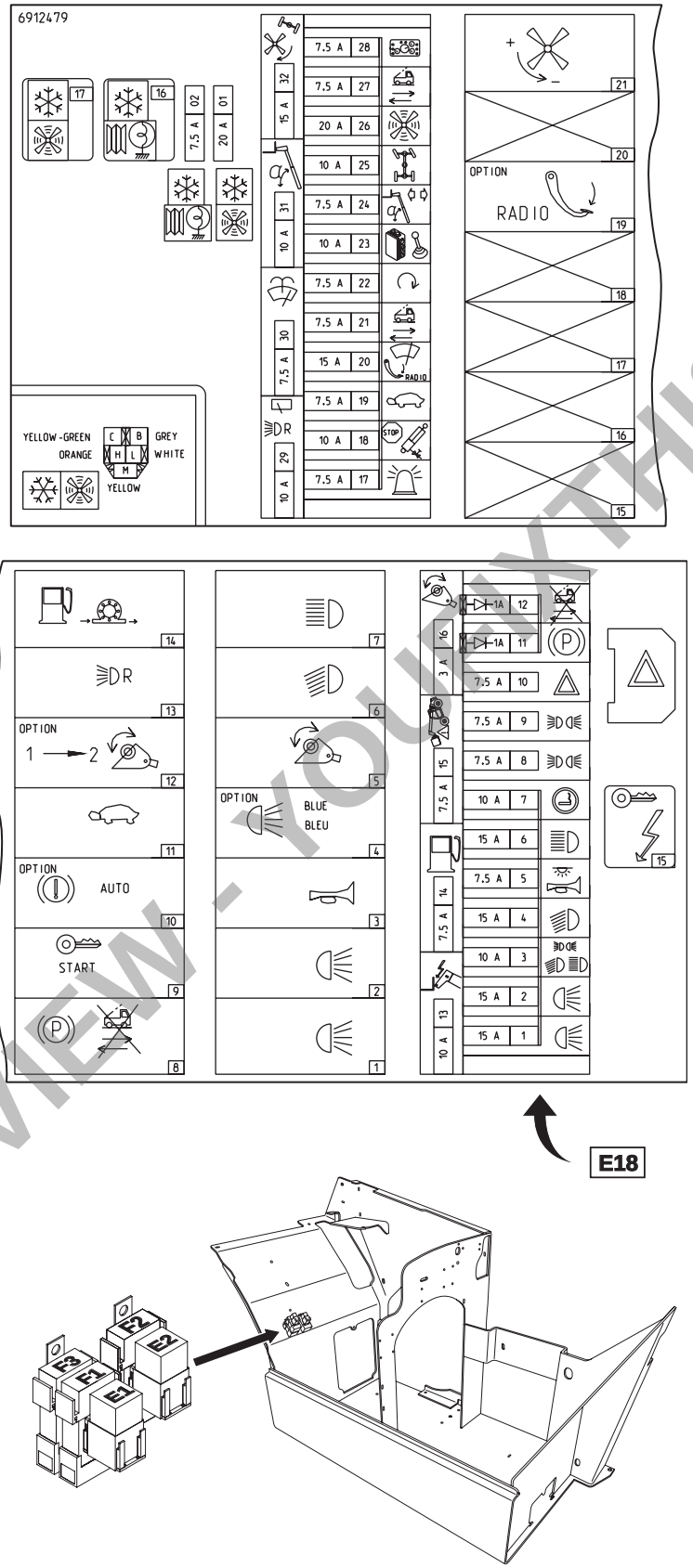
Fuses, Diodes And Relay Drawing

Figure 18

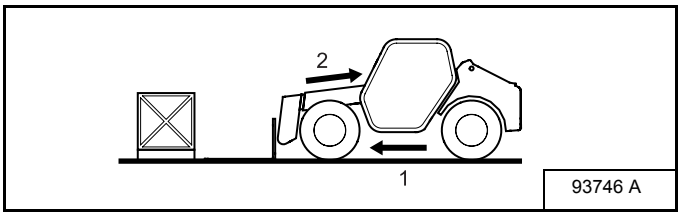


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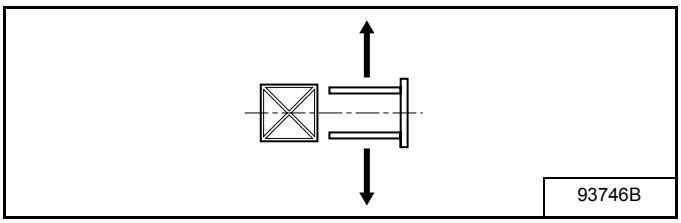
Picking A Load From The Ground

Figure 27



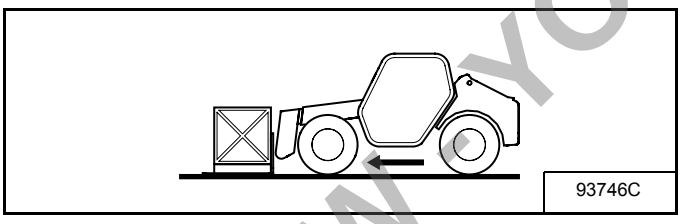
1. Move the machine perpendicular to the load with the telescopic boom fully retracted and the forks parallel to the ground.

Figure 28



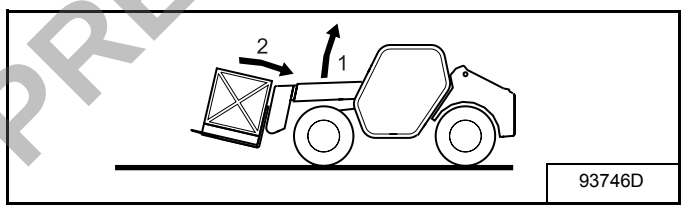
2. Adjust the fork clearance and their centering in relation to the load.
3. Adjust the height of the forks so that they can slide under the load.

Figure 29



4. Move the machine forward or extend the boom to bring the heel of the forks in contact with the load.
5. Engage the handbrake and put the gear lever into neutral.

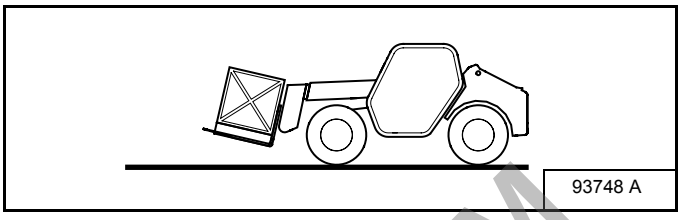
Figure 30



6. Raise the boom so that the load is approximately 12 to 20 inch above groundlevel, tilt the forks fully backwards and retract the boom fully. The machine is then in the transport position.

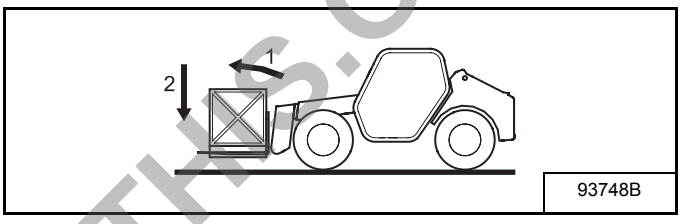
Placing A Load On The Ground

Figure 31



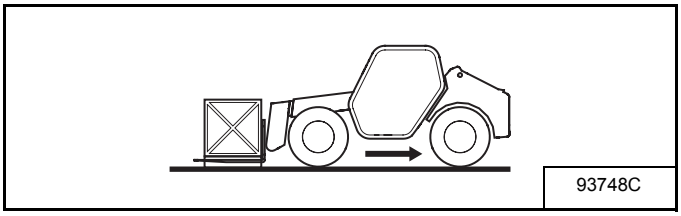
1. Move the load from the place and into the position where it is to be placed.

Figure 32



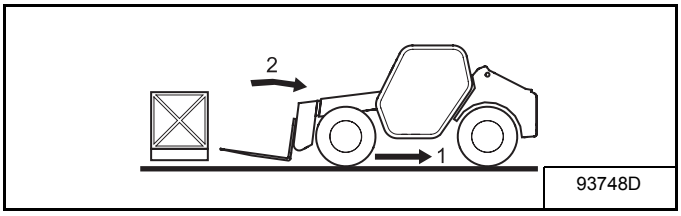
2. Tilt the forks into a position parallel to the ground.
3. Lower the load until it is resting on the ground and the forks are no longer in contact with the load.

Figure 33



4. Move the machine back in order to release the forks from the load completely.

Figure 34



5. Return the boom and the forks to the transport position.

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Dimensions and weights

Dimensions

With standard 400/70 x 20 tyres and rigid palletiser + forks.

Figure 1

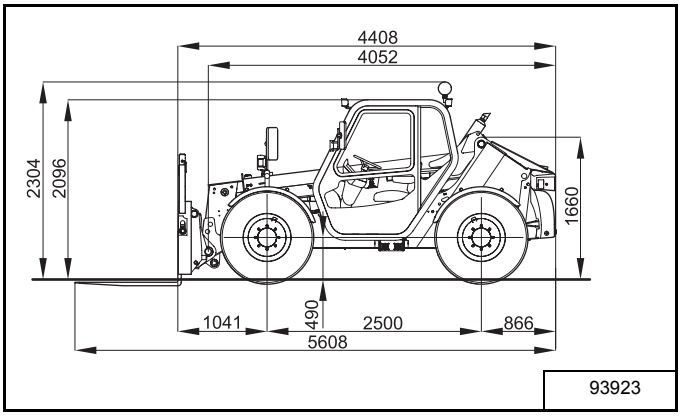


Figure 2

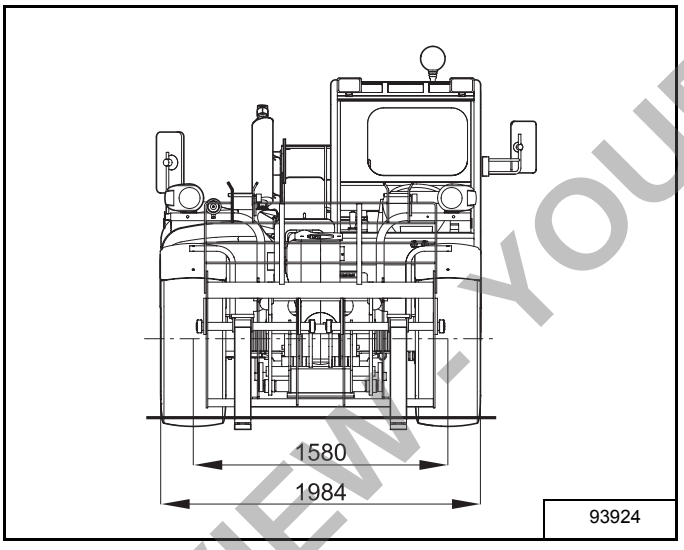
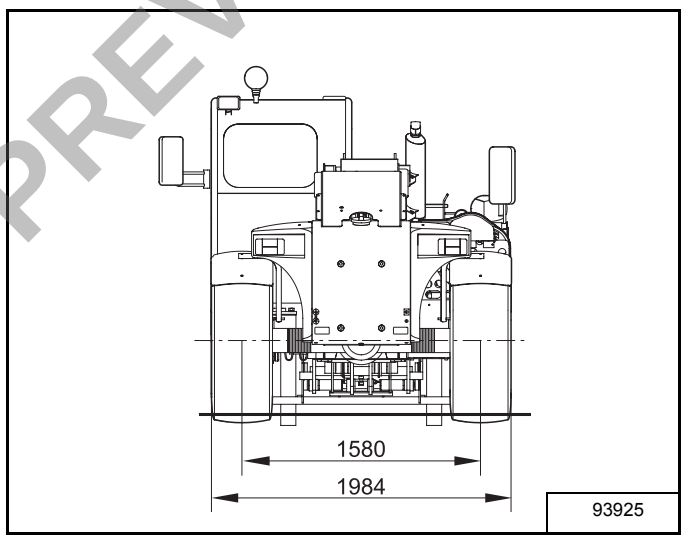


Figure 3



Reach

Reference	Value
Max. forward reach	10’ 8” (3251 mm)
Max. reach @ max. lift height	3’ 6” (1067 mm)
Max. reach @ practical placement height	5’ 3” (1600 mm)
Max. reach below grade w/ standard carriage:	
with standard tires	1’ 0” (305 mm)
with low-profile tires	1’ 3” (381 mm)
Reach @ dump height	2’ 8” (813 mm)

Height

Reference	Value
Max. lift height:	
with standard tires	18’ 4” (5588 mm)
with low-profile tires	17’ 11” (5461 mm)
Practical placement height	
with standard tires	15’ 9” (4800 mm)
with low-profile tires	15’ 6” (4725 mm)
Bucket dump height	16’ 3” (4953 mm)

Weights

Data with boom in transport position, all tanks full, with no driver and standard tyres.

Machine	Weight (Kg)		
	Total	On front axle	On rear axle
With no attachment	4,820	2,050	2,770
With palletiser and forks	5,100	2,495	2,605
With 3,500 kg load	5,280	2,760	2,520

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Maintenance Interval

Maintenance operations should be carried out according to the intervals defined in the table below.

⚠ WARNING

Depending on the working conditions under which you operate the machine, the recommended interval must be reduced in order to keep the machine properly maintained and to prevent possible damage, malfunctions or accidents. These conditions are (non-exhaustive list) in particular: dusty environment, humid atmosphere, muddy environment, abrasive environment

Operation	Page	Hours					
		10	50	200	500 (3)	750 (4)	1000 (4)
Diesel engine							
Cleaning the air filter's main cartridge (6)	p. 51						
Replacing the air filter's main cartridge (6)	p. 51						
Replacing the air filter's safety cartridge (6)	p. 51						
Checking the cooling fluid level	p. 54						
Checking the cooling fluid	p. 54						
Checking the radiators are clean	–						
Checking the lubricating oil level	p. 52						
Draining and changing the lubricating oil	p. 53						
Replacing the lubricating oil filter cartridge	p. 53						
Checking the condition and tension of the alternator belt (2)	p. 54						
Replacing the fuel filter cartridge	p. 52						
Hydraulic System							
Checking the hydraulic oil level	p. 58						
Draining and changing the hydraulic oil	p. 59						
Replacing the hydraulic filter cartridge	p. 60						
Replacing the hydraulic oil tank vent valve	p. 59						
Checking the tightness of pipes and hydraulic connections	p. 59						
Mechanical Transmission							
Checking the condition of tyres	p. 60						
Checking the tyre pressure	p. 60						
Checking the tightness of wheel nuts (1)	p. 60						
Checking the vent valves on the two axles are clean	p. 60						
Lubricating the rear axle rolling element bearings	p. 61						
Lubricating the axle steering pivots	p. 61						
Checking the oil level in the transfer box and front axle central casing	p. 61			monthly			
Checking the oil level in the rear axle central casing	p. 62			monthly			
Checking the oil level on both axles gear reducers	p. 62						
Draining and changing the oil in the transfer box and front axle central casing (3)	p. 63						
Draining and changing the oil on the rear axle central casing (3)	p. 63						
Draining and changing the oil on two axles gear reducers (3)	p. 63						
Structure							
Cleaning dust out of the cab filter	p. 50						
Replacing the cab filter	p. 50						
Lubriating the hinge pins							
Lubricating the boom's guide rail slippers							
Checking the tightness of screws and bolts	–						
Checking wear on the boom's guide rail slippers	–						
Checking wear on flanges and hinge pins	–						
Electrical System							
Checking the battery fluid level	p. 55						
Checking the condition of fuses, diodes and relays	p. 55						
Checking the working order of controls, lighting and signalling	p. 55						
Checking the working order of indicator lights, indicators and controls	p. 55						
Checking the condition of electric connections	p. 55						
Checking proper CEC operation	–						
Operation	**Page**	**Hours**					

* For more information see **"Lubricating drawing" on page 65**.

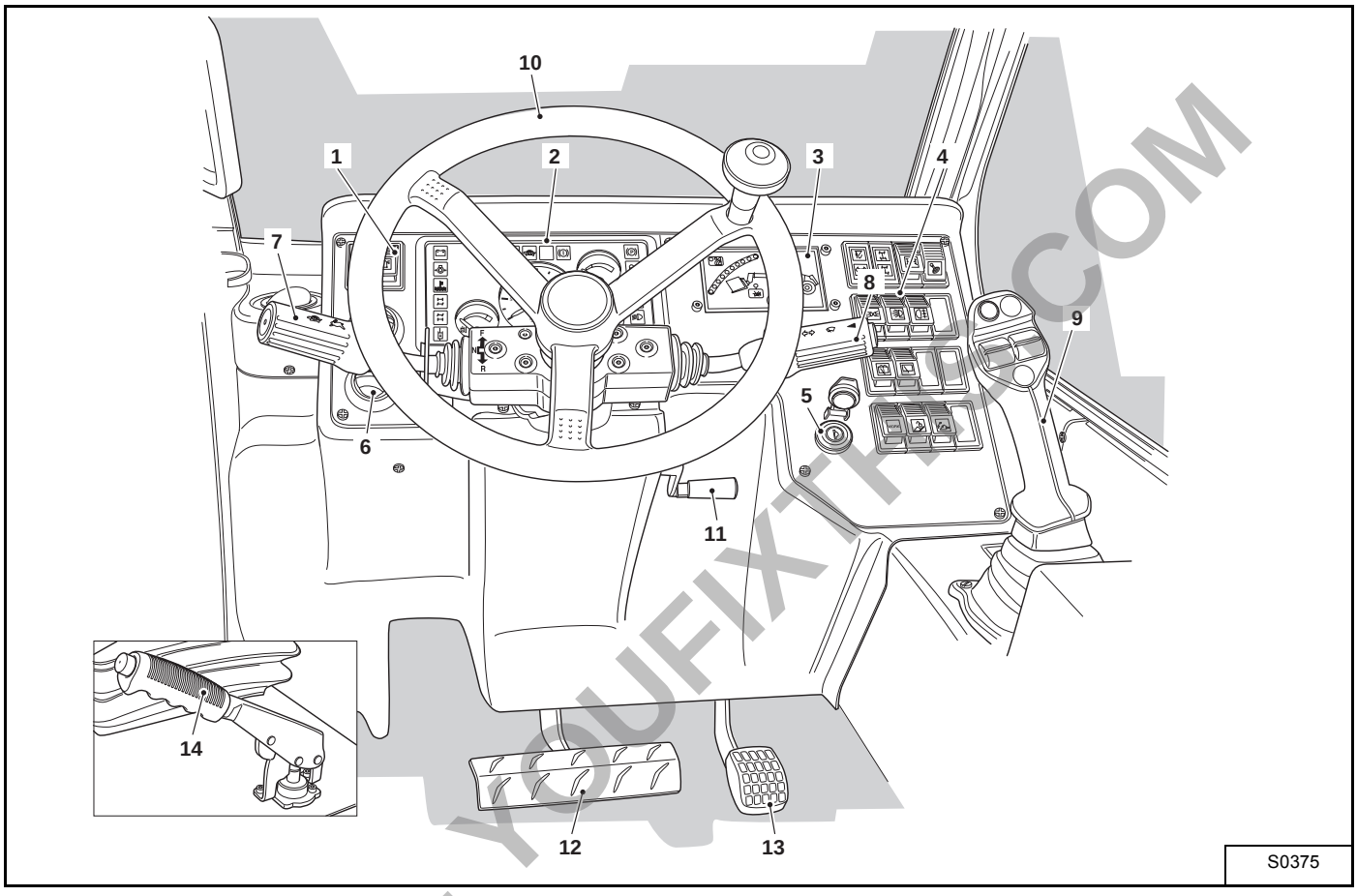
(1) Check wheel nut torque every 8 hours for the first 24 hours.
(2) First maintenance after 50 hours then according to the table.
(3) Or every 6 months.
(4) Or every 12 months.
(5) Frequency may vary in certain dusty environments.
(6) To be replaced after 250 hours if the fuel filter bowl is badly fouled.

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Controls And Indicators

The main controls and indicators are shown in the figure below.

Figure 1



Reference	Designation	See
1	Controls for the hazard warning light and rotating beacon	p. 27
2	Multi-function dial	p. 22
3	Right console	p. 24
5	Key Switch	p. 29
6	Cab heating and defogging control	p. 31
7	Left multi-function lever	p. 26
8	Right multi-function lever	p. 26
9	Boom function control joystick	p. 27
10	Steering wheel	p. 29
11	Steering wheel tilt adjustment	p. 29
13	Brake and slow advance pedal	p. 30
14	Accelerator pedal	p. 30
15	Handbrake	p. 30

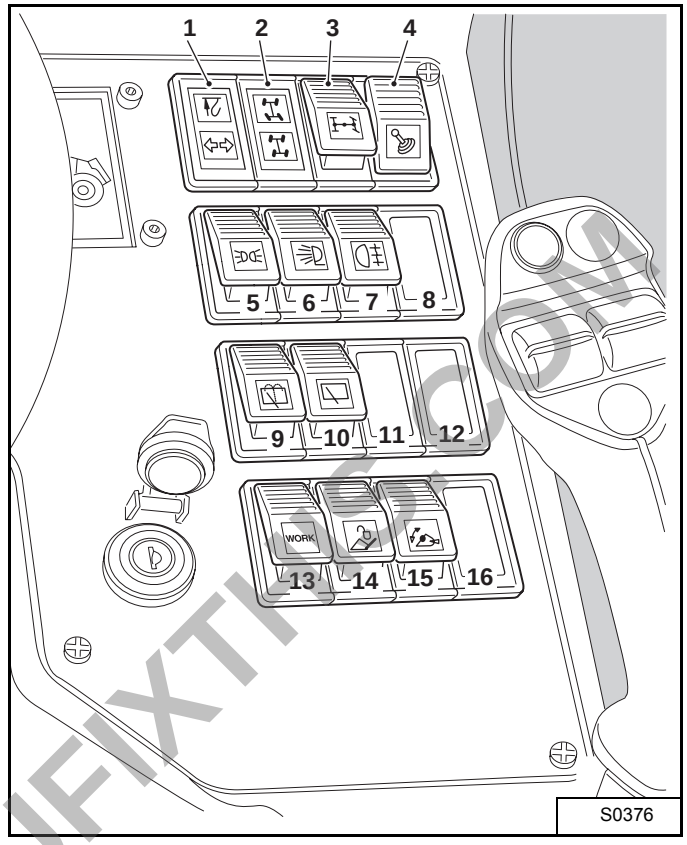
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Right Console

Figure 3

This multi-function dial comprises 2 indicators and 13 switches with indicator lights.



Reference	Icon	Description	Function
1		**Trailer turn indicator**	Green indicator light with symbol. The light flashes when the trailer's turn indicators are lighted. The red indicator light is not used on this model.
2		**Steering mode indicator**	Green indicator lights with symbols: • upper part on: parallel running mode selected. • lower part on: 4-wheel steering mode selected. • upper and lower part off: 2-wheel steering mode (front wheels) selected.
3		**Steering mode**	With green indicator light and symbol. 3-position toggle switch: • down position: parallel running mode selected. This mode is used in narrow areas, to move away from buildings or to reposition the machine. • central position: 2-wheel steering mode (front wheels) selected. This mode is used when driving at higher speeds. • up position: 4-wheel steering mode selected. This is the mode used under most circumstances. **Before changing the steering mode, return all 4 wheels parallel to the longitudinal axis of the machine. The correct positions are indicated by indicator lights in the multi-function dial.** **Select the steering mode best suited to the operations to be carried out.** **Only change the steering mode when the machine is stopped.**
4		**Hydraulics control lockout**	With green indicator light and symbol. 2-position toggle switch: • down position to activate the boom's hydraulic functions. In this position, the indicator light is on. • up position: deactivates the boom's hydraulic functions. Used to deactivate all functions of the hydraulic control lever (joystick) during travel on the road.

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Attachment lock

This device enables the attachment to be locked to the hook-up. It is available in two versions:

- Manual lock: standard version
- Hydraulic lock

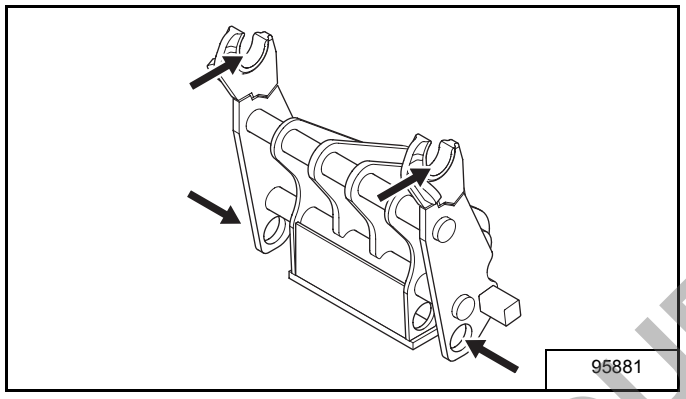
Manual lock: standard version

Description

The hook-up includes the following:

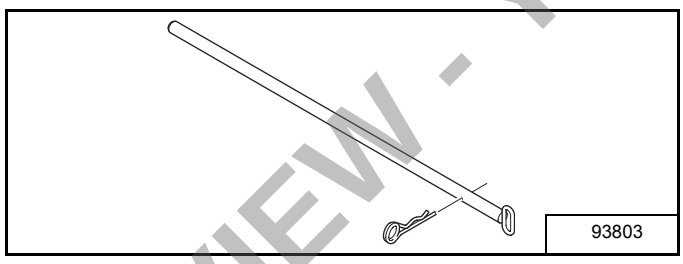
- Two hooks at the top and two bores at the bottom.

Figure 1



- A removable locking bar with its safety pin.

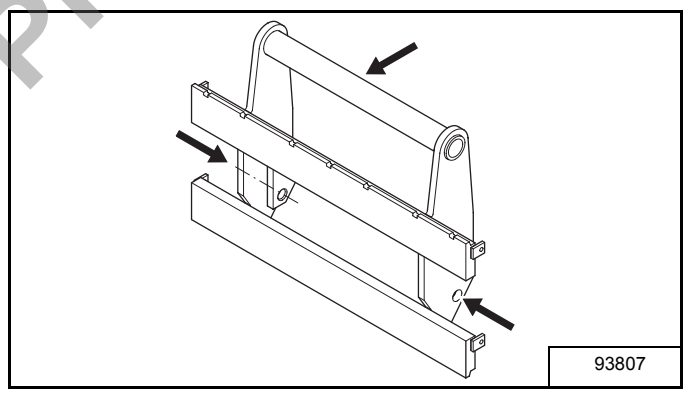
Figure 2



Each attachment includes the following:

- A pipe on top.
- Two bores below.

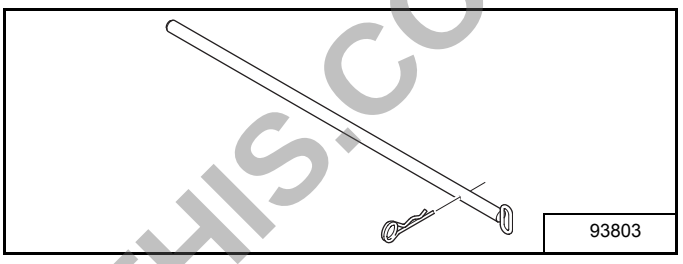
Figure 3



Operation

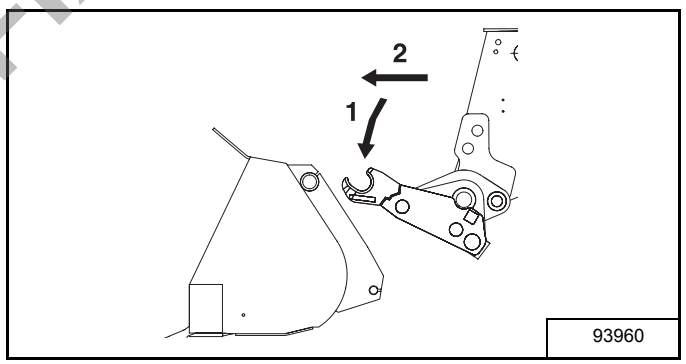
1. Drive the machine forward, with the telescope fully retracted, so that the hook-up is less than 1 m from the attachment and perpendicular to it.
2. Engage the parking brake and put the transmission lever into neutral.
3. Remove the locking bar safety pin, and remove the bar and place it near the machine.

Figure 4



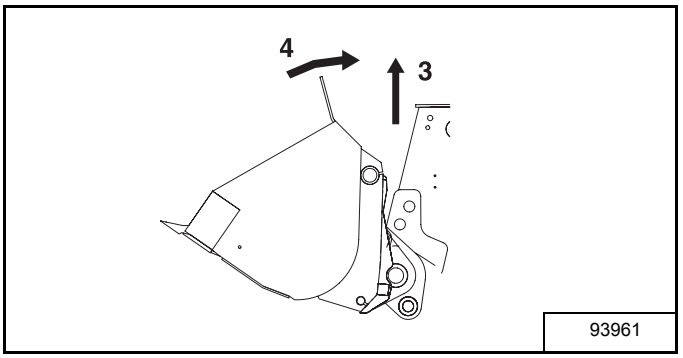
4. Tilt the hook-up forwards so that the hooks are lower than the attachment pipe (1) **[Figure 5]**.

Figure 5



5. Extend the telescope so that the hooks are right below the attachment pipe (2) **[Figure 5]**.
6. Raise the boom in order to engage the attachment pipe in the hooks; tilt the hook-up if necessary (3) **[Figure 6]**.

Figure 6



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Transporting The Machine

Tying Down The Machine

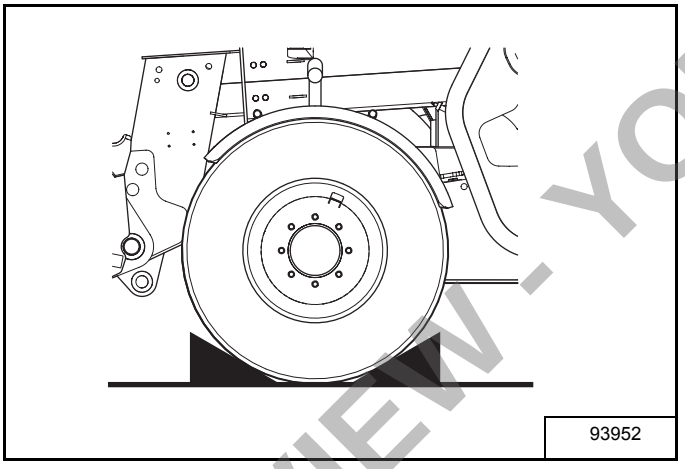
WARNING

Before loading the machine on the trailer, make sure that:

- **All safety instructions for the trailer are complied with.**
- **The driver of the trailer has been informed of the dimensions and weights of the machine.**
- **The trailer platform is big enough and has sufficient capacity to transport the machine.**
- **The admissible pressure on the trailer platform is compatible with the machine.**

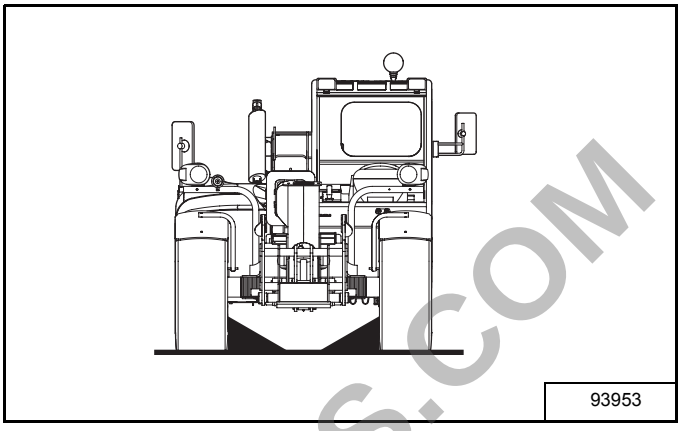
1. Load the machine onto the trailer in accordance with its loading requirements in terms of p osition and distribution of mass.
2. Stop the machine.

Figure 43



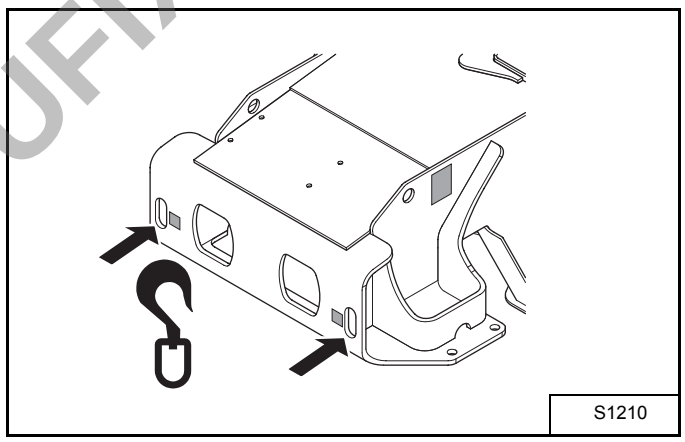
3. Attach chocks to the floor of the trailer in front of and behind each of the machine's wheels **[Figure 43]**.

Figure 44



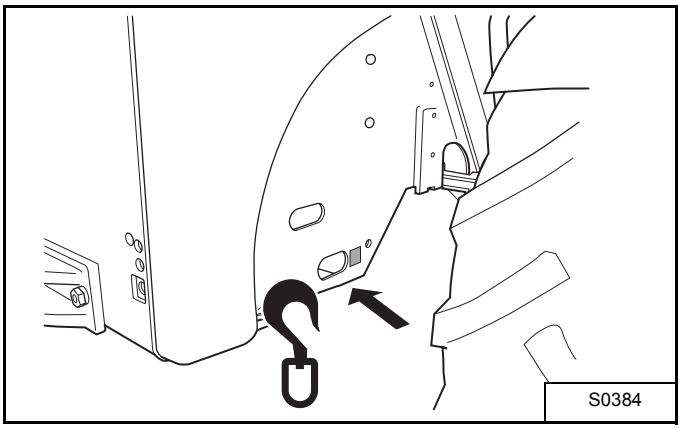
4. Attach chocks to the flo or of the trailer against the inner face of each wheel **[Figure 44]**.
5. Tie down the machine on the trailer using the front tie down points.

Figure 45



6. Stow the machine on the trailer using the rear stowing pins **[Figure 46]**.

Figure 46



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Fuses And Diodes

[Figure 18]

Reference	Gauge	Function protected
1	15 A	Front work lights
2	15 A	Rear work lights
3	10 A	Lighting and full-beam control
4	15 A	Headlamps
5	7.5 A	Road alarm and ceiling light
6	15 A	Full-beam
7	10 A	Cigarette lighter
8	7.5 A	Left side-lights
9	7.5 A	Right side-lights
10	7.5 A	Hazard warning lights
11	DIODE 1 A	Parking brake
12	DIODE 1 A	Advance safety if parking brake tight
13	10 A	Second hydraulic function on boom (option)
14	15 A	Fuel pump
15	7.5 A	Stability indicator
16	3 A	Hydraulic function on boom
17	7.5 A	Rotating beacon (option)
18	10 A	Brake lights, rear hydraulic options, stop lights
19	7.5 A	Slow travel speed
20	15 A	Front wiper
21	7.5 A	Transmission control box supply
22	7.5 A	Engine cutoff
23	7.5 A	Joystick supply
24	7.5 A	Direction indicators and boom angle measurement
25	10 A	Steering mode control
26	20 A	Heating fan
27	7.5 A	Direction of travel
28	7.5 A	Instrument panel supply
29	10 A	Reversing light and roof windscreen wiper (option)
30	7.5 A	Rear windscreen wiper: Rear windscreen and roof washer
31	10 A	Boom angle measurement
32	7.5 A	Fan direction reversing (option) and side offset correction
01	20 A	Air conditioning fan (option)
02	7.5 A	Air conditioning compressor (option)
F1	50 A	permanent line (+)
F2	40 A	Permanent line (+) by contact key
F3	70 A	Glow plugs

Relays

[Figure 18]

Reference	Function performed
1	Front work lights
2	Rear work lights
3	Road horn
4	Blue lights (option)
5	Hydraulic function on boom
6	Headlamps
7	Full-beam
8	Advance safety if parking brake tight
9	Starting safety if transmission is in gear
10	Not used
11	Slow travel speed
12	Second hydraulic function on boom
13	Backup lights / backup alarm
14	Not used
15	Prevent raising of the stabilizers
16	Stabilizers
17	Raise left stabilizer
18	Raise right stabilizer
19	Radio control for acceleration of the engine
20	Not used
21	Not used
E01	Glowplugs
E02	Starter control
E15	12V power relay after contact
E16	Air conditioning compressor (option)
E17	Air conditioning fan (option)
E18	Center for the directional signals (located beneath the fuse box)

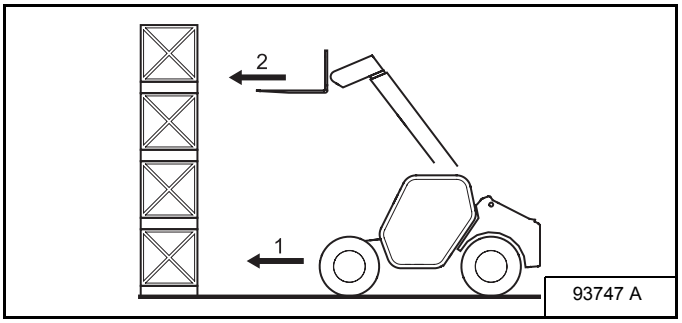
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Picking Up A Raised Load

1. Make sure before the maneuver that the forks can easily slide under the load to be taken and that their clearance and centering in relation to the load is correct.

Figure 35

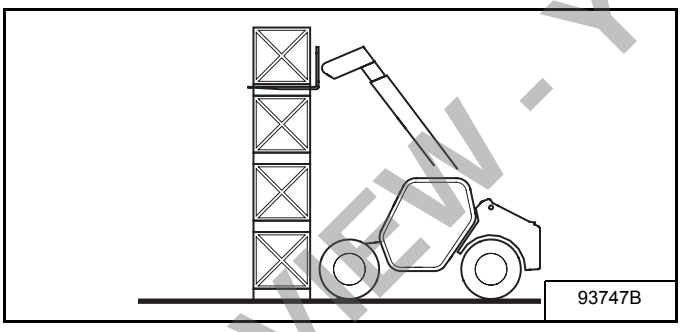


2. Move the machine perpendicularly to the load with the forks horizontal to at the height of the load.

⚠ WARNING

Make sure you leave the necessary distance to slide the forks entirely under the load, between the front of the machine and the pile of loads, using only the minimum length of the telescopic boom.

Figure 36



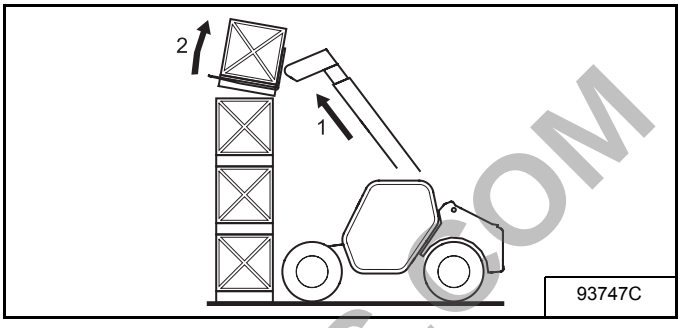
3. Move the machine forward as slowly as possible until the heel of the forks is in contact with the load.

⚠ WARNING

Do not knock against the load with the forks or the stack with the machine.

4. Engage the handbrake and put the gear lever into neutral.

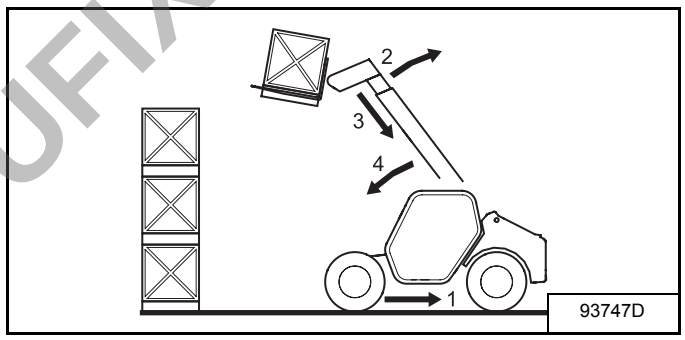
Figure 37



5. Raise the boom slightly and tilt forks partially backwards to stabilize the load.

6. Put the gear lever into reverse and release the handbrake.

Figure 38



7. Move the machine back as slowly as possible so as to release the load on top of the stack, in such a way that the boom can be lowered without the load touching the pile.

8. Retract the telescopic boom fully.

9. Lower the boom until the load is approximately 12” (300 mm) to 20” (500 mm) above ground-level. Then tilt the forks fully backwards. The machine is then in the transport position.

⚠ WARNING

All boom movement or machine displacement maneuvers with a raised load must be carried out with the greatest care and as slowly as possible.

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Rated Capacity Charts

See the chapter “RATED CAPACITY CHARTS” on page 15 for the diagrams relating to machines fitted with standard and optional tires.

Engine and transmission

Engine turbocharger

Reference	Value
Manufacturer	PERKINS
Model	1104-44T
Type / cycle	Diesel / 4 stroke
Pressure-charging	Turbo-compressor
Number and layout of cylinders	4 in line
Bore x stroke / displacement	105 x 127 (mm x mm) / 4400 cm³
Horsepower, Maximum	74.5 KW at 2200 min^{-1} per ISO TR 14396
Torque, Maximum	412 Nm at 1400 min^{-1} per ISO TR 14396
Cooling system	Fluid
Fuel	Gas oil
Type of injection	Direct injection

Hydrostatic transmission

Hydrostatic transmission in reversible closed circuit with pump and engine with variable cylinder capacity and electronic control.

Reference	Pump	Engine
Manufacturer	SAUER SUNDSTRAND	SAUER SUNDSTRAND
Displacement	variable from 0 to 55cm³	variable from 110 to 28cm³
Maximum operating pressure	450 bar	450 bar

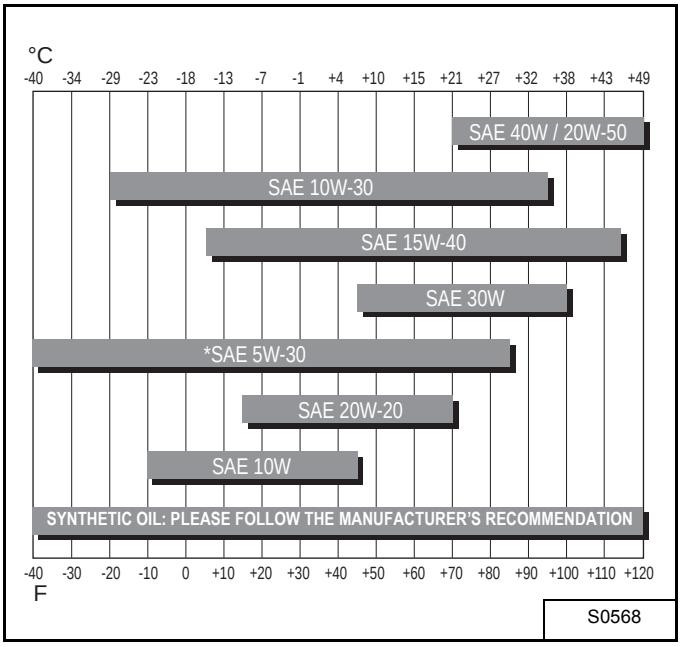
Speed range	On-site	Road
With TITAN 400/70x20 150B Lift Rigger II tyres	8 km/h	30 km/h
With DUNLOP 400/ 70x20 T37 140B TL tyres	8 km/h	30 km/h
With DUNLOP 405/70 R20 MPT SPT9 152G 168A2 TL tyres	8 km/h	30 km/h
With DUNLOP 400/ 70x20 T37 150B TL tyres	8 km/h	30 km/h
With CONTINENTAL 15.0/55x17 AS Farmer 12PR tyres	6 km/h	25 km/h
With BFGOODRICH 400/70x20 tyres	8 km/h	30 km/h

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Oil Chart

Figure 11



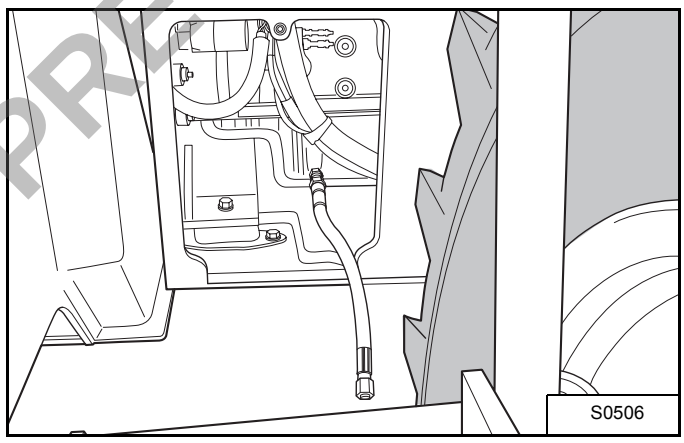
Draining And Changing Oil And Filter

See “Lubricating drawing” on page 65 for the service interval for replacing engine oil and filter.

Draining And Changing The Lubricating Oil

1. Carry out this operation on flat ground.
2. Carry out this operation preferably when the engine is hot: the oil will flow better.
3. Remove the cover at the back of the engine compartment.
4. Guide the drain hose to the collecting container **[Figure 12]**.

Figure 12



5. Unscrew the drain plug located at the end of the hose.
6. Collect the drained oil.
7. Screw the plug back onto the hose.
8. Put the hose back in its proper place.
9. Fill with new oil up to the correct level (see “Check And Top Up Engine Oil” on page 52).
10. Observe the level.
11. Start the engine and let it idle.
12. Wait until the oil pressure indicator light goes out.
13. Turn off the engine.
14. Check and add more oil if required.

CAUTION

Do not start the engine without oil or let it idle if the oil pressure indicator light does not go out 5 seconds after starting.

Replacing The Lubricating Oil Filter Cartridge

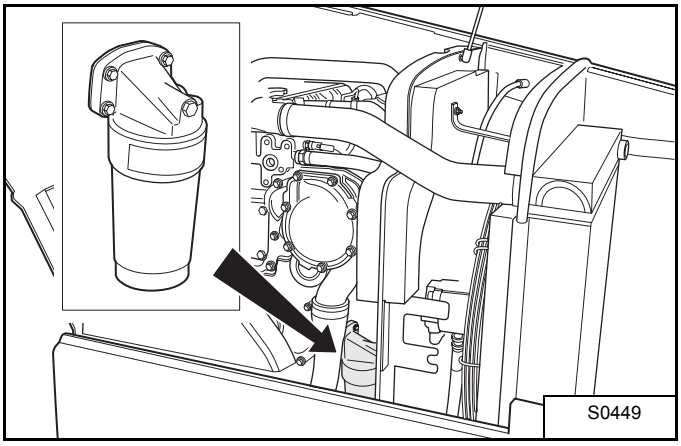
NOTICE

The interval of this operation is made to coincide with the draining and changing of the lubricating oil.

See “Draining And Changing The Lubricating Oil” on page 53

1. Carry out this operation while draining the oil.
2. Unscrew the cartridge.

Figure 13



3. Collect the oil which runs out.
4. Cover the new cartridge's seal with new oil.
5. Screw and tighten the new cartridge by hand.

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