

**Operation  
and  
maintenance  
instruction**

**Spare  
parts  
list**

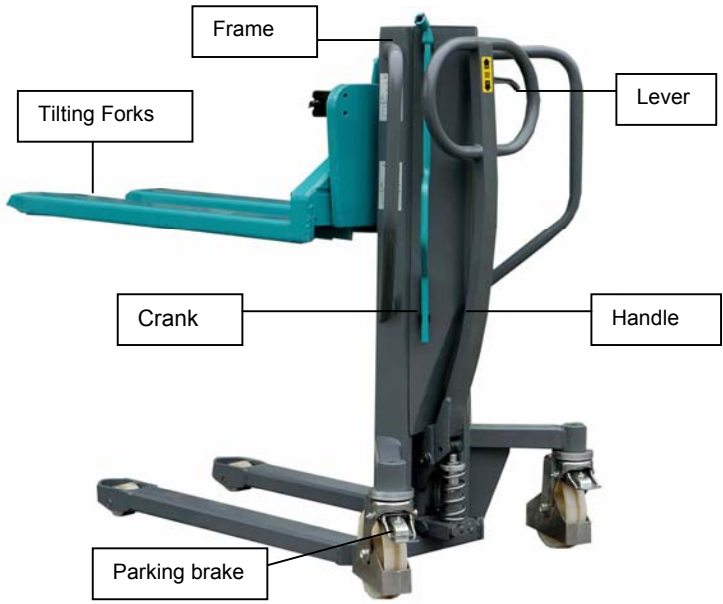


**High Lift Pallet Truck**

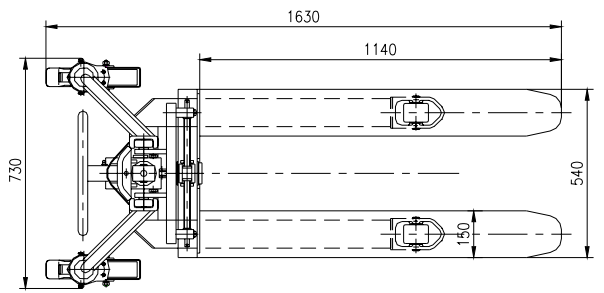
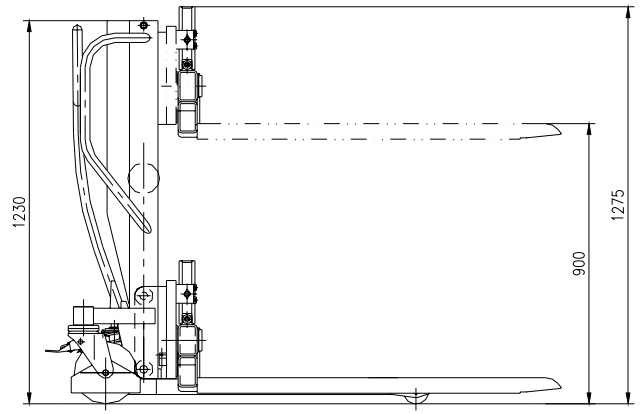
**HS-T0809**



**EHS-T0809**



**HS-T0809**



## Operation and maintenance instruction High Lift Pallet Truck HS-T0809

Manual high lift truck (later “truck” only) is designed for transport and material handling, loaded on transporting platforms or pallets, on flat and solid surfaces. It enables to offtake and to base pallets with material to the maximum lifting height of the truck and to tilt a load placed in a fence pallet with max. height 400 mm, i.e. with the position of the center of gravity 200 mm over forks by  $\pm 20^\circ$ . It decreases physical strain of person manipulating with material.

### Technical data

	<b>HS-T0809</b>	
Loading capacity	800	kg
Length	1630	mm
Width	730	mm
Height	1230	mm
Length of the forks	1140	mm
Width of the fork	150	mm
Min. height of the forks above the floor	87	mm
Forks width	540	mm
Truck weight	220	kg
Lifting height	900	mm
Bearing surface of the forks	1140x540	mm
Tilting angle of the forks	$\pm 20$	°
Lift with load (per 1 manual stroke)	$\geq 18$	mm
Lift without load (per 1 manual stroke)	$\geq 60$	mm

## Operation instruction

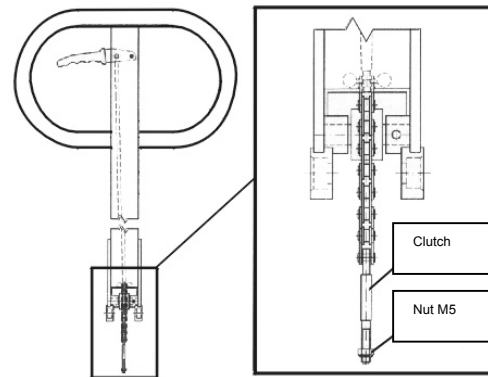
The truck is supplied by the producer with its hydraulic block filled with hydraulic oil conforming to the standard ON 65 6890. It is recommended, at everyday usage, to check oil level once a month. The oil level is correct when its level is directly below the filling hole (closed with a plug) with the forks lowered into the lowest position. When refilling oil, it must be filtered through a 25  $\mu\text{m}$  filter (alternative refills are SHELL TELLUST T 15, MOBIL DTE 11 M, CASTROL HYSPIIN AWS 15).

### Banishing the air in the hydraulic oil

When the truck is stored for a longer period or when a non-expert repair has been performed, the air can get into hydraulics and this will result in an incorrect truck function. The air in hydraulics is indicated by the partial free movement of the handle while pumping, or uneven run of the forks occurs when lifting. This problem can be removed first of all by checking oil level. The control lever must be switched into its transport position (position "O") and by pumping while in this position, air will be removed from the pump piston area. Then, switch the control lever into the lifting position (position "I"), pump the forks into their maximum height above the floor and make several more strokes. Now, the hydraulic block is correctly aired and you can lower the forks to their lowest position above the floor.

### Adjusting the valve of the hydraulic block

1. If the control lever is in lower position and no lifting of the forks occurs while pumping, the M5 nut located on the clutch must be loosened.
2. If the control lever is pressed in its upper position and no lowering of the forks occurs, the M5 nut located on the clutch must be tightened.



## Operation manual

A worker older than 18 years of age, who is mentally and physically suitable and knows all safety regulations regarding material handling using low lift scissors trucks and their operation, may operate the truck. Truck operating activities are provided through the handle and on it positioned control lever, which is connected to hydraulic block. While manipulating (lifting, starting) with load that is heavier than 600 kg it is necessary that two people are operating the truck.

### Lifting

The control lever must be in its lower position (position "1", see the picture). Moving the handle up and down, hydraulic unit generates a power needed for lifting of a load.

### Transporting the load (transport position)

The control lever must be in its middle position (position "O"). While in this position, the load height is constant. The lever is in this position fixated. The forks are in their lower position cca 200 mm over the ground.

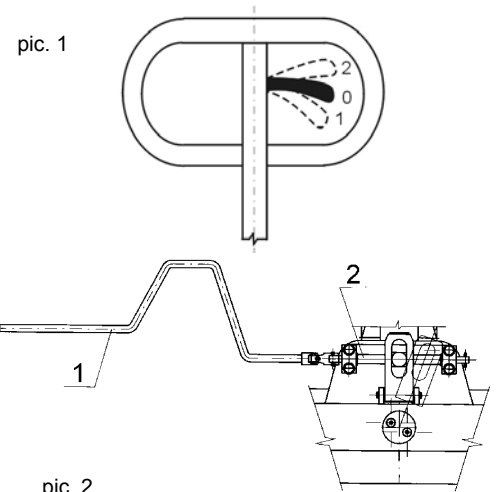
### Lowering

Press the control lever to its upper position (position "2"). When in this position, the safety valve in the hydraulic unit opens and a truck frame sinks to its lowest position. The speed of the lowering depends on how much you press the control lever.

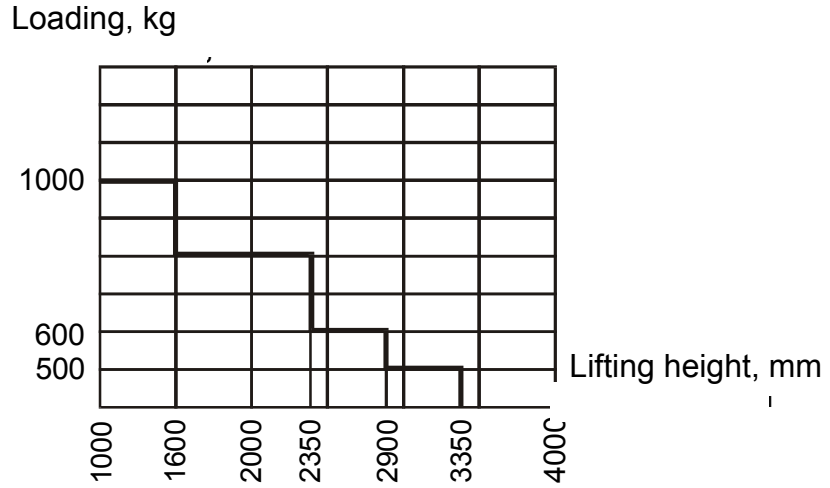
### Tilting

Tilting of the forks by  $\pm 20^\circ$  is provided mechanically by using a crank (see picture 2).

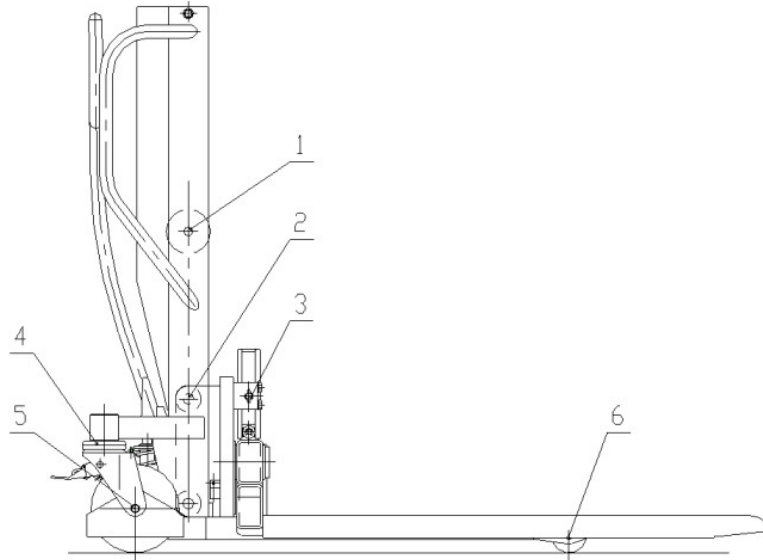
1 - Crank                      2 - Trapezium screw



# Loading diagram HS-T0809



# Lubricating plan



Pos. No.	Place of lubrication	No. of places HS-T0809	Lubricant type	Lubricant quantity	Interval
1	Chain wheel bearing	1	T – K3	0,01 kg	Twice a year
2	Forks bearing	4	T – V2	0,005 kg	Once a year
3	Helix	2	T – V2	0,005 kg	Once a year
4	Front wheel bearing	2	T – V2	0,005 kg	Once a year
5	Front wheel bearing	4	T – V2	0,005 kg	Once a year
6	Rear wheel bearing	4	T – V2	0,005 kg	Once a year

## Safety regulations

When handling loads, operational procedures, which protect operators from accidents and injuries must be used. These are mainly caused by incorrectly secured loads, by exceeding the max. load capacity, or by sliding of the truck on poor transport surfaces. Doorsills and similar obstructions must be leveled by means of ramps as well as bridges between neighboring floors.

### It is forbidden:

- to use the truck for handling on inclined surfaces
- to perform any repairs and maintenance on a truck carrying a load
- to handle loads with a center of gravity higher than 500 mm
- to transport the loads while lifted higher than it is specified 200 mm over the ground except technological essential transport

### Note:

- technological essential transport is oftaking and placing of the load in the place of stacking.

### It is necessary:

- to keep the loading diagram while manipulating with load, which is stucked on each stacker.

## Product disposal

The user of product is after the end of technical life obligatory:

1. to drain the hydraulic system and to hand an oil over for recycling
2. to hand over all metal parts for recycling
3. to put all plastic parts into communal waste system



## Chain

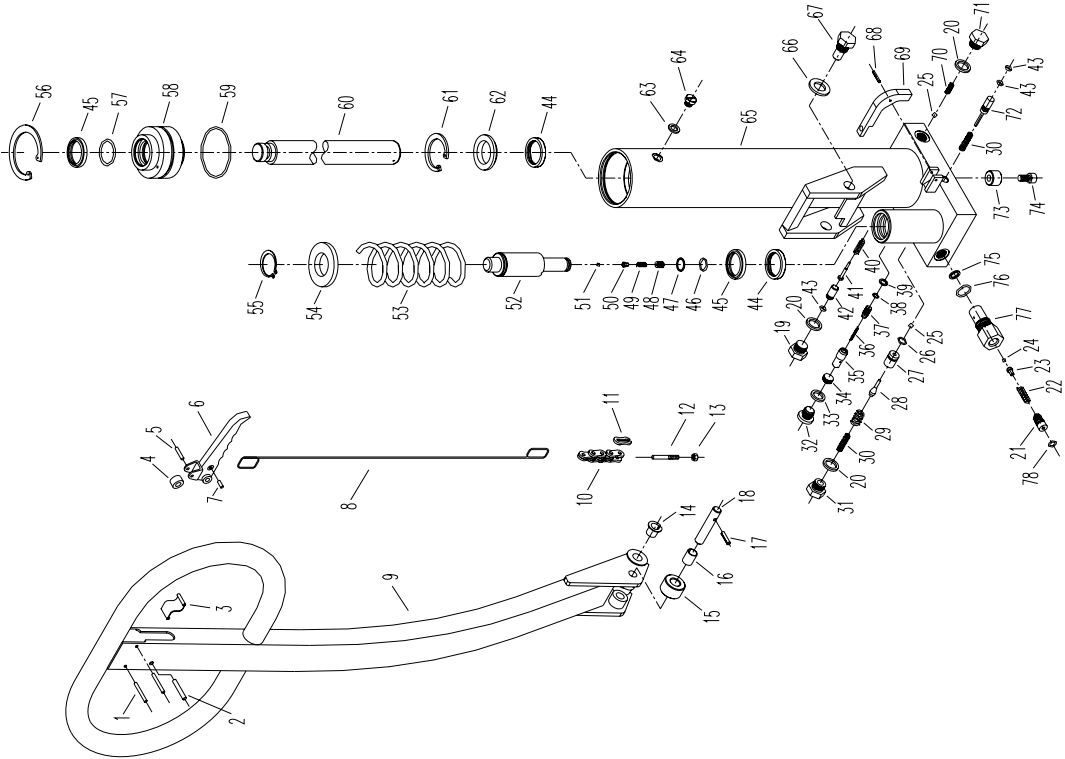
### HS-T0809

Chain 12 A-1	L=857 (46 links)	1 pcs
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### EHS-T0809

Chain 12 A-1	L=857 (46 links)	1 pcs
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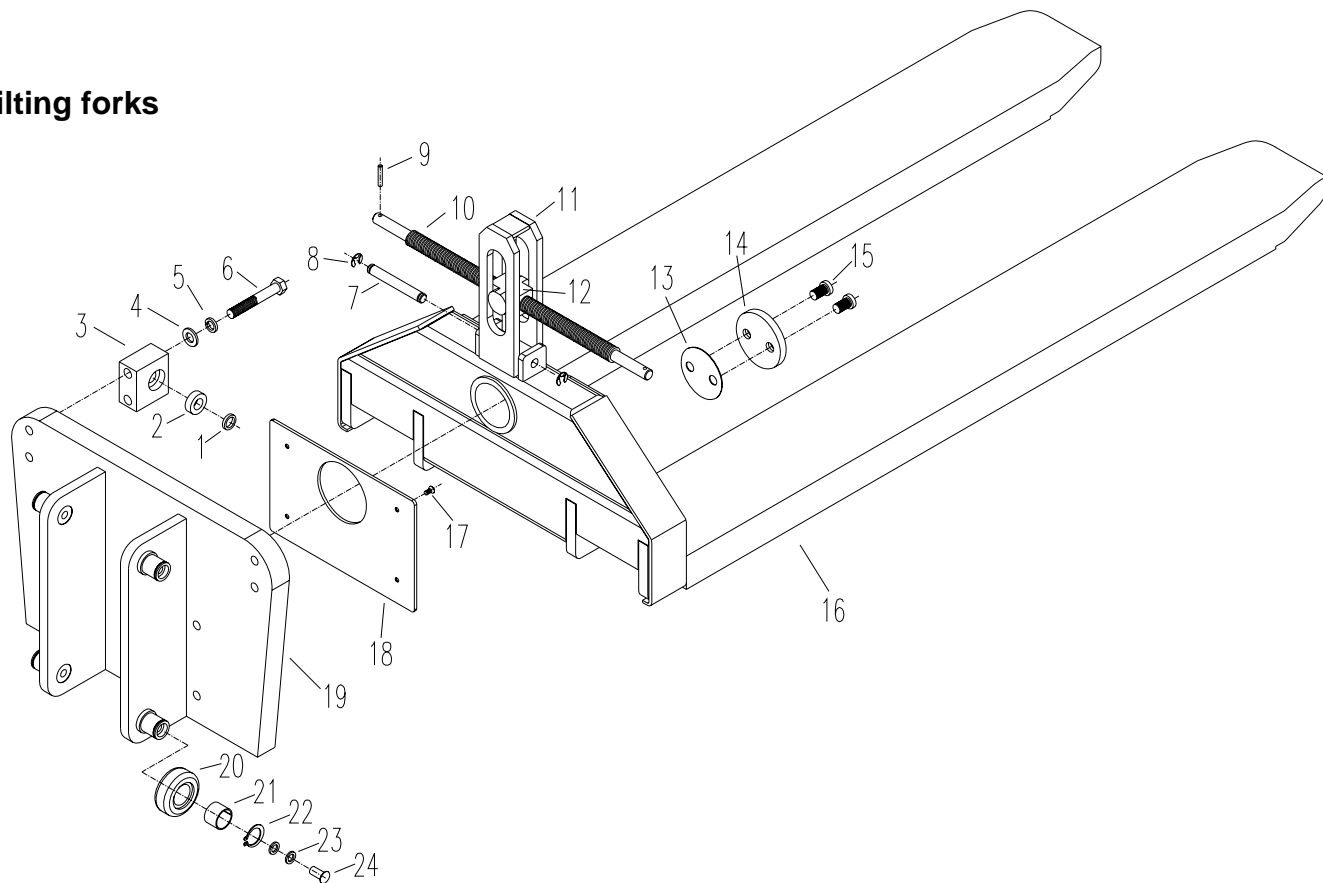
# Piece list – hydraulic block



Hydraulic block				
No.	Pos.	Description	Pcs	Note
1	HS101	Spring cotter 4x30	2	
2	HS102	Spring cotter 6x30	1	
3	HS103	Flat spring	1	
4	HS104	Nylon roller	1	
5	HS105	Spring cotter 4x20	1	
6	HS106	Lever	1	
7	HS107	Spring cotter 4x10	1	
8	HS108	Tie ros	1	
9	HS109	Handle	1	
10	HS110	Chain	1	
11	HS111	Chain lock sheet	1	
12	HS112	Clutch	1	
13	HS113	Nut M5	1	
14	HS114	Bearing	2	
15	HS115	Roller	1	
16	HS116	Bearing	1	
17	HS117	Spring cotter 5x20	1	
18	HS118	Pin	1	
19	HS119	Bolt	2	
20	HS120	Washer 16	4	
21	HS121	Bolt	1	
22	HS122	Spring	1	
23	HS123	Lift pin	1	
24	HS124	Steel bead 5	1	
25	HS125	Steel bead 7	2	
26	HS126	Seal ring 10.6x1.8	1	
27	HS127	Value bush	1	
28	HS128	Value core	1	
29	HS129	Spring	1	
30	HS130	Spring	2	
31	HS131	Bolt	1	
32	HS132	Bolt	1	
33	HS133	Washer 14	1	
34	HS134	Adjustable bole	1	
35	HS135	Value bush	1	
36	HS136	Spring	1	
37	HS137	Value core	1	
38	HS138	Snap ring 8	1	
39	HS139	Nylon washer	1	
40	HS140	Spring	1	
41	HS141	Pole	1	
42	HS142	Value bush	1	
43	HS143	Seal ring 6.7x1.8	3	
44	HS144	Seal ring D2 32	2	

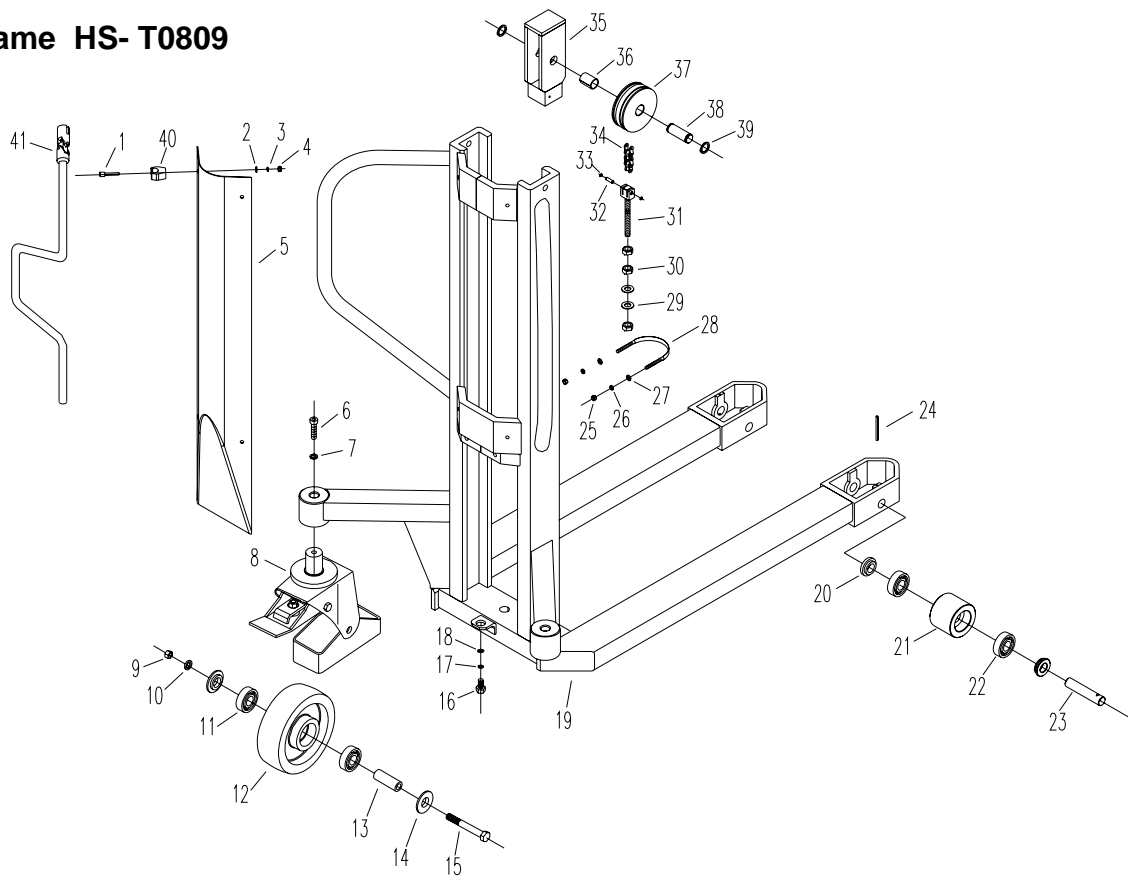
Hydraulic block				
No.	Pos.	Description	Pcs	Note
45	HS145	Dust seal DH32	2	
46	HS146	Seal ring 15x1.8	1	
47	HS147	Snap ring	1	
48	HS148	Screw	1	
49	HS149	Spring	1	
50	HS150	Lift pin	1	
51	HS151	Steel bead 5.5	1	
52	HS152	Pump plunger	1	
53	HS153	Spring	1	
54	HS154	Spring cup	1	
55	HS155	Snap ring 32	1	
56	HS156	Snap ring 70	1	
57	HS157	Seal ring 31.5x2.65	1	
58	HS158	Top nut	1	
59	HS159	Seal ring 65x2.65	1	
60	HS160	Piston rod	1	
61	HS161	Snap ring 48	1	
62	HS162	Push cover	1	
63	HS163	Washer 10	1	
64	HS164	Bolt	1	
65	HS165	Hydraulic cylinder	1	
66	HS166	Plane washer 16	2	
67	HS167	Bolt	2	
68	HS168	Spring cotter 3x20	1	
69	HS169	Control	1	
70	HS170	Spring	1	
71	HS171	Bolt	1	
72	HS172	Return oil ram	1	
73	HS173	Seat	1	
74	HS174	Screw M8x16	1	
75	HS175	Washer	1	
76	HS176	Seal ring 15x2.65	1	
77	HS177	Value bush	1	
78	HS178	Seal ring 8x1.8	1	

## Tilting forks



<b>Tilting forks</b>				
<b>No.</b>	<b>Pos.</b>	<b>Description</b>	<b>Pcs</b>	<b>Note</b>
1	HS201T	Washer	2	
2	HS202T	Bearing	2	
3	HS203T	Trapezium screw holder	2	
4	HS204T	Plane washer 12	4	
5	HS205T	Spring washer 12	4	
6	HS206T	Screw M12x80	4	
7	HS207T	Fork arm pin	1	
8	HS208T	Snap ring 9	2	
9	HS209T	Cotter 5x30	2	
10	HS2010T	Trapezium screw M20x4	1	
11	HS2011T	Fork arm – welded	1	
12	HS2012T	Trapezium screw stone	1	
13	HS2013T	Washer	1	
14	HS2014T	Push cover	1	
15	HS2015T	Bolt	2	
16	HS2016T	Tilting forks – welded	1	
17	HS2017T	Bolt M5x8	4	
18	HS2018T	Tie plate	1	
19	HS2019T	Fork carrier – welded	1	
20	HS2020T	Roller	4	
21	HS2021T	Bearing	4	
22	HS2022T	Snap ring 25	4	
23	HS2023T	Washer 10	8	
24	HS2024T	Pole	4	

# Frame HS- T0809



<b>Frame HS- T0809</b>				
<b>No.</b>	<b>Pos.</b>	<b>Description</b>	<b>Pcs</b>	<b>Note</b>
1	HS301	Screw M6×40	4	
2	HS302	Plane washer 6	4	
3	HS303	Spring washer 6	4	
4	HS304	Nut M6	4	
5	HS305	Cover board	1	
6	HS306	Screw M10×35	2	
7	HS307	Spring washer 10	2	
8	HS308	Wheel rack	2	
9	HS309	Nut M12	2	
10	HS310	Spring washer 12	2	
11	HS311	Bearing 6204	4	
12	HS312	Rear wheel	2	
13	HS313	Axle cover	2	
14	HS314	Push cover	4	
15	HS315	Bolt M12×85	2	
16	HS316	Bolt M8×16	1	
17	HS317	Spring washer 8	1	
18	HS318	Plane washer 8	1	
19	HS319	Frame	1	
20	HS320	Push cover	4	
21	HS321	Load wheel	2	
22	HS322	Bearing 6204	4	
23	HS323	Axle	2	
24	HS324	Pin 5×50	2	
25	HS325	Nut M8	2	
26	HS326	Spring washer 8	2	
27	HS327	Plane washer 8	2	
28	HS328	Clevis bolt	1	
29	HS329	Plane washer 12	2	
30	HS330	Nut M12	3	
31	HS331	Chain joint	1	
32	HS332	Chain pin	2	
33	HS333	Snap ring 4	4	
34	HS334	Chain	1	
35	HS335	Carrier wheel cover	1	
36	HS336	Bearing 20×30	1	
37	HS337	Carrier wheel	1	
38	HS338	Carrier wheel axle	1	
39	HS339	Snap ring 20	2	
40	HS340T	Fixed seat	2	
41	HS341T	Crank	1	

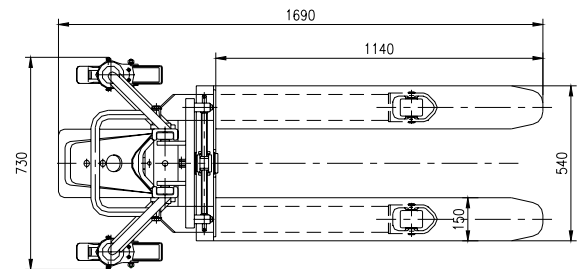
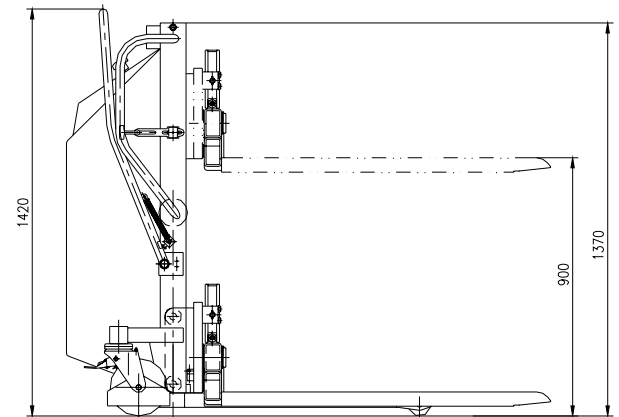


**EHS-T0809**

## Description and illustration



EHS-T0809



## Operation and maintenance instruction

### High Lift Pallet Truck EHS-T0809

Manual high lift truck with electric lifting (later "truck" only) is designed for the transport, handling and stacking of material which is placed on pallets. It enables to offtake and to base pallets to the maximum lifting height of the truck by using electrohydraulic aggregate. It decreases physical strain of person manipulating with material.

#### Technical data

	<b>EHS-T0809</b>	
Loading capacity	800	kg
Length	1690	mm
Width	730	mm
Height	1420	mm
Length of the forks	1140	mm
Width of the fork	150	mm
Min. height over the floor	87	mm
Forks width	540	mm
Spacing between the forks	240	mm
Truck weight	275	kg
Lifting height	900	mm
Bearing surface of the forks	1140x540	mm
Forks tilting angle	±20	°
Lifting speed without load	≥0.05	m/sek
Lifting speed with load	≥0.07	m/sek
Lowering speed with a load	≥0.045	m/sek
Clearance above floor	30	mm
Traction Accu. battery	2x12V/ 60Ah	
Electro hydraulic aggregate	12 V, 700W	

## Constrution description

The truck consists from the outer frame, the internal frame, the working cylinder, the hydraulic aggregate, forks and the handle. The forks are lifted by chain anchored to the outer frame, which is pushed by a piston rod of the working cylinder. The opposite end of the chain is mounted to the forks. The offtaking of the piston rod is provided through the pressure of hydraulic oil created by hydraulic aggregate. The aggregate is activated by pressing of the push-button up and down. Wheels rotation angle is 360°, each of the wheel is equipped with a brake.

These parts are installed in the electric circuit:

- electric fuse for the power circuit
- electric fuse for the control circuit
- connector socket for connecting a charger

There is the throttling valve mounted within the hydraulic circuit.

<b>Electrohydraulic unit</b>	
Flow	0.75ml / rev
Tank	1L
Engine output	700 W
Intensity	12 V
<b>Source</b>	
Traction battery	2 x 12V / 60Ah
Amount of charging cycles	min. 1500
Lifts/1 charging cycle	min. 100 lift

## **Instructions to the truck usage**

### **Oil check and filling**

Truck's working cylinder is filled with hydraulic oil RENOLIN HV - 32. If the truck is used daily, it is recommended to check oil level 1x a month. There is right amount of oil, if there is minimum amount of oil in the tank, while the forks are in the highest position. When filling hydraulic block with oil, it is necessary to filter it through 25 µm filter.

### **Battery control**

It is necessary to control battery regularly with an equipment for measuring of electrolyte density. It is recommended, when electrolyte density is below 75 % of nominal value, to recharge the battery, so it will be not depreciated. Clean and use the battery according to the battery's instruction manual.

Always charge the battery by chargers, which refer to listed specification of required battery. A charger is delivered as extra.

### **Lowering speed adjusting**

In hydraulic circle, on the plate of hydraulic cylinder there is a throttle valve assembled, by which the speed of forks lowering is set. In case, that it is necessary to change the speed of lowering, it is possible to order throttling valve with regulation screw on it (see the picture "Connecting and gripping of hydraulic unit EHS"), which can be used for speed changing.

## **Operation manual**

This truck can be operated by a worker older than 18 years of age, who is mentally and physically suitable and knows all safety regulations regarding material handling using trucks with electric lifting and operation. Operation of the stacker is assured through two buttons.

### **Lifting**

Forks lifting is performed by using a press button where there is an “LIFT” arrow marked. This switches the electrohydraulic engine, which causes forks lifting.

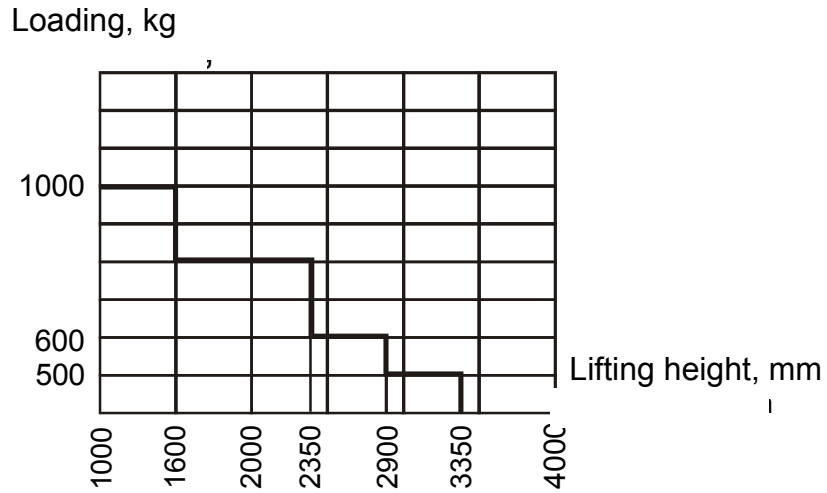
### **Load transport**

When neither of the press buttons is pressed, the forks are in the neutral position. The load is held in any position, which is provided by a non-return valve in hydraulic circuit. Load transport is allowed when the forks are not higher than 200 mm above the floor.

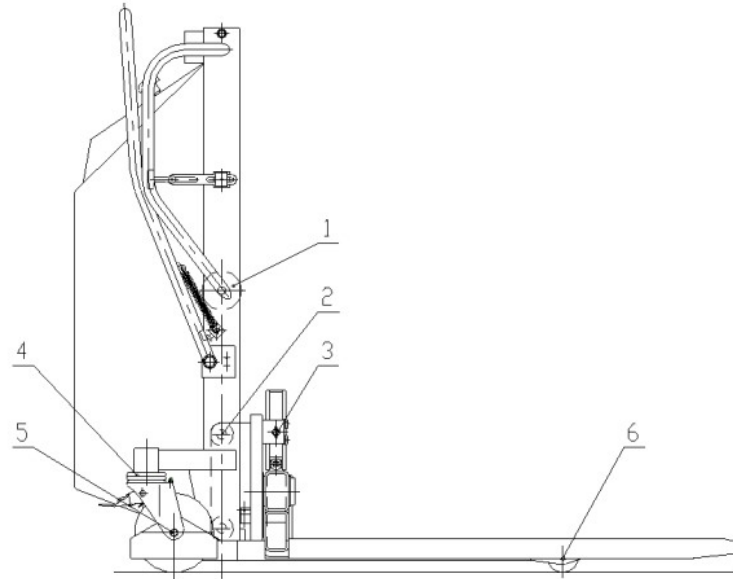
### **Lowering**

By pressing the press-button where there is an “LOWER” arrow marked, the valve is opened and the forks are being lowered to their lowest position. Their lowering speed is regulated by the throttle valve.

# Loading diagram EHS-T0809



## Lubricating plan



Pos. No.	Place of lubrication	No. of places HS-T0809	Lubricant type	Lubricant quantity	Interval
1	Chain wheel bearing	1	T – K3	0,01 kg	Twice a year
2	Forks bearing	4	T – V2	0,005 kg	Once a year
3	Helix	2	T – V2	0,005 kg	Once a year
4	Front wheel bearing	2	T – V2	0,005 kg	Once a year
5	Front wheel bearing	4	T – V2	0,005 kg	Once a year
6	Rear wheel bearing	4	T – V2	0,005 kg	Once a year



## Safety regulations

When handling loads, operational procedures, which protect operators from accidents and injuries, must be used. These are mainly caused by incorrectly secured loads, by exceeding the max. load capacity, or by sliding of the truck on poor transport surfaces. Doorsills and other similar obstructions must be leveled by means of ramps as well as bridges between neighbouring floors.

### It is forbidden:

- to use the truck for handling on inclined surfaces
- to perform any repairs and maintenance on a truck carrying a load
- to handle loads with a center of gravity higher than 500 mm
- to transport the loads while lifted higher than it is specified 200 mm over the ground except technologically essential transport

### Note:

- technologically essential transport is offtaking and placing of the load in the place of stacking.

### It is necessary:

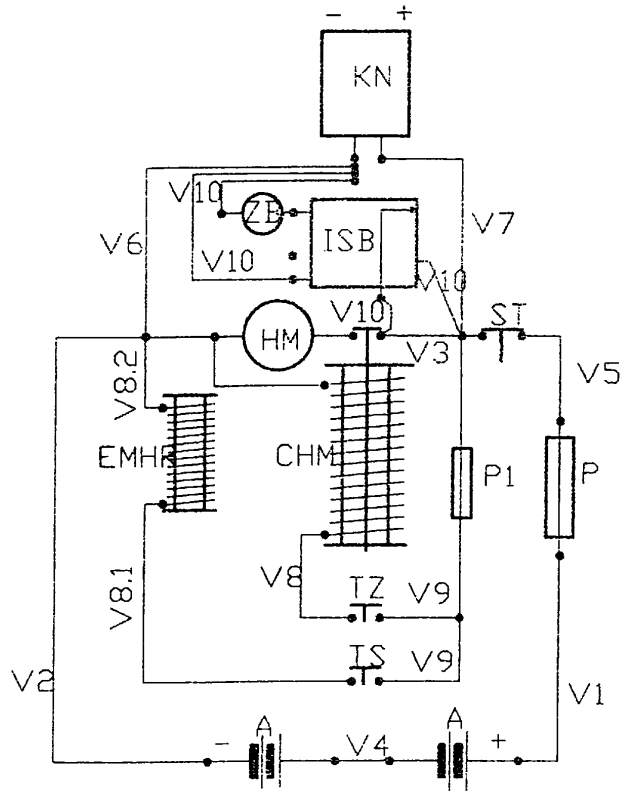
- to keep the loading diagram while manipulating with load, which is stucked on each stacker.

## Product disposal

The user of product is after the end of technical life obligatory:

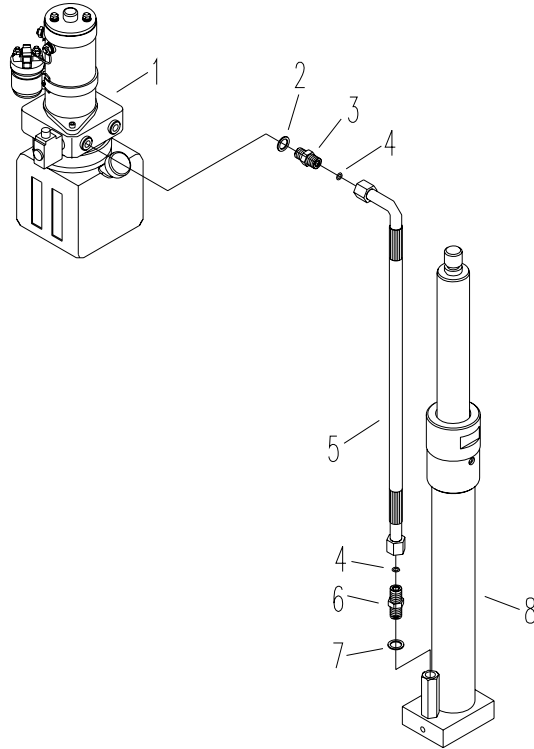
1. to drain the hydraulic system and to hand an oil over for recycling
2. to hand over all metal parts for recycling
3. to put all plastic parts into communal waste system

## Diagram of electric circuit



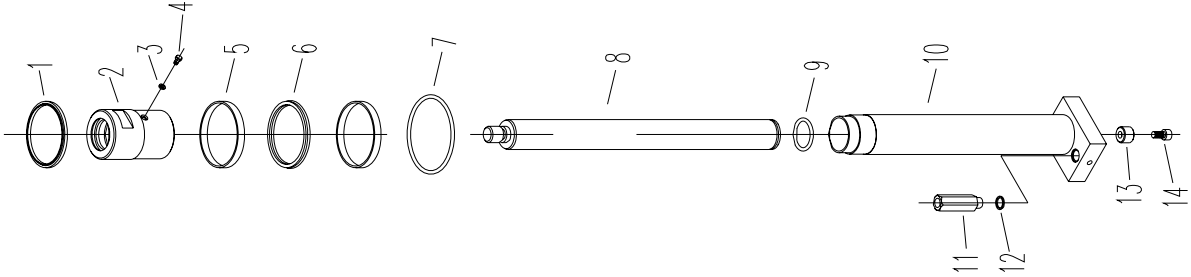
- KN** - power connector
- ZB** - back up battery
- ISB** - accumulator indicator
- HM** - hydromotor
- ST** - stop button
- P** - fuse 160 A
- CHM** - hydromotor coil
- MS** - microswitch
- A** - accumulator
- P1** - fuse 6,3 A
- EMHR** - hydromotor electromagnet
- TZ** - lifting button
- TS** - lowering button
- V1-V10** - conductors

## Connection and gripping of hydraulics for EHS



<b>Connection and gripping of hydraulics for EHS</b>				
<b>NO.</b>	<b>Pos.</b>	<b>Description</b>	<b>Pcs</b>	<b>Note</b>
1	EHS101	Hydraulic aggregate	1	
2	EHS102	Seal washer	1	
3	EHS103	Connector	1	
4	EHS104	O-seal ring	2	
5	EHS105	Compression hose	1	
6	EHS106	Connector	1	
7	EHS107	Seal washer	1	
8	EHS108	Working cylinder-ass	1	

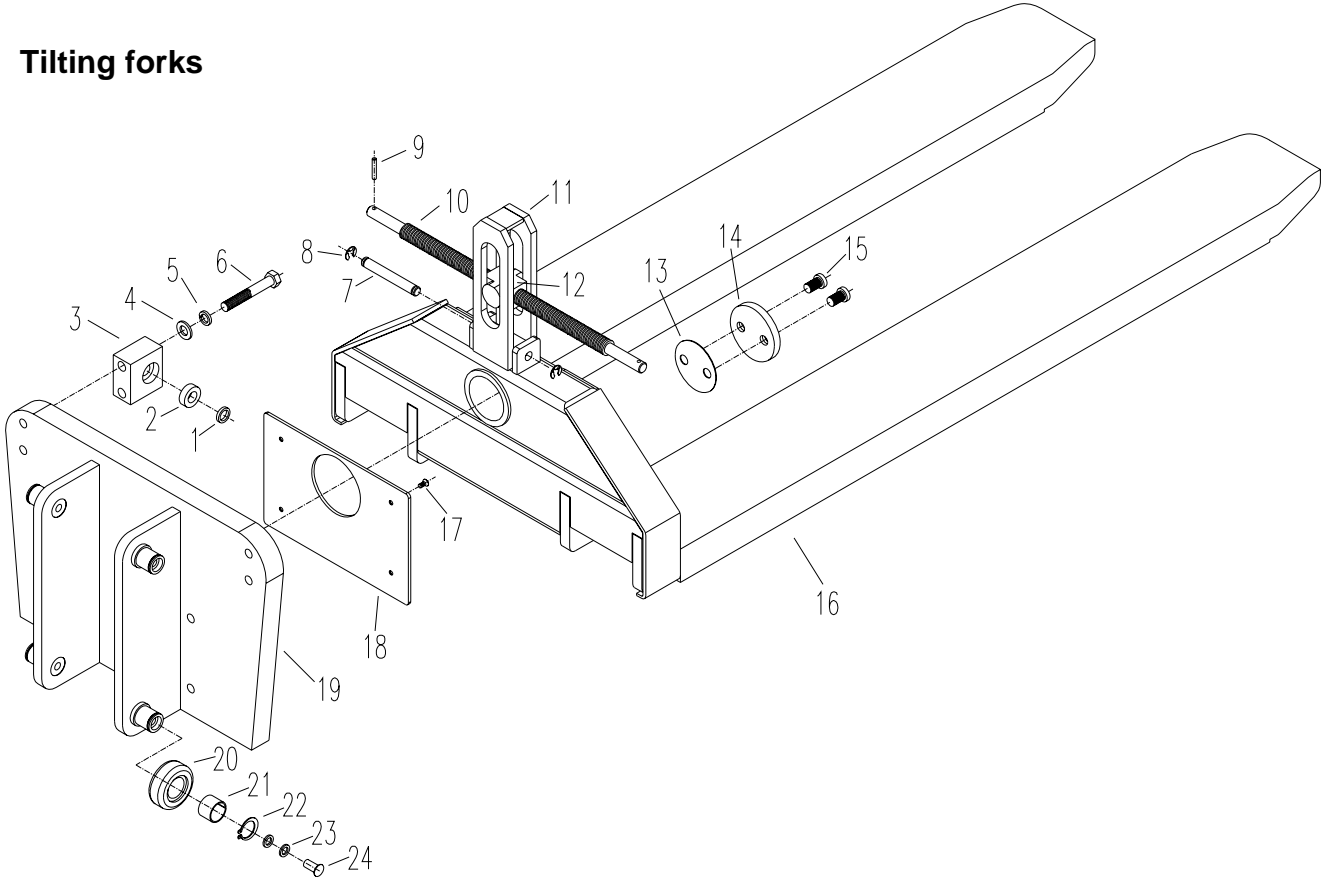
**Working cylinder assembly for EHS**



### Working cylinder assembly for EHS

NO.	Pos.	Description	Pcs	Note
1	EHS201	Dust seal ring	1	
2	EHS202	Top nut	1	
3	EHS203	Seal Washer	1	
4	EHS204	Screw M6x10	1	
5	EHS205	Guiding ring	2	
6	EHS206	Seal ring	1	
7	EHS207	O-seal ring	1	
8	EHS208	Piston rod	1	
9	EHS209	Securing ring	1	
10	EHS210	Cylinder – welded	1	
11	EHS211	Throttle valve	1	
12	EHS212	Seal Washer 16	1	
13	EHS213	Seat	1	
14	EHS214	Screw M8 x16	1	

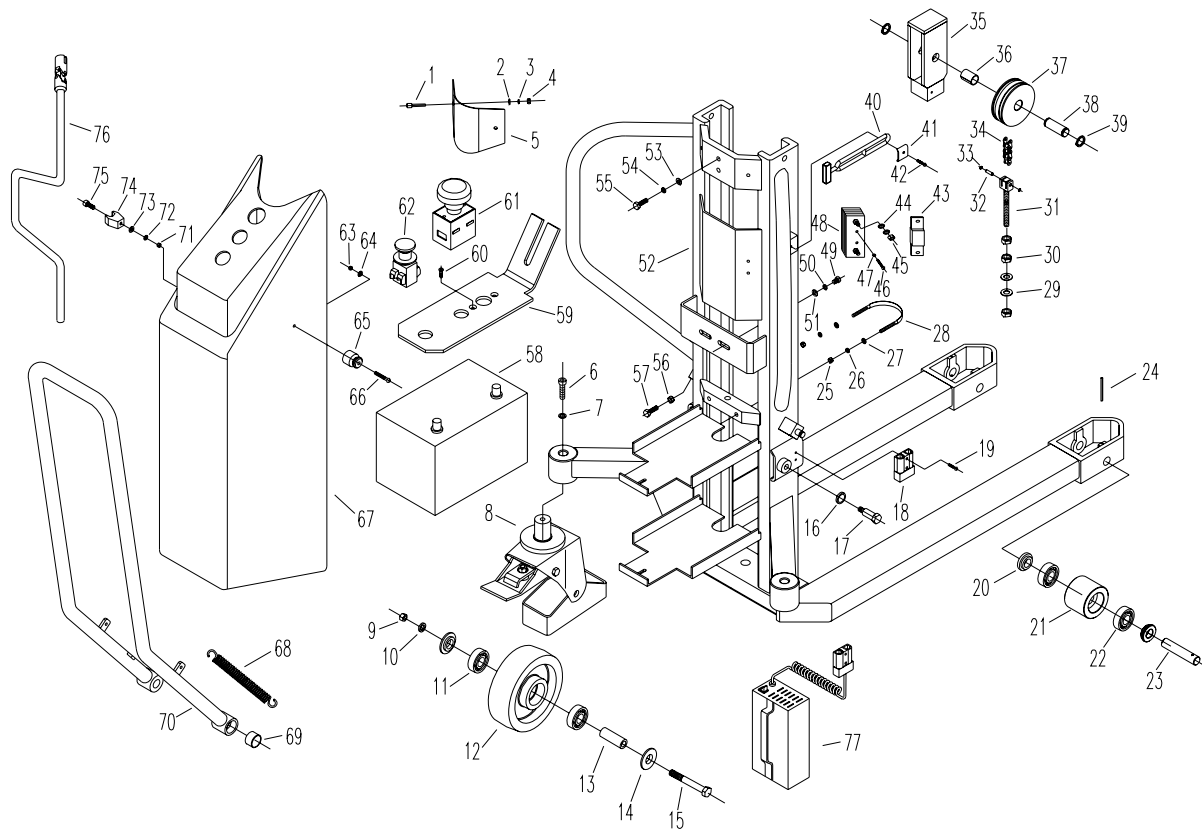
# Tilting forks



<b>Tilting forks</b>				
<b>No.</b>	<b>Pos.</b>	<b>Description</b>	<b>Pcs</b>	<b>Note</b>
1	HS201T	Washer	2	
2	HS202T	Bearing	2	
3	HS203T	Trapezium screw holder	2	
4	HS204T	Plane washer 12	4	
5	HS205T	Spring washer 12	4	
6	HS206T	Screw M12x80	4	
7	HS207T	Fork arm pin	1	
8	HS208T	Snap ring 9	2	
9	HS209T	Cotter 5x30	2	
10	HS2010T	Trapezium screw M20x4	1	
11	HS2011T	Fork arm – welded	1	
12	HS2012T	Trapezium screw stone	1	
13	HS2013T	Washer	1	
14	HS2014T	Push cover	1	
15	HS2015T	Bolt	2	
16	HS2016T	Tilting forks – welded	1	
17	HS2017T	Bolt M5x8	4	
18	HS2018T	Tie plate	1	
19	HS2019T	Fork carrier – welded	1	
20	HS2020T	Roller	4	
21	HS2021T	Bearing	4	
22	HS2022T	Snap ring 25	4	
23	HS2023T	Washer 10	8	
24	HS2024T	Pole	4	



# Frame EHS-T0809



<b>Frame EHS- T0809</b>				
<b>No.</b>	<b>Pos.</b>	<b>Description</b>	<b>Pcs</b>	<b>Note</b>
1	HS301	Screw M6×40	2	
2	HS302	Plane washer 6	2	
3	HS303	Spring washer 6	2	
4	HS304	Nut M6	2	
5	EHS305	Cover board	1	
6	HS306	Screw M10×35	2	
7	HS307	Spring washer 10	2	
8	HS308	Wheel rack	2	
9	HS309	Nut M12	2	
10	HS310	Spring washer 12	2	
11	HS311	Bearing 6204	4	
12	HS312	Rear wheel	2	
13	HS313	Axle cover	2	
14	HS314	Push cover	4	
15	HS315	Bolt M12×85	2	
16	EHS316	Plane washer 18	2	
17	EHS317	Bolt	2	
18	EHS318	Socket	1	
19	EHS319	Screw M4×20	2	
20	HS320	Push cover	4	
21	HS321	Load wheel	2	
22	HS322	Bearing 6204	4	
23	HS323	Axle	2	
24	HS324	Pin 5×50	2	
25	HS325	Nut M8	2	
26	HS326	Spring washer 8	2	
27	HS327	Plane washer 8	2	
28	HS328	Clevis bolt	1	
29	HS329	Plane washer 12	2	
30	HS330	Nut M12	3	
31	HS331	Chain joint	1	
32	HS332	Chain pin	2	
33	HS333	Snap ring 4	4	
34	HS334	Chain	1	
35	HS335	Carrier wheel cover	1	
36	HS336	Bearing 20×30	1	
37	HS337	Carrier wheel	1	
38	HS338	Carrier wheel axle	1	
39	HS339	Snap ring 20	2	

Frame EHS- T0809				
No.	Pos.	Description	Pcs	Note
40	EHS340	Pull bar	2	
41	EHS341	Press board	2	
42	EHS342	Screw M5×15	2	
43	EHS343	Fuse	1	
44	EHS344	Plane washer 8	4	
45	EHS345	Nut M8	2	
46	EHS346	Screw M5×30	2	
47	EHS347	Nut M5	2	
48	EHS348	Fuse seat	1	
49	EHS349	Bolt M10×20	2	
50	EHS350	Spring washer 10	2	
51	EHS351	Plane washer 10	2	
52	EHS352	Frame	1	
53	EHS353	Plane washer 10	2	
54	EHS354	Spring washer 10	2	
55	EHS355	Bolt M10×25	2	
56	EHS356	Nut M10	1	
57	EHS357	Bolt M10×35	1	
58	EHS358	Battery	2	
59	EHS359	Panel	1	
60	EHS360	Screw M5×8	2	
61	EHS361	Switch	1	
62	EHS362	Button	2	
63	EHS363	Nut M5	2	
64	EHS364	Plane washer 5	2	
65	EHS365	Fixed seat	2	
66	EHS366	Screw M5×25	2	
67	EHS367	Cover	1	
68	EHS368	Extension spring	2	
69	EHS369	Bearing 18×20	4	
70	EHS370	Handle	1	
71	EHS371T	Nut M6	2	
72	EHS372T	Spring washer 6	2	
73	EHS373T	Plane washer 10	2	
74	HS340T	Fixed seat	2	
75	EHS375T	Screw M6×25	2	
76	HS341T	Crank	1	
77	EHS377	Charger	1	