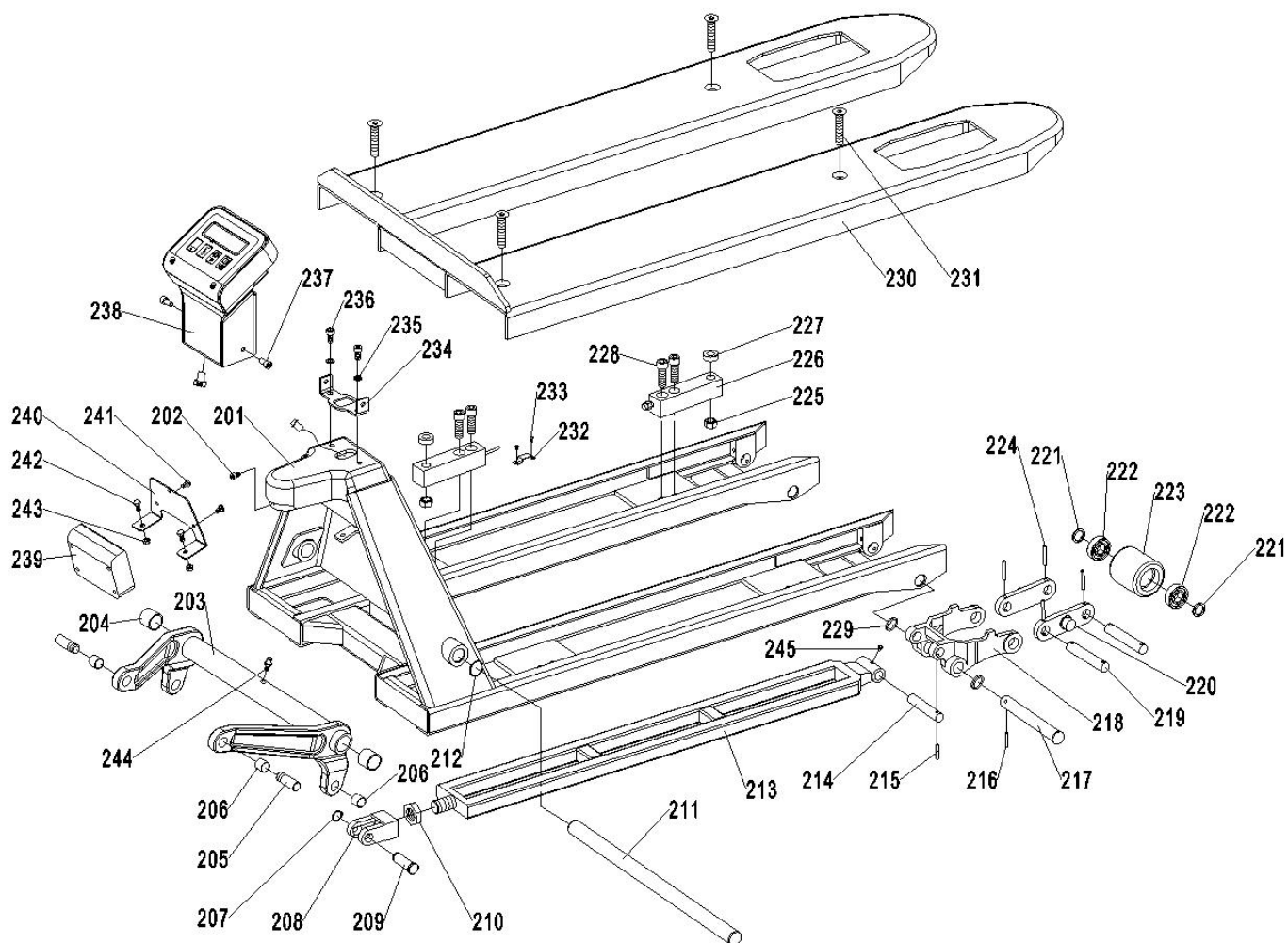


Fig. 10: Chassis diagram

No.	Description	Qty.
201	Chassis	1
202	Bolt	1
203	Crank	1
204	Bushing	2
205	Hinge pin	2
206	Bushing	4
207	Circlip	2
208	Joint	2
209	Hinge pin	2
210	Nut	2
211	Long axle	1
212	Circlip	2
213	Push rod	2
214	Push rod axle	2
215	Elastic pin	2
216	Elastic pin	2
217	Hinge pin	2
218	Frame of roller	2
219	Roller axle	4
220	Linking plate	4
221	Washer	8
222	Bearing	8
223	Load roller	4

No.	Description	Qty.
224	Elastic pin	8
225	Nut	4
226	Sensor	4
227	Washer	4
228	Bolt	8
229	Washer	4
230	Cap plate	1
231	Screw	4
232	Cable clamp	2
233	Screw	4
234	Indicator support mounting bracket	1
235	Spring washer	2
236	Screw	2
237	Screw	2
238	Display unit	1
239	Junction box	1
240	Mounting bracket	4
241	Screw	2
242	Screw	2
243	Nut	2
244	Grease cup	1
245	Grease cup	1

No.	Description	Qty.
301	Spring Cap	1
302	Spring	1
303	Pump piston	1
304	Dust ring	1
305	Y seal	1
306	Dust cover	2
307	Lock ring	2
308	Washer	2
309	Bearing	4
310B	Steering wheel	2
311	Elastic pin	1
312	Elastic pin	2
313	Thrust plate	1
314	Circlip	1
315	Bearing	1
316	Axle	1
317	Nut	1
318	Screw	1
319	Lever plate	1

No.	Description	Qty.
320	Elastic pin	1
321	Valve cartridge	1
322B	Oil pump body	1
323	Seal washer	1
324	Screw plug	1
325	Y seal	1
326	O ring	1
327	Dust ring	1
328	Piston rod	1
329	Steel ball	1
330	Screw plug	1
331	O ring	1
332	Screw	1
333	Spring	1
334	Safety valve core	1
335	Grease cup	1
336	Cylinder	1
337	Bearing cover	1