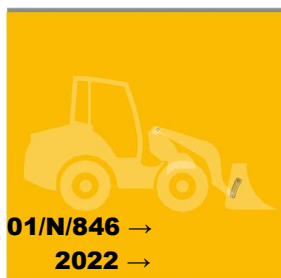


**MECALAC****AS 1000 T5**

Mecalac

OPERATOR'S MANUAL

01/N/846 →
2022 →

AS 1000 T5

W09S100*BA08*******Ref. 5401788****GB**

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Machine designed and manufactured in
Germany.

For purposes of continuous improvement, Mecalac reserves the right
to amend technical specifications without prior notice.

The Repair Manual and After-Sales Service technical documentation
are for the exclusive use of the dealer and must not in any
circumstances be distributed to customers.

TRANSLATION OF THE ORIGINAL MANUAL





Swing loader:
AS850 AS1000 AS900tele
Front loader:
AF1050 AF1200
Telescopic loader:
AT900 AT1050



VIN: Valid from W09.....

Original operator's manual

Status: 09/06/2022

Product	Wheel loader AF AT AS850 / 1000 AS900tele - Stage V
VIN	as from W09...
Publisher	<p>MECALAC Baumaschinen GmbH Am Friedrichsbrunnen 2 D-24782 Büdelsdorf</p> <p>Tel: +49 (0)4331 351 325 Fax: +49 (0)4331 351 491 E-mail: info@mecalac.com www: www.mecalac.com</p> <p>This document is protected by copyright. All rights reserved. The document may not, in whole or in part, be copied, reproduced, translated or reduced to an electronic medium of machine-readable form without the express permission of MECALAC Baumaschinen GmbH .</p> <p>Subject to change without notice.</p>
Foreword	<p>You have chosen the Mecalac Wheel loader AF AT AS850 / 1000 AS900tele.</p> <p>This operator's manual contains all the information and instructions required for the correct handling of the wheel loader Read this operator's manual before commissioning and always keep it to hand for reference.</p>
Service activities	The description of the service activities for tradespeople are to be found in a separate maintenance manual available from MECALAC Baumaschinen GmbH .
Note	Changes to the machines of MECALAC Baumaschinen GmbH and equipping them with accessory equipment and attachments that are not contained in our product range, must be approved by MECALAC Baumaschinen GmbH in writing. Should this not be the case, then our guarantee and product liability lapses forthwith.
Suggestions and comments	...regarding this documentation or the wheel loader can be sent to the above-mentioned address.
Spare part documentation	<p>The spare part documentation is to be found at the following Internet address: https://oneface.mecalac.com/vdoc/easysite/workplace</p> <p>Where applicable, you must create a user account in order to receive the spare parts documentation. To do so, follow the instructions on the website.</p>
Most recent amendment	09/06/2022

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1 Product information

In this chapter you will find the product information regarding the wheel loader:

- Designated Use (Page 9)
- Function description (Page 9)
- Type Plate (Page 11)
- Chassis number (Page 13)
- Scope of Supply (Page 14)
- EC Declaration of conformity (Page 15)

1.1 Designated Use

The wheel loader with bucket is intended for such work as which complies with the functioning of the wheel loader and its attachment. Such work is the loosening, picking up, moving and draining of earth, rocks or other materials and the loading of these materials on lorries, conveyor belts or other means of conveyance, in which the transportation of the load is mainly performed by driving the wheel loader. By attaching special attachments, such as multi-purpose buckets, sweepers, fork lift attachments and others, further applications with the wheel loader are possible. The wheel loader can also be used for the lifting, transportation and lowering of loads with the aid of lifting tackle.

A different application or an application in excess of the intended rating does not comply. For damage thus resulting, MECALAC Baumaschinen GmbH is not liable. The operator alone bears all risk. Compliance with the operating and servicing manual and the performance of maintenance tasks as well as maintaining service intervals all fall under designated use. A special clearance is required for the use aboard ships. Tool operation is permitted according to the specifications.

The wheel loader is expressly not intended for,

- the transportation of persons on the wheel loader or installed attachments,
- use as a load hook.
- that material modifications are made to the wheel loader

In addition the locally-applicable provisions and regulations of the country in which the wheel loader is used, must be observed.

1.2 Function description

1.2.1 AF Series

The wheel loader is equipped with a lift arm. A quick coupler is mounted on the lift arm. Various attachments can be mounted on the quick coupler. All movements of the lift arm and the quick coupler are performed by the driver from the cab with the aid of a multi-function joystick. Three different steering modes can be selected for whichever application is required

1.2.2 AT Series

The wheel loader is equipped with a telescopic boom. A quick coupler is mounted on the telescopic boom. Various attachments can be mounted on the quick coupler. All movements of the telescopic boom and the quick coupler are performed by the driver from the cab with the aid of a multi-function joystick. Three different steering modes can be selected for whichever application is required

1.2.3 AS 850 / AS1000

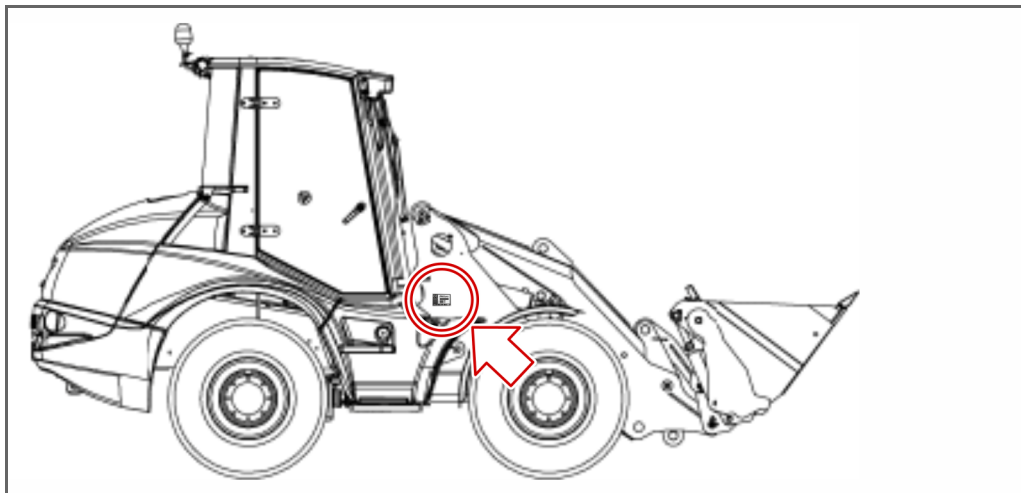
The wheel loader is equipped with a slewing lift arm. A quick coupler is mounted on the lift arm. Various attachments can be mounted on the quick coupler. All movements of the lift arm and the quick coupler are performed by the driver from the cab with the aid of a multi-function joystick. Three different steering modes can be selected for whichever application is required

1.2.4 AS900tele

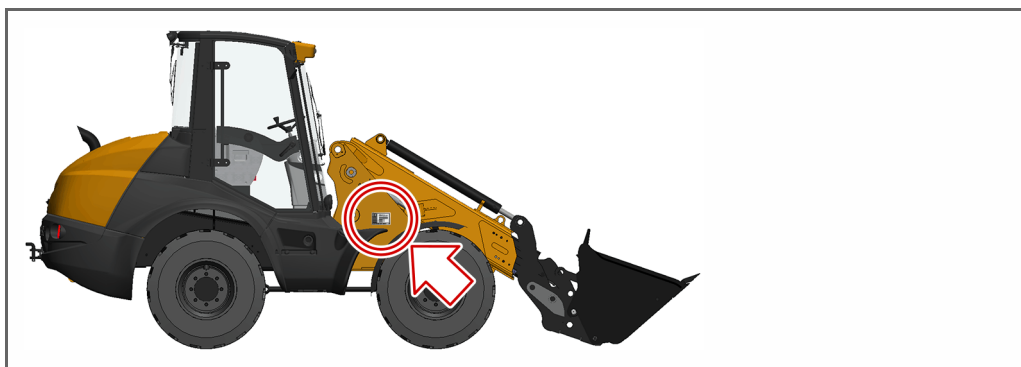
The wheel loader is equipped with a slewing telescopic lift arm. A quick coupler is mounted on the lift arm. Various attachments can be mounted on the quick coupler. All movements of the lift arm and the quick coupler are performed by the driver from the cab with the aid of a multi-function joystick. Three different steering modes can be selected for whichever application is required

1.3 Type Plate

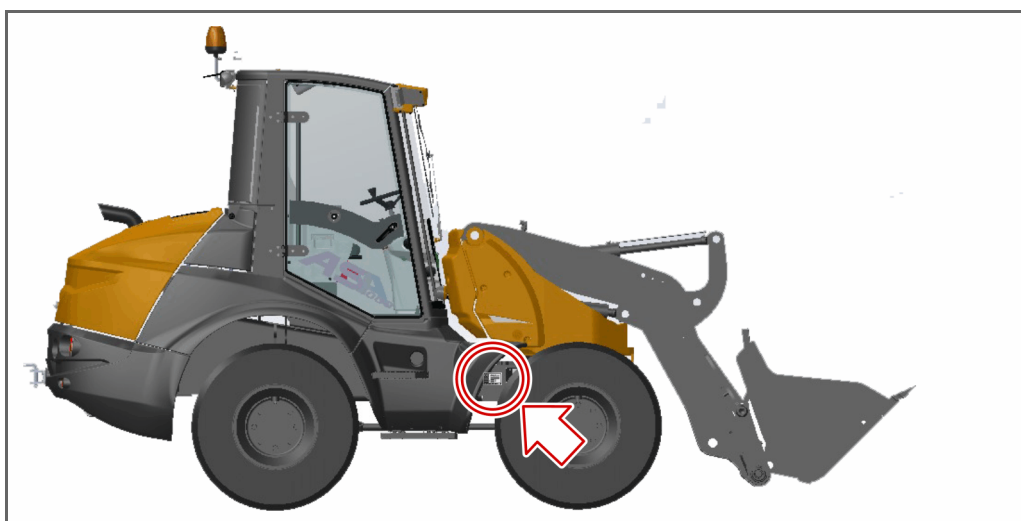
The type plate is located on the right-hand side of the wheel loader.



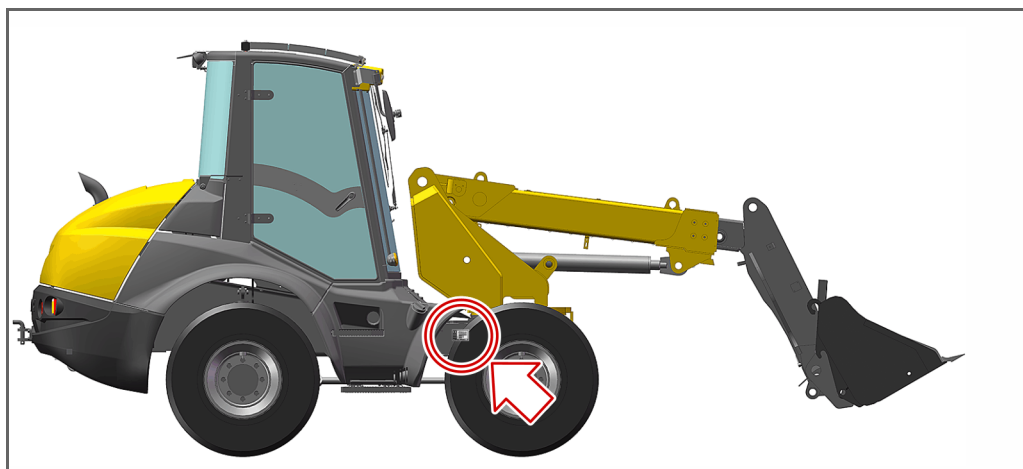
Location of the type plate on the AF1050 / 1200



Location of the type plate on the AT900 / 1050



Location of the type plate on the AS850 / 1000



Location of the type plate on the AS900tele

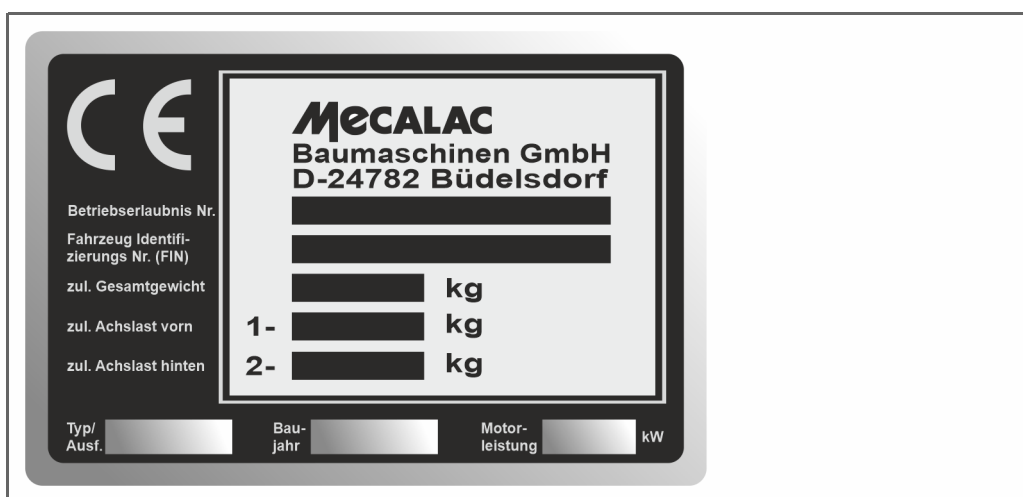


Illustration of the type plate

Data on the type plate of the wheel loader AF | AT | AS850 / 1000 | AS900tele

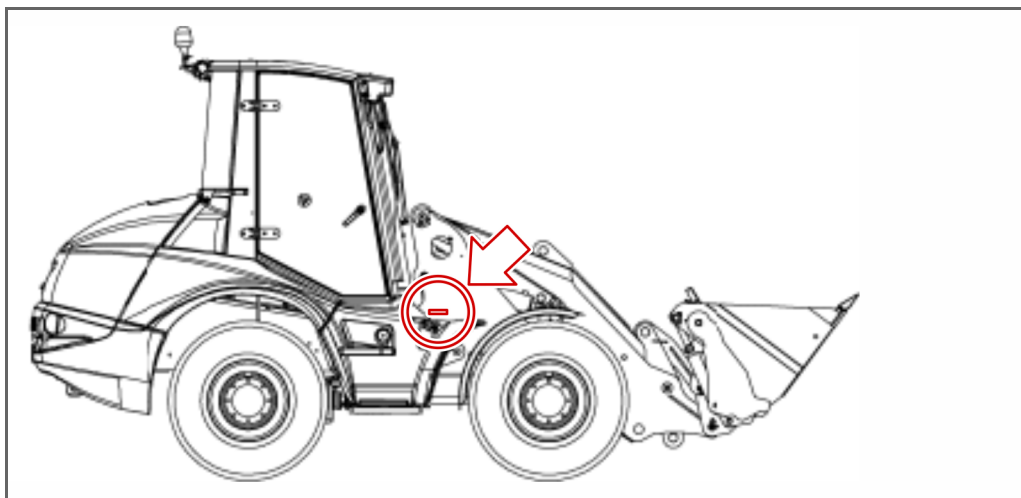
Designation	Contents
Operating licence No.	The operating licence number of the wheel loader is to be found in this location.
Vehicle Identification Number (VIN)	The Vehicle Identification Number (VIN) of the vehicle is to be found in this location.
Permissible total weight	The permissible total mass of the wheel loader is to be found in this location.
Permissible front axle load	The permissible front axle load of the wheel loader is to be found in this location.
Permissible rear axle load	The permissible rear axle of the wheel loader is to be found in this location.
Type / Version	The type / version of the wheel loader is to be found in this location.
Year of manufacture	The year of manufacture of the wheel loader is to be found in this location.

Data on the type plate of the wheel loader AF | AT | AS850 / 1000 | AS900tele (Cont.)

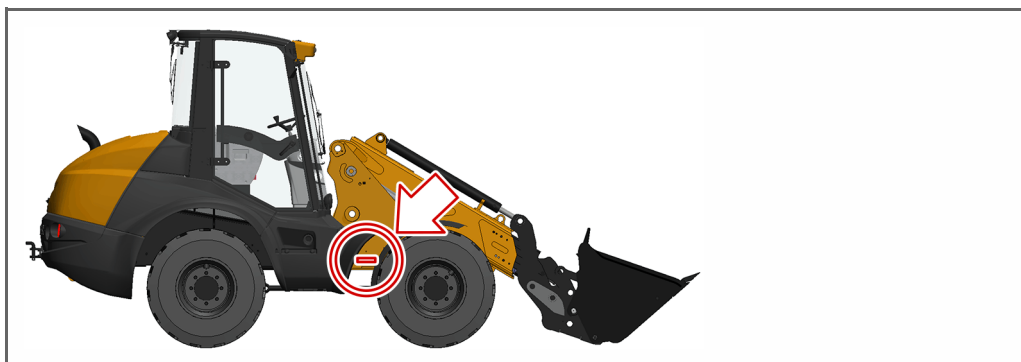
Designation	Contents
Engine output	The engine output of the wheel loader is to be found in this location.

1.4 Chassis number

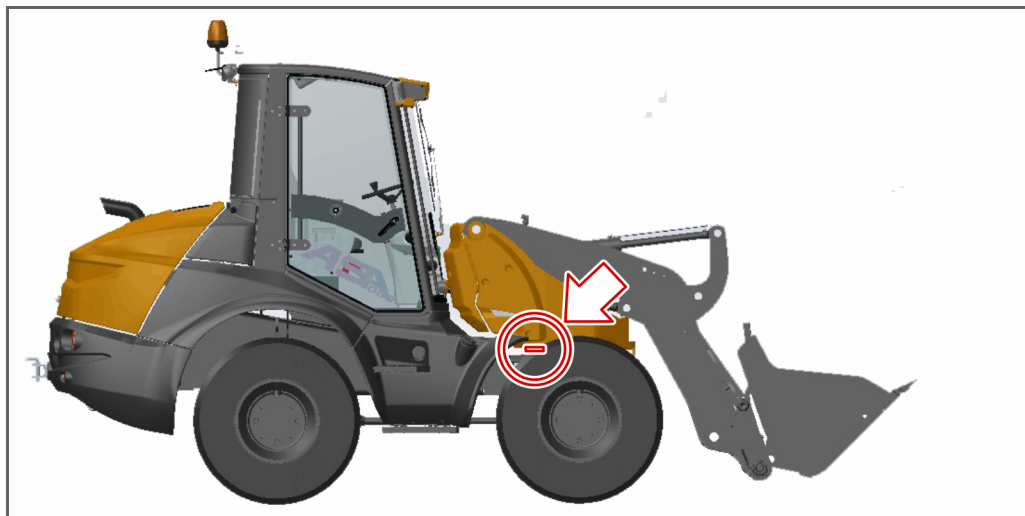
The chassis number is stamped onto the wheel loader on the right-hand side below the type plate.



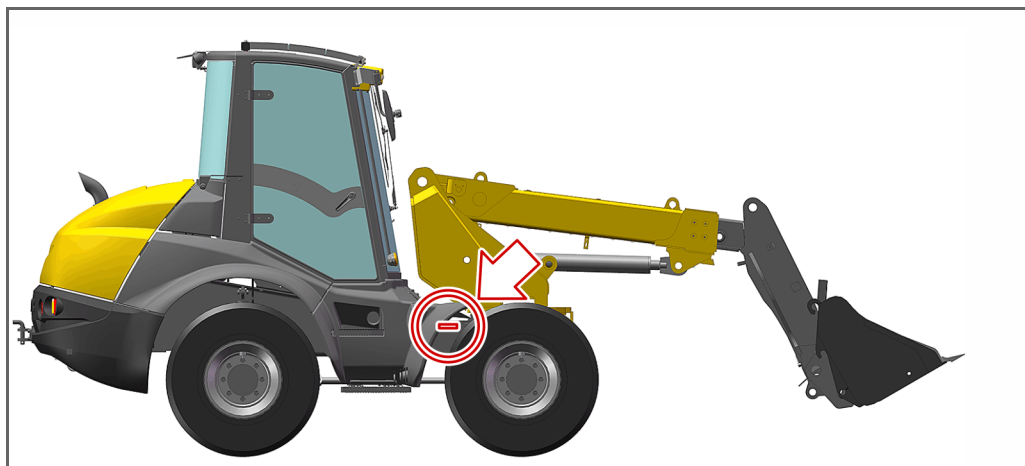
Position of the stamped chassis number on the AF1050 / 1200



Position of the stamped chassis number on the AT900 / 1050



Position of the stamped chassis number on the AS850 / 1000



Position of the stamped chassis number on the AS900tele

1.5 Scope of Supply

The following is supplied with the wheel loader:

- Wheel spanner
- Operator's manual
- EC Declaration of conformity

1.6 EC Declaration of conformity

EU declaration of conformity / EG-Konformitätserklärung

(original) in accordance with EC Machine Directive 2006/42/EC, Annex II A
(Übersetzung des Originals) gemäß EG-Maschinenrichtlinie 2006/42/EG, Anhang II A

Manufacturer	MECALAC Baumaschinen GmbH		
Hersteller	Am Friedrichsbrunnen 2, D-24782 Büdelsdorf		
Product	Wheel loader	Measured noise level	
Produkt	Radlader	Gemessene Schalleistung	
Type		Guaranteed noise level	
Typ		Garantierte Schalleistung	
Make		Serial number: / Seriennummer:	
Marke			
Engine output			
Motorleistung			
Emission Level			
Abgasstufe			
Function	The wheel loader with bucket is intended for such work as which complies with the functioning of the wheel loader and its attachment.		
Funktion	Der Radlader mit Schaufel ist ausschließlich für solche Arbeiten vorgesehen, die der Funktion des Radladers und seinem Anbaugerät entsprechen.		

The manufacturer hereby declares that this machine, on the basis of this design and construction and in the version that it has brought to market complies with the fundamental safety and health requirement of the following EC directives:

Der Hersteller erklärt hiermit, dass diese Maschine aufgrund ihrer Konstruktion und Bauart in der von ihm in Verkehr gebrachten Ausführung den grundlegenden Sicherheits- und Gesundheitsanforderungen der folgenden EG-Richtlinien entspricht:

2006/42/EU
2014/30/EU
2000/14/EU

Procedure used to test conformity: See appendix VIII /
Verfahren zur Beurteilung der Konformität: nach Anhang VIII
DGUV Test, Prüf- und Zertifizierungsstelle Fachbereich Bauwesen
Am Knie 6, D-81241 München
Notified body number: 0515

This machine complies with the following standards:

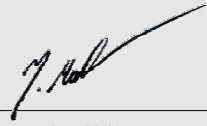
Diese Maschine entspricht den nachfolgend aufgeführten Normen:

EN 474-1: 2006 + A6: 2019
EN 474-3: 2006 + A1: 2009

Authorized person to compile the technical file / Bevollmächtigte Person für die Erstellung der technischen Unterlagen

Head of Serial Product Support / Leiter Serienbetreuung der
MECALAC Baumaschinen GmbH
Am Friedrichsbrunnen 2, D-24782 Büdelsdorf

Büdelsdorf, _____


Jens-M. Marten
Head of Quality / Leiter Qualitätsmanagement
Mecalac Baumaschinen GmbH

EC Declaration of conformity

As soon as this machine has been changed in a material way this declaration becomes null and void. A new conformity process in accordance with the EU Machine Directive is then required.

The original and signed EC declaration of conformity is delivered together with your wheel loader.

2 Performance data and dimensional drawing

2.1 Overview of the performance data

2.1.1 AF1050

AF1050

Operating weight without attachment	5 650 kg
Bucket volume	1 050 m ³
Fording depth	580 mm
Braked towing capacity at maximum bearing load of 100kg	8 000 kg
Unbraked towing capacity at maximum bearing load of 100kg	750 kg

2.1.2 AF1200

AF1200

Operating weight without attachment	5 790 kg
Bucket volume	1.2 m ³
Fording depth	580 mm
Braked towing capacity at maximum bearing load of 100kg	8 000 kg
Unbraked towing capacity at maximum bearing load of 100kg	750 kg

2.1.3 AT900

AT900

Operating weight without attachment	6 250 kg
Bucket volume	0.9 - 1.2 m ³
Fording depth	580 mm
Braked towing capacity at maximum bearing load of 100kg	8 000 kg
Unbraked towing capacity at maximum bearing load of 100kg	750 kg

2.1.4 AT1050

AT1050

Operating weight without attachment	6 630 kg
Bucket volume	1.05 - 1.5 m ³
Fording depth	580 mm
Braked towing capacity at maximum bearing load of 100kg	8 000 kg
Unbraked towing capacity at maximum bearing load of 100kg	750 kg

2.1.5 AS850

AS850

Operating weight without attachment	6 200 kg
Bucket volume	0.85 - 1.2 m ³
Fording depth	580 mm
Braked towing capacity at maximum bearing load of 100kg	8 000 kg
Unbraked towing capacity at maximum bearing load of 100kg	750 kg

2.1.6 AS1000

AS1000

Operating weight without attachment	6 640 kg
Bucket volume	0.9 - 1.5 m ³
Fording depth	580 mm
Braked towing capacity at maximum bearing load of 100kg	8 000 kg
Unbraked towing capacity at maximum bearing load of 100kg	750 kg

2.1.7 AS900tele

AS900tele

Operating weight without attachment	7 035 kg
Bucket volume	0.7-1.2 m ²
Fording depth	580 mm
Braked towing capacity at maximum bearing load of 100kg	8 000 kg
Unbraked towing capacity at maximum bearing load of 100kg	750 kg

2.2 Noise emission and vibration

Noise emission and vibration

Acoustic output level (LWA) - external noise	100 dB(A), according to Directive 2000/14/EU
Sound pressure level (LpA) - noise in cab	75 dB(A), according to ISO 6396
Total vibration level on the upper limbs during normal work	< 2.5 m/s ² , according to ISO/TR 25398
Whole-body vibration level during normal work	< 0.5 m/s ² , according to ISO/TR 25398

2.3 Engine

2.3.1 AF1050, AF1200, AT900, AT1050

Engine

Type	Deutz TCD 2.9 L4
Engine output	55 kW at 2 300 min ⁻¹
Maximum torque	300 Nm at 1 600 min ⁻¹
Battery	95 Ah
Intake filter	2-stage dry air filter with safety cartridge
Cooling	temperature-controlled hydrostatic fan drive
Nominal voltage of electrical system	12 V
Generator	120A

2.3.2 AS850

Engine

Type	Deutz TCD 2.2 L3
Engine output	55 kW at 2 300 min ⁻¹
Maximum torque	280 Nm at 1 600 min ⁻¹
Battery	95 Ah
Intake filter	2-stage dry air filter with safety cartridge
Cooling	temperature-controlled hydrostatic fan drive
Nominal voltage of electrical system	12 V
Generator	120A

2.3.3 AS1000, AS900tele

Engine

Type	Deutz TCD 2.9 L4
Engine output	55 kW at 2 300 min ⁻¹
Maximum torque	375 Nm at 1 600 min ⁻¹
Battery	95 Ah
Intake filter	2-stage dry air filter with safety cartridge
Cooling	temperature-controlled hydrostatic fan drive
Nominal voltage of electrical system	12 V
Generator	120 A

2.4 Drive

Drive

Type	Hydrostatic, power-regulated drive train, 2 gear ranges each with maximum traction, changeable under load, multi-function lever (joystick) operation for the control of the drive train and the hydraulic operating system
Axles	Planetary axles with 4-wheel steering for greatest manoeuvrability, rear axle with oscillating mount and load-dependent support.
Differential lock.	Automatically-operating self-locking differential on the front axle with 35 % lockup. Optional rear axle with 100% lockup.
Rear axle oscillation	max. oscillation angle +/- 10°
Version 20 km/h	
Speed range I	0-5 km/h
Speed range II	0-20 km/h
Version 40 km/h	
1 Gearing	
Speed range I	0-5 km/h
Speed range II	0-15 km/h
2nd Gear range	
Speed range I	0-11 km/h
Speed range II	0-40 km/h

2.5 Axle loads

2.5.1 AF1050

Axle loads

Permissible total mass	6 900 kg
Permissible axle load according to StVZO (German road trafficlicensing authority - front	5 000 kg
Permissible axle load according to StVZO (German road trafficlicensing authority - rear	5 000 kg

2.5.2 AF1200, AT900, AT1050, AS850, AS1000, AS900tele

Axle loads

Permissible total mass	7 490 kg
Permissible axle load according to StVZO (German road trafficlicensing authority - front	5 000 kg
Permissible axle load according to StVZO (German road trafficlicensing authority - rear	5 000 kg

2.6 Permissible tyres

2.6.1 AF1050, AF1200

Permissible tyres

Standard tyres	14.5 R 20 MPT-04
Tyre pressure	front: 3.0 bar rear: 3.0 bar
Special tyres	16/70 R 20 MPT-04 Front 3.00 bar Rear 3.00 bar 405/70 R 20 XZSL Front 3.75 bar Rear 3.75 bar 405/70 R 20 EM-01 Front 3.75 bar Rear 3.75 bar 405/70 R 18 EM01 Front 3.75 bar Rear 3.75 bar 550/45-22.5 328 Front 2.4 bar Rear 2.4 bar 400/70 R 20 XMCL Front 3 bar Rear 3 bar

2.6.2 AT900, AT1050

Permissible tyres

Standard tyres	400/70 R20
Tyre pressure	front: 3.5 bar rear: 2.2 bar
Special tyres	16/70 R20 Front 3.5 bar Rear 2.2 bar 405/70 R20 Front 3.8 bar Rear 2.5 bar 550/45-22.5 Front 3.6 bar Rear 2.5 bar

2.6.3 AS850

Permissible tyres

Standard tyres	14.5-20
Tyre pressure	front: 3 bar rear: 3 bar
Special tyres	405/70 R20 Front 3.75 bar Rear 3.75 bar 405/70 R18 Front 3.75 bar Rear 3.75 bar 400/70 R20 Front 3.5 bar Rear 2.2 bar 365/80 R20 Front 3.0 bar Rear 3.0 bar

2.6.4 AS1000

Permissible tyres

Standard tyres	14.5-20
Tyre pressure	front: 3 bar rear: 3 bar
Special tyres	405/70 R20 Front 3.75 bar Rear 3.75 bar 400/70 R20 Front 3.5 bar Rear 2.2 bar 550/45 - 22.5 Front 3.6 bar Rear 2.5 bar 360/80 R20 Front 3.0 bar Rear 3.0 bar

2.6.5 AS900tele

Permissible tyres

Standard tyres	16/70 20
Tyre pressure	front: 3.5 bar rear: 2.2 bar
Special tyres	405/70 R20 Front 3.8 bar Rear 2.5 bar 550/45 - 22.5 Front 3.6 Rear 2.5 360/80 R20 Front 3.0 Rear 3.0

2.7 Brake system

2.7.1 AF1050 (20 km/h) and AF1200 (20 km/h)

Brake system

Service brake	Hydraulically-operated disc brake, operating on all 4 wheels.
Parking brake	Mechanically-operated disc brake, operating on all 4 wheels.

2.7.2 AF1050/1200 (30 km/h, 40 km/h), AT900/1050, AS850/1000, AS900tele

Brake system

Service brake	1. hydrostatic inching brake, operating on all 4 wheels 2. hydraulically-operated, wet multi-disc brakes in the front axle, operating on all 4 wheels
Parking brake	Hydraulically-operated spring-actuated brake, operating on all 4 wheels

2.8 Steering

2.8.1 AF1050 and AF1200

Steering

Type	Hydrostatic 4-wheel steering with 3 steering modes including steering adjustment: 4-wheel, front-axle and crab-steering
Max. steering angle	+/- 35°
Turning radius at rear	3 710 mm

2.8.2 AT900 and AT1050

Steering

Type	Hydrostatic 4-wheel steering with 3 steering modes including steering adjustment: 4-wheel, front-axle and crab-steering
Max. steering angle	+/- 35°
Turning radius at rear	3 710 mm
Turning radius at bucket	4 600 mm

2.8.3 AS850 and AS1000

Steering

Type	Hydrostatic 4-wheel steering with 3 steering modes including steering adjustment : 4-wheel, front-axle and crab-steering
Max. steering angle	+/- 35°
Turning radius at rear	3 450 mm

2.8.4 AS900tele

Steering

Type	Hydrostatic 4-wheel steering with 3 steering modes including steering adjustment : 4-wheel, front-axle and crab-steering
Max. steering angle	+/- 35°
Turning radius at rear	3 710 mm

2.9 Hydraulic system

2.9.1 AF1050 and AF1200

Hydraulic system

Type	Single-circuit system with central gear pump (lift/lower, tip, telescope, quick-coupler) as well as steering (via priority valve); triple control valve with primary and secondary relief, maximum power at 2 600 min ⁻¹ : 84 l/min and 225 bar
Cylinders	2 x lifting cylinders 100 Ø 1 x tilting cylinder 110 Ø

2.9.2 AT900

Hydraulic system

Type	Single-circuit system with central gear pump (lift/lower, tip, telescope, quick-coupler) as well as steering (via priority valve); quadruple control valve with primary and secondary relief, maximum power at 2300 min ⁻¹ : 84 l/min and 210 bar Floating setting for lifting cylinder.
Cylinders	1x lifting cylinder Ø 70 mm x 120 mm 1x compensation cylinder Ø 40 mm x 90 mm 1x compensation cylinder Ø 50 mm x 70 mm 1x tipping cylinder Ø 60 mm x 130 mm

2.9.3 AT1050

Hydraulic system

Type	Single-circuit system with central gear pump (lift/lower, tip, telescope, quick-coupler) as well as steering (via priority valve); quadruple control valve with primary and secondary relief, maximum power at 2300 min ⁻¹ : 84 l/min and 240 bar Floating setting for lifting cylinder.
Cylinders	1x lifting cylinder Ø 70 mm x 120 mm 1x compensation cylinder Ø 40 mm x 90 mm 1x compensation cylinder Ø 50 mm x 70 mm 1x tipping cylinder Ø 60 mm x 130 mm

2.9.4 AS850

Hydraulic system

Type	Single-circuit system with gear pump 1 Hydraulic operating system circuit (lift/lower, tip, quick-coupler) as well as steering via priority valve; triple control valve with primary and secondary relief, maximum output at 2 300 min ⁻¹ : 84 l/min and 200 bar 2 Circuit (pivoting) single control valve with primary and secondary relief, max. output at 2 300 min ⁻¹ : 35 l/min and 220 bar float position for lifting cylinder
Cylinders	2 x lifting cylinders 90 Ø 1 x tilting cylinder 100 Ø 2 x slewing cylinders 100 Ø

2.9.5 AS1000

Hydraulic system

Type	Single-circuit system with gear pump 1 Hydraulic operating system circuit (lift/lower, tip, quick-coupler) as well as steering via priority valve; triple control valve with primary and secondary relief, maximum output at 2 300 min ⁻¹ : 84 l/min and 240 bar 2 Circuit (pivoting) single control valve with primary and secondary relief, max. output at 2 300 min ⁻¹ : 35 l/min and 220 bar float position for lifting cylinder
Cylinders	2 x lifting cylinders 90 Ø 1 x tilting cylinder 100 Ø 2 x slewing cylinders 100 Ø

2.9.6 AS900tele

Hydraulic system

Type	<p>Dual-circuit system with gear pump.</p> <p>1 Operating hydraulic circuit (lifting/lowering, tipping, telescoping quick coupler) as well as steering via priority valve; triple control valve with primary and secondary relief.</p> <p>Maximum output at 2 300 min⁻¹: 84 l/min and 240 bar</p> <p>2 Circuit (swivelling) single control valve with Primary and secondary relief,</p> <p>Maximum output at 2 300 min⁻¹: 35 l/min and 220 bar</p> <p>Floating setting for lifting cylinder</p>
Cylinders	<p>1 x lifting cylinder Ø 110 mm</p> <p>1 x tilting cylinder Ø 110 mm</p> <p>2 x slewing cylinders Ø 100 mm</p> <p>1 x telescopic cylinder Ø 80 mm</p>

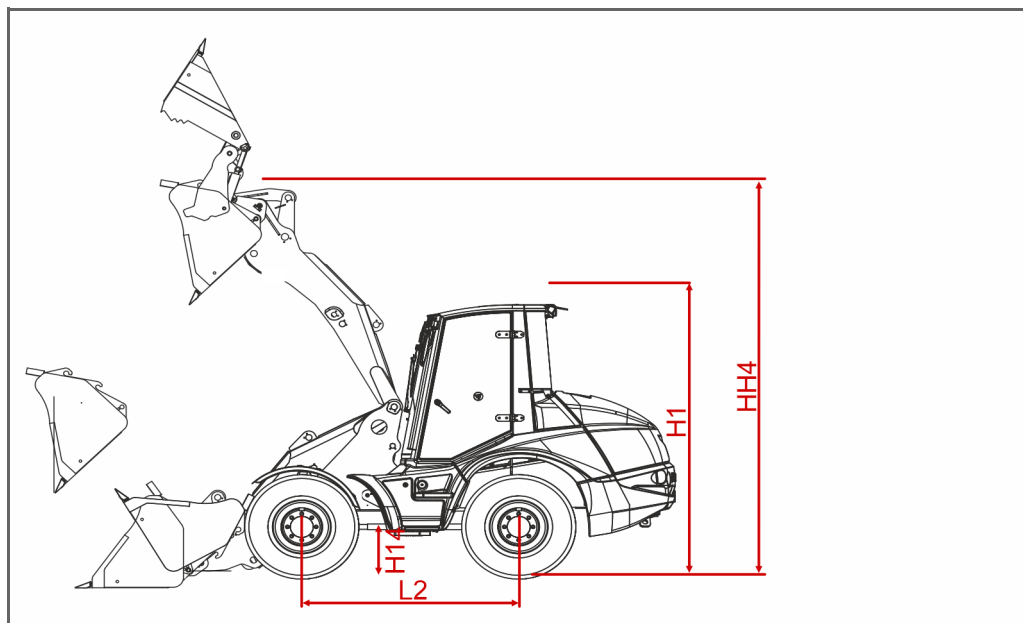
2.10 Performance data

Performance data

Thrust force	47 kN
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2.11 Dimensional drawing

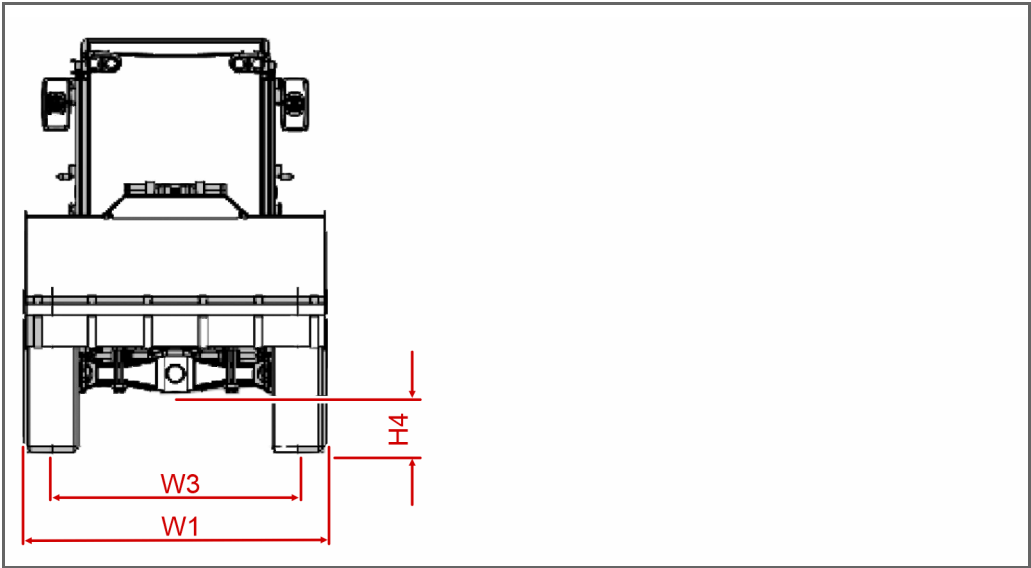
2.11.1 AF1050 and AF1200



Dimensional drawing – Side view

Key

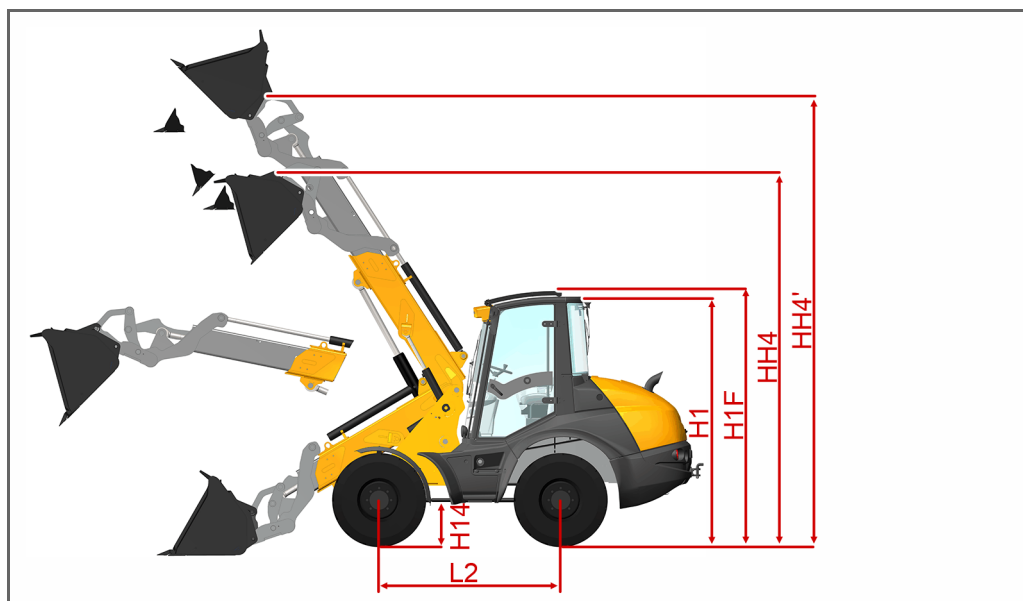
Dimension type	Designation	Value
L2	Wheelbase	2 085 mm
H14	Height of steering shaft	420 mm
H1	Vehicle height	2 840 mm
HH4	Attachment pivot point	3 650 mm



Dimensional drawing – Frontal view

Key		
Dimension type	Designation	Value
H4	Ground clearance *	345 mm
W1	Width - outer edge of tyres *	2 060 mm
W3	Track	1 660 mm
* depending on tyres		

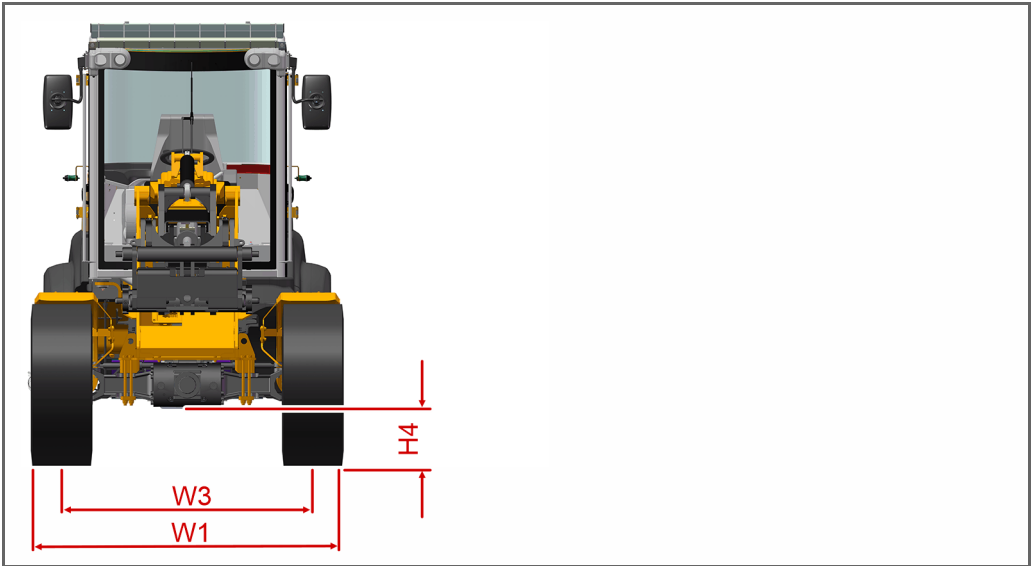
2.11.2 AT900



Dimensional drawing – Side view

Key

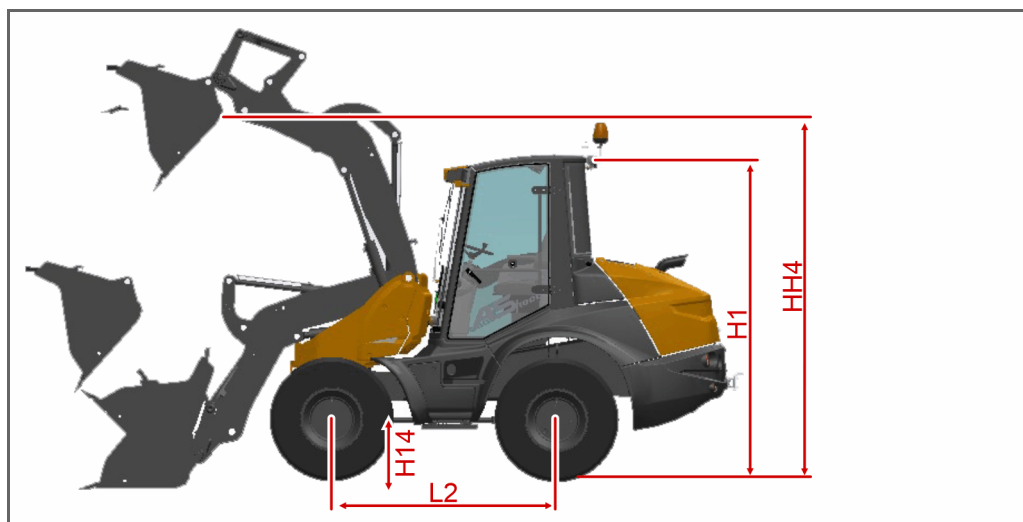
Dimension type	Designation	Value
L2	Wheelbase	2 085 mm
H14	Height of steering shaft	420 mm
H1	Vehicle height	2 850 mm
H1F	Vehicle height with FOPS	2 910 mm
HH4	Attachment pivot point	4 005 mm
HH4'	Attachment pivot point	4 830 mm



Dimensional drawing – Frontal view

Key		
Dimension type	Designation	Value
H4	Ground clearance *	345 mm
W1	Width - outer edge of tyres *	2 065 mm
W3	Track	1 660 mm
* depending on tyres		

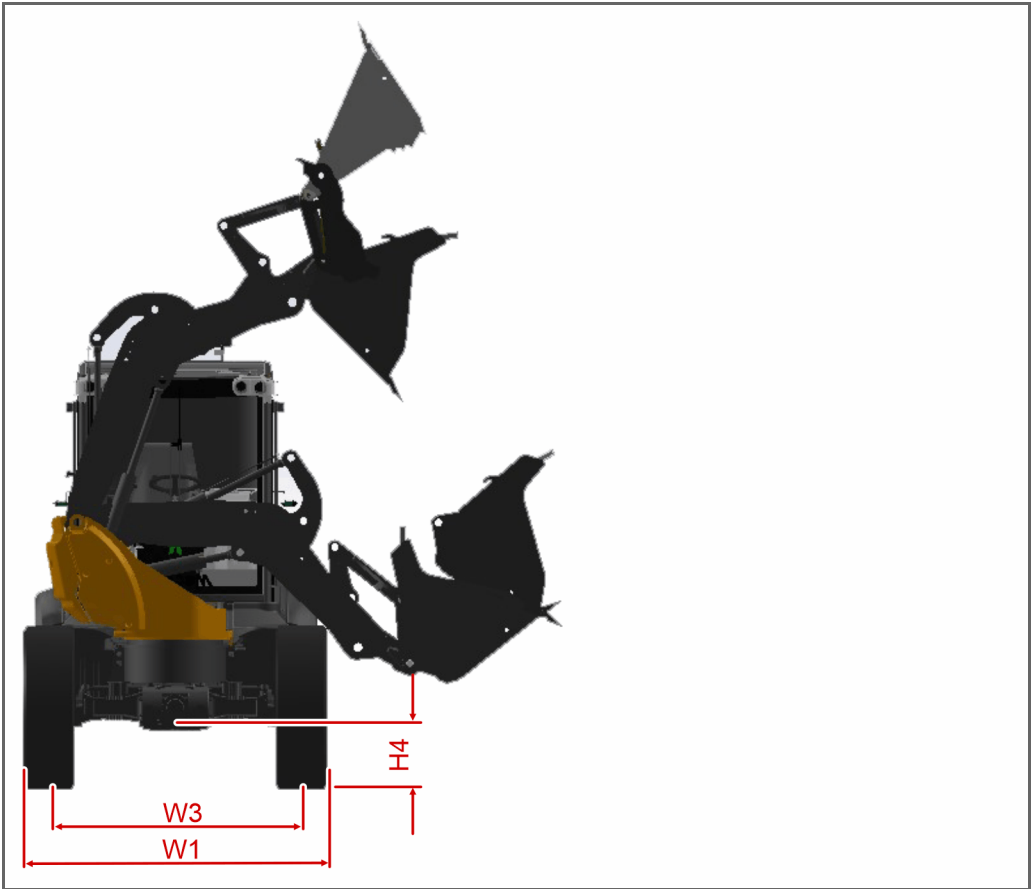
2.11.3 AS850



Dimensional drawing – Side view

Key

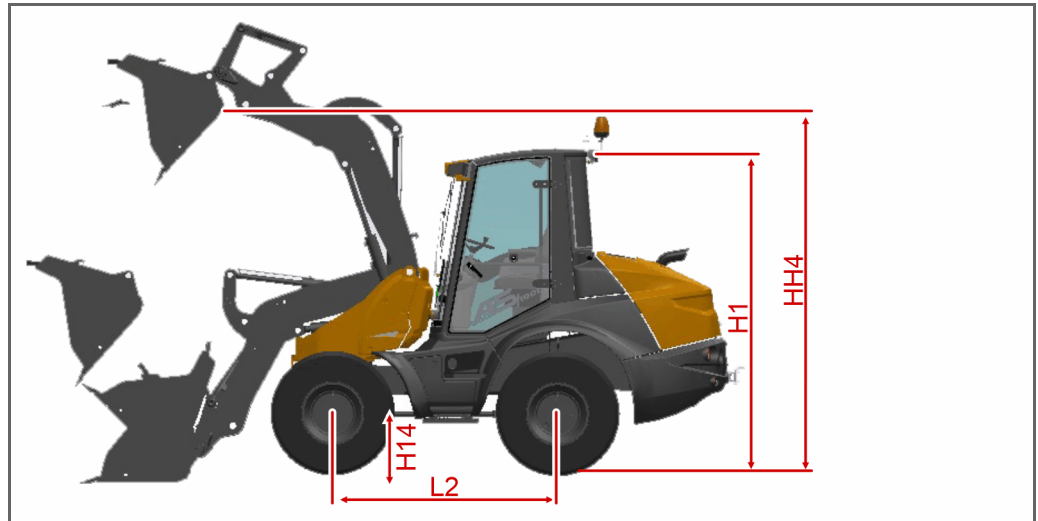
Dimension type	Designation	Value
L2	Wheelbase	1 980 mm
H14	Height of steering shaft*	420 mm
H1	Vehicle height	2 830 mm
HH4	Attachment pivot point	3 500 mm



Dimensional drawing – Frontal view

Key		
Dimension type	Designation	Value
H4	Ground clearance *	345 mm
W1	Width - outer edge of tyres *	1 950 mm
W3	Track	1 590 mm
* depending on tyres		

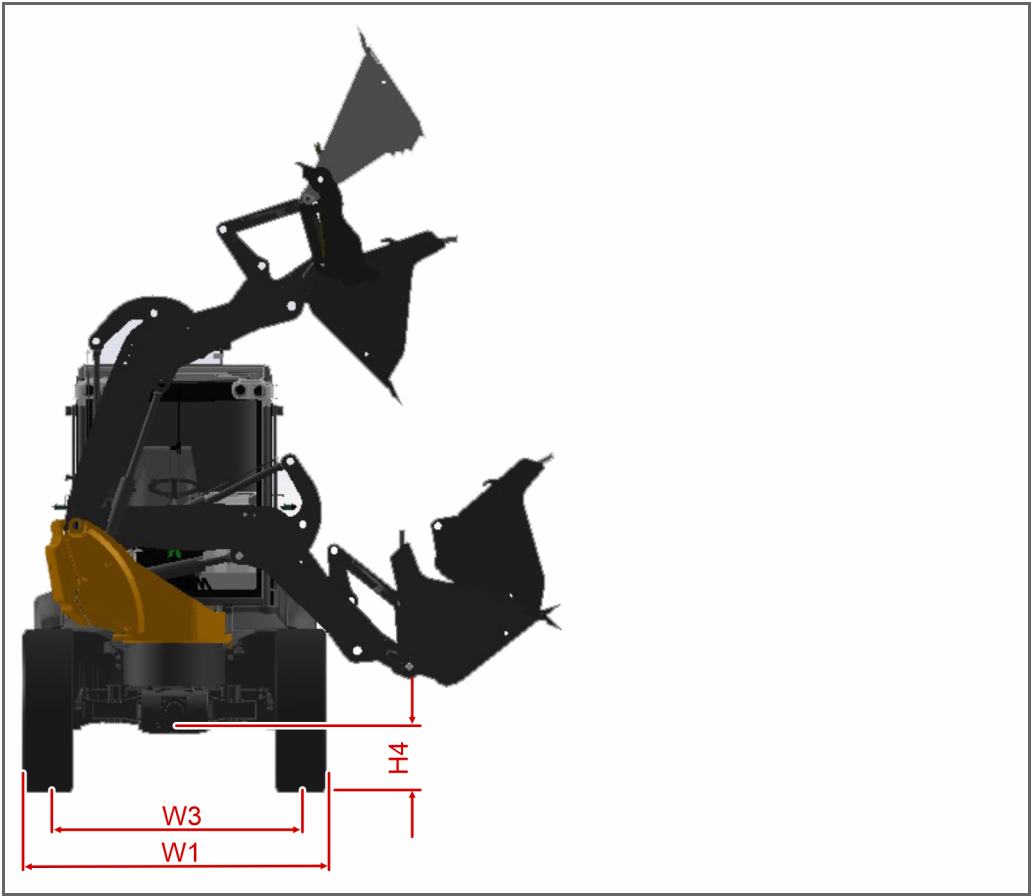
2.11.4 AS1000



Dimensional drawing — Side view

Key

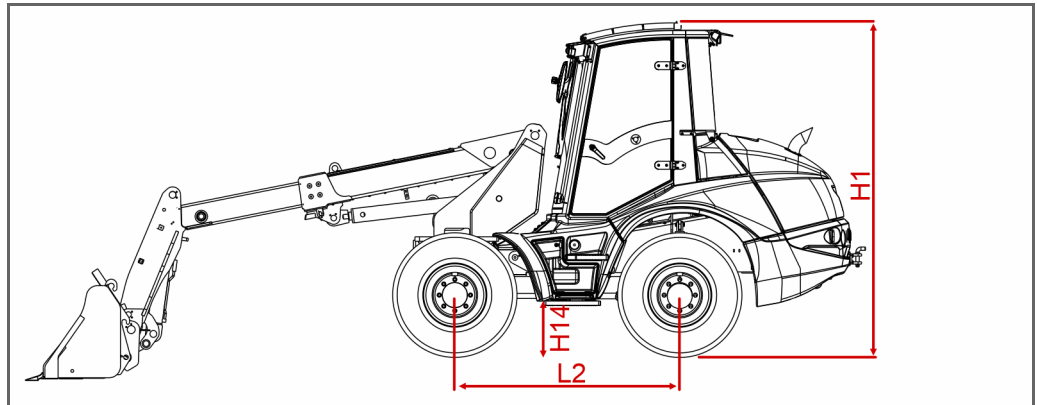
Dimension type	Designation	Value
L2	Wheelbase	1 980 mm
H14	Height of steering shaft*	420 mm
H1	Vehicle height	2 830 mm
HH4	Attachment pivot point	3 500 mm



Dimensional drawing – Frontal view

Key		
Dimension type	Designation	Value
H4	Ground clearance *	345 mm
W1	Width - outer edge of tyres *	1 990 mm
W3	Track	1 660 mm
* depending on tyres		

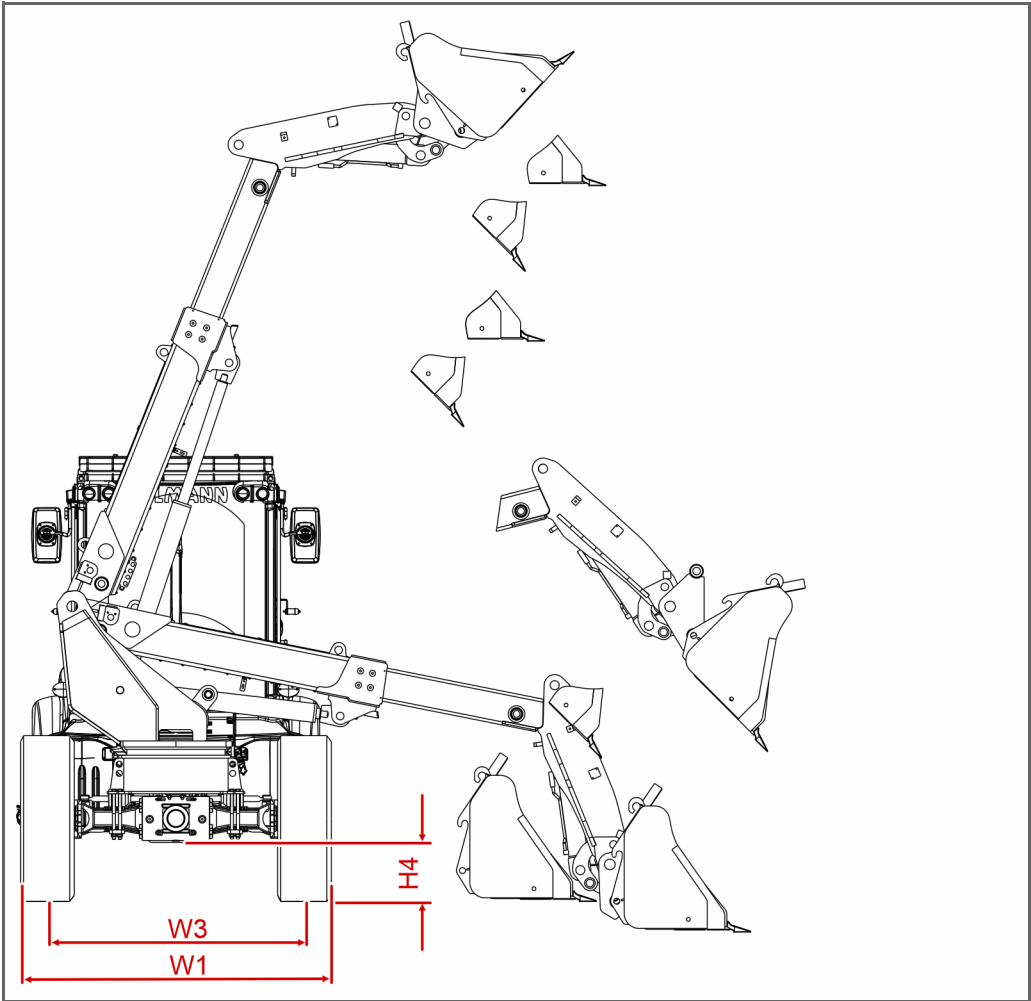
2.11.5 AS900tele



AF900tele dimensional drawing – side view

Key

Dimension type	Designation	Value
L2	Wheelbase	2 085 mm
H14	Height of steering shaft	420 mm
H1	Vehicle height	2 830 mm



AF900tele dimensional drawing – frontal view

Key

Dimension type	Designation	Value
H4	Ground clearance *	345 mm
W1	Width - outer edge of tyres *	2 070 mm
W3	Track	1 660 mm
* depending on tyres		

2.12 Fill quantities of the consumables

2.12.1 AF1050 and AF1200

Lubricant requirements

Designation	Mecalac TKZ
Engine oil	2320075
Hydraulic fluid	23133730
Transmission oil	23104578
Lubrication grease	4117807A
Anti-corrosion and antifreeze agent	DQC CA-14 DQC CB-14 DQC CC-14 Nitrate-free, phosphate-free, amine-free, silicate-free

Fill quantities of the consumables

Designation	Filling capacities
Diesel tank	130 l
Engine oil	8.9 l with filter
Hydraulic fluid (filling capacity, total)	134 l
Hydraulic fluid reservoir	80 l
Gearbox oil for front axle	9.5 l
Gearbox oil for rear axle	8 l
Gearbox oil for the planetary gears	4 x 0.8 l
Gearbox oil for the transfer box 20 km/h	1.25 l
Gearbox oil for the transfer box 30 km/h, 40 km/h	4 l
Lubrication grease	As required
Air conditioner - coolant (special equipment)	900 g
Coolant	total 14 l thereof: • Anti-freeze 7 l • Anti-corrosion agent 7 l

2.12.2 AT900 and AT1050**Lubricant requirements**

Designation	Mecalac TKZ
Engine oil	2320075
Hydraulic fluid	23133730
Transmission oil	23104578
Lubrication grease	8204147A
Grease for sliding surfaces of telescope	2320061
Anti-corrosion and antifreeze agent	DQC CA-14 DQC CB-14 DQC CC-14 Nitrate-free, phosphate-free, amine-free, silicate-free

Fill quantities of the consumables

Designation	Filling capacities
Diesel tank	130 l
Engine oil	8.9 l
Hydraulic fluid (filling capacity, total)	140 l
Hydraulic fluid reservoir	80 l
Gearbox oil for front axle	9.5 l
Gearbox oil for rear axle	8 l
Gearbox oil for the planetary gears	4 x 0.8 l
Gearbox oil for the transfer box 20 km/h	1.25 l
Gearbox oil for the transfer box 30 km/h, 40 km/h	4 l
Lubrication grease	As required
Grease for sliding surfaces of telescope	As required
Air conditioner - coolant (special equipment)	900 g
Coolant	total 14 l thereof: • Anti-freeze 7 l • Anti-corrosion agent 7 l

2.12.3 AS850 and AS1000
Lubricant requirements

Designation	Mecalac TKZ
Engine oil	2320075
Hydraulic fluid	23133730
Transmission oil	23104578
Lubrication grease	4117807A
Anti-corrosion and antifreeze agent	DQC CA-14 DQC CB-14 DQC CC-14 Nitrate-free, phosphate-free, amine-free, silicate-free

Filling capacities

Designation	Filling capacities
Diesel tank	130 l
Engine oil	8 l with filter
Hydraulic fluid (filling capacity, total)	134 l
Hydraulic fluid reservoir	80 l
Gearbox oil for front axle	9.5 l

Filling capacities (Cont.)

Designation	Filling capacities
Gearbox oil for rear axle	8 l
Gearbox oil for the planetary gears	4x 0.8 l
Gearbox oil for the 20km/h transfer box	1.25 l
Gearbox oil for the transfer box 30 km/h	4 l
Lubrication grease	As required
Air conditioner - coolant (special equipment)	900 g
Coolant	total 14 l thereof: • Anti-freeze 7 l • Anti-corrosion agent 7 l

2.12.4 AS900tele

Lubricant requirements

Designation	Specification	Temperature – Limits	Viscosity
Engine oil	Low SAPS / Low Ashes ACEA: E9/ E7 (E5) API: CJ-4 / CI-A plus / CI-4 / SM DQC III-10 LA	-20°C to +40°C	SAE 10W40
Hydraulic fluid	AFNOR : NF E48690 / 48691 DIN 51524 : HLP/2-HVLP/3 ISO 6743 / 4 : HV DIN 51524 / T2-T3 : HVLP	25°C to +30°C -20°C to +40°C -10°C to +50°C 0°C to +60°C -20°C to +40°C -20°C to +40°C	ISO VG 32 ISO VG 46 ISO VG 68 ISO VG 100 ISO VG 46 ISO VG 46
Driving axle and wheel gearbox	API GL5 MIL-L 2105D API GL5 MIL-L 2105B/C/D API GL5 «LS» MIL-L 2105D	All temperatures	SAE 85W90 SAE 80W90
Transmission oil	ACEA: E9/ E7 (E5) API: CJ-4 / CI-A plus / CI-4 / SM DQC III-10 LA	20°C to +40°C	SAE 10W-40
Lubrication grease	DIN 51502 : KP2N-30 ISO 6743-09 : L-XCDHB2	-	NLGI : ASTM D217 DIN 51 818

Lubricant requirements (Cont.)

Designation	Specification	Temperature – Limits	Viscosity
Coolant	AFNOR : NF R15601 AFNOR : NF BS 6580	-26°C	COOLELF AUTO SUPRA - 26°C
Anti-corrosion and antifreeze agent	ASTM D3306 / D 4656 Nitrate-free, phosphate-free, amine-free, silicate-free	-	-
Air conditioner fluid	Oil: PLANETELF / PAG SP 20 Gas: R134a	-	-

Fill quantities of the consumables

Designation	Filling capacities
Diesel tank	130 l
Engine oil (turbo)	8 l
Hydraulic fluid (filling capacity, total)	134 l
Hydraulic fluid reservoir	80 l
Gearbox oil for front axle	9.5 l
Gearbox oil for rear axle	8 l
Gearbox oil for the planetary gears	4 x 0.8 l
Gearbox oil for the transfer box 20 km/h	1.25 l
Gearbox oil for the transfer box 30 km/h, 40 km/h	4 l
Lubrication grease	As required
Air conditioner - coolant (special equipment)	900 g
Coolant	total 14 l thereof: • Anti-freeze 7 l • Anti-corrosion agent 7 l

3 Notes for the Reader

In this chapter you will find information regarding the use of the operator's manual.

- Design of this manual (Page 44)
- Validity (Page 44)
- Illustrations (Page 44)
- Accentuated text (Page 45)

3.1 Design of this manual

The base model of the wheel loader is described in this manual, see Chapter (See page 71: Description).

According to the version of your wheel loader, additional control elements and parts may be installed. A description of these additional control elements and parts is to be found in Chapter (See page 221: Special equipment).

Various attachments can be mounted on this wheel loader. A description of the most frequently used attachments is to be found in Chapter (See page 290: Attachments).

3.2 Validity

This original operator's manual contains information and codes of behaviour for the safe operation of the swing loader. Read this original operator's manual carefully before starting up. Keep the operator's manual manual to hand in the swing loader for anyone to use. In accordance with current usage in the industry, the term wheel loader is used in this operator's manual.

In order to operate the wheel loader effectively, the original operator's manual supplies amongst other things, information regarding the following topics:

- Transporting and commissioning the wheel loader
- Working with the wheel loader
- Taking care of and maintaining the wheel loader
- Detecting and rectifying faults

This operator's manual applies to:

- the operator
- all persons working on or with the wheel loader

3.3 Illustrations




The illustrations in this operator's manual manual show the machine in partially simplified form.

3.4 Accentuated text

In these operating Instructions, important information is highlighted by symbols or special formatting. The following examples illustrate the most important types of highlighting.

3.4.1 Pictograms

Pictograms used

Pictogram	Meaning
	Further useful information.
	Conditions that must be fulfilled in order to perform an action
	Tools or material required in order to perform an action.

3.4.2 Safety Note

Safety instruction: Special note for an informatory section

Explanation of the note.

- The dot identifies measures that relate to the note.

3.4.3 Safety instructions

Safety Instruction

To ensure the safe implementation, ensure compliance with the following steps:

1. First step of a safety instruction
! Important note regarding a safety instruction
 2. Second step of a safety instruction.
→ The result of this step.
- ✓ The safety instruction is complete, the goal of the of a safety instruction has been achieved.

3.4.4 Warning notes



DANGER

Warning of injuries leading to fatality

Failure to observe the safety instruction will result in serious damage to health, including death.

→ The arrow identifies a precautionary measure you have to take to avoid the hazard.



WARNING

Warning: Serious Injuries.

Failure to observe the warning can cause serious damage to health, or even death.

→ The arrow identifies a precautionary measure you have to take to avoid the hazard.



CAUTION

Warning: Injuries.

Failure to observe the warning can result in serious damage to health.

→ The arrow identifies a precautionary measure you have to take to avoid the hazard.

NOTICE

Warning: Damage to property.

Ignoring the warning instructions can result in serious damage to the wheel loader or in its surroundings

→ The arrow identifies a precautionary measure you have to take to avoid the hazard.

3.4.5 Guideline

Carry out the following steps: = Start of a set of instructions.

1. First step in a sequence of operations.

Required settings **Setting values**

2. Second step in a sequence of operations.

→ The result of this step.

✓ The operation is complete, the goal has been achieved.

4 Safety

In this chapter you will find information regarding the safe operation of the wheel loader:

- Operator's Duties (Page 47)
- Safety while operating (Page 49)
- Notes on environmental protection (Page 55)
- Residual Risk (Page 55)
- Supplementary Regulations (Page 57)
- Qualification of Personnel (Page 58)
- Safety installations (Page 60)
- Areas (Page 65)
- Instructions for first aid (Page 70)
- Conduct in the event of a fire (Page 70)

4.1 Operator's Duties

In this section you will find information regarding the duties of the wheel loader operator:

4.1.1 Organisational measures

Do not, under any circumstances, use parts and accessories that are not delivered, tested and released by the manufacturer. The installation and use of such products may, under certain circumstances negatively impact on the constructive specified aspects of your wheel loader. The active and passive driving safety could possibly be impaired. Any liability of the manufacturer is excluded for damage that may result from the use of non-original parts and accessories.

4.1.2 Plan and check safety measures

The operator's duty of care is subject to planning the necessary safety measures and monitoring that these measures are observed. Take note of the basic principles in Section: "Operate the wheel loader in a faultless condition" (Page 48).

4.1.3 Operate the wheel loader in a faultless condition

in order to be able to operate the wheel loader in a faultless condition, take note of the following points and check that your personnel also abide by them.

- Authorise and qualify your personnel for the respective activities.
- Arrange and communicate unambiguous procedures, competencies and responsibilities regarding the wheel loader. Everybody must know what to do in case of an emergency. Personnel must be instructed regularly in this regard.
- Ensure that before commencing work, your personnel have familiarised themselves with and inspected all safety installations and that these are used in accordance with regulations.
- Ensure that the wheel loader is used for its intended purpose exclusively.
- Keep a complete, clearly legible operator's manual to hand in the cab for your employees.
- Inform the wheel loader driver with regard to traffic regulations and enable him to refuse instructions from third parties that are prejudicial to safety.
- Ensure that work on the wheel loader is only performed by personnel qualified to do so.
- Ensure that the operator of the wheel loader does not have long, loose hair, loose-fitting clothing or jewellery including rings. There is a danger of injury by being caught or drawn in.
- Ensure that your personnel wear the protective clothing that is specified for this wheel loader.
- Ensure that qualified first aiders, who if necessary can implement the required first aid measures, are on call during operations,
- Ensure that the prescribed maintenance intervals are maintained.
- Ensure that only reliable persons marshal the wheel loader driver. The banksman must be informed of the task before commencing his activities.
- Ensure that banksmen are clearly identified, for example by wearing reflective clothing. The banksman must always stay within the driver's field of view.
- Instruct your personnel that unambiguous signals are required for clear understanding between the driver and the banksman. Signals may only be given by the driver and the banksman.

4.2 Safety while operating

4.2.1 General Principles

Safety-conscious and pre-emptive behaviour on the part of personnel will prevent dangerous situations during operation.

Take note of the following points when handling the wheel loader.

- Read the operator's manual before operating the wheel loader.
- Only use the wheel loader if you are qualified to do so and have understood this operator's manual.
- Do not make any constructional modifications to the wheel loader.
- Only use attachments that are permitted by the manufacturer and technically faultless, while observing the associated operator's manuals.
- Ensure that the danger zone around the wheel loader is always kept unobstructed. Persons may only enter the danger zones if the wheel loader is switched off and properly secured.

The wheel loader may not be operated under the following conditions:

- There are persons or objects in the danger zone of the wheel loader.
- The safety installations on the wheel loader are not functioning or have been removed.
- Functional failures have been identified on the wheel loader.
- The service intervals of the wheel loader have been exceeded.

4.2.2 General operating instructions

When you are working with the wheel loader, take note of the following points:

- Always use the wheel loader in the manner for which it is intended.
- Only operate the wheel loader in a faultless, properly functioning condition. Externally identifiable damage and defects must be reported to the supervisor immediately. If necessary, the wheel loader must be shut down until it has been repaired.
- Keep the wheel loader, its surroundings and the cab clean and tidy.
- Always illuminate the the working area of the wheel loader properly.
- Before working on the edges of excavations, ditches, dumps or slopes, determine the required distances and communicate this information.
- Only carry out work on stationary tipping sites if permanently fixed installations at the tipping site prevent the wheel loader from being endangered.
- Never carry loads over persons. It is forbidden to go under a suspended load!
- Take care that the safety installations on the wheel loader are in the safety position while operating.

4.2.3 Checks

Take note of the following points for safe and fault-free operation.

- Before commencing work, check the operational safety condition of the wheel loader.
- Familiarise yourself with the working environment before commencing work. Obstacles in the work and traffic areas, the bearing capacity of the soil and the safeguarding of the construction site from public traffic are all examples of the working environment.
- Familiarise yourself with the control elements of the wheel loader before commencing work.
- Before commencing work, check the functioning of the steering and brakes.
- Check the hydraulic plant, particularly the hydraulic hoses, at regular intervals for damage and leaks. Immediately rectify the defects that have been identified.
- Check at regular intervals that the warning signs and instructions on the wheel loader are complete and clearly legible. Clean the warning signs at regular intervals and replace when necessary.

4.2.4 Driving

To prevent damage and accidents, take note of the following points:

- Start and operate the wheel loader from the driver's seat. Only the driver may be in the cab.
- Before driving off, secure accessory parts on the wheel loader against falling off.
- Guide the attachments fitted to the wheel loader as close to the ground as possible, especially when ascending.
- Never drive with the lift arm extended.
- Only leave the cab once the operating equipment/attachments have been set down or secured.
- Secure the wheel loader thoroughly against rolling away and unauthorised use when leaving it unattended.
- During work breaks and at the end of a shift, park the wheel loader on a surface that can support the load and which is as flat as possible.
- Do not drive diagonally across slopes and do not make any sudden steering movements.
- On steep slopes and gradients, carry the load facing the mountainside when possible.
- Before travelling on a slope or a gradient, switch the driving speed to the lowest running level.
- Avoid driving in reverse over longer distances.
- Under conditions of poor visibility, allow yourself to be marshalled by a second person.
- When passing underpasses, bridges, tunnels, overhead lines or other height limitations, always maintain sufficient distance.

Never perform any movements that impair the stability of the wheel loader. For example:

- overloading,
- operating on soft soil
- jerky acceleration or deceleration of driving and operating movements
- reversing at high speed
- working on a slope
- high driving speed in tight curves.

4.2.5 Maintenance tasks

Take note of the following points for the safe performance of maintenance work:

- When carrying out any maintenance work within the range of travel of the wheel loader, secure it in such a way that it is impossible for it to run away or move unintentionally.
- Observe the intervals in the maintenance schedule of the wheel loader and do not exceed them.
- Observe the instructions for switching the wheel loader on and off, as well as the maintenance instructions in the operating instructions.
- Secure an extensive area for performing maintenance work.
- Keep to the prescribed maintenance intervals and tasks.
- Switch off the engine before all maintenance work.
- Ensure the stability of the wheel loader and the attachments when carrying out maintenance work.
- Ensure that the attachment is placed on the ground or that equivalent measure against movement have been implemented prior to beginning the maintenance work.
- When exchanging heavy individual components and assemblies take care that suitable and authorised lifting devices with sufficient load capacity are used.
- Never step underneath suspended loads!
- Always fasten loads in such a way that they cannot slip or fall out. Only task experienced persons with the fastening of loads.
- Drive the wheel loader only if the route is as flat as possible.
- With a load attached, only approach the lift arm from the side with the permission of the wheel loader driver. The driver may only give permission if the wheel loader is stationary and the operating equipment is not moved.
- Fasten a load only if you are in the field of vision of, or are in speech contact with the driver of the wheel loader.
- Transport the load as close as possible to the surface of the ground. Prevent oscillating motion.
- In the case of assembly work above head height, always use authorised and suitable ladders and working platforms. Do not use any machine parts and attachments as a climbing aid. Always use a fall-arrester when working at greater heights. Always keep the fall-arrester free of dirt and ice.

- When beginning maintenance of the wheel loader, clean all connections and screw couplings of oil, fuel and dirt. Do not use any aggressive substances when cleaning. Use only lint-free cleaning cloths.
- Before cleaning with water or a steam jet (high-pressure cleaner), safeguard by covering and masking those parts that should not come into contact with water/vapour and cleaning agents for reasons of safety and functionality. The engine components such as the fuel-injection pump, alternator, regulator and starter are particularly endangered.
- After cleaning, remove all covers and masks, which had been used for protective purposes.
- After cleaning, check all fuel, engine oil and hydraulic fluid lines for leaks, loose connections, chafing and damage. Rectify the defect that you have noticed, if you are authorised to do so.
- After performing maintenance work, always tighten threaded connections that have been loosened.
- If safety installations must be dismantled for maintenance work, ensure that once the work has been performed, the safety installations are re-installed and taken into operation.
- Dispose of such operating and process materials, as well as parts that have been exchanged, in an environmentally friendly manner and in accordance with local regulations.
- Allow the wheel loader to be checked by a competent person prior to commissioning as well as after working in special operational environments. Allow the wheel loader to be inspected by a competent person at least once a year.
- Record the results of the inspection by the competent person in writing and keep them on file at least until the next inspection.

When carrying out maintenance work beneath the lift arm, take note of the following points:

- Support the lift arm mechanically by means of the lift arm support (special equipment).
- Secure the hand lever of the operating and accessory hydraulic system via the relevant toggle switch.

When performing maintenance work, secure the wheel loader against an unintentional restart.

- Remove the ignition key.
- Place a warning sign on the main switch - Battery On This applies especially to work on components of the electrical system.

4.2.6 Electrical energy

4.2.6.1 Parts on the wheel loader

In order to deal safely with electrical energy on the wheel loader, take note of the following points:

- Use only original fuses of the prescribed rating. In the event of faults in the electrical supply, switch off the wheel loader immediately.
- Check the electrical equipment on the wheel loader at regular intervals. Rectify the defects and damage that you have noticed, if you are authorised to do so.

4.2.6.2 Parts in the vicinity of the wheel loader

In order to deal safely with electrical energy on the wheel loader and in its environment, take note of the following points:

- If you are working in the vicinity of electrical overhead lines and catenaries, you must maintain a safety distance dependent on the nominal voltage of the overhead line between the wheel loader and its operating facilities. This avoids a transfer of current. This also applies to the distance between these lines and the attachments as well as attached loads.
- Take note of all operational movements of the wheel loader. For example, the lift arm positions, the swinging of ropes and the dimensions of attached loads. Also take note of unevenness of the ground surface, resulting in the wheel loader standing at an angle and thus coming closer to the vicinity of the overhead lines.
- Take note of the wind at the site of operations, as the overhead lines as well as the operating equipment can swing outwards and thus reduce the distance.

In the event of a current transfer, lift, lower, traverse or drive the operating equipment or the wheel loader out of the danger zone. If this is not possible, keep to the following code of behaviour:

- Do not leave the cab!
- Warn those standing outside against approaching or touching the wheel loader!
- Ask that the current be switched off!
- Only leave the cab once the power line that has been touched/damaged is definitely switched off!

Safety distances for overhead electrical lines according to BGI 887

Nominal voltage (Kilovolt)			Safety distance (Metres)	
		up to	1 kV	1.0 m
over	1 kV	up to	110 kV	3.0 m
over	110 kV	up to	220 kV	4.0 m
over	220 kV	up to	380 kV	5.0 m
unknown nominal voltage				5.0 m

4.2.7 Hydraulic system

For the safe operation of the hydraulic system of the wheel loader, take note of the following points:

- At regular intervals, check all lines, hoses and screw couplings of the hydraulic system for leaks and damage. Rectify the defect that you have noticed, if you are authorised to do so. Hot oil spurting out can lead to injuries and burns
- Never adjust the hydraulic components set by the factory. Any such adjustments will lead to loss of the guarantee.

4.2.8 Oils, grease and other chemical substances

In order to deal safely with oils, grease and other chemical substances, take note of the following points:

- When handling oils, greases and other chemical substances, adhere to the safety instructions applicable to the product.
- Take note of the characteristics of the operating and process materials, as well as hydraulic fluid, the braking system and the battery acid. The dangers of burns, chemical burns and poisoning are all present.

There is a fire hazard when working with fuel. When dealing with fuel, take note of the following points:

- Before filling up, switch off the engine and remove the ignition switch.
- Never fill up with fuel in an enclosed space!
- Never fill up with fuel in the vicinity of naked flames or sparks capable of causing ignition.
- Never smoke when working with fuel.
- Wipe up the spilled fuel with suitable cloths and dispose of these in the proper manner. Catch the draining fuel in a suitable container.
- Always keep the wheel loader clean. Thoroughly remove all fuel, oil and grease residues.

4.2.9 Gas, vapour, dust, smoke

Only operate the wheel loader in adequately ventilated spaces. Before starting the wheel loader, check the ventilation in enclosed spaces. Follow the regulations that apply in the particular operating location.

4.3 Notes on environmental protection

Safety-conscious and pre-emptive conduct on the part of personnel will prevent environmentally hazardous effects from arising.

To act in an environmentally responsible manner, the following principles apply:

- Ensure that substances that are hazardous to the environment do not make their way into the ground or the sewers.
- Always follow the regulations concerning the avoidance, disposal and recycling of waste.
- Store substances that are hazardous to the environment in suitable containers.
- Clearly identify containers containing substances that are hazardous to the environment.

4.4 Residual Risk

The safety installations on the wheel loader protect personnel effectively against injury. In the case of certain activities, remaining in hazardous areas is still unavoidable.

The wheel loader is built according to state-of-the art standards. Residual risks cannot be ruled out completely. Hazardous situations are avoided by wearing protective personal equipment as well as the safety-conscious and pre-emptive conduct of the personnel.

Residual risks on wheel loader

Danger	Cause	Measure
Burn hazard in the engine compartment.	The operator can sustain burns when working in the engine compartment.	Take note of the following measures: <ul style="list-style-type: none"> • Always wear protective gloves when working in the engine compartment. • Always work according to the instruction in this instruction manual. • Warning sign in the engine compartment: Hot surfaces

Residual risks on wheel loader (Cont.)

Danger	Cause	Measure
Injury hazard in the engine compartment.	The operator may touch moving parts when the engine hood is open.	Take note of the following measures: <ul style="list-style-type: none"> • Switch off the engine, before carrying out work in the engine compartment. • Always work according to the instruction in this instruction manual. • Never touch moving parts. • Warning sign in the engine compartment: Danger of being drawn in • Prohibition sign in the engine compartment: "Do not touch"
Danger of injury when loading the wheel loader	The wheel loader is large and heavy. There is a crush hazard when transporting and loading	Take note of the following measures: <ul style="list-style-type: none"> • Transporting and loading to be carried out only by competent and experienced personnel. • Always use personal protective equipment (safety shoes, safety gloves) • Only use suitable transportation and lifting equipment. • Never step underneath suspended loads!
Injury to health by the operating fluids of the wheel loader.	Skin contact with escaping operating fluids may occur during maintenance work on the wheel loader. This can be a health risk. Escaping operating fluids pollute and endanger the environment.	Take note of the following measures: <ul style="list-style-type: none"> • Avoid contact with the skin. • Absorb the leaked operating fluids without delay with the appropriate materials and clean the floor. • Dispose of all waste according to regulations and in an environmentally responsible manner.

Residual risks on wheel loader (Cont.)

Danger	Cause	Measure
Fire hazard when refueling the wheel loader	The wheel loader runs on diesel fuel. If the diesel fuel should come into contact with hot parts or an open flame, there is a danger of deflagration and fire.	Take note of the following measures: <ul style="list-style-type: none"> • Smoking and open flames are forbidden during refuelling • Always proceed with caution and the utmost care while refueling. • Using a cloth, remove any spilled fuel immediately. • Dispose of the fuel-drenched cloths correctly.

4.5 Supplementary Regulations

The proper use of the wheel loader is determined by statutes and regulations in addition to this operator's manual.

The following regulations apply to the operation of the wheel loader:

- Regulations for the operation of wheel loaders (including statutes and regulations not expressly mentioned here)
- Accident prevention regulations,
- Internal company regulations'
- Road traffic regulations
- Instructions on the wheel loader.

4.6 Qualification of Personnel

In this section you will find information regarding personnel qualifications.

4.6.1 Minimum requirements

In this section you will find information regarding how personnel must be trained to work with or drive the wheel loader.

All work with the wheel loader requires that the personnel have special knowledge and skills.

Anyone who works with the wheel loader must fulfil the following requirements:

- Personal suitability for the task in question.
- The driver must possess the driver's license required by law.
- Be sufficiently qualified for the task in question.
- Be trained in the handling and operation of the wheel loader.
- Be familiar with the safety installations of the wheel loader and their function.
- Be familiar with the instruction manual, especially the safety instructions and with the sections that are relevant to the operational tasks.
- Familiar with the basic regulations with regard to occupational health and safety and accident prevention.

Basically, all persons who work on or with the wheel loader must have the following minimum qualification:

- Qualified as a tradesman (agricultural machinery mechanic, mechatronic technician or equivalent qualification).
- Sufficient instruction to work on and with the wheel loader under the supervision and direction of a qualified tradesman (agricultural machinery mechanic, mechatronic technician or equivalent qualification).

4.6.2 User groups

The following user groups are distinguished in this operator's manual:

User groups

Staff	Qualifications
Operating personnel	<p>A locally valid driver's licence to drive the wheel loader.</p> <p>Be in the position to understand the operator's manual.</p> <p>Appropriate instruction in terms of:</p> <ul style="list-style-type: none"> • the functional processes of the wheel loader • the operating processes of the wheel loader • lubrication tasks
Maintenance staff	<p>Sound knowledge of:</p> <ul style="list-style-type: none"> • mechanical equipment • Hydraulic system • vehicle electric systems <p>Sound knowledge of the design and functioning of the wheel loader.</p>

4.6.3 Specific technical knowledge

The following tasks may only be performed by personnel with specialized knowledge:

Tasks and knowledge

Task:	Qualifications
Work on electrical installations	<p>Mechatronic technician, agricultural machinery mechanic equivalent qualification</p> <p>or</p> <p>Instruction: Work may only be carried out under supervision and direction of a mechatronic technician or agricultural machinery mechanic in accordance with the electro-technical rules.</p>
Work on hydraulic installations	<p>Agricultural machinery mechanic , industrial mechanics equivalent qualification</p> <p>or</p> <p>Instruction: Work may only be carried out under supervision and direction of an agricultural machinery mechanic or industrial mechanic in accordance with the recognised technical rules.</p>
Work on mechanical installations	<p>Agricultural machinery mechanic , industrial mechanics equivalent qualification</p> <p>or</p> <p>Instruction: Work may only be carried out under supervision and direction of an agricultural machinery mechanic or industrial mechanic in accordance with the recognised technical rules.</p>

4.7 Safety installations

In this chapter you will find information regarding the safety installations on the wheel loader:

4.7.1 Importance and safety installations

Safety installations secure dangerous areas on the wheel loader. They have no influence on the functioning of the wheel loader.

Without properly adjusted safety installations, persons on the wheel loader may sustain life-threatening injuries. Safety devices must not be modified, removed or taken out of service.

Safety installations may only be removed for maintenance and repair work. Always install the safety installations before taking back into service.

4.7.2 Fixed safety installations

Fixed safety installations prevent or hinder direct access to:

- rotating and moving parts
- hot surfaces.

The wheel loader has a plate in front of the turbo-charger as safety installation.

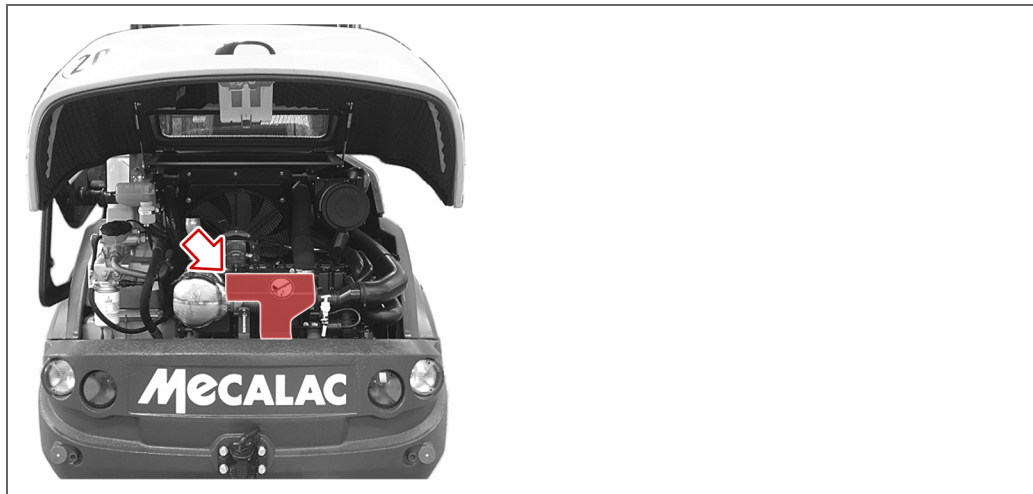


Plate in front of the turbo-charger

4.7.3 Movable safety installations

The movable safety installations:

- prevent reaching into moving parts,
- regulate the running speed of the wheel loader,
- protect the driver in the driver's seat in the event of an accident.

The following movable safety installations are to be found on the wheel loader:

- Engine hood
- Safety belt on the driver's seat



Engine hood

4.7.4 Signalling installations

Signalling installations give an alert to hazards in the vicinity of the wheel loader by visual or aural signals.

Depending on the version, the following signaling installations are to be found on the wheel loader:

- Rotating beacons (optional)
- Hazard warning lights (hazard flashers)
- Horn.



Always activate the rotating beacons and hazard warning lights when travelling with the wheel loader. Only use the horn to warn persons of danger.

4.7.5 Signage

There are various signs on the wheel loader. Danger zones on the wheel loader are identified by warning signs in accordance with DIN 4844 and BGV A8 (VBG 125). Information signs for the operator also appear on the wheel loader. Warning signs as well as information signs on the wheel loader must always be clearly legible. Clean dirty signs and renew illegible or lost signs.







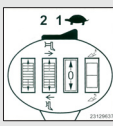
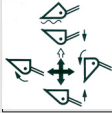
4.7.5.1 Warning signs

Overview of the warning signs



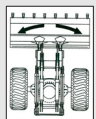



Warning placard:	Meaning
	PROHIBITED: Do not reach into moving parts
	Warning: Danger zone

4.7.5.2 Information signs






Overview of the information signs

Sign	Meaning
	Read and take note of the operator's manual before taking into service. Inform other users regarding all safety instructions
	Prescribed lifting points for crane loading
	Prescribed lifting points for towing and rigging
	Fuse and relay overview
	Prescribed mineral oil
	Steering only when the engine is running
	Control assignment on the multi-function joystick
	Assignment of controls for the hydraulic operating system on the X-/Y-axes of the multi-function joystick

Overview of the information signs (Cont.)

Sign	Meaning
	Annual APR inspection
	APR inspection tag
	Pivoting
	Differential lock.
	Hydraulic fluid reservoir
	Maximum speed 20 km/h
	Maintenance schedule
	Tyre pressure
	Acoustic output level
	Greenhouse gases
	After shutting down the engine, wait at least 2 minutes before operating the main switch of the battery.

Overview of the information signs (Cont.)

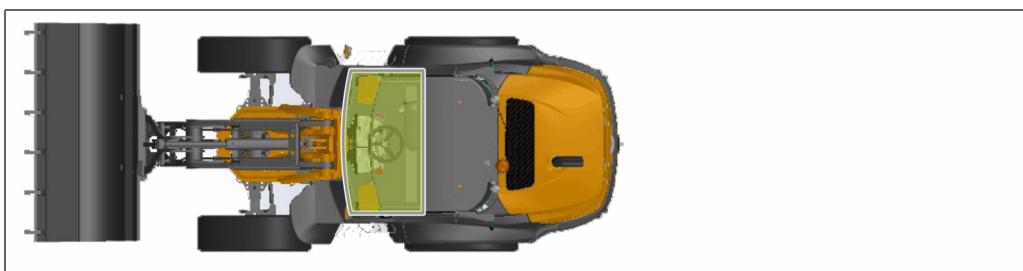
Sign	Meaning
	Diesel.
	The main switch of the battery must be deactivated once the engine has been shut down.
	Load chart.
	Stacker loads
	Quick coupler locking mechanism

4.8 Areas

In this section you will find information regarding the working environments and danger zones of the wheel loader. These areas apply during operation of the wheel loader.

4.8.1 Working environments

The operator of the wheel loader remains in the working environment. He operator operates the wheel loader in this area.

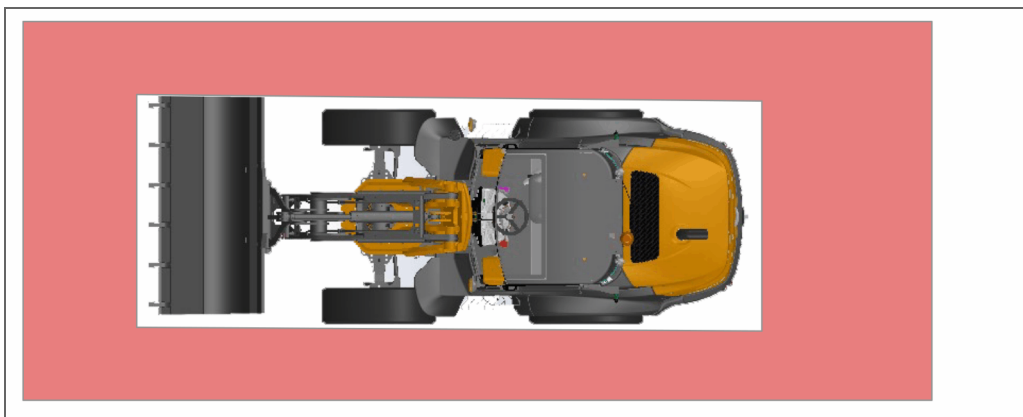


Working environment in the cab

4.8.2 Danger zones

You may not enter these areas while operating. If the wheel loader is switched off and secured against unintentional re-starting, you may reach into these areas and enter them for maintenance and service work.

The danger zone is the vicinity of the wheel loader, in which persons are endangered by attachments, operating equipment and loads.

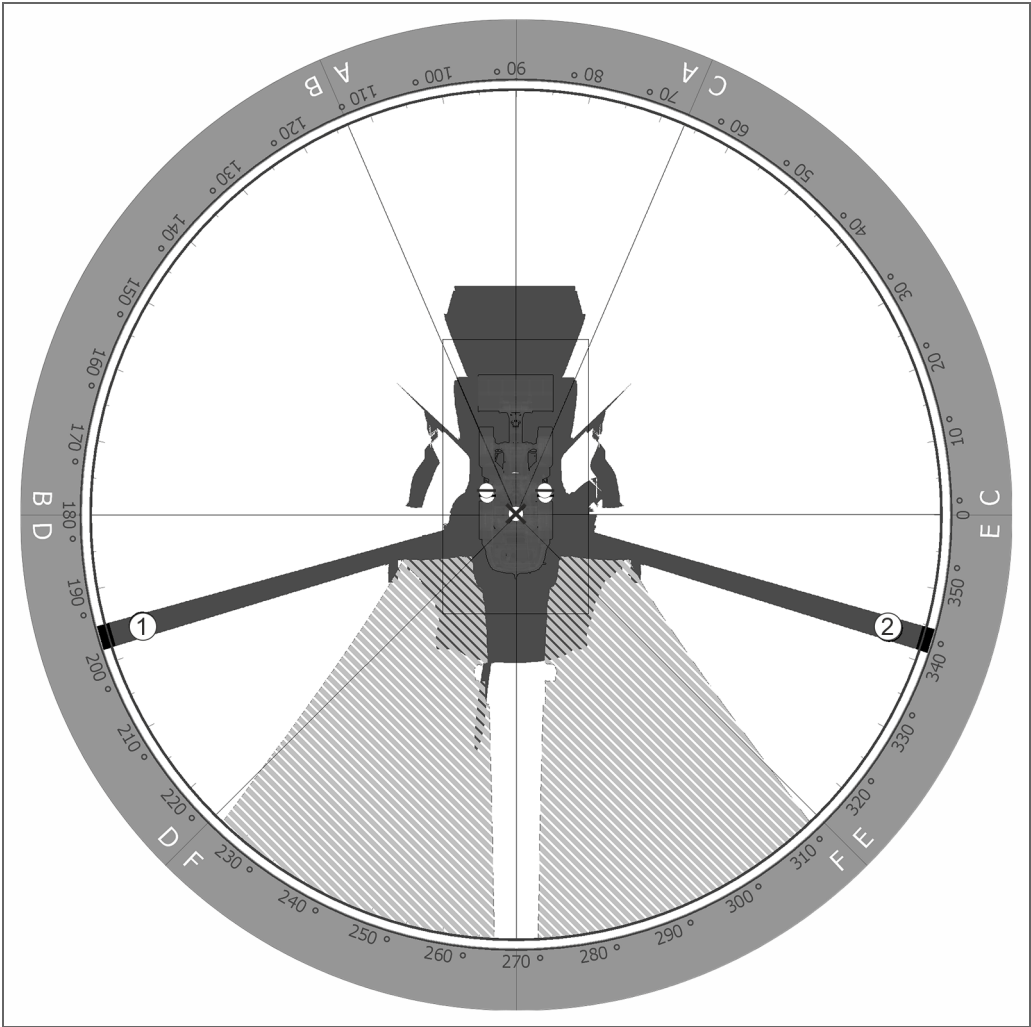


Danger zones around the wheel loader

4.8.3 Field of view analysis

Modifications to the wheel loader are not permitted to influence the field of view.

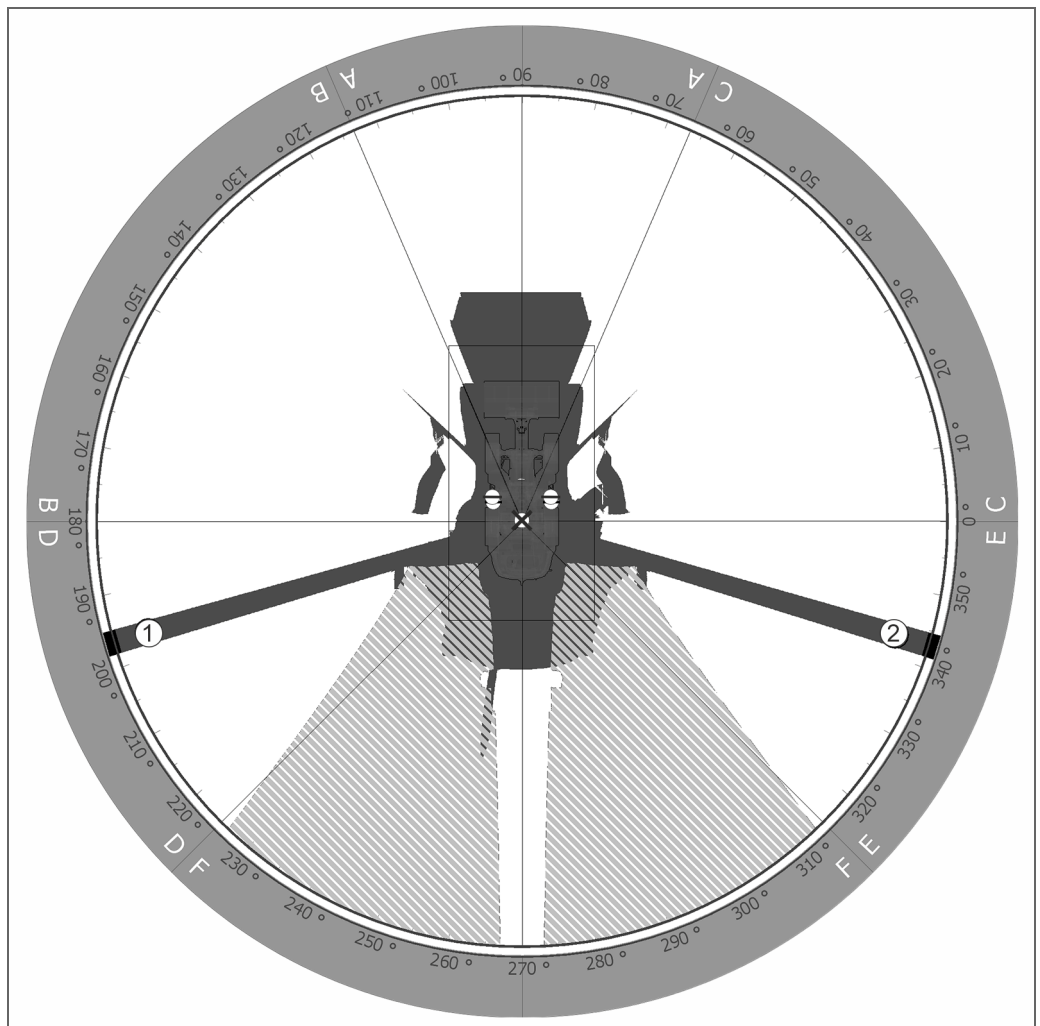
4.8.3.1 AF Series



Field of view around the wheel loader (plan view)

Symbol	Meaning
	Field of view limitation regarding the RB / test circuit
	Field of view limitation
	Field of view of mirror.
	Mirror.
	Position of the light source support.

4.8.3.2 AT Series

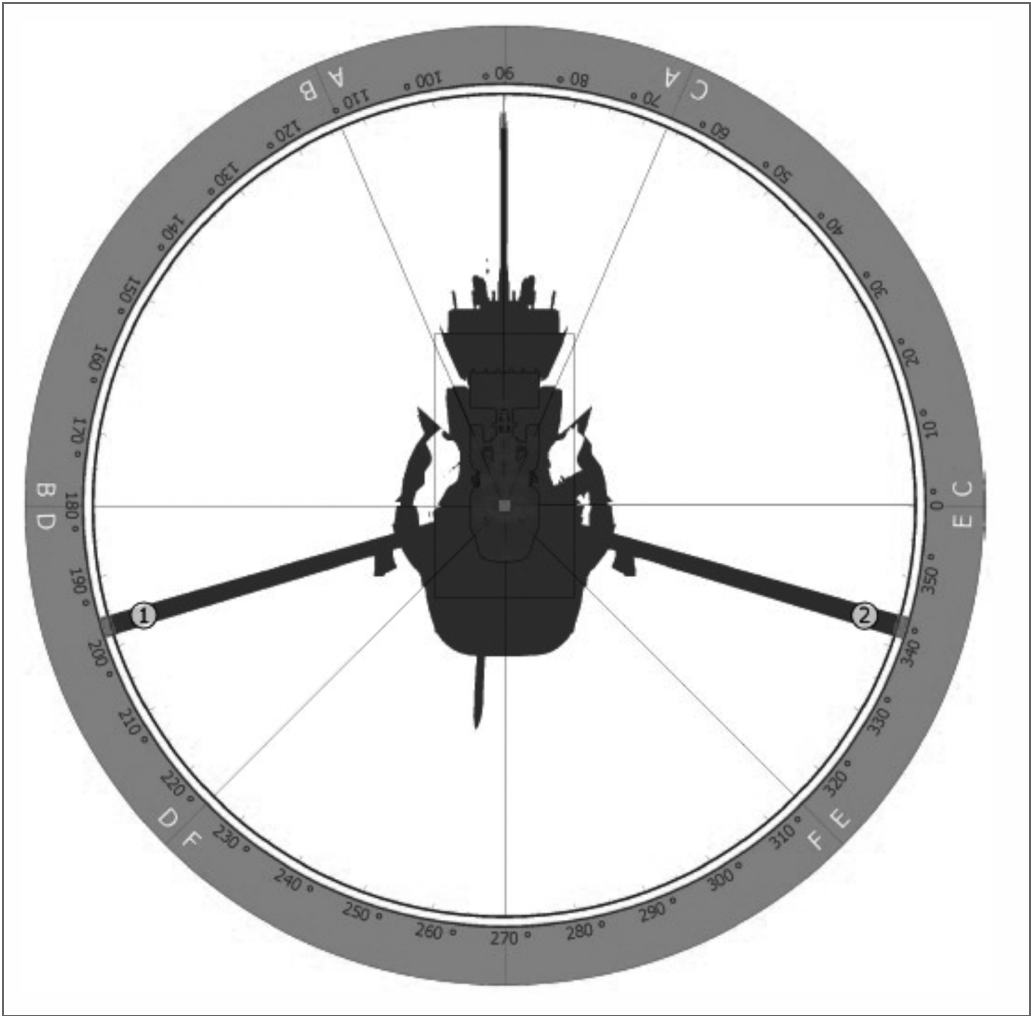


Field of view around the wheel loader (plan view)

Key

Symbol	Meaning
	Field of view limitation regarding the RB / test circuit
	Field of view limitation
	Field of view of mirror.
	Mirror.
	Position of the light source support.

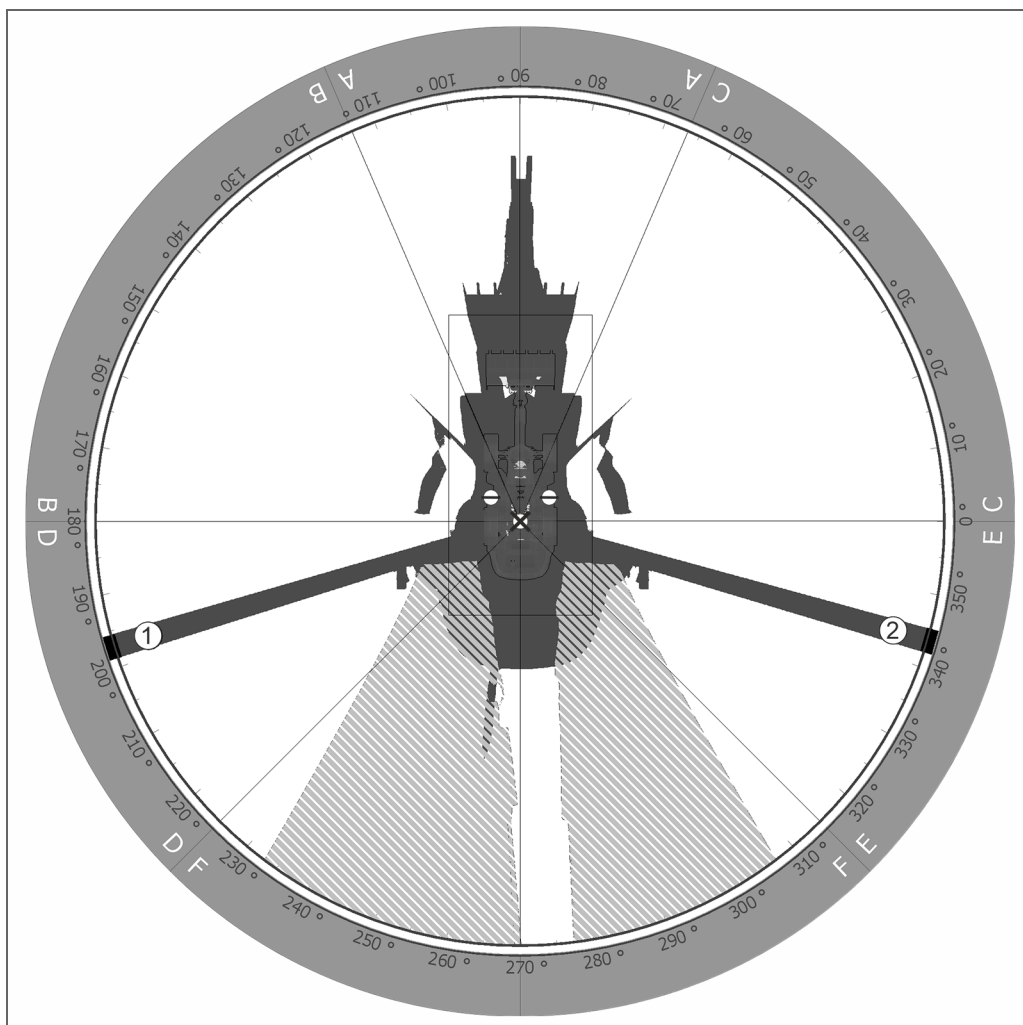
4.8.3.3 AS 850 / 1000



Field of view around the wheel loader (plan view)

Key	
Symbol	Meaning
	Field of view limitation regarding the RB / test circuit
	Field of view limitation
	Field of view of mirror.
	Mirror.
	Position of the light source support.

4.8.3.4 AS900tele



Field of view around the wheel loader (plan view)

Key

Symbol	Meaning
	Field of view limitation regarding the RB / test circuit
	Field of view limitation
	Field of view of mirror.
	Mirror.
	Position of the light source support.

4.9 Instructions for first aid

In this section you will find special first aid measures.

Safety instruction:

If you or another person should be injured while working on the wheel loader,

- stay calm,
- perform first aid,
- in every instance, contact a first aider
- inform the supervisor responsible, or his/her representative

If you must make an emergency call, keep the following points in mind:

- What has happened?
- Where has it happened?
- Who is reporting?
- How many casualties?
- Wait for enquiries!



Info

Familiarize yourself with the alarm system and the rescue equipment at your place of work, such as: What is the emergency number? Where is the nearest telephone? Where can I find a fire extinguisher? Where can I find the nearest first aid kit? Attend a first aid course in order to be able to render immediate assistance in an emergency.

4.10 Conduct in the event of a fire

Recommendations and instructions regarding the correct conduct in the event of a fire are to be found in this section.

We recommend that a an approved and tested fire extinguisher always be carried in the wheel loader.

Correct procedure in the event of a fire:

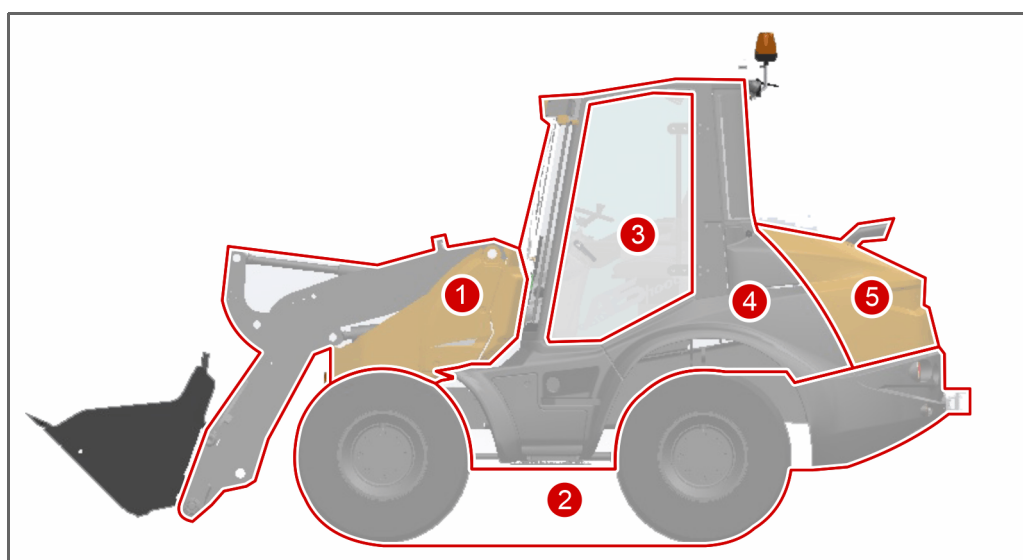
- First rescue injured persons from the danger zone and administer first aid!
- Extinguish the fire that has broken out with the aid of the fire extinguisher within reach!
- If the fire cannot be extinguished with a single fire extinguisher, ensure that further fire extinguishers are brought to the scene of the fire. Avoid a lengthy interruption in the attempt to extinguish the fire!
- If necessary, initiate an alarm call promptly, see Instructions for first aid (Page 70)!
- inform the supervisor responsible, or his/her representative!

5 Description

In this chapter you will find information describing the wheel loader in base model form: A description of the special equipment can be found in Chapter: "Special equipment" (Page 221).

- Parts of the wheel loader (Page 71)
- Lift arm with quick coupler (Page 72)
- Chassis (Page 82)
- Cab - interior (Page 83)
- Cab - exterior (Page 114)
- Engine compartment (Page 119)
- Lighting (Page 123)

5.1 Parts of the wheel loader



Overview - Parts of the wheel loader

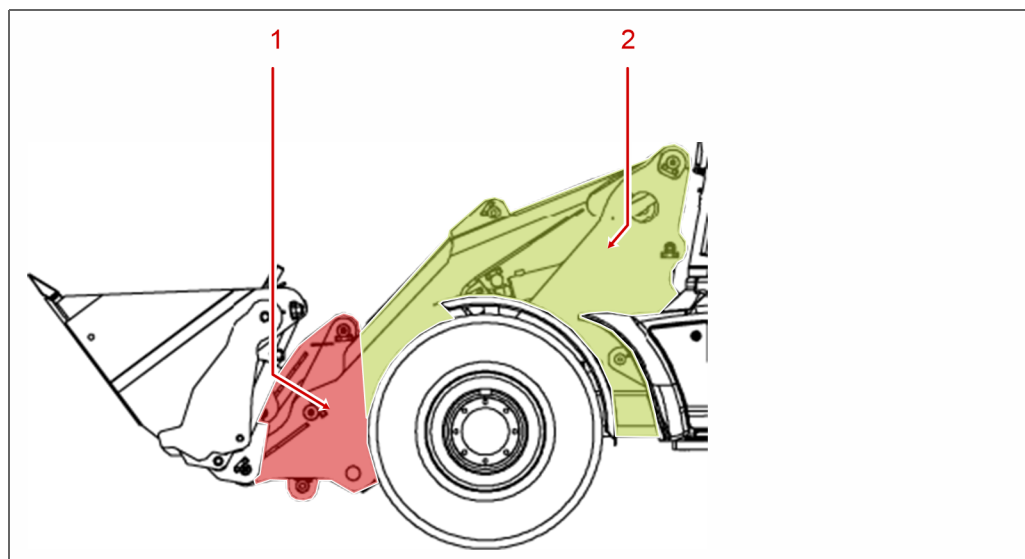
Key

No.	Designation	Function
1	Lift arm with quick coupler	See Chapter: <ul style="list-style-type: none"> • AF Series (Page 72) • AT Series (Page 75) • AS850 / AS1000 (Page 77) • AS900tele (Page 80)
2	Chassis	See Chapter: "Chassis" (Page 82).
3	Cab - interior	See Chapter: "Cab - interior" (Page 83).
4	Cab - exterior	See Chapter: "Cab - exterior" (Page 114).
5	Engine compartment	See Chapter: "Engine compartment" (Page 119).

5.2 Lift arm with quick coupler

5.2.1 AF Series

5.2.1.1 Overview

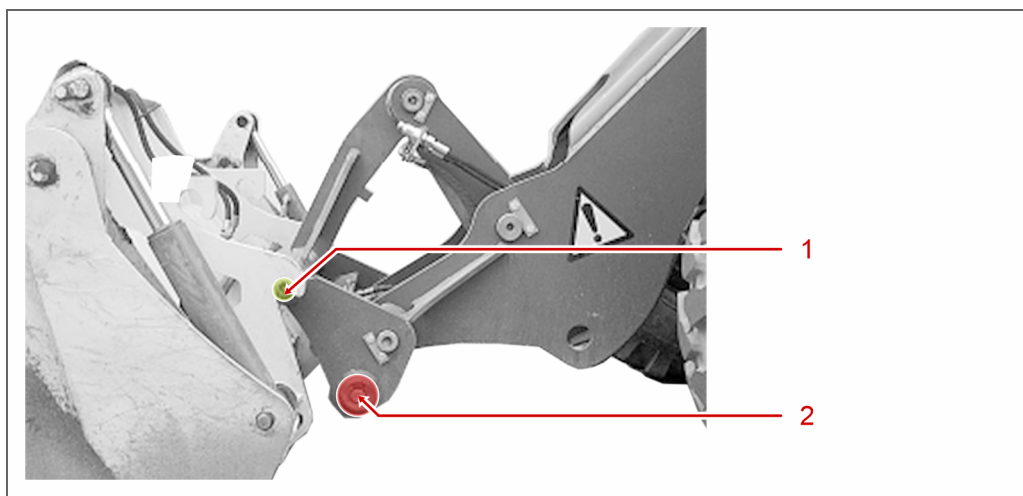


Overview - Lift arm with quick coupler

Key

No.	Designation	Function
1	Quick coupler	See section "Quick coupler" (Page 73).
2	Lift arm	See section "Lift arm" (Page 74).

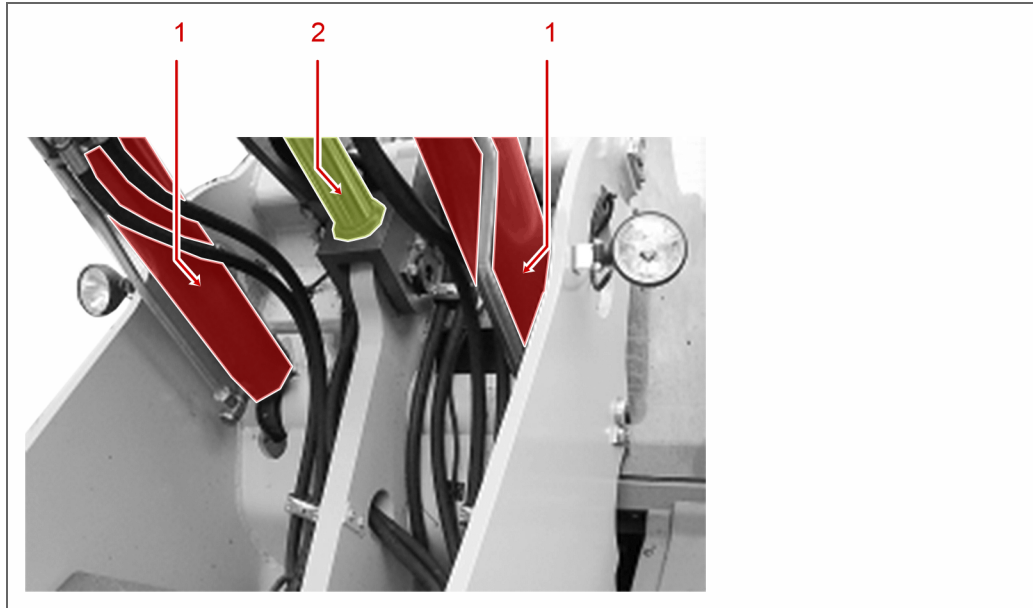
5.2.1.2 Quick coupler



Overview - Quick coupler

Key

No.	Designation	Function
1	Locating pins	Serve to hook up and guide the relevant lifting lugs of an attachment.
2	Unlocking cylinders	Serve to lock an attachment to the wheel loader.

5.2.1.3 Lift arm

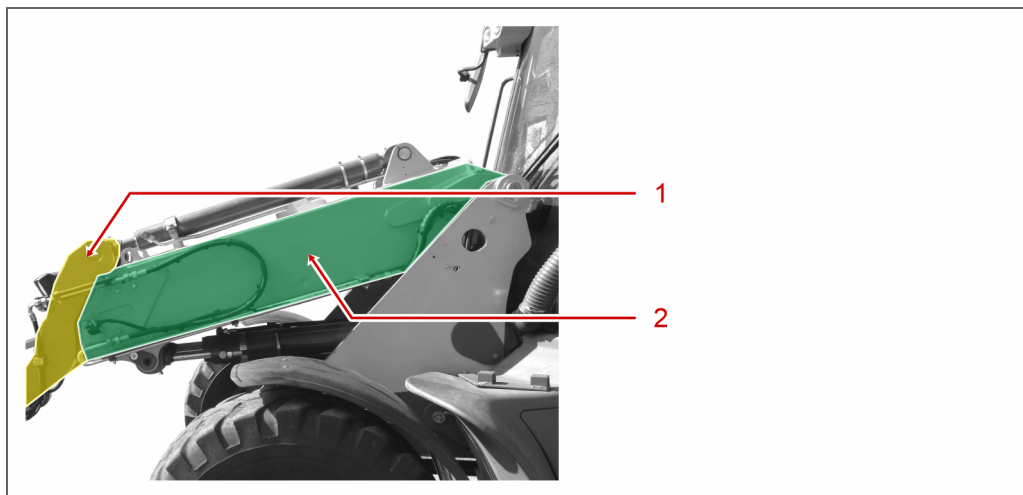
Overview – Lift arm

Key

No.	Designation	Function
1	Lifting cylinder	Allows the lift arm to make vertical lifting motions.
2	Tilting cylinder	Allows the quick-change device to make vertical lifting motions.

5.2.2 AT Series

5.2.2.1 Overview

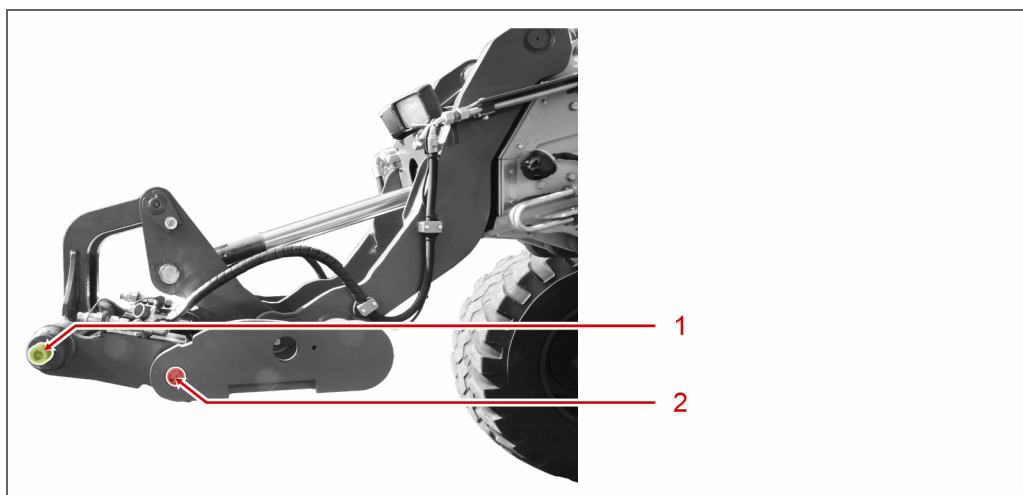


Overview - Lift arm with quick coupler

Key

No.	Designation	Function
1	Quick coupler	See section "Quick coupler" (Page 73).
2	Lift arm	See section "Lift arm" (Page 74).

5.2.2.2 Quick coupler

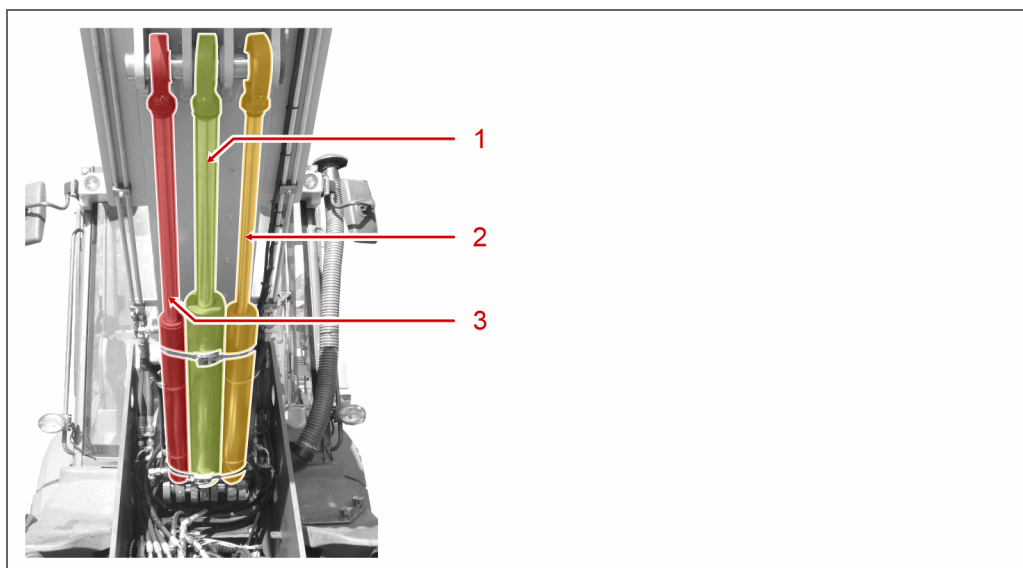


Overview - Quick coupler

Key

No.	Designation	Function
1	Locating pins	Serve to hook on and guide into the respective hooks of an attachment.
2	Unlocking cylinders	Serve to lock an attachment to the wheel loader.

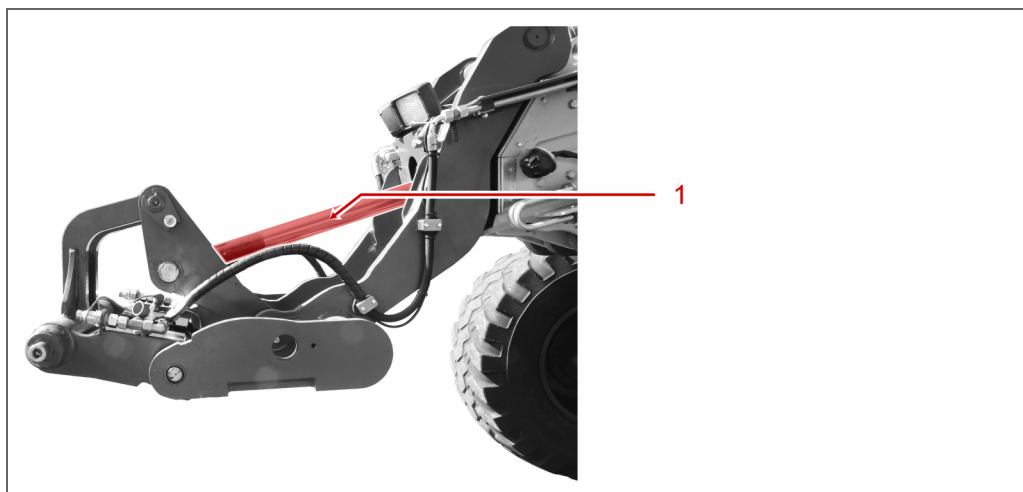
5.2.2.3 Lift arm



Overview – Lift arm – View showing lifting arm - bottom

Key

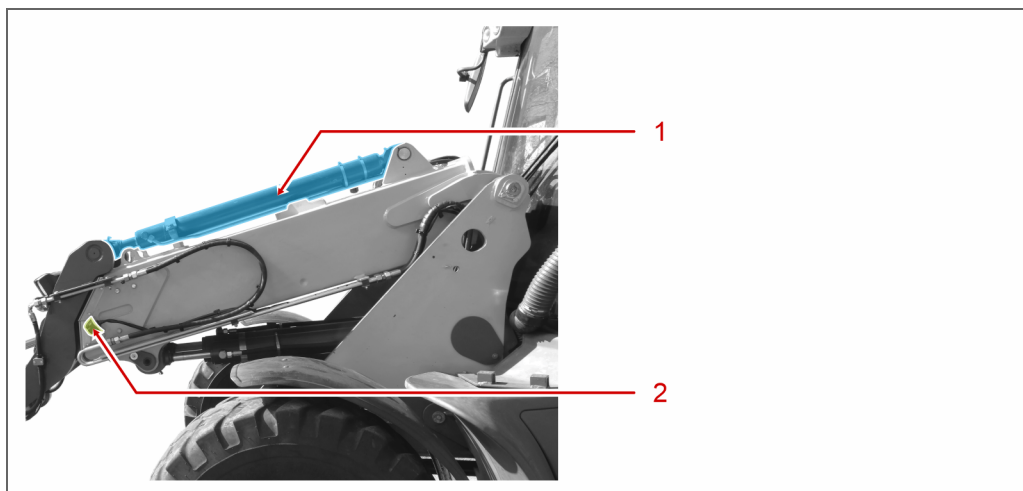
No.	Designation	Function
1	Lifting cylinder	Allows the lift arm to make a vertical lifting movement.
2	Compensation cylinder	Serves to guide the parallel movement of the attachment while the lift arm is lifting.
3	Compensation cylinder	Serves to guide the parallel movement of the attachment while the lift arm is lifting.



Overview – Lift arm – View showing lifting arm - front

Key

No.	Designation	Function
1	Tilting cylinder	Serves to tilt the quick coupler.



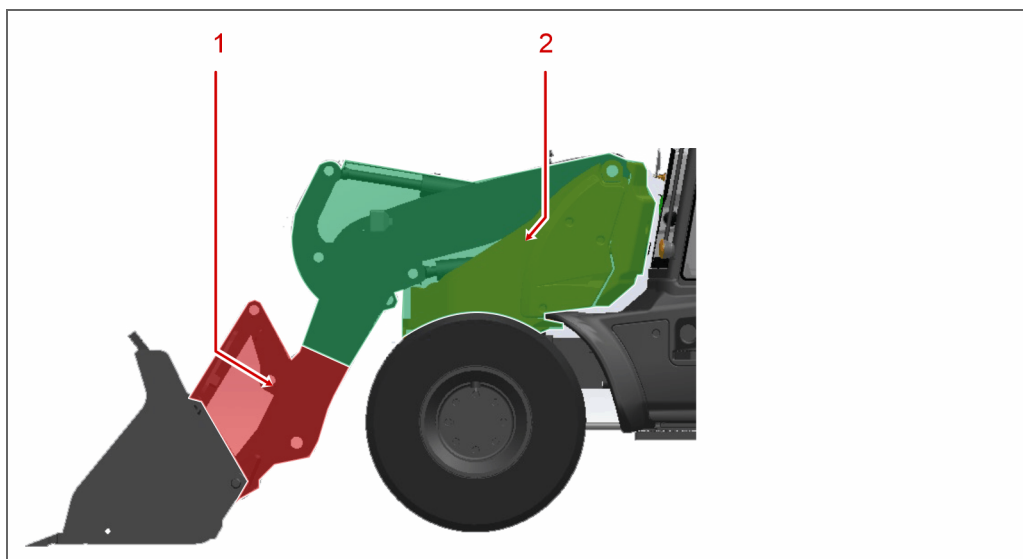
Overview – Lift arm – View showing lifting arm - left

Key

No.	Designation	Function
1	Telescopic cylinder	Serves to extend the lift arm.
2	7-pin socket	Serves to provide electrical power and illumination to various attachments.

5.2.3 AS850 / AS1000

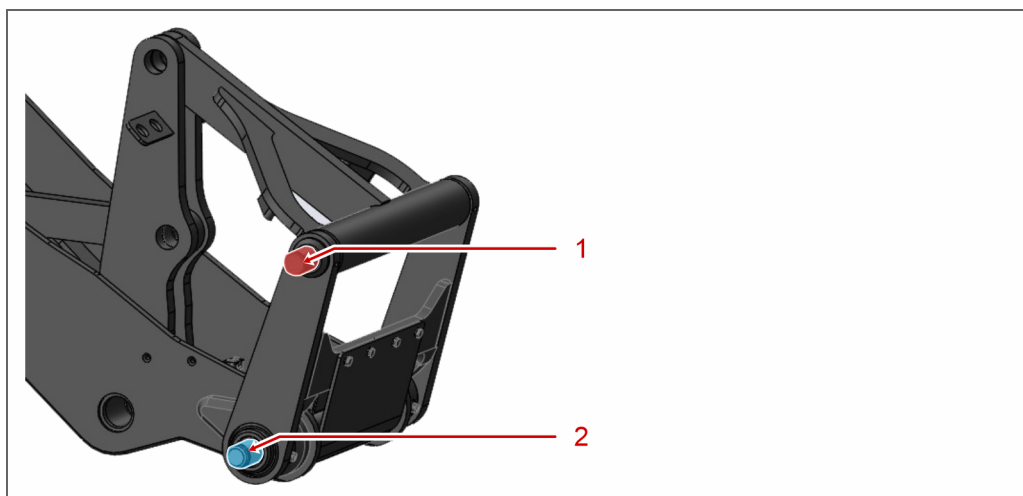
5.2.3.1 Overview



Overview - Lift arm with quick coupler

Key

No.	Designation	Function
1	Quick coupler	See section "Quick coupler" (Page 73).
2	Lift arm	See section "Lift arm" (Page 74).

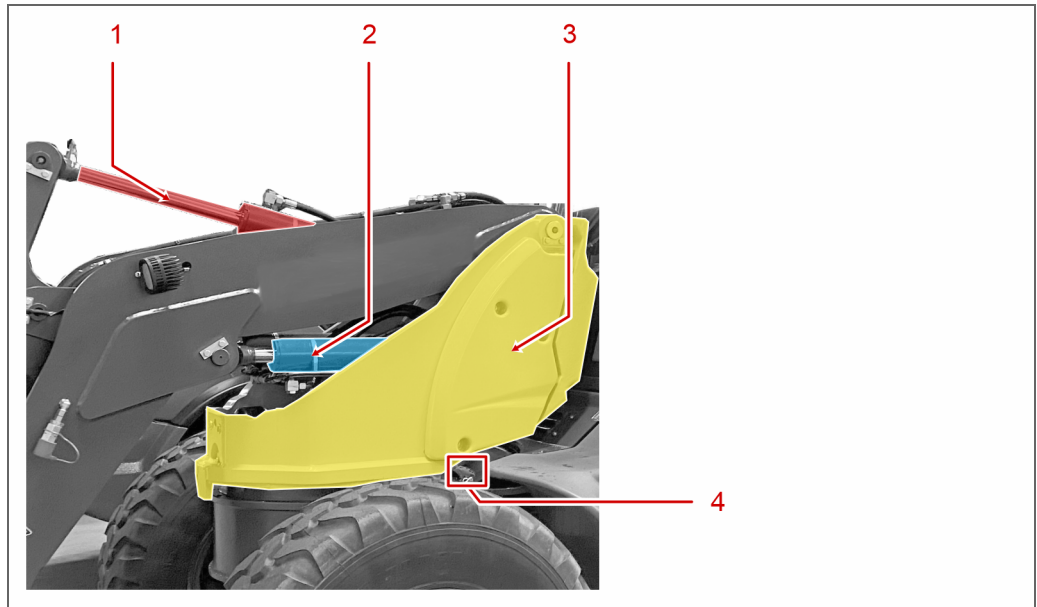
5.2.3.2 Quick coupler

Overview - Quick coupler

Key

No.	Designation	Function
1	Locating bolts (both sides)	Serve to hook up and guide the relevant lifting lugs of an attachment.
2	Unlocking cylinder (both sides)	Serve to lock an attachment to the wheel loader.

5.2.3.3 Lift arm



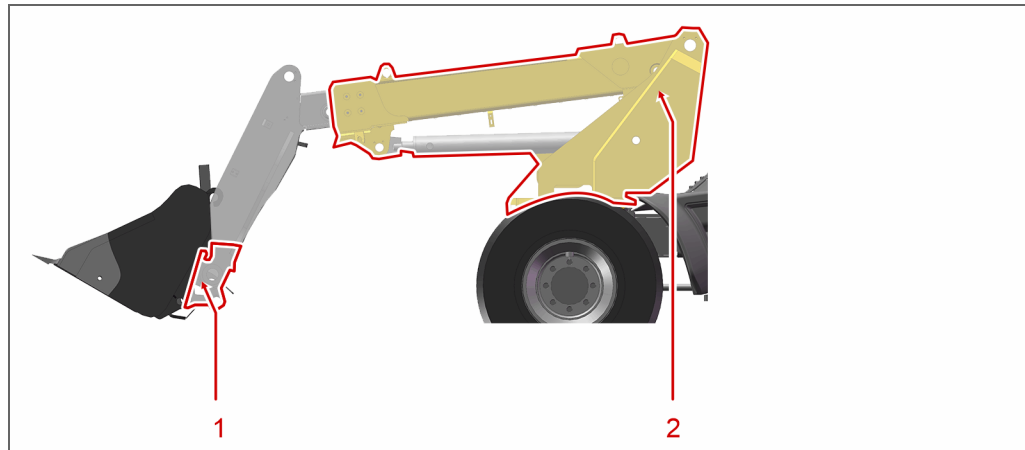
Overview – Lift arm

Key

No.	Designation	Function
1	Tilting cylinder	Serves to tilt the quick coupler.
2	Lifting cylinder	Allows the lift arm to make vertical lifting motions.
3	Turntable	The lift arm can be pivoted via the turntable
4	Pivot lock	Serves to lock the turntable when maintenance tasks are performed.

5.2.4 AS900tele

5.2.4.1 Overview

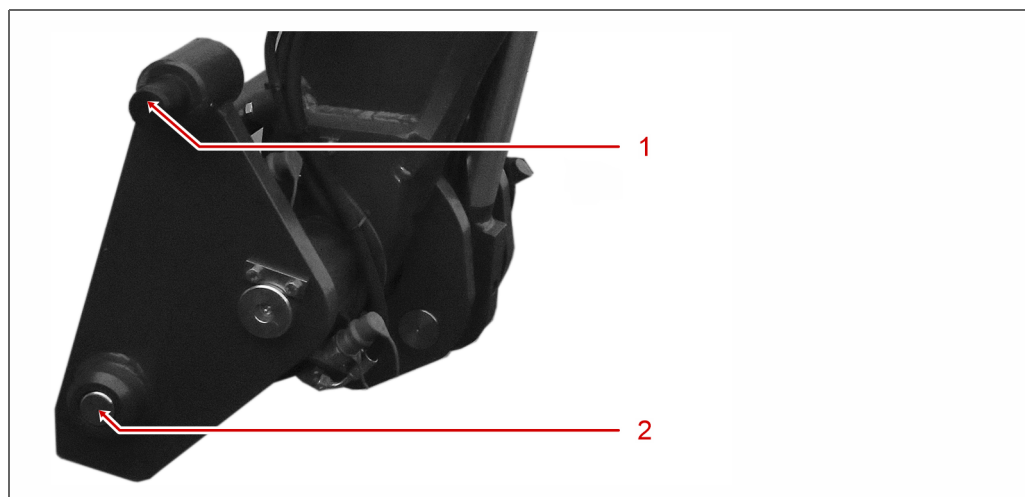


Overview - Lift arm with quick coupler

Key

No.	Designation	Function
1	Quick coupler	See section "Quick coupler" (Page 73).
2	Lift arm	See section "Lift arm" (Page 74).

5.2.4.2 Quick coupler

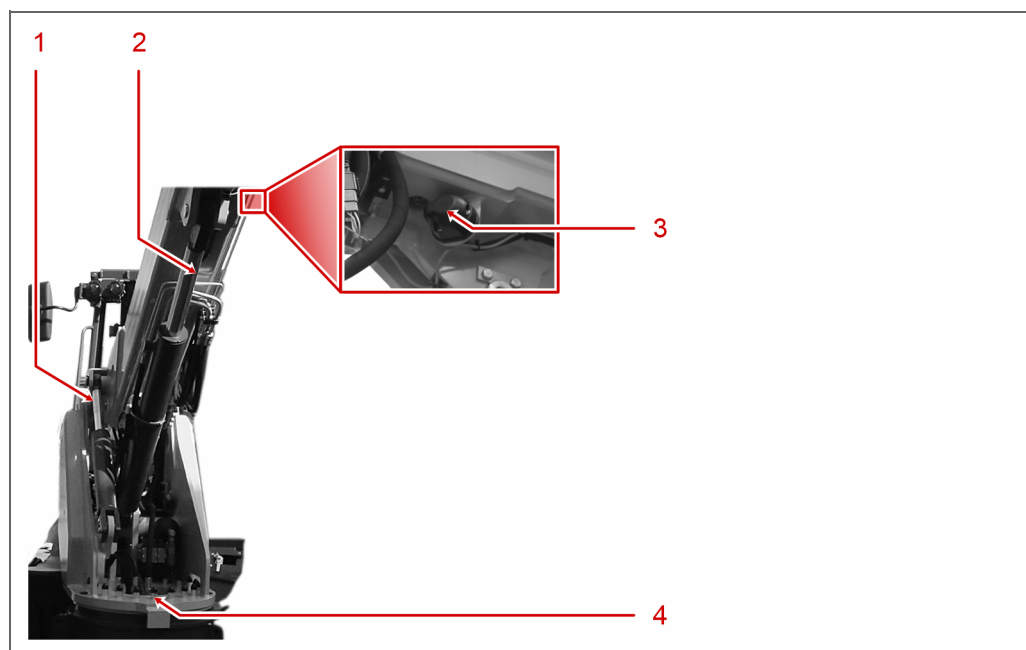


Overview - Quick coupler

Key

No.	Designation	Function
1	Locating bolts (both sides)	Serve to hook up and guide the relevant lifting lugs of an attachment.
2	Unlocking cylinder (both sides)	Serve to lock an attachment to the wheel loader.

5.2.4.3 Lift arm

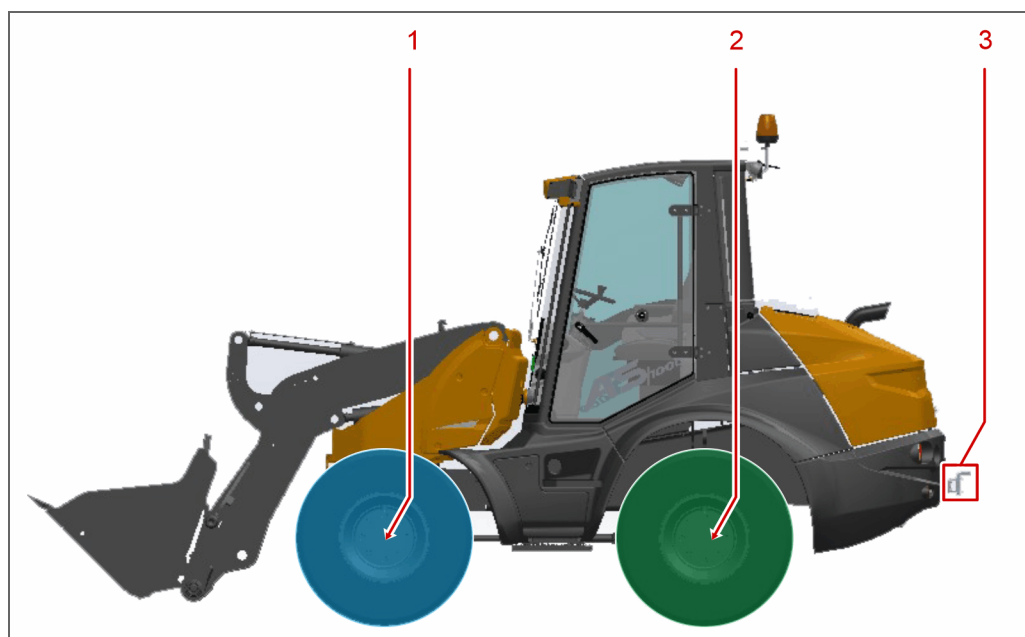


Overview – Lift arm

Key

No.	Designation	Function
1	Lifting cylinder	Allows the lift arm to make vertical lifting motions.
2	Telescopic cylinder	Serves to extend the lift arm.
3	7-pin socket	Serves to provide electrical power and illumination to various attachments.
4	Turntable	The lift arm can be pivoted via the turntable

5.3 Chassis



Overview - Chassis

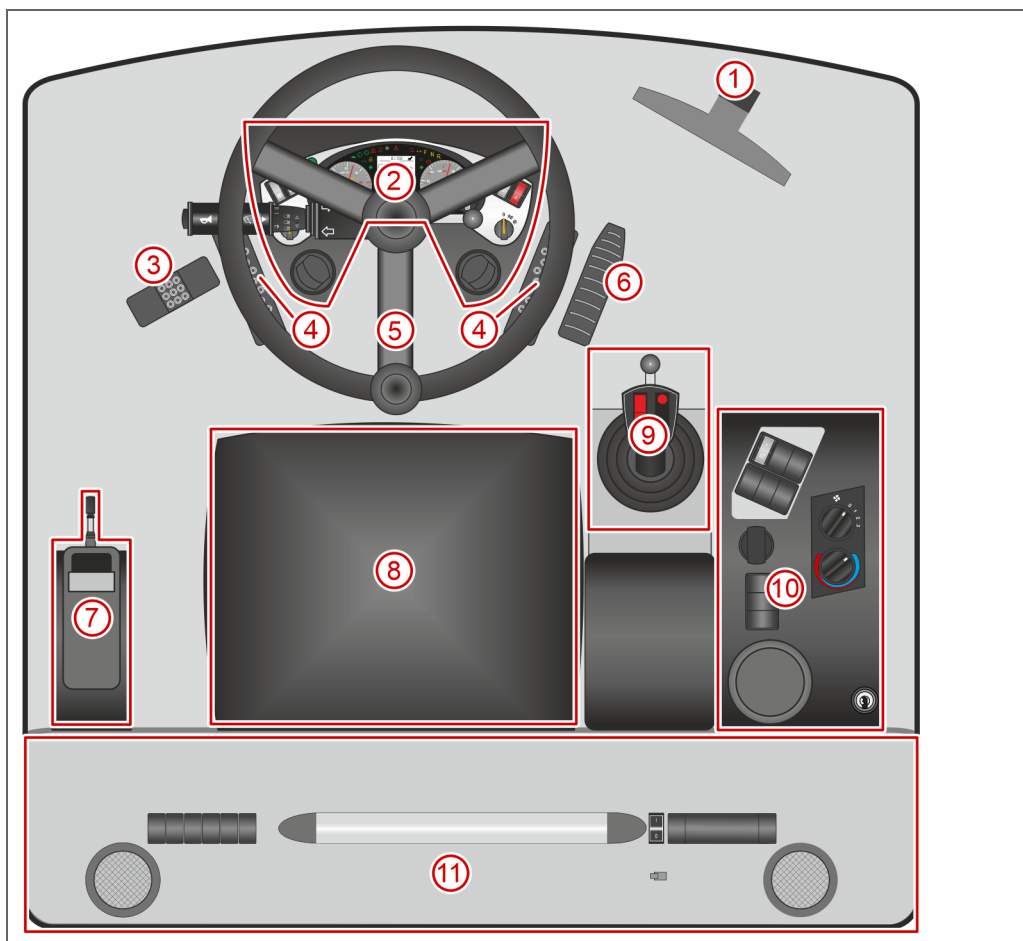
Key

No.	Designation	Function
1	Front axle	Forward steering device of the wheel loader.
2	Rear axle	Rear steering device of the wheel loader.
3	Towing hitch	Optionally, trailer hitches and rear mounting bracket for attachments can be installed on the towing hitch

5.4 Cab - interior

In this chapter you will find information regarding the parts of the cab.

5.4.1 Overview



Overview - Cab - interior

Key

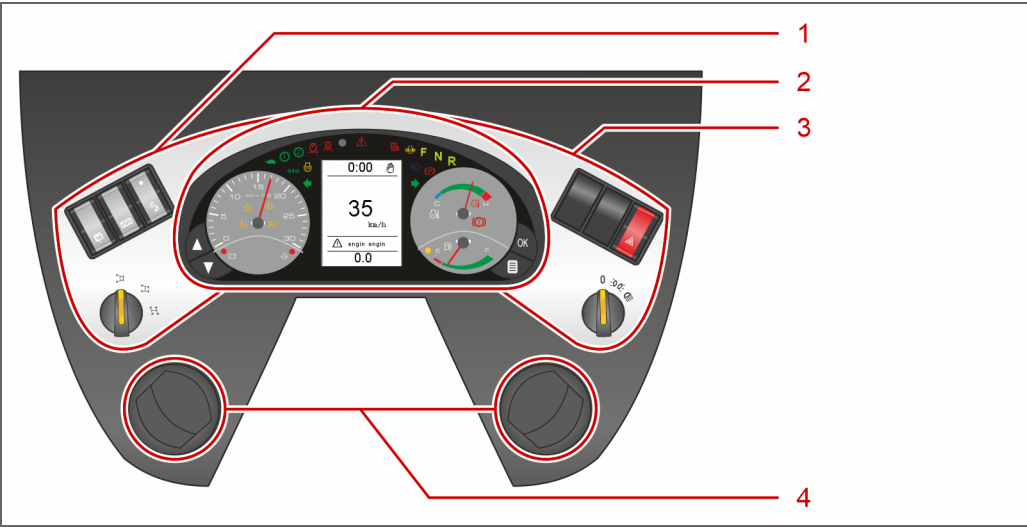
No.	Designation	Function
1	optional rear-view mirror	Used to monitor rearward traffic.
2	Instrument panel	See Chapter "Instrument panel" (Page 84).
3	Pivoting pedal	Only present in the case of the AS850 , AS1000 and AS900tele versions! Serves to pivot the turntable to the left or the right .
4	Brake pedal	Serves to brake the wheel loader.
5	Steering wheel	See Chapter: "Steering wheel" (Page 95).
6	Accelerator pedal	Serves to accelerate the wheel loader.
7	Left-hand side	See Chapter: "Left-hand side" (Page 97).
8	Driver's seat	See Chapter: "KAB driver's seat" (Page 98).

Key (Cont.)

No.	Designation	Function
9	Multi-function joystick	See Chapter: "Multi-function joystick" (Page 100).
10	Right-hand side	See Chapter: "Right-hand side" (Page 109).
11	Vehicle roof liner	See Chapter: "Vehicle roof liner" (Page 113).

5.4.2 Instrument panel

5.4.2.1 Overview

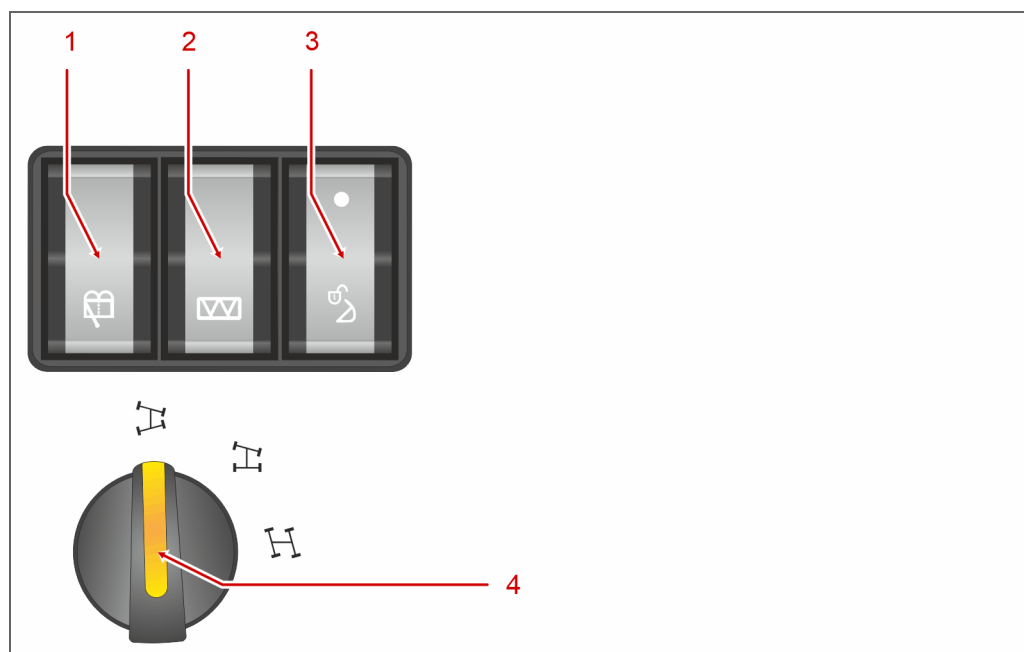


Overview - Instrument panel

Key




No.	Designation	Function
1	Control elements - instrument panel left-hand side	See section "Control elements - instrument panel" (Page 85).
2	Multi-function panel	See section "Multi-function panel" (Page 87).
3	Control elements - instrument panel right-hand side	See section "Control elements - instrument panel" (Page 85).
4	Ventilation outlets	See section "Ventilation outlets" (Page 94).

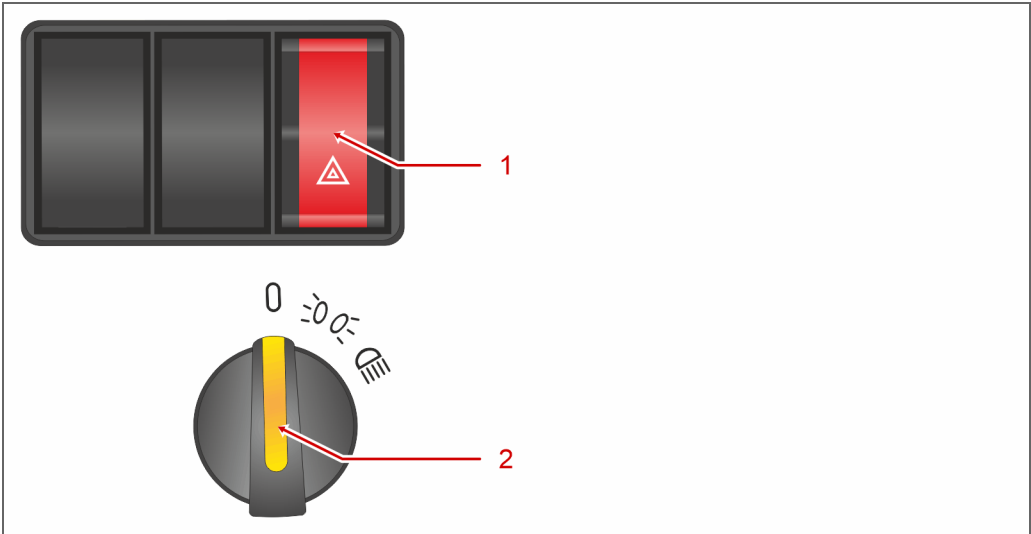
5.4.2.2 Control elements - instrument panel



Control elements - instrument panel | left-hand side

Key

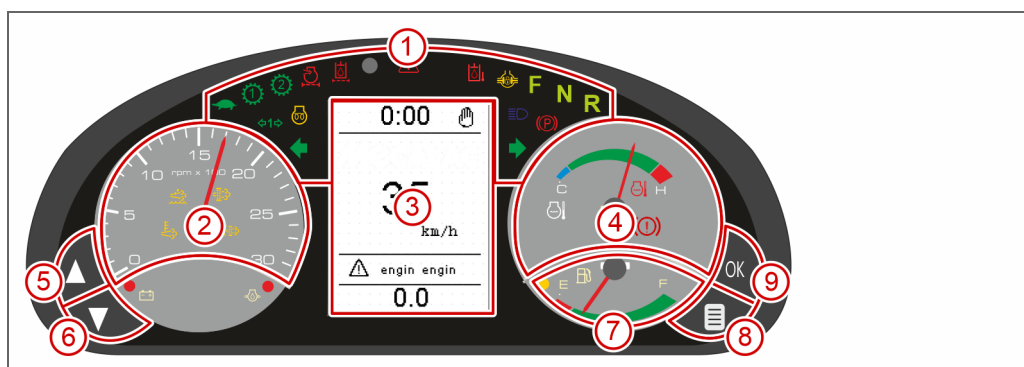
No	Designation	Type	Setting	Function
1	Rear window wiper	Rocker switch	press	The rear window wiper is switched on and performs a few wiping cycles. Windscreen washer water is sprayed onto the rear window of the wheel loader.
2	Rear window heating	Toggle switch	up	Switches the rear window heating of the wheel loader off .
			down	Switches the rear window heating of the wheel loader on .
3	Unlocking cylinder for hydraulic quick-change device	Rocker switch	Press and hold	Release of locking and unlocking system of the attachment.
4	Steering mode	Rotary switch		Switches the wheel loader to the 4-wheel steering-mode .
				Switches the wheel loader to the front-wheel steering-mode .
				Switches the wheel loader to the crab steering-mode .



Control elements - instrument panel | right-hand side





Key				
No	Designation	Type	Setting	Function
1	Hazard warning lights (hazard flashers)	Toggle switch	up	Switches the hazard warning lights of the wheel loader off .
			down	Switches the hazard warning lights of the wheel loader on .
2	Running light	Rotary switch	0	Switches the dipped beam / parking lights of the wheel loader off .
				Switches the parking lights of the wheel loader on .
				Switches the dipped beam of the wheel loader on .

5.4.2.3 Multi-function panel



Overview - Multi-function panel

Key





No.	Designation	Function
1	Indicators	See section "Warning lights" (Page 88).
2	Tachometer	Indicates the current engine revolutions
3	Display	See section "Display" (Page 90).
4	Coolant temperature	Indicates the current coolant temperature of the wheel loader.
5		Serves to navigate in the display menu.
6		Serves to navigate in the display menu.
7	Fuel tank gauge	Indicates the current level of the diesel fuel tank.
8		Changes from the main menu screen to the sub-menus of the display. If you are in a sub-menu, then you can close the sub-menu by pressing.
9		An input in the display menu is confirmed.

5.4.2.4 Warning lights

Safety instruction:








As soon as one of the warning lights listed below lights up, the wheel loader must be switched off immediately and the technicians must be informed.

Key













No.	Figure	Designation	Explanation
1		Hydraulic fluid filter	Indicates a blockage of the hydraulic fluid filter.
2		Hydraulic fluid temperature	Indicates when the hydraulic fluid temperature is too high,
3		Air filter	Indicates a blockage of the air filter.
4		Diagnosis and aural warning	Indicates a critical engine fault in conjunction with aural warning signal. This may also result in a reduction in power and an emergency shut-down of the engine. The wheel loader must be shut down immediately and inspected in a workshop.

5.4.2.5 Indicators

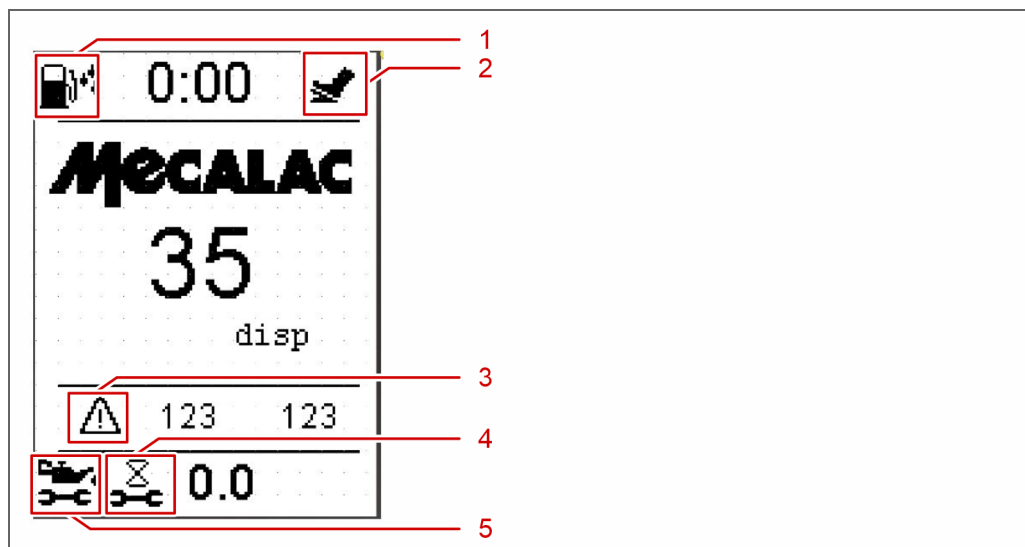
Key

No.	Figure	Designation	Explanation
1		Diagnosis	Indicates an engine fault. This may also result in a reduction in power of the engine. It is recommended that the wheel loader be inspected in a workshop immediately.
2		Parking brake	The parking brake is applied.
3		2 Speed range	The second speed range is active (High-speed)
4		1 Speed range	The first speed range is active
5		Slow-speed range	The slow-speed range is active
6		High beam	The high beam is switched on.
7		Pre-heating	The pre-heating system (glow-plug) is activated.

Key (Cont.)

No.	Figure	Designation	Explanation
8		Direction of travel - forwards	The forward direction of travel mode is activated.
9		Direction of travel - neutral	The neutral direction of travel mode is activated.
10		Direction of travel - rearwards	The rearward direction of travel mode is activated.
11		Direction of travel	Indicates that the indicator is active.
12		Differential lock	The differential lock is active
13		Indicator lamp - Trailer	Indicates that there is a trailer attached to the vehicle
14		Charging indicator	Indicates that the battery is being charged.
15		Fuel reserve	Indicates that very little diesel fuel remains in the fuel tank.
16		Coolant	Indicates that there is very little coolant in the wheel loader.
17		Active regeneration	Lights up during the cleaning process.
18		Ash load	<p>Lights up if the diesel particulate filter must be exchanged (ash load of the diesel particulate filter over 100 %)</p> <p>Flashes if the diesel particulate filter has not yet been exchanged as instructed (ash load of the diesel particulate filter over 105 %)</p> <p>The diesel particulate filter may only be exchanged by qualified technicians.</p>
19		Regeneration required	<p>Flashes if cleaning of the diesel particulate filter is required.</p> <p>The flashing behaviour of the indicator changes according to the load state of the diesel particulate filter (See page 215: Diesel particulate filter cleaning).</p>

5.4.2.6 Display



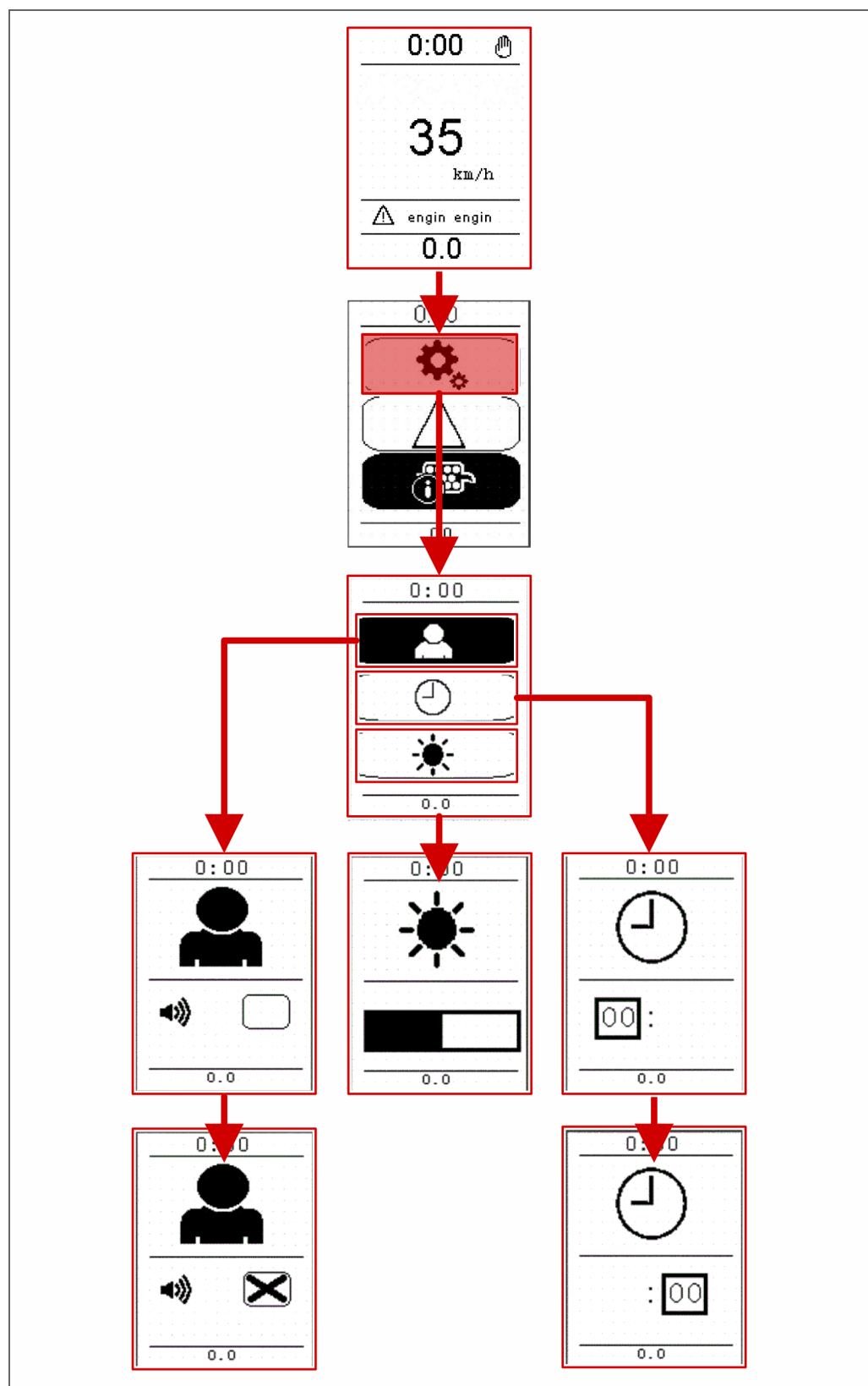
Display – Icons

Key

No.	Figure	Explanation
1		There is water in the fuel system (flashing). This warning symbol goes out once the fault has been rectified.
2		Engine speed control by M-Drive or accelerator.
3		A fault is present on the engine.
4		The wheel loader must be serviced (flashing). This warning symbol appears after 500 hours of operation.
5		An oil change must be performed on the wheel loader (flashing). This warning symbol goes out once an oil change has been performed successfully.

The following figure shows the settings that can be made in the display:

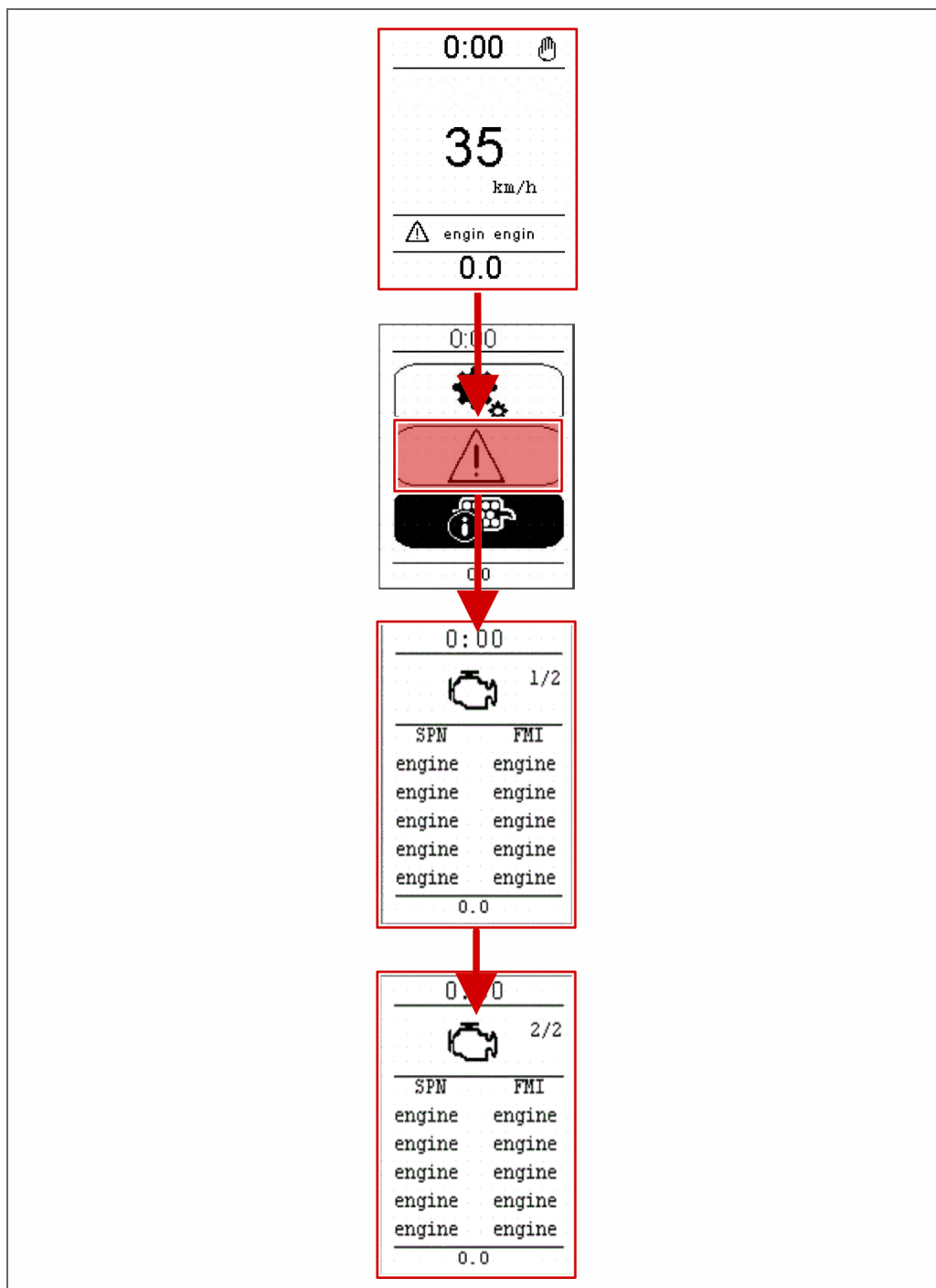
- Warning signal setting in the case of handbrake and direction of travel
- Display brightness
- Time setting



Display – Settings

The following figure shows how faults that have been detected are displayed:

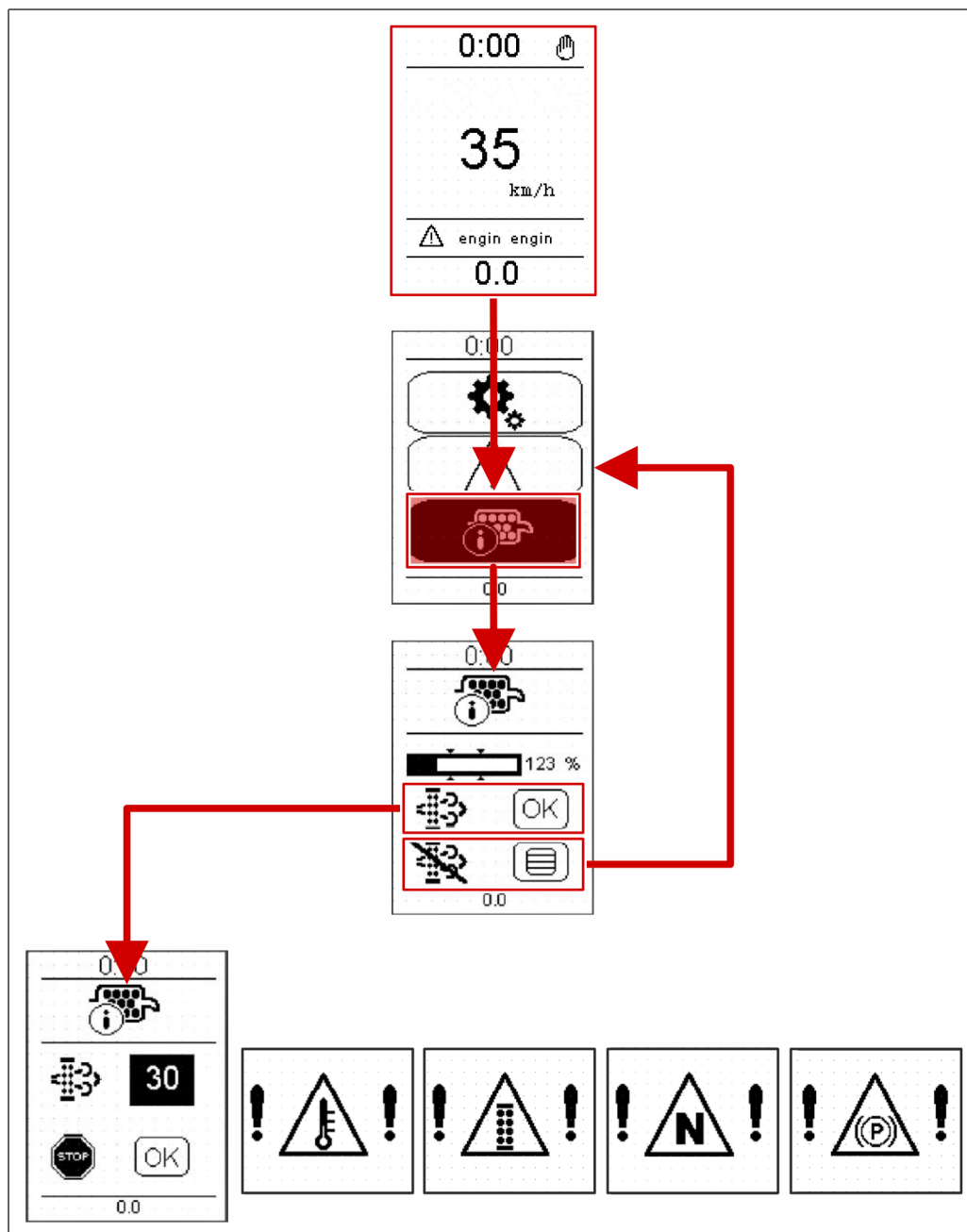
- Engine fault



Display – engine and wheel loader messages

The menu prompt to perform an active burn off process is shown in the figure below:

- Diesel particulate filter

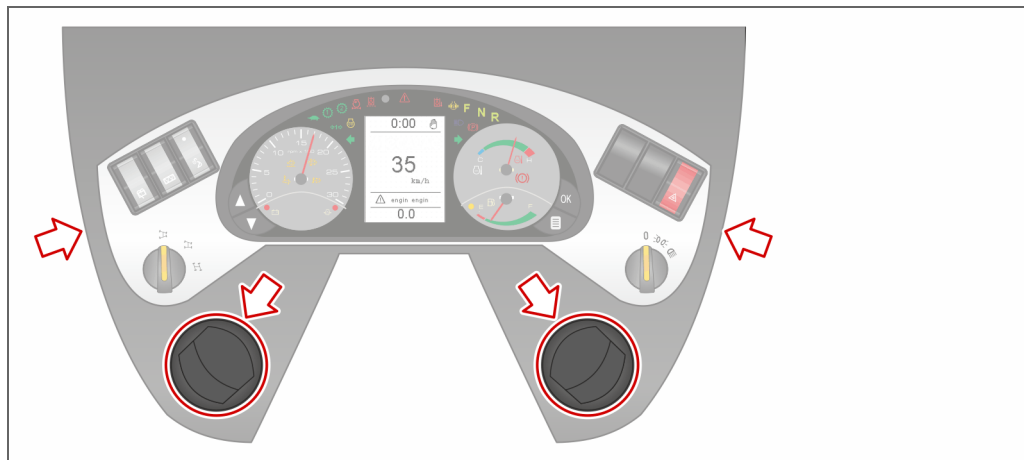


Display – Diesel particle filter

Further information regarding the cleaning of the diesel particulate filter is to be found in Chapter “Maintenance” > “Diesel particulate filter cleaning” (Page 210).

5.4.2.7 Ventilation outlets

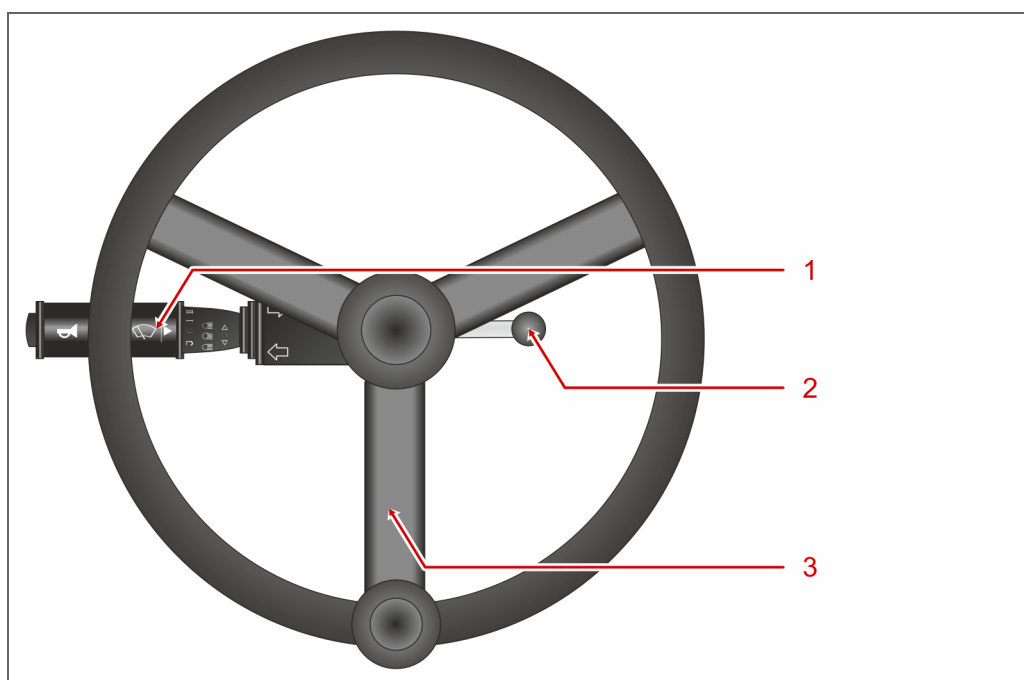
The wheel loader is equipped with four ventilation outlets in the cab. Fresh air or warmed air is lead into the interior of the cab via the ventilation outlets. The ventilation outlets must be set manually by the driver.



Position of the ventilation outlets in the cab

5.4.3 Steering wheel

5.4.3.1 Overview



Overview - Steering wheel

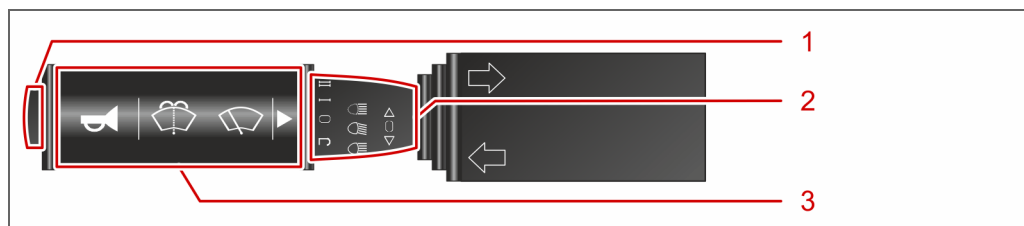
Key

No	Designation	Type	Setting	Function
1	Steering column switch	Multi-function lever	-	See section "Steering column switch" (Page 96).
2	Steering column lock	Lever	-	Serves to lock and unlock the steering wheel setting.

Key (Cont.)

No	Designation	Type	Setting	Function
3	Steering wheel	-	Turning to the left	The axles of the wheel loader are set for a leftward direction of travel
			Turning to the right	The axles of the wheel loader are set for a rightward direction of travel

5.4.3.2 Steering column switch



Overview - Steering column switch

Key

No	Designation	Type	Setting	Function
1	Signal horn	Push-button	press	Gives an audible warning signal when pressed.
2	Steering column switch - complete	Swivelling lever	down	Activates the left-hand side indicator lights
			up	Activates the right-hand side indicator lights
			back-wards	Activates the high beam
			Neutral	Activates the dipped beam
3	Windscreen wipers	Rotary switch	J	Activates the intermittent stage of the front windscreen wipers
			0	Switches the windscreen wipers off.
			I	Activates the washing stage of the front windscreen wipers at normal speed.
			II	Activates the washing stage of the front windscreen wipers at high speed.
			press	Sprays windscreen washer fluid on the front windscreen.

5.4.4 Left-hand side

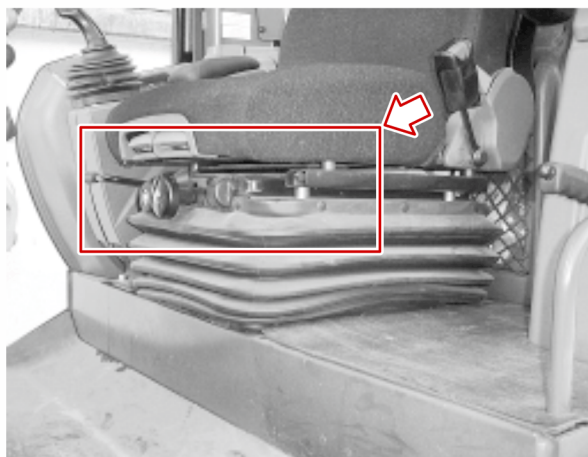


Overview – Left-hand side

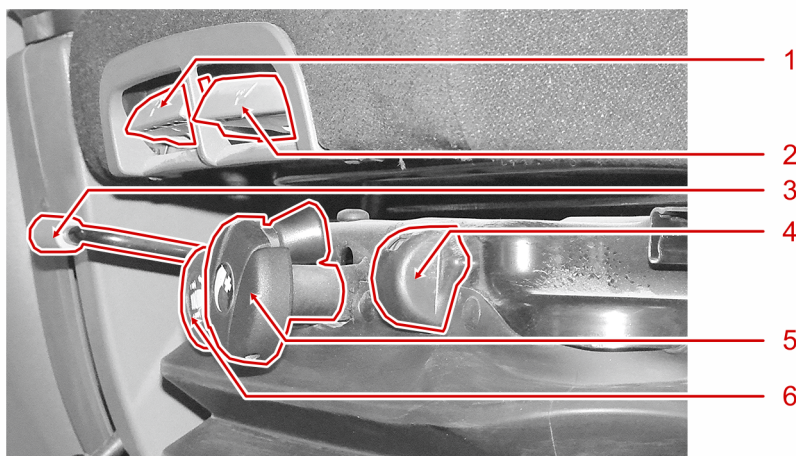
Key

No	Designation	Type	Setting	Function
1	Parking brake	Lever	top - locking	Locks the front and rear axles of the wheel loader.
			bottom - unlocking	Releases the parking brake of the front and rear axles of the wheel loader. The lever engages when it is pressed downwards
2	Glove compartment	-	-	Serves as a storage space for various objects.

5.4.5 KAB driver's seat



Overview – KAB driver's seat | Location of the adjustment lever



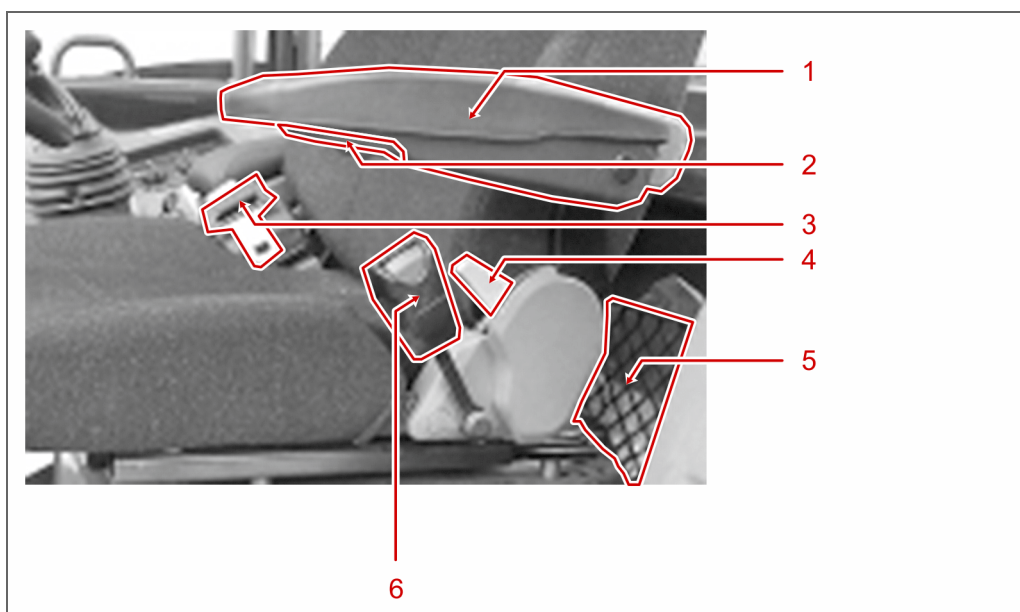
Driver's seat - front adjustment lever

Key

No.	Designation	Function
1	Seat-angle setting	The inclination of the seat pan of the driver's seat is adjusted by means of the seat-angle setting.
2	Seat height setting	The height of the seat pan of the driver's seat is adjusted by means of the seat-height setting.
3	Forward/backward setting	The driver's seat can be slid on the guide rails with the aid of the forward/backward setting.
4	Indicator - driver's mass	<p>The driver's mass indicator display whether or not the driver's mass has been set correctly.</p> <p>Displays on the control screen</p> <ul style="list-style-type: none"> • green The driver's mass is set correctly. • red The driver's mass is not set correctly, and must be readjusted with the aid of the «SUSPENSION TRAVEL ADJUSTMENT».

Key (Cont.)

No.	Designation	Function
5	Mass setting	The mass of the driver on the driver's seat is set with the aid of the mass setting.
6	Suspension travel adjustment	The suspension travel of the driver's seat is adjusted with the aid of the suspension travel adjustment



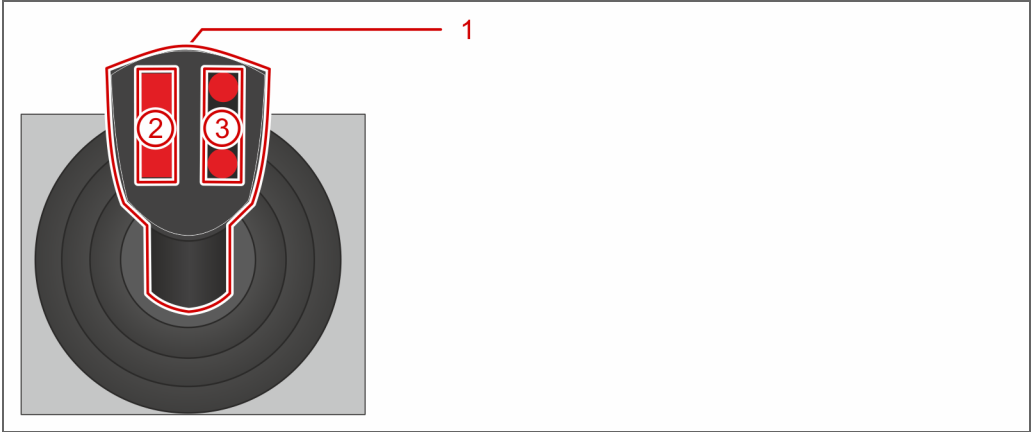
Driver's seat - left-hand adjustment lever

Key

No.	Designation	Function
1	Armrest	The driver can place his/her arm on the armrest. The armrest can be flipped up.
2	Armrest setting	Serves to adjust the armrest
3	Seat belt	Serves to secure the driver in the driver's seat
4	Backrest adjustment	The inclination of the backrest of the driver's seat is adjusted by means of the backrest adjustments.
5	Net	Important documents for the wheel loader are stored in the net (for example, the operator's manual).
6	Seat belt button	The driver's seat belt is latched, secured and once again released by the seat belt button.

5.4.6 Multi-function joystick

5.4.6.1 AF Series and AS850 / 1000



Multi-function joystick - plan view

Key				
No.	Designation	Type	Setting	Function
1	Control handle	Multi-function joystick	forwards	Moves the lift arm downwards .
			forwards (engaged)	Switches on the floating position of the lift arm.
			backwards	Lifts the lift arm upwards .
			left	Toggles the quick coupler on .
			right	Toggles the quick coupler off .
2	Direction of travel	Toggle switch	forwards	Switches the wheel loader to travel forwards .
			In the middle	Switches the wheel loader to the neutral -mode.
			backwards	Switches the wheel loader to travel backwards .
3	Accessory hydraulics / unlocking cylinder	Push-button	up	Moves the accessory hydraulic system / Unlocking cylinders are extended.
			down	Moves the accessory hydraulic system / Unlocking cylinders are retracted.

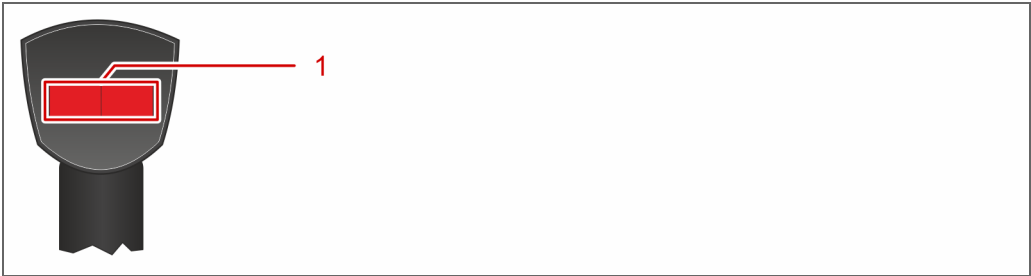


Multi-function joystick – Rear view | low-speed version

Key

No	Designation	Type	Setting	Function
1	Speed range and gear switch	Toggle switch	left	Switches the wheel loader to the Slow speed range. The maximum speed of the wheel loader is 5 km/h.
			centre	Switches the wheel loader to speed range I . The maximum speed of the wheel loader is 20 km/h.
			right	Switches the wheel loader to speed range I . The maximum speed of the wheel loader is 20 km/h.

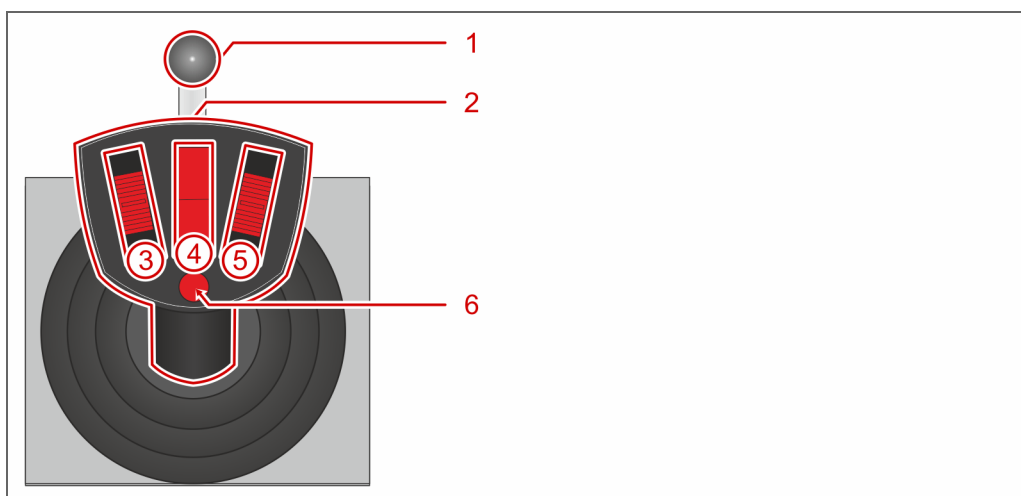
The gear ranges can be changed when stationary.



Multi-function joystick – Rear view | high-speed version

Key				
No	Designation	Type	Setting	Function
1	Speed range and gear switch	Toggle switch	left	Switches the wheel loader to the Slow speed range. The maximum speed of the wheel loader is 5 km/h.
			centre	Switches the wheel loader to speed range I . The maximum speed of the wheel loader is 13 km/h.
			right	Switches the wheel loader to speed range II . The maximum speed of the wheel loader is 40 km/h.
The gear ranges can be changed when stationary.				

5.4.6.2 AT Series



Multi-function joystick - plan view

Key

No.	Designation	Type	Setting	Function
1	Armrest lock	Lever	up	The lock is released and the armrest can be swivelled up and down.
			down	Locks the armrest lock.
2	Control handle	Multi-function joystick	forwards	Moves the lift arm downwards .
			forwards (engaged)	Switches on the floating position of the lift arm.
			backwards	Lifts the lift arm upwards .
			left	Toggles the quick coupler on .
			right	Toggles the quick coupler off .
3	Telescopic arm	Rocker key	up	Extends the telescopic arm of the wheel loader.
			In the middle	Neutral setting
			down	Retracts the telescopic arm of the wheel loader.
4	Direction of travel	Toggle switch	forwards	Switches the wheel loader to travel forwards .
			In the middle	Switches the wheel loader to the neutral -mode.
			backwards	Switches the wheel loader to travel backwards .

Key (Cont.)

No.	Designation	Type	Setting	Function
5	Accessory hydraulic circuit / Unlocking cylinders	Rocker key	up	Moves the accessory hydraulic circuit / Unlocking cylinders are extended.
			In the middle	Neutral setting
			down	Moves the accessory hydraulic circuit / Unlocking cylinders are retracted.
6	Differential lock	Push-button	pressed	The differential lock is engaged.
			not pressed	The differential lock is disengaged.



Multi-function joystick – Rear view | low-speed version

Key

No.	Designation	Type	Setting	Function
1	Speed range and gear switch	Toggle switch	left	Switches the wheel loader to the Slow (Alpha max,) speed range. The maximum speed of the wheel loader is 5 km/h.
			centre	Switches the wheel loader to Speed range I . The maximum speed of the wheel loader is 20 km/h.
			right	Switches the wheel loader to Speed range I . The maximum speed of the wheel loader is 20 km/h.

The gear ranges can be changed when stationary.



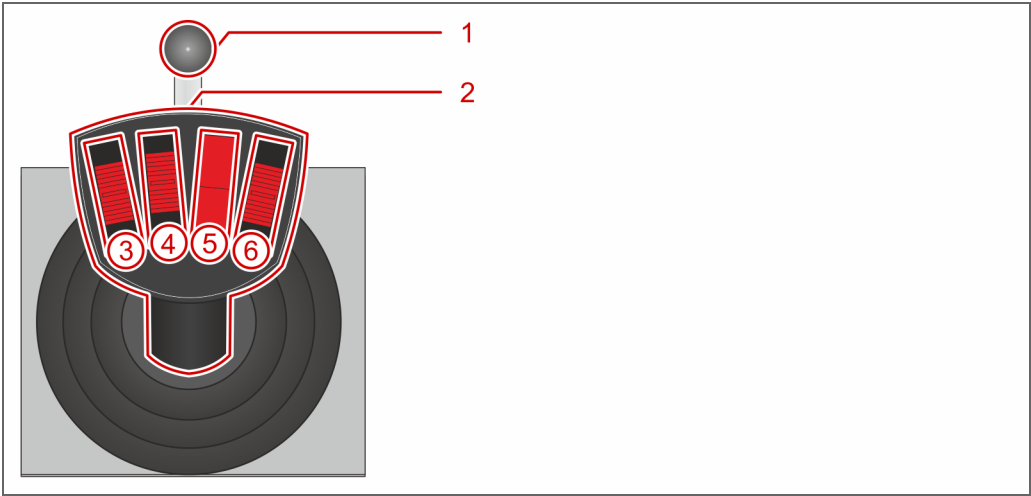
Multi-function joystick – Rear view | high-speed version

Key

No	Designation	Type	Setting	Function
1	Speed range and gear switch	Toggle switch	left	Switches the wheel loader to the Slow (Alpha max,) speed range. The maximum speed of the wheel loader is 5 km/h.
			centre	Switches the wheel loader to the previously selected gear range when in Speed Range 1 . The maximum speed of the wheel loader is 13 km/h.
			right	Switches the wheel loader to the previously selected gear range when in Speed Range 2 . The maximum speed of the wheel loader is 30 km/h or 40 km/h, depending on the version.

The gear ranges can be changed when stationary,

5.4.6.3 AS900tele



Multi-function joystick - plan view

Key				
No.	Designation	Type	Setting	Function
1	Armrest lock	Lever	up	The lock is released and the armrest can be swivelled up and down.
			down	Locks the armrest lock.
2	Control handle	Multi-function joystick	forwards	Moves the lift arm downwards .
			forwards (engaged)	Switches on the floating position of the lift arm.
			backwards	Lifts the lift arm upwards .
			left	Toggles the quick coupler on .
			right	Toggles the quick coupler off .
3	Reserve	Rocker key	up	-
			In the middle	-
			down	-
4	Telescopic arm	Rocker key	up	Extends the telescopic arm of the wheel loader.
			In the middle	Neutral setting
			down	Retracts the telescopic arm of the wheel loader.

Key (Cont.)

No.	Designation	Type	Setting	Function
5	Direction of travel	Toggle switch	forwards	Switches the wheel loader to travel forwards .
			In the middle	Switches the wheel loader to the neutral -mode.
			back-wards	Switches the wheel loader to travel backwards .
6	Accessory hydraulics / unlocking cylinder	Rocker key	up	Moves the accessory hydraulic system / Unlocking cylinders are extended.
			In the middle	Neutral setting
			down	Moves the accessory hydraulic system / Unlocking cylinders are retracted.

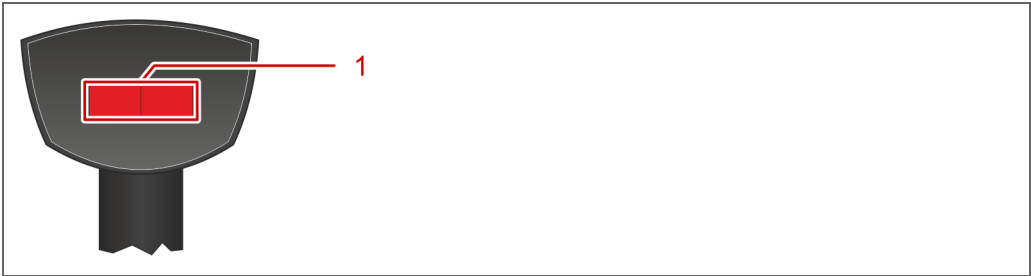


Multi-function joystick – Rear view | low-speed version

Key

No.	Designation	Type	Setting	Function
1	Speed range and gear switch	Toggle switch	left	Switches the wheel loader to the Slow speed range. The maximum speed of the wheel loader is 5 km/h.
			centre	Switches the wheel loader to speed range I . The maximum speed of the wheel loader is 20 km/h.
			right	Switches the wheel loader to speed range I . The maximum speed of the wheel loader is 20 km/h.

The gear ranges can be changed when stationary,

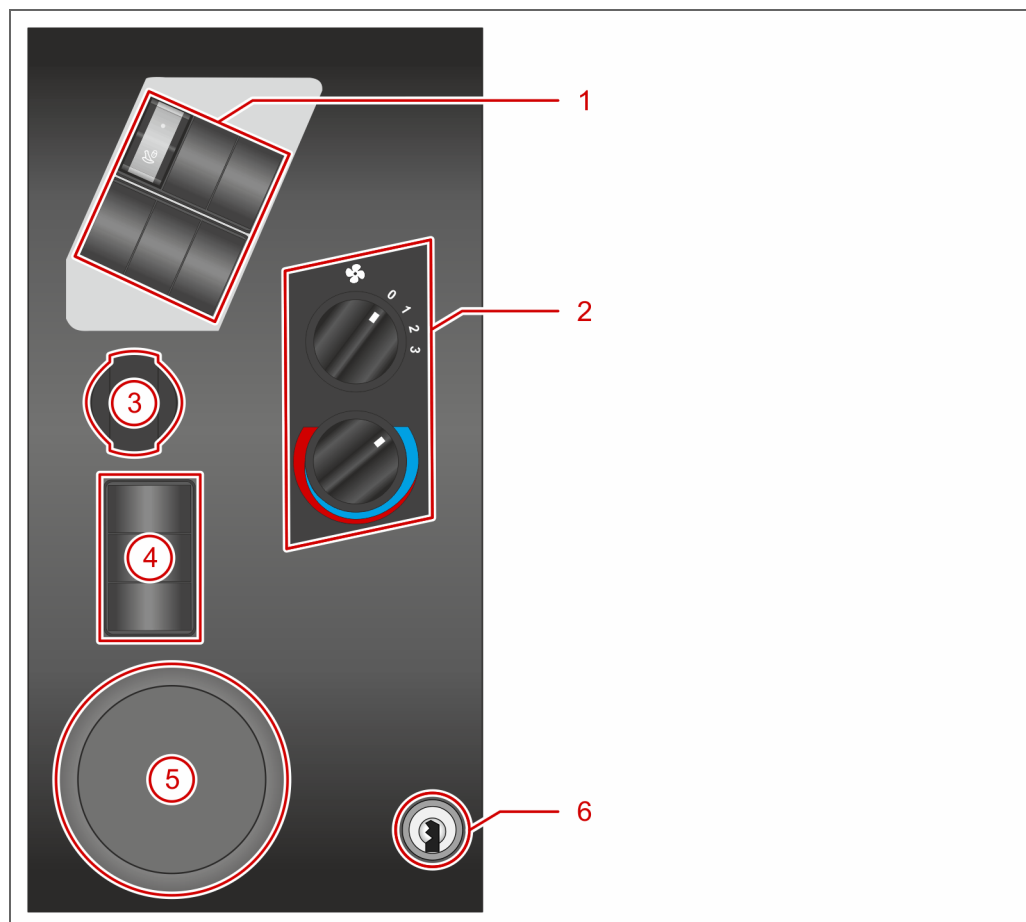


Multi-function joystick – Rear view | high-speed version

Key				
No	Designation	Type	Setting	Function
1	Speed range and gear switch	Toggle switch	left	Switches the wheel loader to the Slow speed range. The maximum speed of the wheel loader is 5 km/h.
			centre	Switches the wheel loader to speed range I . The maximum speed of the wheel loader is 13 km/h.
			right	Switches the wheel loader to speed range II . The maximum speed of the wheel loader is 40 km/h.
The gear ranges can be changed when stationary,				

5.4.7 Right-hand side

5.4.7.1 Overview

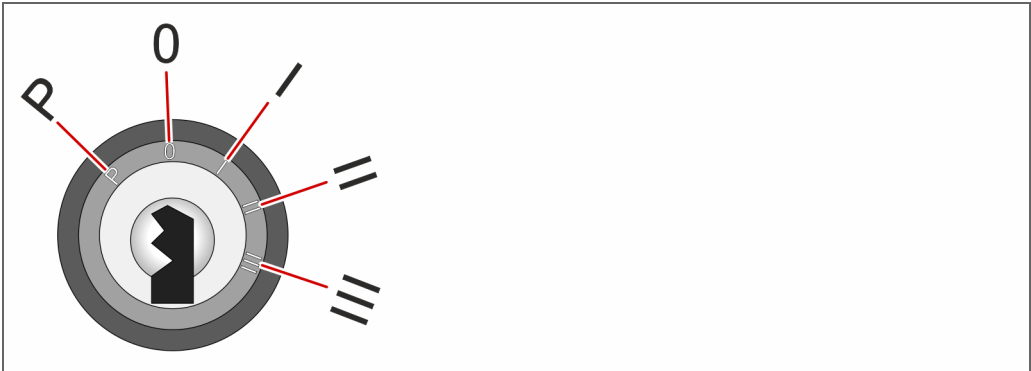


Control elements - right-hand side - overview

Key

No.	Designation	Function
1	Control elements - right-hand side	See section "Control elements - right-hand side" (Page 112).
2	Control elements - Ventilation	See section "Description" > "Control elements - Ventilation" (Page 111).
3	12V socket	Serves to provide power to various electrical devices.
4	Spare switch blank	-
5	Cup-holder	Bottles or beverage containers can be placed in the cup-holder.
6	Ignition lock	See section "Ignition lock" (Page 110).

5.4.7.2 Ignition lock

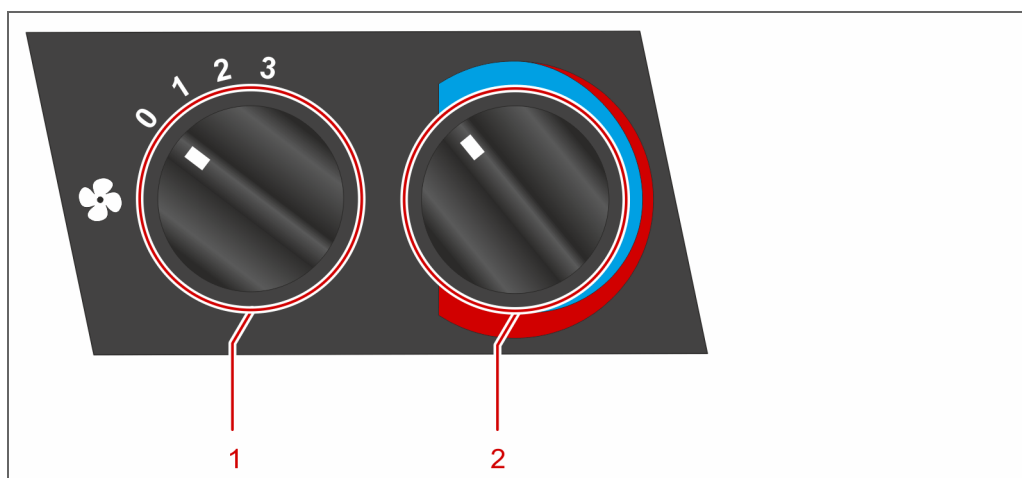


Ignition lock

Key

Designation	Type	Setting	Function
Ignition lock	Key switches	P	This position is unoccupied
		0	The diesel engine is switched off.
		I	The ignition is switched on
		II	The diesel engine glows or is in the operating setting
		III	Serves to start the diesel engine.

5.4.7.3 Control elements - Ventilation

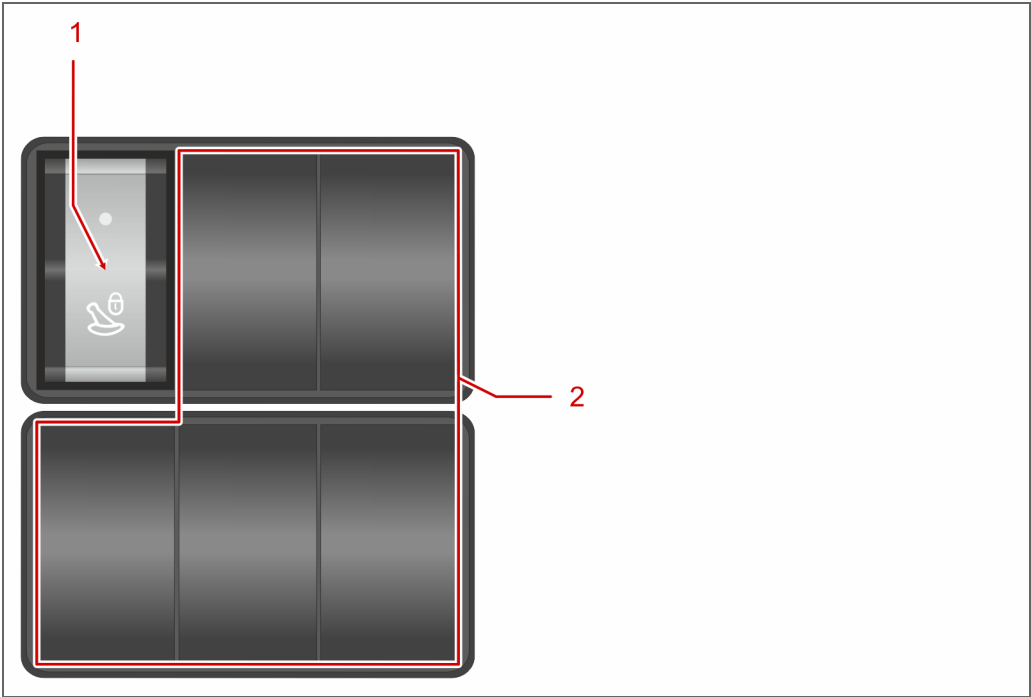


Control elements - Ventilation

Key

No	Designation	Type	Setting	Function
1	Fan control	Rotary control	0	Switches the ventilation fan off .
			1	Switches the ventilation fan to the first stage.
			2	Switches the ventilation fan to the second stage.
			3	Switches the ventilation fan to the third stage.
2	Temperature control	Rotary control	blue	Sets the temperature to co ld.
			red	Sets the temperature to wa rm.

5.4.7.4 Control elements - right-hand side

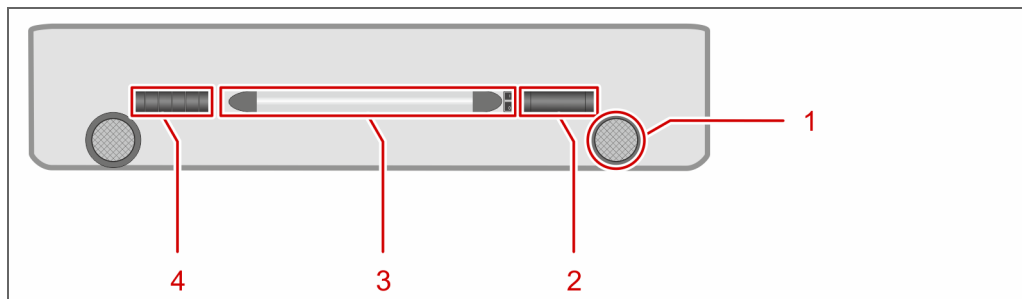


Control elements - right-hand side

Key				
No	Designation	Type	Setting	Function
1	Hydraulic operating system	Toggle switch	up	Activates the hydraulic operating system of the wheel loader,
			down	Locks the hydraulic operating system of the wheel loader. In this position, the complete lift arm can no longer be driven or moved by the multi-function joystick.
2	Reserve	Blanked-off switch positions	up	-
			down	-

5.4.8 Vehicle roof liner

5.4.8.1 Overview

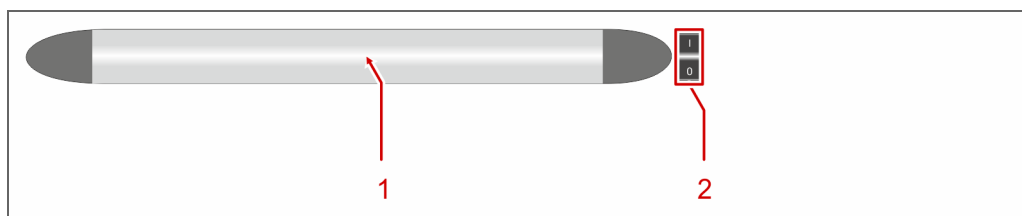


Overview - Parts of the roof liner

Key

No.	Designation	Function
1	Loudspeaker installation location	Loudspeakers can be installed in this location. Serves to reproduce the sound of the optional radio.
2	Slide-in compartment - radio	A radio can be installed in this position.
3	Interior lighting	See section "Interior lighting" (Page 113).
4	Spare position - control elements	Additional control elements can be retrofitted in this position.

5.4.8.2 Interior lighting



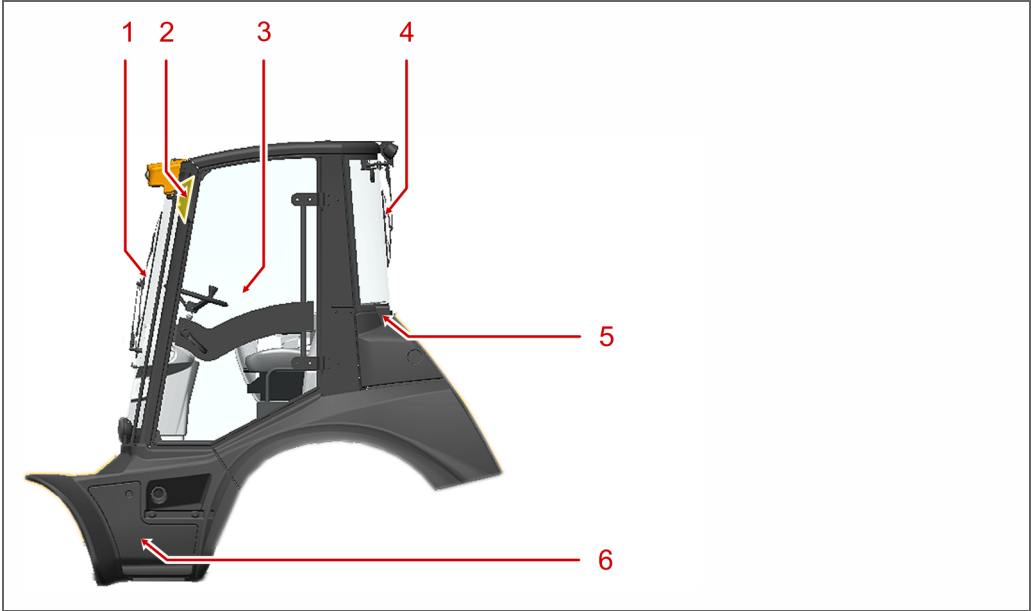
Interior lighting in the vehicle roof liner

Key

No.	Designation	Type	Setting	Function
1	Lamp	-	-	Serves to illuminate the cab.
2	Toggle switch	Toggle switch	I	Switches the cab illumination on .
			0	Switches the cab illumination off .

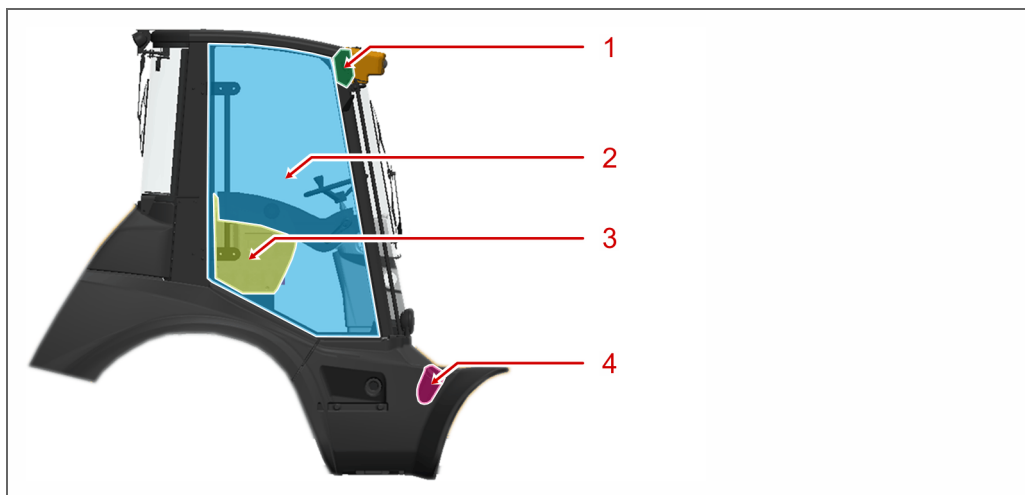
5.5 Cab - exterior

5.5.1 Overview



Cab - exterior | Side view – left-hand side

Key		
No.	Designation	Function
1	Windscreen wiper - Front windscreen	Serves to clean the windscreen of moisture and dirt.
2	Mirror - left-hand side	Enables the observation of rearward traffic.
3	Driver's door	See section "Doors" (Page 118).
4	Windscreen wiper - rear window	Serves to clean the rear window of moisture and dirt.
5	Door stay	Serves to secure the open door.
6	Storage compartment	The supplied wheel-brace is stowed in the storage compartment. In addition, accessories such as the first aid kit, fire extinguisher, rotating beacon can be stowed in the storage compartment. These accessories are not included in the scope of delivery of the wheel loader.



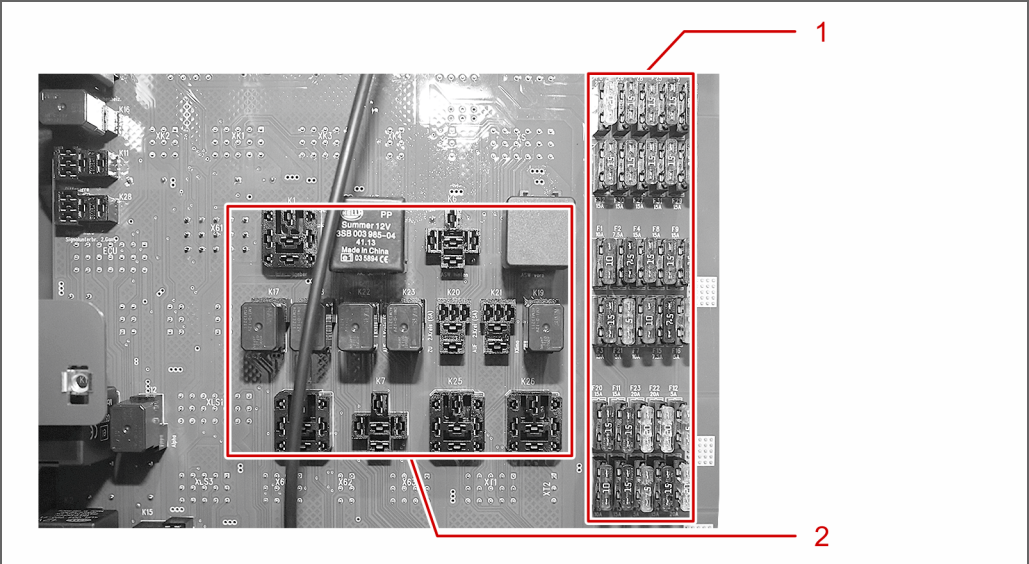
Cab - exterior | Side view – right-hand side

Key

No.	Designation	Function
1	Mirror - right-hand side	Enables the observation of rearward traffic.
2	Right-hand side door	Serves as the emergency exit of the wheel loader.
3	Central electrical system	See Chapter "Central electrical system" (Page 116).
4	Fuel filler nozzle - diesel fuel	Diesel fuel is delivered to the diesel tank via the diesel fuel filler nozzle.

5.5.2 Central electrical system

5.5.2.1 Overview



Overview - Central electrical system

Key		
No.	Designation	Function
1	Fuses	See section: Fuses "Fuses" (Page 116).
2	Relays	See section "Relays" (Page 117).

5.5.2.2 Fuses

Key		
No.	Designation	Fuse
F1	Hydrostatic drive train	10A
F2	Steering	7.5A
F3	Hydraulic system	15A
F4	Windscreen wiper/washer	15A
F5	Window heating	30A
F6	Heating / Air conditioner	20A
F7	Tele sensor	10A
F8	Working lights, front	15A
F9	Working lights, front	15A
F10	Immobiliser	5A
F11	Cabin socket	15A
F12	Radio / interior lighting	5A
F13	Rotating beacon	5A
F14	Hazard warning lights	15A

Key (Cont.)

No.	Designation	Fuse
F15	Indicators	7.5A
F16	Brake light	5A
F17	Parking light, left	5A
F18	Parking light, right	5A
F19	High beam	10A
F20	Low beam	15A
F21	Steering column	5A
F22	Terminal 30 Exhaust gas recirculation / Spare	5 A / 20 A
F23	Reserve	20A
F24	Headlights	20A
F25	Steady Plus socket	15A
F26	Steady Plus socket	15A
F27	Fuel pump	20A
F28	Rearview camera option	15A
F29	Terminal 15 ECU	15A
F30	Reserve	15A
F31	Seat heating	15A
F32	Seat compressor	15A

5.5.2.3 Relays
Legend (SE= Special Equipment)

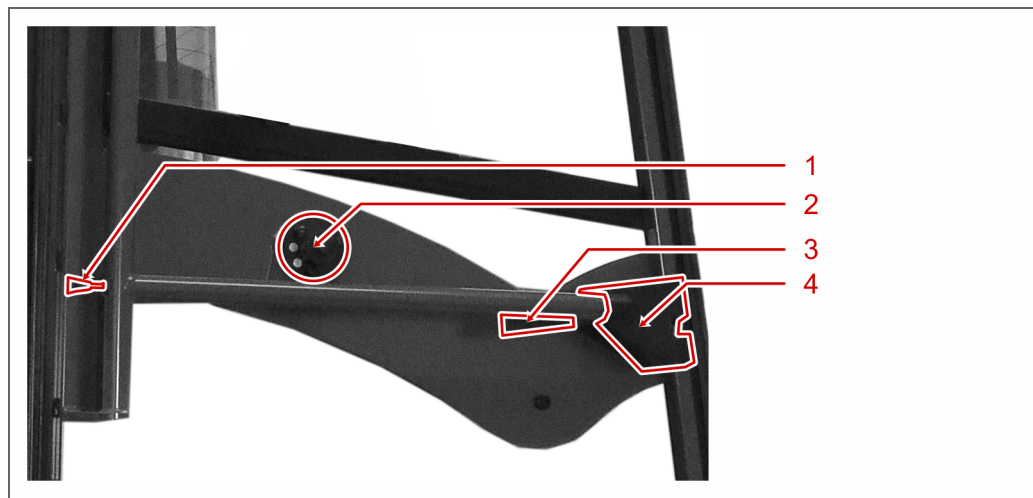
No.	Designation
K1	Interval encoder
K2	Flasher unit
K3	Audible buzzer
K5	Working lights, front
K6	Working lights, rear
K7	Interruption - telescoping function
K11	Differential lock
K12	Alpha
K13	Hydrostatic drive train
K15	Engine immobiliser
K16	Fan
K17	Anti-tilt device 1

Legend (SE= Special Equipment) (Cont.)

No.	Designation
K18	Anti-tilt device 2
K19	Option
K20	2 Circuit closed (no application in the AT series)
K21	2 Circuit open (no application in the AT series)
K22	1 Circuit closed (no application in the AT series)
K23	1 Circuit open (no application in the AT series)
K24	Transmission control PLC (40kmh) – High speed version only
K25	Telescoping – AS900tele and AT only
K26	Swivelling – As900tele only
K28	Basket signal interruption (in the case of the temporary work platform only)
K29	Window heating

5.5.3 Doors

The doors are installed in the cab. They provide protection against external weather influences. Various elements are to be found on both doors for locking and opening.



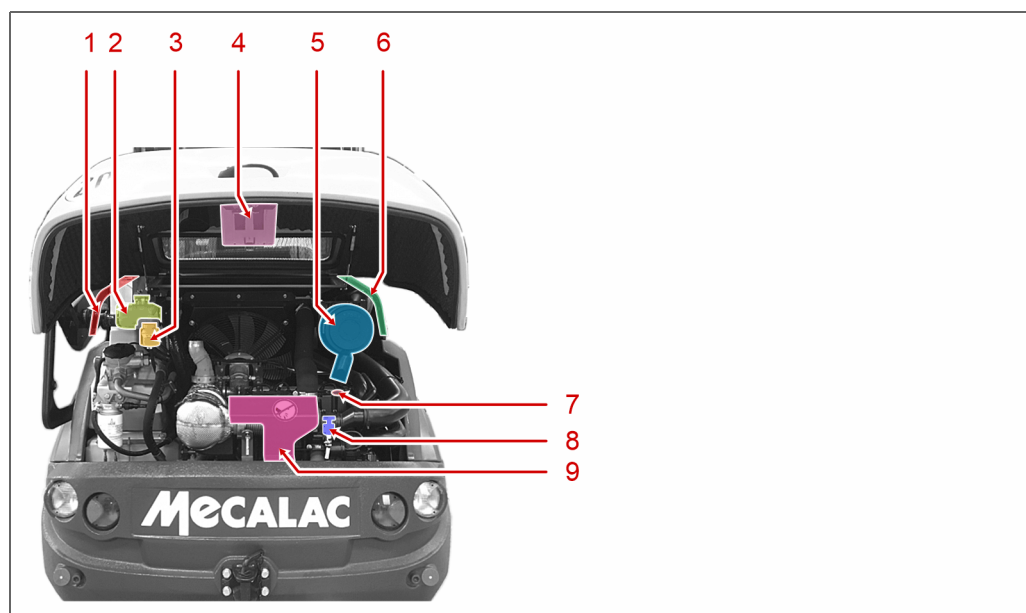
Elements on the doors - interior

Key

No.	Designation	Function
1	Unlocking - interior	The door locks can be opened from the inside the cab by means of the interior unlocking system
2	Unlocking - exterior	The door locks can be opened from outside of the cab by means of the interior unlocking system
3	Door opener	The relevant door lock can be opened by means of the door opener.
4	Locking system	The door can be locked by means of the door locking system.

5.6 Engine compartment

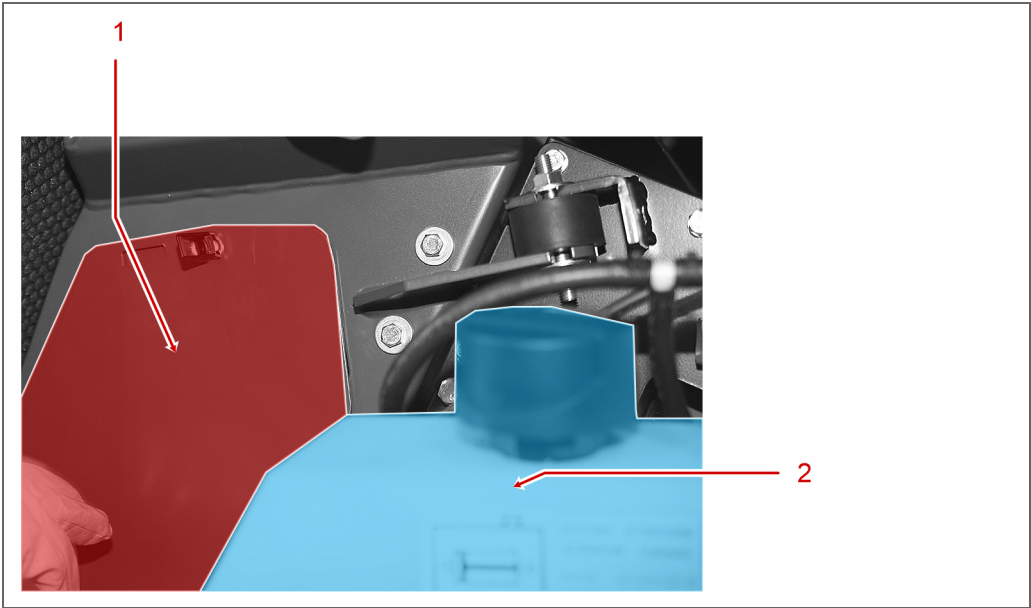
5.6.1 Overview



Overview - Engine compartment - front view

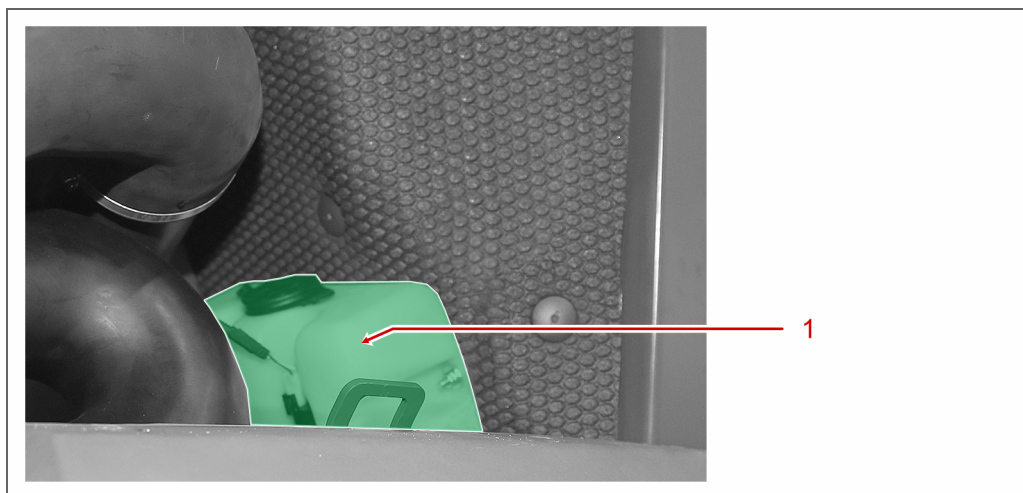
Key

No.	Designation	Function
1	Engine compartment cover – left	Serves to cover the left-hand side of the engine compartment. Further components of the engine compartment are located behind the engine compartment cover.
2	Coolant expansion tank	Reservoir for the coolant.
3	Brake system hydraulic fluid expansion tank	The brake system hydraulic fluid expansion tank contains the brake fluid for the brake system of the wheel loader.
4	Wheel chock	Serves to secure the wheel loader when it is parked on a slope.
5	Air filter	The air filter removes dirt particles from the air that is sucked in.
6	Engine compartment cover – right-hand side	Serves to cover the right-hand side of the engine compartment. Further components of the engine compartment are located behind the engine compartment cover.
7	Engine oil filling nozzle	The engine oil tank is filled with engine oil via the filler nozzle.
8	Oil dipstick	Serves to check the engine oil level.
9	Protective cover - turbo-charger	Serves to prevent contact with the turbo-charger located behind it.



Overview - Engine compartment - left-hand view

Key		
No.	Designation	Function
1	Radiator maintenance cover	Serves as a maintenance hatch through which cleaning tasks can be carried out on the radiator of the engine.
2	Hydraulic fluid reservoir	The hydraulic fluid reservoir contains the hydraulic fluid for the entire hydraulic system of the wheel loader. Further information regarding the hydraulic fluid reservoir can be found in Section: "Hydraulic fluid reservoir" (Page 122).

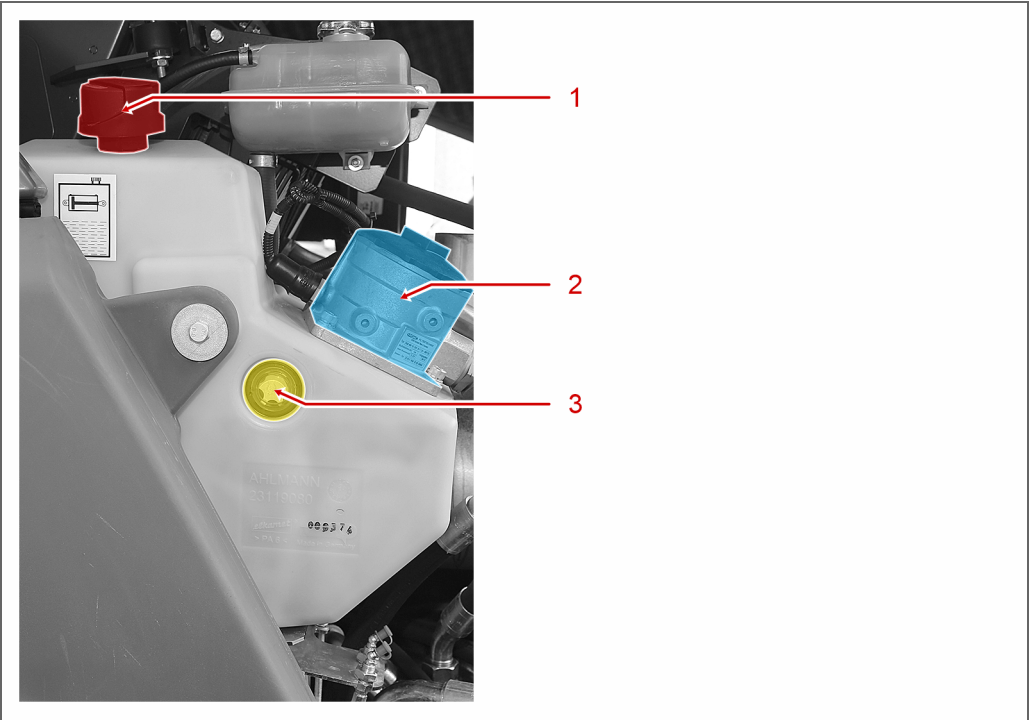


Overview - Engine compartment - right-hand view

Key

No.	Designation	Function
1	Windscreen washer water reservoir	The windscreen washer water reservoir contains the windscreen washer water or the anti-freeze agent for the front and rear windscreens of the wheel loader.

5.6.2 Hydraulic fluid reservoir

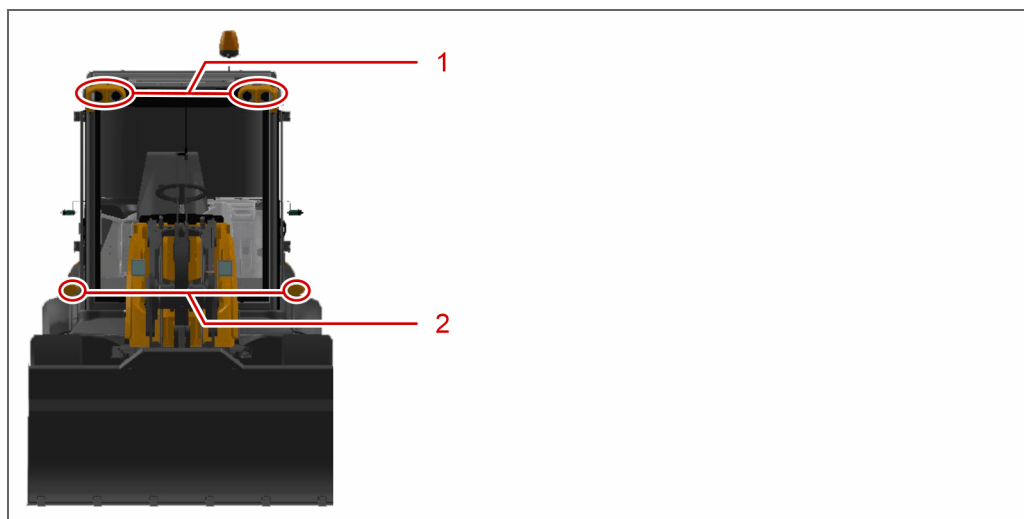


Overview - Hydraulic fluid reservoir

Key		
No.	Designation	Function
1	Hydraulic fluid filler nozzle	The hydraulic fluid is delivered to the hydraulic fluid reservoir via the filler nozzle.
2	Hydraulic fluid filter	The hydraulic oil filter removes dirt particles from the hydraulic fluid.
3	Sight glass	The level of the hydraulic fluid in the reservoir can be checked by means of the sight glass. When the cylinders are retracted, the sight glass must be at least half-full.

5.7 Lighting

5.7.1 Lighting - forward view

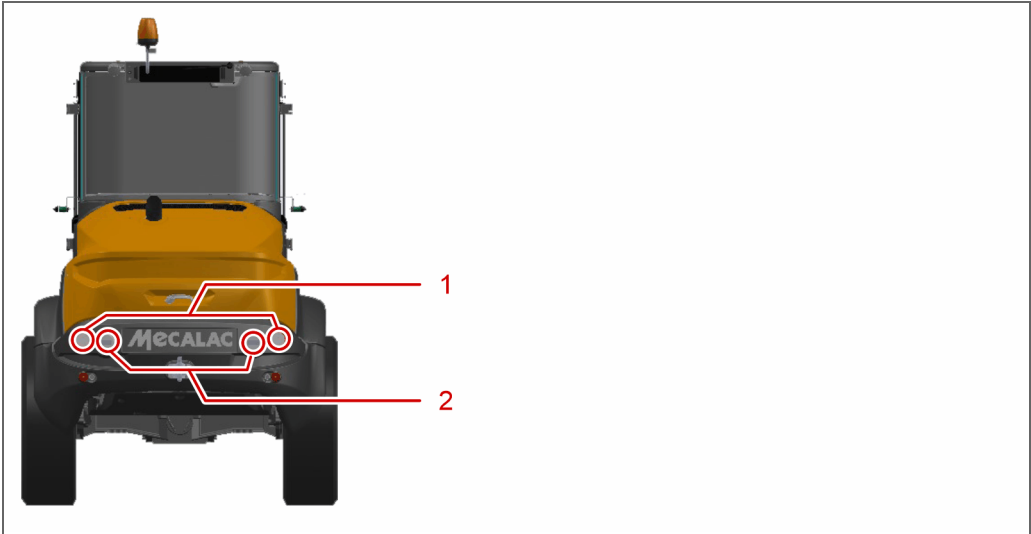


Lighting - forward view

Key

No.	Designation	Function
1	Headlights - cab	Serve as the headlights of the wheel loader.
2	Indicators - front	Serve to indicate an imminent change in the direction of travel in the public traffic environment.

5.7.2 Lighting - rear view



Lighting - rear view

Key		
No.	Designation	Function
1	Indicators - rear	Serve to indicate an imminent change in the direction of travel in the public traffic environment.
2	Reversing light with brake light.	Serves to indicate a braking process by the wheel loader.

6 Transportation

In this chapter you will find information regarding the transportation, towing and rigging of the wheel loader:

- Loading the wheel loader (Page 125)
- Towing the wheel loader (Page 134)
- Rigging the wheel loader (Page 138)

6.1 Loading the wheel loader

In the following sections you will find information regarding the loading of the wheel loader.

- Lifting points (Page 126)
- Raising and lowering (Page 133)

6.1.1 Principles applicable

Safety-conscious and pre-emptive conduct on the part of personnel will prevent dangerous situations arising when loading.

The following principles apply when loading:

- Loading may only be carried out by persons qualified to do so.
- Access by unauthorised persons must be barred. If required, signs should be erected, drawing attention to the loading operations.
- Moving parts must be properly secured
- Only authorised, suitable and fault-free load-lifting equipment and lifting tackle must be used for loading.
- When loading, take note of the mass of the wheel loader as well as the location of the centre of gravity.
- A vehicle or means of transportation that is suitable for the dimensions and weight of the wheel loader must be used for loading.

Prepare the wheel loader for loading as follows:

- If the wheel loader was operating before being loaded, switch it off securely as described in "Operation" > "Daily shut-down" (Page 164) .
- If necessary, clean the wheel loader.
- Secure the machine against slipping, note the centre of gravity.

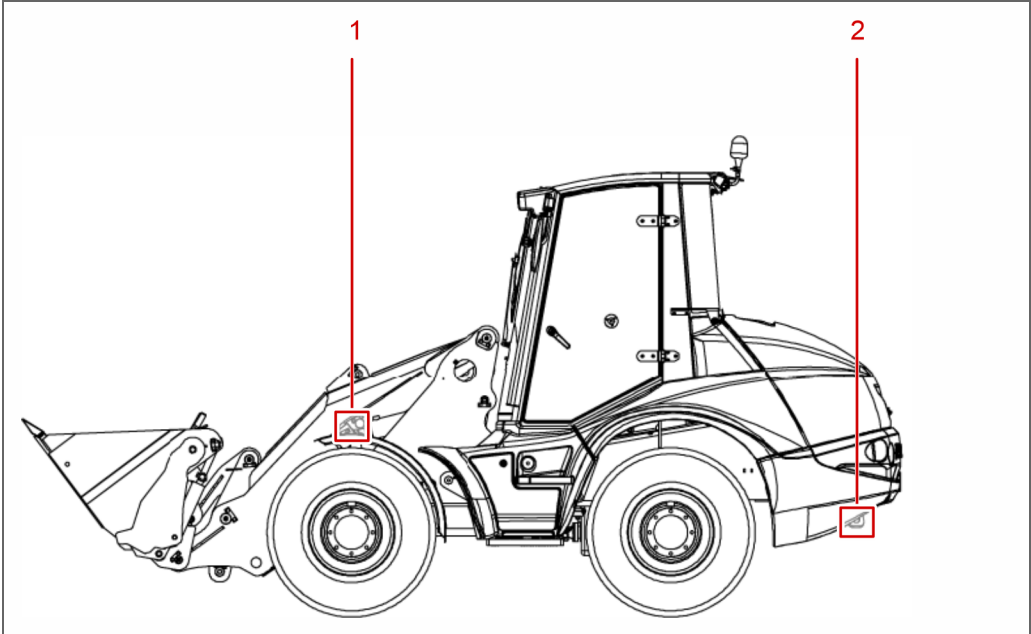
When loading, follow the following instructions:

- Observe accident prevention measures as well as local regulations.
- No persons must remain beneath suspended loads.
- Only use lifting devices in the prescribed manner.
- Lifting devices must be suitable and approved for the mass of the wheel loader.
- Use only lifting devices that are in faultless condition..

6.1.2 Lifting points

The following illustrations show, by way of example the lifting points used for lifting the wheel loader by crane. Only lift the wheel loader by means of a suitable lifting harness attached to the lifting points provided.

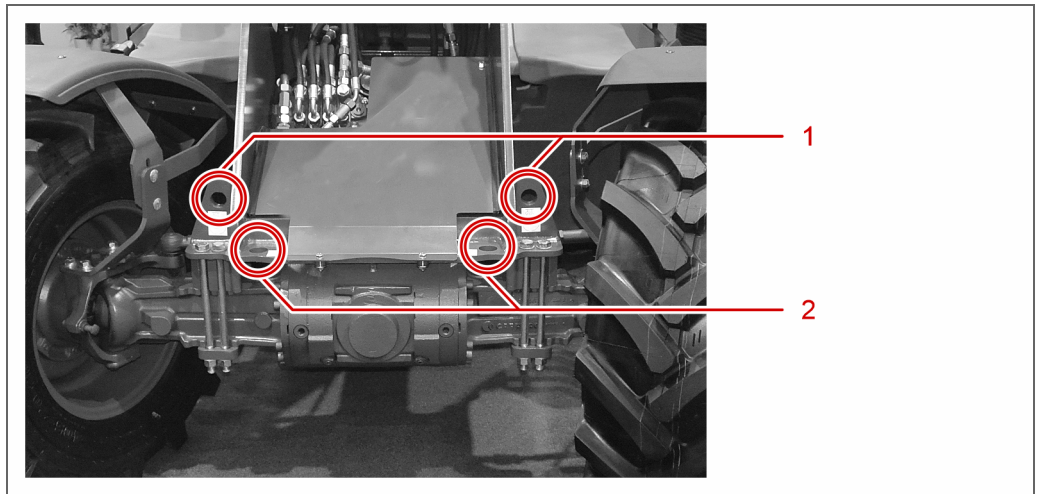
6.1.2.1 AF Series



Overview - Lifting points

Key

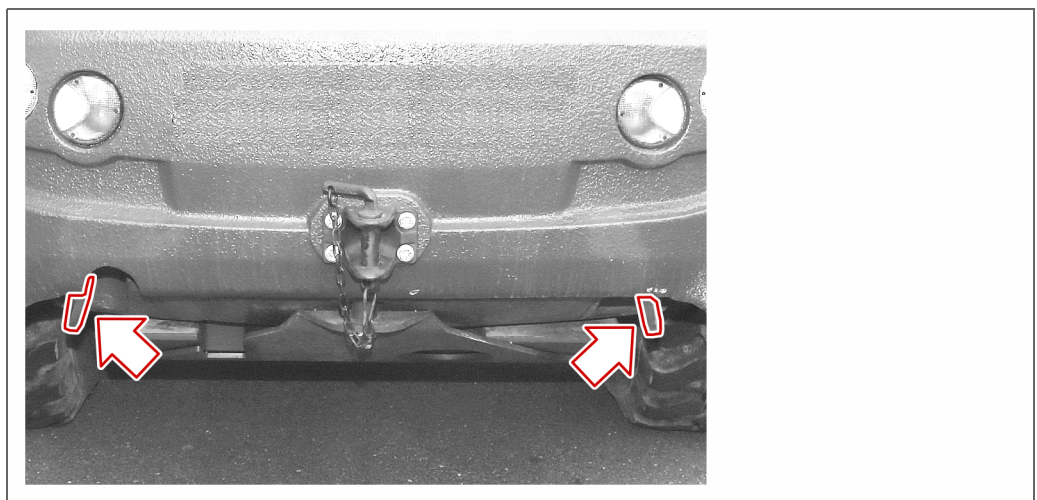
No.	Designation
1	Lifting points - front
2	Lifting points - rear



Lifting points - front

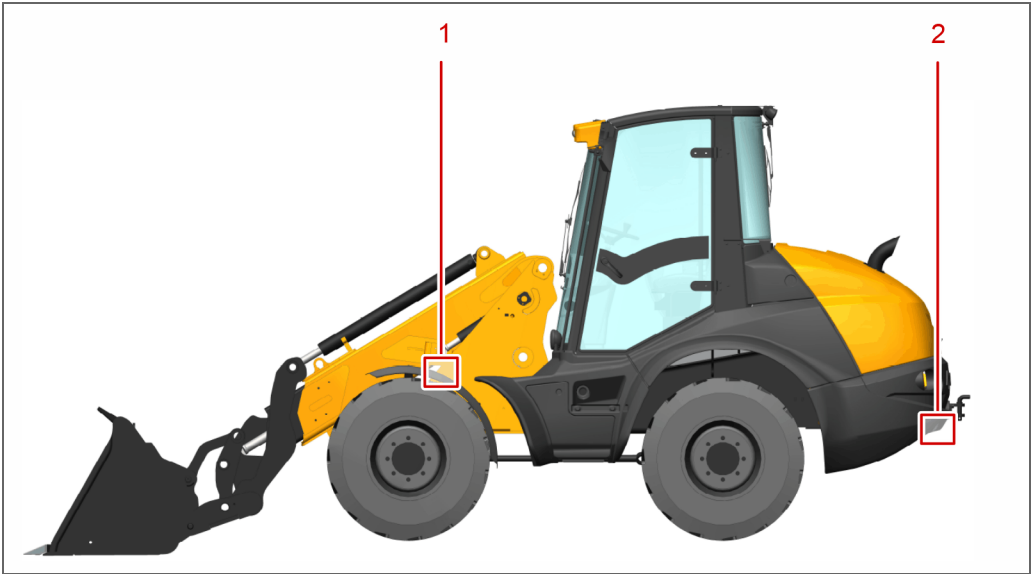
Key

No.	Designation
1	Lifting points for hoisting the wheel loader with a crane
2	Lifting points for rigging the wheel loader for transportation on a trailer.



Lifting points - rear

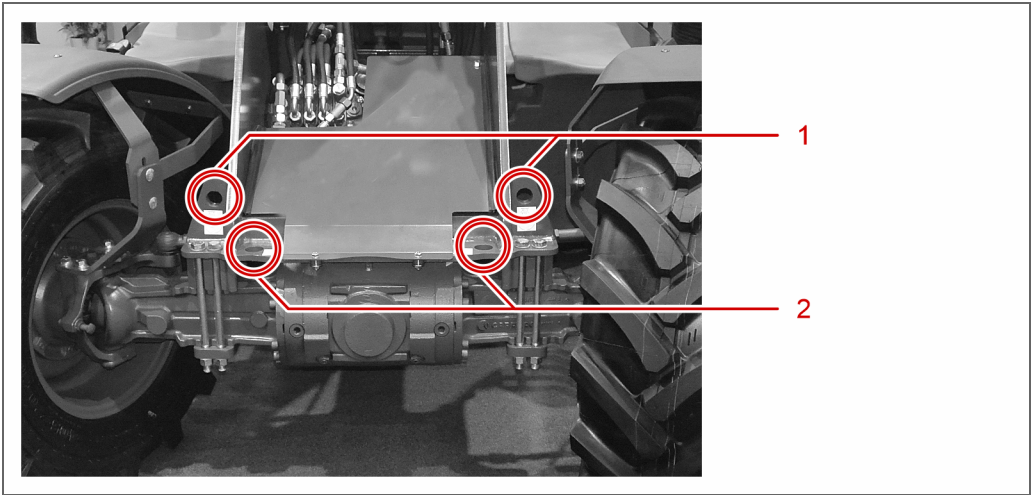
6.1.2.2 AT Series



Overview - Lifting points

Key

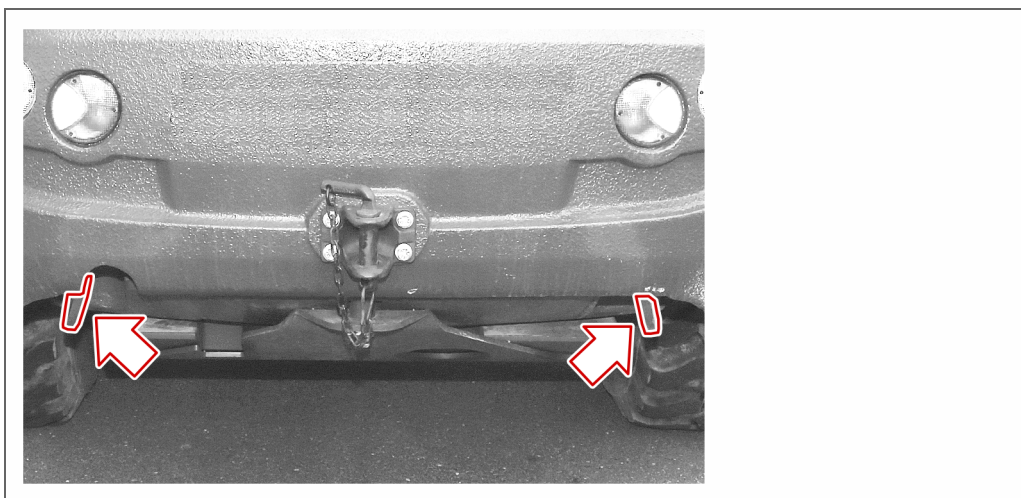
No.	Designation
1	Lifting points - front
2	Lifting points - rear



Lifting points - front

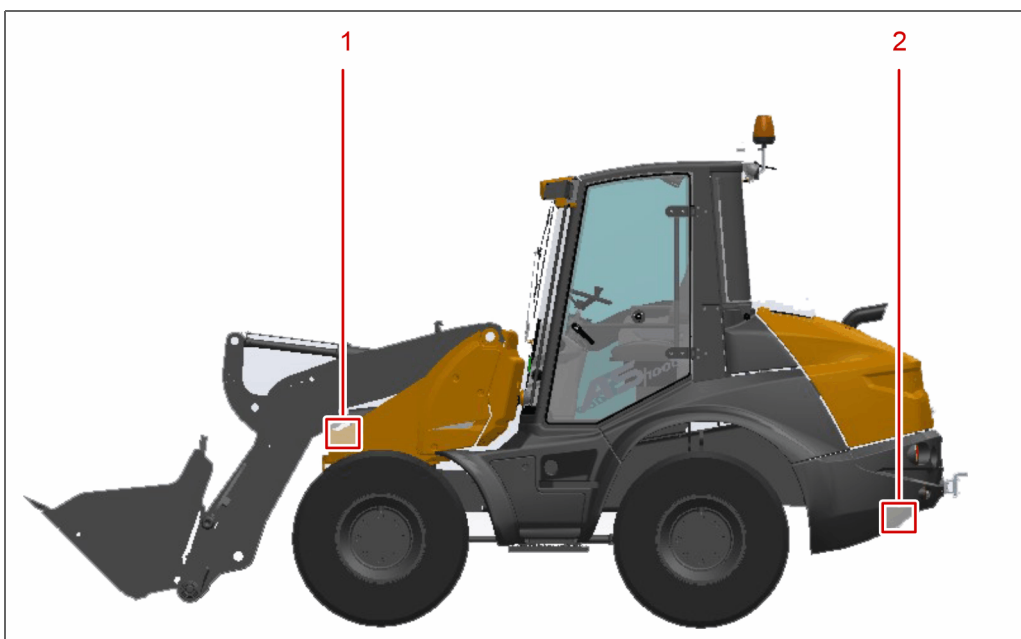
Key

No.	Designation
1	Lifting points for hoisting the wheel loader with a crane
2	Lifting points for rigging the wheel loader for transportation on a trailer.



Lifting points - rear

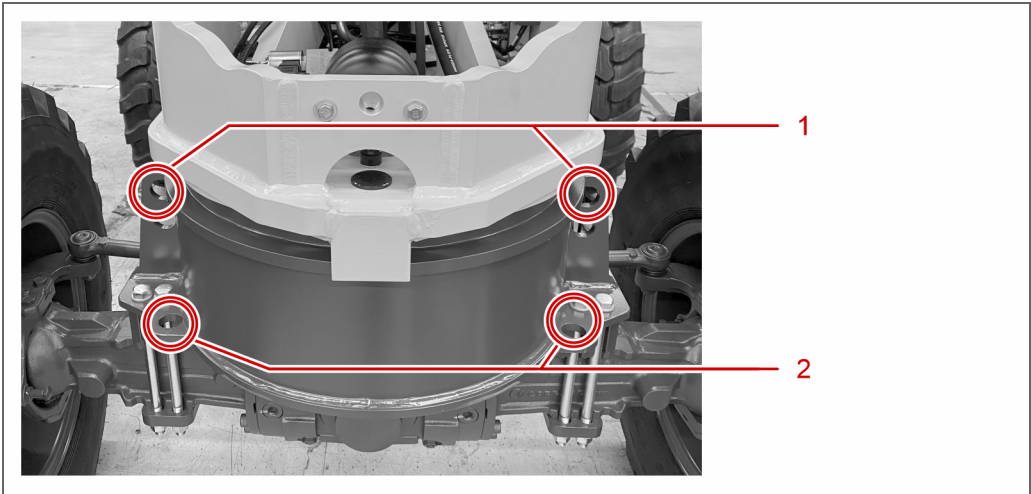
6.1.2.3 AS850 / 1000



Overview - Lifting points

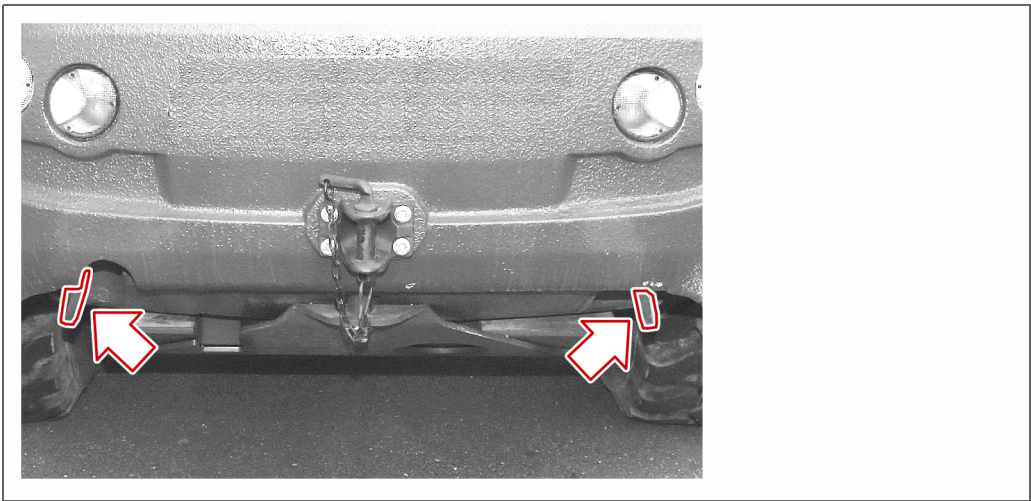
Key

No.	Designation
1	Lifting points - front
2	Lifting points - rear



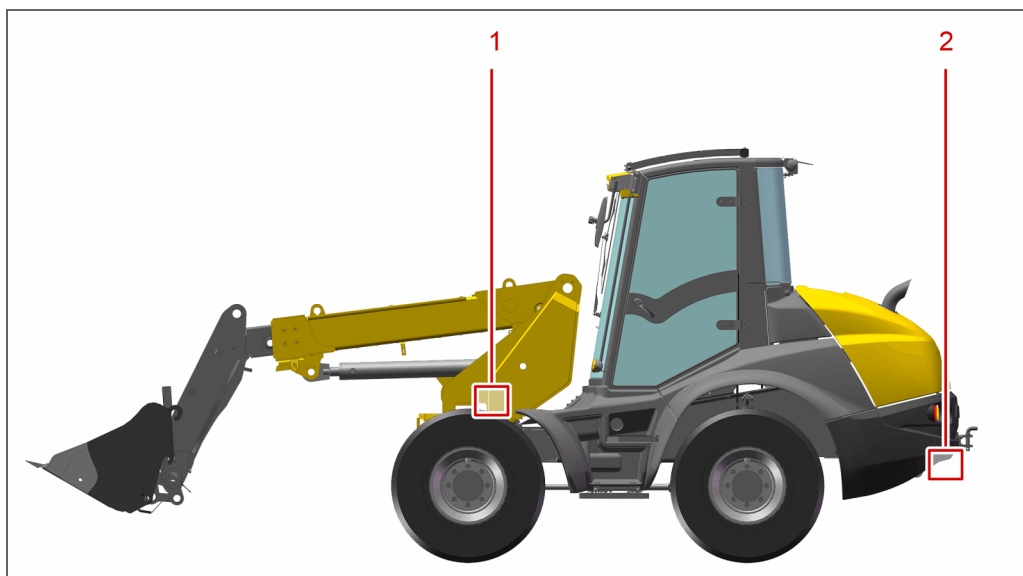
Lifting points - front

Key	
No.	Designation
1	Lifting points for hoisting the wheel loader with a crane
2	Lifting points for rigging the wheel loader for transportation on a trailer.



Lifting points - rear

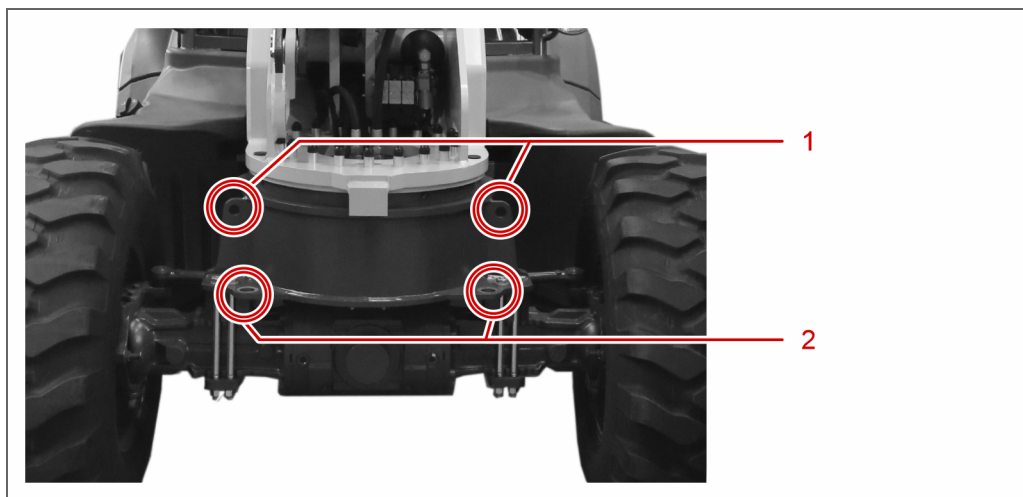
6.1.2.4 AS900tele



Overview - Lifting points

Key

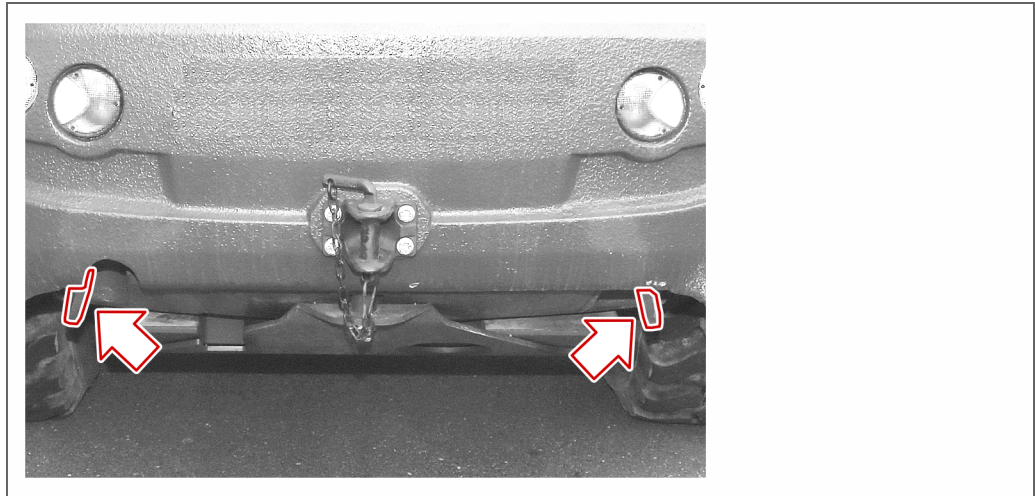
No.	Designation
1	Lifting points - front
2	Lifting points - rear



Lifting points - front

Key

No.	Designation
1	Lifting points for hoisting the wheel loader with a crane
2	Lifting points for rigging the wheel loader for transportation on a trailer.



Lifting points - rear

6.1.3 Raising and lowering



Requirement

- The wheel loader has been decommissioned, see Chapter: "Operation" > "Daily shut-down" (Page 164).
- The turntable has been secured by means of the pivot lock.



Tools required:

- A suitable hoisting device with sufficient lifting capacity for the wheel loader.
- Suitable load-bearing devices (for example: Crane hooks, lifting eyes for the lifting points on the wheel loader, suspension chains, webbing slings) of adequate lifting capacity for the wheel loader.



WARNING

Danger of injury posed by the wheel loader falling!

Severe injuries to the body and limbs can be sustained due to the wheel loader falling!

- Never step underneath suspended loads!
- If possible, lift the wheel loader only so high that it can still be guided by hand!
- Always wear safety shoes!



CAUTION

Hazard of crush injuries to limbs!

You can be crushed at various places on the wheel loader.

- Always wear protective gloves!
- Always wear safety shoes!
- Always work carefully!

Carry out the following steps:

1. Fasten suitable **⟨LOAD-BEARING DEVICES⟩** to the **front** and **rear** lifting points of the wheel loader.
2. Fasten the **⟨HOISTING DEVICES⟩** to the installed **⟨LOAD-BEARING DEVICES⟩**.
3. Lift the **⟨WHEEL LOADER⟩** with the **⟨HOISTING DEVICES⟩** carefully.
! Take note that the wheel loader should only be lifted as far as is absolutely necessary.
4. Lift the **⟨WHEEL LOADER⟩** carefully into the desired position.
5. Remove the **⟨HOISTING DEVICES⟩** and the installed **⟨LOAD-BEARING DEVICES⟩** from the wheel loader.
! When loading on a trailer: Rig the wheel loader to the **front** and **rear** lifting points.

✓ Done.

6.2 Towing the wheel loader

Special measures must be implemented in the event of the wheel loader breaking down. In this section you will find information on how to prepare the wheel loader for towing and how to tow it safely.

6.2.1 Instructions

Personnel must be specially qualified for towing the wheel loader. In the case of doubt, seek assistance from a specialist workshop. Inform your supervisor.

Instructions and basic principles for towing the wheel loader:

- The wheel loader may not be towed along. Every attempt at towing along results in damage.
- The wheel loader may only be towed away to clear the recovery area.
- The recovery area must be secured before recovery or towing takes place.
- The wheel loader may only be towed at walking pace.
- It may only be towed a maximum of 1000 m (1093 yards). For greater distances, the wheel loader must be loaded.

6.2.2 Towing

Requirement



- The wheel loader has been left stationary with a broken-down engine.



Tools required:

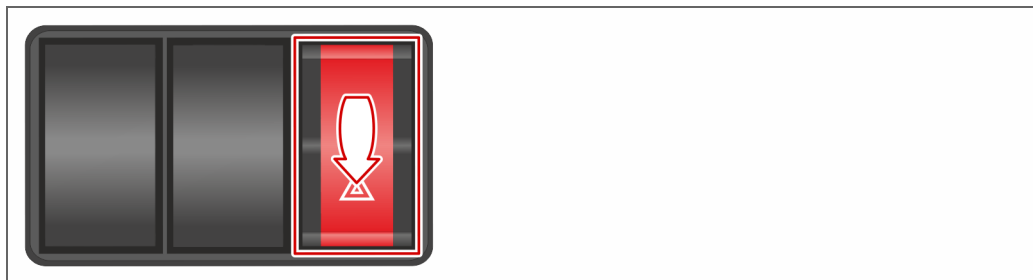
- Lift arm support
- A second wheel loader with a lift installed to lift the lift arm of the defective wheel loader
- A tow bar
- Number 8 Allen key
- Number 24 open-end spanner

Securing the wheel loader



Carry out the following steps:

1. Switch the **«HAZARD WARNING LIGHTS»** toggle switch of the wheel loader to the **on**-position.



2. Place the **«WHEEL CHOCKS»** in front of the wheels of the front axle.

3. Using the **«DIRECTION OF TRAVEL»** toggle switch on the **«MULTI-FUNCTION JOYSTICK»** select the **neutral** position.
4. Press the **«MULTI-FUNCTION JOYSTICK»** **forwards** until it engages.
→ The hydraulic operating system of the wheel loader is now in the floating position.
5. Switch the **«WHEEL LOADER»** into the **«REAR-AXLE STEERING»**-mode, see Chapter "Operation" > "Switching from 4-wheel steering to front-axle steering" (Page 143).
6. If necessary, secure the **«attachment»** installed on the **«WHEEL LOADER»** with suitable **«PROTECTIVE COVERS»** or **«SAFETY INSTALLATIONS»**.

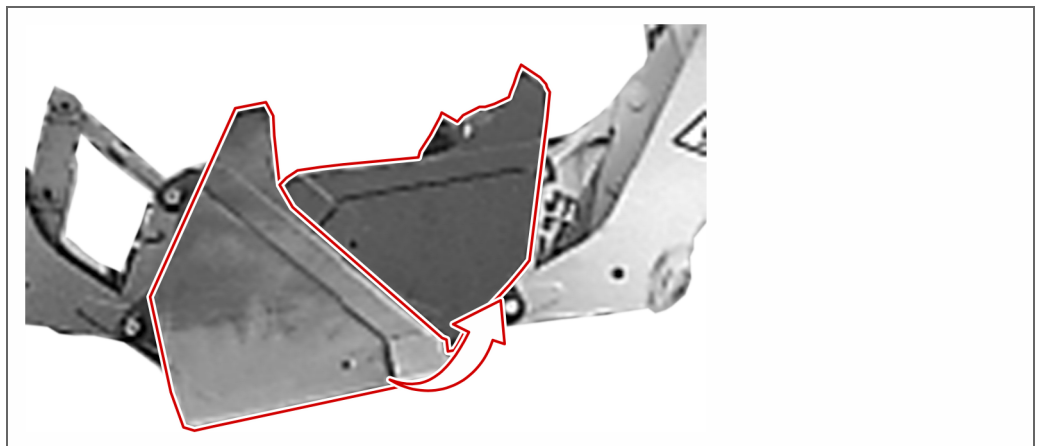
The wheel loader is secured.

Secure the wheel loader with the lift arm support.



Carry out the following steps:

1. Using the **«IGNITION KEY»** switch the **«IGNITION KEY»** of the defective wheel loader to Position **I**.
2. Drive the second wheel loader carefully into position in front of the defective wheel loader.
3. With the aid of the installed **«BUCKET»** lift up the **«LIFT ARM»** of the defective wheel loader.
! Take care that the **«LIFT ARM»** of the defective **«WHEEL LOADER»** is only lifted sufficiently for there to be enough place for the **«LIFT ARM SUPPORT»** to be installed on the **«LIFT ARM»**.



4. Install the **«LIFT ARM SUPPORT»**.
5. Move the lift arm of the second wheel loader downwards with the multi-function joystick.

The wheel loader has been secured with the lift arm support.

Switch the drive train to free oil circulation.



Carry out the following steps:

1. Open the **«ENGINE HOOD»** of the wheel loader.
2. Using an **«ALLEN KEY (SW 8)»**, switch the shuttle valve of the hydrostatic drive train **anti-clockwise** as far as the stop.



3. Close the **«ENGINE HOOD»** of the wheel loader.

The hydrostatic drive train is switched to free oil circulation.

Release the spring mechanism.



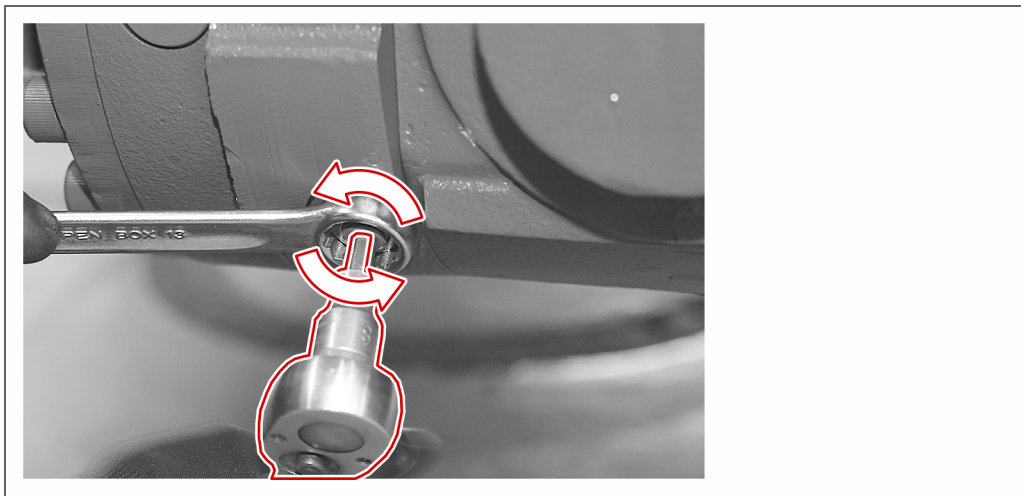
Carry out the following steps:

1. Counter the **«STOP SCREW»** of the **«SPRING ACTUATOR»** on the front axle with the **«OPEN-END SPANNER»**.

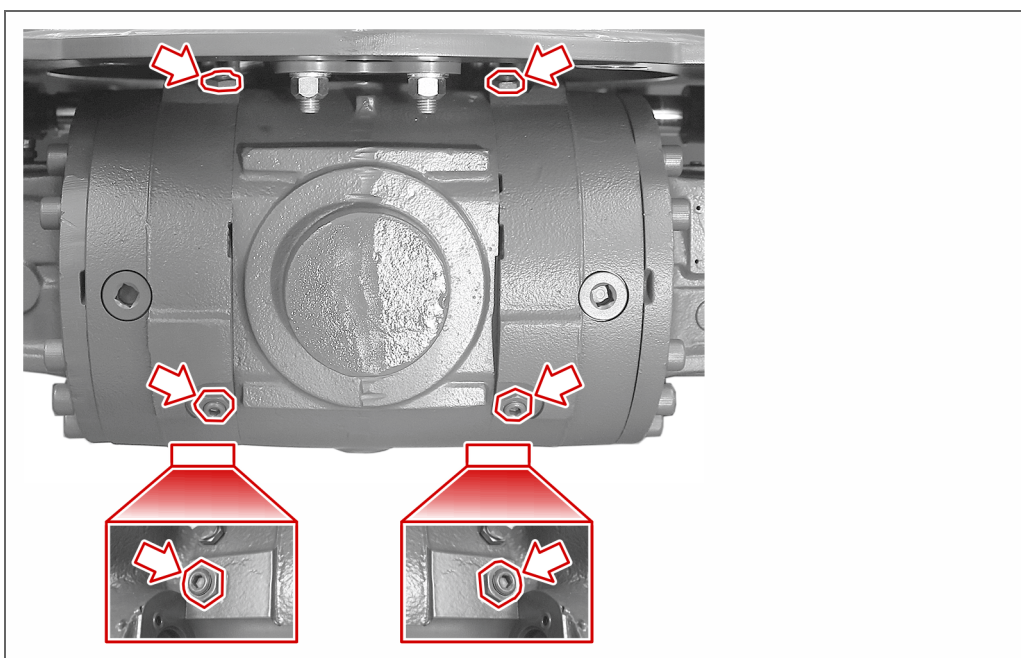


→ The stop screw is secured against release.

2. Unscrew the «PROTECTIVE COVER» of the «SPRING ACTUATOR» with the «ALLEN KEY (SW 8)» .



3. Using the «ALLEN KEY (SW 8)» turn the «SET SCREW» of the «SPRING ACTUATOR» located below it **clockwise** until there is noticeable resistance.
! After reaching a noticeable resistance, gradually turn the set screw a further $\frac{3}{4}$ turn back.
4. Carry out STEPS 1 TO 3 at all six «LOOSENING POINTS» of the «SPRING ACTUATOR».
! When resetting, care must be taken that the inner socket screws are turned back incrementally into the limit stop.



The spring actuator has been loosened.

Finishing the
 preparations


Carry out the following steps:

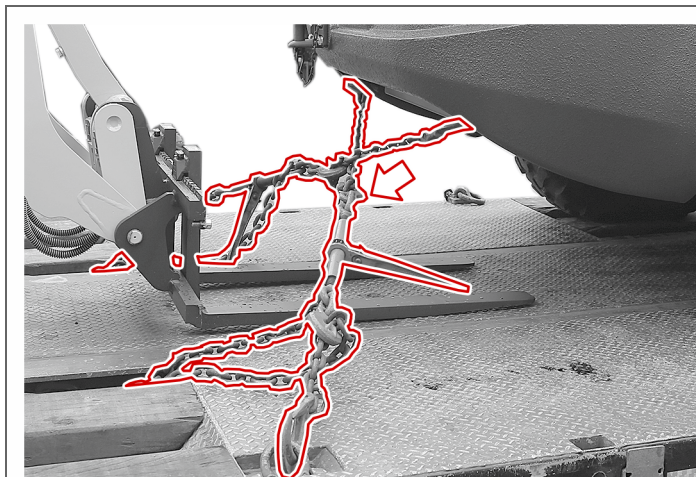
1. Install the **«TOW BAR»** on the **«TRAILER HITCH»** of the defective **«WHEEL LOADER»** and the towing **«VEHICLE»**.
2. Using the **«IGNITION KEY»** switch the **«IGNITION LOCK»** of the defective wheel loader to Position 0.
3. Remove the **«WHEEL CHOCKS»** from in front of the front axle wheels.

The preparations have been completed.

✓ Done.

6.3 Rigging the wheel loader

The wheel loader can be transported on a low-loader. When being transported, the wheel loader must be rigged crosswise to the four lifting points, see Section: Lifting points (Page 126). The following figures show by way of example how the wheel loader can be secured on a low loader by means of rigging chains.



Wheel loader with rigging chains - rear view



Info

The means of rigging must comply with the requirements for the securing of loads.

7 Operation

In this chapter you will find information describing the wheel loader:

- Daily start-up (Page 139)
- Settings (Page 142)
- Driving (Page 160)
- Working (Page 161)
- Shutting down (Page 162)
- Winter operation (Page 167)

7.1 Daily start-up

In this chapter you will find information describing the daily start-up of the wheel loader:

7.1.1 Daily checks

Checks must be performed on the wheel loader before each start-up. If required, take the necessary measures.

Engine compartment

- Check for cleanliness and foreign objects
- Engine oil level
- Brake system hydraulic fluid level
- Coolant level
- Hydraulic fluid level
- Windscreen washer water
- Air filter

Visual check

- Visual check for damage
- Visual check for objects in the direct range of travel of the wheel loader
- Visual check for foreign objects in the tyre treads
- Visual check for leaks
- Visual check that all screens and mirrors on the wheel loader are clean.

Detailed information on performing the individual checks is to be found in Chapter: "Maintenance" (Page 168).

7.1.2 Preparing for operational readiness

Carry out the following steps:

1. Ensure that there is sufficient diesel in the tank.
2. Check the tyre pressures of the wheel loader.
! The tyre pressures permissible for this wheel loader are to be found in Chapter: "Performance data and dimensional drawing" (Page 16).
3. If necessary, remove the **«WHEEL CHOCKS»** from the front axle wheels.

✓ Done.

7.1.3 Boarding

Carry out the following steps:

1. Open the **«DRIVER'S DOOR»**.
2. Climb **forwards** into the wheel loader.
3. Using the **«ADJUSTMENT LEVER»** set the **«DRIVER'S SEAT»** according to your body weight.
4. Adjust the **«STEERING WHEEL»** by using the **«STEERING WHEEL LOCKING »** lever.
5. Adjust both **«EXTERIOR MIRRORS»** and the **«INTERIOR MIRROR»** correctly according to your field of vision.
6. Strap yourself in by means of the **«SEAT BELT»**.
7. Close the **«DRIVER'S DOOR»**.

✓ Done.

7.1.4 Starting the diesel engine



Requirement

- The daily check of the wheel loader has been performed, see Section: "Daily checks" (Page 139).
- The wheel loader has been prepared for operation, see Section: "Preparing for operational readiness" (Page 140)
- The **«DIRECTION OF TRAVEL»** toggle switch on the **«MULTI-FUNCTION JOYSTICK»** is in the **neutral** position.
- The **«PARKING BRAKE»** of the wheel loader is engaged.
- The continuous operation of the accessory hydraulic system is switched off.

Carry out the following steps:

1. Insert the **«IGNITION KEY»** of the wheel loader into the **«IGNITION LOCK»**.

2. Turn the **«IGNITION KEY»** clockwise to Position **I**.

↳ The **«PRE-HEATING»** indicator lights up on the multi-function panel.



↳ The preheating system (glow-plug) is activated. The indicator is extinguished once this process has concluded.

3. Turn the **«IGNITION KEY»** clockwise and hold it in Position **III**.

↳ The diesel engine is started.

? *The diesel engine does not start?*

The diesel engine may be damaged.

→ Release the ignition key and repeat the step once more.

→ Park the wheel loader safely, see "Parking" (Page 162) and disembark from the wheel loader, see "Disembarking" (Page 163).

→ If you are qualified to do so, determine the fault and rectify if possible.

→ In any event, inform your supervisor regarding the fault on the wheel loader.

4. Release the **«IGNITION KEY»**.

↳ The **«IGNITION KEY»** returns automatically to Position **II**.

✓ Done.

7.2 Settings

In this chapter you will find information regarding the settings on the wheel loader:

7.2.1 Ventilation



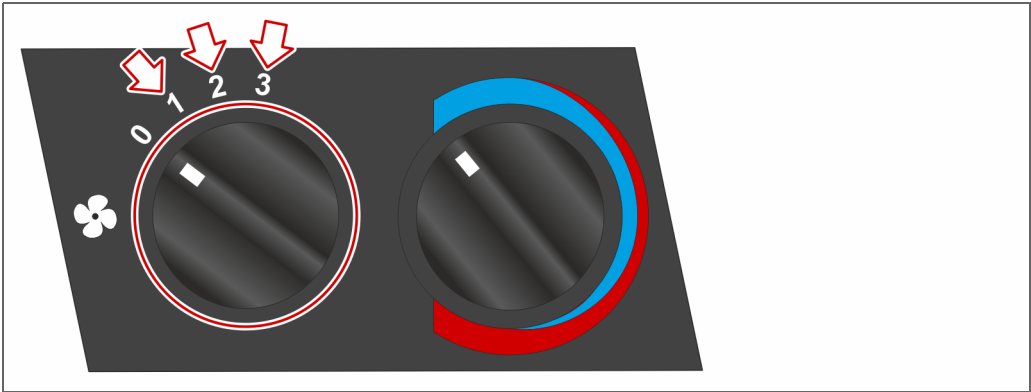
Requirement

- The diesel engine is switched on, see Section: "Starting the diesel engine" (Page 141).

Carry out the following steps:

1. Turn the **«FAN CONTROL»** rotary knob to adjust the volume of air.

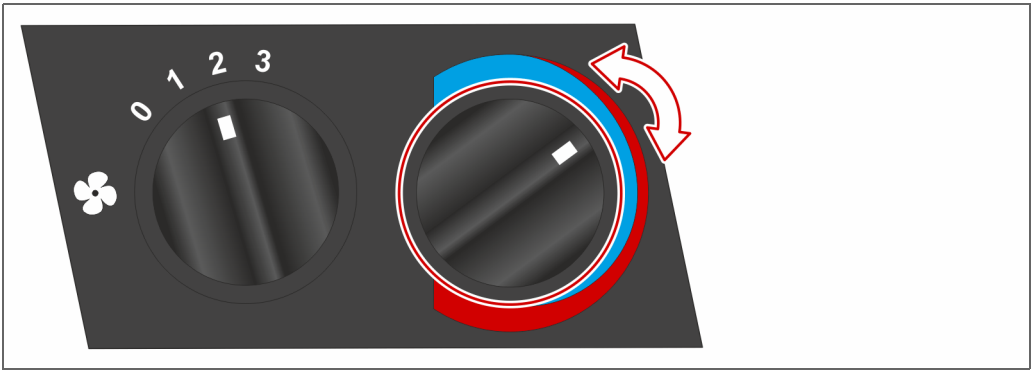
Level	1
Level	2
Level	3



→ The higher the level selected, the more air flows out of the **«AIR OUTLETS»**.

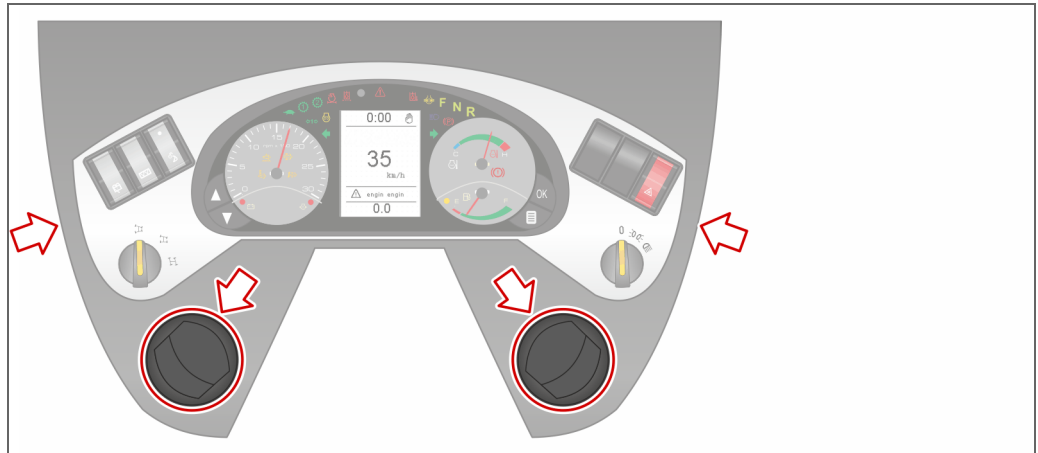
2. Turn the rotary control of the **«TEMPERATURE CONTROL»** to set the temperature of the outgoing air.

blue	cold air
red	warm Air



→ Warm and cold air are mixed with each other according to the setting of the rotary knob and flow out of the ventilation outlets.

3. Adjust the «**VENTILATION OUTLETS**» according to your requirements, in order to regulate the direction of the airflow.



✓ Done.

7.2.2 Steering mode

The wheel loader can be driven in a total of three steering modes. The following sections describe the possibilities open to you to change the desired steering mode.

7.2.2.1 Switching from 4-wheel steering to front-axle steering



Requirement

- The diesel engine is switched on, see Section: "Starting the diesel engine" (Page 141).
- The «**DIRECTION OF TRAVEL**» toggle switch must be in the neutral position.
- The wheel loader is standing on level ground.

Carry out the following steps:

1. Turn the «**STEERING MODE**» rotary switch into position.



2. Turn the «**STEERING WHEEL**» in the desired direction as far as the stop.
3. Turn the «**STEERING WHEEL**» in the opposite direction.
4. Ensure by means of a visual check that the steering mode has been switched correctly.

✓ Done.

7.2.2.2 Switching from front-axle steering to 4-wheel steering



Requirement

- The diesel engine is switched on, see Section: "Starting the diesel engine" (Page 141).
- The **«DIRECTION OF TRAVEL»** toggle switch must be in the neutral position.
- The wheel loader is standing on level ground.

Carry out the following steps:

1. Turn the **«STEERING MODE»** rotary switch into position.



2. Turn the **«STEERING WHEEL»** in the desired direction as far as the stop.
3. Turn the **«STEERING WHEEL»** in the opposite direction.
4. Ensure by means of a visual check that the steering mode has been switched correctly.

✓ Done.

7.2.2.3 Switching to crab-steering mode

Safety instruction:

The crab-steering mode is suitable for certain applications only. It is possible to operate the wheel loader with an offset of maximally one tyre breadth.

Avoid continuous operation in crab-steering mode.

You can only switch the wheel loader to crab-steering mode if you are in the **front-axle steering** mode. Switching over from 4-wheel steering to crab-steering mode is **not** possible.



Requirement

- The diesel engine is switched on, see Section: "Starting the diesel engine" (Page 141).
- The **«DIRECTION OF TRAVEL»** toggle switch must be in the neutral position.
- The wheel loader is standing on level ground.
- The wheel loader is in the **front-axle steering** mode.

Carry out the following steps:

1. Turn the **«STEERING WHEEL»** in the desired direction as far as the stop.
2. Turn the **«STEERING WHEEL»** a $\frac{1}{4}$ turn in the opposite direction.

3. Turn the «STEERING MODE» rotary switch into position.



✓ Done.

7.2.2.4 Switching from crab-steering to front-axle steering

Safety instruction:

You can only switch the wheel loader back to the **front-axle steering** mode. Switching over from crab-steering to 4-wheel steering mode is **not** possible.



Requirement

- The diesel engine is switched on, see Section: "Starting the diesel engine" (Page 141).
- The «DIRECTION OF TRAVEL» toggle switch must be in the neutral position.
- The wheel loader is standing on level ground.
- The wheel loader is in the **crab-steering** mode.

Carry out the following steps:

1. Turn the «STEERING MODE» rotary switch into position.



2. Turn the «STEERING WHEEL» in the desired direction as far as the stop.
3. Turn the «STEERING WHEEL» in the opposite direction.
4. Ensure by means of a visual check that the steering mode has been switched correctly.

✓ Done.

7.2.2.5 Synchronising the steering

The steering must be resynchronised at regular intervals. In order to synchronise the steering, the steering mode must be changed.

Carry out the following steps:

1. Switch over the steering mode.
 - Switching from 4-wheel steering to front-axle steering (Page 143)
 - Switching from front-axle steering to 4-wheel steering (Page 144)
2. Switch back to the original steering mode.

✓ Done.

7.2.3 Doors

The doors and window on this wheel loader can be locked or moved in various positions.

7.2.3.1 Lock on door stay

The doors can be locked to the door stays of the cab. Unlocking can take place outside or inside of the wheel loader.



Illustration of the door locked on the door stay.

Unlocking inside
the cab



Carry out the following steps:

➔ Pull the «INTERNAL UNLOCKING» lever.



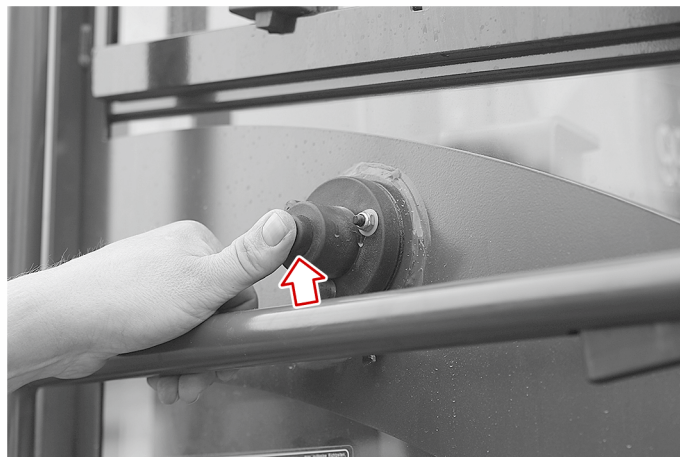
The door is unlocked.

Unlocking outside
of the cab



Carry out the following steps:

➔ On the outside of the wheel loader, press the «EXTERNAL UNLOCKING» lever.



The door is unlocked.

✓ Done.

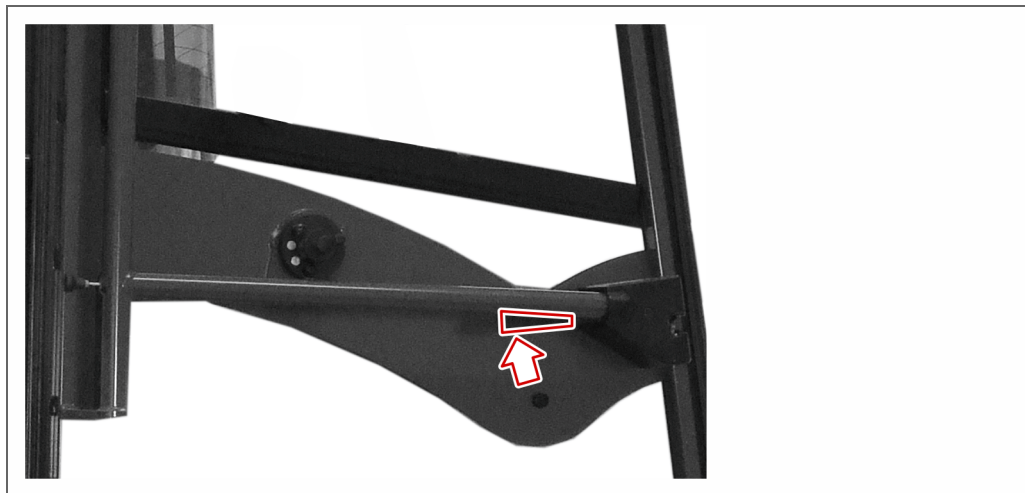
7.2.3.2 Locking with an air gap



Illustration of the door locked with an air gap.

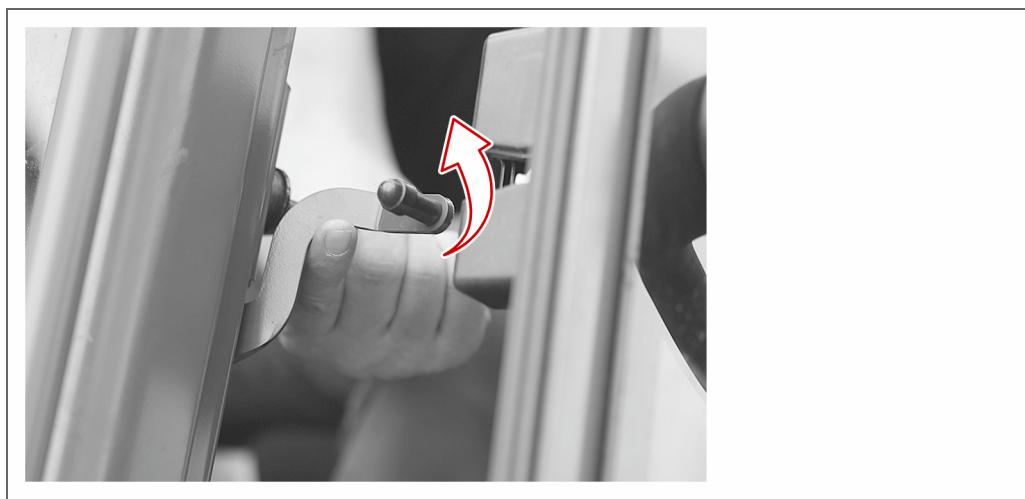
Carry out the following steps:

1. Press the door opener on the door.



→ The door is unlocked.

2. Fold the «BRACKET» inwards.



✓ Done.

7.2.4 Slow-speed speed range selector (20 km/h)

7.2.4.1 AF Series and AS850 / AS1000

This wheel loader has three selectable speed ranges. The speed ranges can be changed while on the move.

Carry out the following steps:

➔ Using the **«SPEED RANGE AND GEAR SWITCH»** select the desired speed range.

Slow-speed range	max. 5 km/h
Speed range 1	max. 20 km/h
Speed range 1	max. 20 km/h



✓ Done.

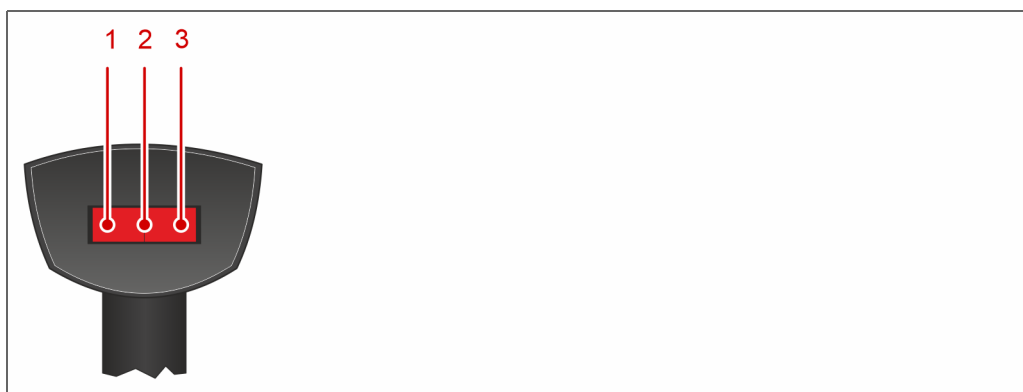
7.2.4.2 AT Series

This wheel loader has three selectable speed ranges. The speed ranges can be changed while on the move.

Carry out the following steps:

➔ Using the «**SPEED RANGE AND GEAR SWITCH**» select the desired speed range.

1	Slow - 5 km/h
2	Speed range 1 - 13 km/h
2	Speed range 2 - 20 km/h



✓ Done.

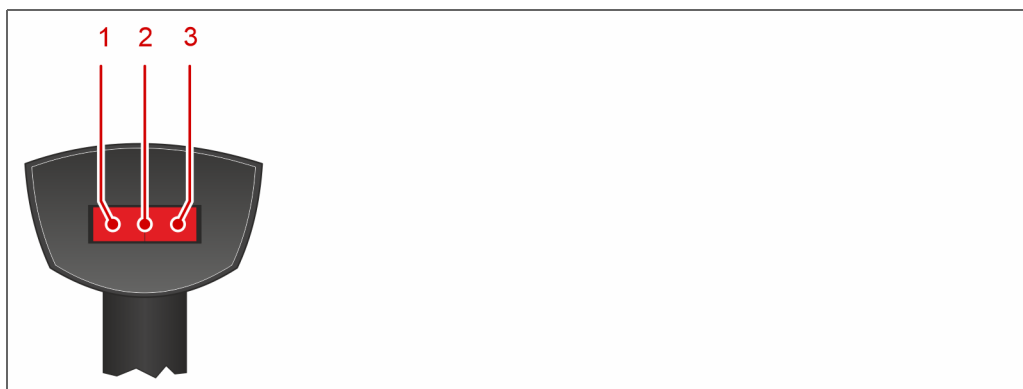
7.2.4.3 AS900tele

This wheel loader has three selectable speed ranges. The speed ranges can be changed while on the move.

Carry out the following steps:

➔ Using the «**SPEED RANGE AND GEAR SWITCH**» select the desired speed range.

Slow-speed range	max. 5 km/h
speed range 1	max. 20 km/h
speed range 1	max. 20 km/h



✓ Done.

7.2.5 High-speed speed and gear range selector (40 km/h)

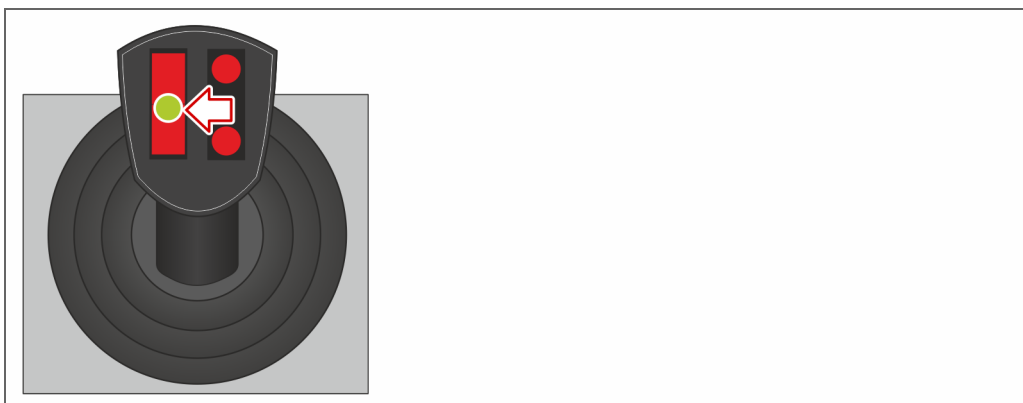
This wheel loader has two selectable gear ranges. Three different speed ranges can be selected in each gear range.

7.2.5.1 AF Series and AS850 / AS1000

7.2.5.1.1 Selecting Gear Range 1

Carry out the following steps:

1. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the central neutral position.

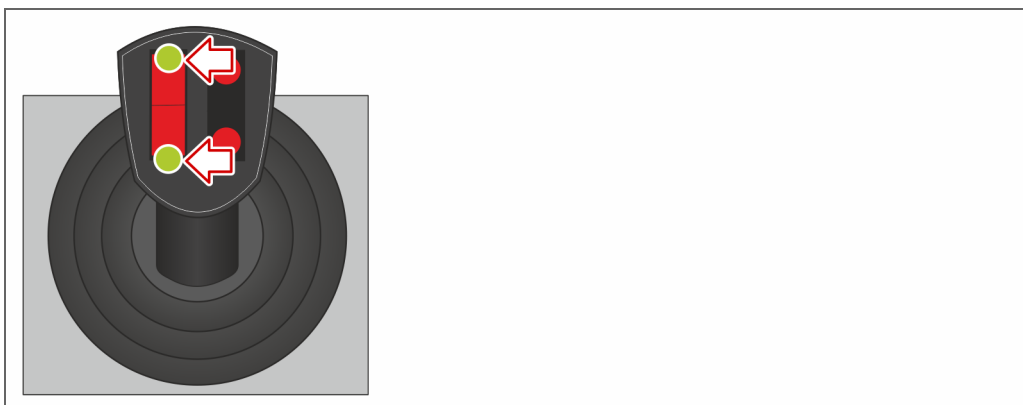


2. Using the «**SPEED RANGE AND GEAR SWITCH**» select **Gear range 1**.



→ The wheel loader is switched to the desired gear range after four seconds when stationary.

3. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the **top** or **bottom** position.



4. Using the «SPEED RANGE AND GEAR SWITCH» select the desired speed range.

Slow-speed range	max. 5 km/h
Speed range 1	max. 13 km/h
Speed range 2	max. 40 km/h

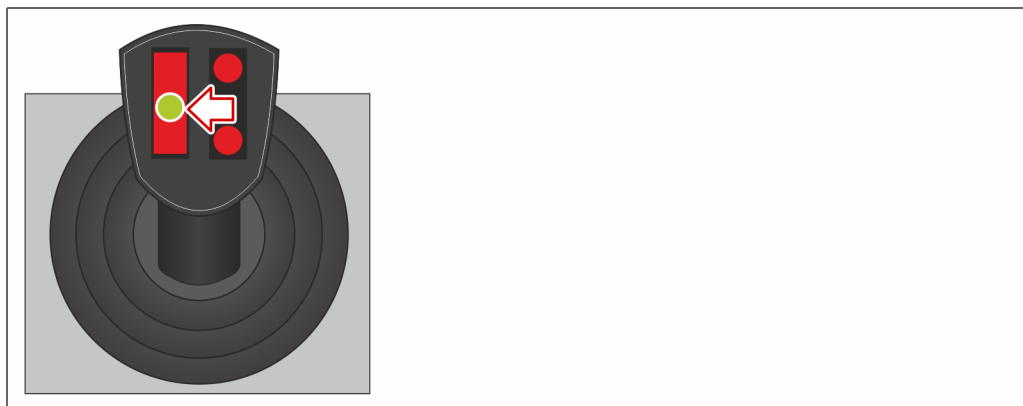


✓ Done.

7.2.5.1.2 Selecting Gear Range 2

Carry out the following steps:

1. Switch the «DIRECTION OF TRAVEL» toggle switch to the central **neutral** position.

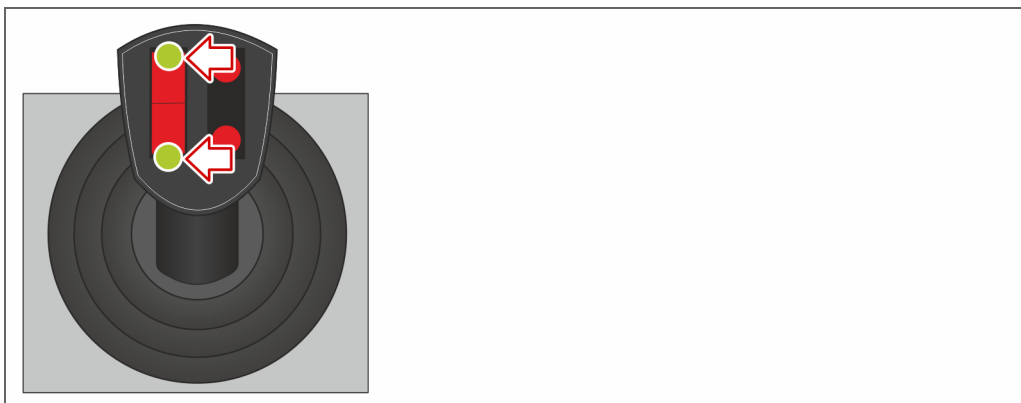


2. Using the «SPEED RANGE AND GEAR SWITCH» select **Gear range 2**.



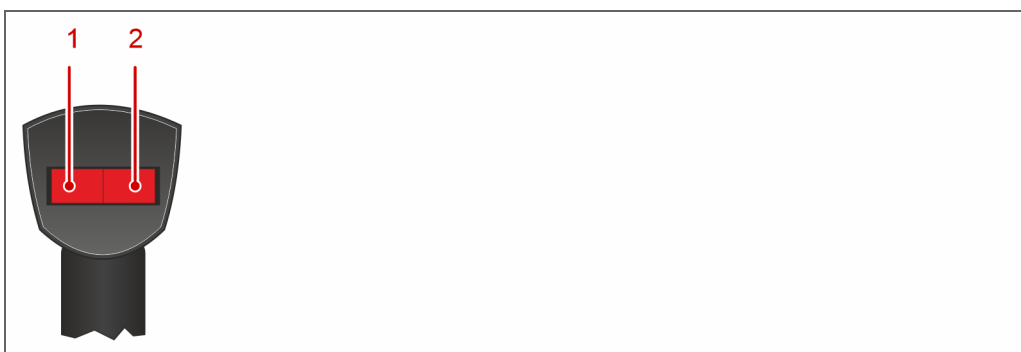
➡ The wheel loader is switched to the desired gear range after **four seconds** when stationary.

3. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the **top** or **bottom** position.



4. Using the «**SPEED RANGE AND GEAR SWITCH**» select the desired speed range.

Slow-speed range	max. 5 km/h
speed range 1	max. 13 km/h
speed range 2	max. 40 km/h



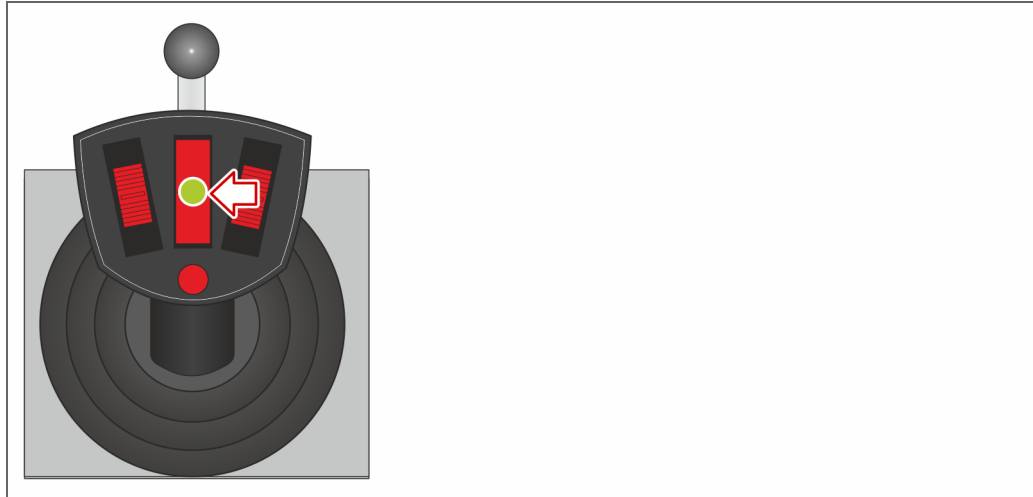
✓ Done.

7.2.5.2 AT Series

7.2.5.2.1 Selecting Gear Range 1

Carry out the following steps:

1. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the central neutral position.

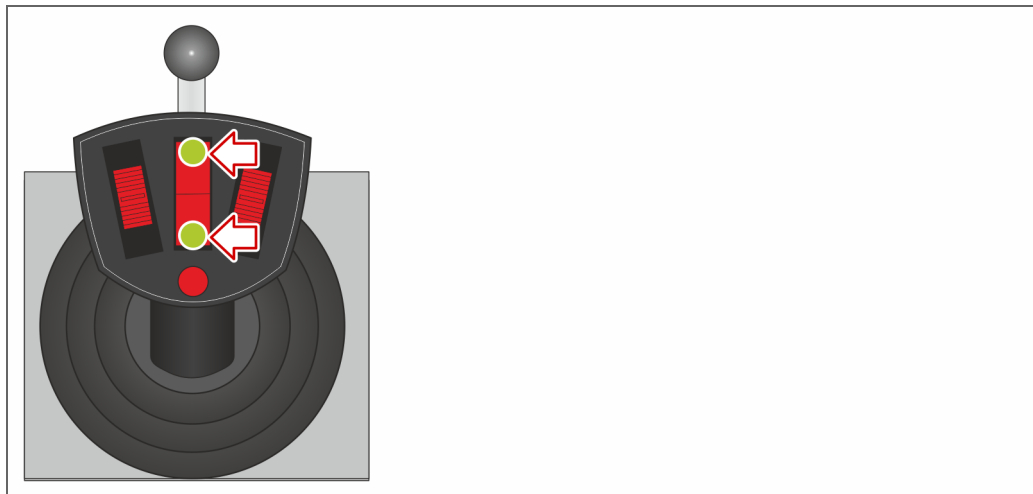


2. Using the «**SPEED RANGE AND GEAR SWITCH**» select **Gear range 1**.



➤ The wheel loader is switched to the desired gear range after four seconds when stationary.

3. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the **top** or **bottom** position.



4. Using the «SPEED RANGE AND GEAR SWITCH» select the desired speed range.

- | | |
|-------------|-------------------------|
| 1 | Speed range 1 - 5 km/h |
| 2 | Speed range 2 - 17 km/h |

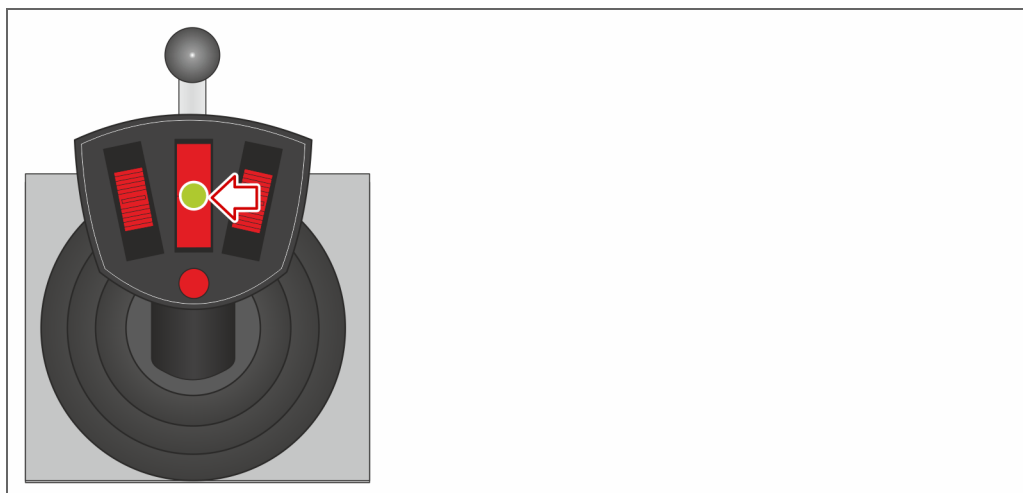


✓ Done.

7.2.5.2.2 Selecting Gear Range 2

Carry out the following steps:

1. Switch the «DIRECTION OF TRAVEL» toggle switch to the central **neutral** position.

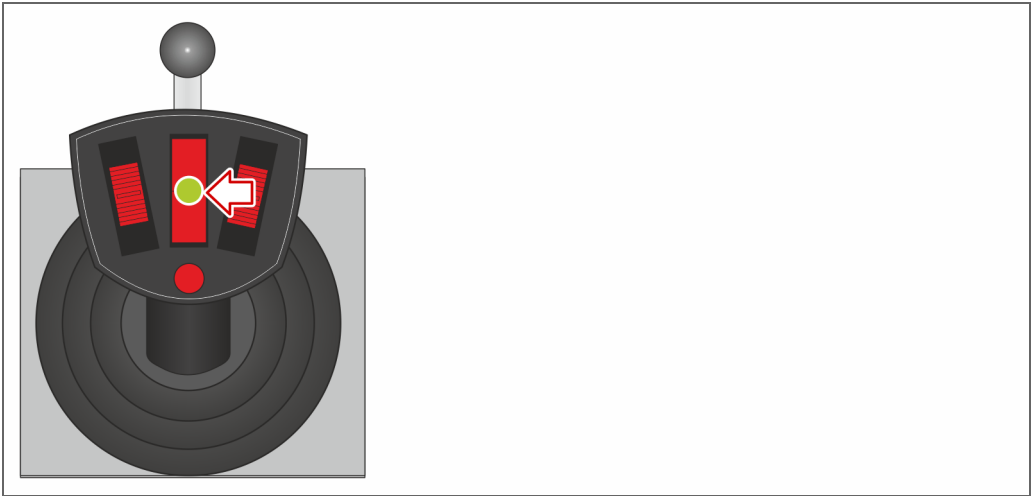


2. Using the «SPEED RANGE AND GEAR SWITCH» select **Gear range 2**.



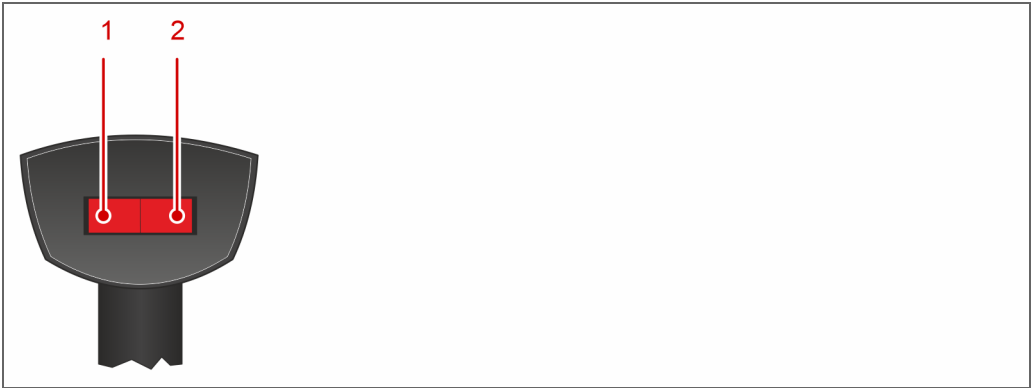
→ The wheel loader is switched to the desired gear range after **four seconds** when stationary.

3. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the **top** or **bottom** position.



4. Using the «**SPEED RANGE AND GEAR SWITCH**» select the desired speed range.

- | | |
|-------------|-------------|
| 1 | 1 - 11 km/h |
| 2 | 2 - 40 km/h |



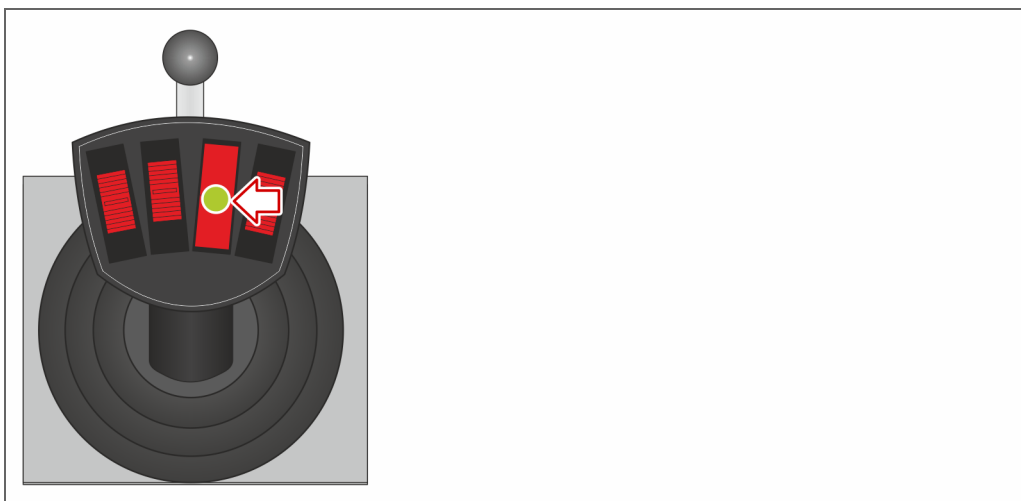
✓ Done.

7.2.5.3 AS900tele

7.2.5.3.1 Selecting Gear Range 1

Carry out the following steps:

1. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the central neutral position.

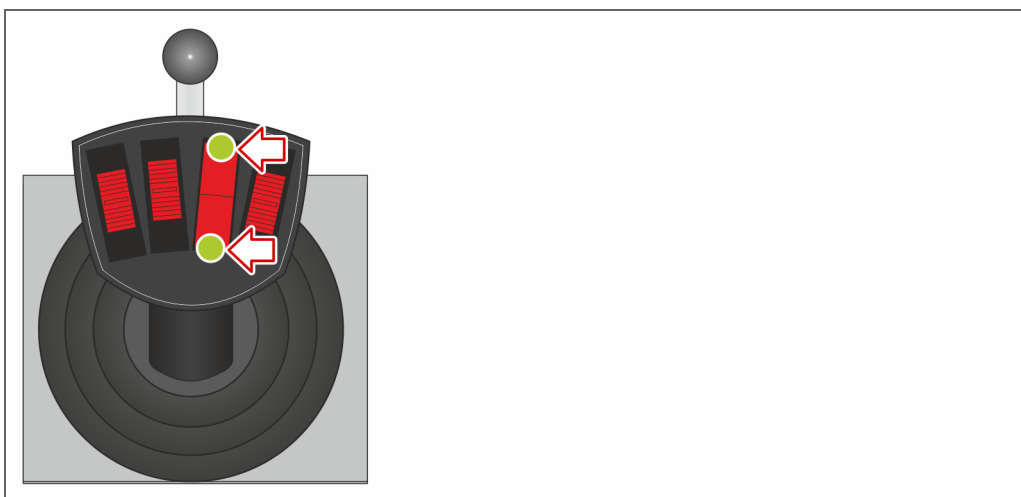


2. Using the «**SPEED RANGE AND GEAR SWITCH**» select **Gear range 1**.



→ The wheel loader is switched to the desired gear range after four seconds when stationary.

3. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the **top** or **bottom** position.



4. Using the «SPEED RANGE AND GEAR SWITCH» select the desired speed range.

Slow-speed range	max. 5 km/h
Speed range 1	max. 7 km/h
Speed range 2	max. 20 km/h

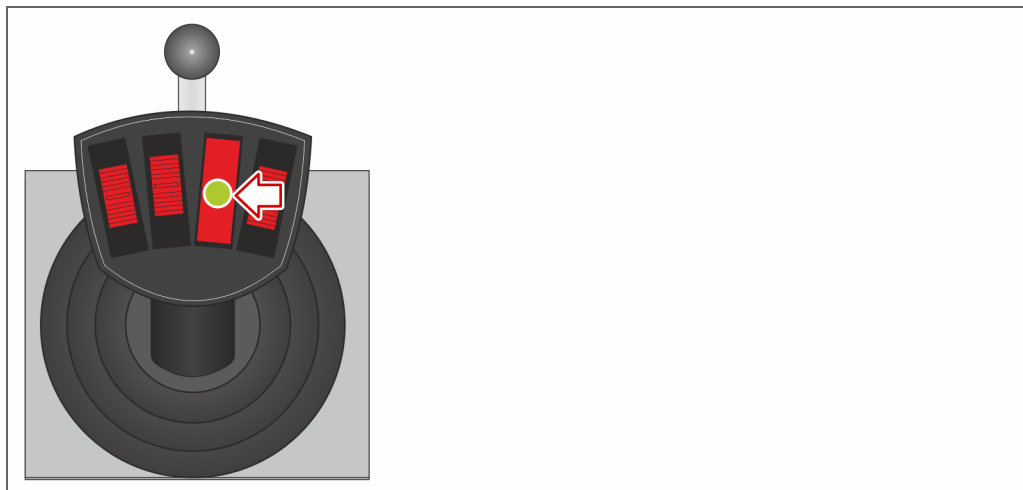


✓ Done.

7.2.5.3.2 Selecting Gear Range 2

Carry out the following steps:

1. Switch the «DIRECTION OF TRAVEL» toggle switch to the central **neutral** position.

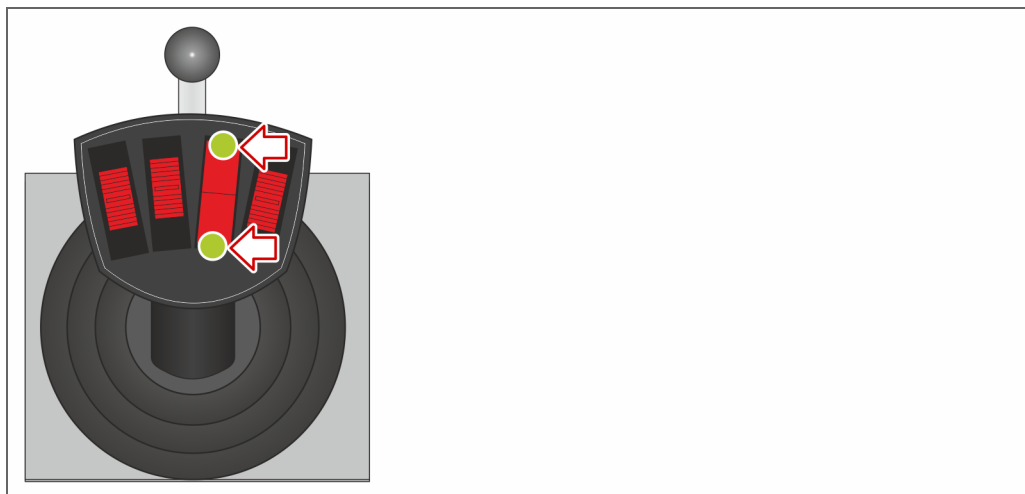


2. Using the «SPEED RANGE AND GEAR SWITCH» select **Gear range 2**.



→ The wheel loader is switched to the desired gear range after **four seconds** when stationary.

3. Switch the «**DIRECTION OF TRAVEL**» toggle switch to the **top** or **bottom** position.



4. Using the «**SPEED RANGE AND GEAR SWITCH**» select the desired speed range.

slow-speed range	max. 5 km/h
speed range 1	max. 13 km/h
speed range 2	max. 40 km/h



✓ Done.

7.3 Driving



Requirement

- You have read Chapter: "Safety" (Page 47) , you understand it and you are personally qualified to drive this wheel loader.
- You have carried out the daily start-up of the wheel loader, see Section: "Daily start-up" (Page 139).

Carry out the following steps:

1. Move the **«LIFT ARM»** so that the **«QUICK COUPLER»** or the installed **«ATTACHMENT»** is at least 30 centimetres above the ground.
2. Release the **«PARKING BRAKE»**.
3. Set the desired steering mode of the wheel loader, see Chapter "Steering mode" (Page 143).
4. Using the **«DIRECTION OF TRAVEL»** toggle switch on the **«MULTI-FUNCTION JOYSTICK»** select the direction.
5. Using the **«SPEED RANGE»** toggle switch on the **«MULTI-FUNCTION JOYSTICK»** select the speed range, see Section "Slow-speed speed range selector (20 km/h)" (Page 149).
6. Make sure that there are no objects or persons in your way.
! Check this by using the mirrors and an all-round look over your shoulders.
7. Carry out a steering, brake and illumination check.
8. Drive the wheel loader.

✓ Done.

7.4 Working

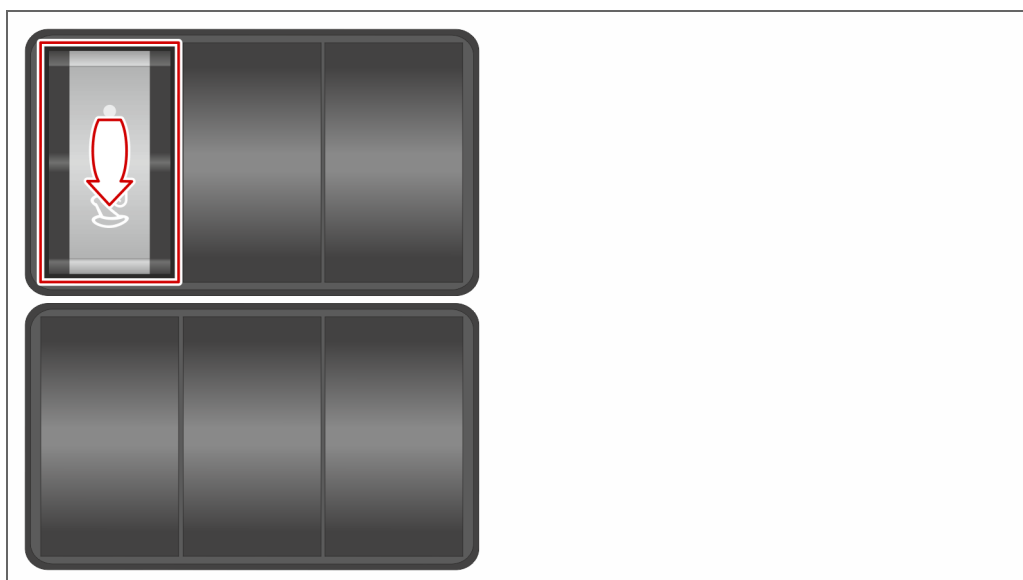


Requirement

- You have read Chapter: "Safety" (Page 47) , you understand it and you are personally qualified to drive this wheel loader.
- You have carried out the daily start-up of the wheel loader, see Section: "Daily start-up" (Page 139).
- You have installed the permitted attachment on the wheel loader for the job to be performed, see Chapter: "Attachments" > "Installing the attachment" (Page 367).

Carry out the following steps:

1. Using the **«HYDRAULIC OPERATING SYSTEM»** toggle switch, activate the functions on the **«MULTI-FUNCTION JOYSTICK»** for the hydraulic operating system.



2. Work pre-emptively and carefully with the wheel loader.

✓ Done.

7.5 Shutting down

In this chapter you will find information on how to shut the wheel loader down safely.

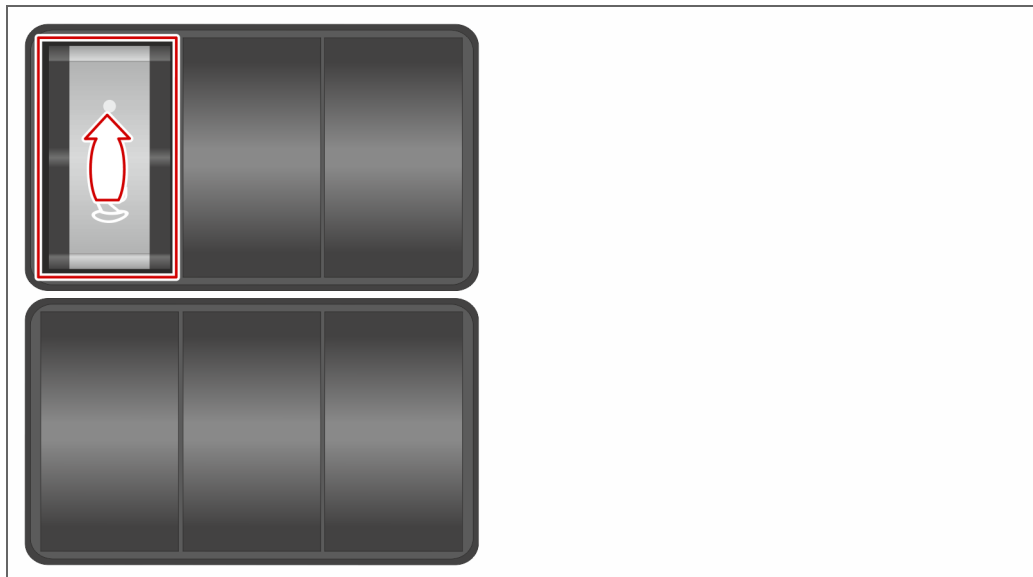
7.5.1 Interrupting operation

In this chapter you will find information on how to interrupt the operation of the wheel loader.

7.5.1.1 Parking

Carry out the following steps:

1. Move the **«WHEEL LOADER»** to a safe and suitable location.
2. Move the **«LIFT ARM»** so that the **«QUICK COUPLER»** or the installed **«ATTACHMENT»** is placed securely on the ground.
3. Set the **«PARKING BRAKE»**.
4. Using the **«DIRECTION OF TRAVEL»** toggle switch on the **«MULTI-FUNCTION JOYSTICK»**, select the **neutral** position.
5. Using the **«HYDRAULIC OPERATING SYSTEM»** toggle switch, disable the functions on the **«MULTI-FUNCTION JOYSTICK»** for the hydraulic operating system.



6. If necessary, switch the **«DRIVING AND OPERATING LIGHTS»** off.

✓ Done.

7.5.1.2 Switch off the diesel engine



Requirement

- The wheel loader is parked safely, see Section: "Parking" (Page 162).

Carry out the following steps:

1. In the event of prior heavy loading, allow the **«DIESEL ENGINE»** to idle for a short while.
 - ↪ The temperature of the **«DIESEL ENGINE»** is reduced.
2. Turn the **«IGNITION KEY»** anti-clockwise to Position 0.
 - ↪ The diesel engine has been switched off.
3. Remove the **«IGNITION KEY»** of the wheel loader from the **«IGNITION LOCK»**.

✓ Done.

7.5.1.3 Disembarking



Requirement

- The diesel engine has been switched off, see Section: "Switch off the diesel engine" (Page 163).

Carry out the following steps:

1. Release the latch of the **«LAP BELT»**.
2. Open the **«DRIVER'S DOOR»**.
3. Carefully step **backwards** out of the wheel loader.
4. Close the **«DRIVER'S DOOR»**.

✓ Done.

7.5.2 Cleaning and inspecting

In order to be able to use the wheel loader for longer, the wheel loader must be cleaned and inspected for damage at regular intervals.

Carry out the following steps:

1. Clean the wheel loader.
2. Check all lines and connections for damage.
 - ? *You have identified damage to lines and connections?*
→ Inform your supervisor and arrange for repair.
3. Check the wheel loader for damage.
 - ? *You have identified damage to the wheel loader?*
→ Inform your supervisor and arrange for repair.

✓ Done.

7.5.3 Daily shut-down

Carry out the following steps:

1. Interrupt operation of the wheel loader, see Chapter: "Interrupting operation" (Page 162).
2. Lubricate the heavily used parts of the wheel loader.
 - ! Further information regarding lubrication can be found in Chapter: "Maintenance" > "Lubrication" (Page 193).
3. In the case of an inclined parking position, place **WHEEL CHOCKS** in front of the wheels of the front axle.
 - ! Ensure that the wheel chocks are placed on the down-hill side of the incline.

✓ Done.

7.5.4 Long-term decommissioning

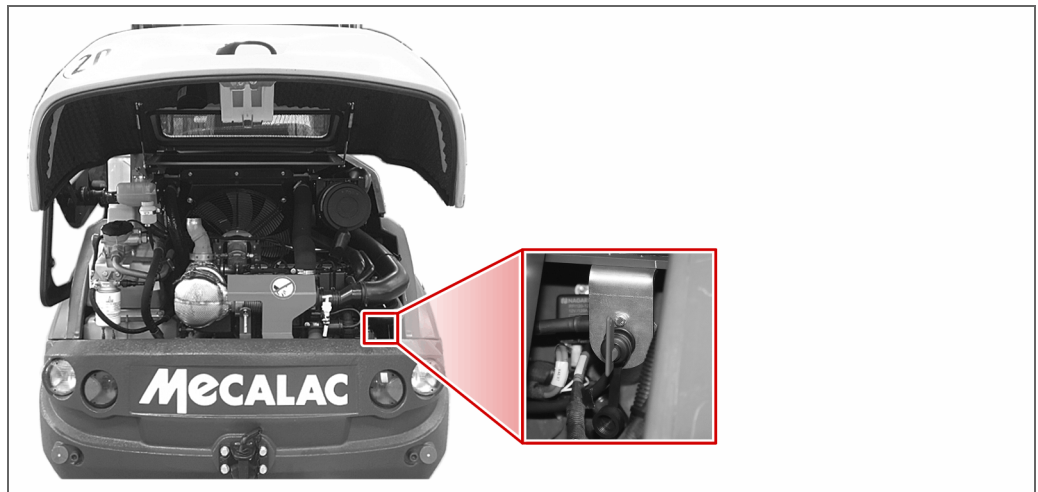
Long-term decommissioning means that the wheel loader is taken out of operation for a long time.

Safety instruction: Take note of the power supply to the control devices!

Before interrupting the supply of electrical power, ensure - by using the main switch of the battery - that the control devices are supplied with electrical power for at least two minutes.

Carry out the following steps:

1. Perform the daily shut-down, see Chapter: "Daily shut-down" (Page 164).
2. Disconnect the supply of electrical power to all components of the wheel loader by means of the **MAIN SWITCH – BATTERY**.



↪ Before interrupting the supply of electrical power by using the main switch, ensure that the control devices are supplied with electrical power for at least two minutes.

3. Drain all consumables in the wheel loader
! Take note of the anti-freeze.
 4. Lubricate all parts of the wheel loader, see Chapter: "Maintenance" > "Lubrication" (Page 193).
- ✓ Done.

7.5.5 Storage when not in use

Should you not require the wheel loader for an extended period of time and therefore wish to store it, ensure that the following conditions are fulfilled:

- The wheel loader is prepared for storage, see Section: "Long-term decommissioning" (Page 165).
- Store the wheel loader horizontally and straightly aligned,
- When possible, it must be stored in an enclosed and well-ventilated space.
- The ambient air must be free of aggressive substances and dust.
- There must be minimal humidity in the storage area, so as not to promote corrosion.

7.5.6 Disposal

The following basic principles apply to the disposal of the wheel loader:

- Separate, collect and if necessary clean the individual parts of the wheel loader as scrap metal and electrical waste.
- Cleaned metal can be disposed of as scrap.
- Cleaned cables can be disposed of as electrical scrap.
- Dispose of all pieces in accordance with local statutory requirements.

7.6 Winter operation

Special measures must be taken on the wheel loader in low temperatures. In this chapter you will find information on how to operate the wheel loader in low ambient temperatures.

NOTICE

Low outdoor temperatures

Below an outdoor temperature of 0 °C, components and cylinders of the wheel loader may be damaged, if they have not been warmed up

→ Before commencing work, move the moving components cylinders in an unloaded condition for a few minutes in order to warm them up.

Carry out the following steps:

1. At the beginning of winter, perform an engine oil change.
 2. Ensure that you use hydraulic fluid appropriate to the ambient temperature.
 3. Ensure that the wheel loader is filled up with diesel fuel that is appropriate to the ambient temperature.
 4. Pour the «ANTI-FREEZE AGENT» into the «WINDSCREEN WASHER WATER TANK».
 5. Inspect the «ANTI-FREEZE AGENT» in the «COOLANT EXPANSION TANK».
- ✓ Done.

8 Maintenance

In this chapter you will find information regarding the maintenance of the wheel loader:

- Explanation of the levels of experience (Page 168)
- Daily inspection plan (Page 169)
- Securing the lift arm (Page 170)
- Tightening torque (Page 170)
- Daily checks (Page 171)
- Daily maintenance tasks (Page 176)
- Refilling the fluids (Page 183)
- Lubrication (Page 193)
- Diesel particulate filter cleaning (Page 210)
- Service schedule (Page 218)



Info

The description of the maintenance activities for specialists is to be found in a separate service manual available from MECALAC Baumaschinen GmbH.

8.1 Explanation of the levels of experience

Explanation

Level	Task:	Staff	Interval or hours of operation (HO)
M10	Commissioning	Authorised technical personnel	When commissioning new or overhauled engines
M20	Daily check	Driver	Daily or every 10HO
M25	Inspection	Specialist personnel	50 HO
M30	Maintenance		500 HO ¹⁾²⁾³⁾
M40	Extended maintenance		1 000 HO ³⁾
M45	Extended maintenance I		1 500 HO ³⁾
M50	Extended maintenance II		3 000 HO ³⁾
M70	Major overhaul		6 000 HO ³⁾⁴⁾
1	Depending on the application, the demand for lubricating oil may be considerably greater. In this case, the lubricating oil change intervals should be halved.		
2	Specification of the lubricating oil change interval, with reference to Lubricating Oil Grade DQC III.		
3	The operating hour display must be verified. The operating hours of the engine are captured by the control device. Interrogation via the CANBus and the multifunction panel display.		

Explanation (Cont.)

Level	Task:	Staff	Interval or hours of operation (HO)
4	The workload, operating conditions, environmental conditions and care and maintenance of the engine have a great influence in determining the optimal point in time for a major overhaul is		

8.2 Daily inspection plan

Chassis

Level	Task:
M20	Check tyre pressure, check for foreign objects.
M20	Perform a first inspection of the fastening of the wheel nuts Page 170.

Cab

Level	Task:
M20	Clean all screens

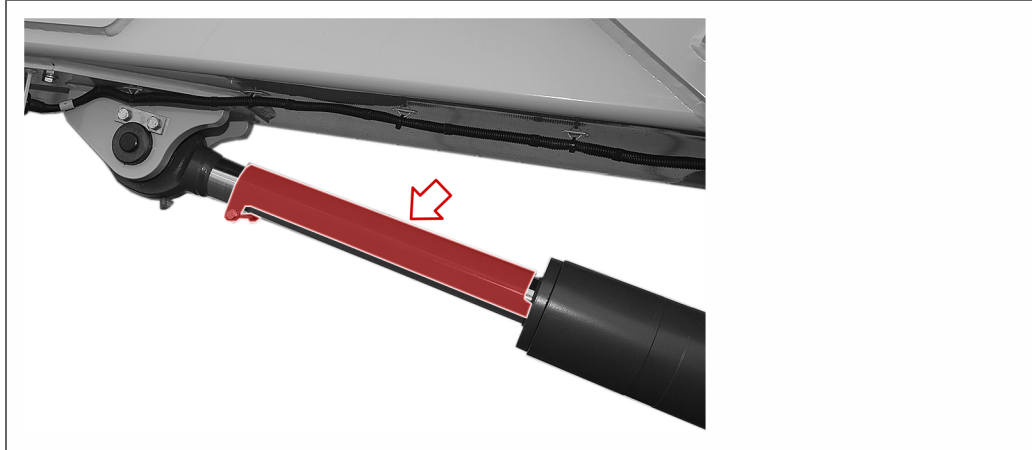
Engine compartment

Level	Task:
M20	Check for cleanliness and foreign objects
M20	Check for integrity and leaks
M20	Checking the engine oil level (Page 171)
M20	Checking the brake system hydraulic fluid (Page 175)
M20	Check the coolant level
M20	Checking the hydraulic fluid level (Page 174)
M20	Topping up the windscreen washer water / anti-freeze (Page 189)
M20	Activating the dust ejection valve (Page 179)
M20	Rinsing the water separator valve (Page 176)
M20	Cleaning the radiator (Page 180)
M20	Check the V-belt

8.3 Securing the lift arm

When working on or beneath the lift arm, it must always be secured against tipping.

Optional in the case of the lift arm support: The lift arm support must be installed on the lifting cylinder before commencing work.



Lift arm support must be installed on the lifting cylinder

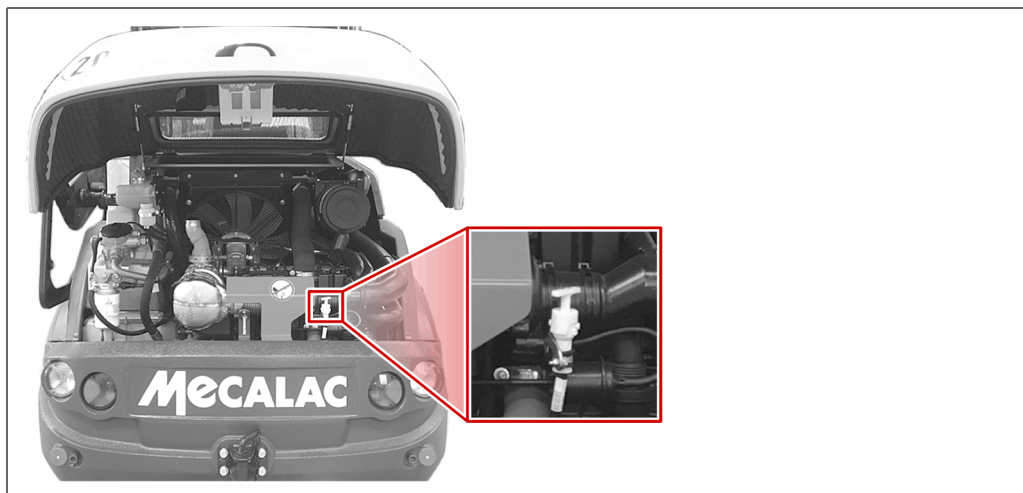
8.4 Tightening torque

permissible tightening torques

Part on wheel loader	Tightening torque
Front and rear axle fastenings	425 Nm
Steering shaft fastening	32 Nm
Ball-type slewing bearing fastening	300 Nm
Wheel nut fastening	500 Nm

8.5 Daily checks

8.5.1 Checking the engine oil level



Location of the oil dipstick



Requirement

- The wheel loader is standing on a horizontal surface.
- The diesel engine must be cold.
- The wheel loader is switched off.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

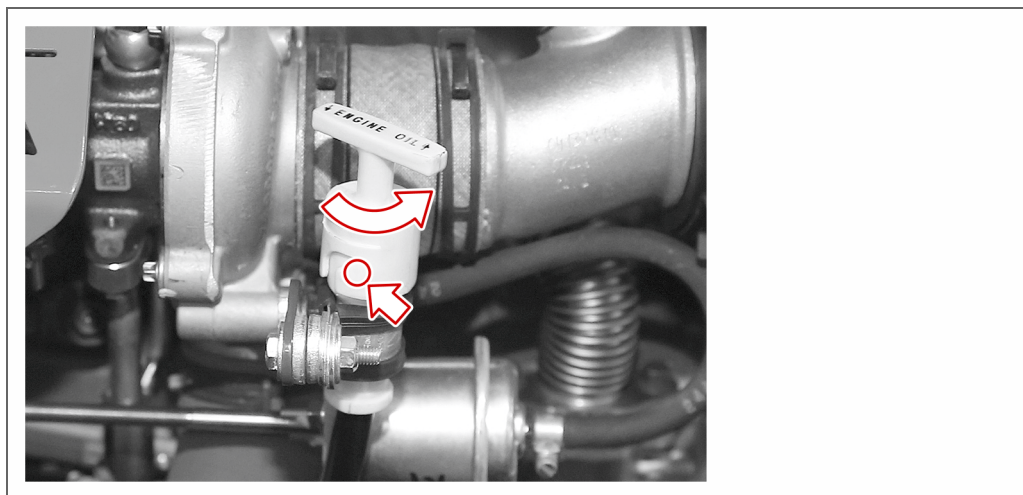


Tools required:

- Cloths
- Protective gloves

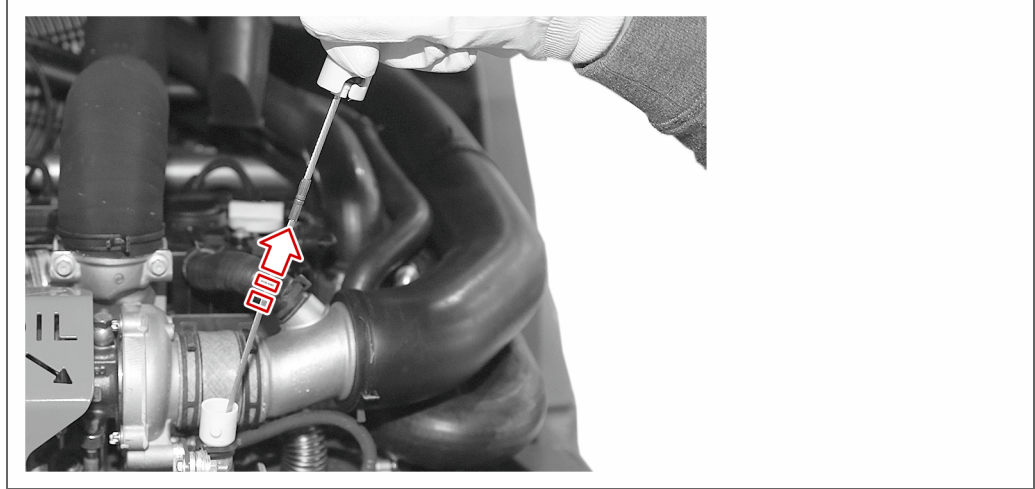
Carry out the following steps:

1. Carefully turn the «OIL DIPSTICK» anti-clockwise.

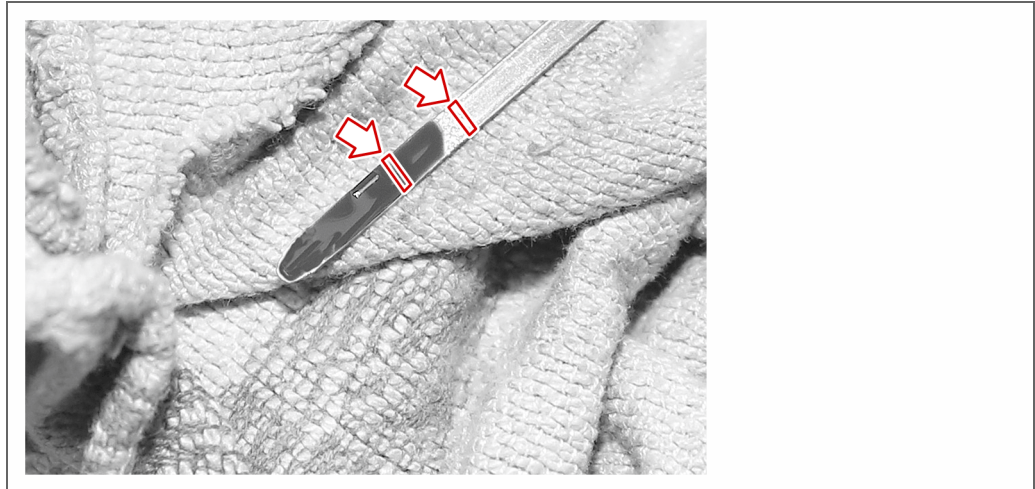


→ The oil dipstick lock is released.

2. Withdraw the «OIL DIPSTICK» from the «SOCKET» .



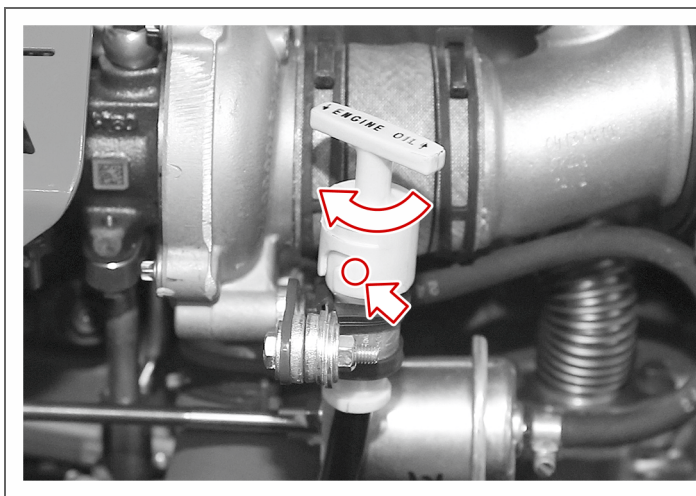
3. Clean the «OIL DIPSTICK» with a «CLOTH».
- The «OIL DIPSTICK» has been cleaned of all oil residue.
 - The «OIL DIPSTICK» has been prepared for measurement.
4. Slide the «OIL DIPSTICK» back into the «SOCKET».
5. Withdraw the «OIL DIPSTICK» from the «SOCKET» again.
- On the «OIL DIPSTICK» there is now an «OIL FILM».
6. Check the «OIL FILM» on the «OIL DIPSTICK».
- ! There is a scale on the «OIL DIPSTICK» with the minimum and maximum permissible oil levels engraved. The oil film must lie between the two markings.



- ? *The oil film is below the marking?*
There is too little engine oil in the tank.
→ Top up with engine oil; see Section “Maintenance” > “Topping up the engine oil” (Page 185).

7. Slide the «OIL DIPSTICK» back into the «SOCKET».

8. Carefully turn the «OIL DIPSTICK» clockwise.



↪ The «OIL DIPSTICK» is locked.

✓ Done.

8.5.2 Checking the hydraulic fluid level



Location of the hydraulic fluid reservoir.



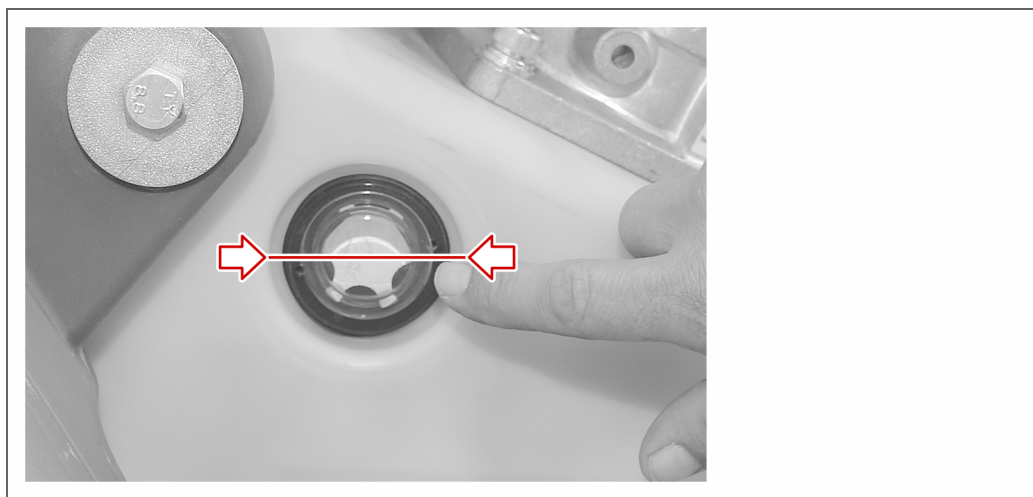
Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The engine hood of the wheel loader is open.
- The lift arm is lowered.
- If a bucket is mounted, this must be tilted.
- The ignition key has been removed.

Carry out the following steps:

➔ Check the **«SIGHT GLASS»** on the **«HYDRAULIC FLUID RESERVOIR»**.

! The **«SIGHT GLASS»** must be at least half full with hydraulic fluid.



? *The sight glass is not at least half-full?*

There is too little hydraulic fluid in the reservoir.

➔ Top up with hydraulic fluid oil; see Section: "Topping up the hydraulic fluid" (Page 191).

✓ Done.

8.5.3 Checking the brake system hydraulic fluid



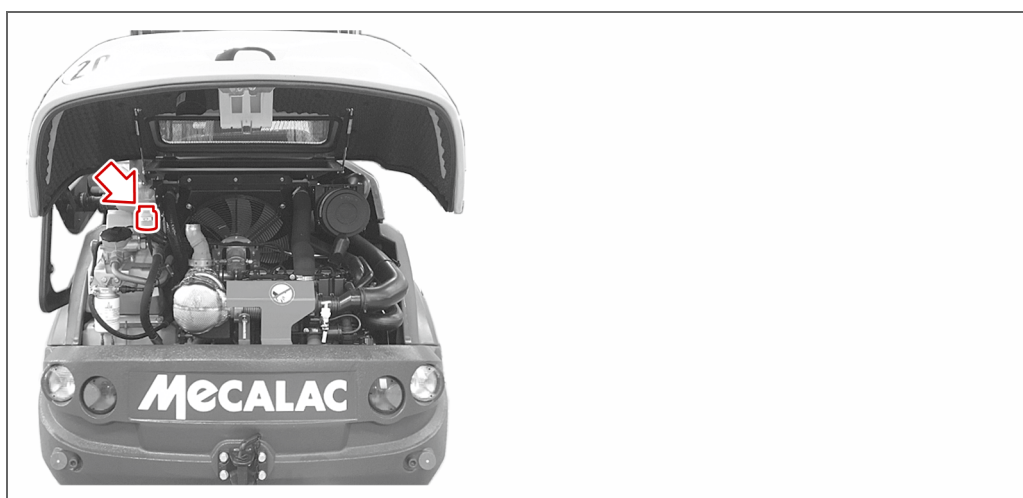
Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Carry out the following steps:

➔ Check the level on the **«BRAKE SYSTEM HYDRAULIC FLUID EXPANSION TANK»**.

! The level must lie between the **MIN** and **MAX** lines.



? *The level is below the **MIN** line?*

There is too little brake system hydraulic fluid in the expansion tank.

➔ Top up with brake system hydraulic fluid; see Section: "Topping up the brake system hydraulic fluid" (Page 187).

? *The level is above the **MAX** line?*

There is too much brake system hydraulic fluid in the expansion tank.

➔ Drain the hydraulic fluid of the brake system until the level lies between the **MIN** and **MAX** lines.

✓ Done.

8.6 Daily maintenance tasks

8.6.1 Rinsing the water separator valve



Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.



Tools required:

- Protective gloves
- Collection container

Empty the water collection container.



WARNING

Fire hazard due to ignition of the diesel fuel!

Burns to the body may result. In addition, the wheel loader will be damaged by the fire!

- Smoking **is prohibited** when working on the fuel filter!
- Immediately clean up any diesel fuel that has spilled.



WARNING

Health hazard posed by diesel fuel!

The diesel fuel is hazardous to health. Frequent skin contact can be carcinogenic.

- Avoid continuous skin contact with the diesel fuel.
- Always wear gloves when carrying out this job.

NOTICE

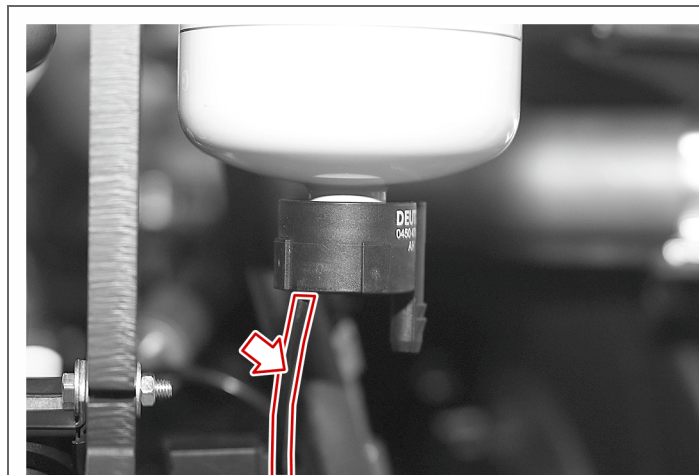
Environmental hazard posed by diesel fuel!

The diesel fuel used by the wheel loader is hazardous to the environment!

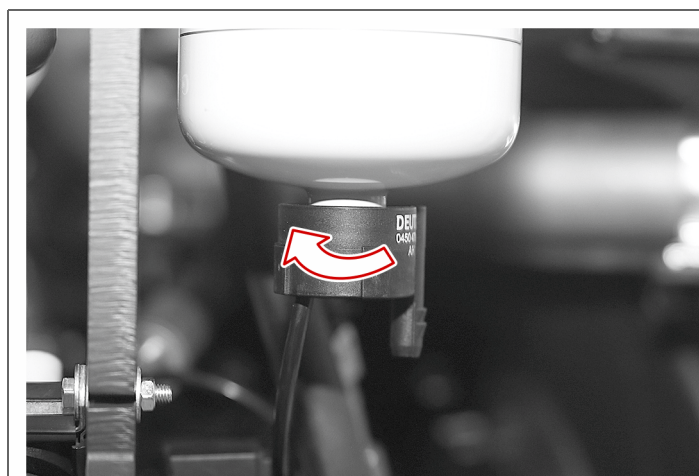
- Dispose of the diesel fuel according to the local statutory provisions,
- Catch the draining diesel fuel in a suitable container.
- Prevent the diesel fuel from entering the soil.

Carry out the following steps:

1. Carefully detach the connection cable for the water level sensor .



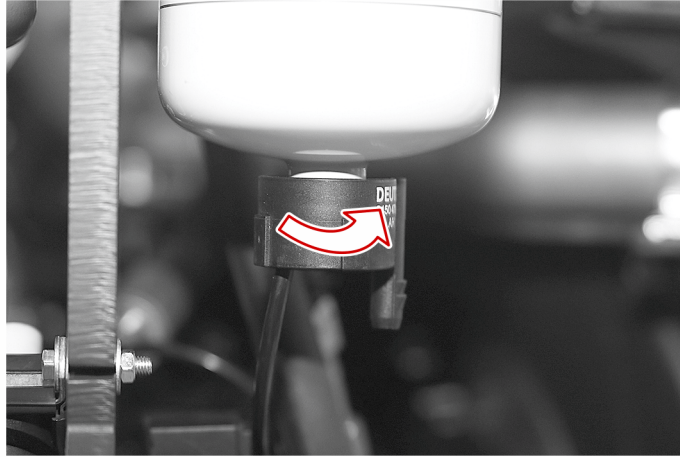
2. Place a **«CATCHMENT CONTAINER»** beneath the **«WATER SEPARATOR VALVE»**.
3. Slowly unscrew the **«DRAIN BOLT»** of the **«WATER SEPARATOR VALVE»** **«TILL IT IS OPEN»**.



- ↪ A water-fuel mixture runs into the catchment container.
 - ↪ The water separator valve is rinsed.
4. Leave the **«WATER SEPARATOR VALVE»** open, until only clearly identifiable **«DIESEL FUEL»** escapes.

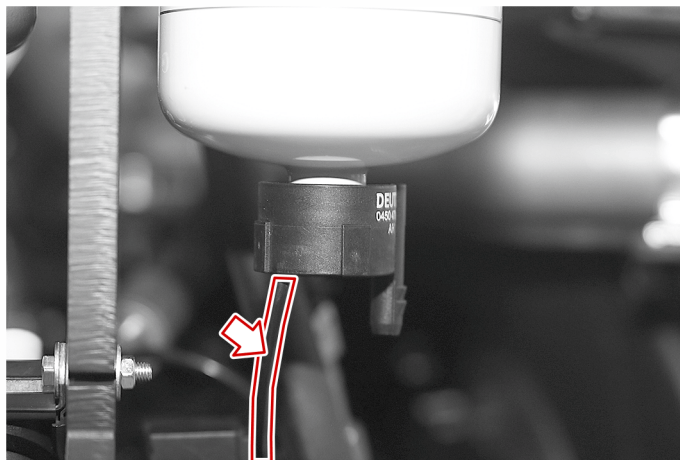
5. Slowly screw the **«DRAIN BOLT»** of the **«WATER SEPARATOR VALVE»** closed.

! Torque 1.6 +- 0.3 Nm



6. Dispose of the **«WATER-FUEL MIXTURE»** that has been collected according to the local statutory provisions.

7. Install the connection cable for the water level sensor.



The water catchment container has been emptied.

Bleeding the fuel system



Carry out the following steps:

1. Insert the **«IGNITION KEY»** of the wheel loader into the **«IGNITION LOCK»**.
2. Turn the **«IGNITION KEY»** clockwise to Position **I**.
 - ↳ The ignition system of the wheel loader is switched on.
 - ↳ The fuel supply pump is switched on.
3. Wait 20 seconds.
4. Turn the **«IGNITION KEY»** clockwise to Position **0**.
 - ↳ The ignition system of the wheel loader is switched off.

5. Repeat steps «1 TO 4» twice.
 - The fuel system is bled piece by piece.
 - The fuel pressure required for operation is built up.

The fuel system has been bled.

✓ Done.

8.6.2 Activating the dust ejection valve



Requirement

- The wheel loader is switched off.
- The diesel engine must be cold.
- The parking brake is applied.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.
- The wheel loader is standing on a horizontal surface.



Tools required:

- Protective gloves
- Cloths

Carry out the following steps:

1. Place a «CLOTH» beneath the «DUST EJECTION VALVE».
2. Using your hand, press the ends of the «DUST EJECTION VALVE» apart.



➤ Dirt falls from the air filter housing onto the cloth.

3. Remove the «CLOTH».
4. Dispose of the dirt that has been collected.

✓ Done.

8.6.3 Cleaning the radiator



Requirement

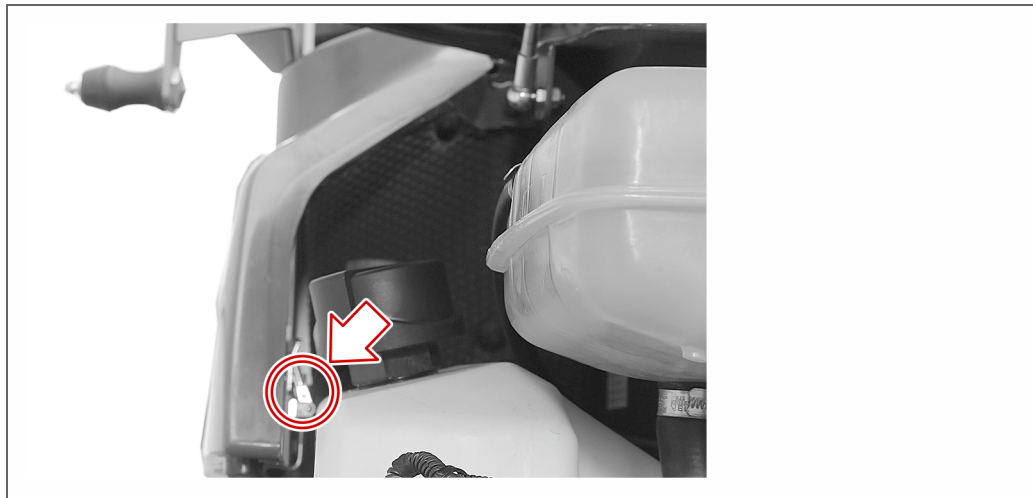
- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

Open the interior
of the radiator



Carry out the following steps:

1. Unfasten the **«LOCKING MECHANISM»** of the **«ENGINE COMPARTMENT COVER – LEFT-HAND SIDE»**.



2. Carefully remove the **«ENGINE COMPARTMENT COVER – LEFT-HAND SIDE»**.
3. Carefully unfasten the **«LOCKING MECHANISM»** of the **«RADIATOR MAINTENANCE COVER»**.



4. Carefully remove the **«RADIATOR MAINTENANCE COVER»**.

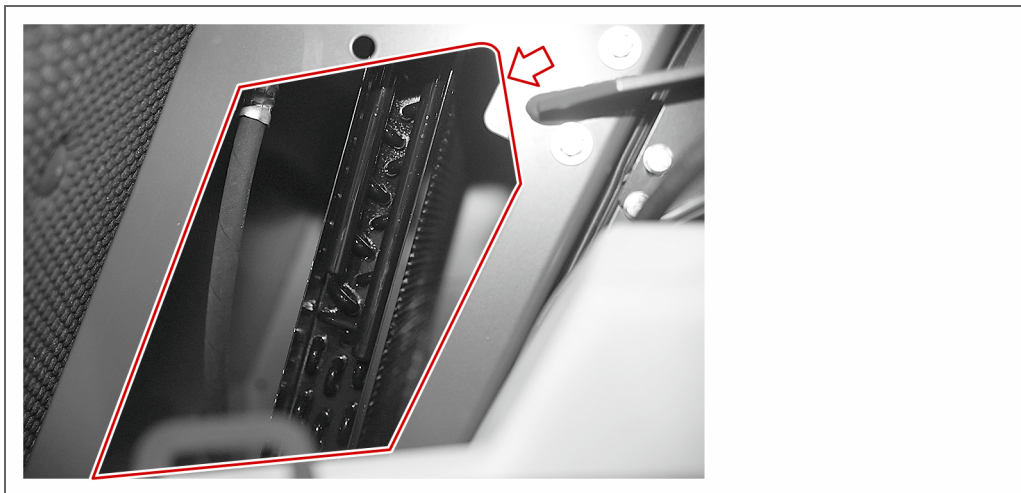
The interior of the radiator has been opened.

Clean the interior
of the radiator



Carry out the following steps:

- ➔ Clean the accumulated dust and dirt from the interior.



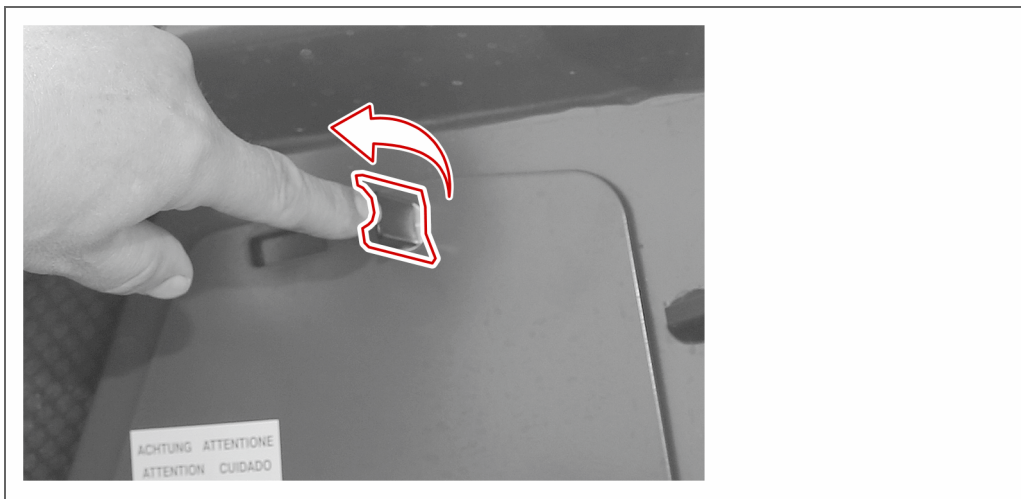
The interior of the radiator has been cleaned.

Close the interior
of the radiator



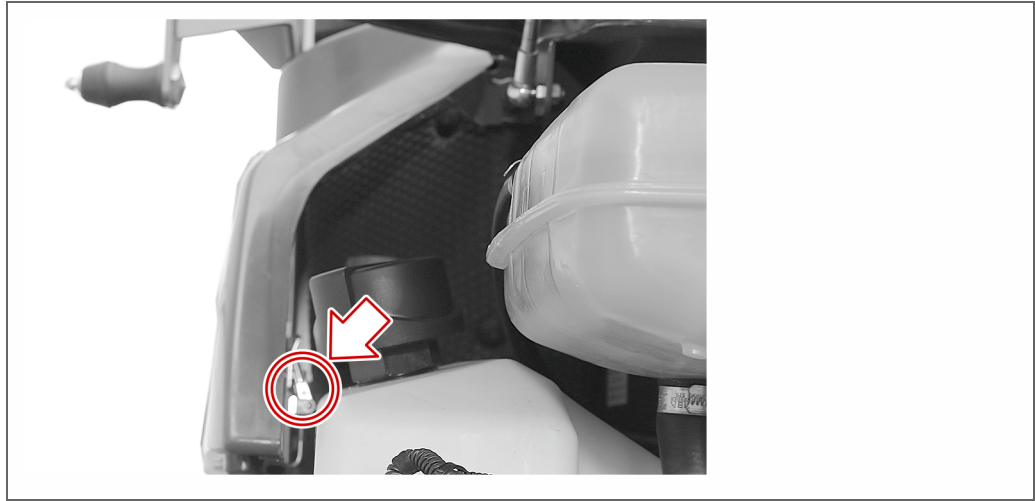
Carry out the following steps:

1. Refit the «**RADIATOR MAINTENANCE COVER**» on the fastening and guide points.
2. Refasten the locking mechanism of the «**RADIATOR MAINTENANCE COVER**».



3. Relocate the «**ENGINE COMPARTMENT COVER – LEFT-HAND SIDE**» on the fastening and guide points.

4. Refasten the locking mechanism of the «ENGINE COMPARTMENT COVER – LEFT-HAND SIDE»..



The interior of the radiator has been closed.

✓ Done.

8.7 Refilling the fluids

8.7.1 Refilling diesel fuel



Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The ignition key has been removed.



Tools required:

- Cloths
- Ignition key
- Protective gloves



WARNING

Fire hazard due to ignition of the diesel fuel!

Burns may result. In addition, the wheel loader will be damaged by the fire!

- ➔ Refuel the wheel loader only once it has cooled down.
- ➔ Smoking is **strictly prohibited** when refuelling the wheel-loader!
- ➔ Immediately clean up any diesel fuel that has spilled.



WARNING

Health hazard posed by diesel fuel!

The diesel fuel is hazardous to health. Frequent skin contact can be carcinogenic.

- ➔ Avoid continuous skin contact with the diesel fuel.
- ➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by diesel fuel!

The diesel fuel used by the wheel loader is hazardous to the environment!

- ➔ Dispose of the diesel fuel according to the local statutory provisions,
- ➔ Catch the draining diesel fuel in a suitable container.
- ➔ Prevent the diesel fuel from entering the soil.

Carry out the following steps:

1. Using the **«IGNITION KEY»** open the **«TANK CAP»** on the **«DIESEL FILLER NOZZLE»**..



2. Carefully pour the **«DIESEL FUEL»** into the **«TANK»**.
3. Using the **«IGNITION KEY»** lock the **«TANK CAP»** on the **«DIESEL FILLER NOZZLE»**.
4. Wipe off any spilled **«DIESEL FUEL»** with the **«CLOTH»** .

✓ Done.

8.7.2 Topping up the engine oil



Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.



Tools required:

- Cloths
- Protective gloves
- A suitable funnel
- Suitable, fresh engine oil; the requirements are to be found in Section: "Filling capacities and lubricant requirements of the consumables" (Page 193).



WARNING

Health hazard posed by engine oil!

The engine oil is hazardous to health. Frequent skin contact can be carcinogenic.

- ➔ Avoid continuous skin contact with the engine oil.
- ➔ Always wear gloves when carrying out this job.

NOTICE

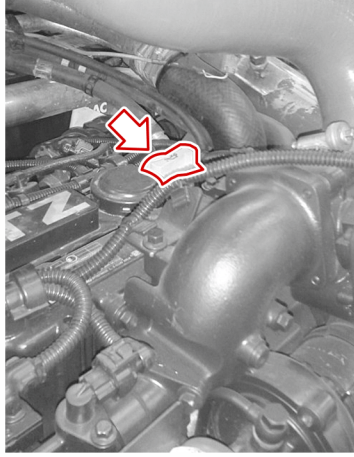
Environmental hazard posed by engine oil!

The used engine oil of the wheel loader is hazardous to the environment!

- ➔ Dispose of the used engine oil according to the local statutory provisions,
- ➔ Catch the draining engine oil in a suitable container.
- ➔ Prevent the engine oil from entering the soil.

Carry out the following steps:

1. Open the **«CAP»** of the **«ENGINE OIL FILLER NOZZLE»**.



2. Using a suitable **«FUNNEL»** pour the **«ENGINE OIL»** into the open **«ENGINE OIL FILLER NOZZLE»**.
 3. Close the **«CAP»** of the **«ENGINE OIL FILLER NOZZLE»**.
 4. Wipe off any spilled **«ENGINE OIL»** with a **«CLOTH»** .
- ✓ Done.

8.7.3 Topping up the brake system hydraulic fluid



Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.



Tools required:

- Cloths
- Protective gloves
- A suitable funnel
- Suitable, fresh brake fluid; the requirements are to be found in Section: "Filling capacities and lubricant requirements of the consumables" (Page 193).



WARNING

Health hazard posed by brake system hydraulic fluid!

The brake system hydraulic fluid is hazardous to health. Frequent skin contact can be carcinogenic.

- ➔ Avoid continuous skin contact with the brake system hydraulic fluid.
- ➔ Always wear gloves when carrying out this job.

NOTICE

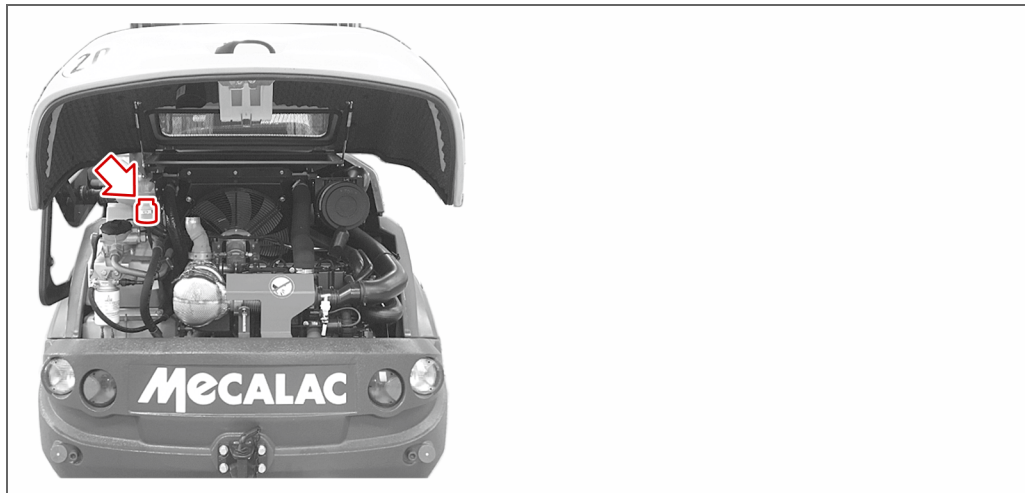
Environmental hazard posed by brake system hydraulic fluid!

The used brake system hydraulic fluid of the wheel loader is hazardous to the environment!

- ➔ Dispose of the used brake system hydraulic fluid according to the local statutory provisions,
- ➔ Catch the draining brake system hydraulic fluid in a suitable container.
- ➔ Prevent the brake system hydraulic fluid from entering the soil.

Carry out the following steps:

- ➔ Using a suitable **«FUNNEL»**, pour the **«BRAKE SYSTEM HYDRAULIC FLUID »** into the opened **«BRAKE SYSTEM HYDRAULIC FLUID EXPANSION TANK»** until the level lies between the **MIN** and **MAX** lines.



✓ Done.

8.7.4 Topping up the windscreen washer water / anti-freeze



Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.

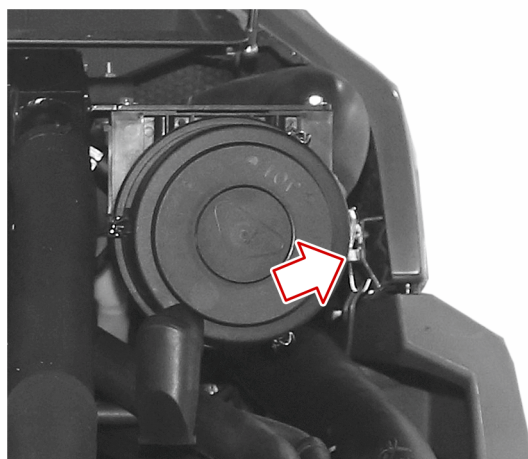


Tools required:

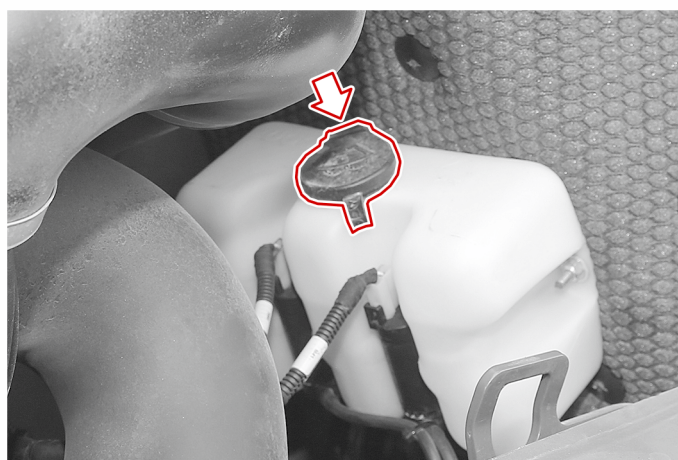
- A suitable funnel
- Fresh windscreen washer water or anti-freeze

Carry out the following steps:

1. Unfasten the locking mechanism of the **«ENGINE COMPARTMENT COVER – RIGHT-HAND SIDE»**.

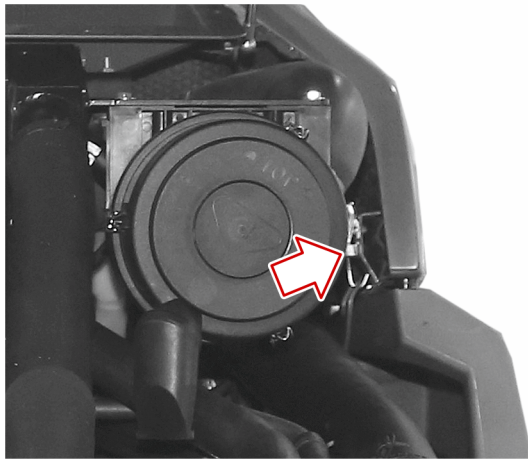


2. Carefully remove the **«ENGINE COMPARTMENT COVER – RIGHT-HAND SIDE»**.
3. Open the **«CAP»** of the **«WINDSCREEN WASHER WATER TANK»**.



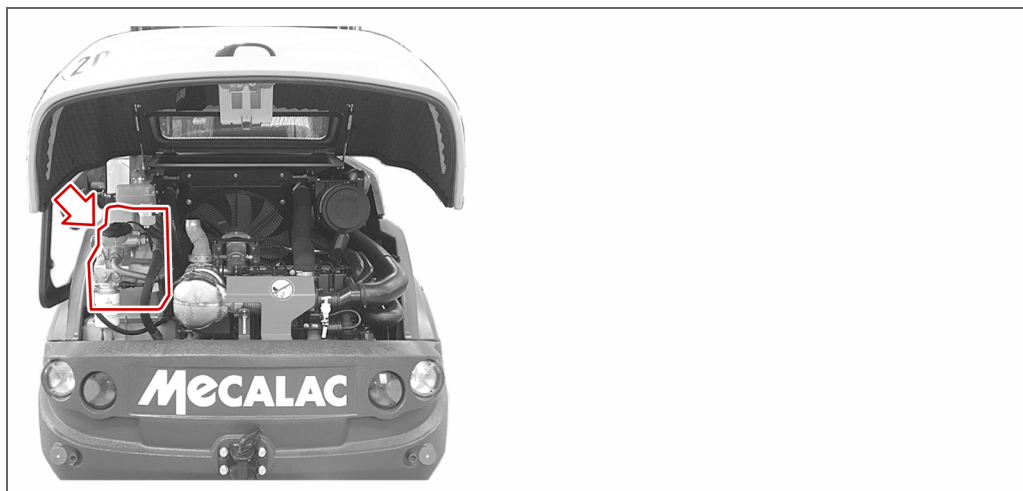
4. Using a suitable **«FUNNEL»** pour the **«WINDSCREEN WASHER WATER / ANTI-FREEZE»** into the open **«WINDSCREEN WASHER TANK»**.

5. Close the **«CAP»** of the **«WINDSCREEN WASHER TANK»**..
6. Relocate the **«ENGINE COMPARTMENT COVER – RIGHT-HAND SIDE»** on the fastening and guide points.
7. Refasten the locking mechanism of the **«ENGINE COMPARTMENT COVER – RIGHT-HAND SIDE»**.



✓ Done.

8.7.5 Topping up the hydraulic fluid



Location of the hydraulic fluid reservoir.



Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The engine hood of the wheel loader is open.
- The ignition key has been removed.



Tools required:

- Cloths
- Protective gloves
- A suitable funnel
- If required, suitable, fresh hydraulic fluid; the requirements are to be found in Section: "Filling capacities and lubricant requirements of the consumables" (Page 193).



WARNING

Health hazard posed by hydraulic fluid!

The hydraulic fluid is hazardous to health. Frequent skin contact can be carcinogenic.

- ➔ Avoid continuous skin contact with the hydraulic fluid.
- ➔ Always wear gloves when carrying out this job.

NOTICE

Environmental hazard posed by hydraulic fluid!

The used hydraulic fluid of the wheel loader is hazardous to the environment!

- ➔ Dispose of the used hydraulic fluid according to the local statutory provisions,
- ➔ Catch the draining hydraulic fluid in a suitable container.
- ➔ Prevent the hydraulic fluid from entering the soil.

Carry out the following steps:

1. Open the **«CAP»** of **«HYDRAULIC FLUID FILLER NOZZLE»**.

! If the cap cannot be opened by hand, then a special open-end spanner can be used.



2. Using a suitable **«FUNNEL»** pour the **«HYDRAULIC FLUID»** into the open **«HYDRAULIC FLUID FILLER NOZZLE»**.
3. Manually close the **«CAP»** of the **«HYDRAULIC FLUID FILLING NOZZLE»**.
4. Wipe off any spilled **«HYDRAULIC FLUID»** with a **«CLOTH»**.

✓ Done.

8.8 Lubrication

In this chapter you will find information regarding the lubrication of the wheel loader.

8.8.1 Filling capacities and lubricant requirements of the consumables

Information regarding the filling capacities and lubricant requirements of the consumables are to be found in Chapter "Performance data and dimensional drawing" > "Fill quantities of the consumables" (Page 39).



Info

Other lubricants may have to be used, depending on the environmental conditions and the application. In this regard, check the instruction signs directly on the wheel loader.

8.8.2 Lubrication plan

In this chapter you will find information regarding the greasing of the wheel loader. In addition, you may find further lubrication points on the installed attachments.

Lubrication schedule

Lubrication intervals	Part on wheel loader	Location of the lubrication points
after 10 hours of operation	Quick coupler	See Chapter: "Lubrication points – quick-change device" (Page 198).
after 10 hours of operation	Lift arm	See Chapter: "Lubrication points - lift arm" (Page 202).
after 50 hours of operation	Engine hood	See Chapter: "Lubrication points - engine hood" (Page 208).
after 50 hours of operation	Interior of engine compartment	See Chapter: "Lubrication points – interior of engine compartment" (Page 208).
after 50 hours of operation	Front and rear axles	See Chapter: "Lubrication points – front and rear axles" (Page 209).

8.8.3 Lubrication process

In this section it is described how you should proceed with lubrication, using a grease nipple as an example.



Requirement

- The wheel loader is switched off.



Tools required:

- Cloths
- Manual grease gun
- A ladder, depending on the lubrication point
- Protective gloves

Preparing the lubrication process



WARNING

Health hazard posed by grease!

The grease is hazardous to health. Frequent skin contact can be carcinogenic.

- Avoid continuous skin contact with the grease.
- Always wear gloves when carrying out this job.

NOTICE

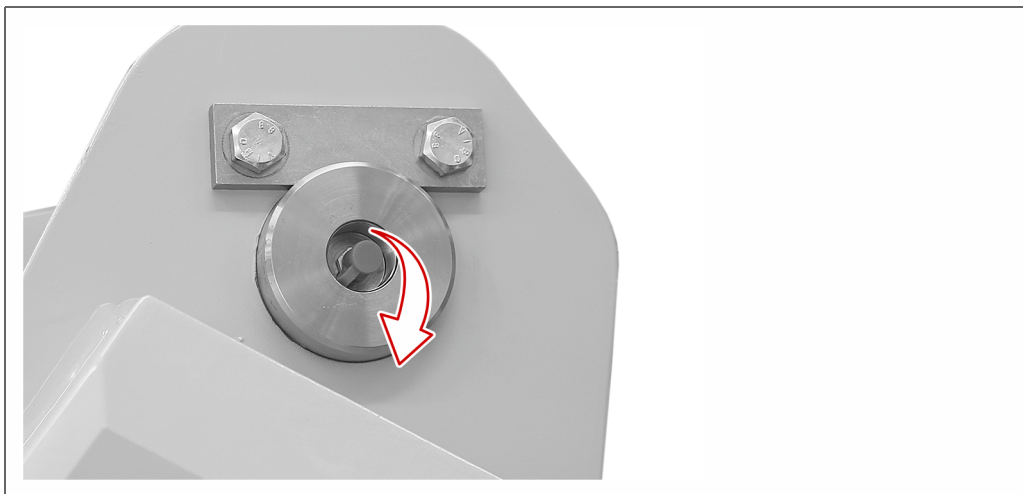
Environmental hazard posed by grease!

The grease used for the wheel loader is hazardous to the environment!

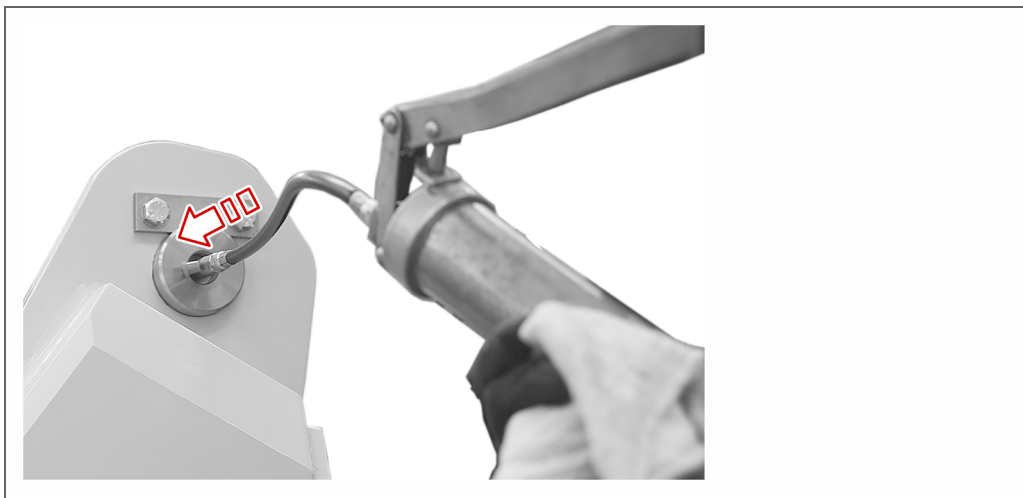
- Dispose of the grease according to the local statutory provisions,
- Catch the draining grease oil in a suitable container.
- Prevent the grease from entering the soil.

Carry out the following steps:

1. Using a «CLOTH» wipe any surplus «OLD GREASE» off the «DISCHARGE POINT» .
2. Remove the «PROTECTIVE CAP» from the «GREASE NIPPLE» .



3. Clean the «GREASE NIPPLE» with a «CLOTH».
4. Press the «GREASE NOZZLE» of the «GREASE GUN» onto the «GREASE NIPPLE».



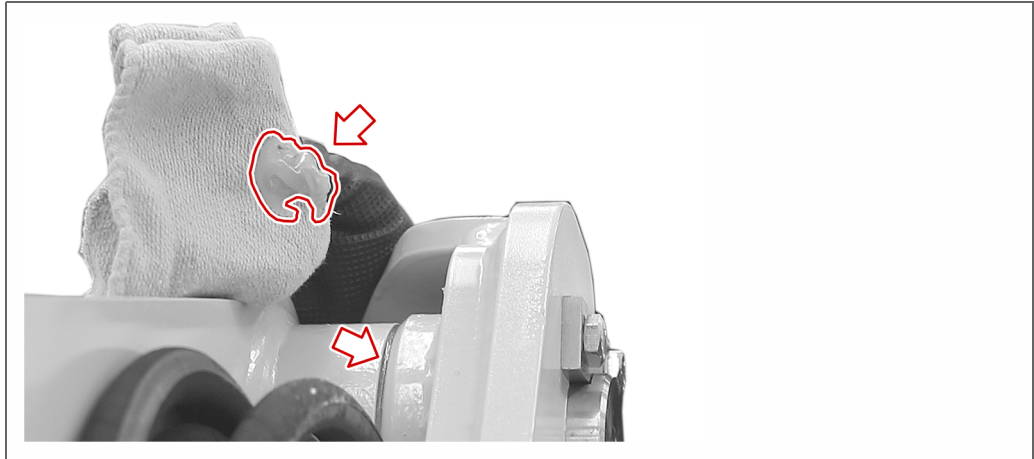
The lubrication process is ready.

Performing the
lubrication process

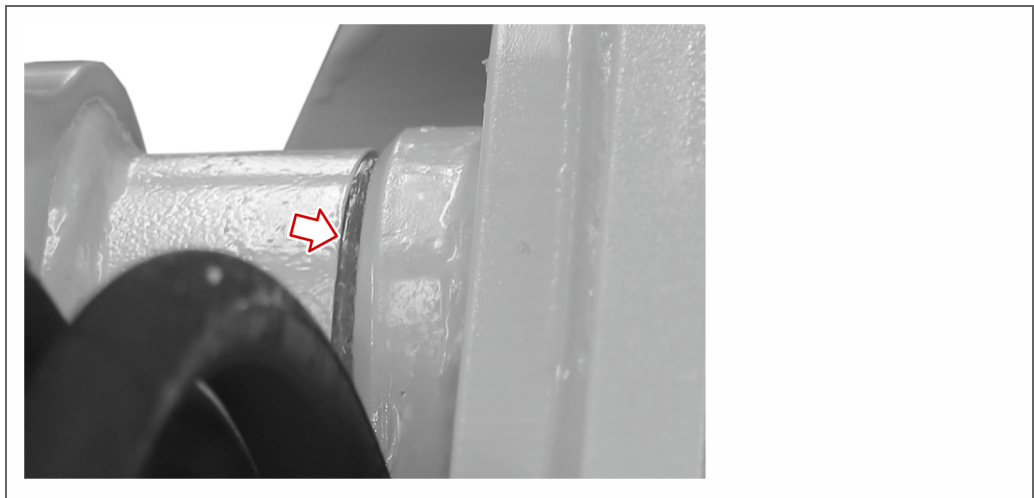


Carry out the following steps:

1. Using the «GREASE GUN» squeeze the «FRESH GREASE» into the «LUBRICATION POINT».
! Squeeze until clearly visible fresh grease escapes from the discharge point.
2. Using a «CLOTH» wipe the «OLD GREASE» off the «DISCHARGE POINT» .



3. Using the «GREASE GUN» squeeze a little more until a slightly domed «BEAD» is visible at the «DISCHARGE POINT».



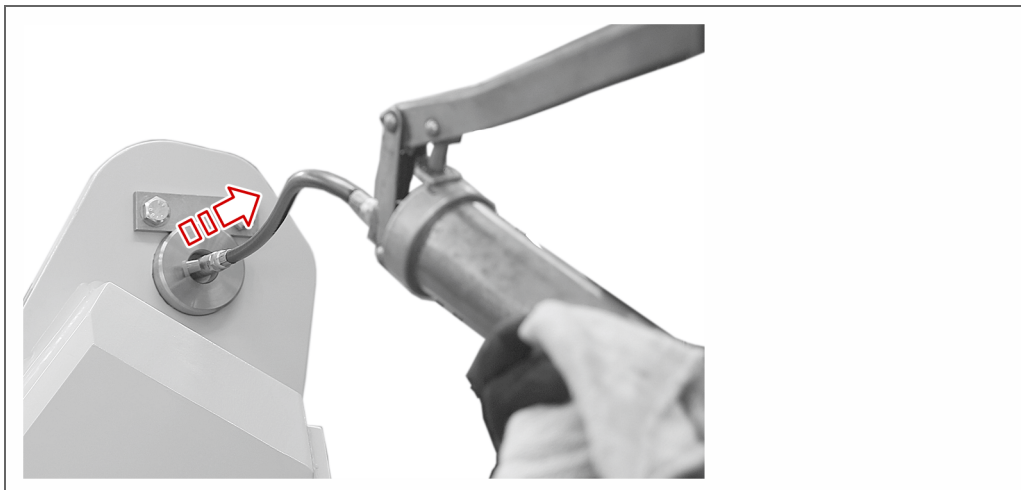
The lubrication process is complete.

Completing the
lubrication process

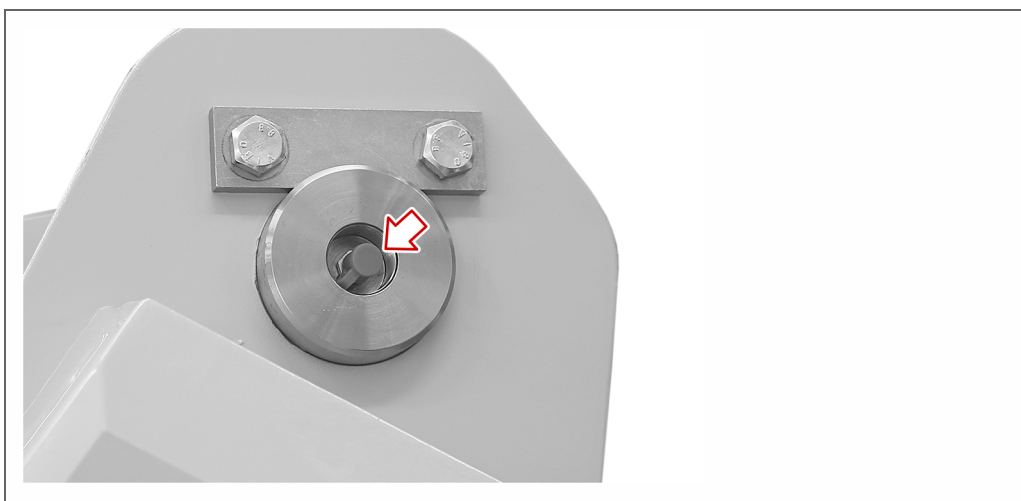


Carry out the following steps:

1. Pull the «GREASE NOZZLE» of the «GREASE GUN» off the «GREASE NIPPLE» .



2. Clean the «GREASE NIPPLE» with a «CLOTH».
3. Press the «PROTECTIVE CAP» back onto the «GREASE NIPPLE».



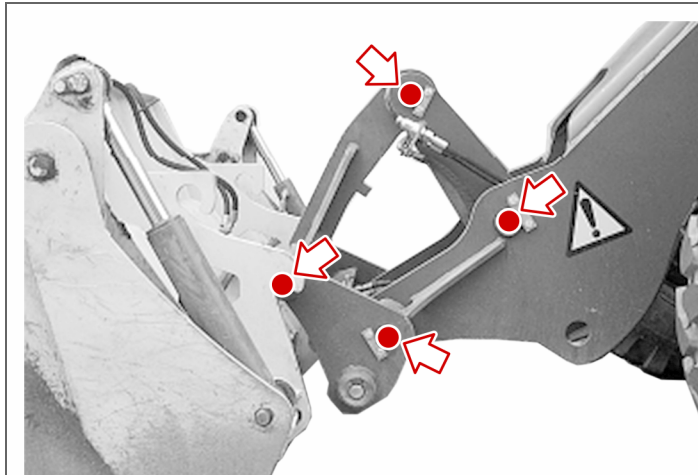
4. Dispose of the «USED CLOTHS» according to the local statutory provisions.

The lubrication process is complete.

✓ Done.

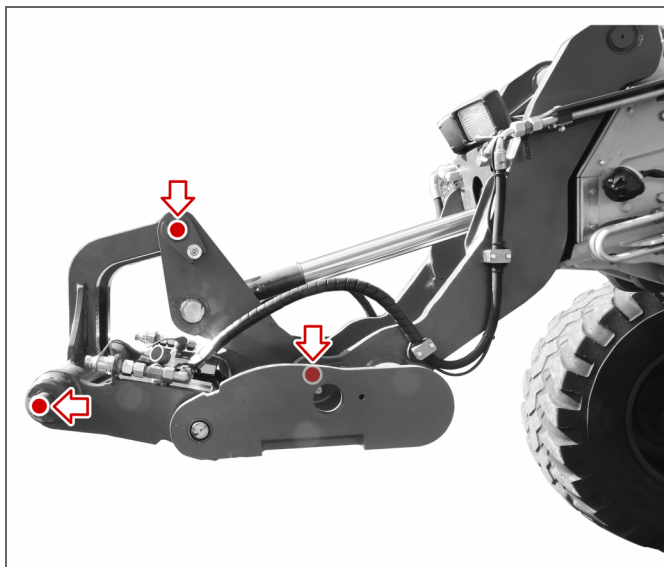
8.8.4 Lubrication points – quick-change device

8.8.4.1 AF Series

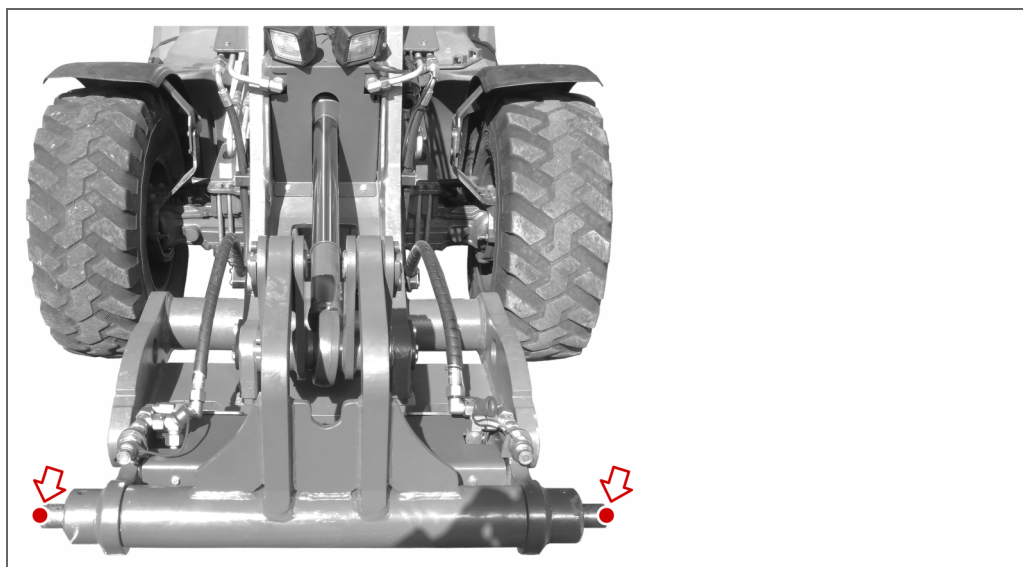


each of 4 lubrication points on the quick-change device (both sides)

8.8.4.2 AT Series



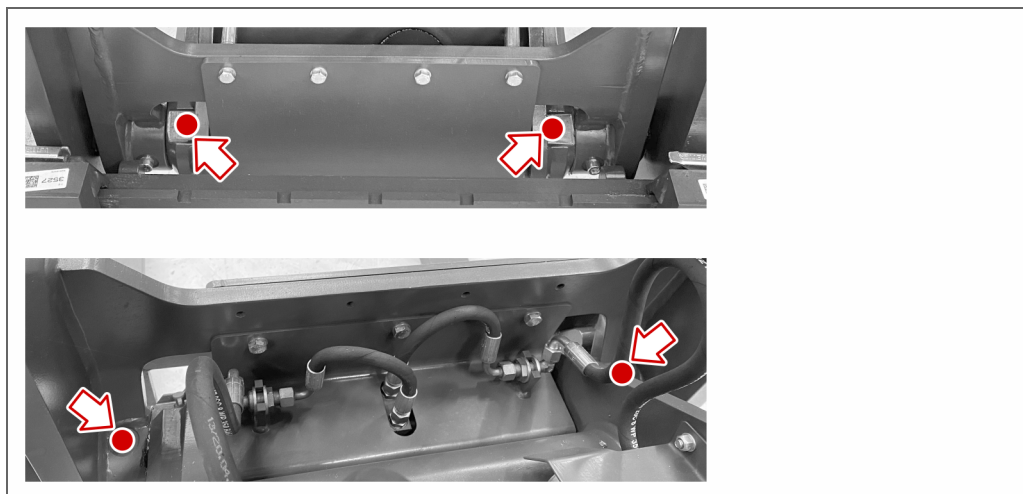
Lubrication points on the quick-change device (both sides) – Left-hand view of the quick-change device



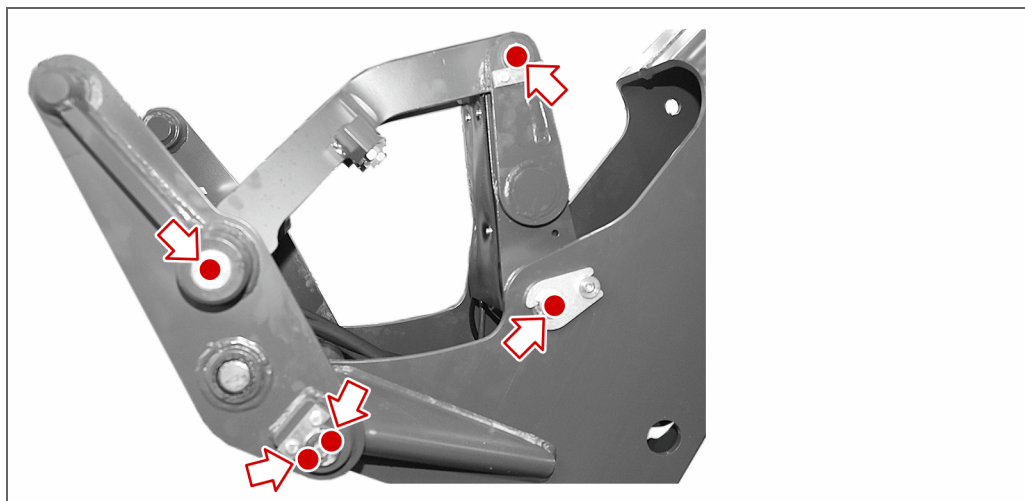
Lubrication points on the quick-change device – Front view of the quick-change device

8.8.4.3 AS850 / 1000

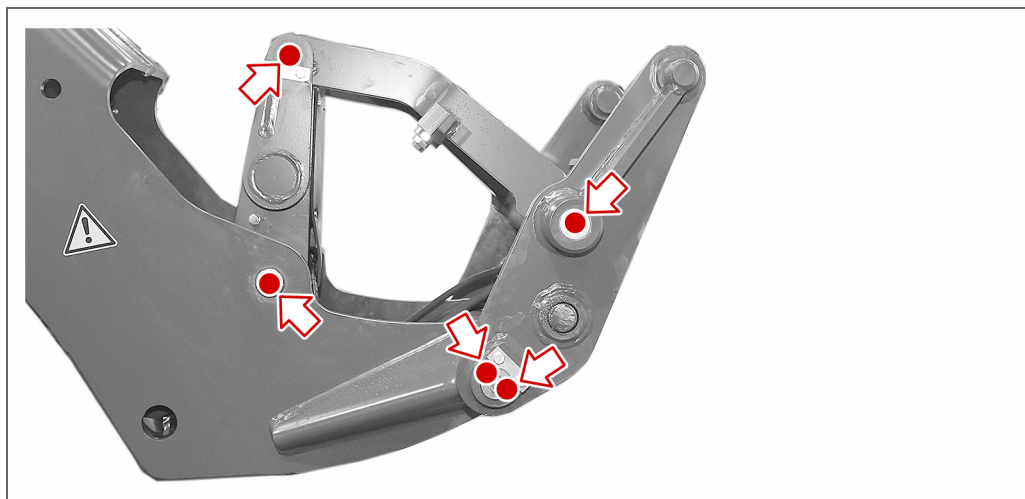
8.8.4.3.1 Extract - top



Extract – top | Lubrication point on the quick-change device

8.8.4.3.2 Extract - right

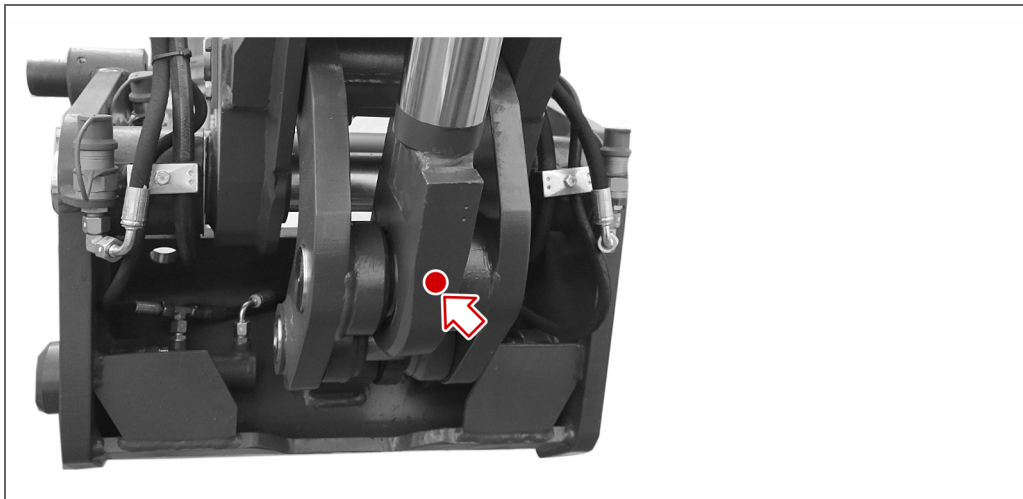
Extract – right | 5 lubrication points on the quick-change device

8.8.4.3.3 Extract - left

Extract – left | 5 lubrication points on the quick-change device

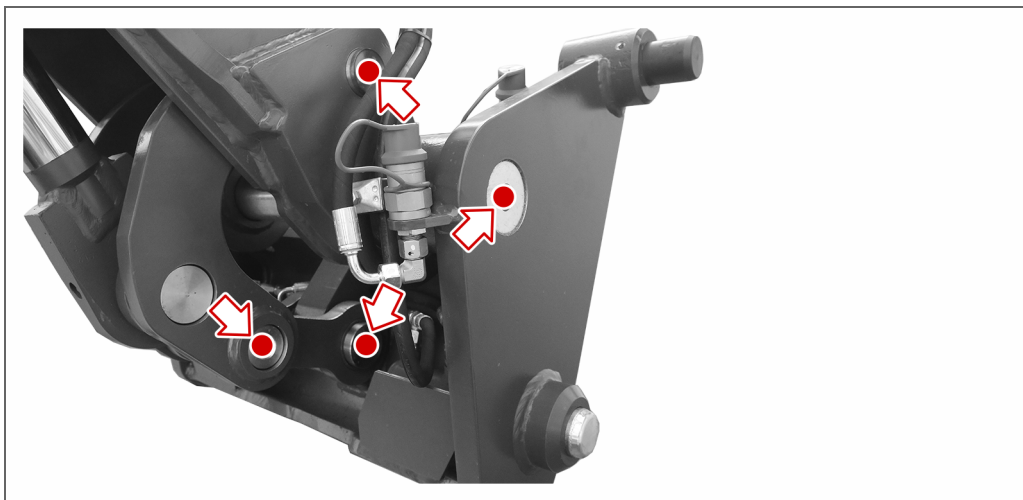
8.8.4.4 AS900tele

8.8.4.4.1 Extract - rear



Extract – top | Lubrication point on the quick-change device

8.8.4.4.2 Extract – side



Extract – side | Lubrication points on the quick-change device (both sides)

8.8.5 Lubrication points - lift arm

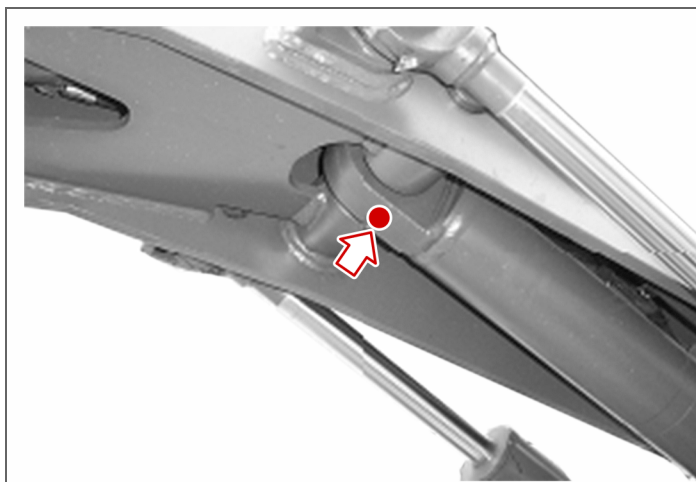
8.8.5.1 AF Series



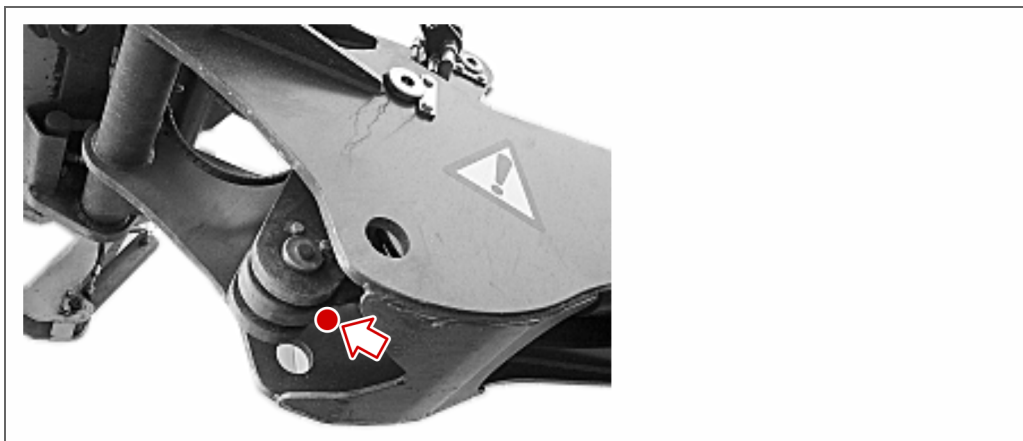
Lubrication points on the frame and lifting cylinder - rod-side (both sides)



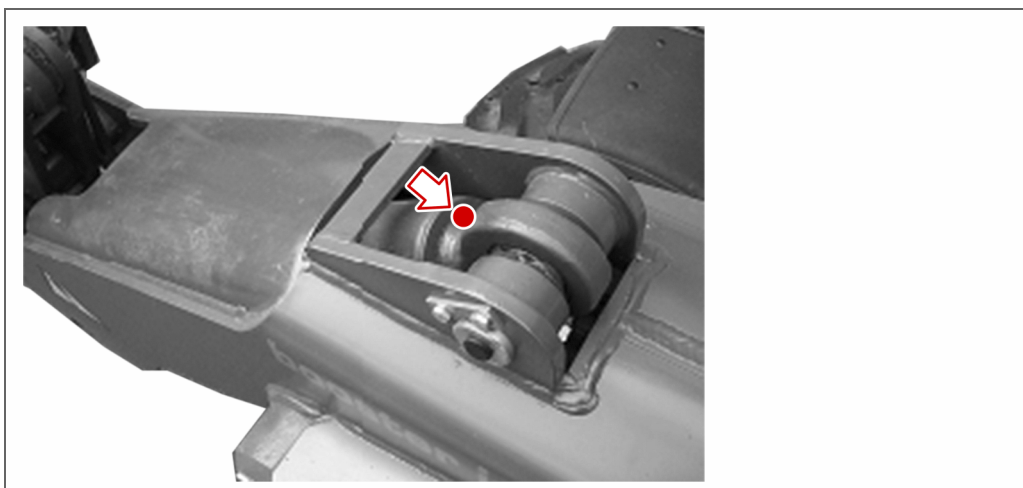
Lubrication point on the lifting cylinders - bottom and a lubrication point on the compensation cylinder (rod-side).



Lubrication point on the compensation cylinder - bottom

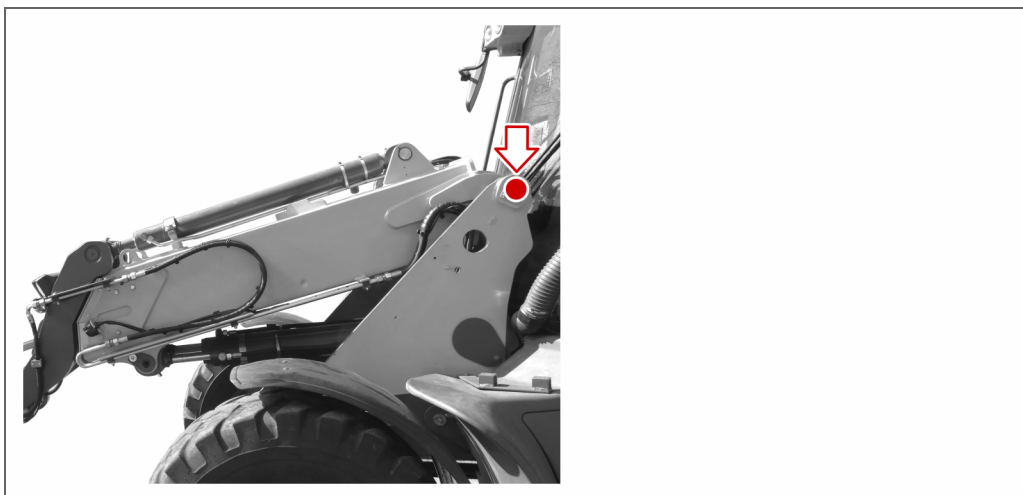


Lubrication point on the tipping cylinder - rod-side

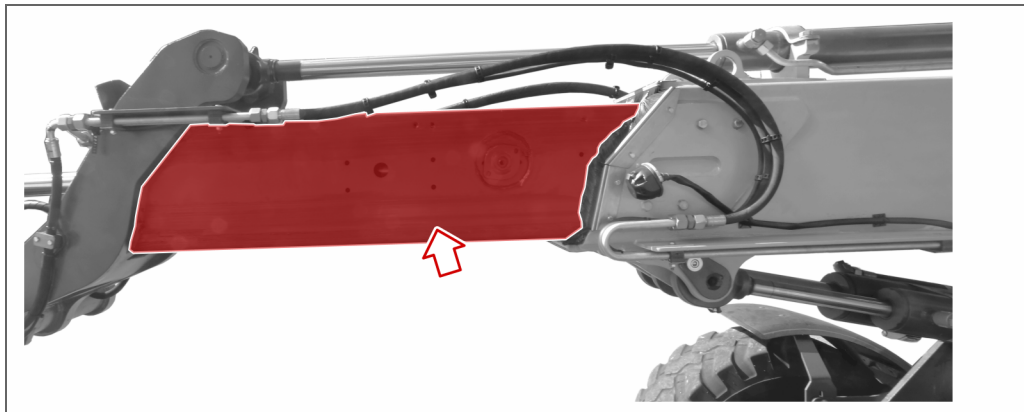


Lubrication point on the tipping cylinder - bottom

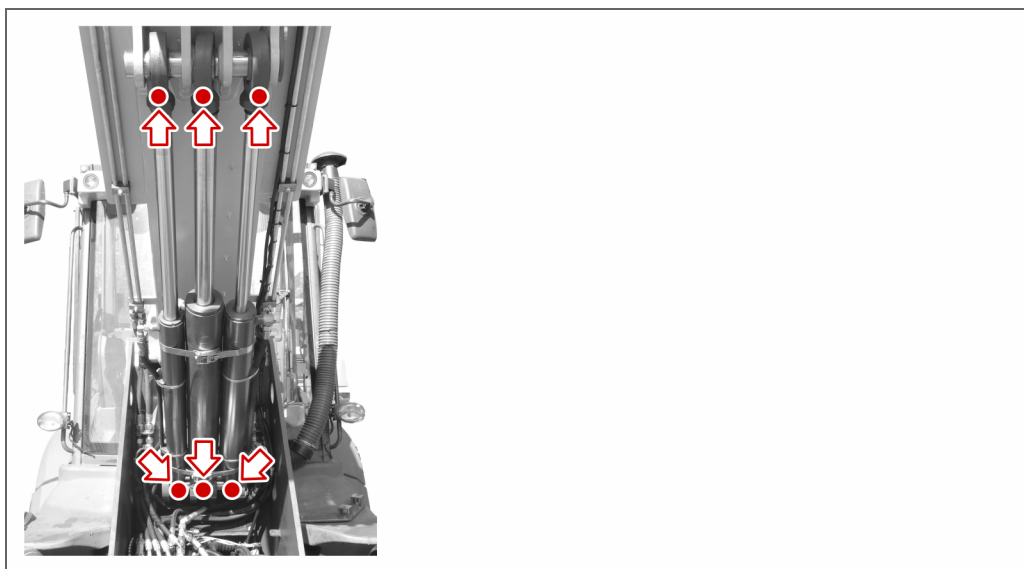
8.8.5.2 AT Series



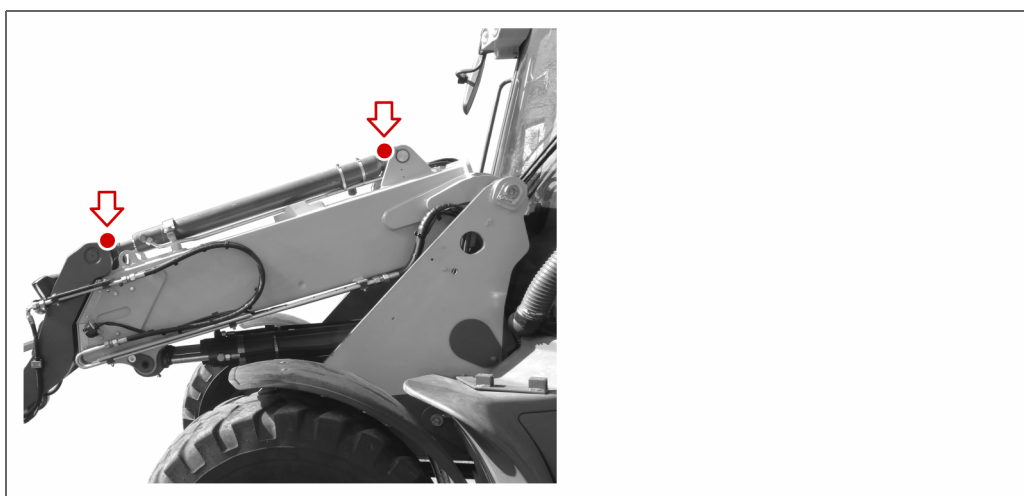
Lubrication point on the frame (both sides)



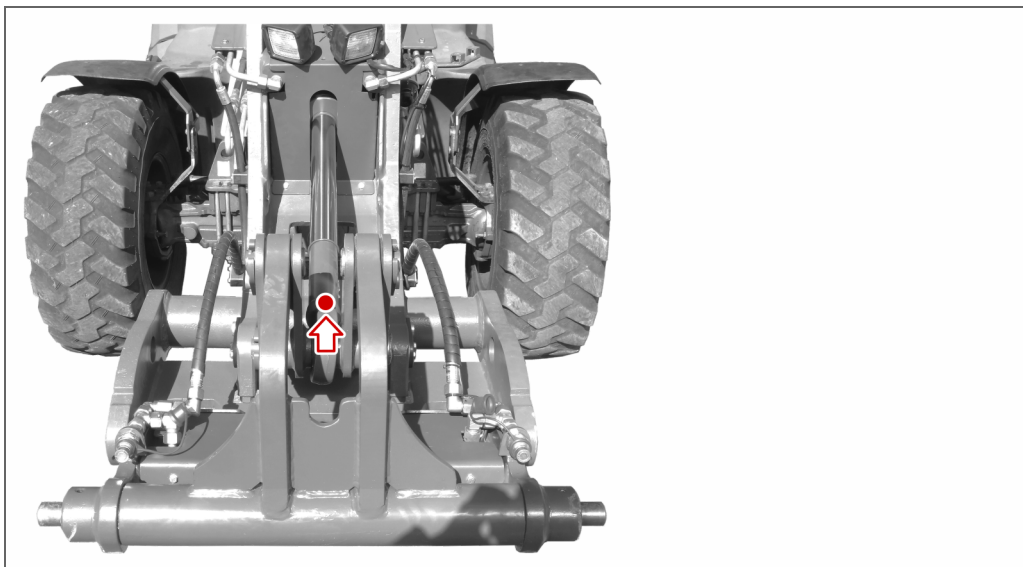
Lubrication point on the extended lift arm (both sides)



Lubrication points on the lifting and compensation cylinders – Bottom view of the lift arm



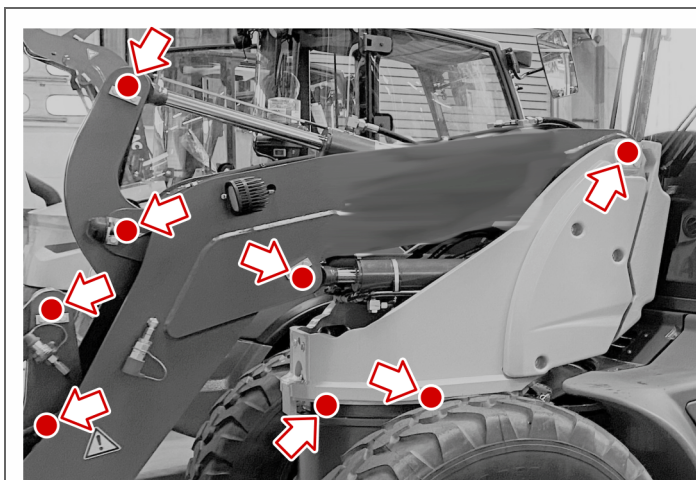
Lubrication points on the telescopic cylinder – Left-hand view of the lift arm



Lubrication point on the tipping cylinder – Front view of the lift arm

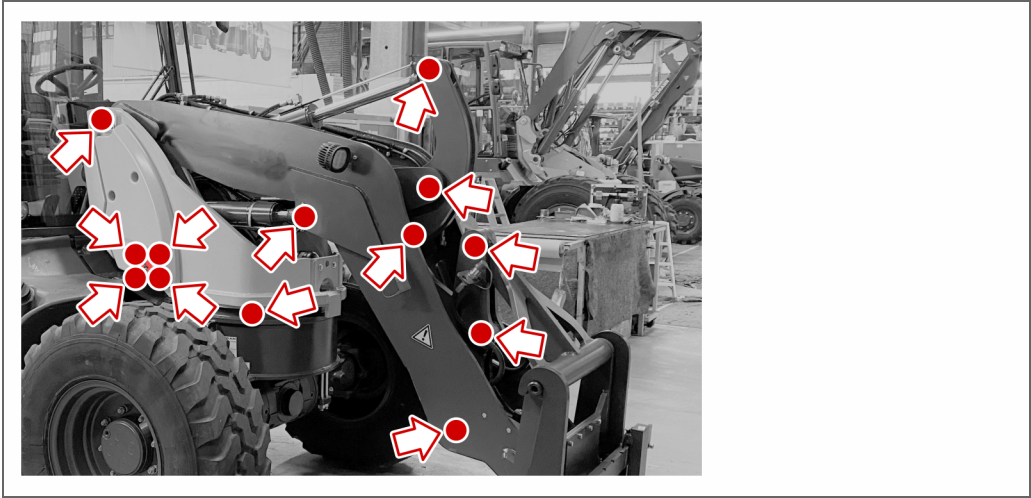
8.8.5.3 AS850 / 1000

8.8.5.3.1 View – left-hand side



View – left-hand side | Lubrication points on the lift arm

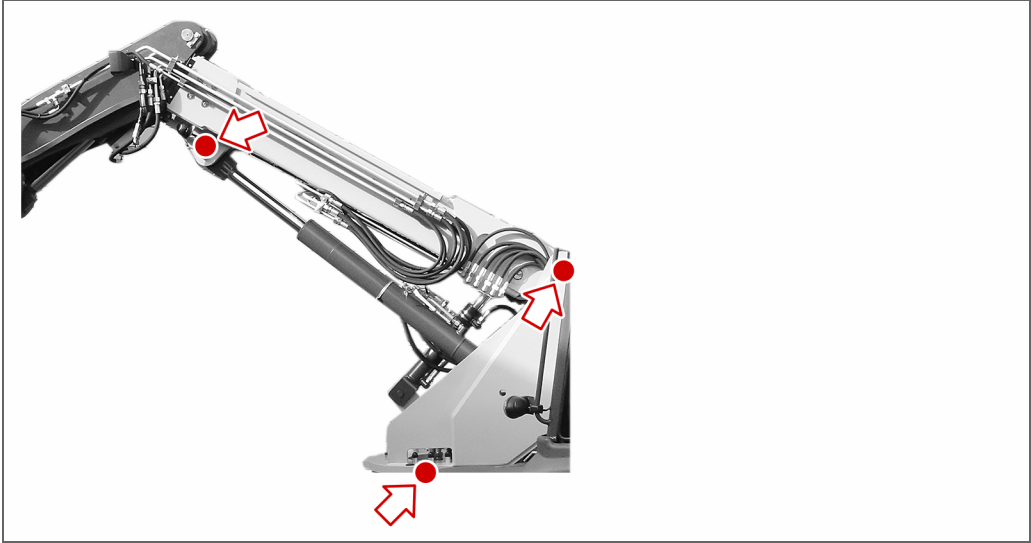
8.8.5.3.2 View – right-hand side



View – right-hand side | Lubrication points on the lift arm

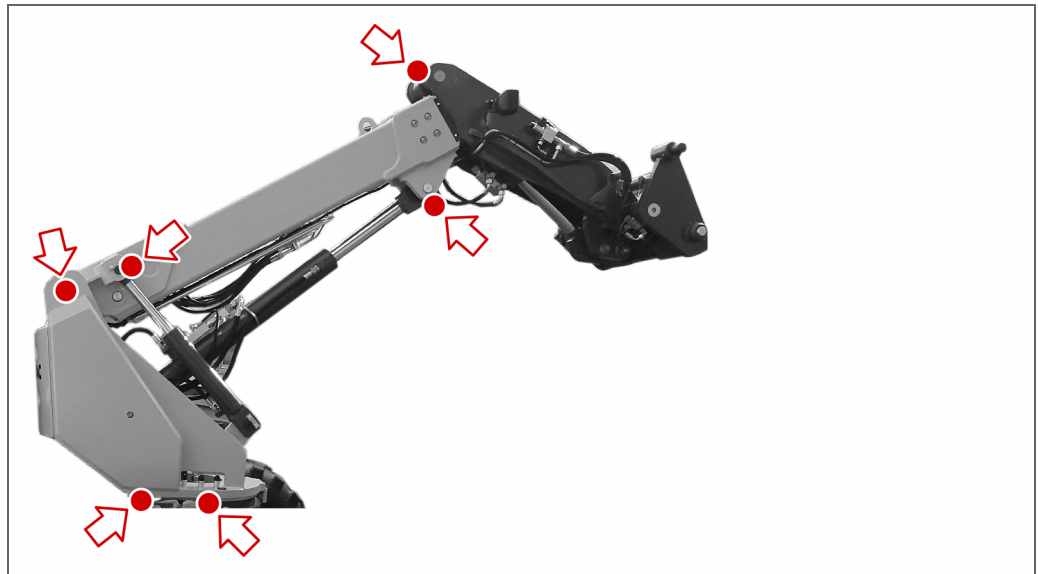
8.8.5.4 AS900tele

8.8.5.4.1 View – left-hand side



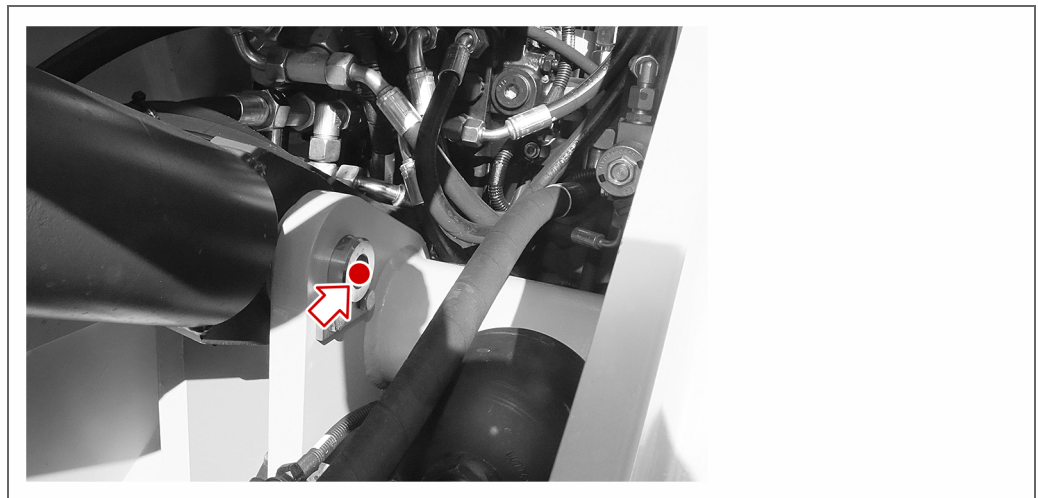
View – left-hand side | Lubrication points on the lift arm

8.8.5.4.2 View – right-hand side



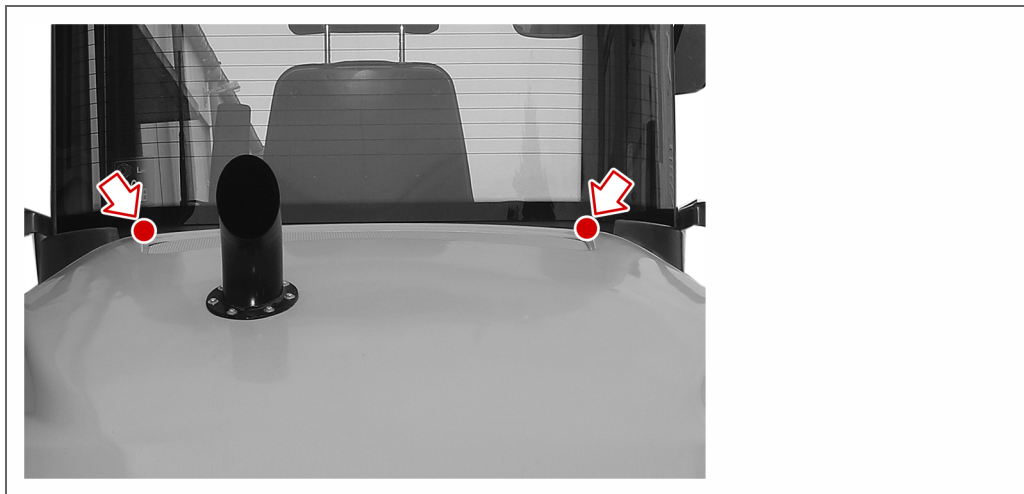
View – right-hand side | Lubrication points on the lift arm

8.8.5.4.3 View – front



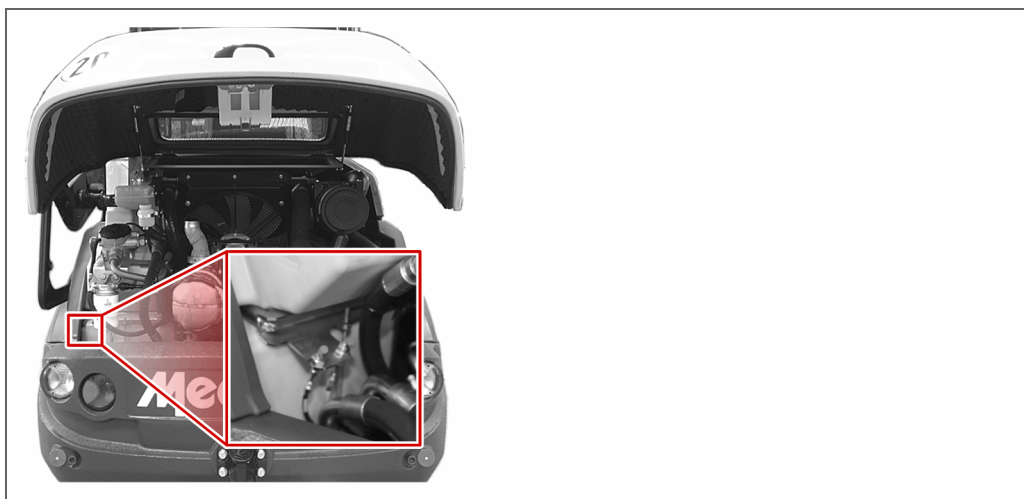
View – front | Lubrication point on the telescopic cylinder

8.8.6 Lubrication points - engine hood



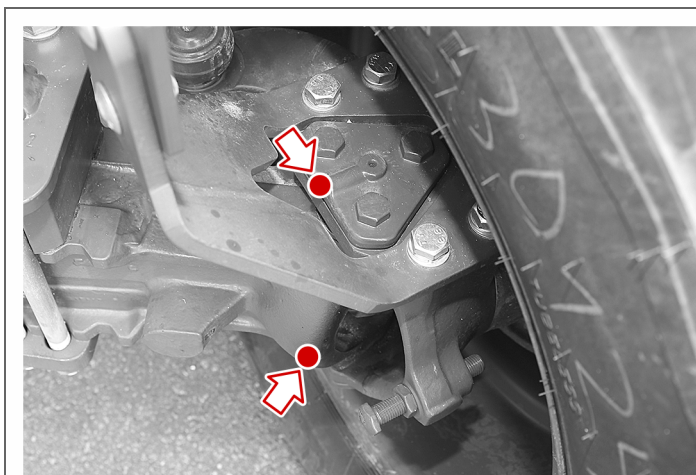
Engine hood | 2 lubrication points

8.8.7 Lubrication points – interior of engine compartment



Engine hood | 2 lubrication points on the oscillating axle mount

8.8.8 Lubrication points – front and rear axles



Front and rear axles | 2 kingpin lubrication points per wheel

8.9 Diesel particulate filter cleaning




The diesel particulate filter serves to process the exhaust emissions of the wheel loader. The diesel particulate filter must be cleaned at regular intervals. The cleaning of the particulate filter is performed by means of an automatic cleaning process.

- Indicators (Page 210)
- Display – Cleaning the diesel particle filter (Page 211)
- Diesel particulate filter cleaning (Page 215)

8.9.1 Indicators

The indicators signal when the diesel particulate filter must be cleaned or exchanged. These indicators are arranged on the multi-function control panel.

Key

No.	Figure	Designation	Explanation
1		Active regeneration	Lights up during the cleaning process.
2		Ash load	<p>Lights up if the diesel particulate filter must be exchanged (ash load of the diesel particulate filter over 100 %)</p> <p>Flashes if the diesel particulate filter has not yet been exchanged as instructed (ash load of the diesel particulate filter over 105 %)</p> <p>The diesel particulate filter may only be exchanged by qualified technicians.</p>
3		Regeneration required.	<p>Flashes if cleaning of the diesel particulate filter is required.</p> <p>The flashing behaviour of the indicator changes according to the load state of the diesel particulate filter (See page 211: Diesel particulate filter cleaning – Selection).</p>

8.9.2 Display – Cleaning the diesel particle filter

The menu for cleaning the diesel particulate filter is shown on the display of the multi-function panel. In this chapter you will find information regarding the respective display screens.

- Diesel particulate filter cleaning – Selection (Page 211)
- Diesel particulate filter cleaning – Cleaning (Page 212)
- Diesel particulate filter cleaning – Warning messages (Page 212)

8.9.2.1 Diesel particulate filter cleaning – Selection

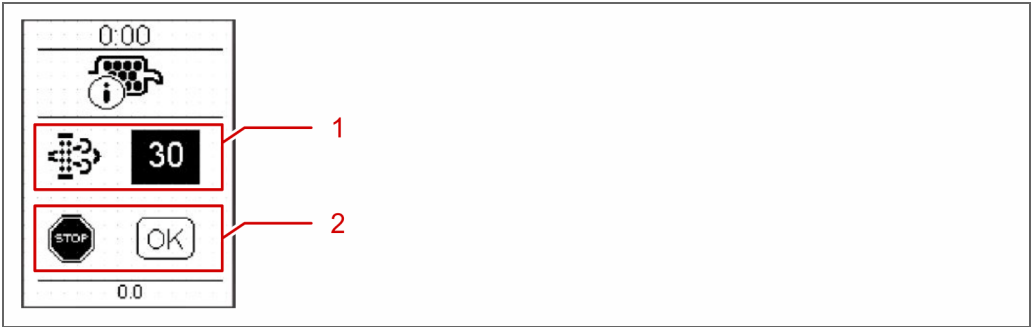


Display: Diesel particulate filter cleaning – Selection

Key

No.	Function
1	Shows the current accumulation status of the diesel particulate filter. There are the following levels of load: <ul style="list-style-type: none"> • Less than 100 %: Normal accumulation > no regeneration required • More than 100 %: Requirement > Regeneration required. > «REGENERATION REQUIRED» indicator flashes slowly • More than 109 %: Warning > Regeneration required. > «REGENERATION REQUIRED» indicator flashes rapidly • More than 125 %: Service > Regeneration required. > «REGENERATION REQUIRED» indicator flashes rapidly > Reduction in performance of 30 % • More than 156 %: Stop > «REGENERATION REQUIRED» indicator flashes rapidly > Reduction in performance of 30 % > Speed reduced to 1 200 1/min > Diesel particulate filter must be exchanged, no regeneration possible
2	Indicates that the cleaning process is started by means of the «OK» button.
3	Indicates that the DIESEL PARTICULATE FILTER menu is closed by means of the «MENU» button.

8.9.2.2 Diesel particulate filter cleaning – Cleaning



Display: Diesel particulate filter cleaning – Cleaning

Key

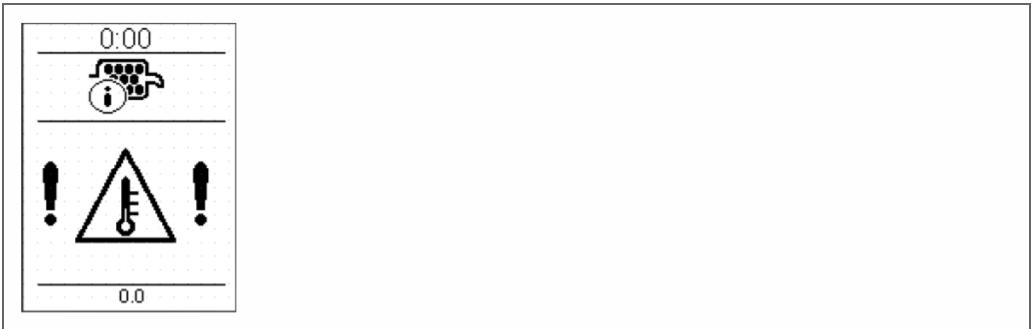
No.	Function
1	Indicates the time remaining in the cleaning process.
2	Indicates that the cleaning process has been interrupted means of the «OK» button.

8.9.3 Diesel particulate filter cleaning – Warning messages

Certain conditions must be fulfilled for the diesel particulate filter to be cleaned. Unfulfilled requirements are shown in the multi-function display:

- Diesel particulate filter cleaning – Engine temperature (Page 212)
- Diesel particulate filter cleaning – Ash load (Page 213)
- Diesel particulate filter cleaning – Direction of travel (Page 213)
- Diesel particulate filter cleaning – Parking brake (Page 214)

8.9.3.1 Diesel particulate filter cleaning – Engine temperature



Display: Diesel particulate filter cleaning – Engine temperature

Key

Designation	Function
low engine temperature	Indicates that the engine temperature is not high enough for the diesel particulate filter to be cleaned.

8.9.3.2 Diesel particulate filter cleaning – Ash load



Display: Diesel particulate filter cleaning – Ash load

Key

Designation	Function
low soot load	Indicates that the soot load is not adequate for the diesel particulate filter to be cleaned.

8.9.3.3 Diesel particulate filter cleaning – Direction of travel



Display: Diesel particulate filter cleaning – Direction of travel

Key

Designation	Function
Select the neutral direction of travel.	Indicates that the Neutral direction of travel is selected.

8.9.3.4 Diesel particulate filter cleaning – Parking brake



Display: Diesel particulate filter cleaning – Parking brake

Key

Designation	Function
Apply the parking brake.	Indicates that the parking brake of the wheel loader must be applied.

8.9.4 Diesel particulate filter cleaning

With economical use, the diesel particulate filter may become blocked. In this event, it must be cleaned immediately. The manner in which the cleaning procedure must be performed is described in the following guideline.



Requirement

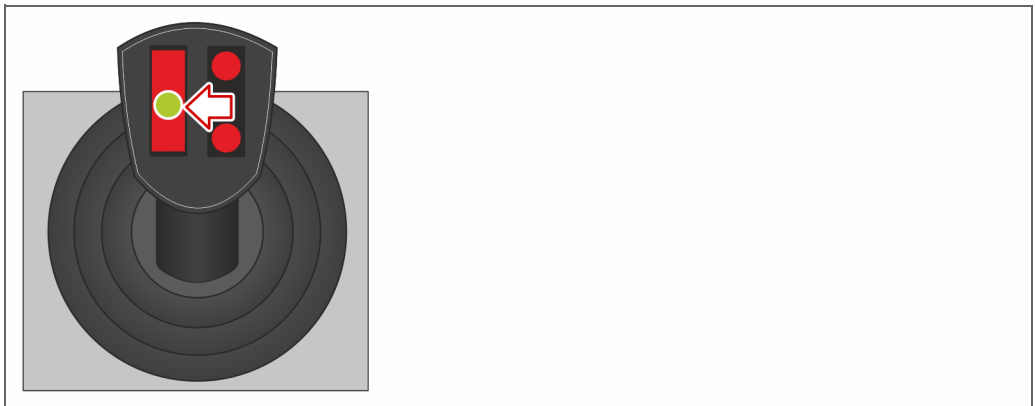
- The **«REGENERATION REQUIRED»** indicator in the display of the multifunction panels flashes (See page 210: Indicators).
- The DIESEL PARTICULATE FILTER CLEANING – SELECTION display screen is shown in the multifunction panel (See page 211: Diesel particulate filter cleaning – Selection).
- The diesel engine has been warmed up.
- The coolant temperature must be at least 75 °C.

Parking the wheel loader

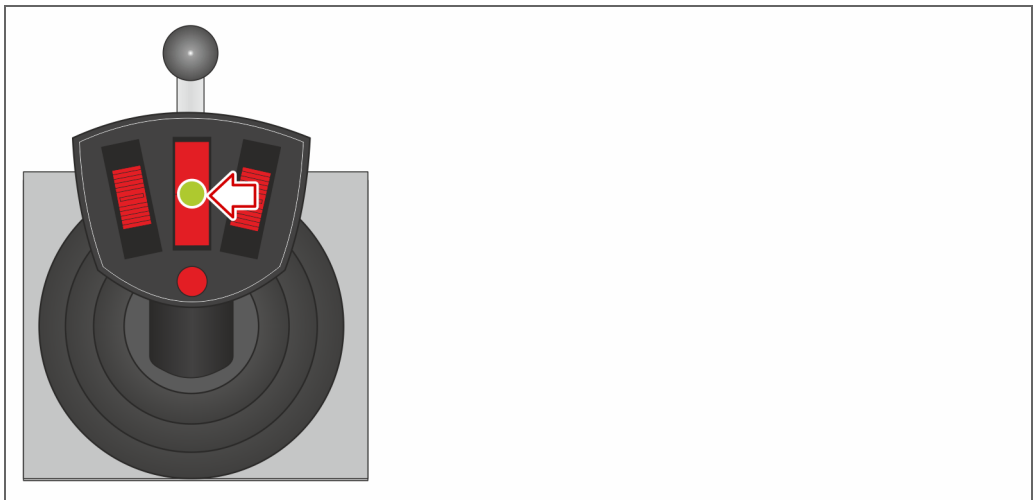


Carry out the following steps:

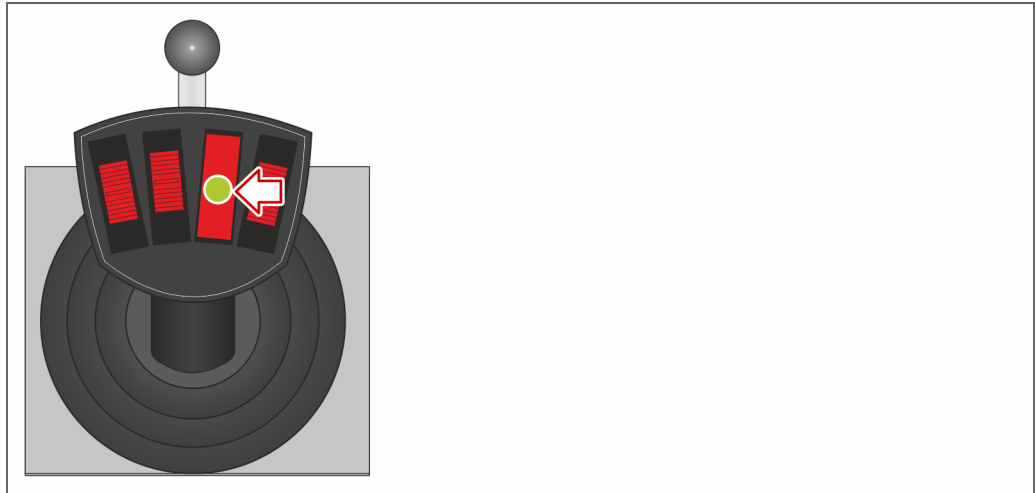
1. Drive the wheel loader to an open area with an adequate safety distance from flammable objects.
2. Switch the **«DIRECTION OF TRAVEL»** toggle switch to the central **neutral** position.
→ AF Series and 850 / 1000



→ AT Series



→ AS900tele



3. Apply the **«PARKING BRAKE»** of the wheel loader.
4. Ensure that no one is in the danger zone.
! Attention: High levels of heat generated in the engine compartment.

The wheel loader is parked in a secured area.

Performing the
cleaning procedure



Carry out the following steps:

1. Press the **«MENU»** push-button on the multifunction panel.



→ An overview of the menu is shown on the display.

2. By using the **«ARROW DOWN»** push-button, navigate to the **DIESEL PARTICULATE FILTER CLEANING** menu..



→ The menu prompt for the **DIESEL PARTICULATE FILTER CLEANING** menu is highlighted.



3. Press the **OK** push-button on the multifunction panel.



→ The **DIESEL PARTICULATE FILTER CLEANING** menu is opened on the display.



4. Press the **OK** push-button on the multifunction panel.



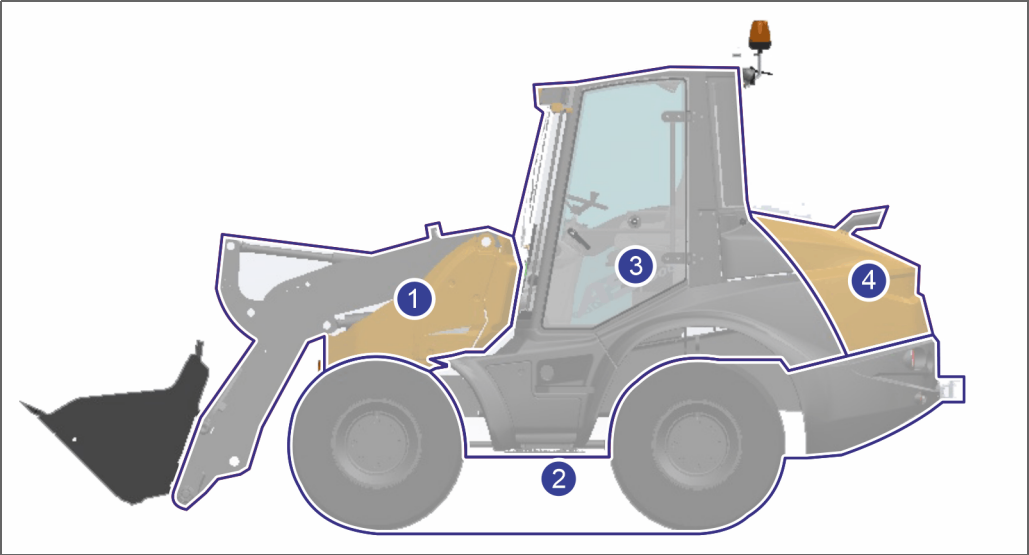
- The **«DIESEL PARTICULATE FILTER»** cleaning process is started.
- The engine speed is increased.
- The **«ACTIVE REGENERATION»** indicator lights up.
- The time remaining in the cleaning process is shown on the display.



- ? *The diesel particulate filter cleaning process does not start?*
One or more cleaning conditions have not been fulfilled.
→ The unfulfilled cleaning conditions are shown in the display of the multifunction panel (See page 212: Diesel particulate filter cleaning – Warning messages).
- ? *Do you want to interrupt the cleaning process?*
→ Press the **OK** push-button on the multifunction panel.

5. Wait until the cleaning process has ended.
- ! On average, the cleaning process lasts 25 minutes.
 - Th engine speed is reduced after successful completion of cleaning.
 - The STARTUP SCREEN of the wheel loader is shown on the display.
 - The «**ACTIVE REGENERATION**» and «**REGENERATION REQUIRED**» indicators go out.
- The «**DIESEL PARTICULATE FILTER**» has been cleaned.
- ✓ Done.

8.10 Service schedule



Service schedule

(1) Lift arm

Level	Task:
M45	Check the wear on bolts, bushes, bearings and the overall condition

(2) Chassis

Level	Task:
M20	Check tyre pressure, check for foreign bodies
M20	Perform a first inspection of the wheel nut fastenings
M25	Check the front axle oil level
M25	Check the rear axle oil level
M25	Check the planetary gear oil level.
M25	Check the reduction gear oil level.
M25	Perform a first inspection of the axle fastenings, steering shaft and ball-type slewing bearings

(2) Chassis (Cont.)

Level	Task:
M25	1 Front axle oil change
M25	1 Rear axle oil change
M25	1 Planetary gear oil change
M25	1 Reduction gear oil change
M30	Perform an inspection of the axle fastenings, steering shaft, ball-type slewing bearings and wheel nuts.
M45	Front axle oil change
M45	Rear axle oil change
M45	Planetary gear oil change
M45	Reduction gear oil change

(3) Cab

Level	Task:
M20	Clean all screens
M30	Check the fresh air filter
M30	Function test of the operating elements and the tell-tales.
M45	Changing the fresh air filter

(4) Engine compartment

Level	Task:
M20	Check for cleanliness and foreign objects
M20	Check for integrity and leaks
M20	Checking the engine oil level
M20	Check the brake fluid level
M20	Check the coolant level
M20	Checking the hydraulic fluid level
M20	Check the windscreen washer water
M20	Rinsing the water separator valve
M20	Cleaning the radiator
M20	Check the V-belt
M20	Activating the dust ejection valve
M25	1 Engine oil change
M25	1 Hydraulic fluid filter change
M30	Changing the engine oil
M30	Changing the engine oil filter

(4) Engine compartment (Cont.)

Level	Task:
M30	Changing the fuel filter
M30	Changing the fuel pre-filter
M30	Change the hydraulic fluid filter
M30	Top up the coolant
M30	Check the air filter
M40	Changing the air filter
M40	Check the battery and electrical cables for damage
M40	Check the durability of the water and hydraulic hoses
M45	Change the coolant
M45	Change the hydraulic fluid
M50	Change the V-belt

9 Special equipment

In this chapter you will find information regarding the special equipment available for the wheel loader:

- Rotating beacon (Page 222)
- Working lights (Page 224)
- Rocker switch operated ride control (Page 227)
- Fan reversing (Page 229)
- Operating the manual throttle (Page 231)
- Tipping limiter switch (Page 236)
- Switchable load contact for front socket (Page 238)
- Continuous operation – auxiliary hydraulic circuit (Page 240)
- Filling system (Page 242)
- Air conditioner (Page 245)
- Fuel pre-warming (Page 247)
- High-flow (Page 250)
- Rear hydraulic connections (Page 252)
- Multi-function joystick with differential lock (Page 255)
- Multi-function joystick – Accessory hydraulic circuits (Page 259)
- Crawler gear (Page 261)
- Dumping throttle (Page 263)
- Roller blind (Page 265)
- Rear mount with ball head and Rockinger coupling (Page 266)
- Unpressurised oil return line (Page 271)
- Unpressurised return line (Page 274)
- Engine and cab pre-heating system (Page 279)
- Movable window pane (Page 282)
- Preparation of work platform (AS900tele) (Page 284)
- Rocker switch operated ride control (Page 285)

9.1 Rotating beacon

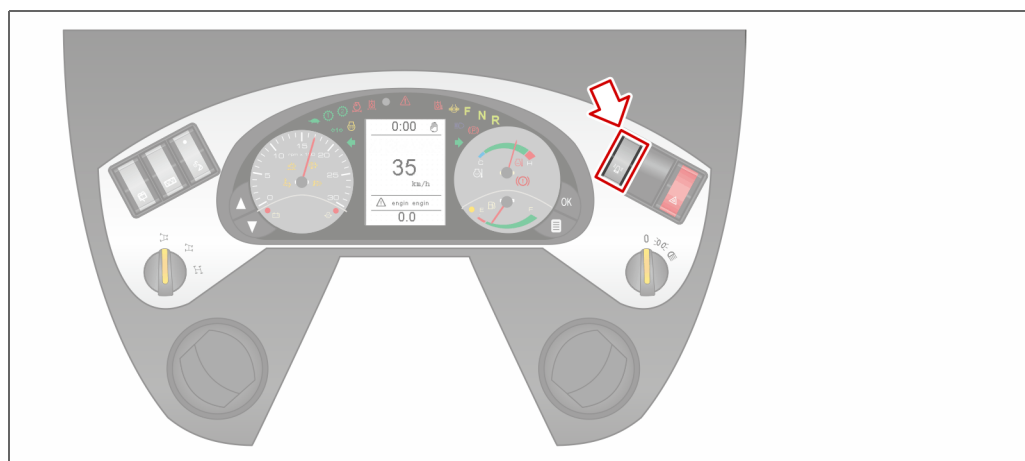
Serve as warning lights to alert persons to the wheel loader.

9.1.1 Location



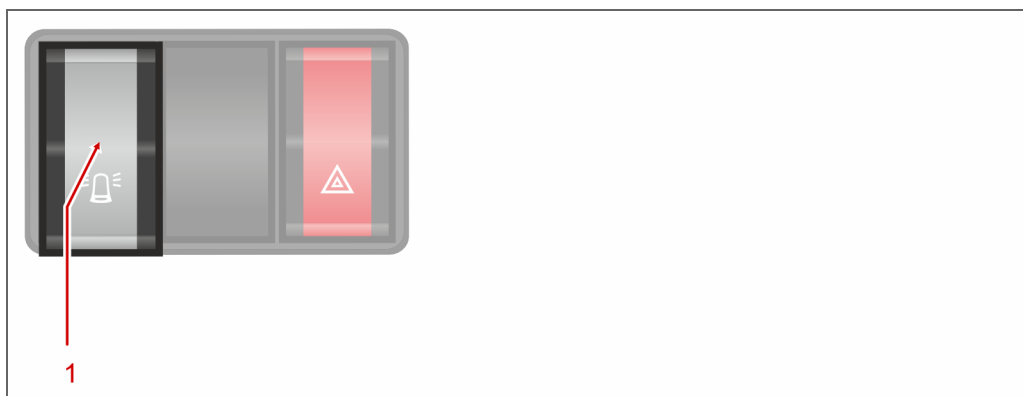
Location on wheel loader

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side of the instrument panel.



Location of the control element

9.1.2 Description



Control elements of the special equipment

Key

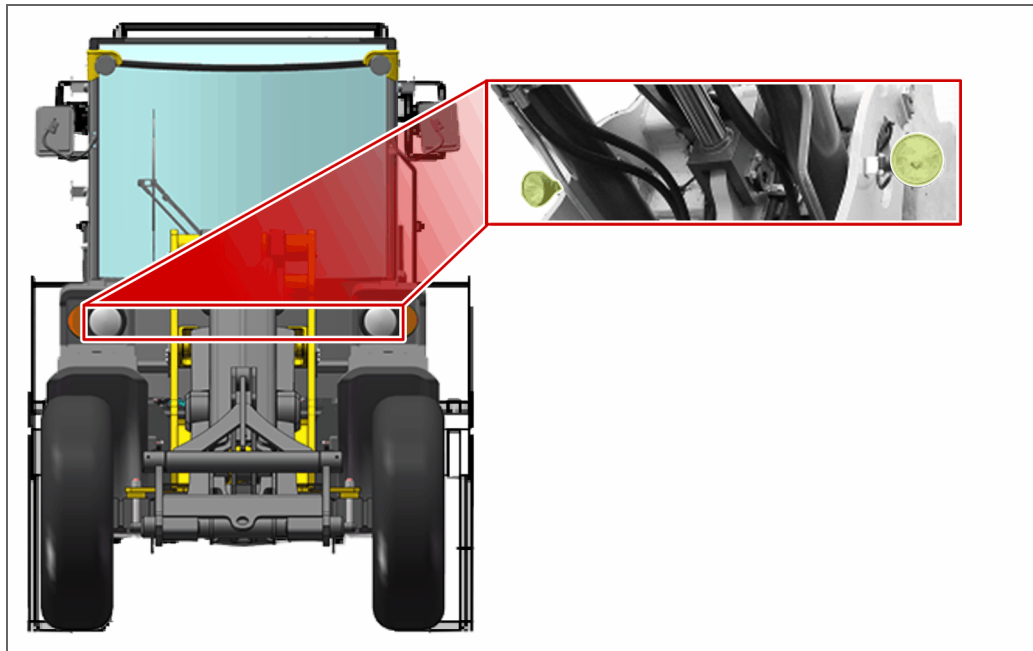
No	Designation	Type	Setting	Function
1	Rotating beacons	Toggle switch	up	Switches the rotating beacon off .
			down	Switches the rotating beacon on .

9.2 Working lights

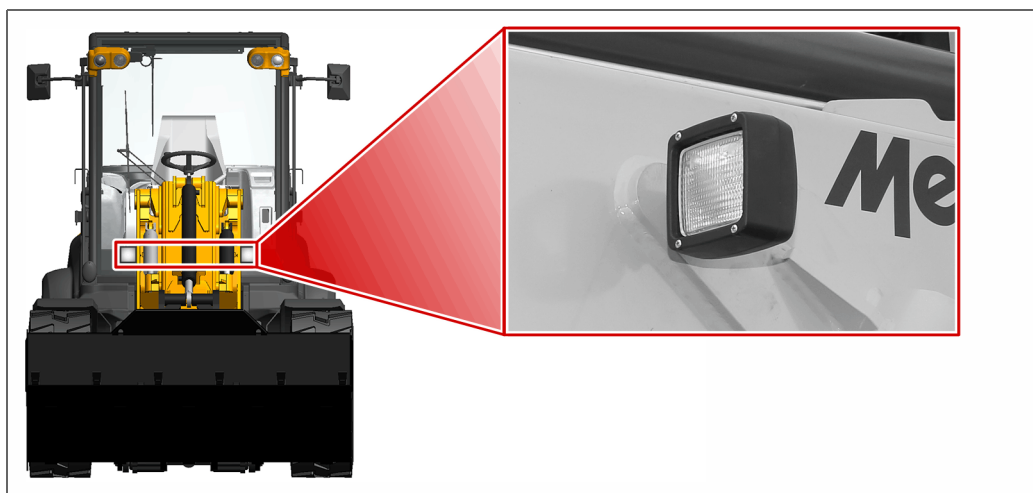
The working lights serve to illuminate the working environment to the front and rear of the wheel loader. The working lights must be switched off when driving in the public traffic environment.

9.2.1 Location

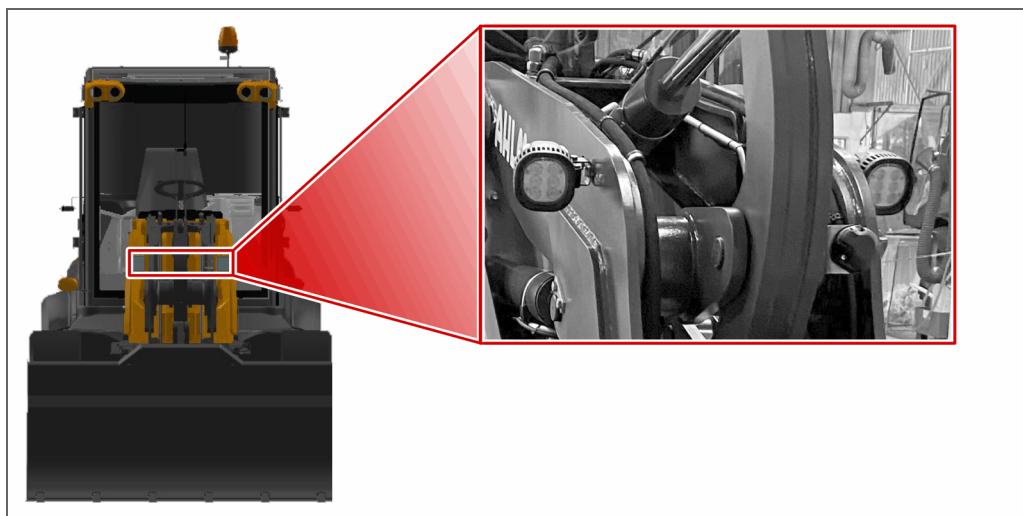
The forward working lights are mounted on the lift arm and the rear working lights on the roof of the cab.



Position on wheel loader - front | AF Series



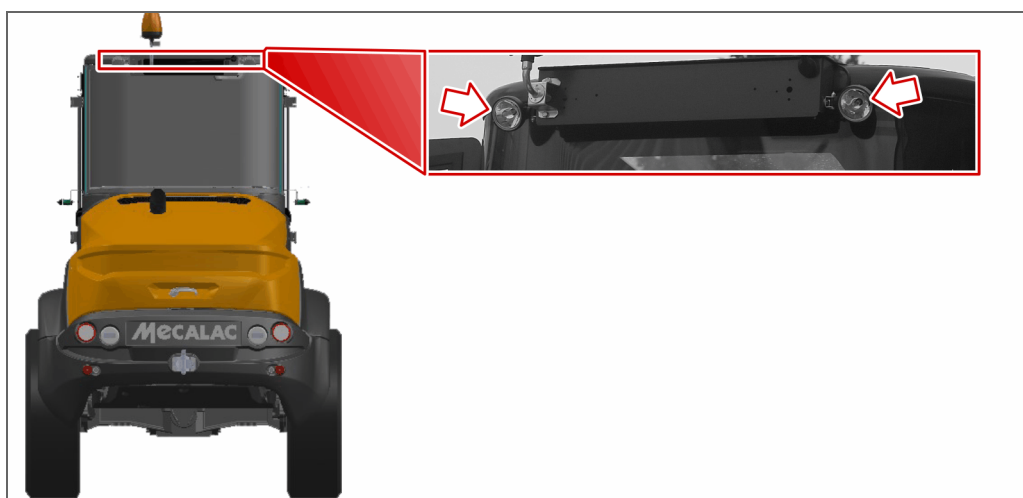
Position on wheel loader - front | AT Series



Position on wheel loader - front | AS850 / 1000

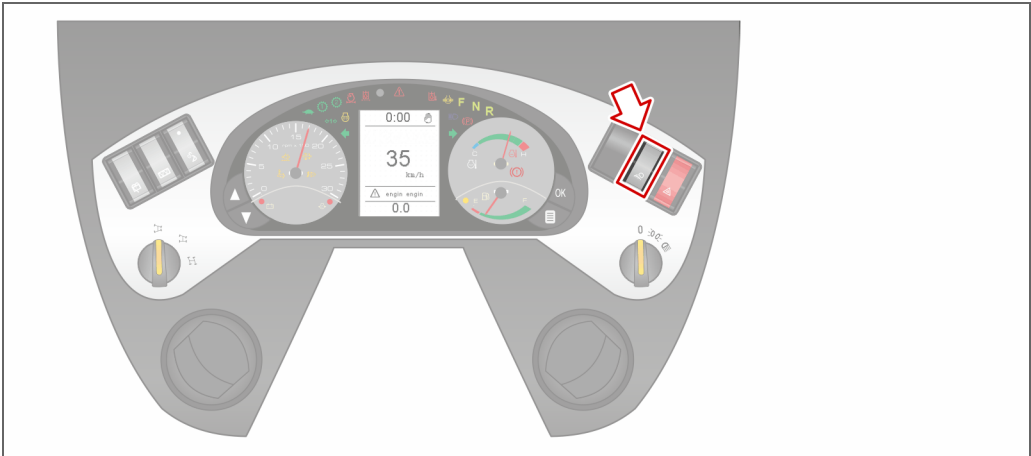


Position on wheel loader - front | AS900tele



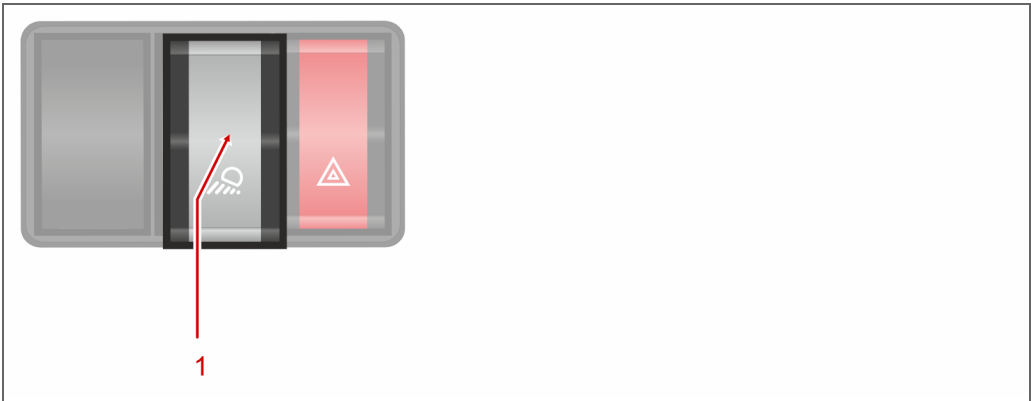
Position on wheel loader - rear

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side of the instrument panel.



Location of the control element of the special equipment.

9.2.2 Description



Control element of the special equipment

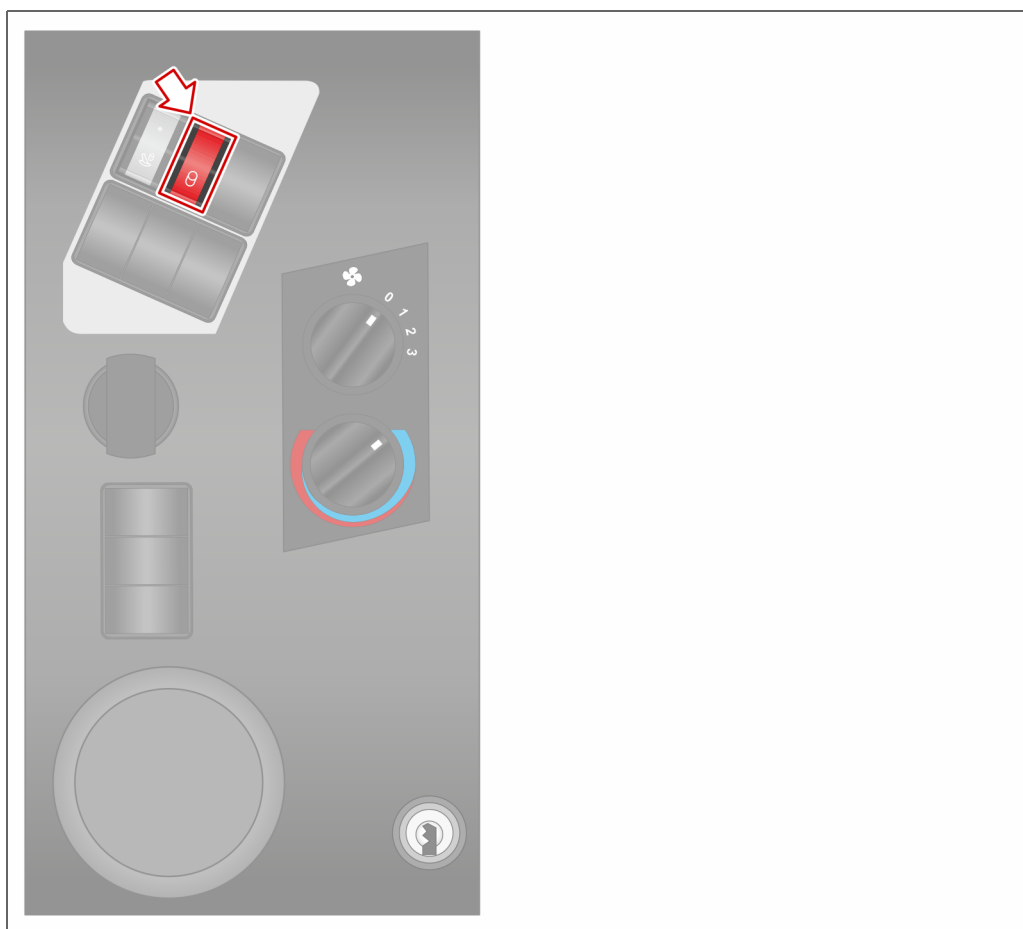
Key				
No	Designation	Type	Setting	Function
1	Working lights	Toggle switch	up	Switches the working lights off.
			down	Switches the working lights on..

9.3 Rocker switch operated ride control

The Ride control allows the lift arm to resonate when travelling with an unladen bucket. This compensates for unevenness. The ride control may only be switched on when travelling with the wheel loader.

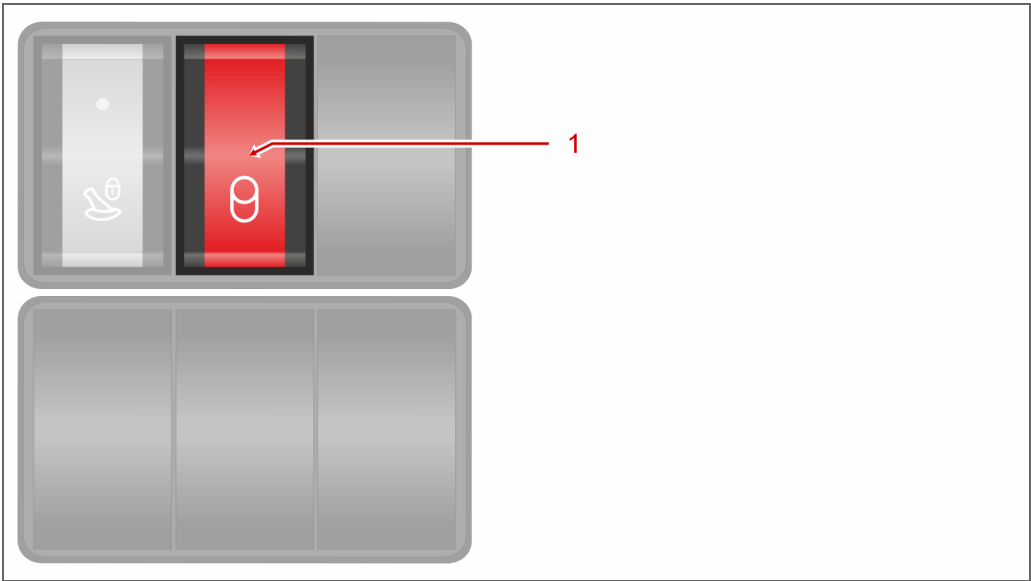
9.3.1 Location

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the control element of the special equipment.

9.3.2 Description



Control element of the special equipment

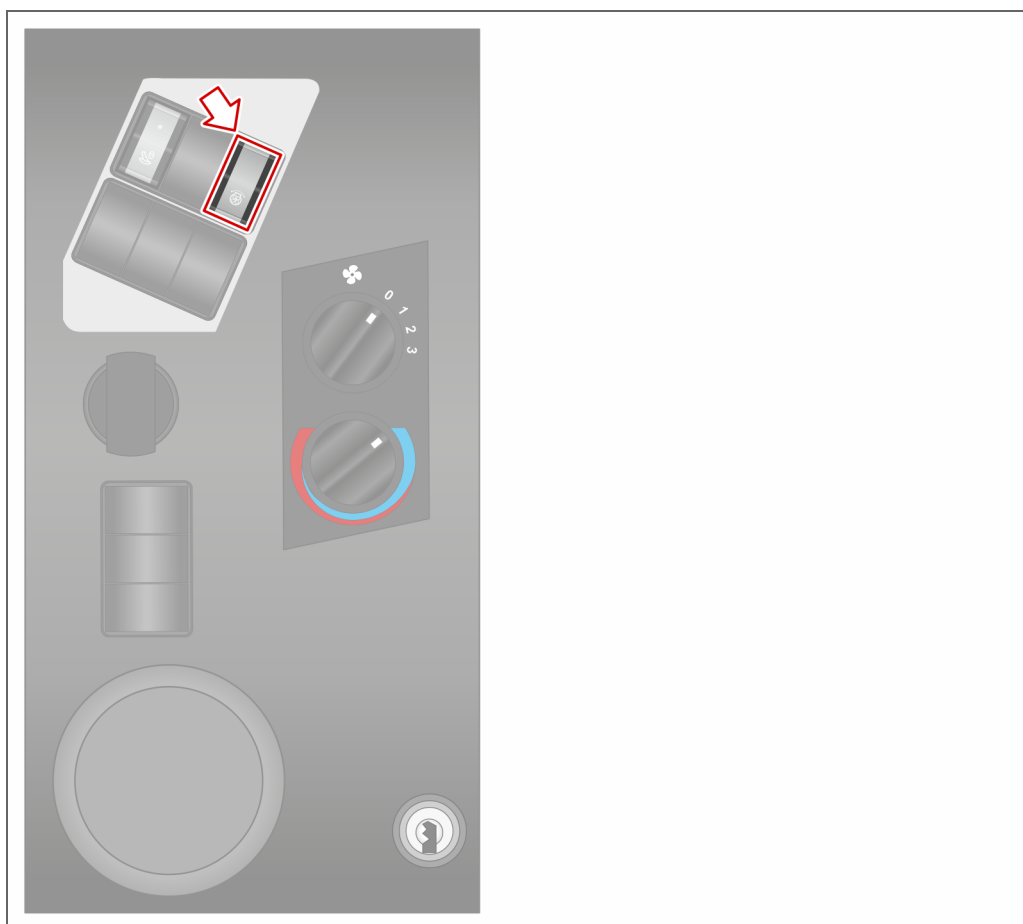
Key				
No	Designation	Type	Setting	Function
1	Rocker switch operated ride control	Rocker switch	switched on	Switches the ride control on when in the activated condition. The ride control may not be used when working. When in Neutral gear, the ride control switches off automatically after a short time.

9.4 Fan reversing

Serves to clean the fan quickly and easily. Depending on the level of contamination, fan reversing must be activated at least once a day. In the case of especially severe contamination, fan reversing must be activated every 15 minutes. Fan reversing can be activated while travelling as well as when the wheel loader is stationary.

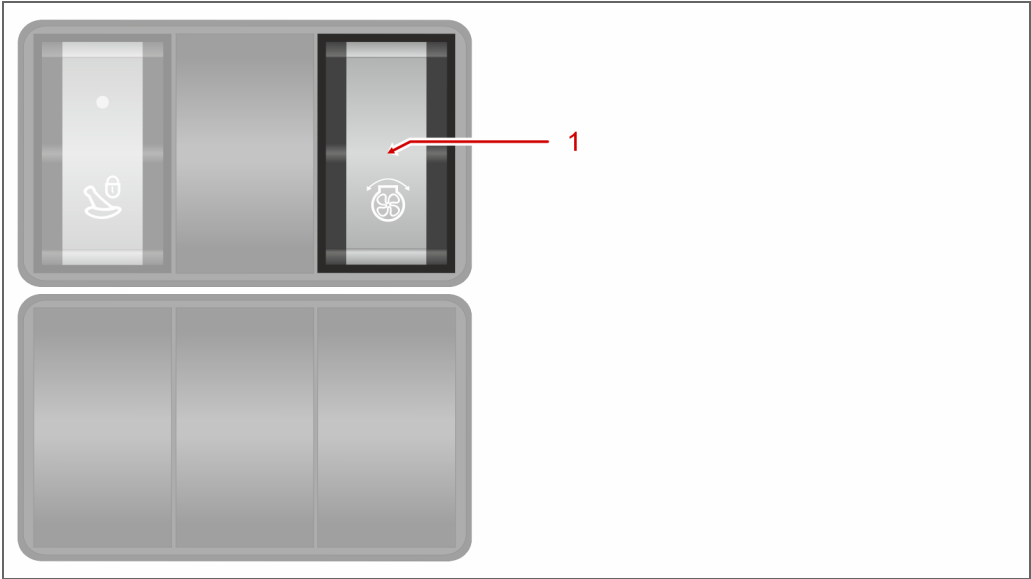
9.4.1 Location

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the control element

9.4.2 Description



Description of the control element

Key				
No.	Designation	Type	Setting	Explanation
1	Fan reversing - On/Off	Toggle switch	up	Switches fan reversing off .
			down	Switches fan reversing on .

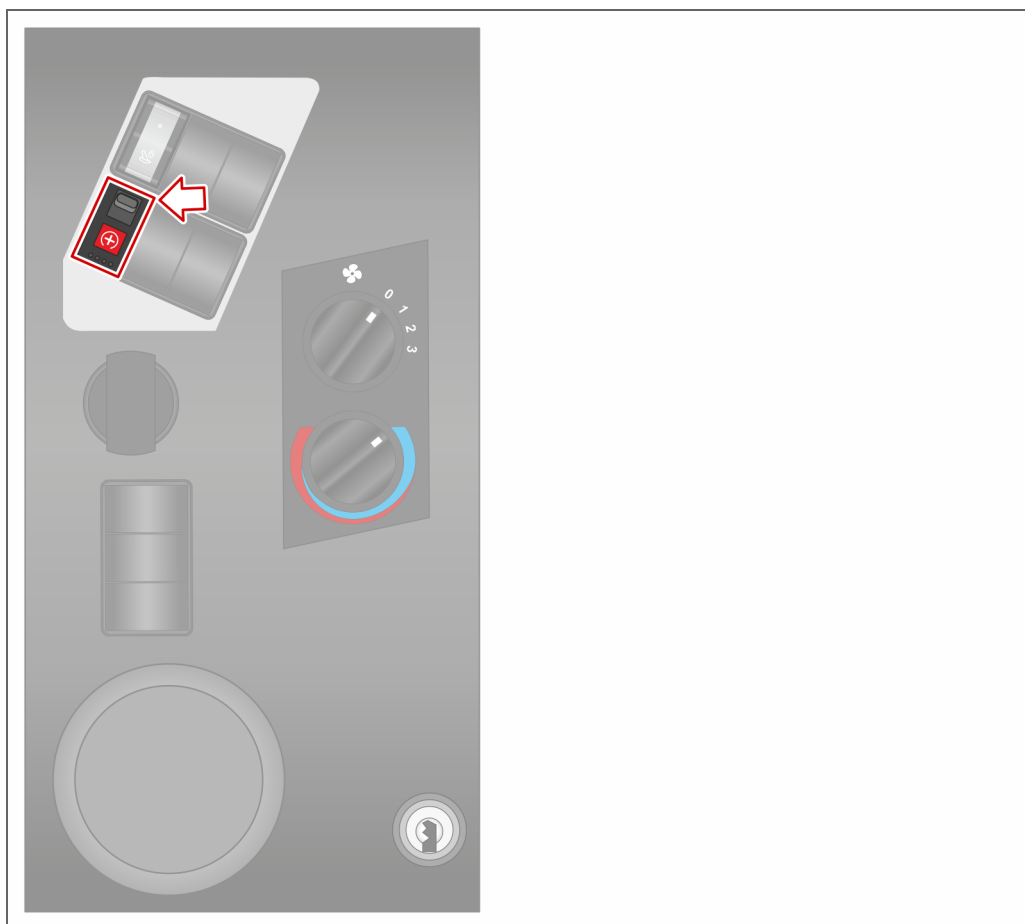
9.5 Operating the manual throttle

Manual throttle operation is intended for work that requires a constant travelling speed for an extended period of time.

9.5.1 Control elements - right-hand side

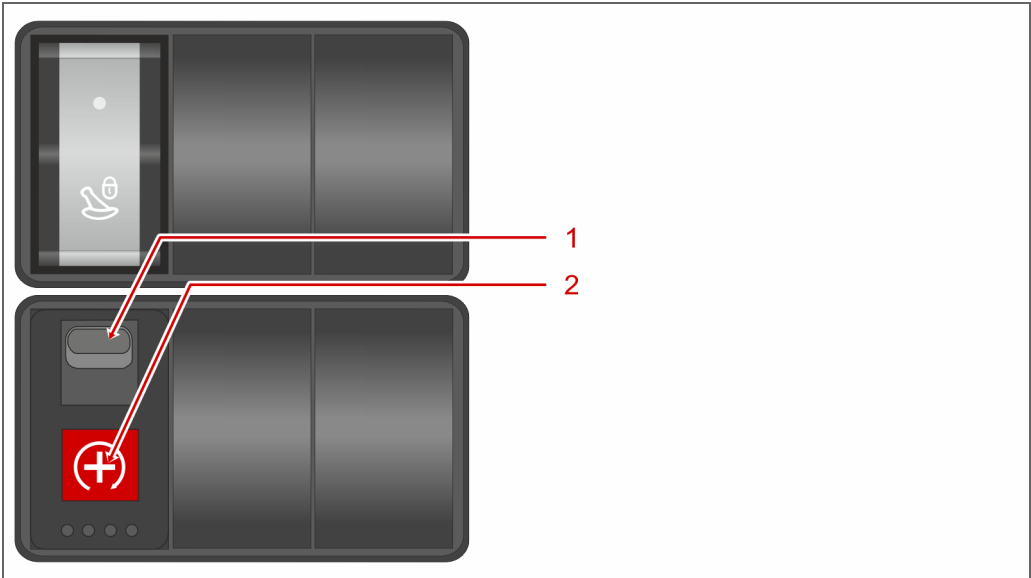
9.5.1.1 Location

This special equipment has two additional control elements. These are located in the cab on the right-hand side and to the right of the instrument panel.



Overview – Control elements, right-hand side | Unlocking

9.5.1.2 Description



Special equipment control elements in the cab on the right-hand side

Key				
No.	Designation	Type	Setting	Explanation
1	Release – Hand throttle On/Off	-	up	The « HAND THROTTLE ON/OFF » toggle switch with guard cannot be switched to the down position.
			down	The « HAND THROTTLE ON/OFF » toggle switch with guard can be switched to the down position.
2	Hand throttle On/Off	Toggle switch with guard	up	Switches the manual throttle off .
			down	Switches the manual throttle on ..



Control elements of the special equipment in the cab in addition to the instrument panel

Key

No.	Designation	Type	Setting	Explanation
1	Hand throttle +/-	Rotary adjuster	down -	Reduces the engine speed when the manual throttle is switched on.
			up +	Increases the engine speed when the manual throttle is switched on.

9.5.2 Activating hand throttle mode

Hand throttle mode can be activated in two ways:

- Installation (Page 268)
- Removal (Page 270)

9.5.2.1 Activating when the wheel loader is stationary

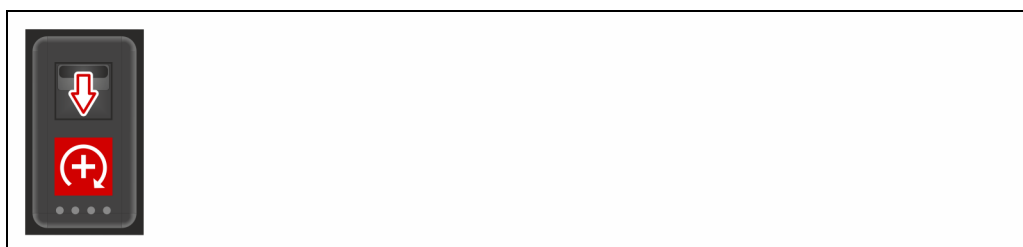
Requirement



- The diesel engine is started.
- The «**DIRECTION OF TRAVEL**» toggle switch on the «**MULTI-FUNCTION JOYSTICK**» is in the **neutral** position.
- The «**PARKING BRAKE**» of the wheel loader is engaged.
- The accelerator pedal serves as a dead man's switch.

Carry out the following steps:

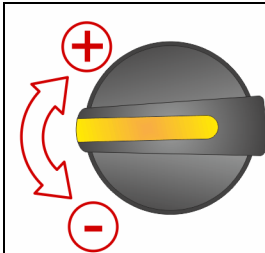
1. Switch the «**RELEASE**» of the «**HAND THROTTLE ON/OFF**» switch to the **bottom** position.



2. Switch the **«HAND THROTTLE ON/OFF»** switch to the **bottom** position.



3. Using the **«HAND THROTTLE +/-»** rotary adjuster, select the desired engine speed.
! An aural warning signal sounds after successful activation of hand throttle mode.



➔ Once the function has been ended, turn the rotary activator back to the initial position.

✓ Done.

9.5.2.2 Activating when a speed level has been engaged

Requirement



- The diesel engine is started.
- The **«DIRECTION OF TRAVEL»** toggle switch on the **«MULTI-FUNCTION JOYSTICK»** is in the **forwards** or **reverse** position.
- The wheel loader is stationary.
- The accelerator pedal serves as a dead man's switch.

Carry out the following steps:

1. Switch the **«RELEASE»** of the **«HAND THROTTLE ON/OFF»** switch to the **bottom** position.

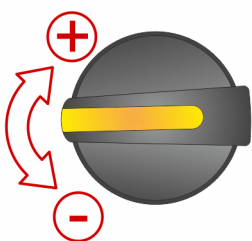


2. Switch the «**HAND THROTTLE ON/OFF**» switch to the **bottom** position.



→ **when activating for the first time:** The engine speed is now increased to 1 200 r.p.m.

3. Using your foot, **s**lowly depress the «**ACCELERATOR PEDAL**».
4. Using the «**HAND THROTTLE +/-**» rotary adjuster, select the desired engine speed.
! An aural warning signal sounds after successful activation of hand throttle mode.



→ Once the function has been ended, turn the rotary activator back to the initial position.

✓ Done.

9.6 Tipping limiter switch

Safety instruction: Damage to the wheel loader!

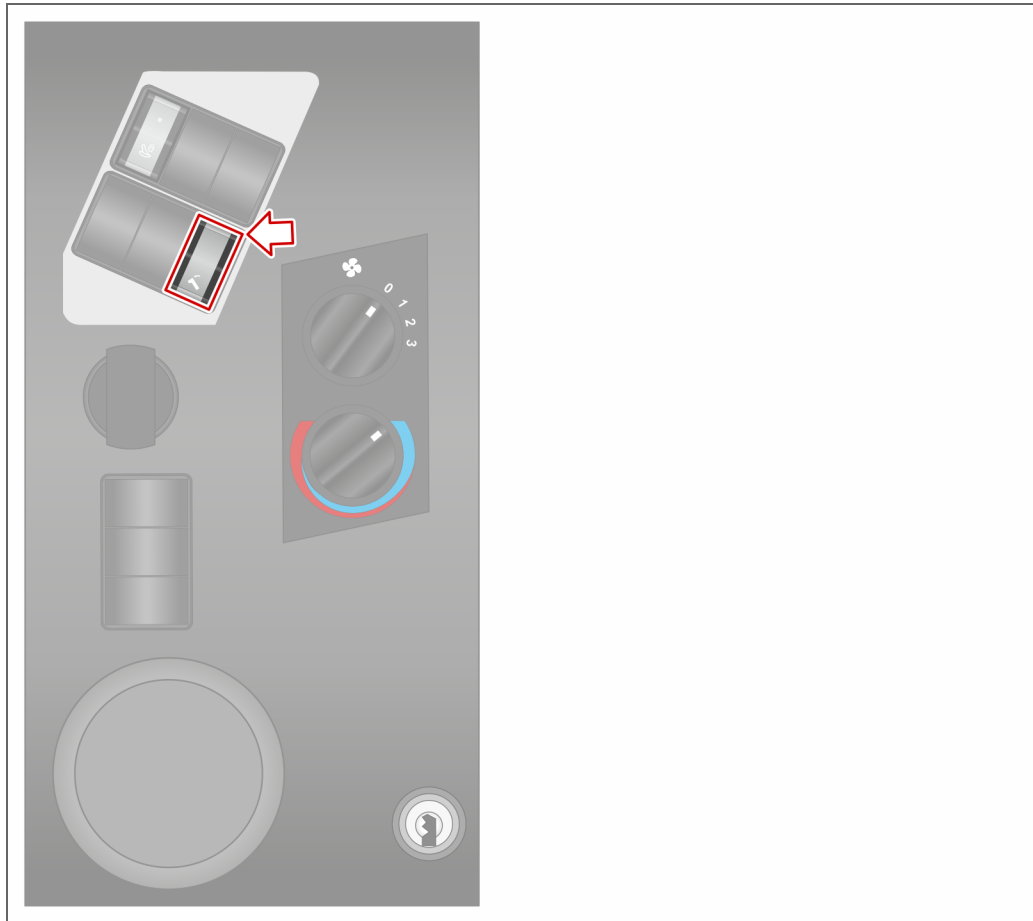
When this function is activated, there is a risk of the contents of your attachment falling onto the roof of your wheel loader in an uncontrolled manner. This can result in damage to the wheel loader.

- Use this function **only** with the greatest caution!

The tipping limiter switch serves to switch off the tipping limiter of the wheel loader.

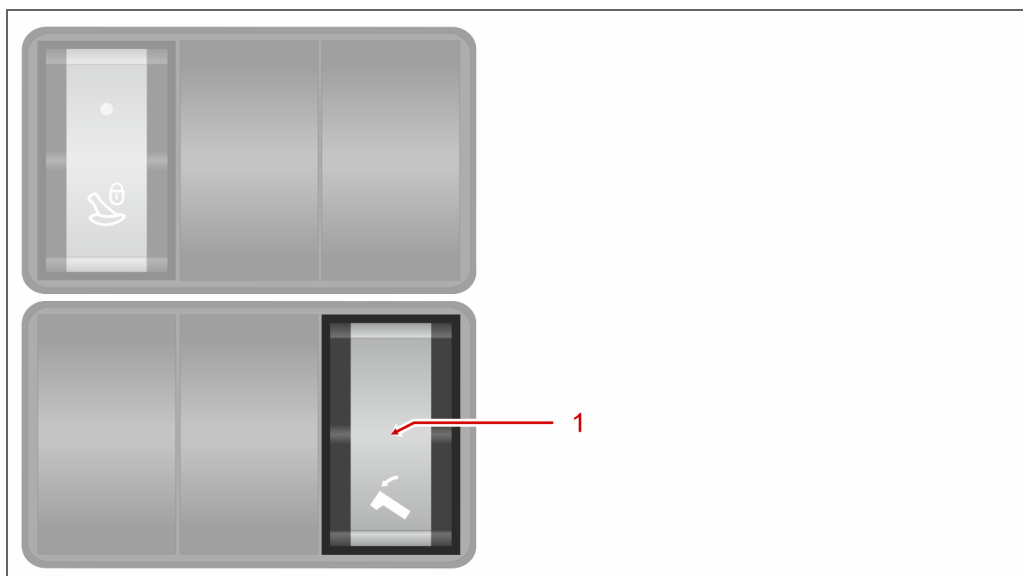
9.6.1 Location

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the control element of the special equipment.

9.6.2 Description



Control element of the special equipment

Key

No	Designation	Type	Setting	Function
1	Tipping limiter switch	Toggle switch	up	Switches the tipping limiter switch on .
			down	Switches the tipping limiter switch off .

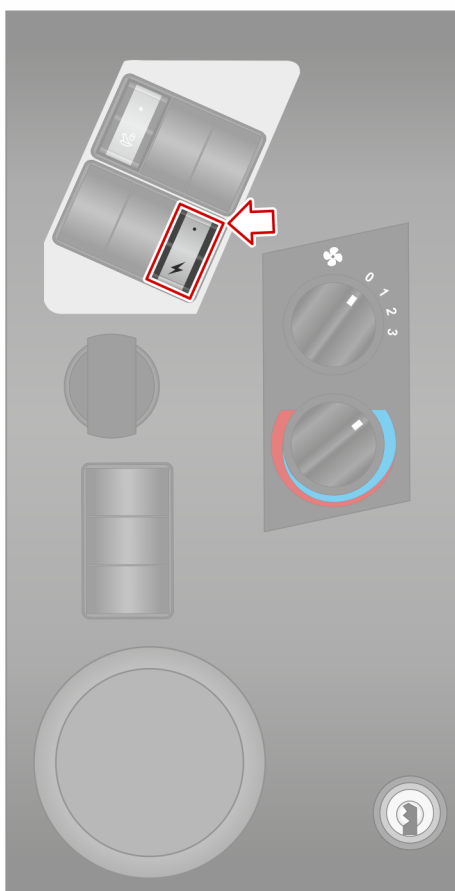
9.7 Switchable load contact for front socket

9.7.1 Location



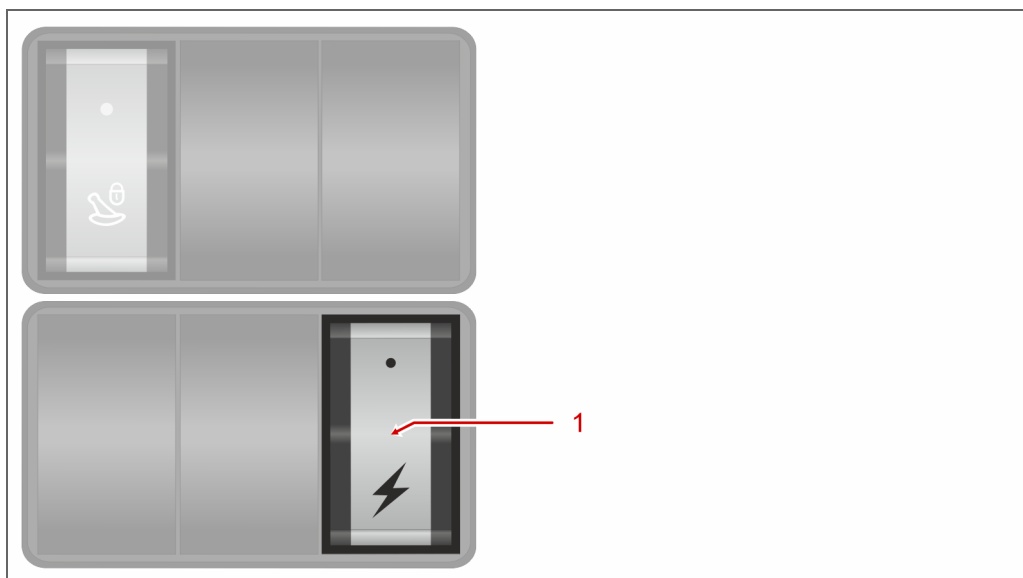
Location of the switch contact on the front socket

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the control element of the special equipment.

9.7.2 Description



Control element of the special equipment

Key

No	Designation	Type	Setting	Function
1	Switchable load contact	Toggle switch	up	Switches the load contact (Terminal 15/12 V) at the front socket off .
			down	Switches the load contact (Terminal 15/12 V) at the front socket on .

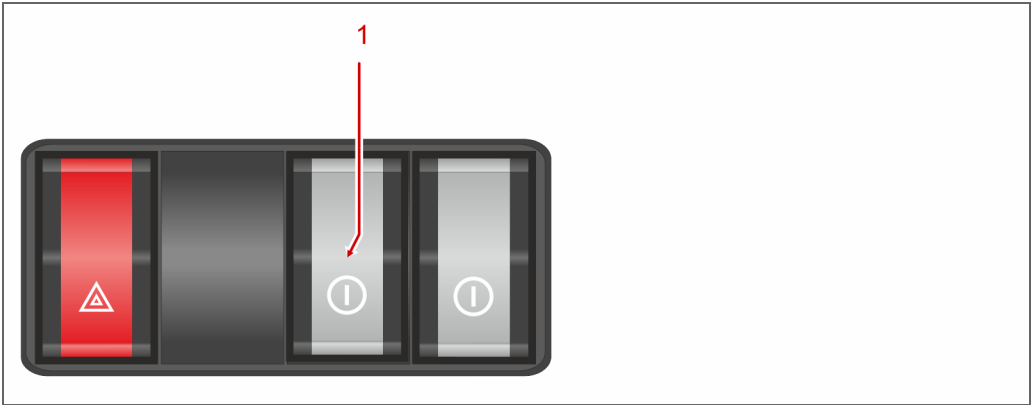
9.8 Continuous operation – auxiliary hydraulic circuit

Continuous operation of the auxiliary hydraulic circuit is used to activate the continuous supply of hydraulic pressure to the attachment. The following information is to be found in this supplement:

- Connection point - Lead (Page 280)
- Display: Continuous operation – auxiliary hydraulic circuit (Page 241)

9.8.1 Control elements of continuous operation of the accessory hydraulic circuit

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the left-hand side of the instrument panel.

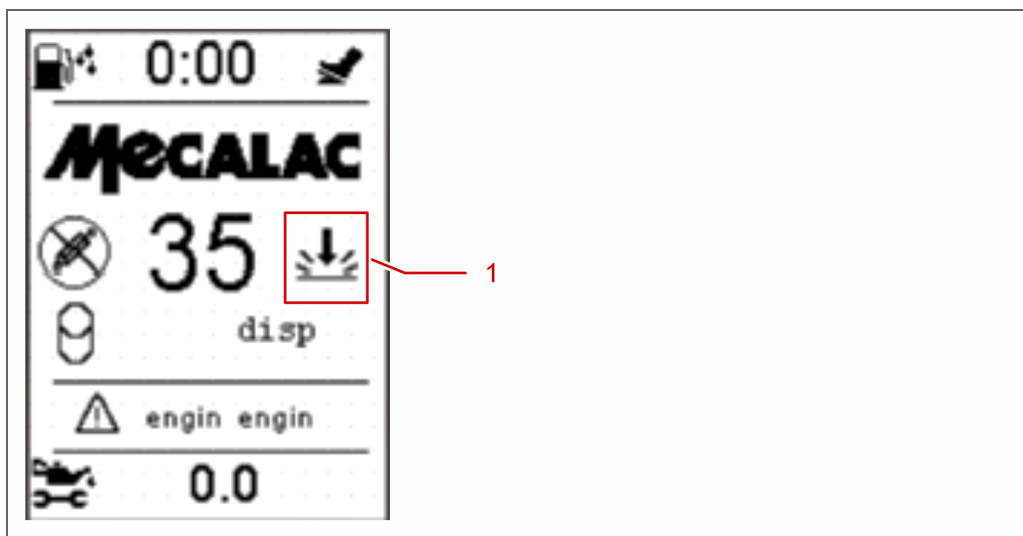


Control element of the special equipment

Key

No.	Designation	Type	Setting	Explanation
1	Continuous operation – auxiliary hydraulic circuit	Push button switch	up	No change in state.
			down	Switches the permanent connection of the auxiliary circuit, depending on the current status (see 1.2).

9.8.2 Display: Continuous operation – auxiliary hydraulic circuit



Display: Continuous operation – auxiliary hydraulic circuit

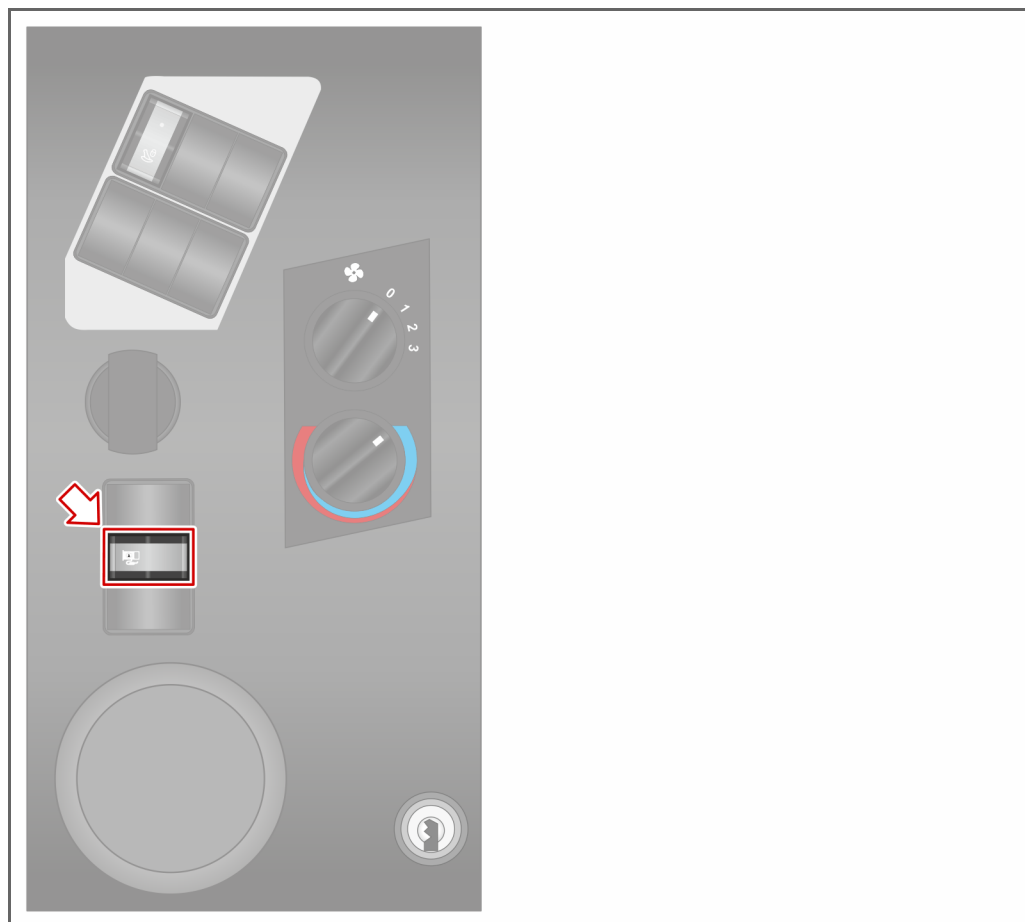
Key

No.	Explanation
1	Indicates that the continuous operation – auxiliary hydraulic circuit is activated.

9.9 Filling system

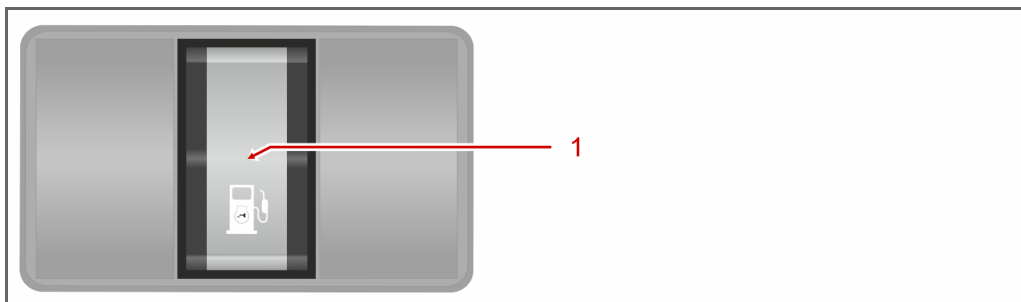
9.9.1 Location

The filling system is used to refuel the wheel loader automatically. This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the control element

9.9.2 Description



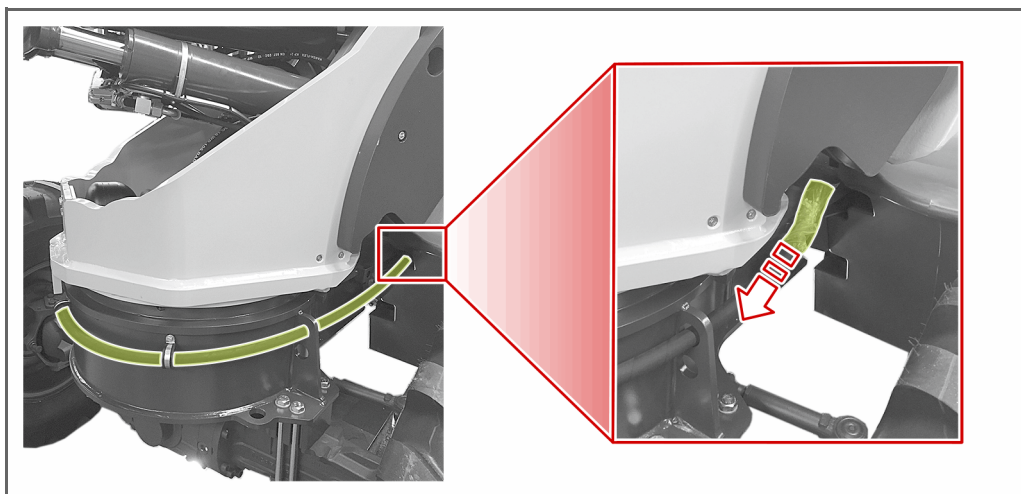
Description of the special equipment

Key

No	Designation	Type	Setting	Function
1	Fuel filling system On/Off	Push-button	press	Switches the fuel filling system on . By pressing again, the fuel filling system is switched off .

9.9.3 Refuelling hose with filler nozzle

The refuelling hose with filler nozzle is located beneath the slewing ring and must be pulled out of the eyelets for the purposes of refuelling.



Refuelling hose with filler nozzle

9.9.4 Activating the filling system



Requirement

- The refuelling hose with filler nozzle is placed in an external fuel container.

Carry out the following steps:

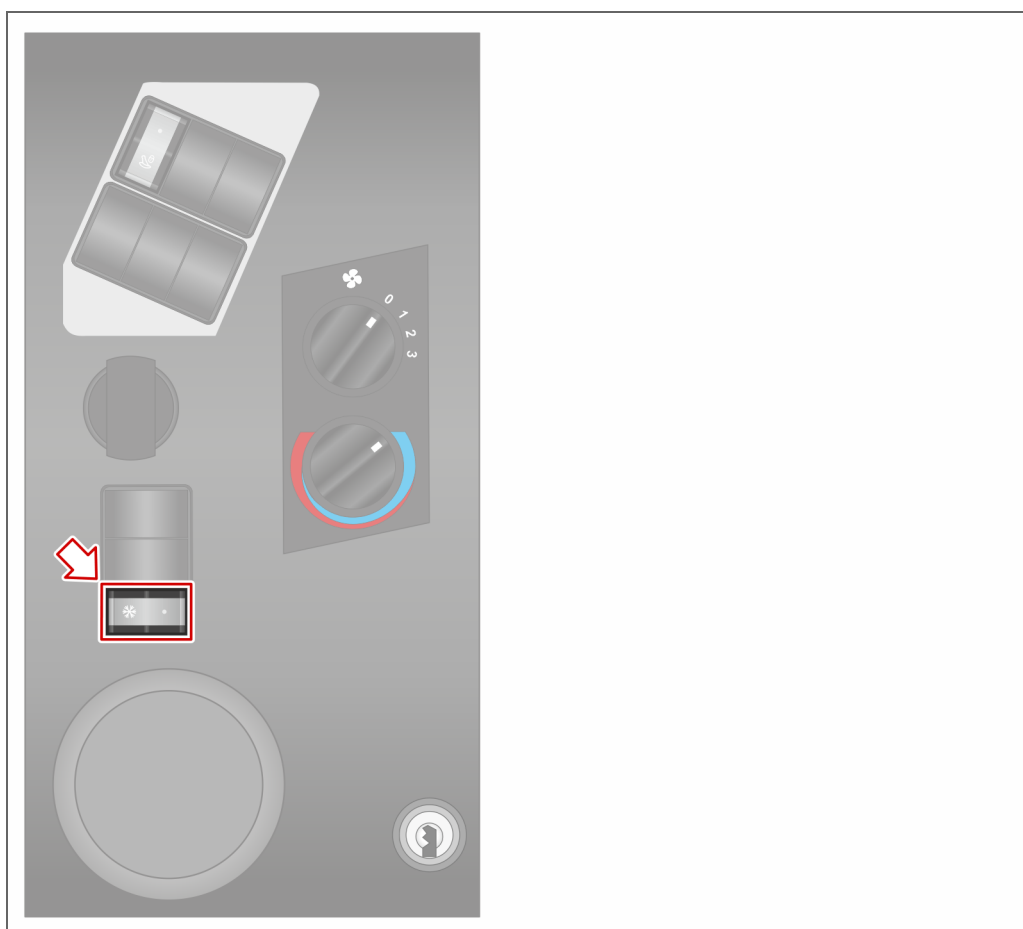
1. Insert the **«IGNITION KEY»** of the wheel loader into the **«IGNITION LOCK»**.
 2. Turn the **«IGNITION KEY»** clockwise to Position **I**.
 - ↪ The preheating system (glow-plug) is activated. The indicator is extinguished once this process has concluded.
 3. Press **«FUEL FILLING SYSTEM ON/OFF»**.
 - ! Monitor the fuelling process continuously.
 - ↪ Automatic fuelling is started.
 - ↪ As soon as a defined fuel level is reached, the fuel filling system switches off automatically.
- ✓ Done.

9.10 Air conditioner

The air-conditioner serves to control the humidity and the temperature in the cab of the wheel loader.

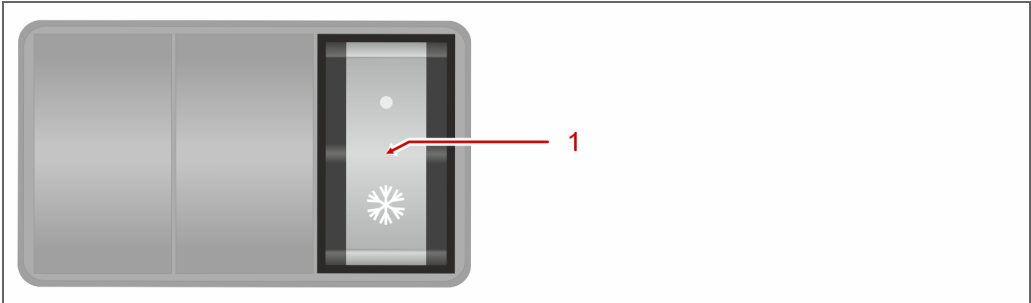
9.10.1 Location

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the control element of the special equipment.

9.10.2 Description



Control element of the special equipment

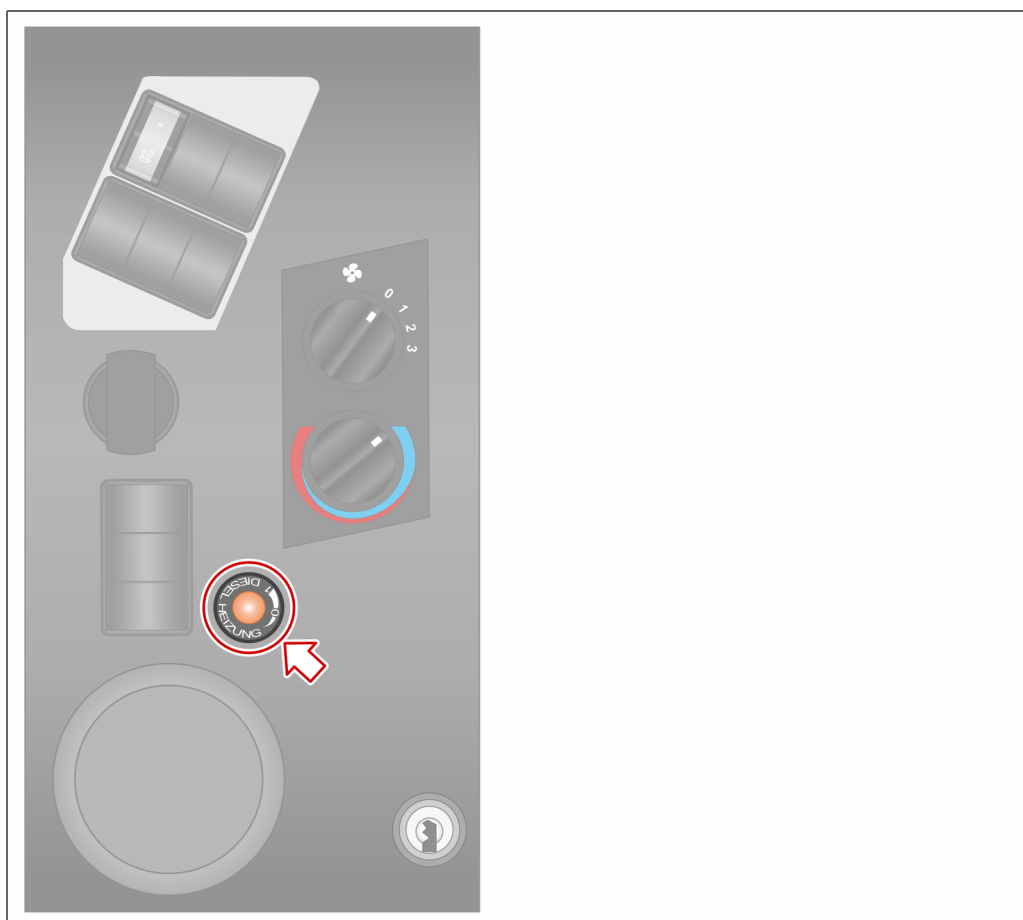
Key				
No	Designation	Type	Setting	Function
1	Air conditioner	Toggle switch	up	Switches the air-conditioner off ..
			down	Switches the air-conditioner on ..

9.11 Fuel pre-warming

Paraffin crystals may form in diesel fuel at sub-zero temperatures. These form a viscous or flaky consistency. As a result thereof, the fuel filter can be contaminated and the engine loses power or shuts down. In order to prevent this, the diesel fuel of your wheel loader can be pre-warmed by means of the diesel pre-warming system.

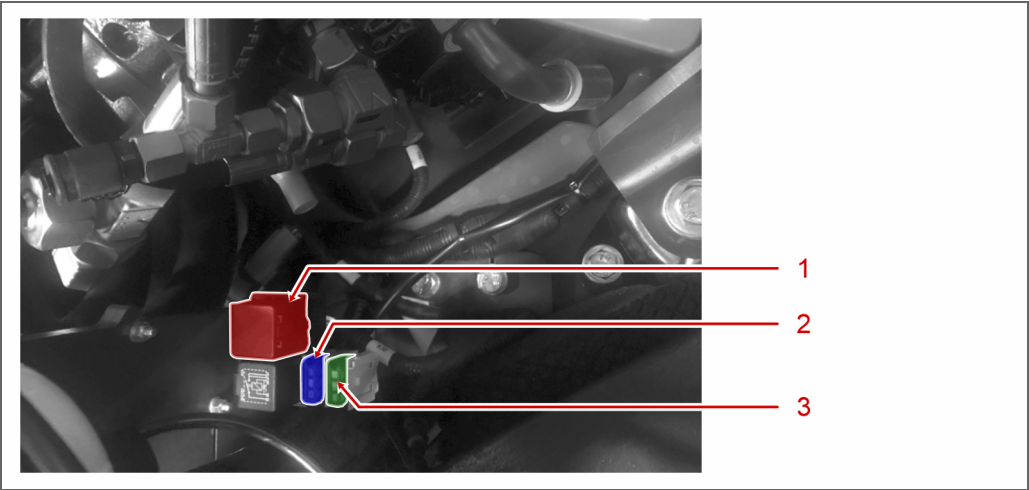
9.11.1 Location

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the control element of the special equipment.

In addition, an electrical distributor for the fuel pre-warming system is located in the engine bay below the fuel filter.



Location of the connection point for the connection line of the DEFA MiniPlug

Key			
No	Designation	Type	Function
1	K _{mv} 1	Relays	Relay 12 V 40 A.
2	F _{mv} 1	Relays	Battery fuse 15 A.
3	F _{mv} 2	Relays	Battery fuse 2 A.

9.11.2 Description



Control element of the special equipment

Key				
No	Designation	Type	Setting	Function
1	Fuel pre-warming	Rotary control	0	Switches the fuel pre-warming system off .
			1	Switches the fuel pre-warming system on ..

9.11.3 Pre-warming the fuel

Requirement



- The wheel loader is shut down and parked in a secured area.

Carry out the following steps:

1. Insert the «IGNITION KEY» of the wheel loader into the «IGNITION LOCK».
2. Turn the «IGNITION KEY» clockwise to Position I.
3. Turn the «ROTARY CONTROL OF THE FUEL PRE-WARMING SYSTEM» to Position 1.
 - ➔ The heating process of the diesel fuel is started up.



- ➔ Once the heating temperature has been reached, the fuel pre-warming system is switched off automatically.

✓ Done.

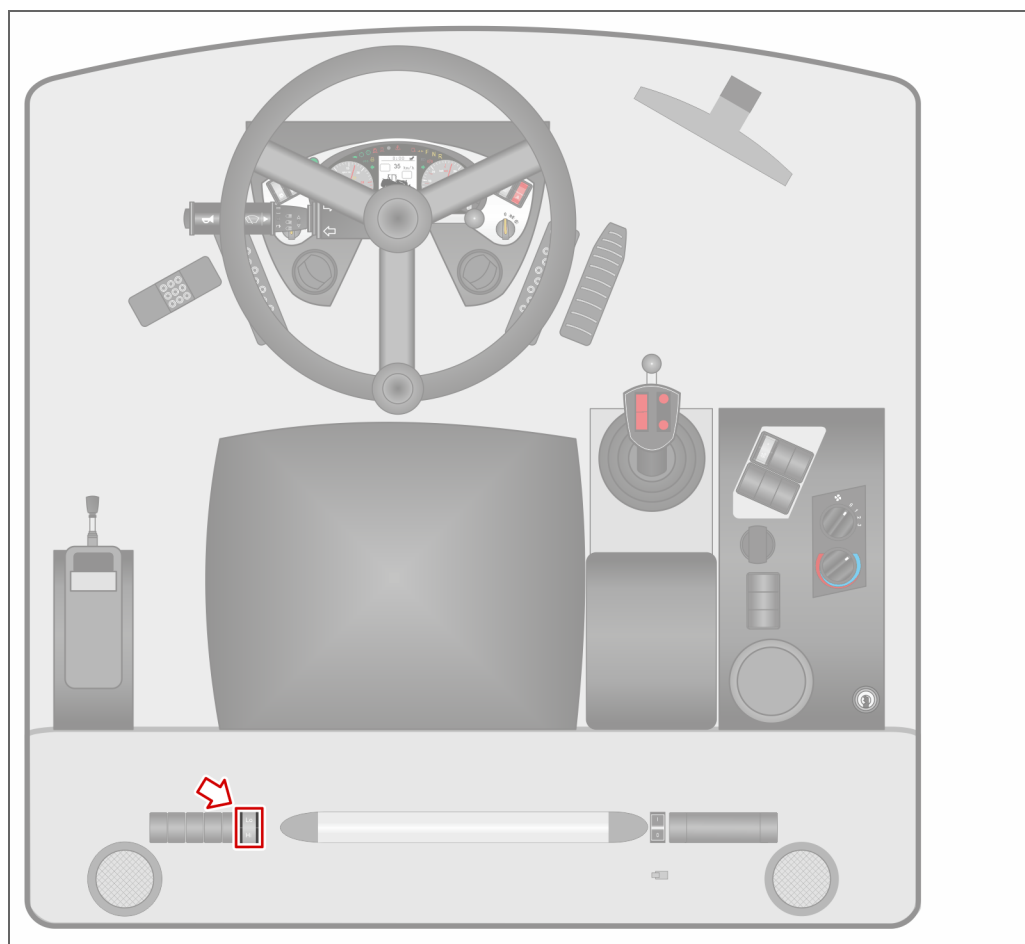
9.12 High-flow

In the case of High-flow special equipment being fitted, any wheel loader is additionally equipped with an unpressurised return line. In order to ensure good performance of the attachment, the return oil of the attachment must be led back to the hydraulic fluid reservoir via the unpressurised return line.

Specific attachments that require a leak-free return line are connected to the unpressurised return line.

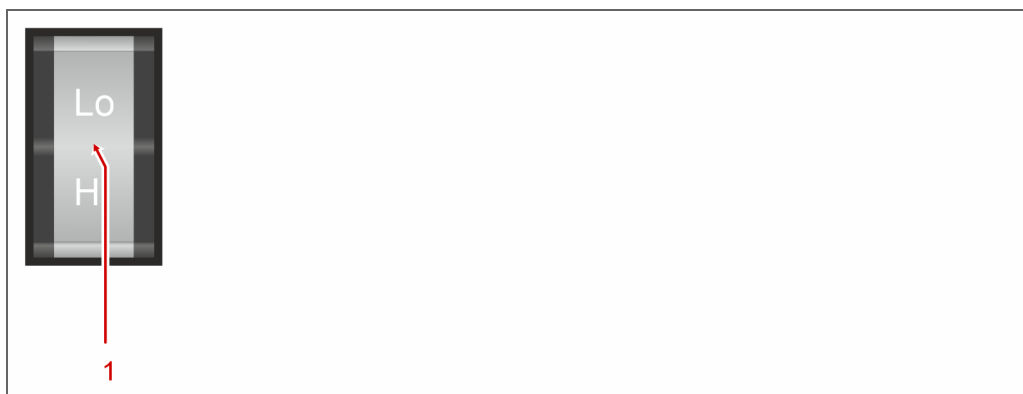
9.12.1 Location

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the roof liner on the left-hand side.



Location of the special equipment

9.12.2 Description



Description

Key

No.	Designation	Type	Setting	Explanation
1	High Flow	Toggle switch with button function	up	Deactivates the function High Flow
			centre	Activates the High Flow function is activated. This can be controlled by means of the button on the multi-function joystick for the accessory hydraulics. A maximum of 35 litres per minute is now additionally available to the hydraulic operating system.
			down	Activates the continuous High Flow function.



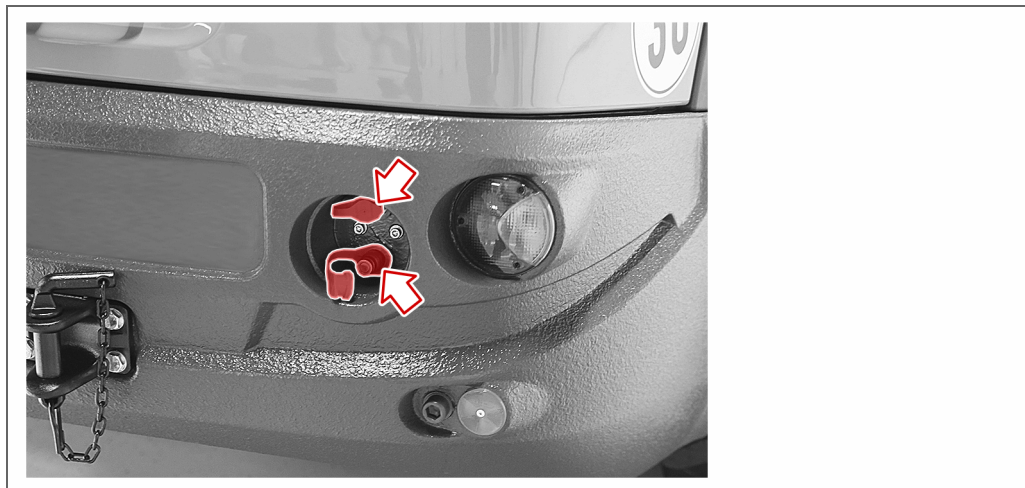
Info

The continuous mode of the function is deactivated when the ignition is switched off. The High Flow function continues to be active.

9.13 Rear hydraulic connections

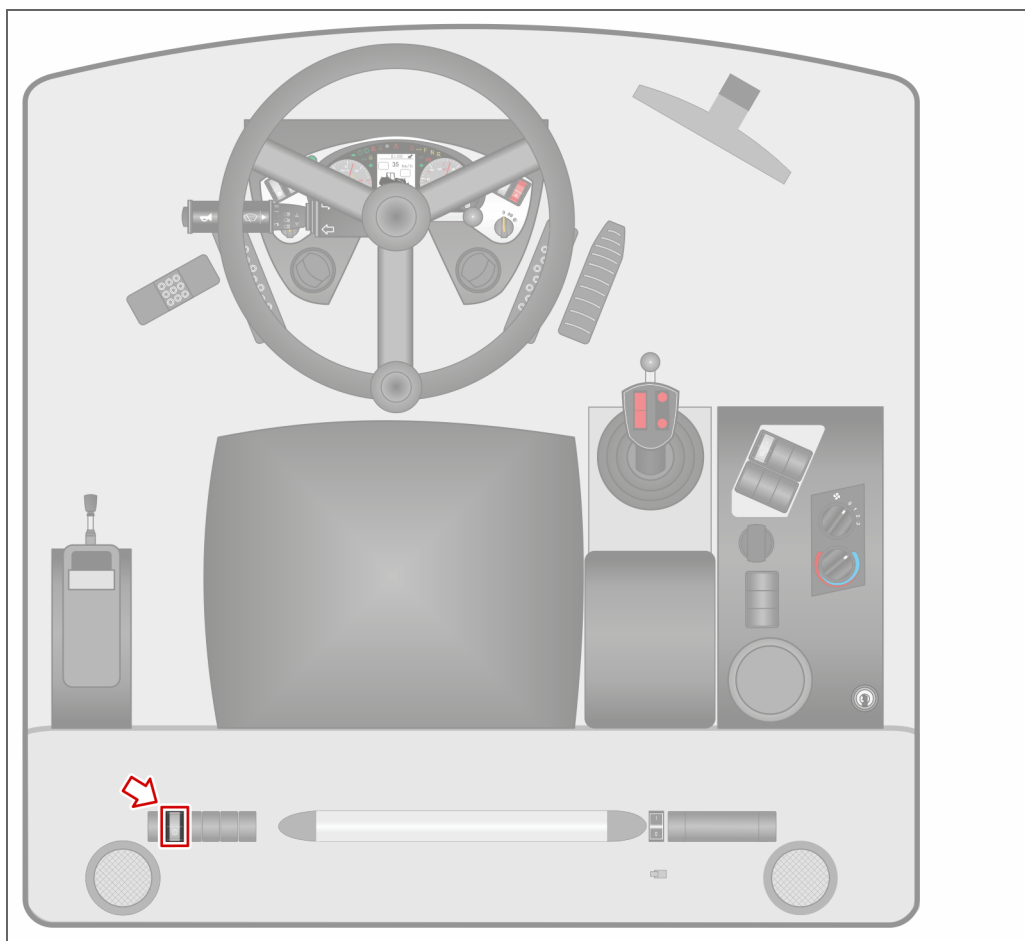
Attachments with a hydraulic connection can be used with the aid of the rear hydraulic connections.

9.13.1 Location



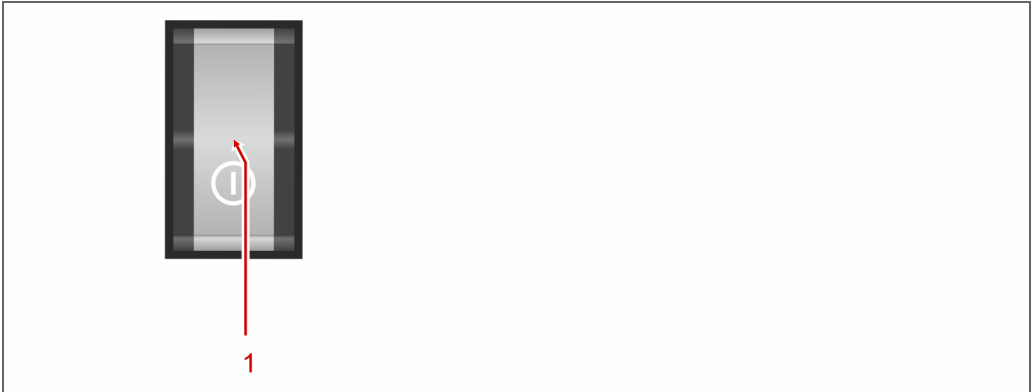
Location on wheel loader

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the roof liner on the left-hand side.



Location of the control element of the special equipment.

9.13.2 Description



Control elements of the special equipment

Key				
No.	Designation	Type	Setting	Explanation
1	supplementary Rear hydraulic system	Toggle switch	up	Activates the circuit of the accessory hydraulic connections on the quick coupler.
			down	Activates the circuit of the accessory hydraulic connections on the rear hydraulic connections.



Info

The toggle switch of the accessory hydraulic system serves only to select the respective hydraulic connections (hydraulic connections on the quick coupler or the rear hydraulic connections). The operating movements of the connected attachment are performed by means of the control lever for continuous operation of the accessory hydraulic system This is located on the multi-function joystick and is described separately.

9.14 Multi-function joystick with differential lock

The differential lock is used to compensate for differences in speed between the drive wheels. This function can be used if one of the two drive wheels cannot transfer power to the road (e.g. on uneven terrain). By activating the differential lock, the drive to the wheels is then balanced, enabling the wheel loader to proceed on its way.

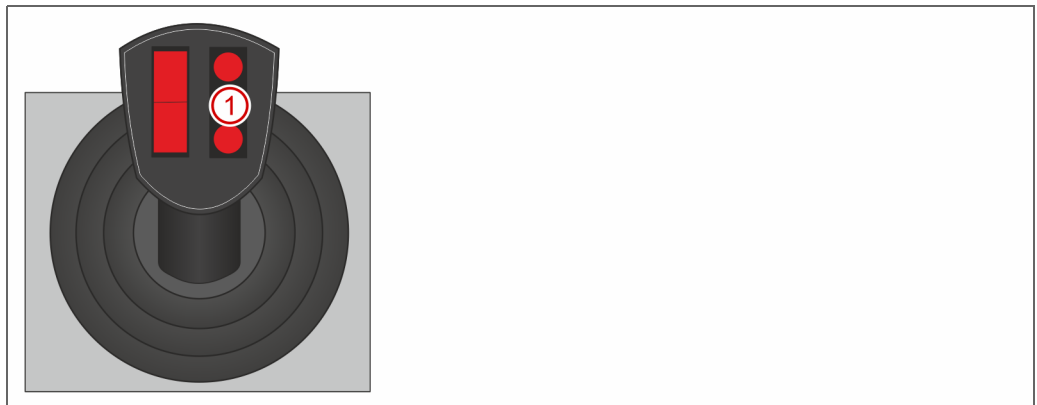
The multifunction joystick can be implemented in various configurations:

- Multifunction joystick with differential lock – one accessory hydraulic circuit (Page 255)
- Multifunction joystick with differential lock – two accessory hydraulic circuits (Page 256)

9.14.1 AF Series and AS850 / 1000

9.14.1.1 Multifunction joystick with differential lock – one accessory hydraulic circuit

The multifunction joystick is configured for a single accessory hydraulic circuit and the differential lock.



Multi-function joystick - plan view

Key

No.	Designation	Type	Setting	Function
1	Accessory hydraulic circuit / Unlocking cylinders	Push-button or scroll wheel	up	Moves the accessory hydraulic circuit / Unlocking cylinders are extended.
			down	Moves the accessory hydraulic circuit / Unlocking cylinders are retracted.

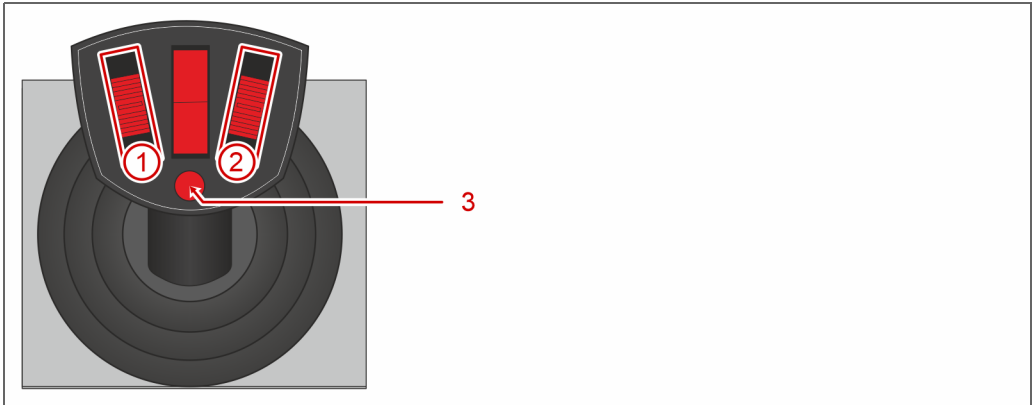


Multi-function joystick – Rear view

Key				
No	Designation	Type	Setting	Function
1	Differential lock	Push-button	pressed	The differential lock is engaged.
			not pressed	The differential lock is disengaged.

9.14.1.2 Multifunction joystick with differential lock – two accessory hydraulic circuits

The multifunction joystick is configured for the differential lock and dual accessory hydraulic circuits.



Multi-function joystick - plan view

Key				
No.	Designation	Type	Setting	Function
1	Accessory hydraulic circuit 2	Push-button or scroll wheel	up	Moves the second accessory hydraulic circuit.
			down	Moves the second accessory hydraulic circuit.
2	Accessory hydraulic circuit / Unlocking cylinders	Push-button or scroll wheel	up	Moves the accessory hydraulic circuit / Unlocking cylinders are extended.
			down	Moves the accessory hydraulic circuit / Unlocking cylinders are retracted.

Key (Cont.)

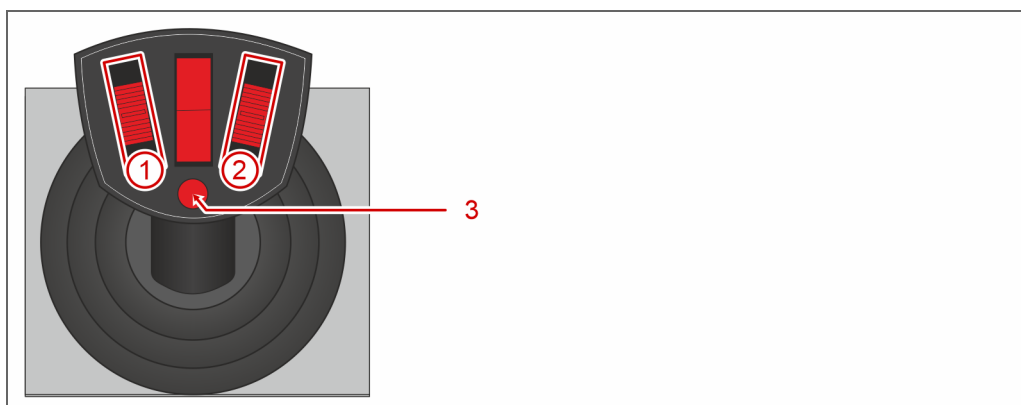
No.	Designation	Type	Setting	Function
3	Differential lock	Push-button	pressed	The differential lock is engaged.
			not pressed	The differential lock is disengaged.

9.14.2 AT Series

The differential lock is used to compensate for differences in speed between the drive wheels. This function can be used if one of the two drive wheels cannot transfer power to the road (e.g. on uneven terrain). By activating the differential lock, the drive to the wheels is then balanced, enabling the wheel loader to proceed on its way.

The multifunction joystick can be implemented in various configurations.

The multifunction joystick is configured for the differential lock and dual accessory hydraulic circuits.



Multi-function joystick - plan view

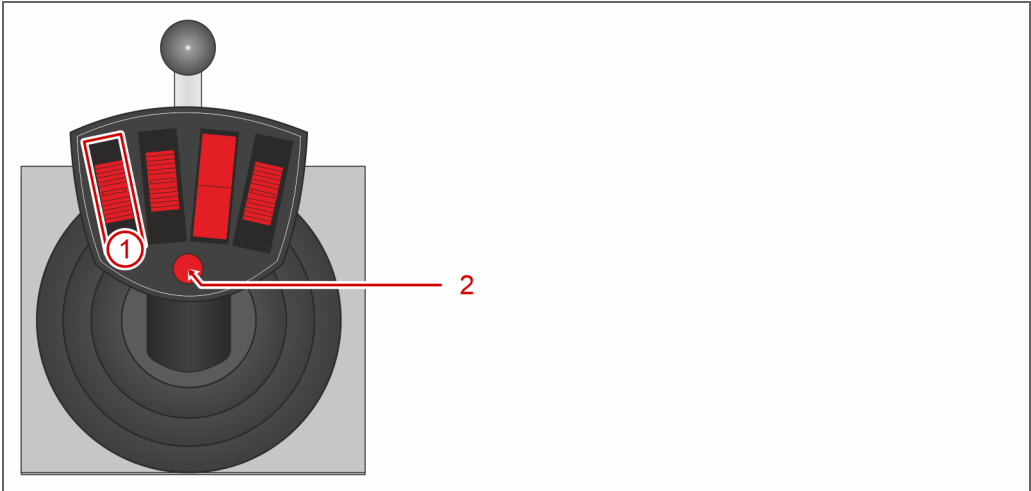
Key

No.	Designation	Type	Setting	Function
1	Telescopic arm	Rocker key	up	Extends the telescopic arm of the wheel loader.
			In the middle	Neutral setting
			down	Retracts the telescopic arm of the wheel loader.
2	Accessory hydraulic circuit / Unlocking cylinders	Push-button or scroll wheel	up	Moves the accessory hydraulic circuit / Unlocking cylinders are extended.
			down	Moves the accessory hydraulic circuit / Unlocking cylinders are retracted.
3	Differential lock	Push-button	pressed	The differential lock is engaged.
			not pressed	The differential lock is disengaged.

9.14.3 AS900tele

The differential lock is used to compensate for differences in speed between the drive wheels. This function can be used if one of the two drive wheels cannot transfer power to the road (e.g. on uneven terrain). By activating the differential lock, the drive to the wheels is then balanced, enabling the wheel loader to proceed on its way.

The multifunction joystick is configured for the differential lock and dual accessory hydraulic circuits.



Multi-function joystick - plan view

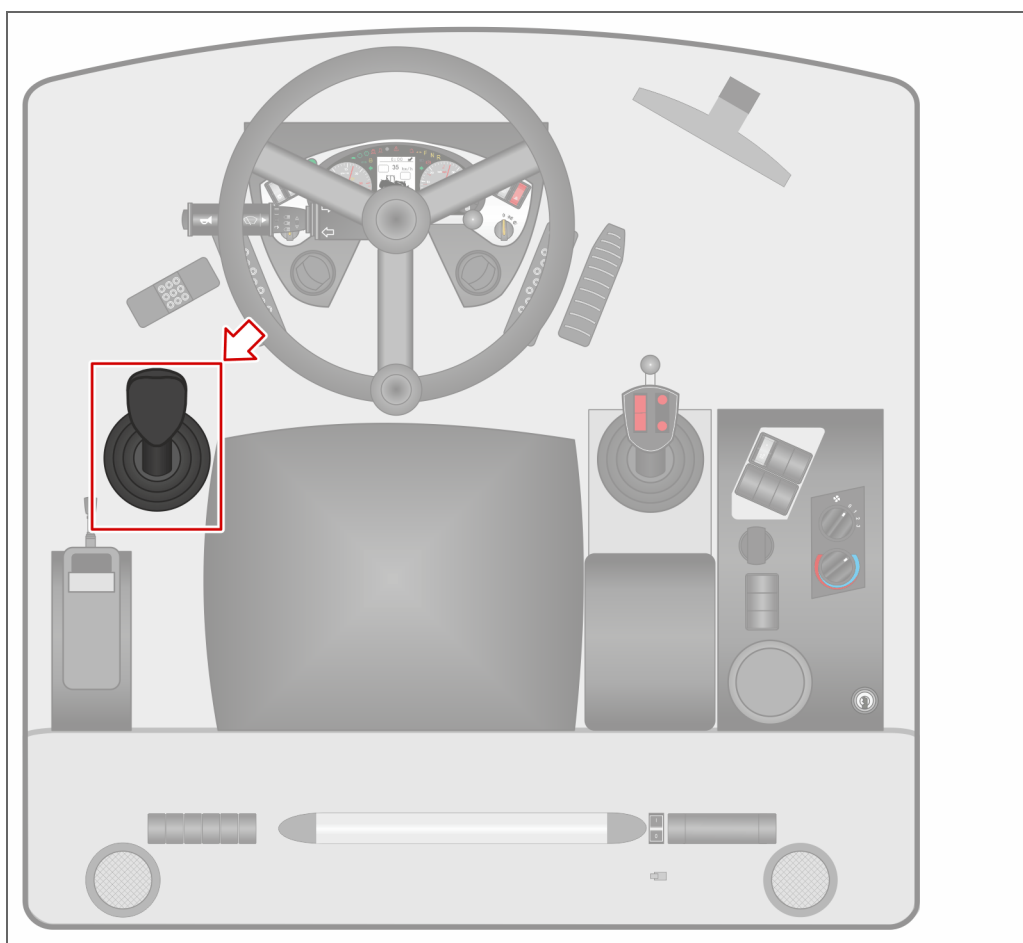
Key				
No.	Designation	Type	Setting	Function
1	Accessory hydraulic circuit 2	Push-button or scroll wheel	up	Controls the second accessory hydraulic circuit
			down	Controls the second accessory hydraulic circuit.
2	Differential lock	Push-button	pressed	The differential lock is engaged.
			not pressed	The differential lock is disengaged.

9.15 Multi-function joystick – Accessory hydraulic circuits

This accessory hydraulic circuit multi-function joystick serves to control the two accessory hydraulic circuits

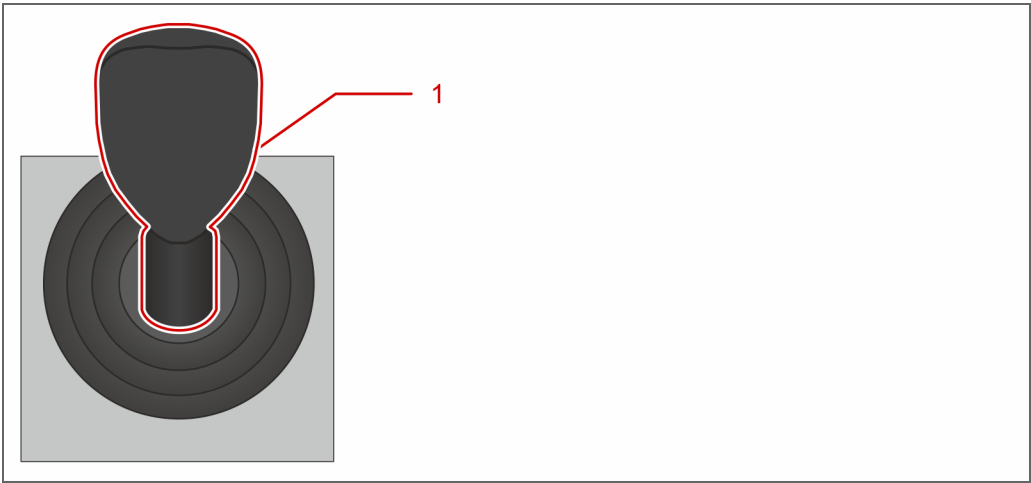
9.15.1 Location

The control elements are located in the interior of the cab on the left-hand side.



Location of the control element

9.15.2 Description



Control elements of the special equipment

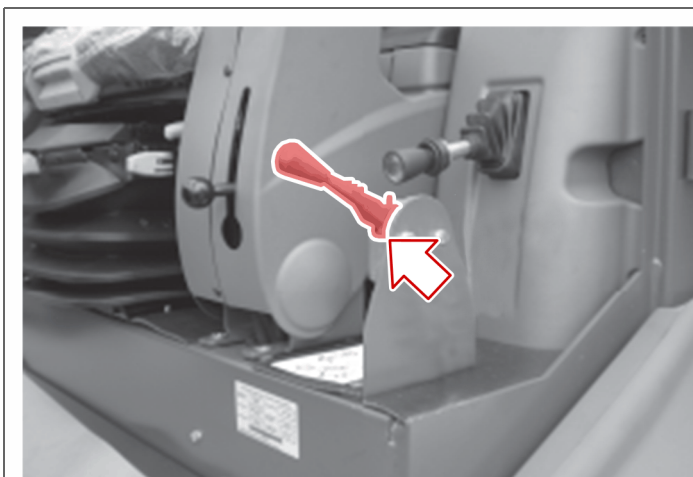
Key				
No	Designation	Type	Setting	Function
1	Control handle - Accessory hydraulics	Multi-function joystick	forwards	opens the 1st accessory hydraulic circuit
			back- wards	closes the 1st accessory hydraulic circuit
			left	opens the 2nd accessory hydraulic circuit
			right	closes the 2nd accessory hydraulic circuit

9.16 Crawler gear

For particular applications that require a high engine speed at a low speed of travel, it may be necessary to select Gear Range 1 and thus the crawler gear to be used.

9.16.1 Location

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the left-hand side.



Location of the control element of the special equipment.

9.16.2 Selecting the crawler gear

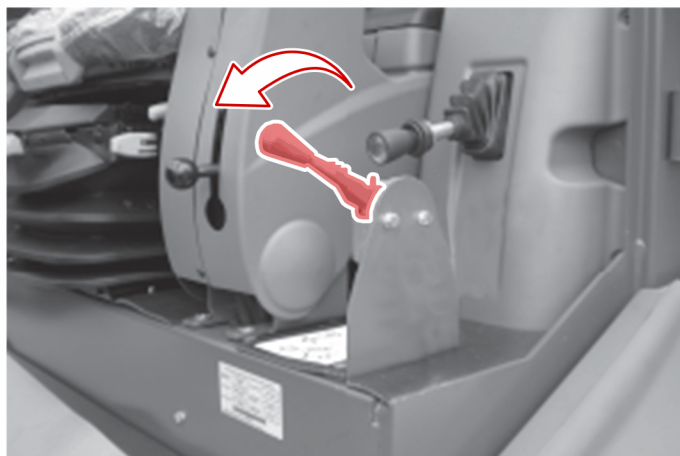


Requirement

- The attachment required for the impending application is installed on the wheel loader.
- The crawler gear lever is in the rearmost position.

Carry out the following steps:

1. Start the diesel engine (See page 141: Operation > Starting the diesel engine).
2. Switch the wheel loader to Gear Range 1 (See page 151: Operation > Selecting Gear Range 1).
3. Depress the accelerator pedal completely.
4. Slowly move the «CRAWLER GEAR LEVER» forwards.
 - ➔ Move the crawler gear lever only far enough forwards for the speed of travel to be achieved.



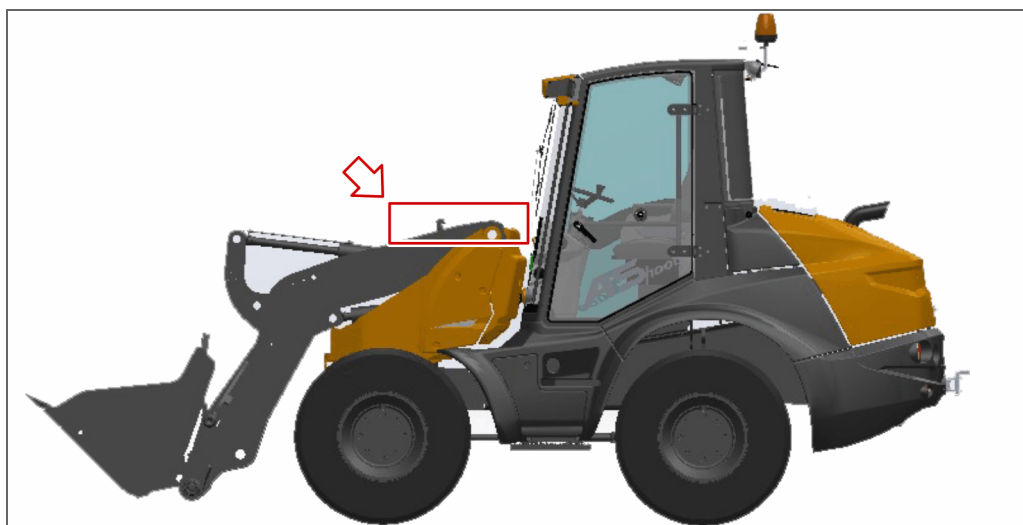
✓ Done.

9.17 Dumping throttle

The dumping throttle is used to lock the tipping speed of the bucket.

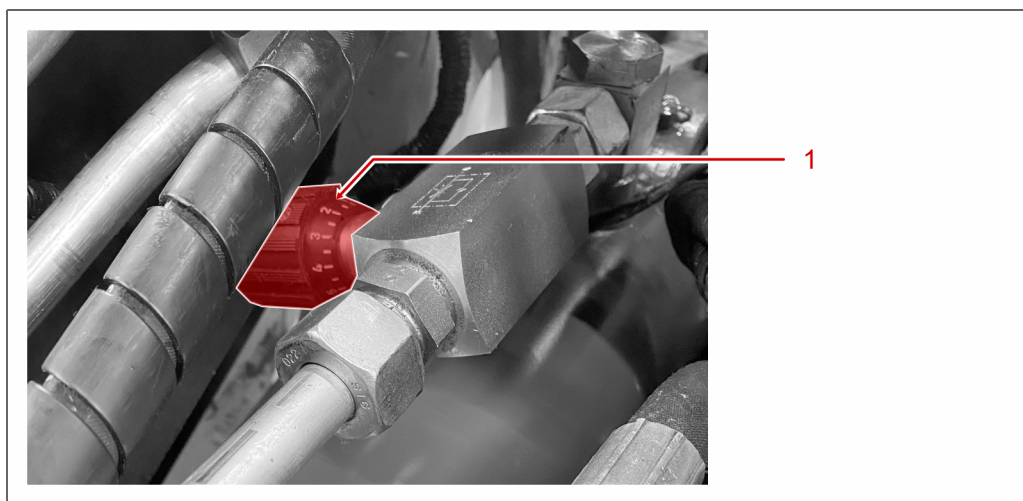
9.17.1 Location

This special equipment is equipped with an additional control element. This is located on the left-hand side of the turntable. This enables the tipping speed of the bucket to be adjusted.



Location of the control element of the special equipment.

9.17.2 Description



Control element of the special equipment

Key

No.	Designation	Type	Setting	Explanation
1	Adjustable dumping throttle	Valve	turn	The tipping speed is regulated.

9.17.3 Setting the tipping speed



Requirement

- The wheel loader is standing on a horizontal surface.
- The wheel loader is switched off.
- The lift arm has been secured by means of the lift arm support.
- The ignition key has been removed.

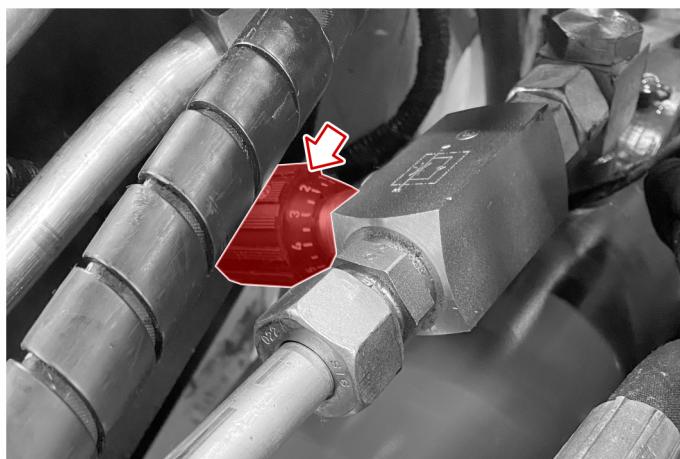


Tools required:

- Lift arm support

Carry out the following steps:

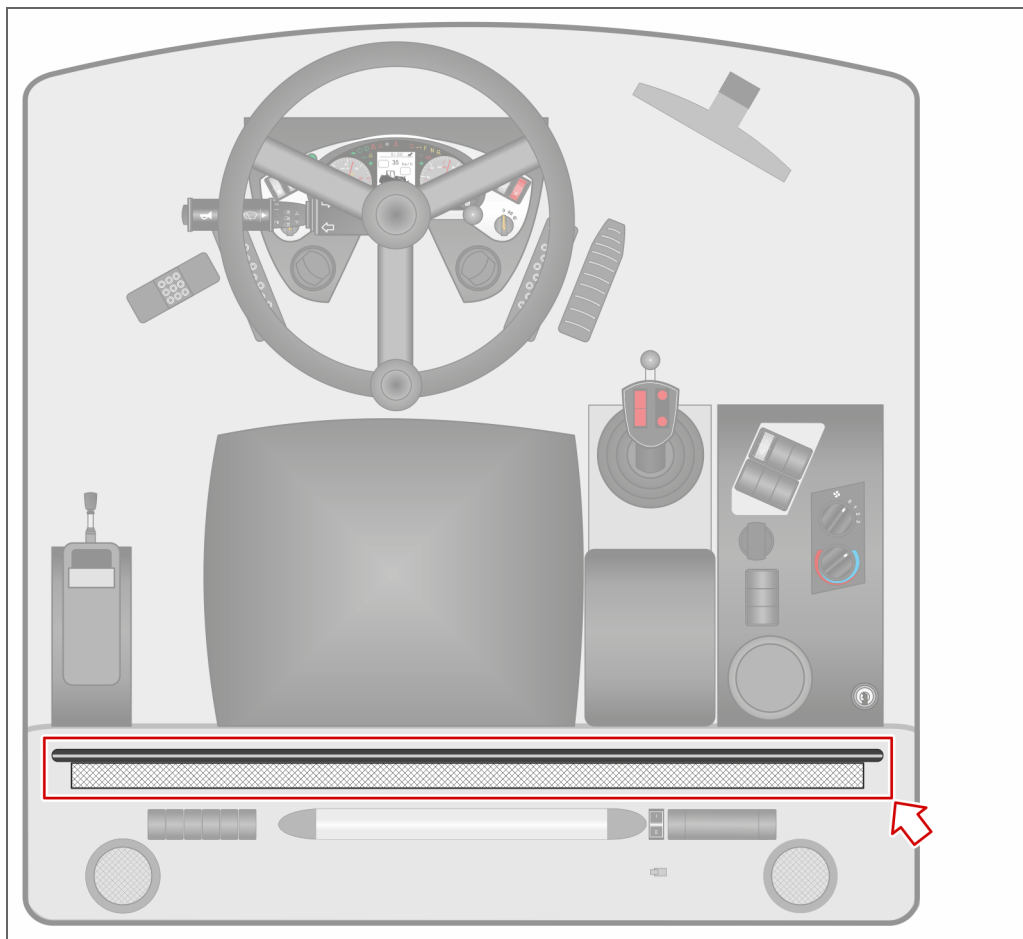
➔ Using the **«DUMPING THROTTLE»**, select the tipping speed.



✓ Done.

9.18 Roller blind

The roller blind serves as a sunshade.



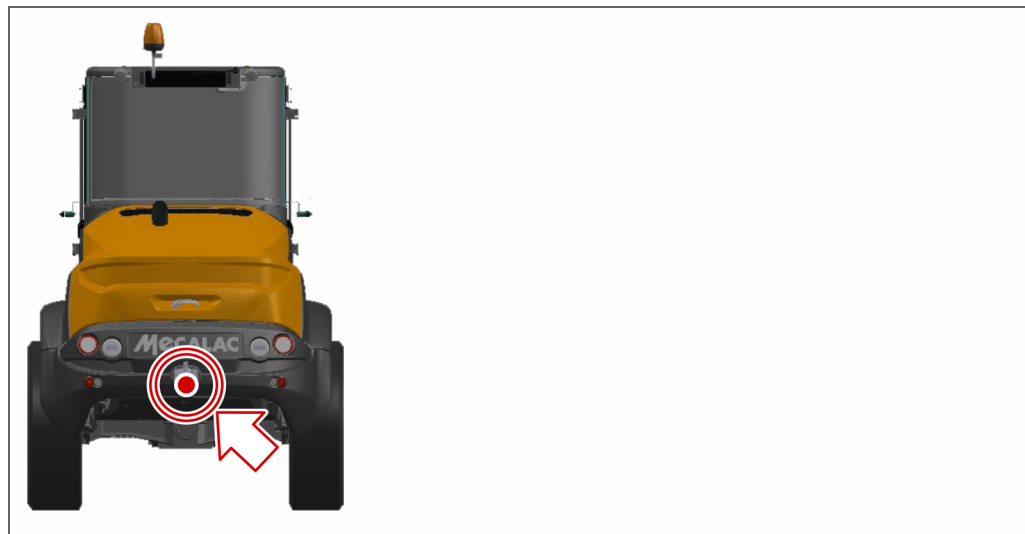
Location

9.19 Rear mount with ball head and Rockinger coupling

This special equipment is used to attach a trailer with a ball head hitch and a ring hitch as well as various attachments (for example, a salt spreader).

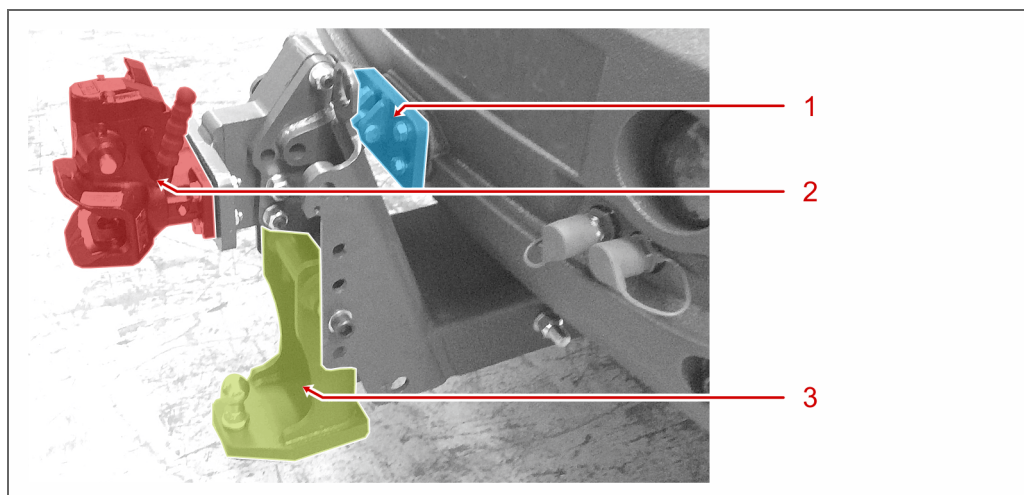
9.19.1 Location

This special equipment is located at the rear of the wheel loader.



Location on wheel loader

9.19.2 Description



Description of the parts of the special equipment

Key

No.	Designation	Function
1	Rear mounting bracket	The rear mounting bracket is installed on the shunting coupling of the wheel loader. The Rockinger trailer hitch and the ball head hitch can then be connected to the rear mounting bracket.
2	Rockinger trailer hitch	Serves as an attachment point for trailers with Rockinger trailer hitches.
3	Ball head trailer hitch	Serves as an attachment point for trailers with ball head trailer hitches.

9.19.3 Installation and removal

Hand throttle mode can be activated in two ways:

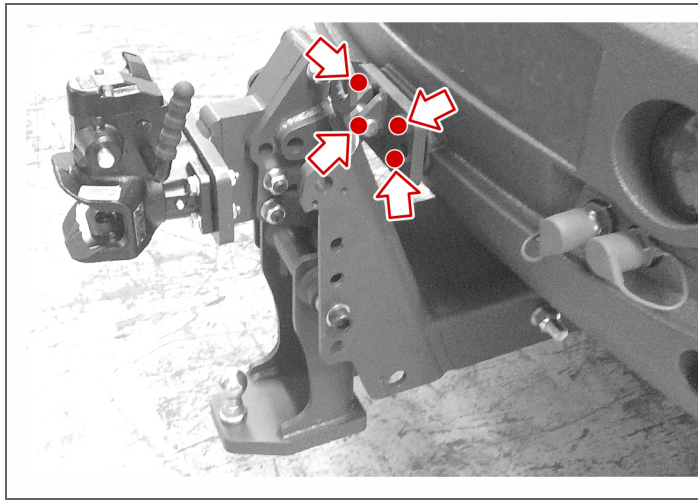
- Installation (Page 268)
- Removal (Page 270)

9.19.3.1 Installation

Carry out the following steps:

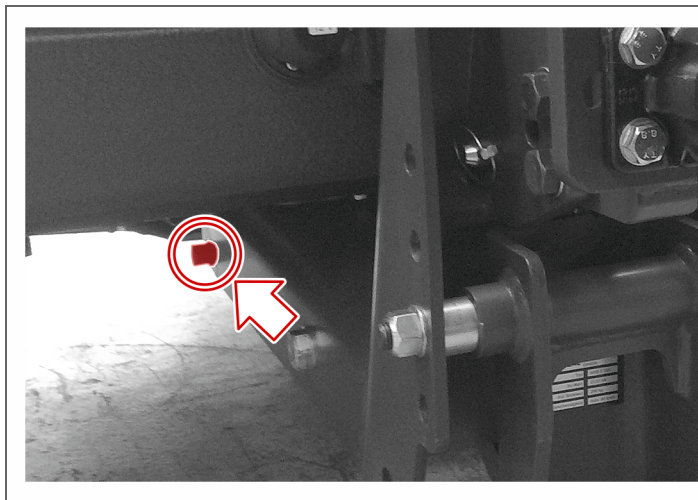
1. Install the **«REAR MOUNTING BRACKET»** by means of four hex screws (**M14**) on the counterweight of the wheel loader.

! Tightening torque: 110 Nm



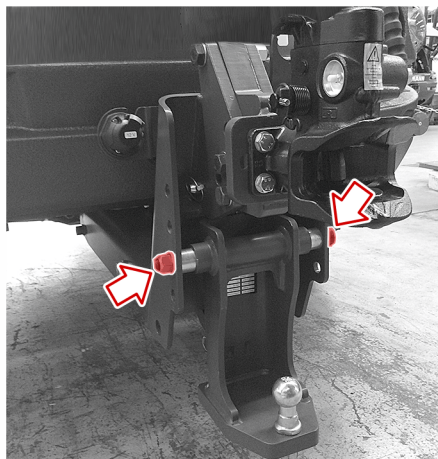
2. Connect the **«REAR MOUNTING BRACKET»** by means of a cylinder screw (**M20**) on the mount provided on the wheel loader.

! Tightening torque: 340 Nm



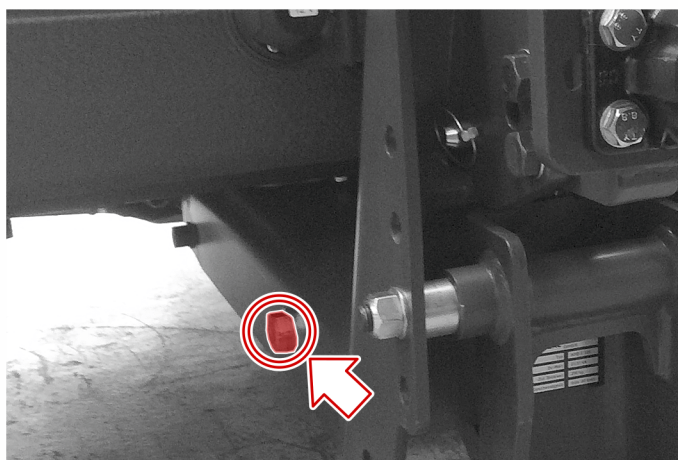
3. Install the ball head trailer hitch by means of a cylinder screw (M20) on the «REAR MOUNTING BRACKET».

! Tightening torque: 340 Nm



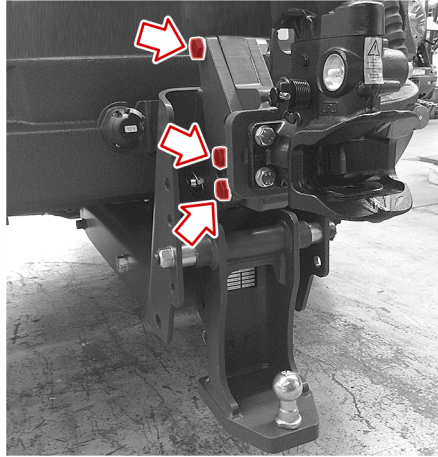
4. Install the «BAR» by means of a cylinder screw (M24) on the «REAR MOUNTING BRACKET».

! Tightening torque: 590 Nm



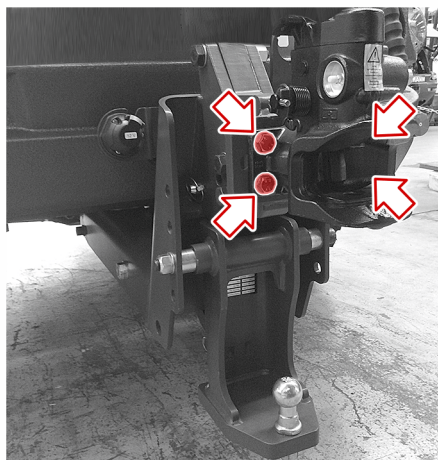
5. Install the **«BLOCK»** of the **«ROCKINGER TRAILER HITCH»** by means of three hex screws (**M20**) on the **«REAR MOUNTING BRACKET»**.

! Tightening torque: 490 Nm



6. Install the **«ROCKINGER TRAILER HITCH»** by means of four hex screws (**M14**) on the **«BLOCK»**.

! Tightening torque: 110 Nm



✓ Done.



Info

In the case of certain trailers and attachments, such as a salt spreader, it may be necessary for the Rockinger trailer hitch to be removed for technical reasons. Check in each individual case whether this is necessary.

9.19.3.2 Removal

Removal of the rear mount takes place in the reverse order of the procedure required for installation.

9.20 Unpressurised oil return line

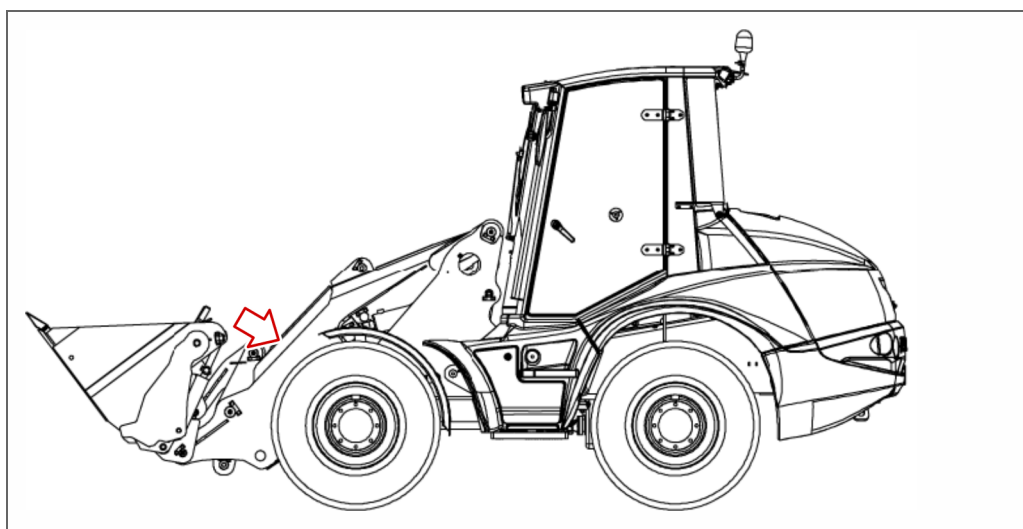
A low volumetric flow (max. 5-10 l/min) of the hydraulic oil can be led back to the tank via the unpressurised oil return line. Depending on the volume flow and the obstructions that may arise in the hose lines, slight back-pressure may develop.

Specific attachments that require an unpressurised return line are connected to the unpressurised oil return line.

9.20.1 AF Series

9.20.1.1 Location

This special equipment is located on the left-hand side of the wheel loader on the lift arm.



Location on wheel loader

9.20.1.2 Display



Display

9.20.2 AT Series

9.20.2.1 Location

This special equipment is located on the left-hand side of the wheel loader on the lift arm.



Location on wheel loader

9.20.2.2 Display



Display

9.20.3 AS850 / AS1000

9.20.3.1 Location

This special equipment is located on the left-hand side of the wheel loader on the lift arm.



Location on wheel loader

9.20.3.2 Display



Display

9.20.4 AS900tele

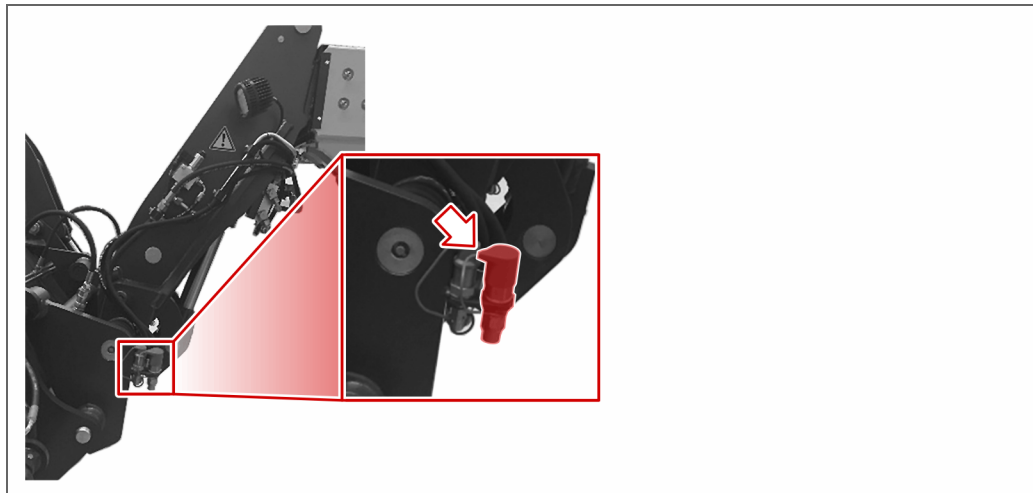
9.20.4.1 Location

This special equipment is located on the left-hand side of the wheel loader on the lift arm.



Location on wheel loader

9.20.4.2 Display



Display

9.21 Unpressurised return line

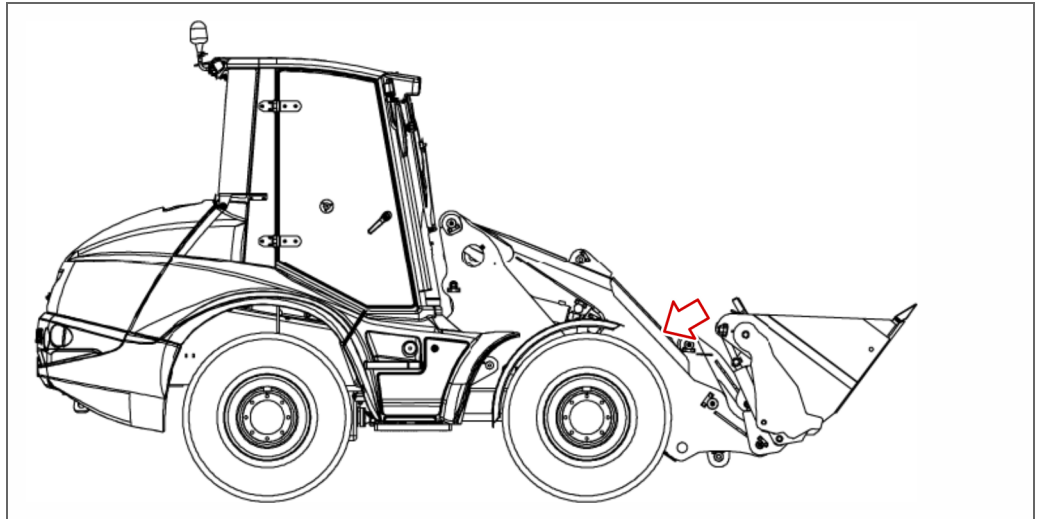
The entire volume flow of the hydraulic operating system can be fed back via the pressure-free return line and return line filter in a practically unpressurised state. Depending on the volume flow and the obstructions that may arise in the hydraulic oil filter and in the hose lines, slight back-pressure may develop.

Specific attachments that require a low-pressure return line are connected to the unpressurised return line.

9.21.1 AF Series

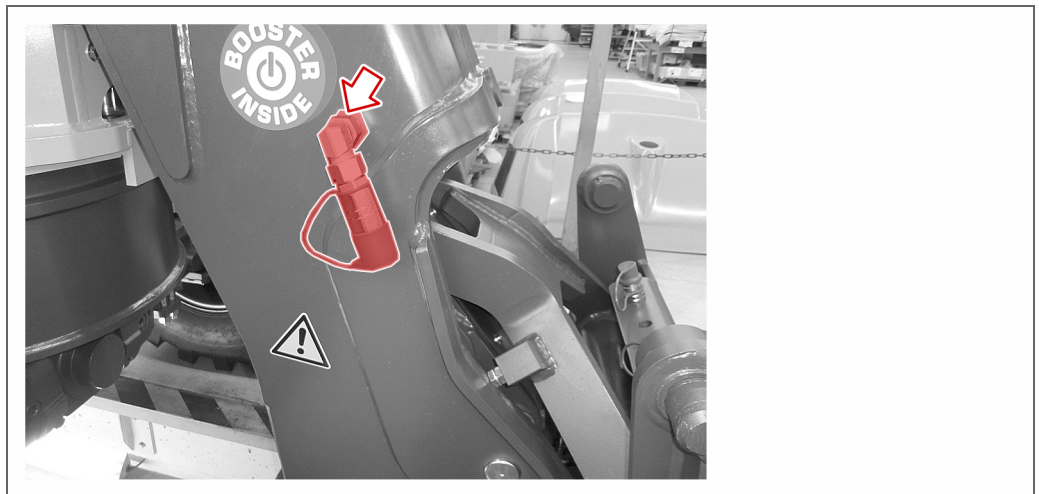
9.21.1.1 Location

This special equipment is located on the right-hand side of the wheel loader on the lift arm.



Location on wheel loader

9.21.1.2 Display



Display

9.21.2 AT Series

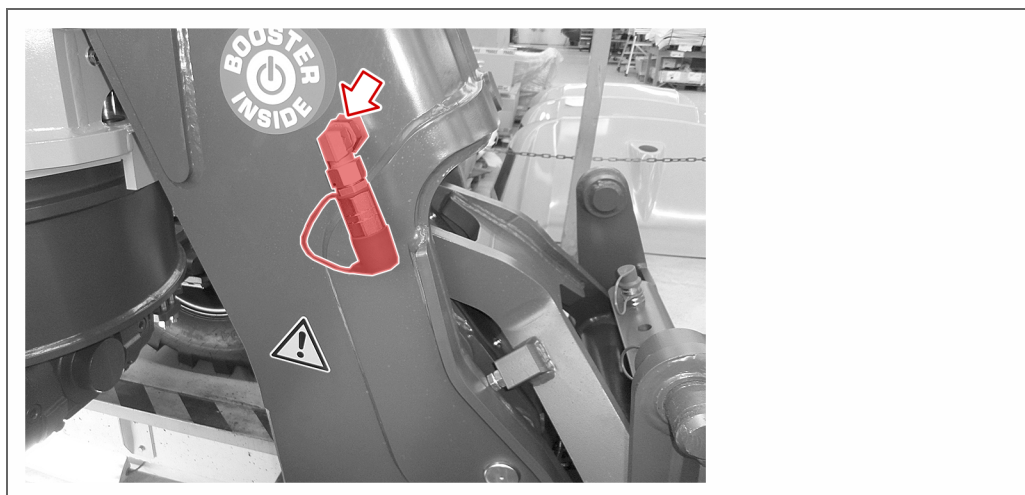
9.21.2.1 Location

This special equipment is located on the right-hand side of the wheel loader on the lift arm.



Location on wheel loader

9.21.2.2 Display

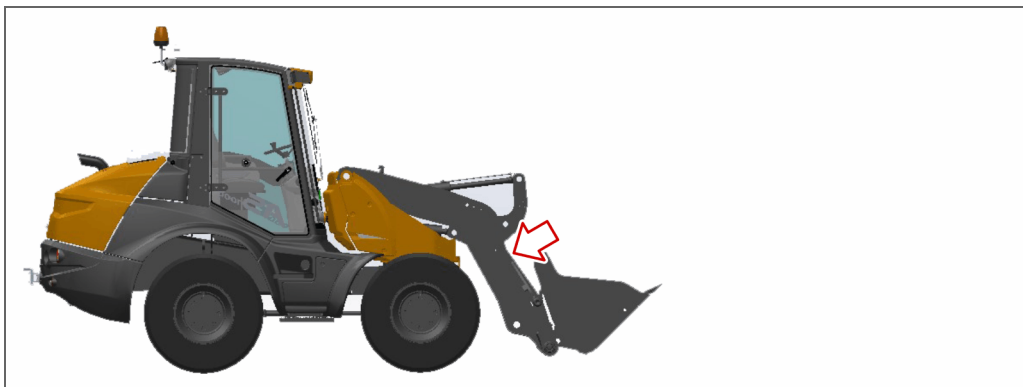


Display

9.21.3 AS850 / AS1000

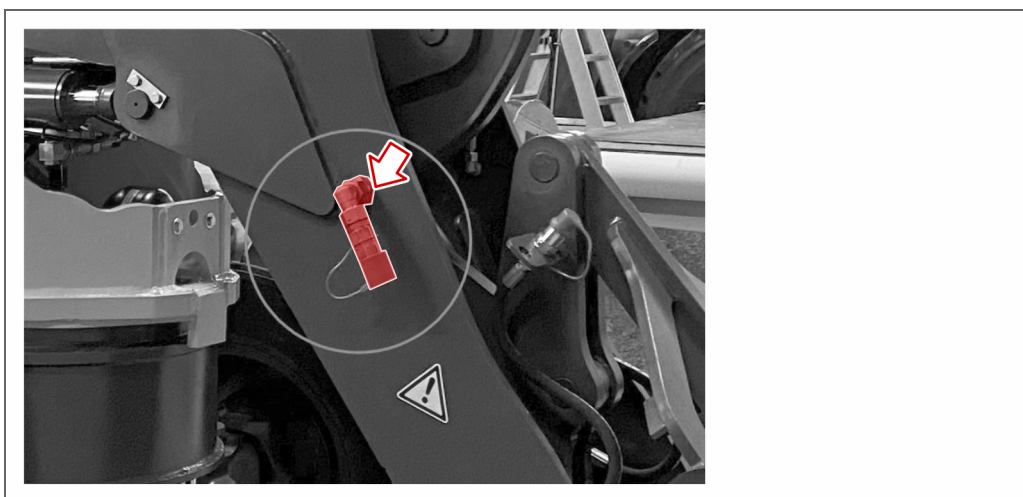
9.21.3.1 Location

This special equipment is located on the right-hand side of the wheel loader on the lift arm.



Location on wheel loader

9.21.3.2 Display



Display

9.21.4 AS900tele

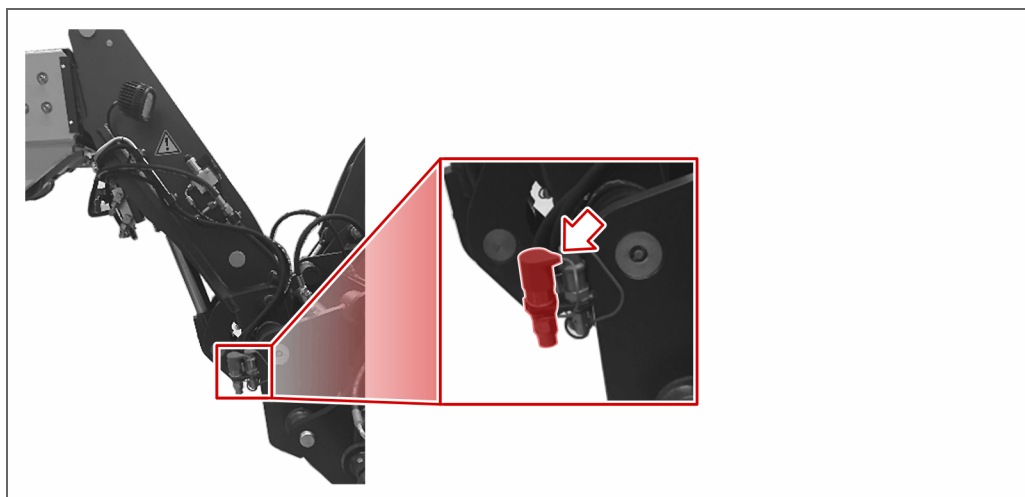
9.21.4.1 Location

This special equipment is located on the right-hand side of the wheel loader on the lift arm.



Location on wheel loader

9.21.4.2 Display



Display

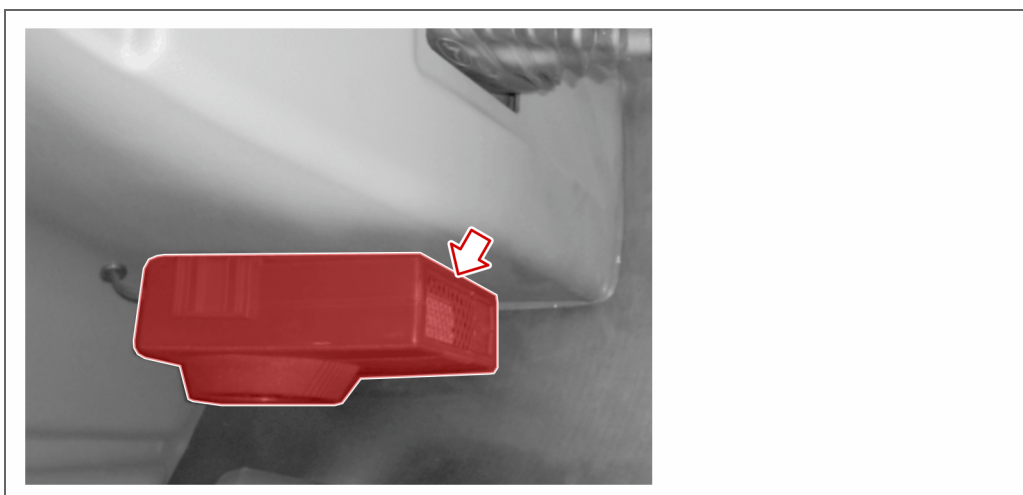
9.22 Engine and cab pre-heating system

The interior of the cab and the cooling water of the engine can be pre-warmed with the aid of the engine and cab pre-warming system.

9.22.1 Engine and cab pre-heating system

9.22.1.1 Heating fan

Warmed air is blown into the interior of the cab by means of the electric heating fan. The heating fan is located in the interior of the cab on the left-hand side.



Location of the heating fan of the special equipment.

9.22.1.2 Lead

The lead serves as the external power supply of the engine and cab pre-warming system.

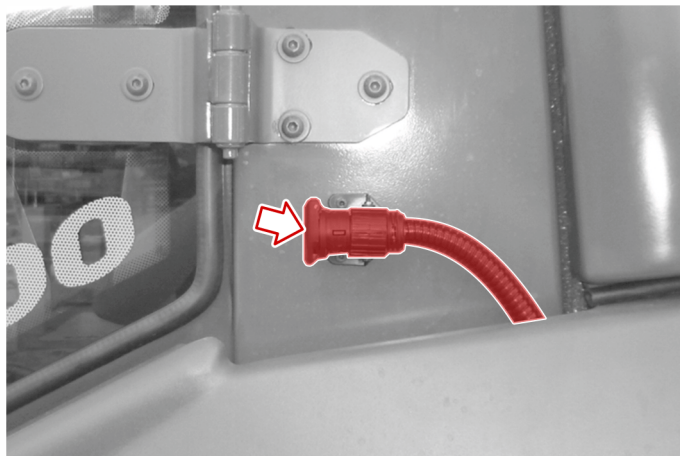


Lead

9.22.1.3 Connection point - Lead

The lead is connected to the lead connection point.

The connection point for the lead is located on the exterior of the cab on the driver's side.



Location - Connection point - Lead

9.22.2 Switching on the engine and cab pre-heating system

Safety instruction: Keep the heating fan clear!

When using the engine and cab pre-warming system, the electrical heating fan may **not** be covered. Otherwise, malfunctions and damage to the engine and cab pre-warming system may occur.



Requirement

- The wheel loader is shut down and parked in a secured area.



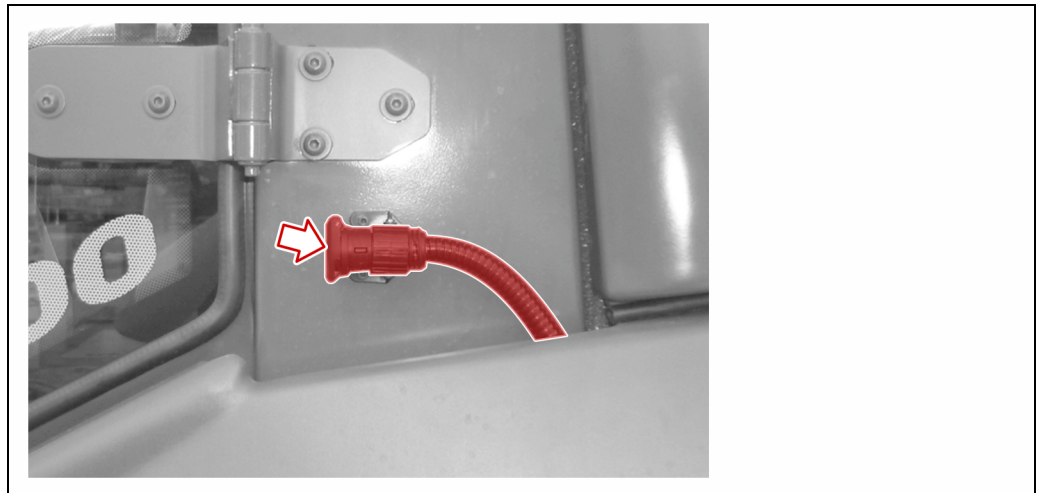
Tools required:

- the original lead
- a suitable 120 V or 230 V Schuko socket with earthing contact (PE)

Carry out the following steps:

1. Connect the «LEAD» to the «LEAD CONNECTION POINT».

! In addition, take note of the enclosed DEFA usage and assembly manual.



2. Connect the Schuko plug of the «LEAD» to the 230 V Schuko socket with earthing contact (PE).

↪ The heating process is started.

3. Remove the «LEAD» once the alarm process has been completed.

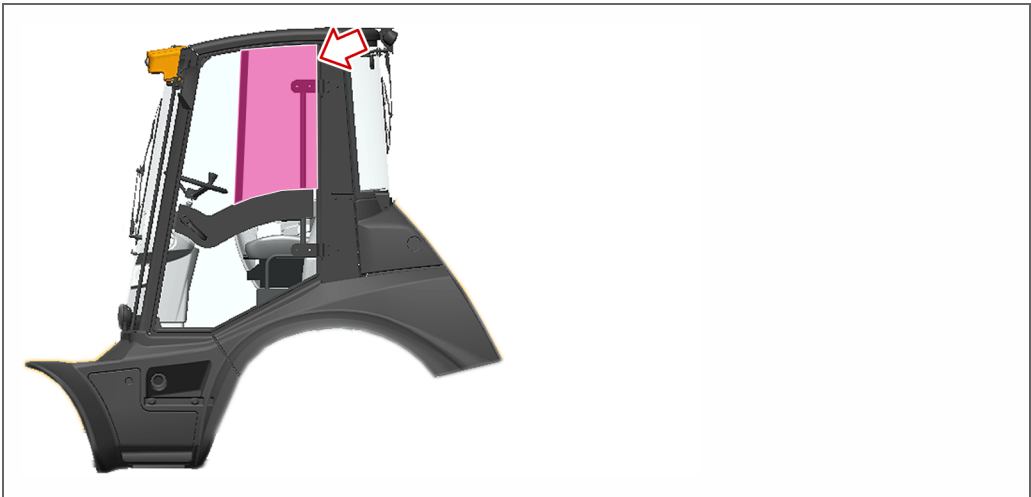
! The lead must be disconnected from the mains circuit after a maximum of 3 hours. The heating system is intended for use three times within 24 hours on 150 days of use per year.

✓ Done.

9.23 Movable window pane

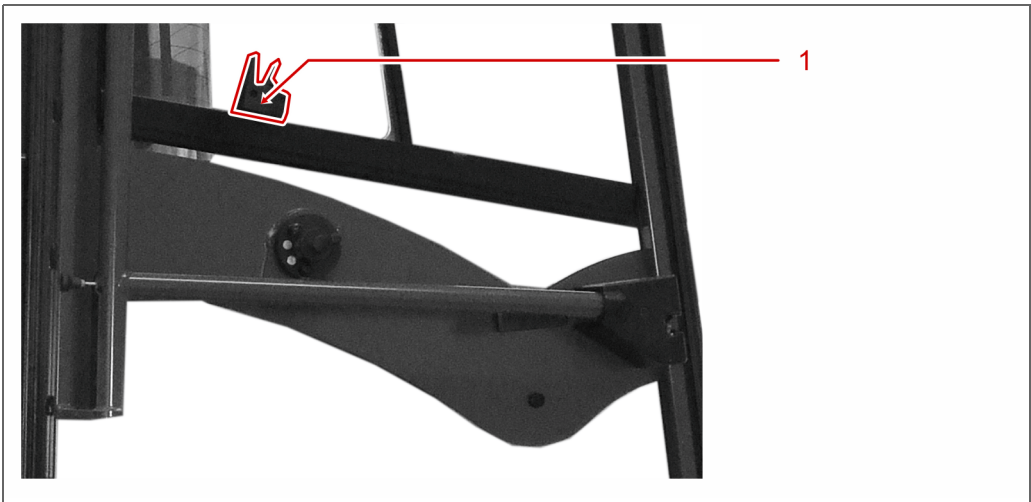
The movable window pane allows the window in the driver's door and the right-hand door to be opened.

9.23.1 Location



Location on wheel loader

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the control element of the special equipment

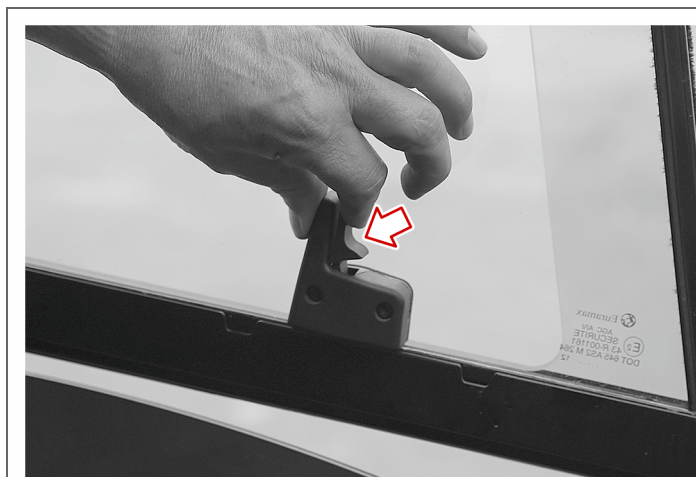
Key

No.	Designation	Function
1	Window locks	The windows in the doors can be opened and locked with the window locks

9.23.2 Moving the window pane

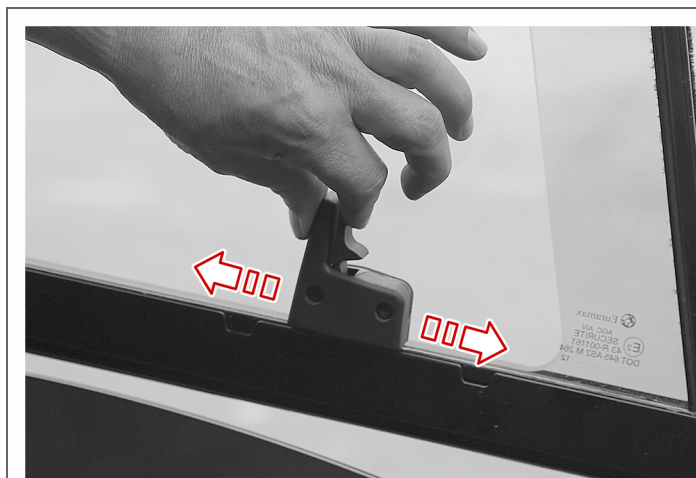
Carry out the following steps:

1. Press and hold the «WINDOW LOCKING» lever.



→ The window lock is released.

2. Move the «WINDOW PANE» to the desired position.

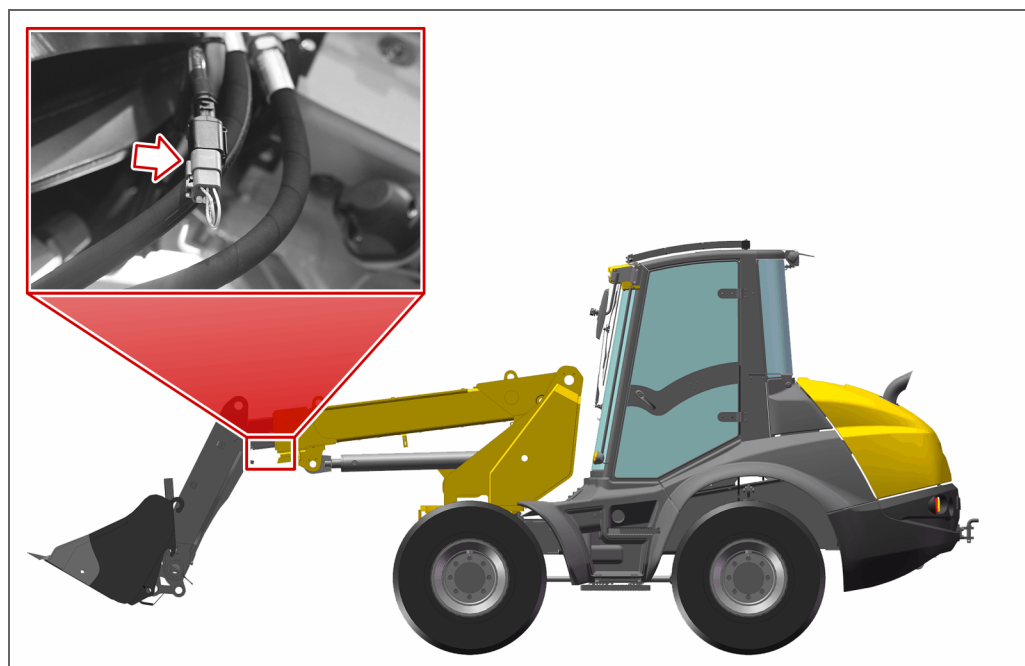


3. Release the «WINDOW LOCKING» lever.

✓ Done.

9.24 Preparation of work platform (AS900tele)

The plug-in connector for the preparation of work platforms is located on the quick coupler. This is used to connect an emergency-stop device to the wheel loader. When the emergency-stop switch is triggered, the entire hydraulic operating system is deactivated. Further information is to be found in the operator's manual of the work platform.



Location

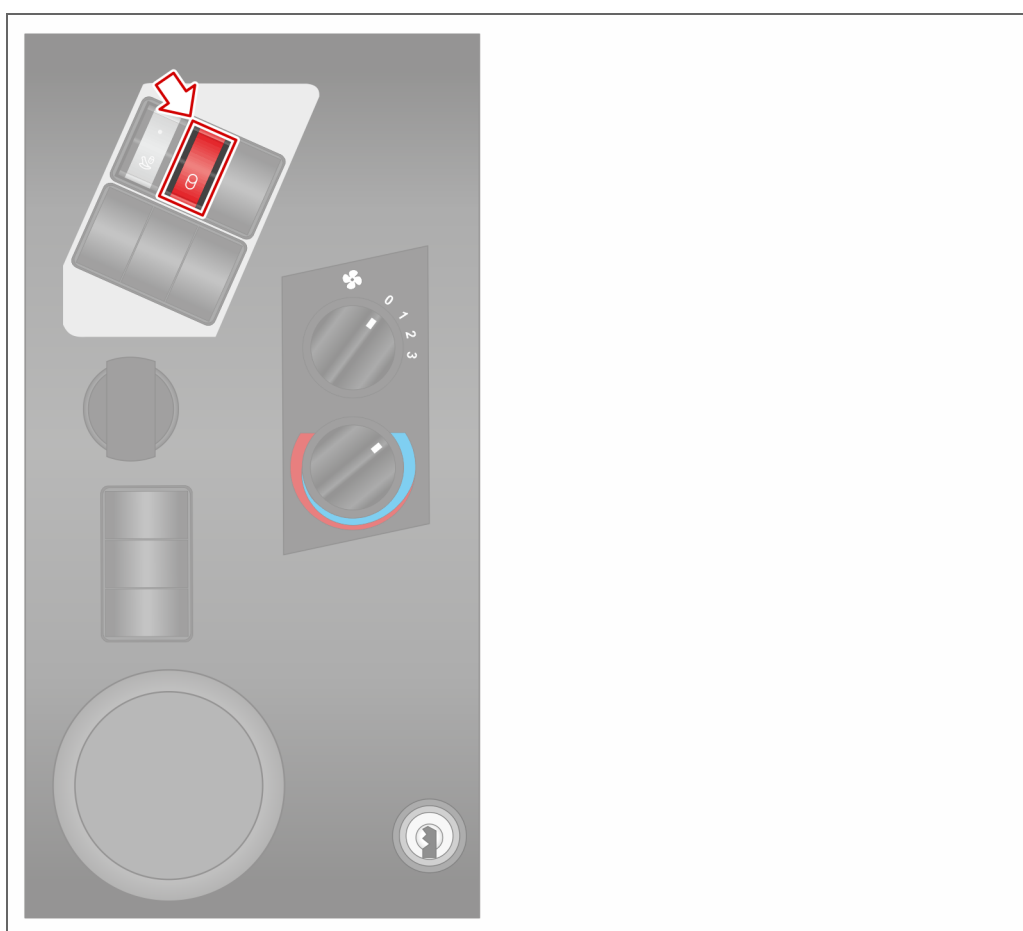
9.25 Rocker switch operated ride control

The ride control allows the lift arm to resonate when travelling with a bucket or an attachment. This compensates for unevenness.

The ride control may only be switched on when operating the wheel loader with an **installed** and **unladen** attachment.

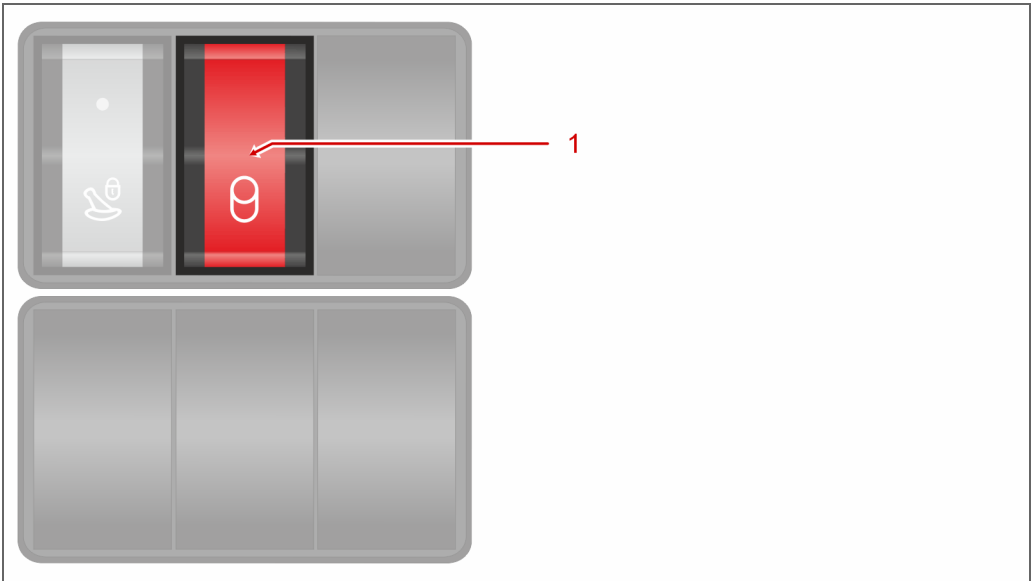
9.25.1 Location

This special equipment is equipped with an additional control element. This is located in the interior of the cab on the right-hand side.



Location of the special equipment

9.25.2 Description



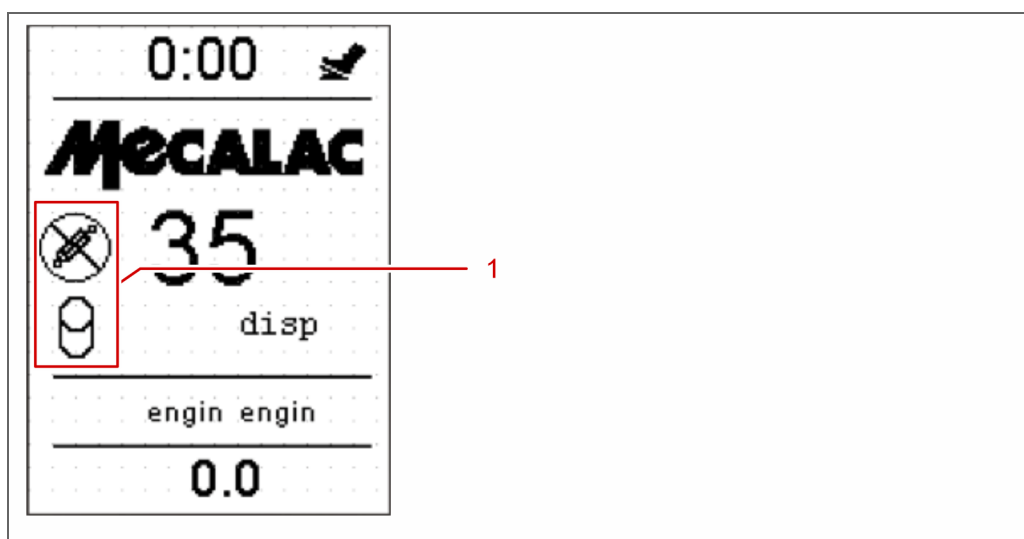
Control element of the special equipment

Key				
No.	Designation	Type	Setting	Explanation
1	Rocker switch operated ride control	Rocker switch	switched on	Switches the ride control on when in the activated condition. The ride control may not be used when working. When in Neutral gear, the ride control switches off automatically after a short time.

9.25.3 Display – Icons

Safety instruction: Uncontrolled movement of the lift arm!

Activation of the ride control is indicated on the multi-function panel by means of the ride control icon. When activated, the supplementary built-in line break safety device is switched off. Activation of the ride control is only possible when stationary. The lift arm may move during the switching process. When in Neutral gear, the ride control switches **off** automatically after a short time.



Display – Icons

Key

No.	Figure	Explanation
1		Indicates that the rocker switch operated ride control is switched on and that the line break safety device is switched off.
		If the icon flashes , the presence of a control system error is indicated. In this case, the ride control is switched off and the line break safety device is switched on.

9.25.4 Performing emergency lowering

This chapter provides a description of how the lift arm is to be lowered in an emergency when a line break safety device is also installed. This is necessary because it may not, under certain circumstances, be possible to lower the lift arm when the engine is shut down.



Requirement

- The diesel engine is switched off.
- The ignition is switched on

Carry out the following steps:

1. Press the following push-button on the multifunction panel:



→ The main menu of the display opens.



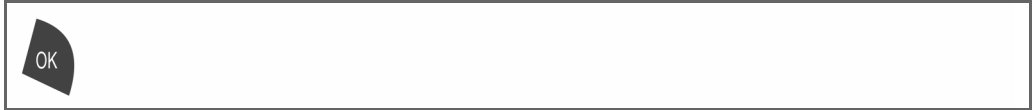
2. Press the following push-button on the multifunction panel:



→ The following operator display opens.



3. Press the following push-button on the multifunction panel:



→ The following operator display opens.



→ The X indicates that the line break safety device is still active.

4. Press the following push-button on the multifunction panel:



→ The line break safety device settings are selected.



5. Press the following push-button on the multifunction panel:



- The line break safety device settings are de-activated.
- The X is **no** longer displayed.
- A warning tone sounds at regular intervals.
- A warning symbol is displayed on the startup screen on the display.



→ The lift arm can be lowered.

6. Re-activate the line break safety device once the lift arm has been lowered.

✓ Done.

10 Attachments

In this chapter you will find information regarding the attachments.

- Safety instructions (Page 290)
- Transportation and operation (Page 291)
- Bucket (Page 294)
- Multi-purpose bucket (Page 313)
- Temporary load hook (Page 333)
- Forklift attachment (Page 347)
- Installing / dismounting the attachment (Page 366)

10.1 Safety instructions

For safe operation with the attachment, follow the following safety instructions: Always follow the safety instructions in the instruction manual of your wheel loader:

- Ensure that only experienced, reliable persons who are specially trained for this assignment are assigned to operate the wheel loader with the attachment.
- The bucket guard must be installed on the attachment when travelling in a public traffic environment.
- Ensure that the wheel loader with the attachment are only operated on level surfaces that are able to sustain the load.
- Follow the accident prevention rules as well as the local regulations
- Only transport and load the attachment if you are qualified to do so.
- Ensure that no persons remain beneath suspended loads.
- Use the load-bearing devices and lifting tackle only in the prescribed manner.
- Ensure that the load-bearing devices and lifting tackle are suitable and approved for the mass of the attachment.
- Only use load-bearing devices and lifting tackle that are in a faultless condition.

10.2 Transportation and operation

In this chapter you will find information regarding the transportation and operation of the attachments.

10.2.1 Unpacking the attachment

Before using the attachment, remove any shipping packaging, locking devices and aids.

Next check the attachment, as follows:

- Is any damage visible, which has arisen as a result of transportation.
- Is the delivery complete? Compare the parts as delivered with the entries on the delivery note.

If the attachment has been damaged during transportation or if the delivery is incomplete, immediately inform the manufacturer.

Dispose of the packaging material according to the local statutory provisions,

10.2.2 Lifting, transporting and lowering the attachment

The attachment can be raised and lowered with the aid of your wheel loader (attachment coupled to the wheel loader). Should you want to lift and lower the attachment with other lifting devices, perform the following steps



Requirement

- The attachment is disconnected from the wheel loader.
- The attachment is cleaned.
- All moving parts are secured.



Tools required:

- Suitable load-lifting equipment
- Suitable lifting tackle



WARNING

Danger of injury due to heavy, falling attachment!

Severe injuries to the body and limbs can be sustained due to the attachment falling!

- Never step underneath suspended loads!
- If possible, lift the attachment only so high that no one can be injured if it should fall.
- Always wear safety shoes!



CAUTION

Hazard of crush injuries to limbs!

You can be crushed and injured by the attachment!

- Always wear protective gloves!
- Always wear safety shoes!
- Always work carefully!

Carry out the following steps:

1. Block access to the working area by unauthorised persons.
! If necessary, set up warning signs, alerting people to the transportation and loading activities.
2. Secure the moving parts of the attachment.
3. Take note of the centre of gravity of the attachment.
4. Lift the attachment with suitable lifting tackle at the locations provided.
! When loading, take note of the mass of the attachment as well as the location of the centre of gravity.
5. Carefully lift the attachment with a suitable load-bearing device.
6. Transport the attachment carefully to the intended location.
7. Place the attachment carefully at the intended location.

8. Remove the lifting tackle from the attachment.

✓ Done.

10.2.3 Tying down the attachment

The attachment can be transported on a trailer or load bed. Secure the attachment on the trailer or load bed by tying it down with lashing straps.

10.2.4 Operation

In this chapter you will find information regarding the daily start up and shut down of the attachment.



Requirement

- The attachment is correctly installed on the wheel loader. Information regarding the installation of the attachment is to be found in the instruction manual of the wheel loader.

Putting the attachment into operation.



Carry out the following steps:

➔ Carry out a visual inspection of the attachment and the wheel loader.

? *You have noticed a defect on the attachment or wheel loader?*

- ➔ Rectify the defect that you have noticed, if you are authorised to do so.
- ➔ Inform your supervisor.
- ➔ Only operate the attachment together with the wheel loader if all defects have been rectified.

The attachment has been taken into operation, you can now proceed to work with the attachment.

Taking the attachment out of operation.



Carry out the following steps:

1. Set the attachment down.
2. Clean and inspect the attachment, see Section: "Cleaning and inspecting" (Page 365).

The attachment has been taken out of service; the attachment can now be dismounted and stored.

✓ Done.

10.3 Bucket

In this chapter you will find information regarding the bucket.

10.3.1 Product information

In this chapter you will find the information regarding the bucket:

- "Designated Use" (Page 294)
- "Function description" (Page 294)
- "Type Plate" (Page 295)
- "Scope of Supply" (Page 295)
- "Spare Parts" (Page 296)

10.3.1.1 Designated Use

The bucket attachment is expressly intended for the loading of bulk material of a defined material density. The correct use of the bucket can be found in the instruction manual of the wheel loader.

A different application or an application in excess of the intended rating does not comply.

The attachment is expressly not intended for:

- the transportation of persons in the installed attachment;
- taking up bulk material of too high a material density;
- working on the bucket without permission and implementing adequate safety measures;
- the purpose of demolition,
- operation without the exchange of wear parts,
- use in which visual checks are not carried out,
- use as a load hook for transportation.

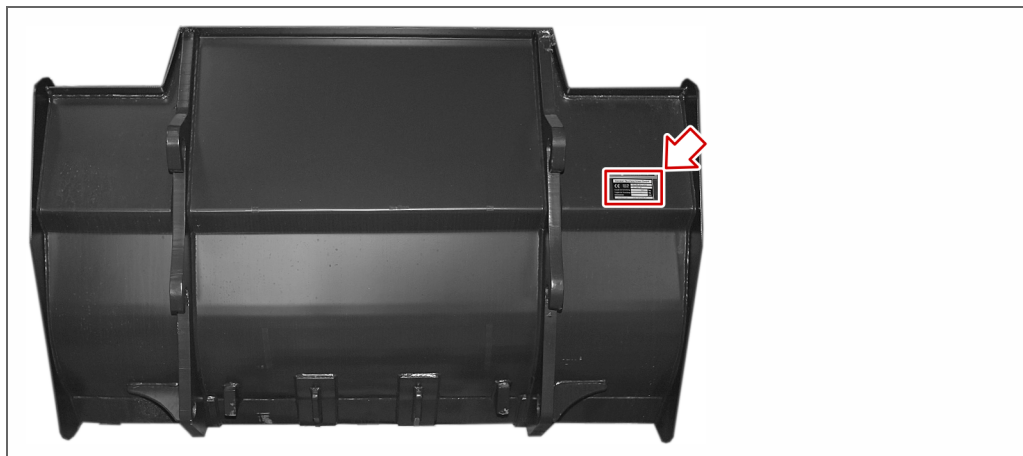
In addition the locally-applicable licensing requirements of the country in which this attachment is used, must be observed.

10.3.1.2 Function description

The attachment is used in combination with a wheel loader. For ease of assembly the attachment is equipped with a mount for use with a compatible quick coupler.

10.3.1.3 Type Plate

The type plate of the attachment is to be found at the following location:



Location of the type plate on the attachment (rear)

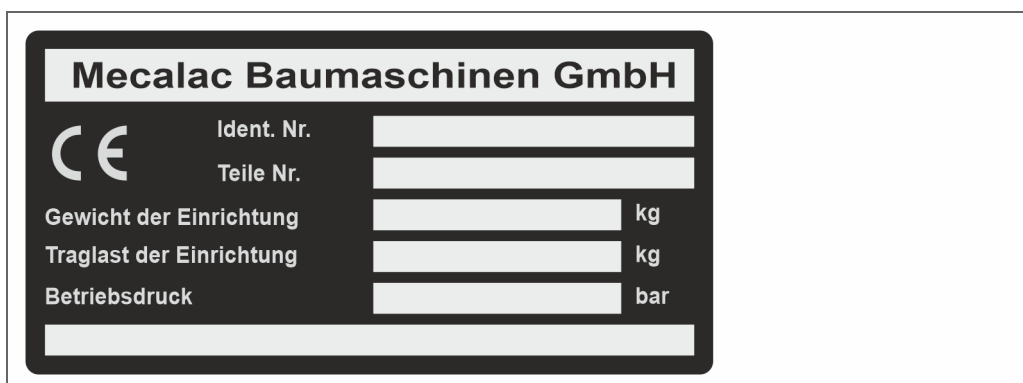


Illustration of the type plate

Data on the type plate of the attachment

Designation	Function
Ident. No.	The identification number of the attachment is to be found in this location.
Part No.	The part number of the attachment is to be found in this location.
Mass of the equipment	The mass of the attachment is to be found in this location.
Working load of the equipment	Not specified
Operating pressure	Not specified

10.3.1.4 Scope of Supply

No additional parts are delivered with this attachment.

10.3.1.5 Spare Parts

The following spare parts are available for this attachment:

- Cutting edge
- Tooth
- Tooth socket
- Safety plate

Further information regarding the spare parts available can be obtained on request from MECALAC Baumaschinen GmbH and in the spare parts documentation.

10.3.2 Technical data and dimensional drawings

In this chapter you will find the dimensional drawings and technical data for the bucket.

10.3.2.1 Technical Data

10.3.2.1.1 AF1050

Technical data of the attachment

Width	2 100 mm
Weight	410 kg
Tipping load - according to ISO 14397, frontal	3 800 kg
Useful load - according to ISO 14397, frontal	1 900 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	1 050 m ³
Lifting capacity	6 600 daN
Breakout force	4 900 daN

10.3.2.1.2 AF1200

Technical data of the attachment

Width	2 100 mm
Weight	448 kg
Tipping load - according to ISO 14397, frontal	4 300 kg
Useful load - according to ISO 14397, frontal	2 150 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	1.2 m ³
Lifting capacity	6 600 daN
Breakout force	4 900 daN

10.3.2.1.3 AT900

Technical data of the attachment

Width	2 100 mm
Weight	359 kg
Tipping load - according to ISO 14397, frontal	3 470 kg
Useful load - according to ISO 14397, frontal	1 620 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	0.90m ³
Lifting capacity	4 700 daN
Breakout force	5 800 daN

10.3.2.1.4 AT1050**Technical data of the attachment**

Width	2 100 mm
Weight	410 kg
Tipping load - according to ISO 14397, frontal	4 290 kg
Useful load - according to ISO 14397, frontal	1 890 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	1 050 m ³
Lifting capacity	4 700 daN
Breakout force	5 800 daN

10.3.2.1.5 AS850**Technical data of the attachment**

Width	1 950 mm
Weight	320 kg
Bucket position	Crowd angle 45° Dumping angle, top 49°
Tipping load - according to EN 474-3, frontal	3 280 kg
Tipping load - according to EN 474-3, swivelled	3 100 kg
Useful load - according to EN 474-3, frontal	1 640 kg
Useful load - according to EN 474-3, swivelled	1 550 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	1 050 m ³
Lifting capacity	4 000 daN
Breakout force	5 600 daN

10.3.2.1.6 AS1000

Technical data of the attachment

Width	2 100 mm
Weight	350 kg
Bucket position	Crowd angle 45° Dumping angle, top 43°
Tipping load - according to EN 474-3, frontal	3 610 kg
Tipping load - according to EN 474-3, swivelled	3 560 kg
Useful load - according to EN 474-3, frontal	1 805 kg
Useful load - according to EN 474-3, swivelled	1 780 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	1 050 m ³
Lifting capacity	4 600 daN
Breakout force	6 400 daN

10.3.2.1.7 AS900tele

Technical data of the attachment

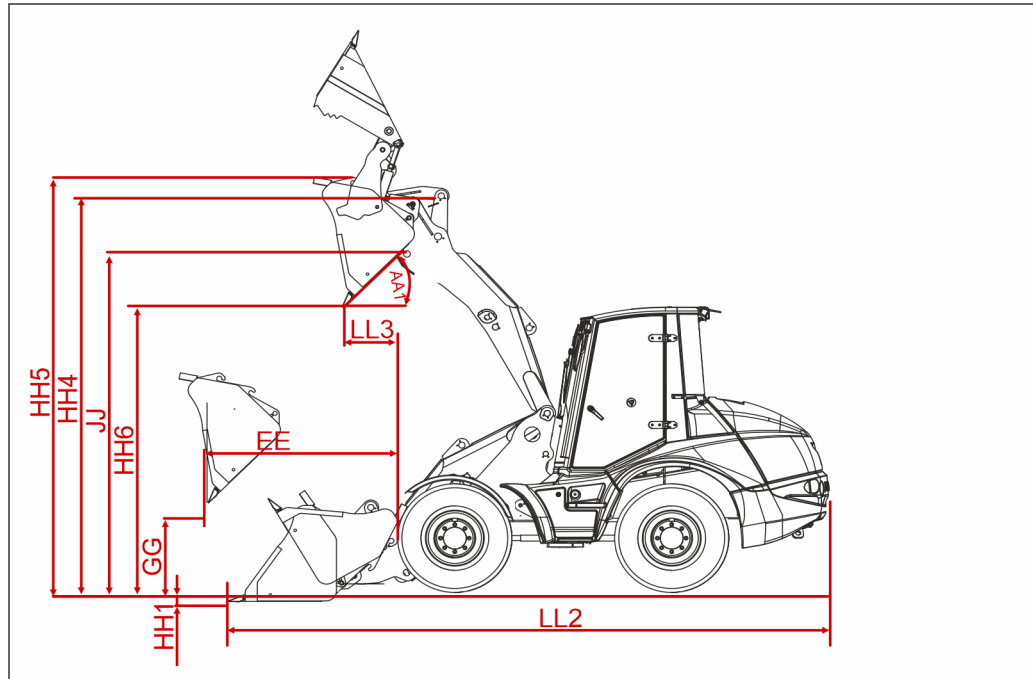
Width	1 945 mm
Weight	258 kg
Bucket position	Crowd angle 45° Dumping angle, top 45° Dumping angle max. 105°
Tipping load - according to ISO 14397, frontal (retracted*)	2 930 kg* 2 580 kg
Tipping load - according to ISO 14397, swivelled (retracted*)	2 235 kg* 1 790 kg

Application limits of the attachment

Bulk material density depending on basic device	2.5 t/m ³ / 1.98 t/m ³
Bucket volume according to DIN / ISO 7546	1 050 m ³

Application limits of the attachment (Cont.)

Lifting capacity	3 700 daN
Breakout force	4 800 daN

10.3.2.2 Dimensional drawing**10.3.2.2.1 AF1050**

Dimensional drawing of AF 1050 with attachment installed

Key

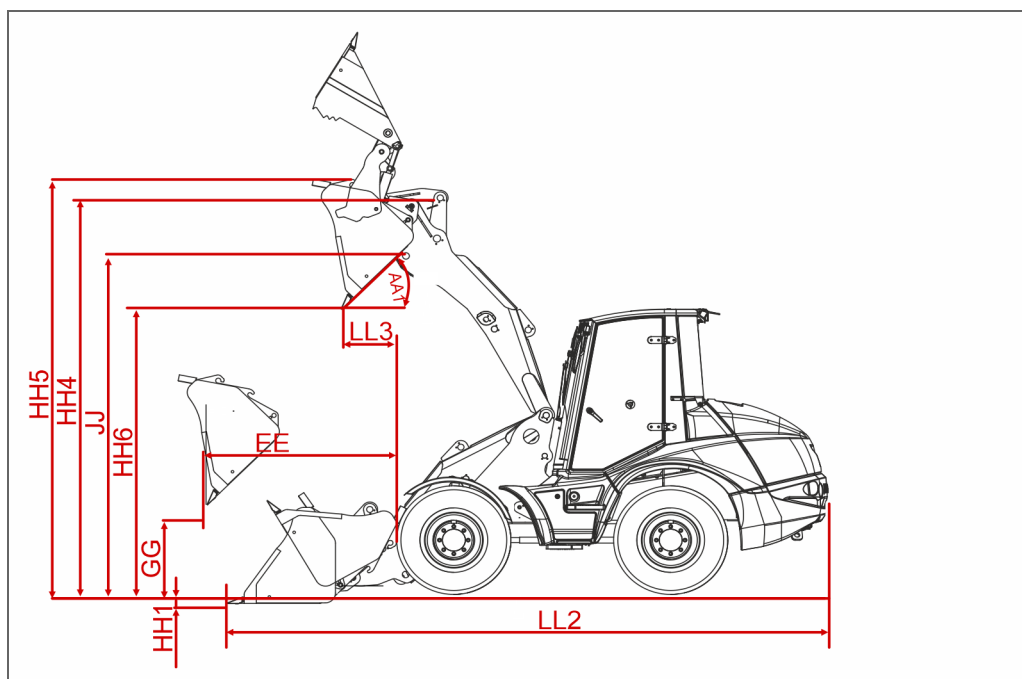
Dimension type	Designation	Value
AA1	Dumping angle, bucket floor at max. lifting height	45°
EE	Distance from bucket blade with bucket tilted 45° to front vehicle edge, at maximum load	1 610 mm
GG	Height of bucket blade with tilted bucket and tine upper surface above ground, at maximum load	875 mm
HH1	Undercut at lower surface of bucket or upper surface of tine	100 mm
HH5	Max height of the attachment (touching overhead lines if the attachment is moved in the highest position)	4 590 mm
HH6	Overload height of bucket blade without teeth	2 820 mm
JJ	Overload height measured at 100mm free space for tail lift, projections on the lift arm must be noted	2 920 mm

Key (Cont.)

Dimension type	Designation	Value
LL2	Length overall from rear edge of vehicle without attachment coupling to forward-most point of the implement without teeth, level with the ground	6 080 mm
LL3	Max. tipping length to machine side at max. lifting height	740 mm

10.3.2.2.2

AF1200



Dimensional drawing of AF 1200 with attachment installed

Key

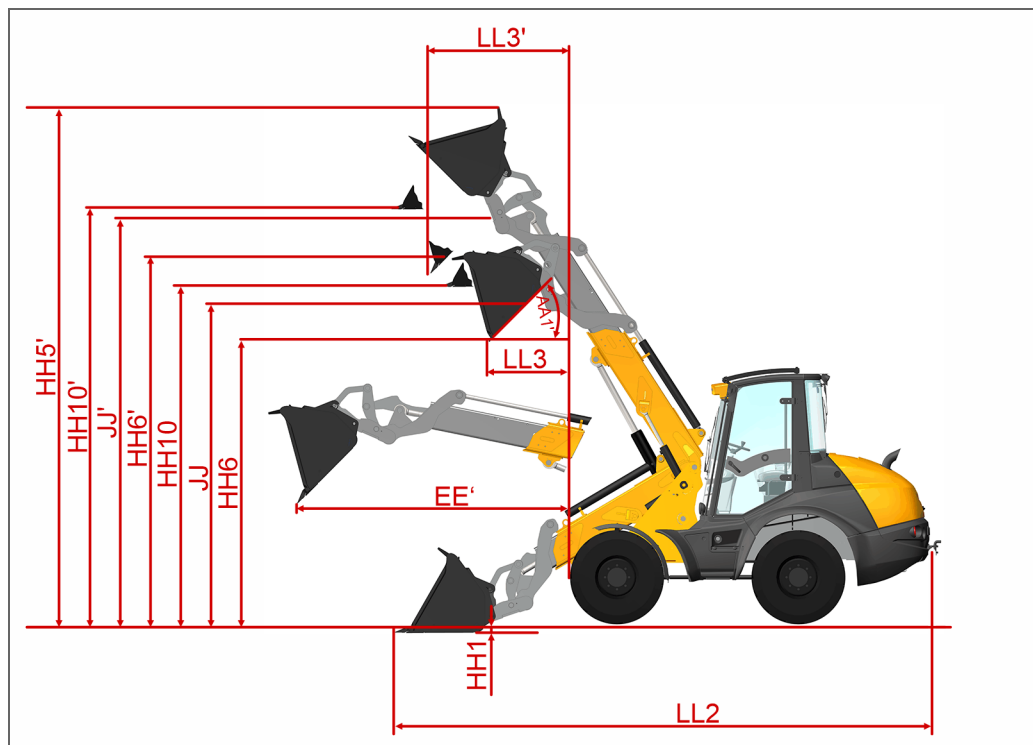
Dimension type	Designation	Value
AA1	Dumping angle, bucket floor at max. lifting height	45
EE	Distance from bucket blade with bucket tilted 45° to front vehicle edge, at maximum load	1 610 mm
GG	Height of bucket blade with tilted bucket and tine upper surface above ground, at maximum load	875 mm
HH1	Undercut at lower surface of bucket or upper surface of tine	100 mm
HH5	Max height of the attachment (touching overhead lines if the attachment is moved in the highest position)	4 590 mm
HH6	Overload height of bucket blade without teeth	2 820 mm
JJ	Overload height measured at 100mm free space for tail lift, projections on the lift arm must be noted	2 920 mm

Key (Cont.)

Dimension type	Designation	Value
LL2	Length overall from rear edge of vehicle without attachment coupling to forward-most point of the implement without teeth, level with the ground	6 080 mm
LL3	Max. tipping length to machine side at max. lifting height	740 mm

10.3.2.2.3

AT900



Dimensional drawing of AT 900 with attachment installed

Key

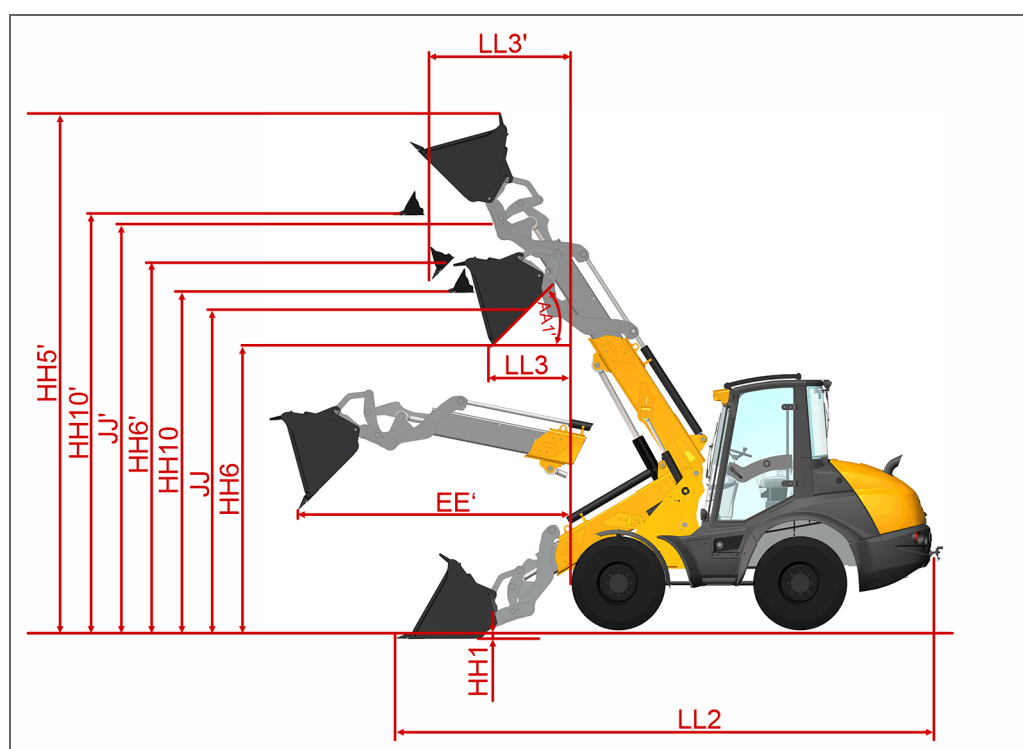
Dimension type	Designation	Value
AA1'	Tipping angle max.	43.8°
EE'	Max. dumping width at a 45° tipping angle	3 080 mm
HH1	Plunge depth	120 mm
HH10	Load height, bottom of the bucket	3 780 mm
HH10'	Load height, bottom of the bucket (extended)	4 670 mm
HH5	Working height max.	5 015 mm
HH5'	Working height max. (extended)	5 850 mm
HH6	Dumping height, bucket cutting edge	3 200 mm
HH6'	Dumping height, bucket cutting edge (extended)	4 080 mm

Key (Cont.)

Dimension type	Designation	Value
JJ	Loading height	3 660 mm
JJ'	Loading height (extended)	4 440 mm
LL2	Length overall	5 850 mm
LL3	Dumping width at max lifting height and at max. tipping angle of 45°	850 mm
LL3'	Dumping width at max lifting height and at max. tipping angle of 45° (extended)	1 500 mm

10.3.2.2.4

AT1050



Dimensional drawing of AT 1050 with attachment installed

Key

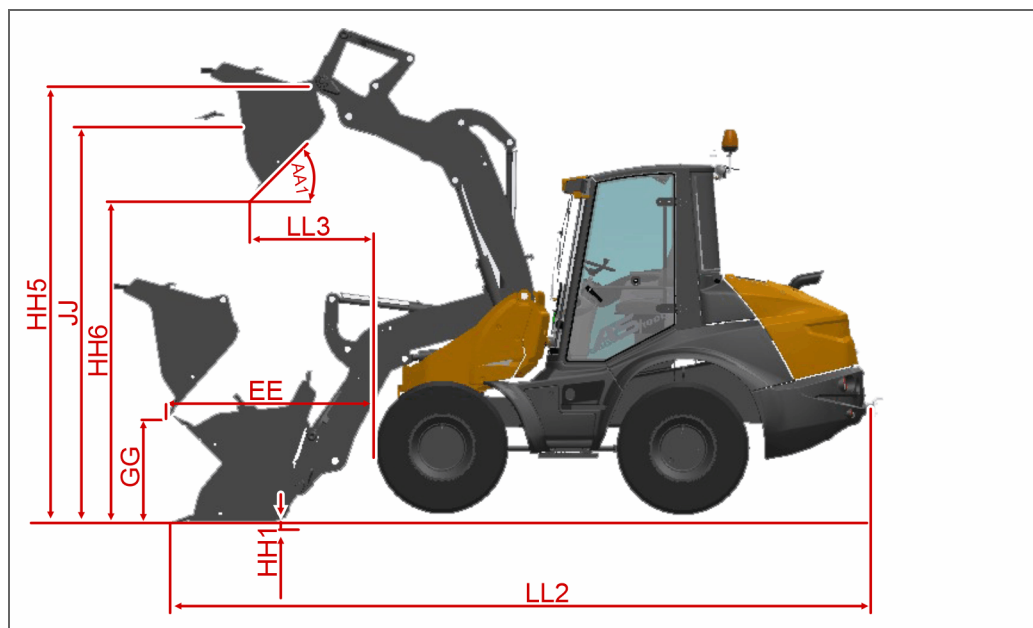
Dimension type	Designation	Value
AA1'	Tipping angle max.	45°
EE'	Max. dumping width at a 45° tipping angle	3 010 mm
HH1	Plunge depth	90 mm
HH10	Load height, bottom of the bucket	3 780 mm
HH10'	Load height, bottom of the bucket (extended)	4 670 mm
HH5	Working height max.	5 040 mm
HH5'	Working height max. (extended)	5 850 mm

Key (Cont.)

Dimension type	Designation	Value
HH6	Dumping height, bucket cutting edge	3 200 mm
HH6'	Dumping height, bucket cutting edge (extended)	4 080 mm
JJ	Loading height	3 660 mm
JJ'	Loading height (extended)	4 440 mm
LL2	Length overall	5 920 mm
LL3	Dumping width at max lifting height and at max. tipping angle of 45°	870 mm
LL3'	Dumping width at max lifting height and at max. tipping angle of 45° (extended)	1 500 mm

10.3.2.2.5

AS850



Dimensional drawing with attachment installed

Key

Dimension type	Designation	Value
AA1	Tipping angle max.	45°
EE	Max. dumping width at a 45° tipping angle	1 580 mm
GG	Dumping height at max. dumping width and at a 45° tipping angle	930 mm
HH1	Plunge depth	120 mm
HH5	Max. lifting height above the back of the bucket with bucket tilted	4 225 mm

Key (Cont.)

Dimension type	Designation	Value
HH6	Dumping height at max lifting height and at a 45° tipping angle	2 700 mm
JJ	Loading height	3 045 mm
LL2	Length overall	5 635 mm
LL3	Dumping width at max lifting height and at a 45° tipping angle	820 mm



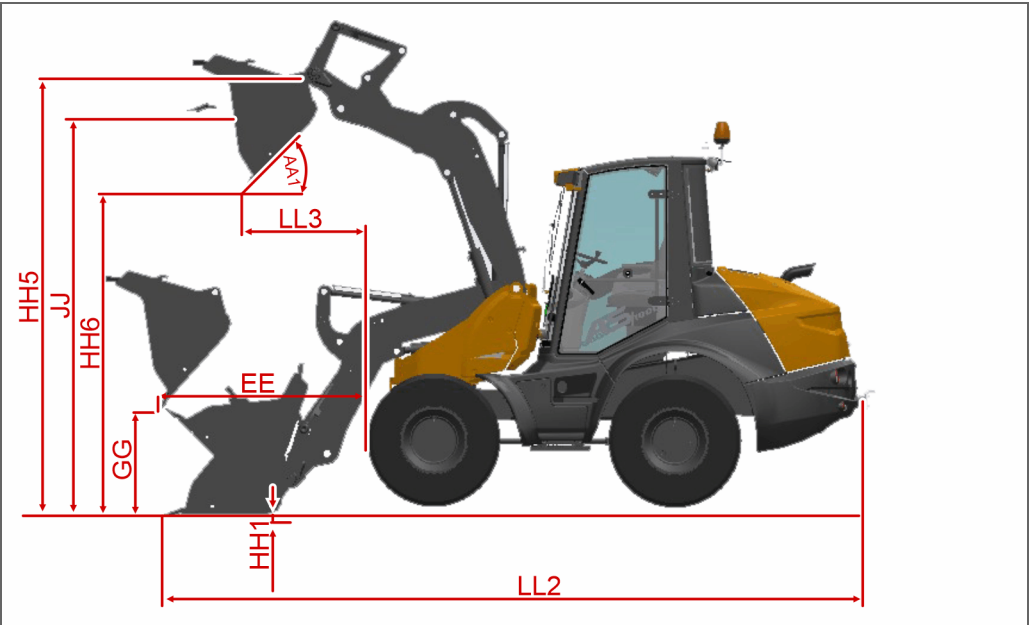
Dimensional drawing with attachment installed (frontal view)

Key

Dimension type	Designation	Value
LL	Dumping width at max lifting height to the left and at a 45° tipping angle	470 mm
WW2	Max. dumping width to the left at a 45° tipping angle	1 270 mm

10.3.2.2.6

AS1000



Dimensional drawing with attachment installed

Key		
Dimension type	Designation	Value
AA1	Tipping angle max.	45°
EE	Max. dumping width at a 45° tipping angle	1 585 mm
GG	Dumping height at max. dumping width and at a 45° tipping angle	935 mm
HH1	Plunge depth	120 mm
HH5	Max. lifting height above the back of the bucket with bucket tilted	4 400 mm
HH6	Dumping height at max lifting height and at a 45° tipping angle	2 700 mm
JJ	Loading height	3 045 mm
LL2	Length overall	5 635 mm
LL3	Dumping width at max lifting height and at a 45° tipping angle	830 mm



Dimensional drawing with attachment installed (frontal view)

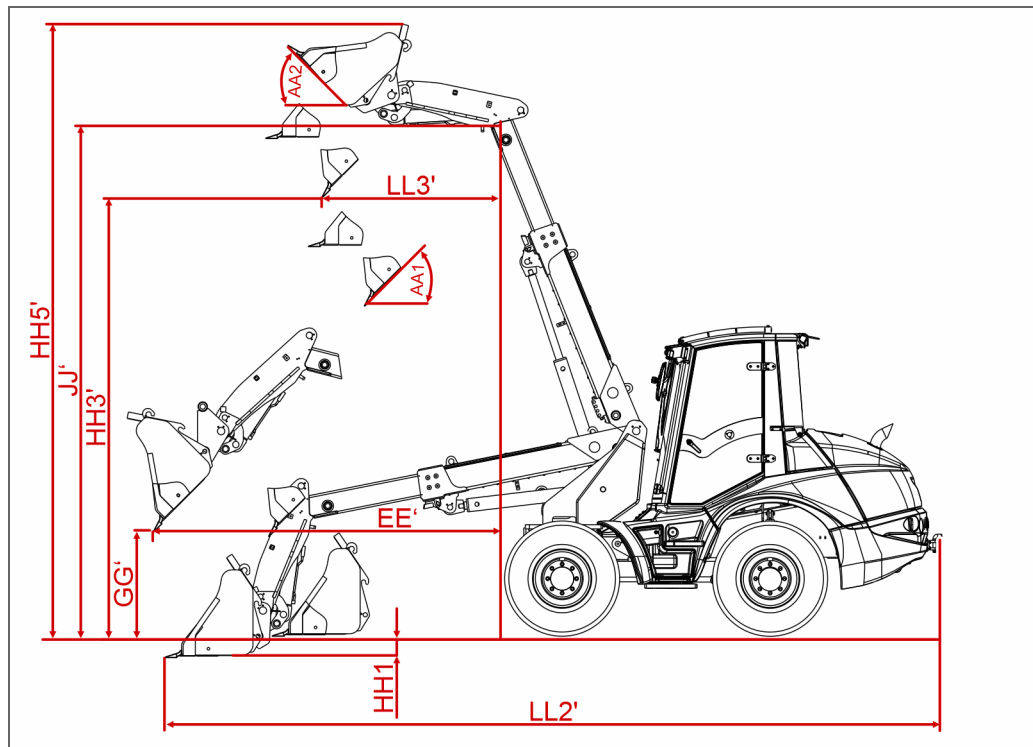
Key

Dimension type	Designation	Value
LL	Dumping width at max lifting height to the left and at a 45° tipping angle	430 mm
WW2	Max. dumping width to the left at a 45° tipping angle	1 230 mm

10.3.2.2.7 AS900tele

Note:

- The alphabetical characters identified **without** an apostrophe (for example LL) provide the values with a **retracted** lift arm.
- The alphabetical characters identified **with** an apostrophe (for example LL') provide the values with an **extended** lift arm.



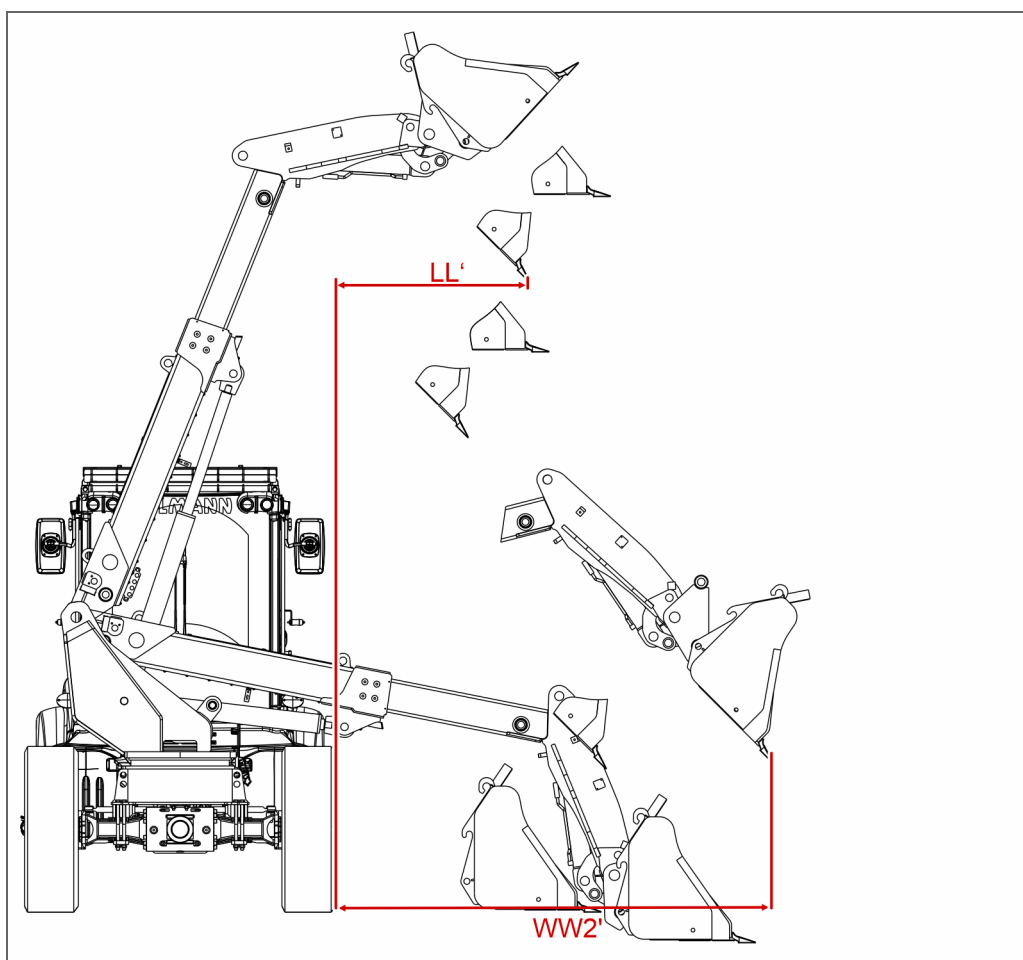
Dimensional drawing with attachment installed (side view)

Key

Dimension type	Designation	Value
AA1	Tipping angle max.	46°
AA2	Tipping angle max.	115°
EE	Max. dumping width at a 45° tipping angle	1 820 mm
EE'	Max. dumping width at a 45° tipping angle	2 835 mm
GG	Dumping height at max dumping width	986 mm
HH1	Plunge depth	75 mm
HH1'	Plunge depth	175 mm
HH3	Dumping height at max lifting height and at a 45° tipping angle	3 222 mm
HH3'	Dumping height at max lifting height and at a 45° tipping angle	4 200 mm
HH5	Working height max.	5 097mm
HH5'	Working height max.	6 070 mm
JJ	Loading height	3 822 mm
JJ'	Loading height	4 805 mm
LL2	Length overall	6 155 mm
LL2'	Length overall	7 252 mm

Key (Cont.)

Dimension type	Designation	Value
LL3	Dumping width at max lifting height and at a 45° tipping angle	690 mm
LL3'	Dumping width at max lifting height and at a 45° tipping angle	1 067 mm



Dimensional drawing with attachment installed (frontal view)

Key

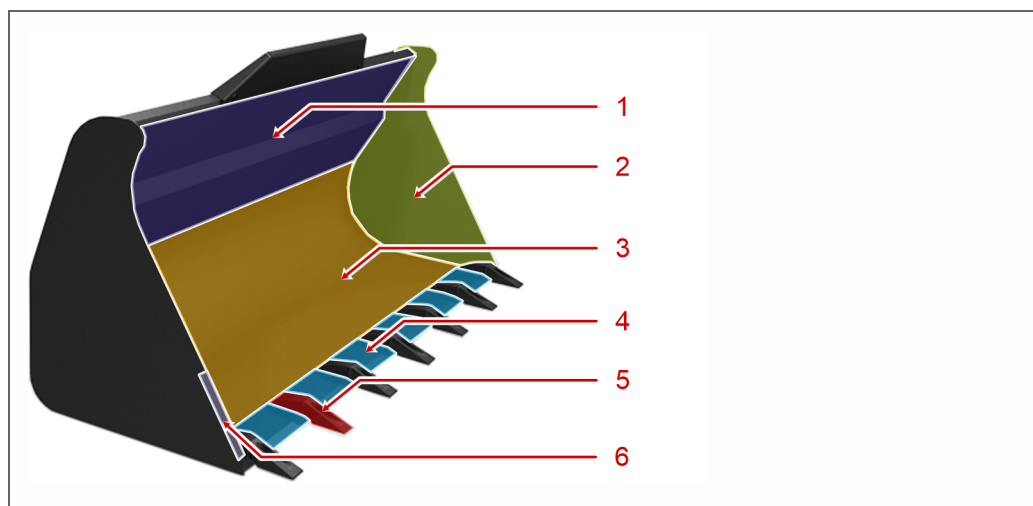
Dimension type	Designation	Value
LL L	Dumping width at max lifting height to the left and at a 45° tipping angle	384 mm
LL L'	Dumping width at max lifting height to the left and at a 45° tipping angle	775 mm
LL R	Dumping width at max lifting height to the right and at a 45° tipping angle	384 mm

Key (Cont.)

Dimension type	Designation	Value
LL R'	Dumping width at max lifting height to the right and at a 45° tipping angle	775 mm
WW2 L	Max. dumping width to the left at a 45° tipping angle	1 435 mm
WW2 L'	Max. dumping width to the left at a 45° tipping angle	2 440 mm
WW2 R	Max. dumping width to the right at a 45° tipping angle	1 440 mm
WW2 R'	Max. dumping width to the right at a 45° tipping angle	2 439 mm

10.3.3 Description

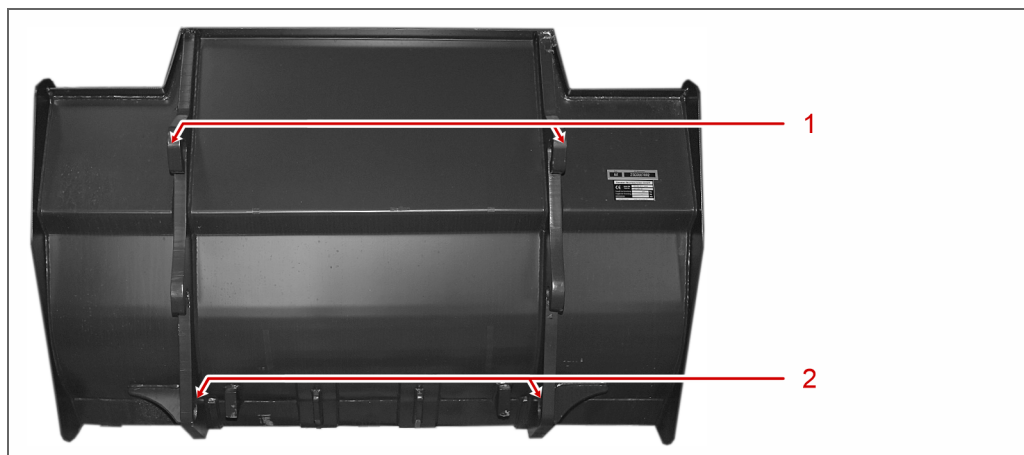
In this section you will find information regarding the parts of the bucket.

10.3.3.1 Parts of the attachment

Parts of the attachment - frontal view

Key

No.	Designation
1	Back of the bucket
2	Side wall
3	Bucket bottom
4	Cutting edge of bucket
5	Bucket tooth
6	Side cutter



Parts of the attachment - rear view

Key

No.	Designation
1	Bucket position display
2	Locking holes

10.3.3.2 Control elements

There are no control elements on this attachment.

10.3.4 Maintenance

In this chapter you will find information regarding the maintenance and disposal of the bucket.

10.3.4.1 Maintenance schedule

There is no maintenance schedule for this attachment.

10.3.4.2 Maintenance tasks

There are no maintenance tasks for this attachment.

10.3.4.3 Lubrication

There are no lubrication points on this attachment.

10.3.4.4 Cleaning and inspecting

In order to be able to use the attachment for longer, the attachment must be cleaned and inspected for damage at regular intervals.

Carry out the following steps:

1. Clean the attachment of residual dirt.
2. Check all lines and connections for damage.
3. Check the attachment for damage.
 - ? *You have identified damage to the attachment?*
 - Inform your supervisor and arrange for repair.

✓ Done.

10.3.4.5 Storage when not in use

Should you not require the attachment for an extended period of time and therefore wish to store it, ensure that the following conditions are fulfilled:

- The attachment is prepared for storage, see Section: "Cleaning and inspecting" (Page 312).
- Store the attachment horizontally and on the level, in order to prevent distortion of the attachment.
- Store in a locked, well-ventilated space.
- The ambient air must be free of aggressive substances and dust.
- There must be minimal humidity in the storage area, so as not to promote corrosion.

10.3.4.6 Disposal

The following basic principles apply to the disposal of the attachment.:

- Separate, collect and if necessary clean the individual parts of the attachment as metal scrap and electrical scrap.
- Cleaned metal can be disposed of as scrap.
- Cleaned cables can be disposed of as electrical scrap.
- Dispose of all pieces in accordance with local statutory requirements.

10.4 Multi-purpose bucket

10.4.1 Product information

10.4.1.1 Designated Use

The multi-purpose bucket standard bucket attachment is expressly intended for the loading of bulk material of a defined material density. The correct use of the bucket can be found in the instruction manual of the wheel loader.

A different application or an application in excess of the intended rating does not comply.

The attachment is expressly not intended for:

- the transportation of persons in the installed attachment;
- taking up bulk material of too high a material density;
- working on the bucket without permission and implementing adequate safety measures;
- the purpose of demolition,
- operation without the exchange of wear parts,
- use in which visual checks are not carried out,
- the multi-purpose bucket to be used as a load-bearing device without the optionally available equipment.
- use as a load hook for transportation.

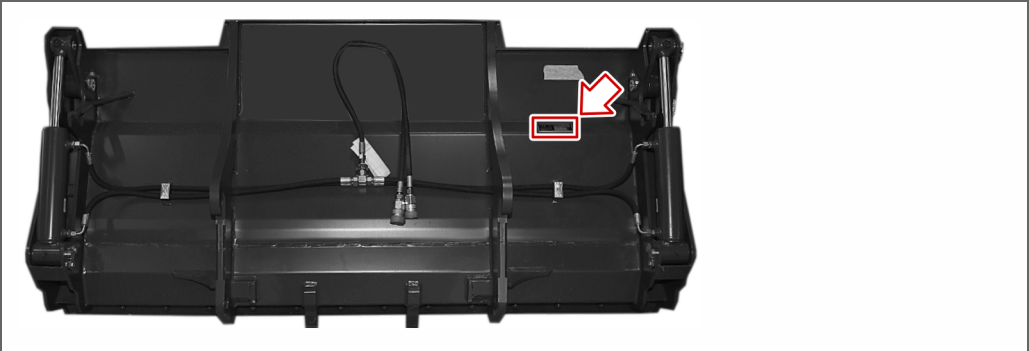
In addition the locally-applicable licensing requirements of the country in which this attachment is used, must be observed.

10.4.1.2 Function description

The attachment is used in combination with a wheel loader. For ease of assembly the attachment is equipped with a mount for use with a compatible quick coupler.

10.4.1.3 Type Plate

The type plate of the attachment is to be found at the following location:



Location of the type plate on the attachment (rear)



Illustration of the type plate

Data on the type plate of the attachment

Designation	Function
Ident. No.	The identification number of the attachment is to be found in this location.
Part No.	The part number of the attachment is to be found in this location.
Mass of the equipment	The mass of the attachment is to be found in this location.
Working load of the equipment	Not specified
Operating pressure	Where applicable, the permissible operating pressure of the attachment is to be found in this location.

10.4.1.4 Scope of Supply

No additional parts are delivered with this attachment.

10.4.1.5 Spare Parts

Information regarding the spare parts available for this attachment is to be found in the spare parts documentation.

Further information can be obtained on request from MECALAC Baumaschinen GmbH.

10.4.2 Technical data and dimensional drawings

In this chapter you will find the dimensional drawings and technical data for the multi-purpose bucket.

10.4.2.1 Technical Data

10.4.2.1.1 AF1050

Technical data of the attachment

Width	2 100 mm
Weight	610 kg
Tipping load - according to ISO 14397, frontal	3 650 kg
Useful load - according to EN 474-3, frontal	1 825 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	1 m ³

10.4.2.1.2 AF1200

Technical data of the attachment

Width	2 100 mm
Weight	609 kg
Tipping load - according to ISO 14397, frontal	4 100 kg
Useful load - according to EN 474-3, frontal	2 050 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	1.1 m ³

10.4.2.1.3 AT900**Technical data of the attachment**

Width	2 100 mm
Weight	595 kg
Tipping load - according to ISO 14397, frontal	3 235 kg
Useful load - according to EN 474-3, frontal	1 620 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	0.85 m ³

10.4.2.1.4 AT1050**Technical data of the attachment**

Width	2 100 mm
Weight	595 kg
Tipping load - according to ISO 14397, frontal	4 105 kg
Useful load - according to EN 474-3, frontal	2 050 kg

Application limits of the attachment

Bulk material density depending on basic device	1.8 t/m ³
Bucket volume according to DIN / ISO 7546	1 m ³

10.4.2.1.5 AS850**Technical data of the attachment**

Width	1 950 mm
Weight	556 kg
Bucket position	Crowd angle 45°
Tipping load - according to EN 474-3, frontal	2 990 kg
Tipping load - according to EN 474-3, swivelled	2 760 kg

Technical data of the attachment (Cont.)

Useful load - according to EN 474-3, frontal	1 495 kg
Useful load - according to EN 474-3, swivelled	1 380 kg

Application limits of the attachment

Bulk material density depending on basic device	1.7 t/m ³
Bucket volume according to DIN / ISO 7546	0.8 m ³

10.4.2.1.6 AS1000
Technical data of the attachment

Width	2 100 mm
Weight	618 kg
Bucket position	Crowd angle 49°
Tipping load - according to EN 474-3, frontal	3 190 kg
Tipping load - according to EN 474-3, swivelled	3 230 kg
Useful load - according to EN 474-3, frontal	1 590 kg
Useful load - according to EN 474-3, swivelled	1 610 kg

Application limits of the attachment

Bulk material density depending on basic device	1.7 t/m ³
---	----------------------

10.4.2.1.7 AS900tele
Technical data of the attachment

Width	1 950 mm
Weight	552 kg
Bucket position	Crowd angle 45° Dumping angle, top 47° Dumping angle max. 105°
Tipping load - according to ISO 14397, frontal (retracted*)	2 730 kg* 2 250 kg

Technical data of the attachment (Cont.)

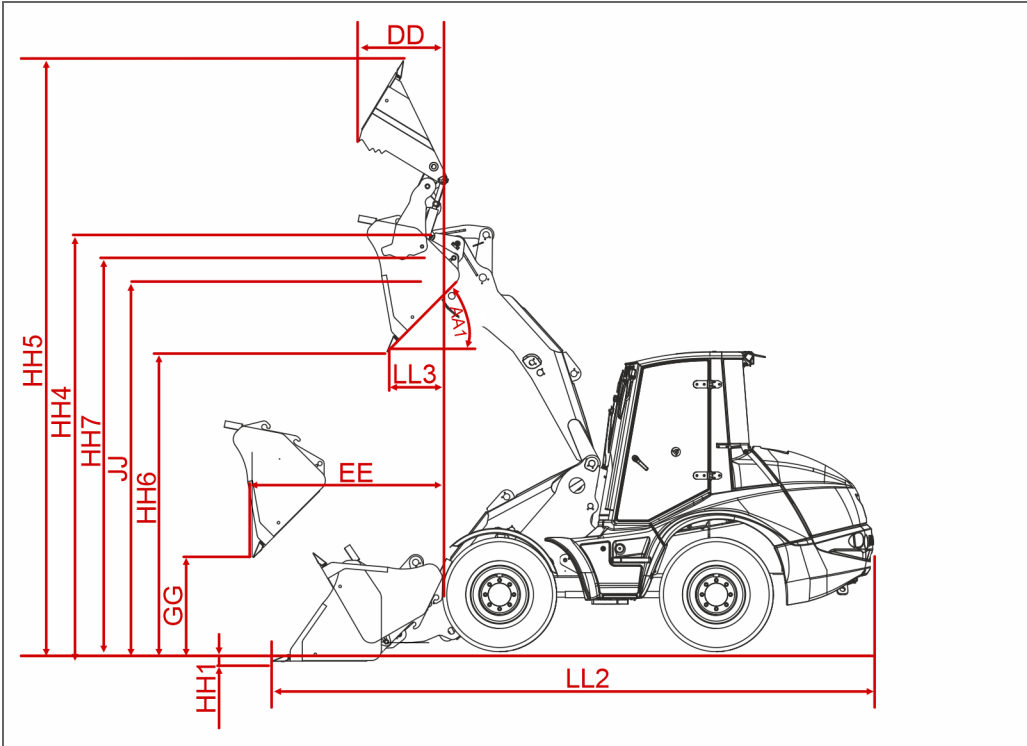
Tipping load - according to ISO 14397, swivelled (retracted*)	1 590 kg*
	1 145 kg

Application limits of the attachment

Bulk material density depending on basic device	2.5 t/m ³ / 1.98 t/m ³
Bucket volume according to DIN / ISO 7546	0.6 m ³

10.4.2.2 Dimensional drawing

10.4.2.2.1 AF1050



Dimensional drawing of AF 1050 with attachment installed

Key

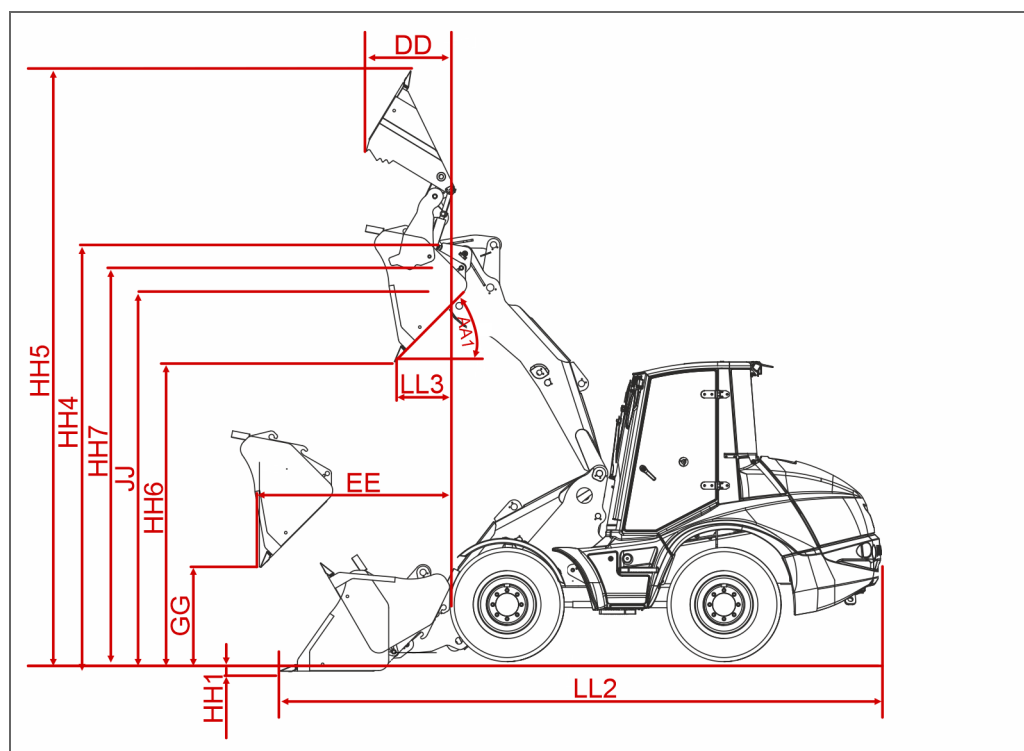
Dimension type	Designation	Value
AA1	Dumping angle, bucket floor at max. lifting height	45°
EE	Distance from bucket blade with bucket tilted 45° to front vehicle edge, at maximum load	1 820 mm
GG	Height of bucket blade with tilted bucket and tine upper surface above ground, at maximum load	765 mm
HH1	Undercut at lower surface of bucket or upper surface of tine	90 mm

Key (Cont.)

Dimension type	Designation	Value
HH4	Attachment pivot point at max. overload height	3 650 mm
HH5	Max height of the attachment (touching overhead lines if the attachment is moved in the highest position)	4 530 mm
HH6	Overload height of bucket blade without teeth	2 780 mm
HH7	Back plate of bucket floor underside to ground	3 390 mm
JJ	Overload height measured at 100mm free space for tail lift, projections on the lift arm must be noted	2 920 mm
LL2	Length overall from rear edge of vehicle without attachment coupling to forward-most point of the implement without teeth, level with the ground	6 120 mm
LL3	Max. tipping length to machine side at max. lifting height	740 mm

10.4.2.2.2

AF1200



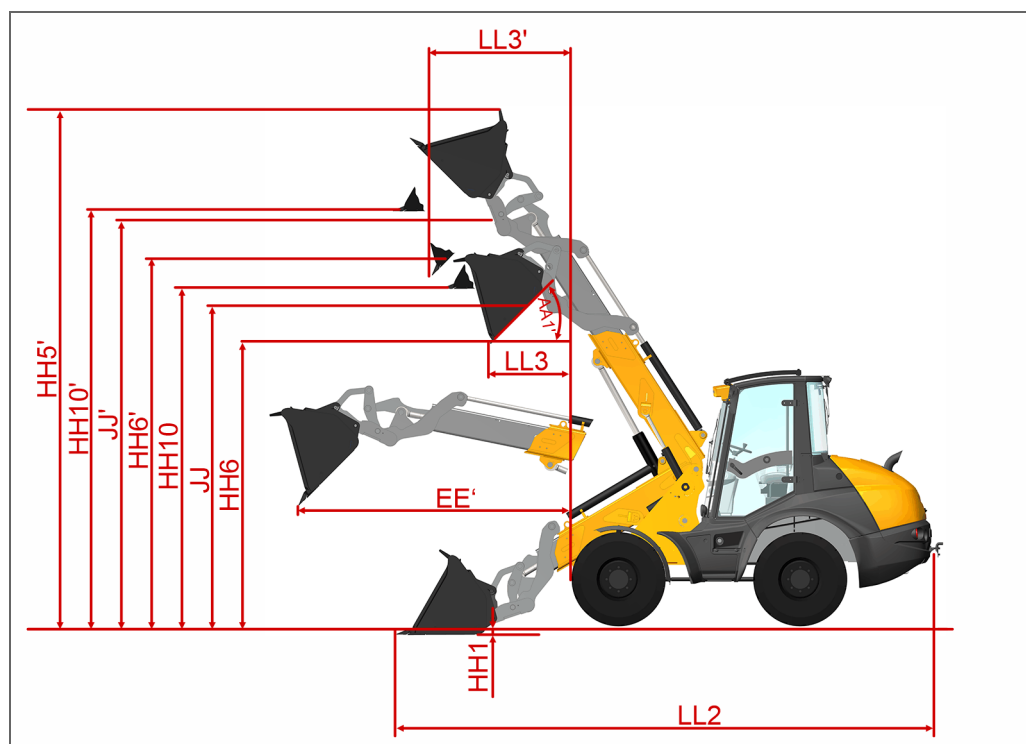
Dimensional drawing of AF 1200 with attachment installed

Key

Dimension type	Designation	Value
AA1	Dumping angle, bucket floor at max. lifting height	45°

Key (Cont.)

Dimension type	Designation	Value
EE	Distance from bucket blade with bucket tilted 45° to front vehicle edge, at maximum load	1 820 mm
GG	Height of bucket blade with tilted bucket and tine upper surface above ground, at maximum load	765 mm
HH1	Undercut at lower surface of bucket or upper surface of tine	90 mm
HH4	Attachment pivot point at max. overload height	3 650 mm
HH5	Max height of the attachment (touching overhead lines if the attachment is moved in the highest position)	4 530 mm
HH6	Overload height of bucket blade without teeth	2 780 mm
HH7	Back plate of bucket floor underside to ground	3 390 mm
JJ	Overload height measured at 100mm free space for tail lift, projections on the lift arm must be noted	2 920 mm
LL2	Length overall from rear edge of vehicle without attachment coupling to forward-most point of the implement without teeth, level with the ground	6 120 mm
LL3	Max. tipping length to machine side at max. lifting height	740 mm

10.4.2.2.3
AT900


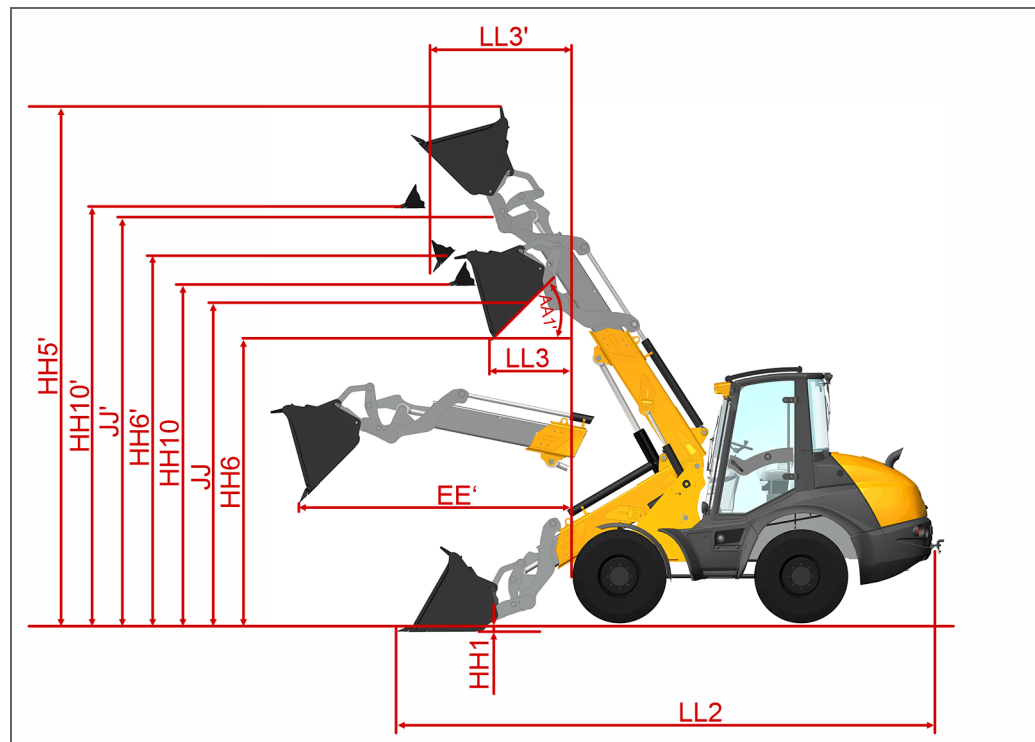
Dimensional drawing of AT 900 with attachment installed

Key

Dimension type	Designation	Value
AA1'	Tipping angle max.	40°
EE'	Max. dumping width at a 45° tipping angle	2 955 mm
HH1	Plunge depth	110 mm
HH10	Load height, bottom of the bucket	3 765 mm
HH10'	Load height, bottom of the bucket (extended)	4 630 mm
HH5	Working height max.	5 140 mm
HH5'	Working height max. (extended)	6 010 mm
HH6	Dumping height, bucket cutting edge	3 145 mm
HH6'	Dumping height, bucket cutting edge (extended)	4 010 mm
JJ	Loading height	3 665 mm
JJ'	Loading height (extended)	4 350 mm
LL2	Length overall	6 085 mm
LL3	Dumping width at max lifting height and at max. tipping angle of 45°	1 095 mm
LL3'	Dumping width at max lifting height and at max. tipping angle of 45° (extended)	1 680 mm

10.4.2.2.4

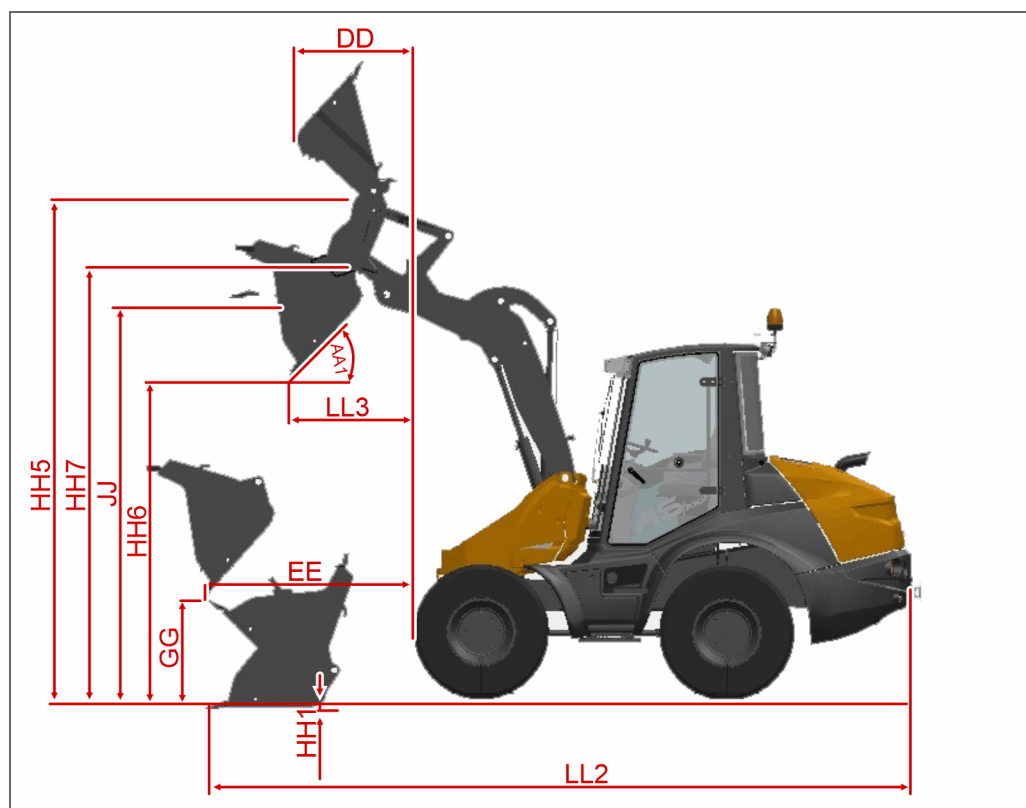
AT1050



Dimensional drawing of AT 1050 with attachment installed

Key

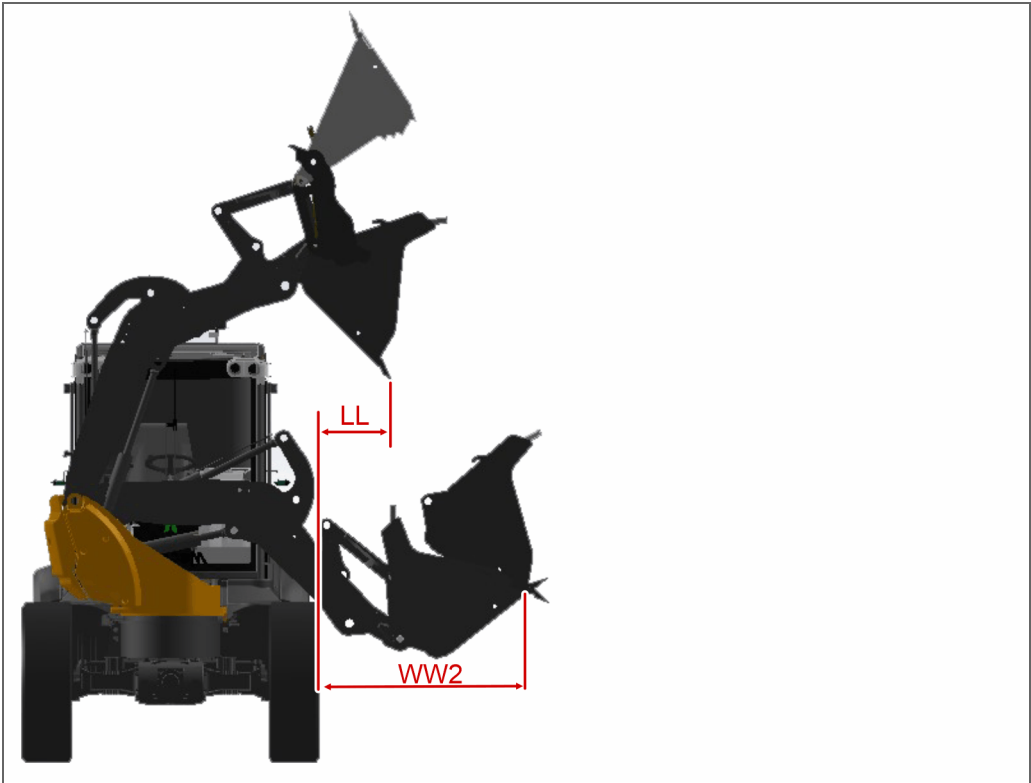
Dimension type	Designation	Value
AA1'	Tipping angle max.	40°
EE'	Max. dumping width at a 45° tipping angle	2 955 mm
HH1	Plunge depth	110 mm
HH10	Load height, bottom of the bucket	3 765 mm
HH10'	Load height, bottom of the bucket (extended)	4 630 mm
HH5	Working height max.	5 140 mm
HH5'	Working height max. (extended)	6 010 mm
HH6	Dumping height, bucket cutting edge	3 145 mm
HH6'	Dumping height, bucket cutting edge (extended)	4 010 mm
JJ	Loading height	3 665 mm
JJ'	Loading height (extended)	4 350 mm
LL2	Length overall	6 085 mm
LL3	Dumping width at max lifting height and at max. tipping angle of 45°	1 095 mm
LL3'	Dumping width at max lifting height and at max. tipping angle of 45° (extended)	1 680 mm

10.4.2.2.5
AS850


Dimensional drawing with attachment installed

Key

Dimension type	Designation	Value
AA1	Dump angle	40°
DD	Dumping width at max lifting height and bucket tilted	770 mm
EE	Max. dumping width at a 45° tipping angle	1 600 mm
GG	Dumping height at max. dumping width and at a 45° tipping angle	930 mm
HH1	Plunge depth	115 mm
HH5	Max. lifting height above the back of the bucket with bucket tilted	4 300 mm
HH6	Dumping height at max lifting height and at a 40° tipping angle	2 735 mm
HH7	Max. dumping height with bucket tilted	3 200 mm
JJ	Loading height	3 045 mm
LL2	Length overall	5 650 mm
LL3	Dumping width at max lifting height and at a 45° tipping angle	920 mm

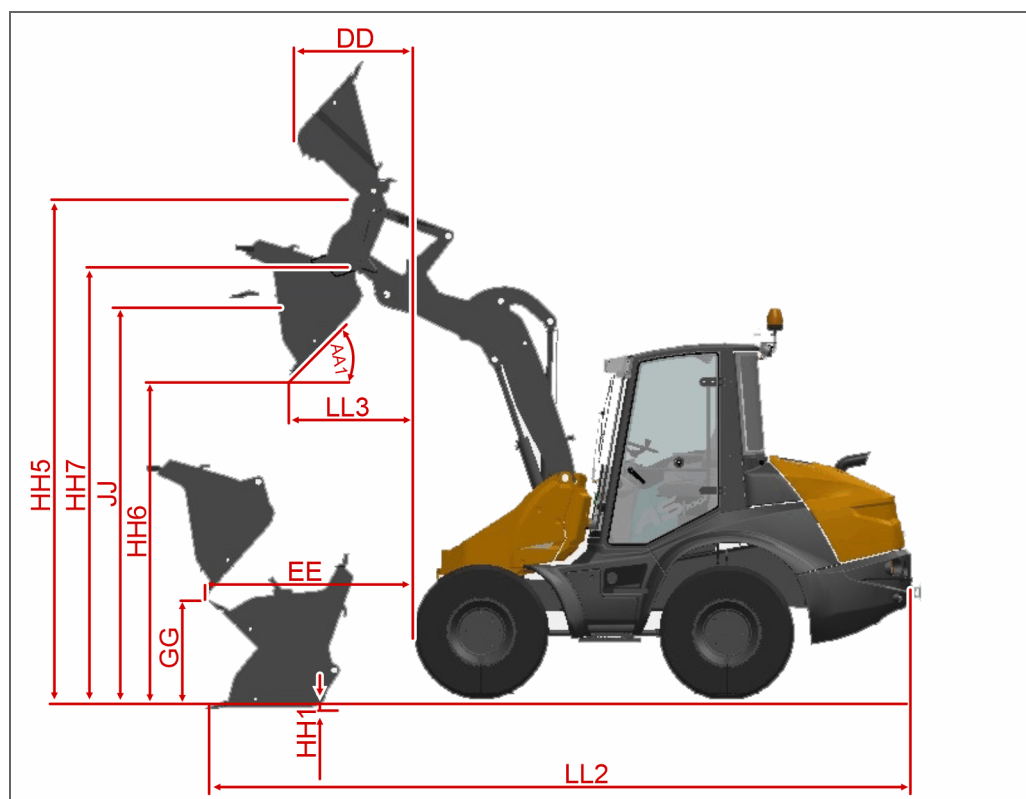


Dimensional drawing with attachment installed (frontal view)

Key		
Dimension type	Designation	Value
LL	Dumping width at max lifting height to the left and at a 45° tipping angle	570 mm
WW2	Max. dumping width to the left at a 45° tipping angle	1 290 mm

10.4.2.2.6

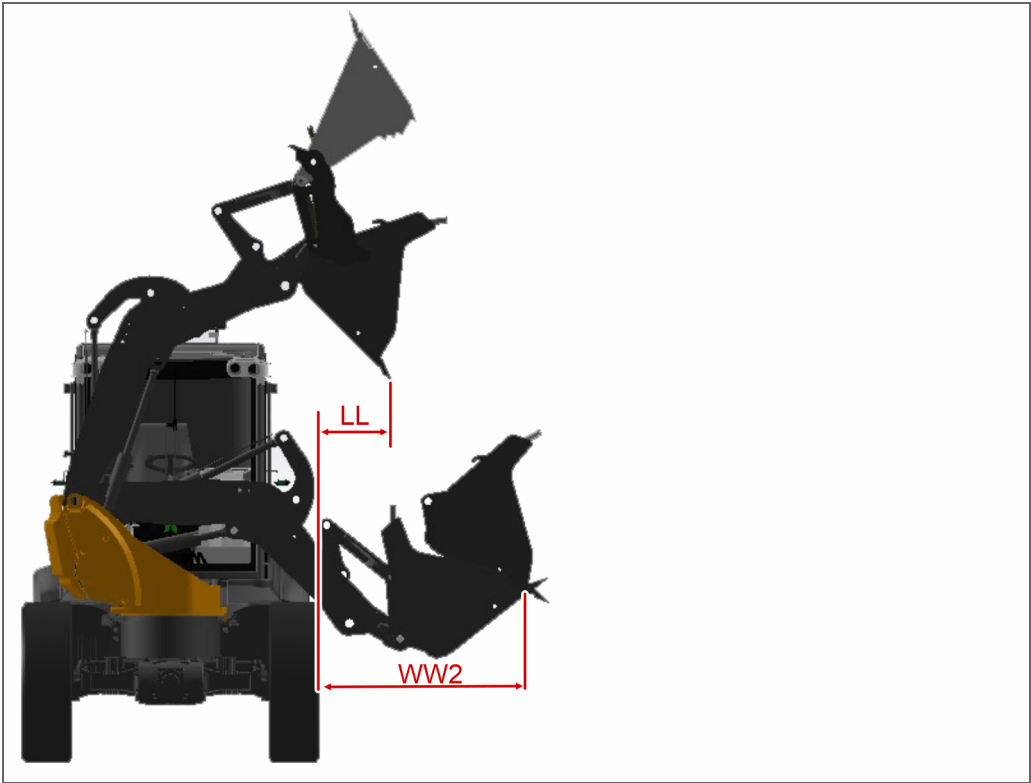
AS1000



Dimensional drawing with attachment installed

Key

Dimension type	Designation	Value
AA1	Dump angle	40°
DD	Dumping width at max lifting height and bucket tilted	770 mm
EE	Max. dumping width at a 45° tipping angle	1 660 mm
GG	Dumping height at max. dumping width and at a 45° tipping angle	870 mm
HH1	Plunge depth	115 mm
HH5	Max. lifting height above the back of the bucket with bucket tilted	4 360 mm
HH6	Dumping height at max lifting height and at a 40° tipping angle	2 680 mm
HH7	Max. dumping height with bucket tilted	3 200 mm
JJ	Loading height	3 045 mm
LL2	Length overall	5 740 mm
LL3	Dumping width at max lifting height and at a 40° tipping angle	990 mm



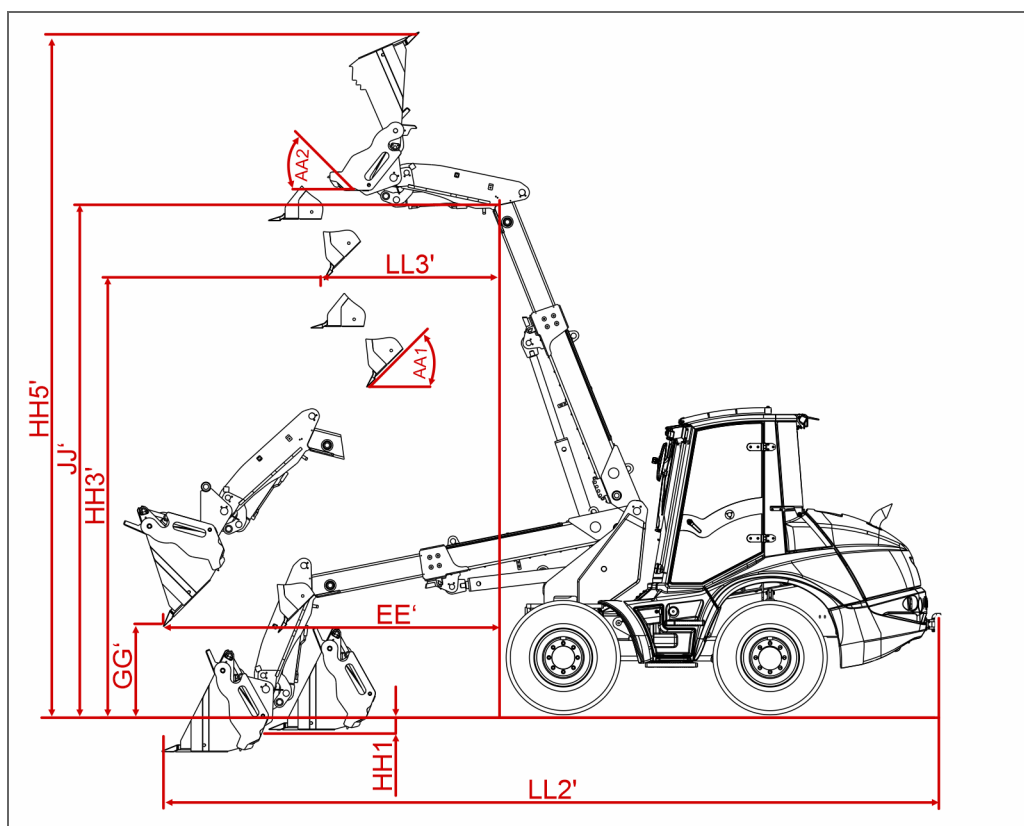
Dimensional drawing with attachment installed (frontal view)

Key		
Dimension type	Designation	Value
LL	Dumping width at max lifting height to the left and at a 45° tipping angle	600 mm
WW2	Max. dumping width to the left at a 45° tipping angle	1 300 mm

10.4.2.2.7 AS900tele

Note:

- The alphabetical characters identified **without** an apostrophe (for example LL) provide the values with a **retracted** lift arm.
- The alphabetical characters identified **with** an apostrophe (for example LL ‘) provide the values with an **extended** lift arm.



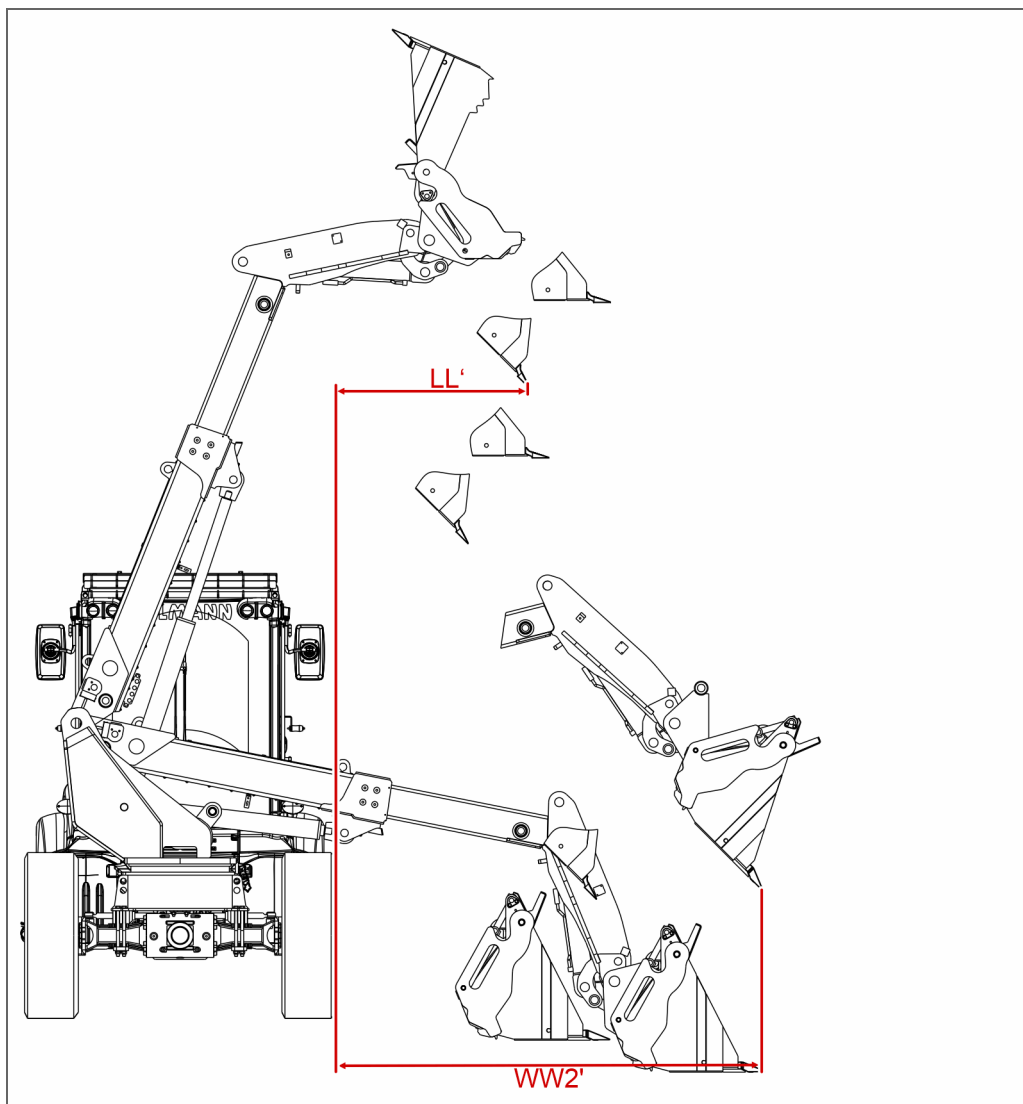
Dimensional drawing with attachment installed (side view)

Key

Dimension type	Designation	Value
AA1	Tipping angle max.	47.0°
AA2	Tipping angle max.	116.0°
EE	Max. dumping width at a 45° tipping angle	1 796 mm
EE'	Max. dumping width at a 45° tipping angle	2 811 mm
GG	Dumping height at max dumping width	786 mm
HH1	Plunge depth	127 mm
HH1'	Plunge depth	208 mm
HH3	Dumping height at max lifting height and at a 45° tipping angle	3 134 mm
HH3'	Dumping height at max lifting height and at a 45° tipping angle	4 109 mm
HH5	Working height max.	5 466 mm
HH5'	Working height max.	6 440 mm
HH6	Dumping height at max lifting height and at a 45° tipping angle	3 134 mm
HH6'	Dumping height at max lifting height and at a 45° tipping angle	4 109 mm

Key (Cont.)

Dimension type	Designation	Value
JJ	Loading height	3 815 mm
JJ'	Loading height	4 794 mm
LL2	Length overall	6 602 mm
LL2'	Length overall	7 615 mm
LL3	Dumping width at max lifting height and at a 45° tipping angle	753 mm
LL3'	Dumping width at max lifting height and at a 45° tipping angle	1 130 mm



Dimensional drawing with attachment installed (frontal view)

Key

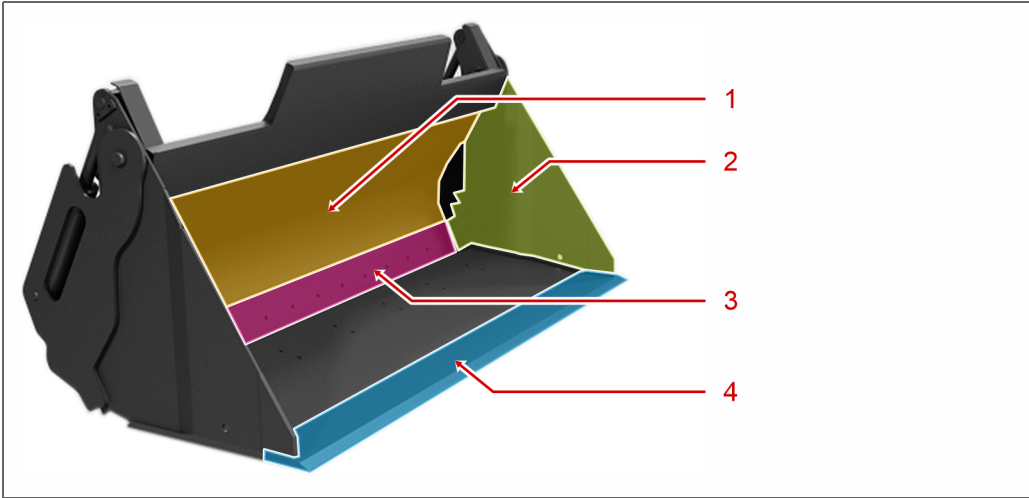
Dimension type	Designation	Value
LL L	Dumping width at max lifting height to the left and at a 45° tipping angle	410 mm
LL L'	Dumping width at max lifting height to the left and at a 45° tipping angle	803 mm
LL R	Dumping width at max lifting height to the right and at a 45° tipping angle	410 mm
LL R'	Dumping width at max lifting height to the right and at a 45° tipping angle	803 mm
WW2 L	Max. dumping width to the left at a 45° tipping angle	1 478 mm
WW2 L'	Max. dumping width to the left at a 45° tipping angle	2 494 mm
WW2 R	Max. dumping width to the right at a 45° tipping angle	1 468 mm

Key (Cont.)		
Dimension type	Designation	Value
WW2 R'	Max. dumping width to the right at a 45° tipping angle	2 485 mm

10.4.3 Description

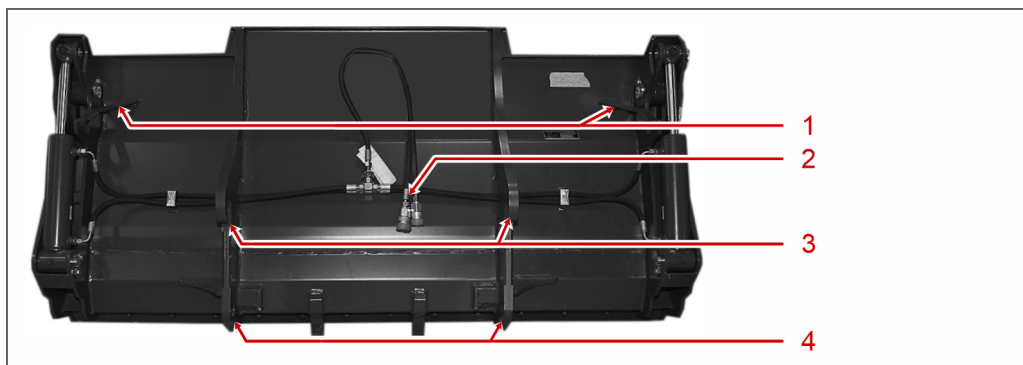
In this section you will find information regarding the parts of the multi-purpose bucket.

10.4.3.1 Parts of the attachment



Parts of the attachment - frontal view

Key	
No.	Designation
1	Back of the bucket
2	Side cutter with grippers
3	Replaceable cutter
4	Cutting edge of bucket



Parts of the attachment - rear view

Key

No.	Designation
1	Bucket position display
2	Hydraulic connections
3	Hooks
4	Locking holes

10.4.3.2 Control elements

There are no control elements on this attachment.

10.4.4 Maintenance

In this chapter you will find information regarding the maintenance and disposal of the bucket.

10.4.4.1 Maintenance schedule

There is no maintenance schedule for this attachment.

10.4.4.2 Maintenance tasks

There are no maintenance tasks for this attachment.

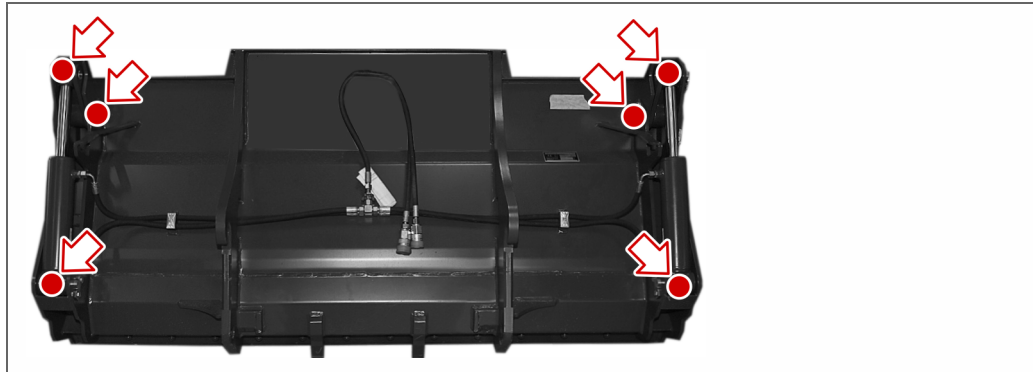
10.4.4.3 Lubrication

Lubricant requirements

Designation	Specification	Viscosity
Lubrication grease	DIN 51825 - KPF 1/2 N-20	-

Lubrication plan

Lubrication intervals	Part on wheel loader	Number of lubrication points
after 10 hours of operation	Moving parts	6 lubrication points



Location - 6 lubrication points on attachment

10.4.4.4 Cleaning and inspecting

In order to be able to use the attachment for longer, the attachment must be cleaned and inspected for damage at regular intervals.

Carry out the following steps:

1. Clean the attachment of residual dirt.
2. Check all lines and connections for damage.
 ? *You have identified damage to lines and connections?*
 → Inform your supervisor and arrange for repair.
3. Check the attachment for damage.
 ? *You have identified damage to the attachment?*
 → Inform your supervisor and arrange for repair.

✓ Done.

10.4.4.5 Storage when not in use

Should you not require the attachment for an extended period of time and therefore wish to store it, ensure that the following conditions are fulfilled:

- The attachment is prepared for storage, see Section: "Cleaning and inspecting" (Page 332).
- Store the attachment horizontally and on the level, in order to prevent distortion of the attachment.
- Store in a locked, well-ventilated space.
- The ambient air must be free of aggressive substances and dust.
- There must be minimal humidity in the storage area, so as not to promote corrosion.

10.4.4.6 Disposal

The following basic principles apply to the disposal of the attachment.:

- Separate, collect and if necessary clean the individual parts of the attachment as metal scrap and electrical scrap.
- Cleaned metal can be disposed of as scrap.
- Cleaned cables can be disposed of as electrical scrap.
- Dispose of all pieces in accordance with local statutory requirements.

10.5 Temporary load hook

In this chapter you will find information regarding the load hook.

10.5.1 Product information

In this chapter you will find information regarding the load hook.

10.5.1.1 Designated Use

The attachment is intended expressly for use as a temporary load hook, for the quick and easy lifting of loads.

A different application or an application in excess of the intended rating does not comply.

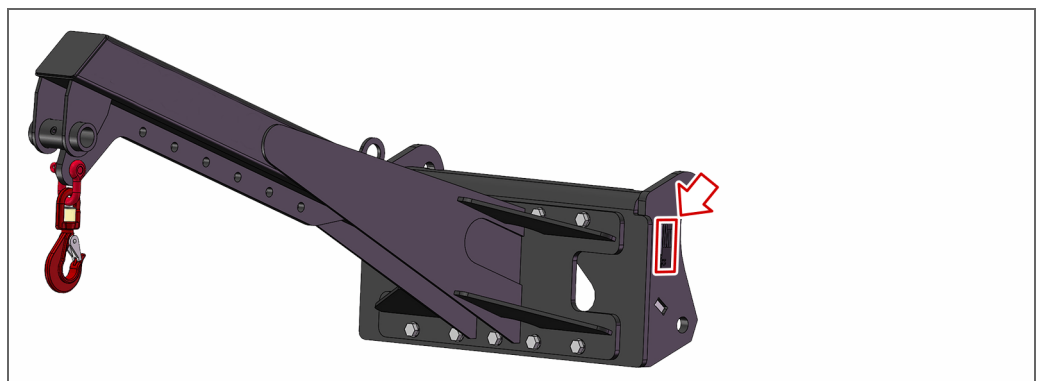
In addition the locally-applicable licensing requirements of the country in which this attachment is used, must be observed.

10.5.1.2 Function description

The attachment is used in combination with a wheel loader. For ease of assembly the attachment is equipped with a mount for use with a compatible quick coupler.

10.5.1.3 Type Plate

The type plate of the attachment is to be found at the following location:



Location of the type plate on the attachment (side)

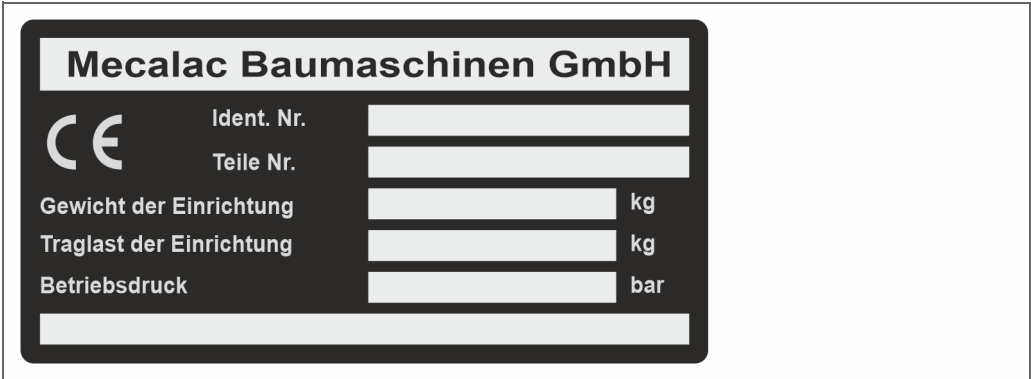


Illustration of the type plate

Data on the type plate of the attachment

Designation	Function
Ident. No.	The identification number of the attachment is to be found in this location.
Part No.	The part number of the attachment is to be found in this location.
Mass of the equipment	The mass of the attachment is to be found in this location.
Working load of the equipment	The permissible working load of the attachment is to be found in this location.
Operating pressure	Not specified

10.5.1.4 Scope of Supply

No additional parts are delivered with this attachment.

10.5.1.5 Spare Parts

Further information regarding the spare parts available can be obtained on request from MECALAC Baumaschinen GmbH and in the spare parts documentation.

10.5.2 Technical data and dimensional drawings

In this chapter you will find the dimensional drawings and technical data for the load hook.

10.5.2.1 Technical Data

10.5.2.1.1 AF1050

Technical data of the attachment

Length	1 745 mm
Width	960 mm
Weight	200 kg

10.5.2.1.2 AF1200

Technical data of the attachment

Length	1 745 mm
Width	960 mm
Weight	200 kg

10.5.2.1.3 AT900

Technical data of the attachment

Length	1 745 mm
Width	960 mm
Weight	200 kg

Application limits of the attachment

Lift arm retracted	800 kg
Lift arm extended	635 kg

10.5.2.1.4 AT1050

Technical data of the attachment

Length	1 745 mm
Width	960 mm
Weight	200 kg

Application limits of the attachment

Lift arm retracted	800 kg
Lift arm extended	635 kg

10.5.2.1.5 AS850**Technical data of the attachment**

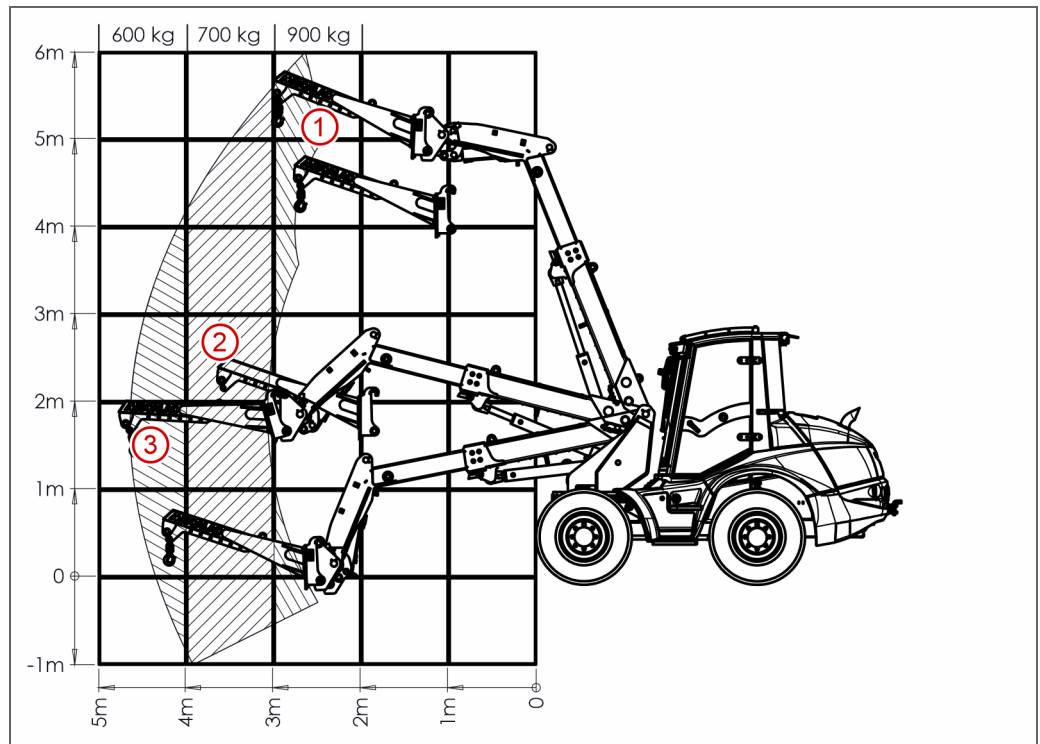
Length	1 785 mm
Width	817 mm
Weight	195 kg
Useful load - according to EN 474-3 frontal - level ground	1 000 kg
Useful load - according to EN 474-3 swivelled - level ground	770 kg

10.5.2.1.6 AS1000**Technical data of the attachment**

Length	1 785 mm
Width	817 mm
Weight	195 kg
Useful load - according to EN 474-3 frontal - level ground	1 000 kg
Useful load - according to EN 474-3 swivelled - level ground	770 kg

10.5.2.1.7 AS900tele**Technical data of the attachment**

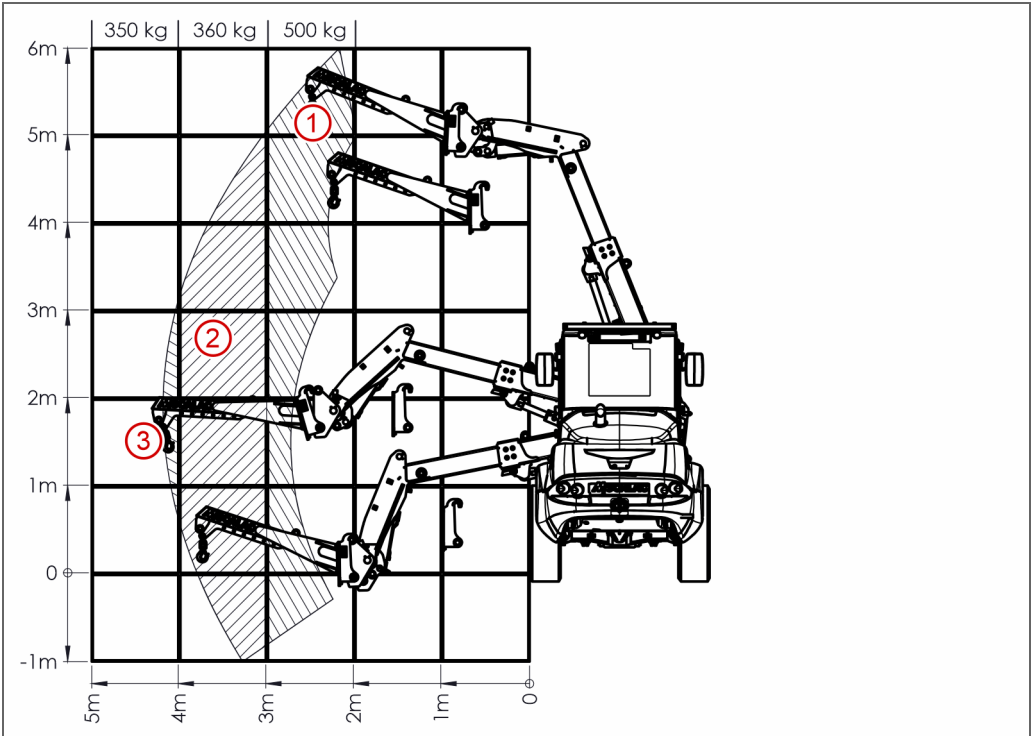
Length	1 785 mm
Width	817 mm
Weight	195 kg



Load chart with attachment installed

Key

Dimension type	Designation	Value
1	permissible load according to EN 474-3	900 kg
2	permissible load according to EN 474-3	700 kg
3	permissible load according to EN 474-3	600 kg

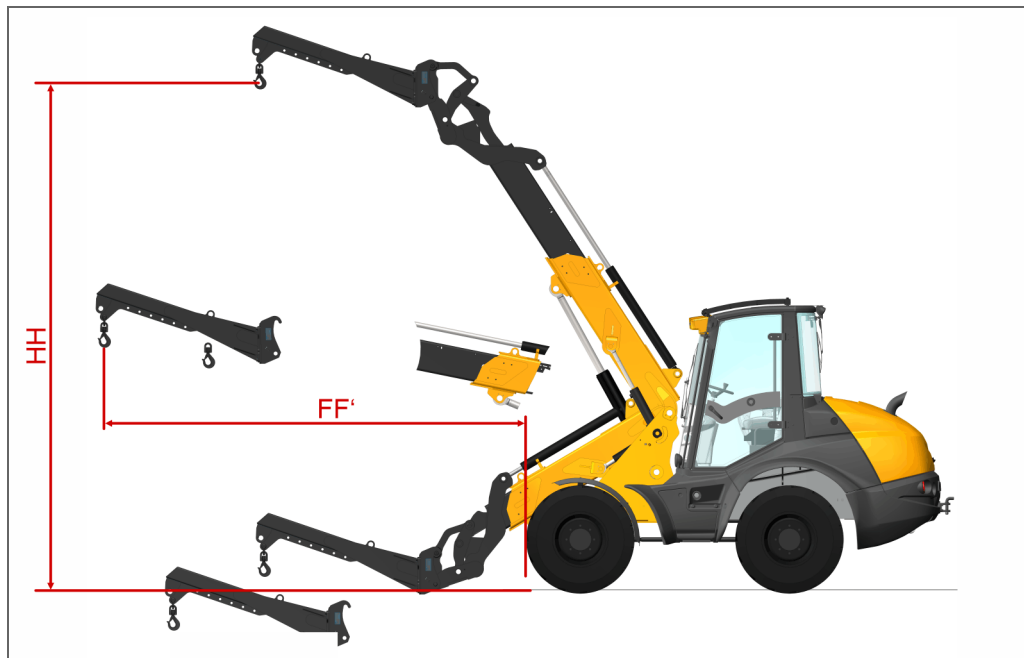


Load chart with attachment installed – frontal

Key		
Dimension type	Designation	Value
1	permissible load according to EN 474-3	500 kg
2	permissible load according to EN 474-3	360 kg
3	permissible load according to EN 474-3	350 kg

10.5.2.2 Dimensional drawing

10.5.2.2.1 AT1050



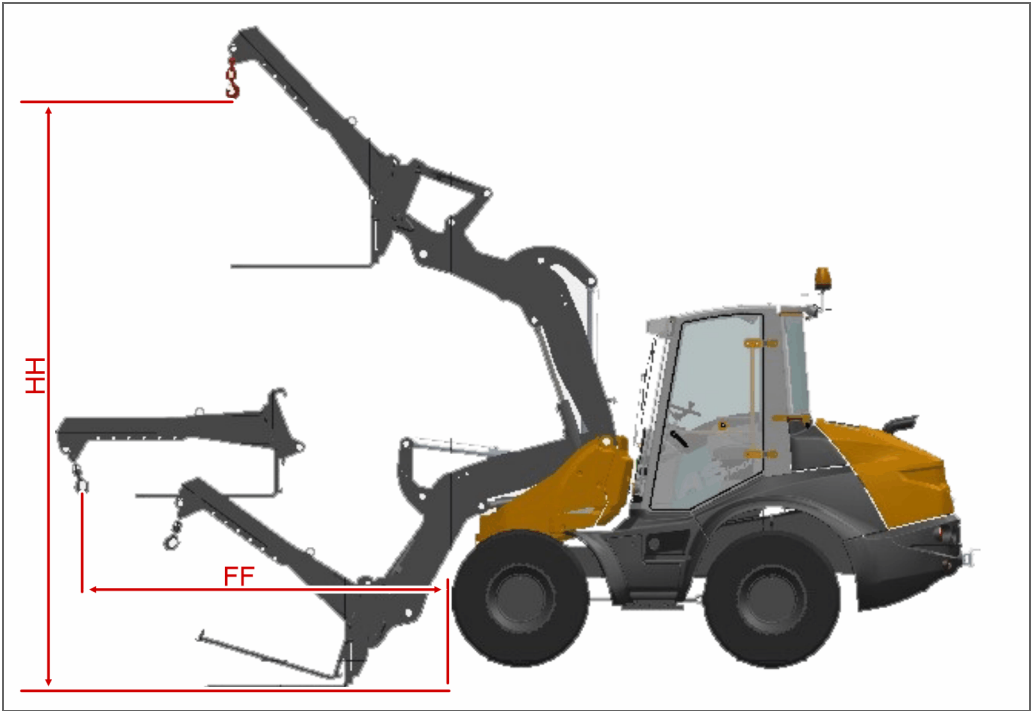
Dimensional drawing of AT 1050 with attachment installed

Key

Dimension type	Designation	Value
HH	Lifting height at maximum reach (retracted)	4 125 mm
HH'	Lifting height at maximum reach (extended)	5 030 mm
FF	Maximum reach (retracted)	3 155 mm
FF'	Maximum reach (extended)	4 200 mm

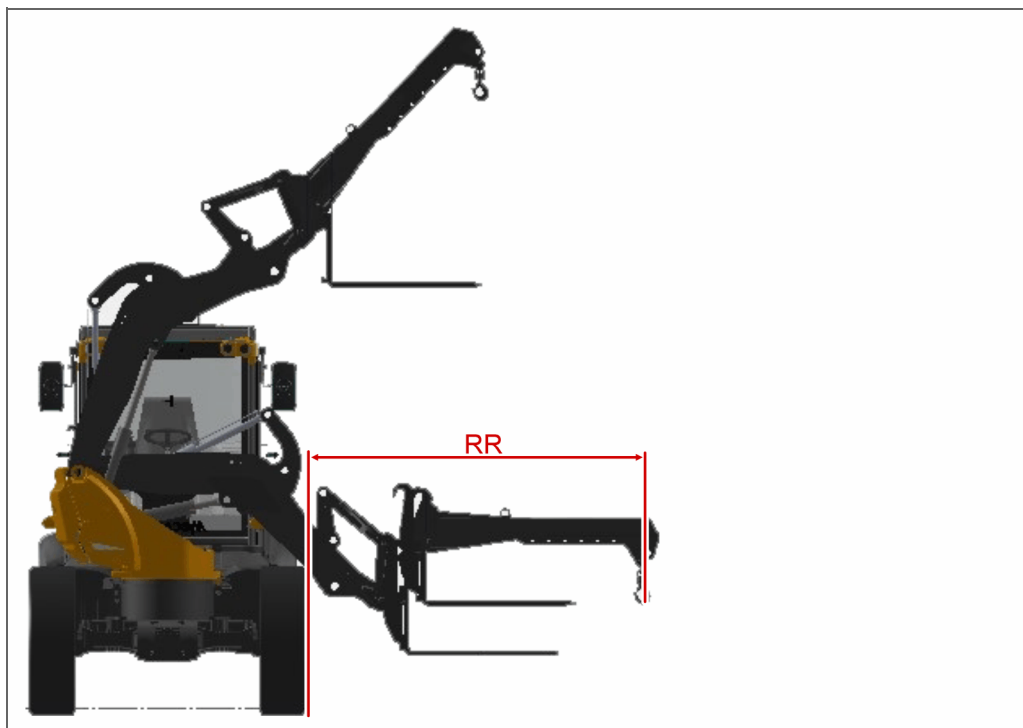
10.5.2.2.2

AS850



Dimensional drawing of AS850 with attachment installed

Key		
Dimension type	Designation	Value
HH	Lifting height at maximum reach	4 500 mm
FF	Maximum reach	3 000 mm

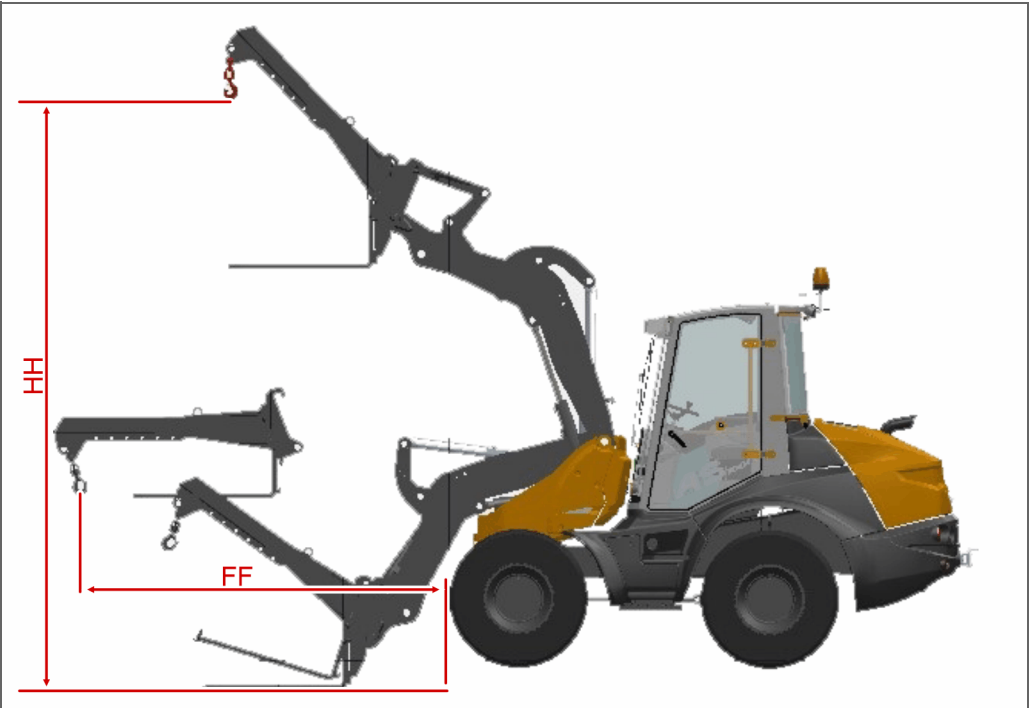


Dimensional drawing of the AS850 with attachment installed (frontal view)

Key

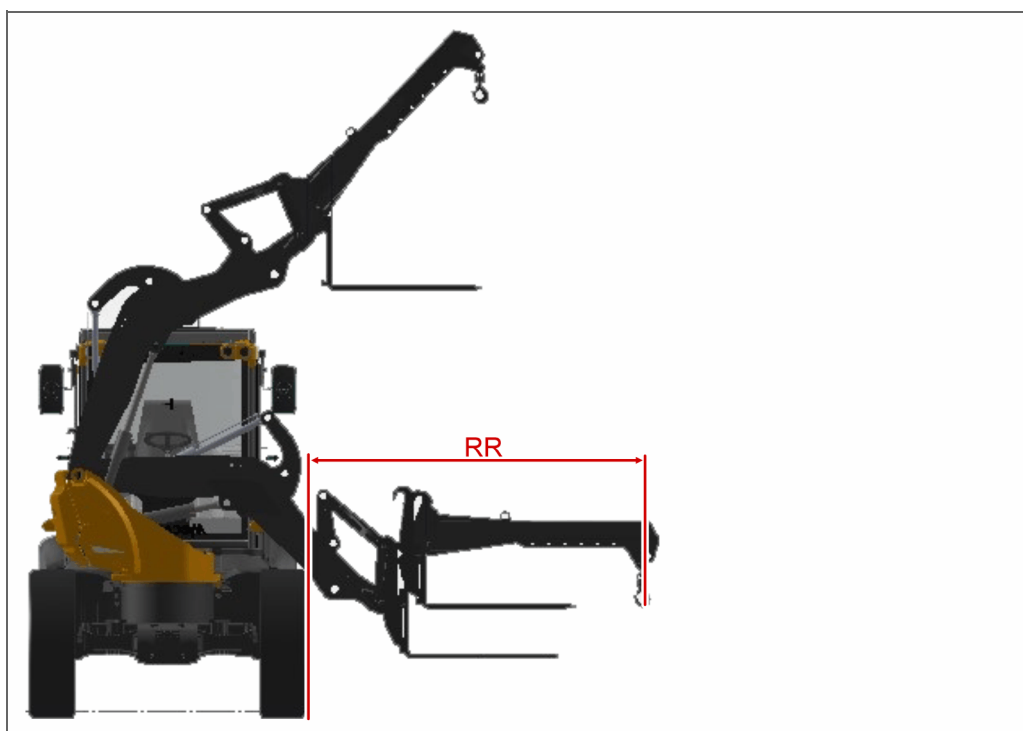
Dimension type	Designation	Value
RR	Distance from the left-hand outer edge of tyres to the load hook eye at maximum lateral load	2 530 mm

10.5.2.2.3 AS1000



Dimensional drawing of AS1000 with attachment installed

Key		
Dimension type	Designation	Value
HH	Lifting height at maximum reach	4 500 mm
FF	Maximum reach	3 000 mm



Dimensional drawing of the AS1000 with attachment installed (frontal view)

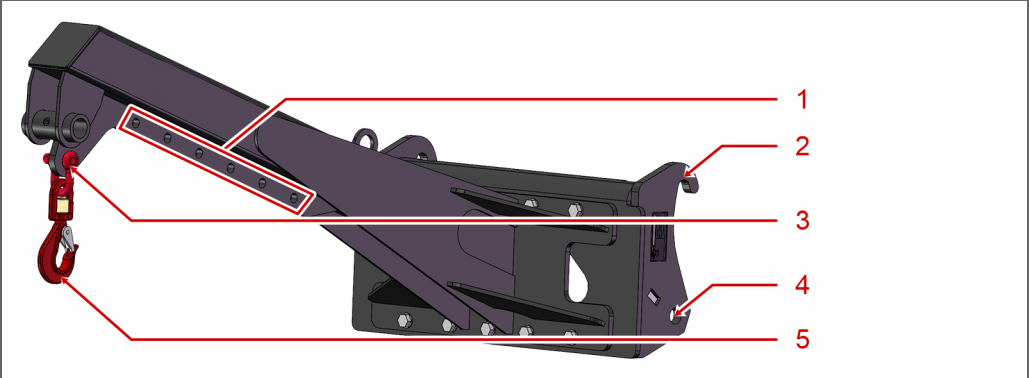
Key

Dimension type	Designation	Value
RR	Distance from the left-hand outer edge of tyres to the load hook eye at maximum lateral load	2 490 mm

10.5.3 Description

In this chapter you will find information regarding the parts of the load hook.

10.5.3.1 Parts of the attachment



Parts of the attachment - frontal view

Key

No.	Designation
1	Additional fastening points for a shackle with swivel hook
2	Hooks
3	Shackle
4	Locking bolts
5	Swivel hook

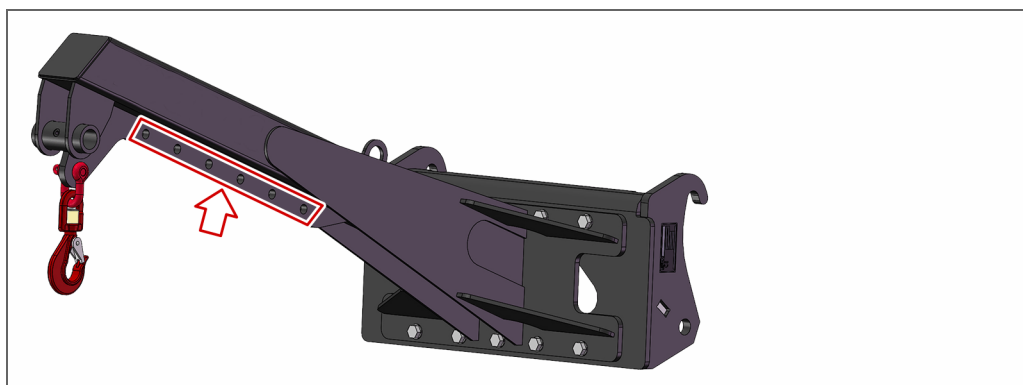
10.5.3.2 Control elements

There are no control elements on this attachment.

10.5.3.3 Attaching a shackle with swivel hook

Carry out the following steps:

1. Loosen the fastening on the shackle.
2. Remove the shackle with swivel hook from the drilled hole.
3. Fasten the shackle with swivel hook to the new attachment point.



✓ Done.

10.5.4 Maintenance

In this chapter you will find information regarding the maintenance and disposal of the load hook.

10.5.4.1 Maintenance schedule

There is no maintenance schedule for this attachment.

10.5.4.2 Maintenance tasks

There are no maintenance tasks for this attachment.

10.5.4.3 Lubrication

There are no lubrication points on this attachment.

10.5.4.4 Cleaning and inspecting

In order to be able to use the attachment for longer, the attachment must be cleaned and inspected for damage at regular intervals.

Carry out the following steps:

1. Clean the attachment of residual dirt.
 2. Check all lines and connections for damage.
? You have identified damage to lines and connections?
→ Inform your supervisor and arrange for repair.
 3. Check the attachment for damage.
? You have identified damage to the attachment?
→ Inform your supervisor and arrange for repair.
- ✓ Done.

10.5.4.5 Storage when not in use

Should you not require the attachment for an extended period of time and therefore wish to store it, ensure that the following conditions are fulfilled:

- The attachment is prepared for storage, see Section: "Cleaning and inspecting" (Page 346).
- Store the attachment horizontally and on the level, in order to prevent distortion of the attachment.
- Store in a locked, well-ventilated space.
- The ambient air must be free of aggressive substances and dust.
- There must be minimal humidity in the storage area, so as not to promote corrosion.

10.5.4.6 Disposal

The following basic principles apply to the disposal of the attachment.:

- Separate, collect and if necessary clean the individual parts of the attachment as metal scrap and electrical scrap.
- Cleaned metal can be disposed of as scrap.
- Cleaned cables can be disposed of as electrical scrap.
- Dispose of all pieces in accordance with local statutory requirements.

10.6 Forklift attachment

In this chapter you will find information regarding the forklift attachment.

10.6.1 Product information

In this chapter you will find information regarding the forklift attachment.

10.6.1.1 Designated Use

The attachment is intended expressly for the lifting of pallets.

A different application or an application in excess of the intended rating does not comply.

The attachment is expressly not intended for:

- the transportation of persons with the installed attachment;
- use as a load hook.

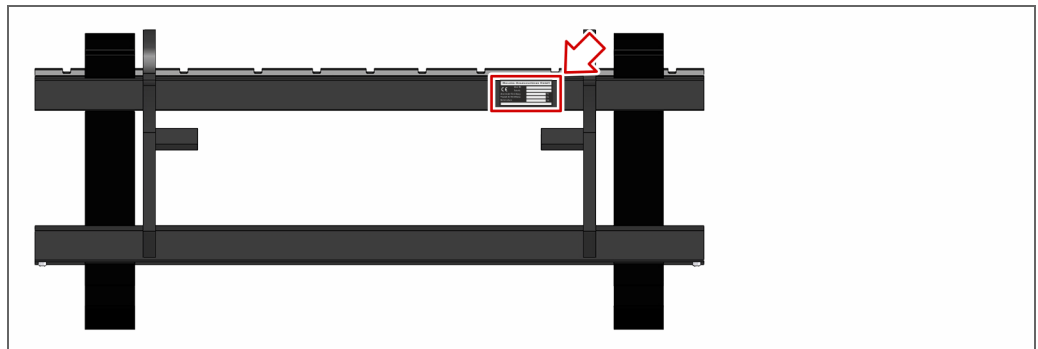
In addition the locally-applicable licensing requirements of the country in which this attachment is used, must be observed.

10.6.1.2 Function description

The attachment is used in combination with a wheel loader. For ease of assembly the attachment is equipped with a mount for use with a compatible quick coupler.

10.6.1.3 Type Plate

The type plate of the attachment is to be found at the following location:



Location of the type plate on the attachment (rear)

Mecalac Baumaschinen GmbH

CE

Ident. Nr.

Teile Nr.

Gewicht der Einrichtung

kg

Traglast der Einrichtung

kg

Betriebsdruck

bar

Illustration of the type plate

Data on the type plate of the attachment

Designation	Function
Ident. No.	The identification number of the attachment is to be found in this location.
Part No.	The part number of the attachment is to be found in this location.
Mass of the equipment	The mass of the attachment is to be found in this location.
Working load of the equipment	The permissible working load of the attachment is to be found in this location.
Operating pressure	Not specified

10.6.1.4 Scope of Supply

No additional parts are delivered with this attachment.

10.6.1.5 Spare Parts

Further information regarding the spare parts available can be obtained on request from MECALAC Baumaschinen GmbH and in the spare parts documentation.

10.6.2 Technical data and dimensional drawings

In this chapter you will find the dimensional drawings and technical data for the forklift attachment..

10.6.2.1 Technical Data

10.6.2.1.1 AF1050

Technical data of the attachment

Tine length	approx.1 200 mm
Weight	214 kg
Tipping load - according to ISO 14397, frontal, maximally steered	3 125 kg
Tipping load - according to ISO 14397, frontal in transport position, maximally steered	3 585 kg
Useful load - according to EN 474-3 frontal - level ground	2 500 kg
Useful load - according to EN 474-3 frontal - uneven ground	2 175 kg
Useful load - according to EN 474-3 frontal - level ground in transport position	2 870 kg
Useful load - according to EN 474-3, frontal - uneven ground in transport position	2 155 kg

10.6.2.1.2 AF1200

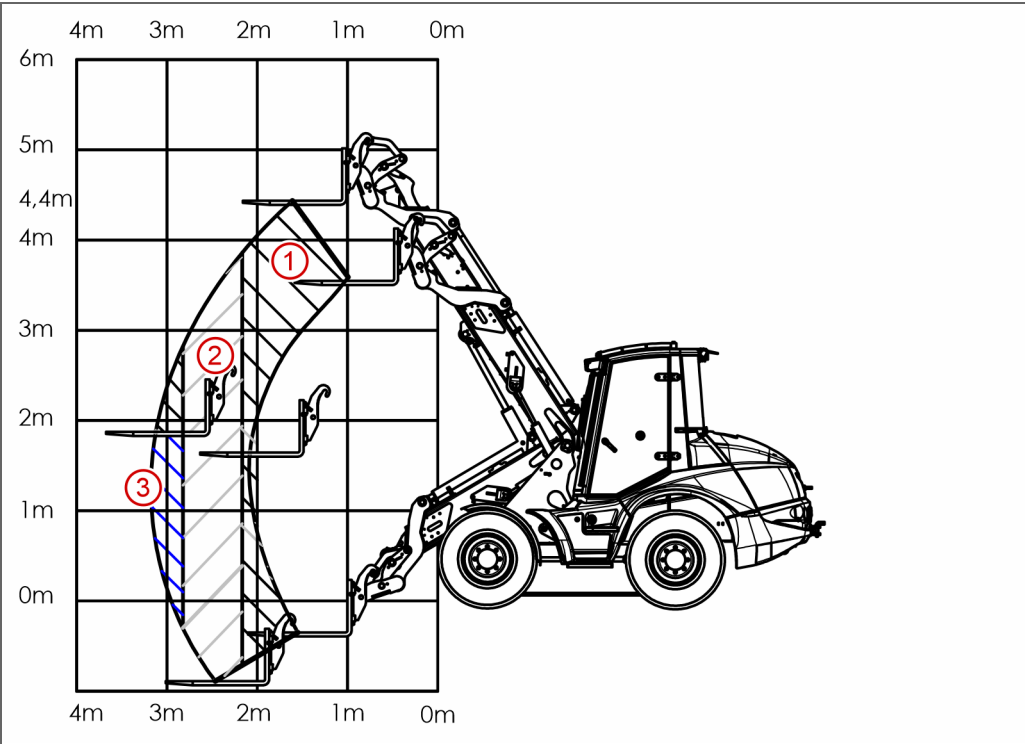
Technical data of the attachment

Tine length	approx.1 200 mm
Weight	214 kg
Useful load - according to EN 474-3 frontal - level ground	2 870 kg
Useful load - according to EN 474-3 frontal - uneven ground	2 150 kg
Useful load - according to EN 474-3 frontal - level ground in transport position	3 150 kg
Useful load - according to EN 474-3, frontal - uneven ground in transport position	2 360 kg

10.6.2.1.3 AT900

Technical data of the attachment

Tine length	approx. 1 200 mm
Weight	210 kg



Load chart with attachment installed

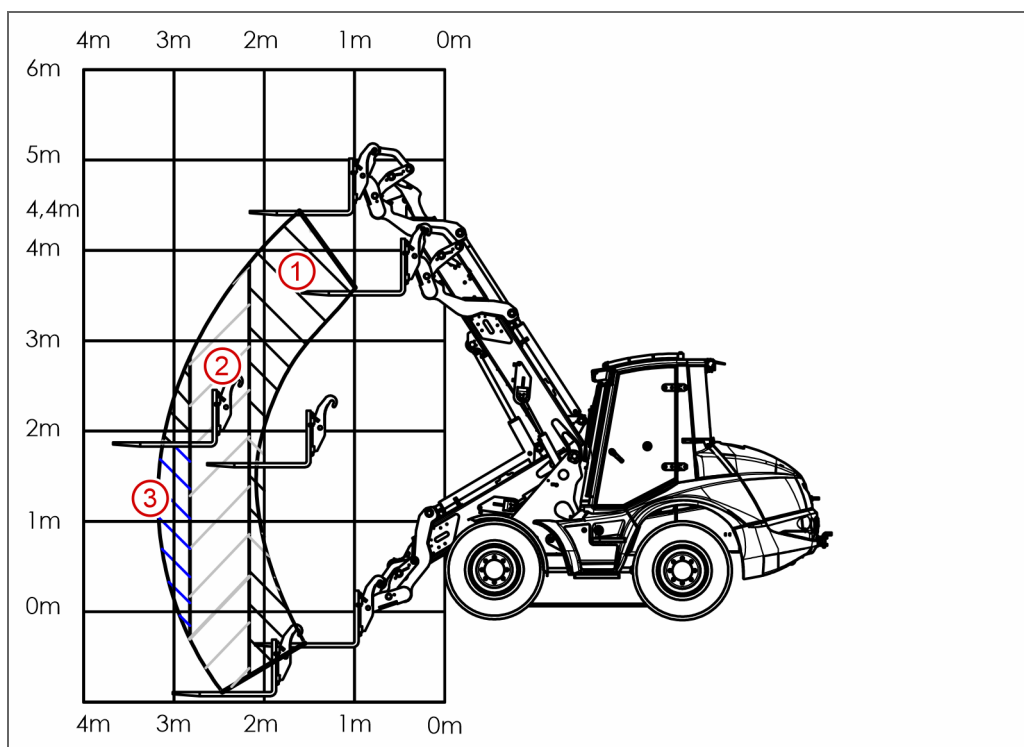
Key

Dimension type	Designation	Value level uneven
1	permissible load according to EN 474-3	2 350 kg 1 765 kg
2	permissible load according to EN 474-3	1 730 kg 1 300 kg
3	permissible load according to EN 474-3	1 420 kg 1 065 kg

10.6.2.1.4 AT1050

Technical data of the attachment

Tine length	approx. 1 200 mm
Weight	310 kg



Load chart with attachment installed

Key

Dimension type	Designation	Value level uneven
1	permissible load according to EN 474-3	2 860 kg 2 145 kg
2	permissible load according to EN 474-3	2 150 kg 1 615 kg
3	permissible load according to EN 474-3	1 800 kg 1 350 kg

10.6.2.1.5 AS850

Technical data of the attachment

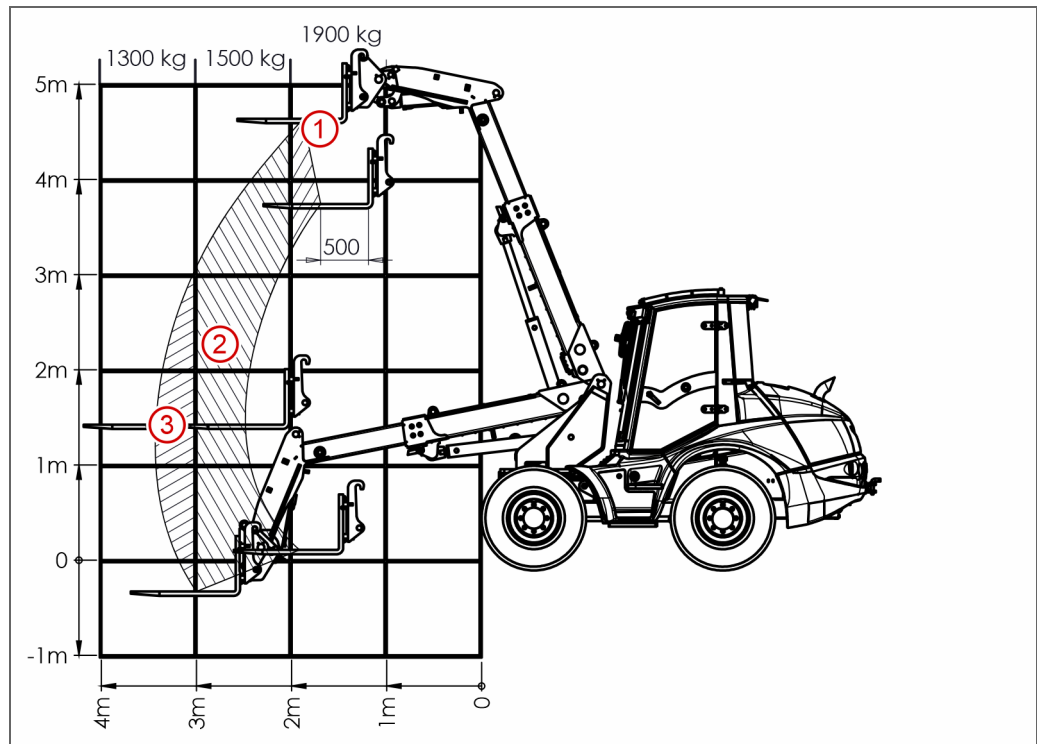
Tine length	approx. 1 200 mm
Weight	235 kg
Useful load - according to EN 474-3 frontal - level ground	2 300 kg
Useful load - according to EN 474-3 frontal - uneven ground	1 720 kg
Useful load - according to EN 474-3 frontal - level ground in transport position	2 700 kg
Useful load - according to EN 474-3, frontal - uneven ground in transport position	2 010 kg

10.6.2.1.6 AS1000**Technical data of the attachment**

Tine length	approx. 1 200 mm
Weight	235 kg
Useful load - according to EN 474-3 frontal - level ground	2 560 kg
Useful load - according to EN 474-3 frontal - uneven ground	1 920 kg
Useful load - according to EN 474-3 frontal - level ground in transport position	2 990 kg
Useful load - according to EN 474-3, frontal - uneven ground in transport position	2 240 kg

10.6.2.1.7 AS900tele**Technical data of the attachment**

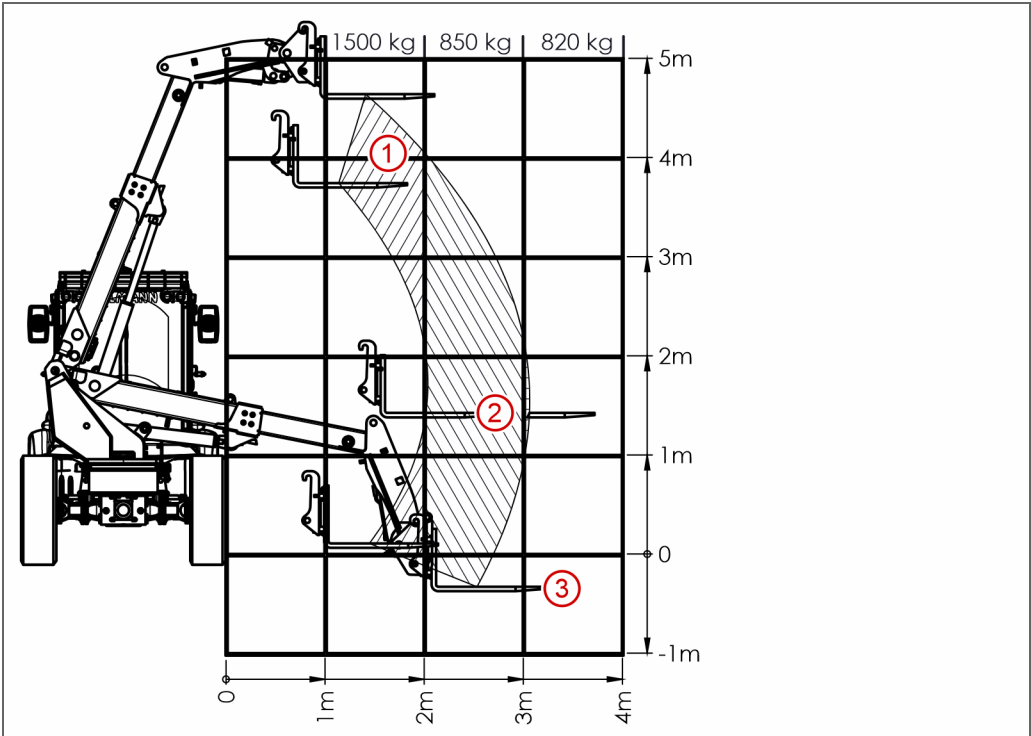
Tine length	Approx. 1 100 mm
Width	1 345 mm
Weight	225 kg



Load chart with attachment installed

Key

Dimension type	Designation	Value
1	permissible load according to EN 474-3	1 900 kg
2	permissible load according to EN 474-3	1 500 kg
3	permissible load according to EN 474-3	1 300 kg

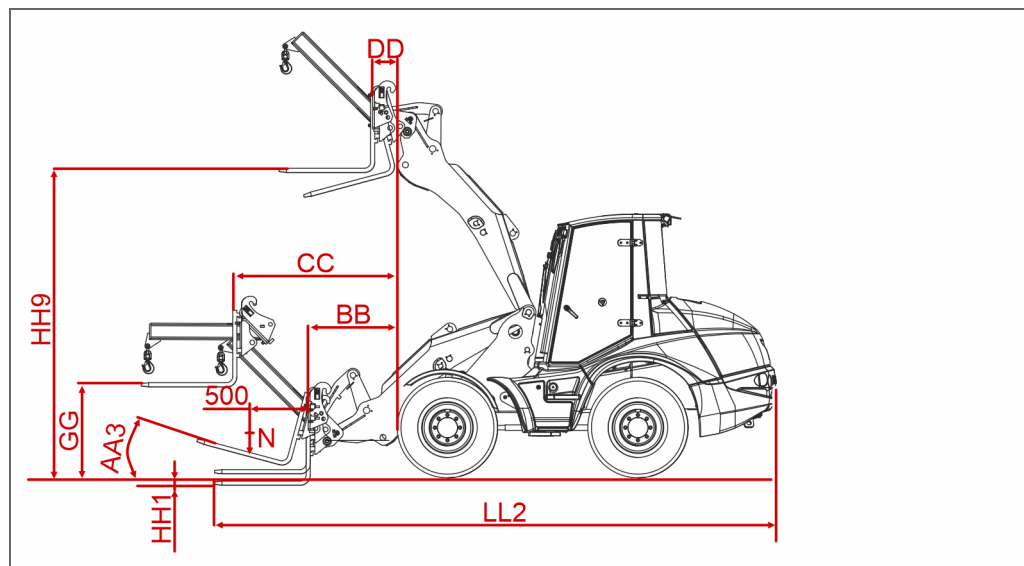


Load chart with attachment installed – frontal

Key		
Dimension type	Designation	Value
1	permissible load according to EN 474-3	1 500 kg
2	permissible load according to EN 474-3	850 kg
3	permissible load according to EN 474-3	820 kg

10.6.2.2 Dimensional drawing

10.6.2.2.1 AF1050 / AF1200

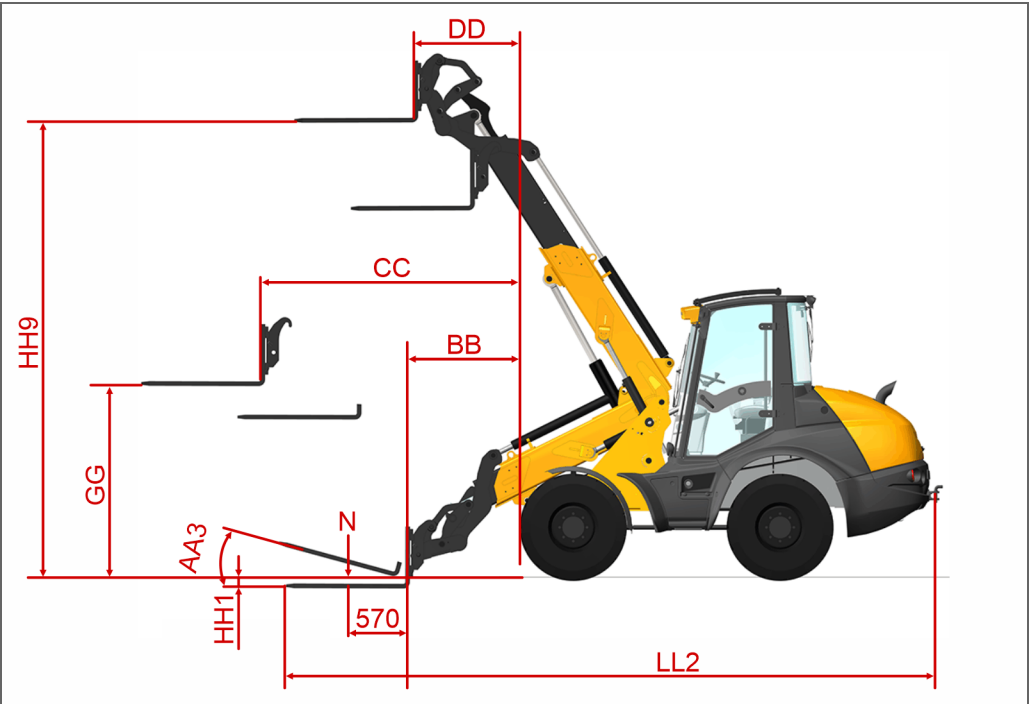


Dimensional drawing of AF 1050 with attachment installed

Key

Dimension type	Designation	Value
AA3	Tipping angle max.	18°
BB	Minimum reach	850 mm
CC	Maximum reach	1 300 mm
DD	Reach at maximum lifting height	440 mm
GG	Loading height at maximum reach	1 470 mm
HH1	Plunge depth	120 mm
HH9	Overload height at max. lifting height	3 340 mm
LL2	Length overall	6 050 mm
U - Useful load 300 mm above surface	-	The permissible useful load of the device is limited by the maximum permissible working load of the fork tines to 3 150 kg.

10.6.2.2.2 AT900

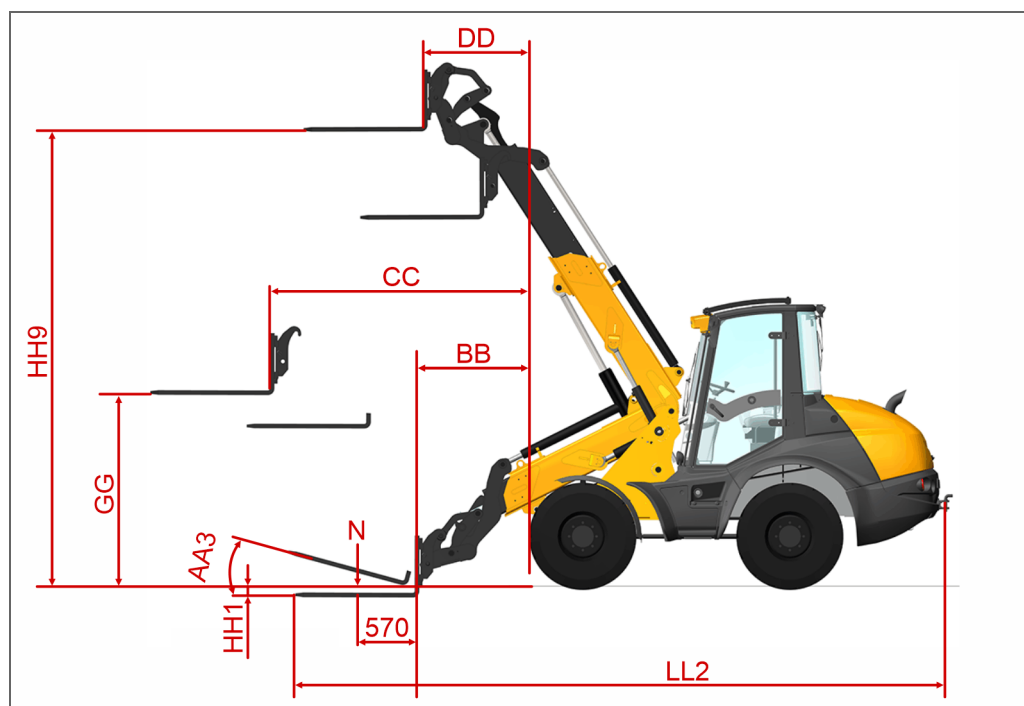


Dimensional drawing of AT 900 with attachment installed

Key		
Dimension type	Designation	Value
AA3	Tipping angle max.	15°
BB	Minimum reach	1 030 mm
CC	Maximum reach	2 600 mm
DD	Reach at maximum lifting height	1 090 mm
GG	Loading height at maximum reach	1 525 mm
HH1	Plunge depth	210 mm
HH9	Overload height at max. lifting height	3 580 mm
LL2	Length overall	6 350 mm
U - Useful load 300 mm above surface	-	The permissible useful load of the device is limited by the maximum permissible working load of the fork tines to 2 500 kg.

10.6.2.2.3

AT1050

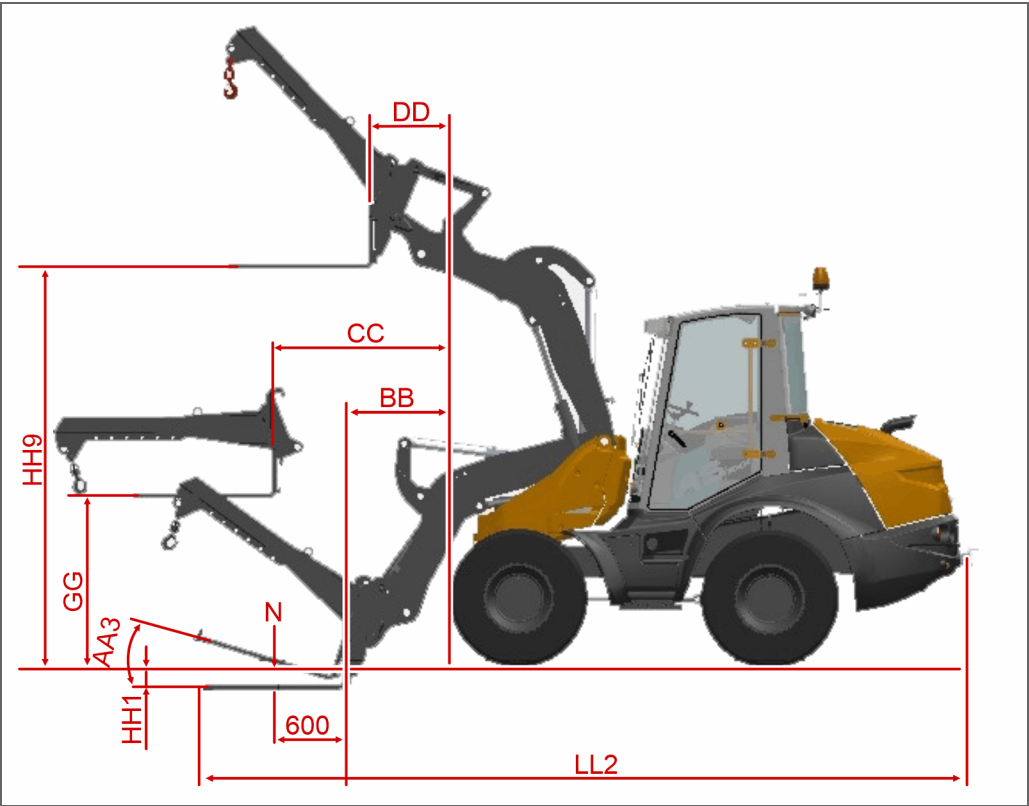


Dimensional drawing of AT 1050 with attachment installed

Key

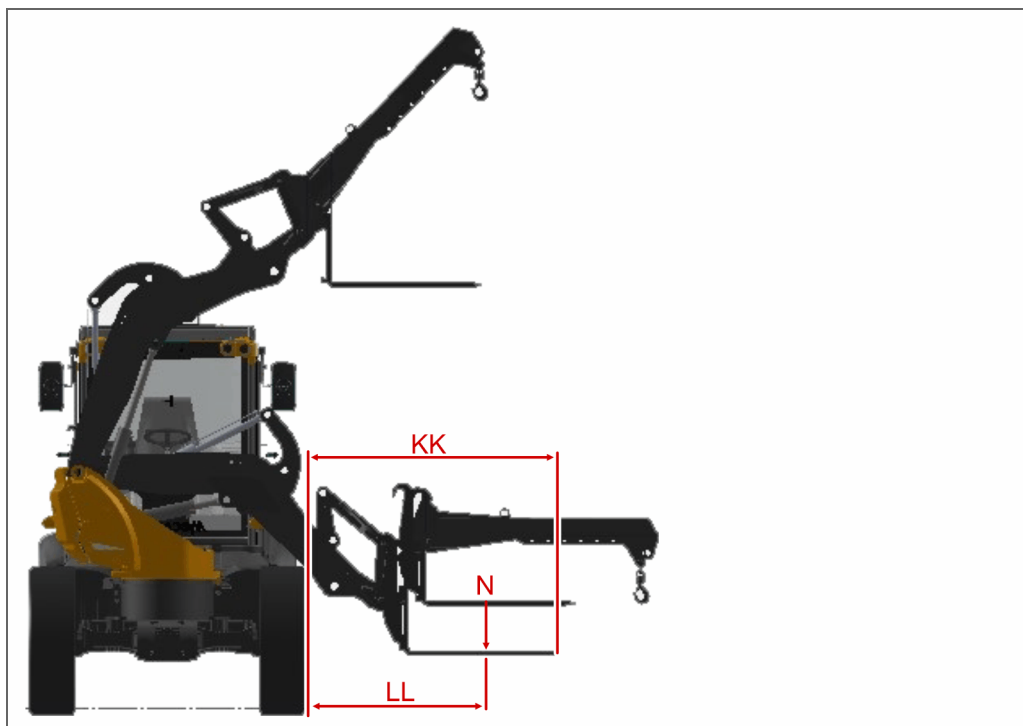
Dimension type	Designation	Value
AA3	Tipping angle max.	15°
BB	Minimum reach	1 030 mm
CC	Maximum reach	2 600 mm
DD	Reach at maximum lifting height	1 090 mm
GG	Loading height at maximum reach	1 525 mm
HH1	Plunge depth	210 mm
HH9	Overload height at max. lifting height	3 580 mm
LL2	Length overall	6 350 mm
U - Useful load 300 mm above surface	-	The permissible useful load of the device is limited by the maximum permissible working load of the fork tines to 2 270 kg.

10.6.2.2.4 AS850



Dimensional drawing of AS850 with attachment installed

Key		
Dimension type	Designation	Value
AA3	Tipping angle max.	17°
BB	Minimum reach	995 mm
CC	Maximum reach	1 385 mm
DD	Reach at maximum lifting height	660 mm
GG	Loading height at maximum reach	1 400 mm
HH1	Plunge depth	210 mm
HH9	Overload height at max. lifting height	3 100 mm
LL2	Length overall	6 100 mm
U - Useful load 300 mm above surface	-	The permissible useful load of the device is limited by the maximum permissible working load of the fork tines to 2 500 kg.



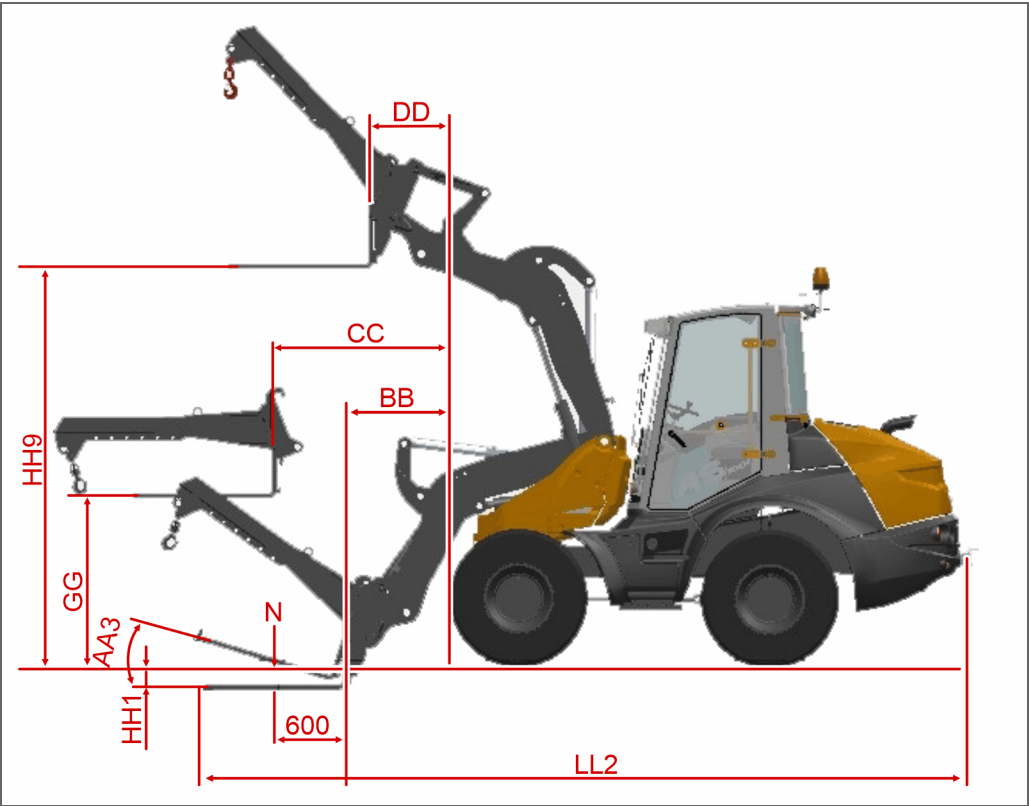
Dimensional drawing of the AS850 with attachment installed (frontal view)

Key

Dimension type	Designation	Value
KK	Distance from the left-hand outer edge to the back of the fork tines at maximum load	1 000 mm
LL	Distance from the left-hand outer edge to the load support point of the tine when the lift arm is placed on the tyre	1 420 mm

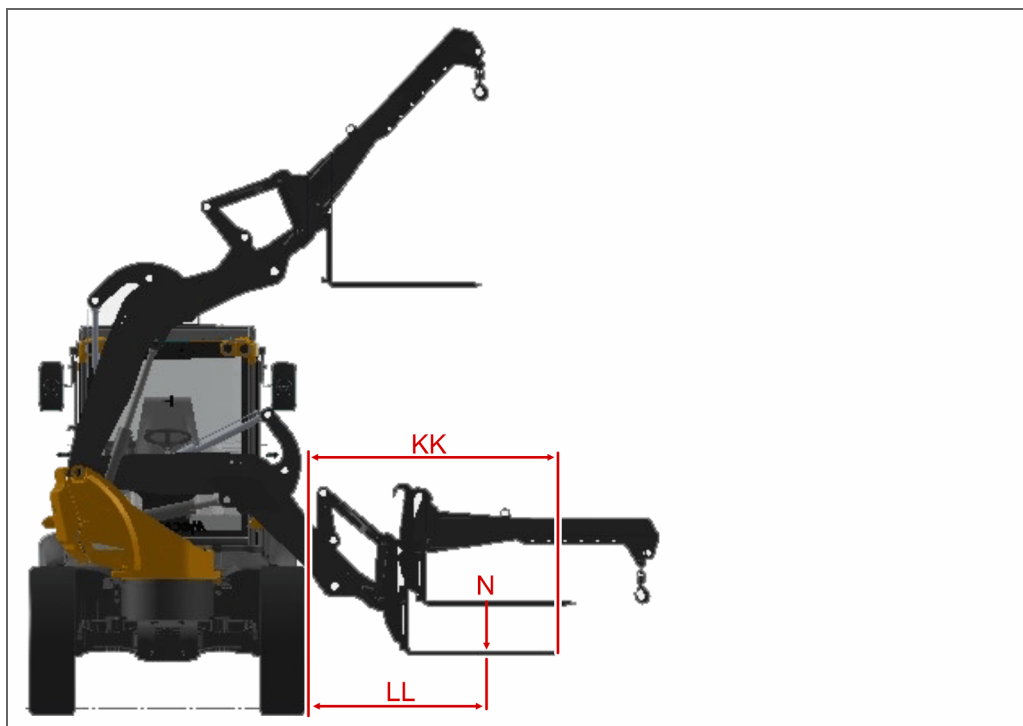
10.6.2.2.5

AS1000



Dimensional drawing of AS1000 with attachment installed

Key		
Dimension type	Designation	Value
AA3	Tipping angle max.	17°
BB	Minimum reach	995 mm
CC	Maximum reach	1 385 mm
DD	Reach at maximum lifting height	660 mm
GG	Loading height at maximum reach	1 400 mm
HH1	Plunge depth	210 mm
HH9	Overload height at max. lifting height	3 100 mm
LL2	Length overall	6 100 mm
U - Useful load 300 mm above surface	-	The permissible useful load of the device is limited by the maximum permissible working load of the fork tines to 2 500 kg.



Dimensional drawing of the AS1000 with attachment installed (frontal view)

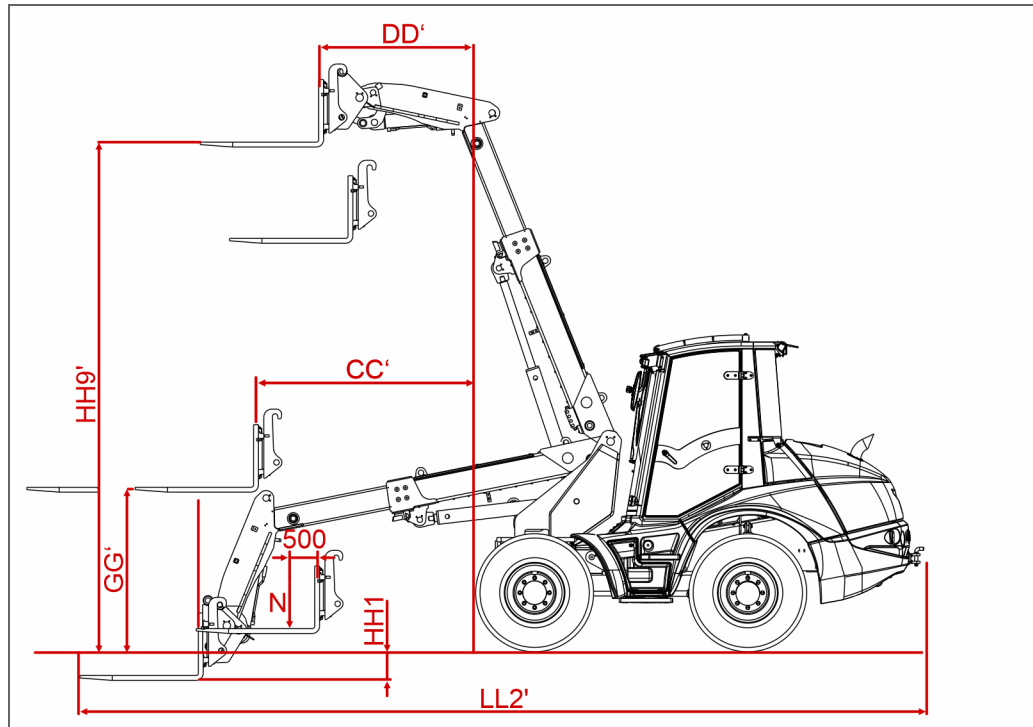
Key

Dimension type	Designation	Value
KK	Distance from the left-hand outer edge to the back of the fork tines at maximum load	965 mm
LL	Distance from the left-hand outer edge to the load support point of the tine when the lift arm is placed on the tyre	1 385 mm

10.6.2.2.6 AS900tele

Note:

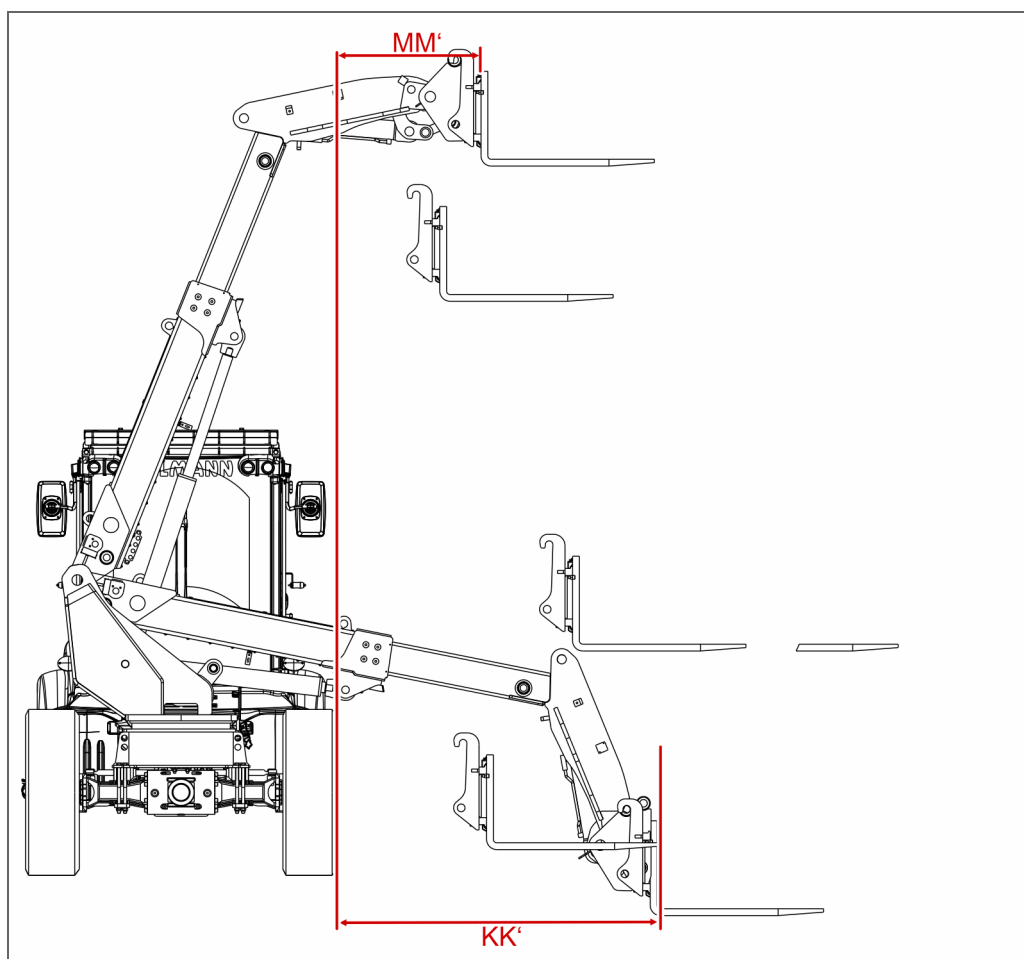
- The alphabetical characters identified **without** an apostrophe (for example LL) provide the values with a **retracted** lift arm.
- The alphabetical characters identified **with** an apostrophe (for example LL') provide the values with an **extended** lift arm.



Dimensional drawing with attachment installed (side view)

Key

Dimension type	Designation	Value
CC	Maximum reach	1 960 mm
CC'	Maximum reach	2 970 mm
DD	Reach at maximum lifting height	865 mm
DD'	Reach at maximum lifting height	1 240 mm
GG	Loading height at maximum reach	1 495 mm
HH1	Plunge depth	10 mm
HH1'	Plunge depth	175 mm
HH9	Overload height at max. lifting height	3 760 mm
HH9'	Overload height at max. lifting height	4 740 mm
LL2	Length overall	6 823 mm
LL2'	Length overall	7 838 mm
U - Useful load 300 mm above surface	-	The permissible useful load of the device is limited by the maximum permissible working load of the fork tines to 2 500 kg.



Dimensional drawing with attachment installed (frontal view)

Key

Dimension type	Designation	Value
KK L	Max. reach - left	2 125 mm
KK L'	Max. reach - left	3 135 mm
KK R	Max. reach - right	2 125 mm
KK R'	Max. reach - right	3 135 mm
MM L	Reach at max. lifting height - left	1 405 mm
MM L'	Reach at max. lifting height - left	1 780 mm
MM R	Reach at max. lifting height - right	1 405 mm
MM R'	Reach at max. lifting height - right	1 780 mm

10.6.3 Description

10.6.3.1 Parts of the attachment



Parts of the attachment - frontal view

Key	
No.	Designation
1	Hooks
2	Locking – fork tines
3	Upper carrier
4	Locking holes
5	Lower carrier
6	Fork tines

10.6.3.2 Control elements

There are no control elements on this attachment.

10.6.4 Maintenance

In this chapter you will find information regarding the maintenance and disposal of the forklift attachment

10.6.4.1 Maintenance schedule

There is no maintenance schedule for this attachment.

10.6.4.2 Maintenance tasks

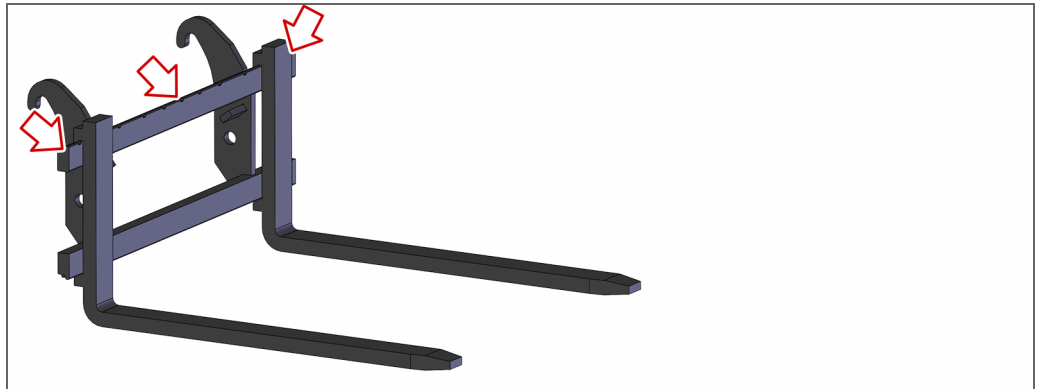
There are no maintenance tasks for this attachment.

10.6.4.3 Lubrication

Depending on use, the upper carrier must be greased regularly.

Lubricant requirements

Designation	Specification	Viscosity
Lubrication grease	IN 51825 - KPF 1/2 N-20	-



Overview - lubrication point on the upper carrier

10.6.4.4 Cleaning and inspecting

In order to be able to use the attachment for longer, the attachment must be cleaned and inspected for damage at regular intervals.

Carry out the following steps:

1. Clean the attachment of residual dirt.
 2. Check all lines and connections for damage.
 - ? *You have identified damage to lines and connections?*
→ Inform your supervisor and arrange for repair.
 3. Check the attachment for damage.
 - ? *You have identified damage to the attachment?*
→ Inform your supervisor and arrange for repair.
- ✓ Done.

10.6.4.5 Storage when not in use

Should you not require the attachment for an extended period of time and therefore wish to store it, ensure that the following conditions are fulfilled:

- The attachment is prepared for storage, see Section: "Cleaning and inspecting" (Page 365).
- Store the attachment horizontally and on the level, in order to prevent distortion of the attachment.
- Store in a locked, well-ventilated space.
- The ambient air must be free of aggressive substances and dust.
- There must be minimal humidity in the storage area, so as not to promote corrosion.

10.6.4.6 Disposal

The following basic principles apply to the disposal of the attachment.:

- Separate, collect and if necessary clean the individual parts of the attachment as metal scrap and electrical scrap.
- Cleaned metal can be disposed of as scrap.
- Cleaned cables can be disposed of as electrical scrap.
- Dispose of all pieces in accordance with local statutory requirements.

10.7 Installing / dismantling the attachment

In this chapter you will find information regarding the installation and dismantling of an attachment.

10.7.1 Explanation



Info

Many attachments are available for the wheel loader. By way of example, the installation and dismantling of a bucket is described at this point. The execution of the installation and dismantling tasks related to an attachment and the appearance of the quick coupler can differ in each individual case. Therefore and in addition, take note of the information for the respective attachment.

10.7.2 Installing the attachment



Requirement

- There is no attachment fitted to the quick coupler of the wheel loader.
- The unlocking cylinders of the quick coupler are retracted.



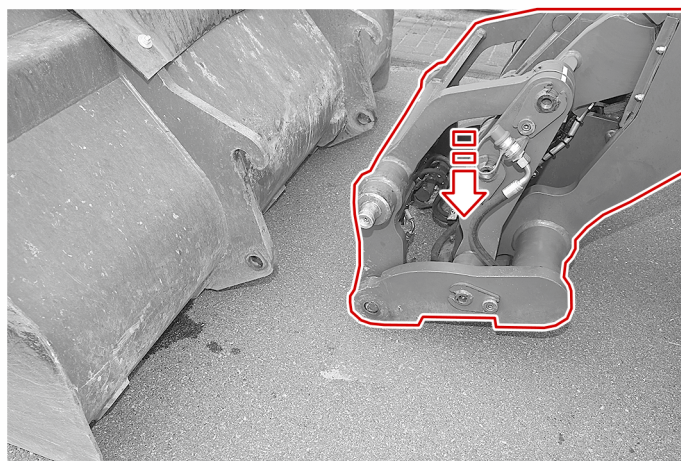
Tools required:

- An attachment to be installed

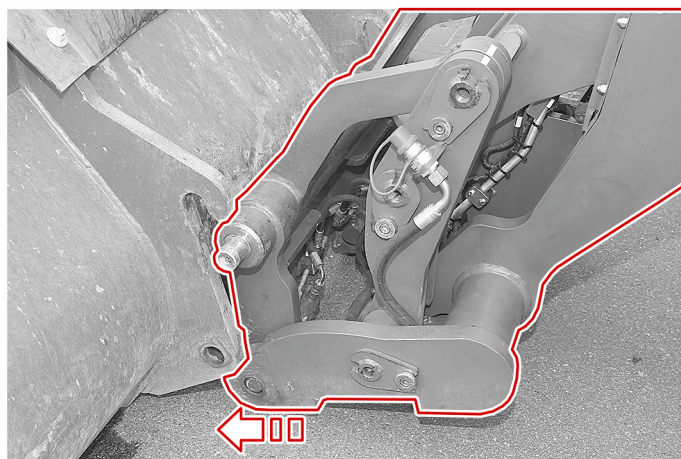
Carry out the following steps:

1. Move the «LIFT ARM» with the «MULTI-FUNCTION JOYSTICK» downwards.

! Take care that the «QUICK COUPLER» does not rest on the ground.

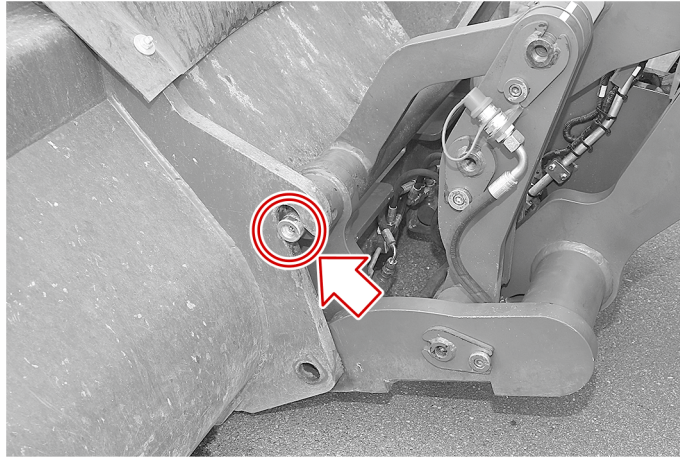


2. Move the «WHEEL LOADER» carefully forwards up to the «ATTACHMENT».

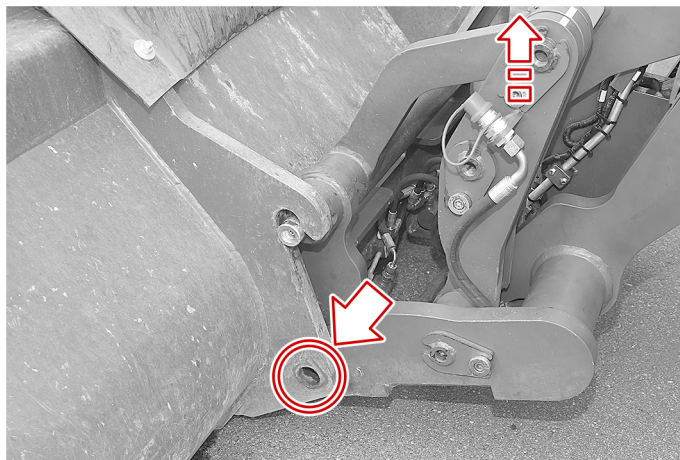


3. Move the «LIFT ARM» with the «MULTI-FUNCTION JOYSTICK» carefully **upwards**.

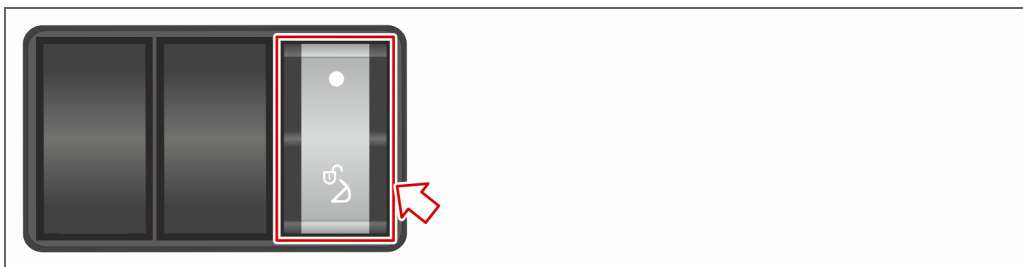
! The two «LOCATING BOLTS» of the «QUICK COUPLER» must be guided precisely into the «HOOKS» of the attachment.



- The attachment is lifted off the ground.
- The attachment aligns itself by the lifting motion of the quick coupler.
- The «LOCKING HOLES» of the attachment are guided via the the retracted «UNLOCKING CYLINDERS» of the «QUICK COUPLER».

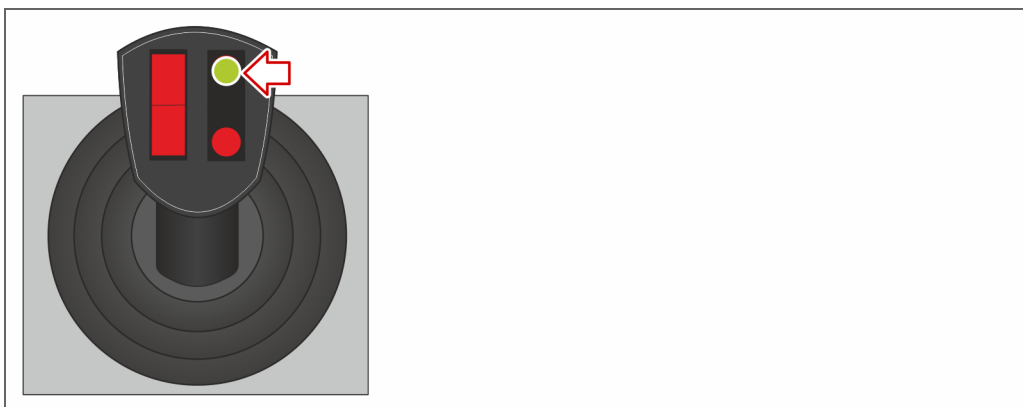


4. Press and hold the toggle switch of the «UNLOCKING CYLINDER».

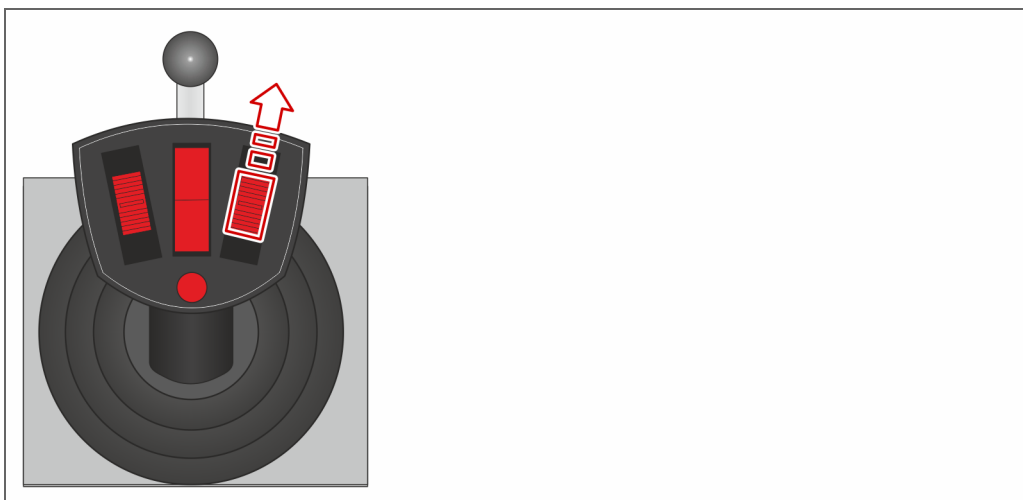


- The locking and unlocking function of the «UNLOCKING CYLINDER» in the «MULTI-FUNCTION JOYSTICK» are activated.

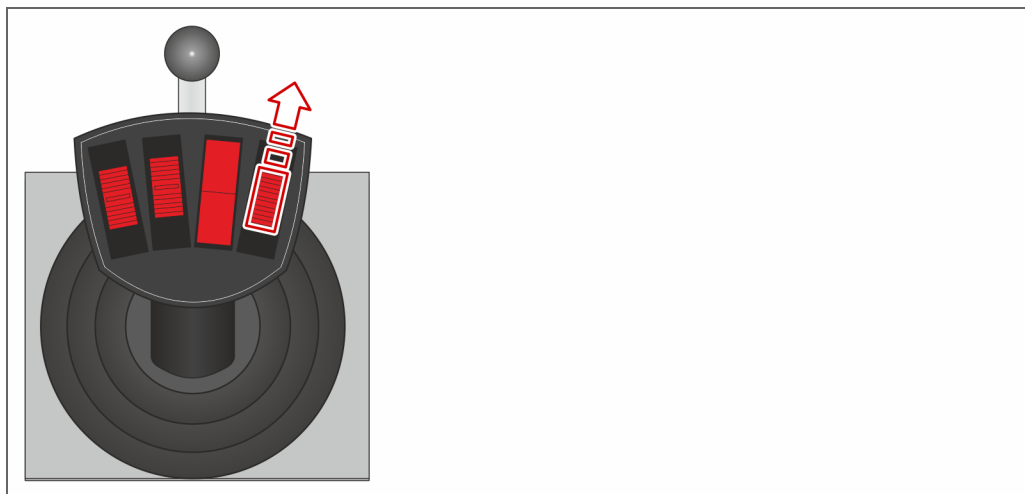
5. Press / move the «ACCESSORY HYDRAULICS / UNLOCKING CYLINDER» push-button / rotary switch on the «MULTI-FUNCTION JOYSTICK».
→ AF Series and AS850 / AS1000



- AT Series



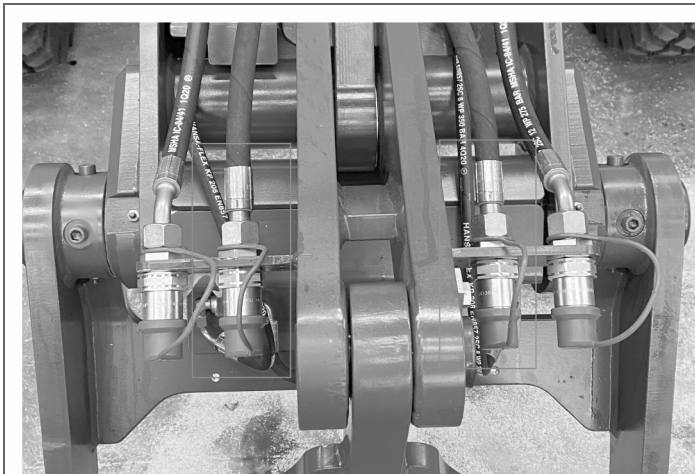
→ AS900tele



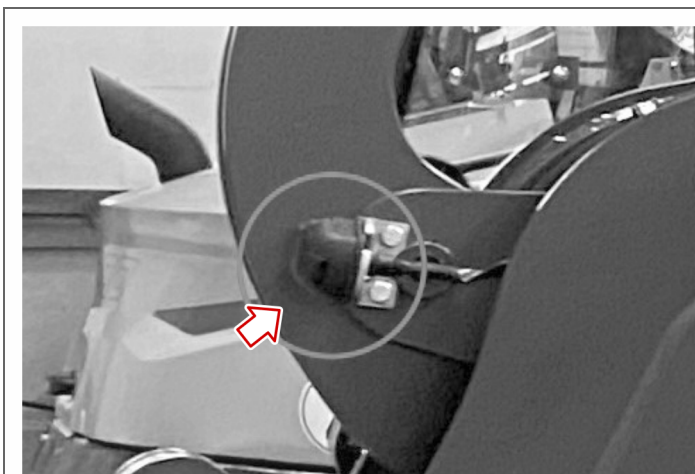
- ↪ The **«UNLOCKING CYLINDERS»** on the **«QUICK COUPLER»** are extended.
- ↪ The attachment has been locked to the **«QUICK COUPLER»**.

6. Release the **«UNLOCKING CYLINDERS»** toggle switch and the **«ACCESSORY HYDRAULICS / UNLOCKING CYLINDERS»** push-button.

7. *Optionally and depending on the attachment* – install if required:
→ **«HYDRAULIC HOSES»** on both connections for the **«ACCESSORY HYDRAULICS»** on the **«QUICK-CHANGE DEVICE»**, see Section "Installing the attachment with a hydraulic connection" (Page 376).



- If necessary plug the **«CONNECTION CABLE»** for the electrical supply of the attachment into the **«7-PIN SOCKET»** of the **«LIFT ARM»** .



✓ Done.

10.7.3 Removing the attachment

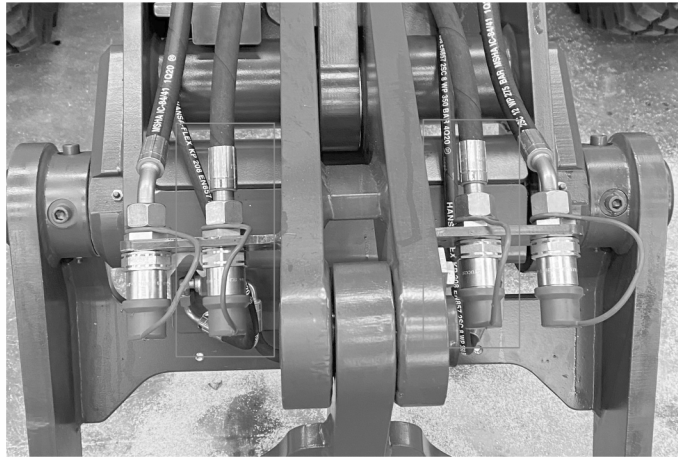
Requirement



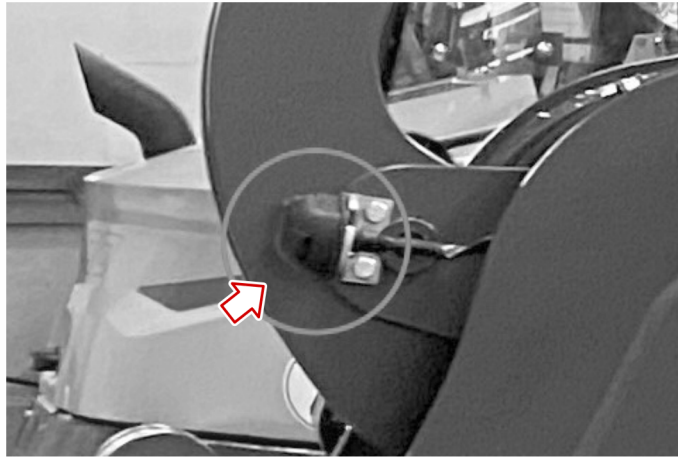
- An attachment is installed on the quick coupler of the wheel loader.

Carry out the following steps:

1. *Optionally and depending on the attachment* – dismount if required:
→ **«HYDRAULIC HOSES»** on both connections for the **«ACCESSORY HYDRAULICS»** on the **«QUICK COUPLER»**, see Section "Removing the attachment with an hydraulic connection" (Page 378).

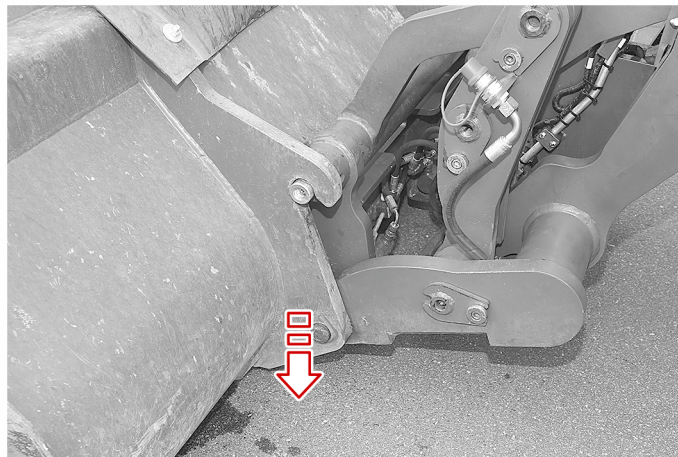


→ If necessary, plug the **«CONNECTION CABLE»** for the electrical supply of the attachment into the **«7-PIN SOCKET»** of the **«LIFT ARM»**.

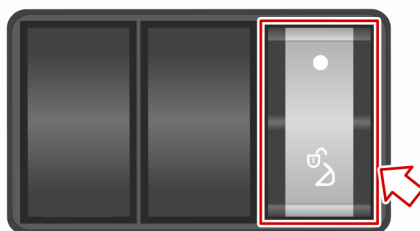


2. Move the «LIFT ARM» with the «MULTI-FUNCTION JOYSTICK» downwards.

! Take care that the installed «ATTACHMENT» is placed on the ground.

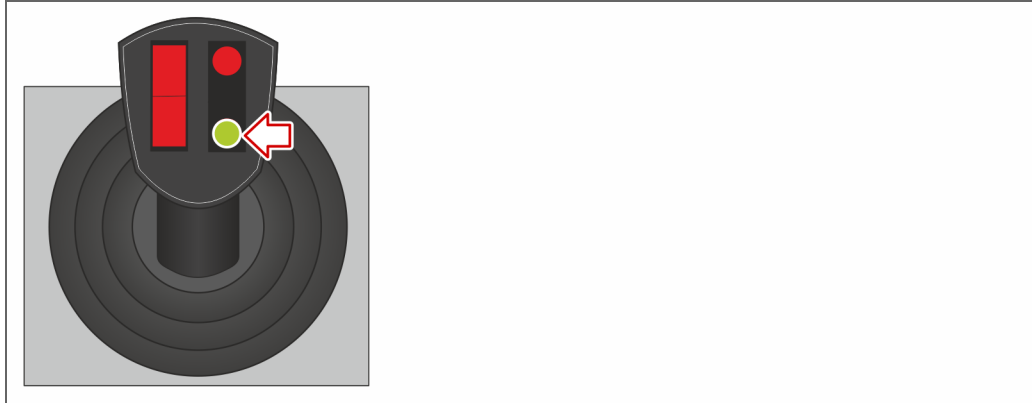


3. Press and hold the toggle switch of the «UNLOCKING CYLINDER».

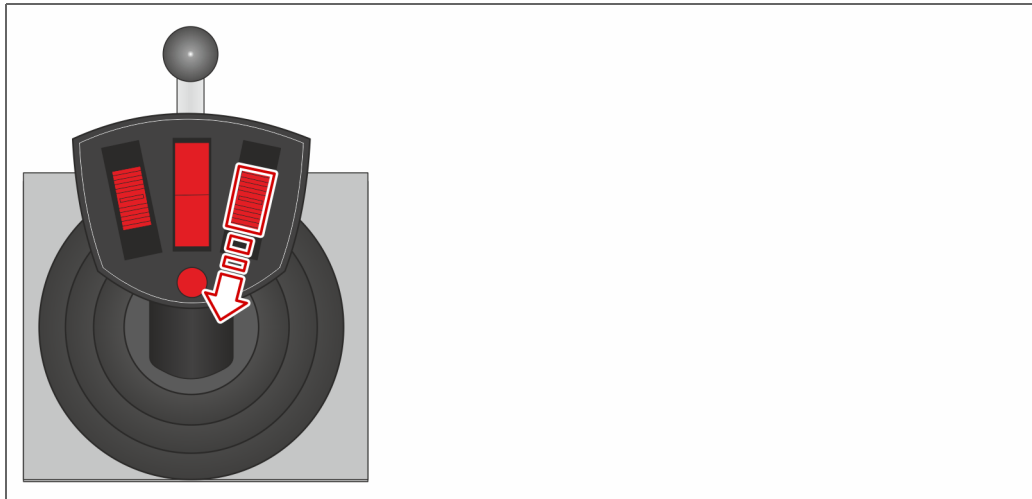


→ The locking and unlocking function of the «UNLOCKING CYLINDER» in the «MULTI-FUNCTION JOYSTICK» are activated.

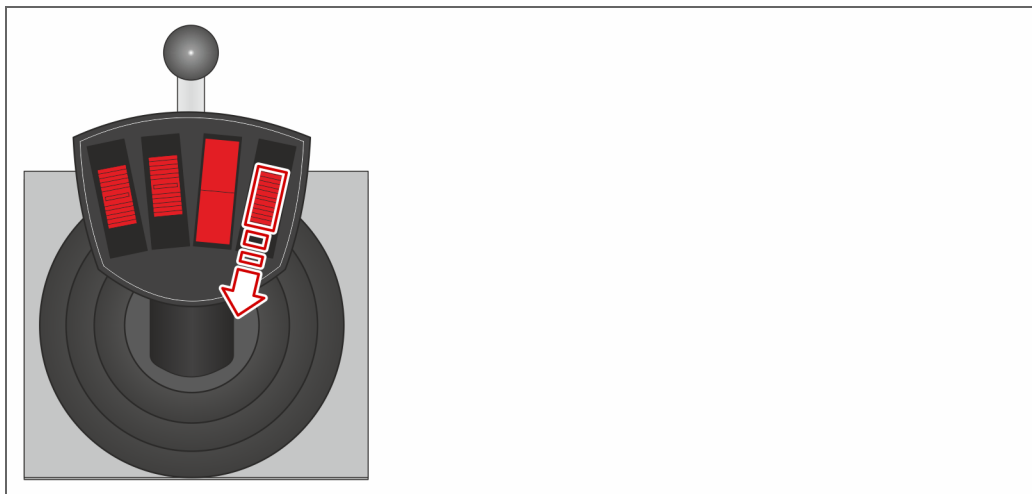
4. Press / move the **«ACCESSORY HYDRAULICS / UNLOCKING CYLINDER»** push-button / rotary switch on the **«MULTI-FUNCTION JOYSTICK»**.
→ **AF Series** and **AS850 / AS1000**



→ **AT Series**



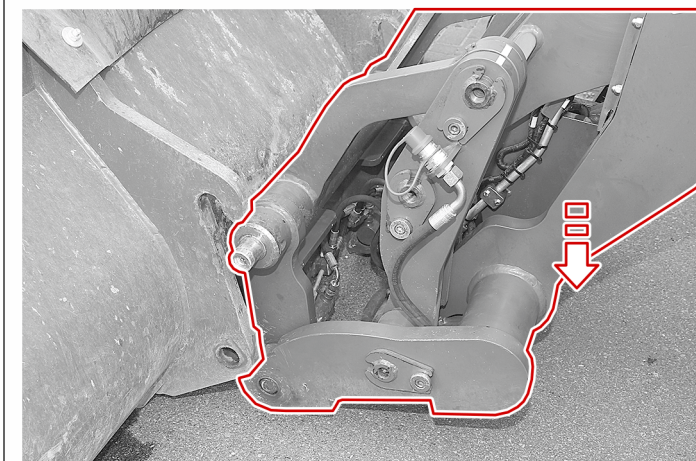
→ **AS900tele**



- ↪ The **«UNLOCKING CYLINDERS»** on the **«QUICK COUPLER»** are retracted once again.
- ↪ The attachment has been unlocked from the **«QUICK COUPLER»**.

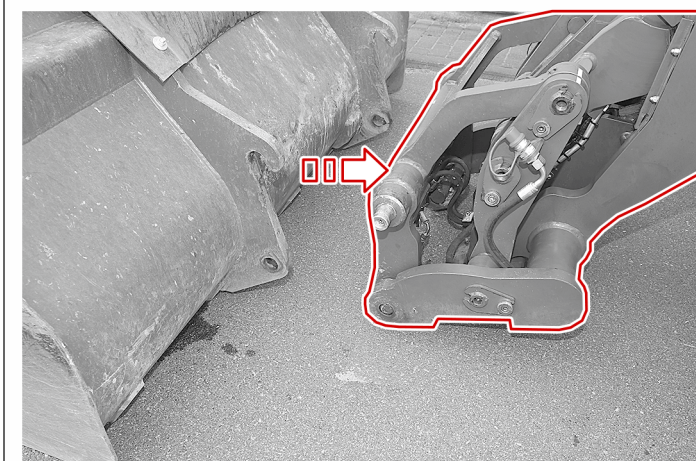
5. Release the **«UNLOCKING CYLINDERS»** toggle switch and the **«ACCESSORY HYDRAULICS / UNLOCKING CYLINDERS»** push-button.

6. Move the «LIFT ARM» with the «MULTI-FUNCTION JOYSTICK» carefully **downwards**.
! Take care that the «QUICK COUPLER» does not rest on the ground.



↪ The «attachment» has been unlocked from the «QUICK-CHANGE DEVICE» .

7. Move the «WHEEL LOADER» carefully backwards away from the «ATTACHMENT».



✓ Done.

10.7.4 Installing the attachment with a hydraulic connection

Safety instruction: Storage!

Take care that attachments with a hydraulic connection are always stored in shade.

Safety instruction: Check for damage!

Before connecting the hydraulic lines the couplings must be checked for damage and dirt and cleaned or exchanged if necessary.



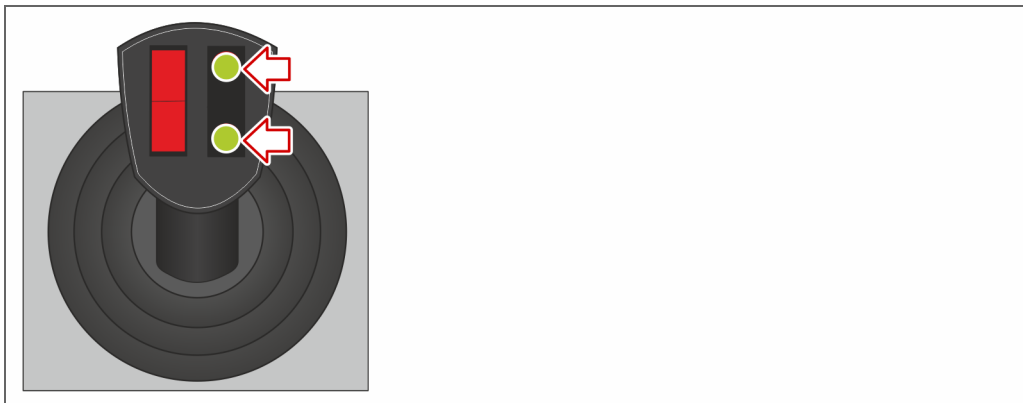
Requirement

- The attachment is stored in the shade and is not warmer than body temperature.

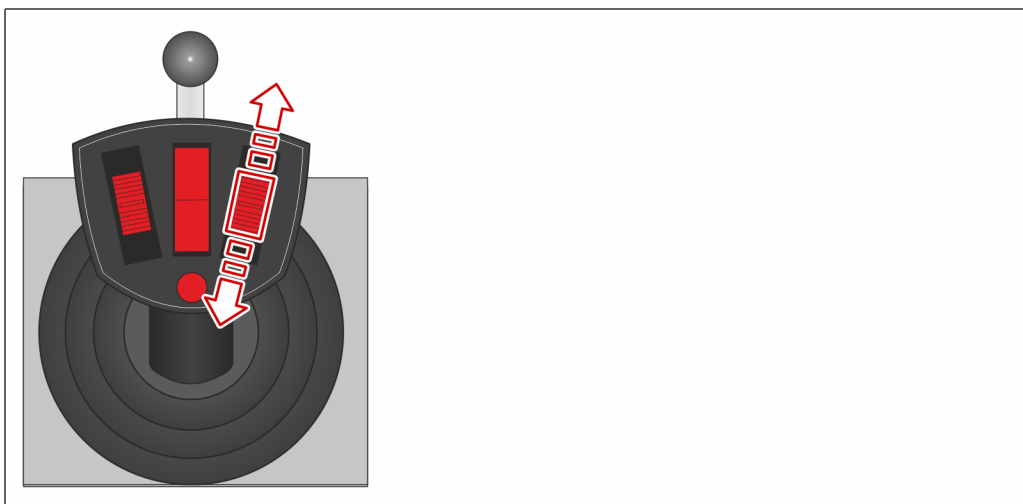
Carry out the following steps:

1. Install the attachment on the **«QUICK COUPLER»**, see Section "Installing the attachment" (Page 367).
2. Switch the **«DIESEL ENGINE»** of the wheel loader **off**.
3. Switch the ignition **on** again.

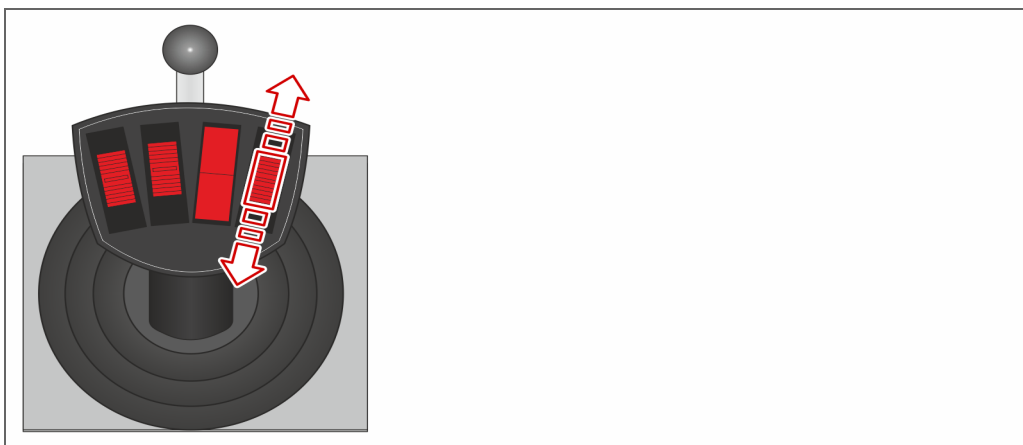
4. Alternately press / move the **«ACCESSORY HYDRAULICS / UNLOCKING CYLINDER»** push-button / rotary switch multiple times on the **«MULTI-FUNCTION JOYSTICK»**.
→ **AF Series and AS850 / AS1000**



→ **AT Series**

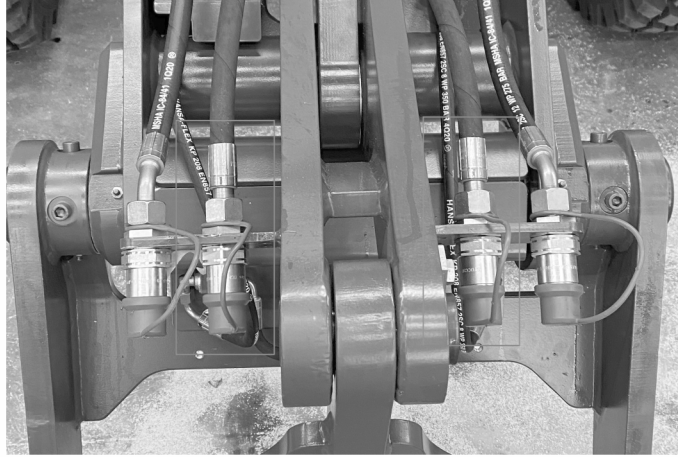


→ **AS900tele**



↪ The pressure in the hydraulic lines is eliminated.

5. Remove the «**PROTECTIVE CAPS**» from the hose lines of the quick coupler of the wheel loader.



6. Remove the «**PROTECTIVE CAPS**» from the quick-release couplings of the attachment.
7. Plug the «**QUICK-RELEASE COUPLING**» into the hose line of the quick coupler of the wheel loader.

✓ Done.

10.7.5 Removing the attachment with an hydraulic connection

Safety instruction: Storage!

Take care that attachments with a hydraulic connection are always stored in shade.

Safety instruction: Check for damage!

Before connecting the hydraulic lines the couplings must be checked for damage and dirt and cleaned or exchanged if necessary.

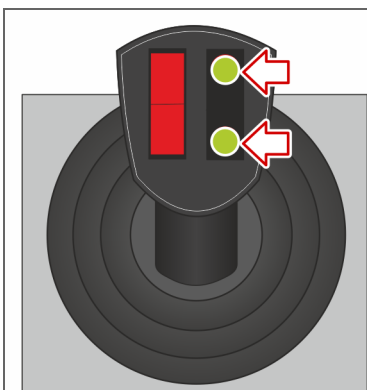
Requirement



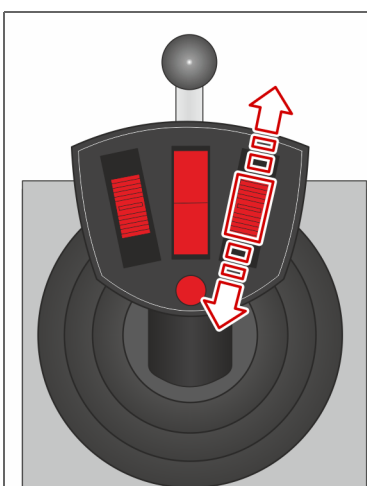
- The attachment must be placed safely and securely on the ground.

Carry out the following steps:

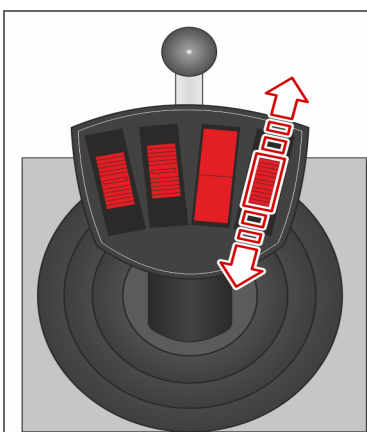
1. Switch the **«DIESEL ENGINE»** of the wheel loader off.
2. Switch on the ignition once more.
3. Alternately press / move the **«ACCESSORY HYDRAULICS / UNLOCKING CYLINDER»** push-button / rotary switch multiple times on the **«MULTI-FUNCTION JOYSTICK»**.
→ **AF Series and AS850 / AS1000**



→ **AT Series**

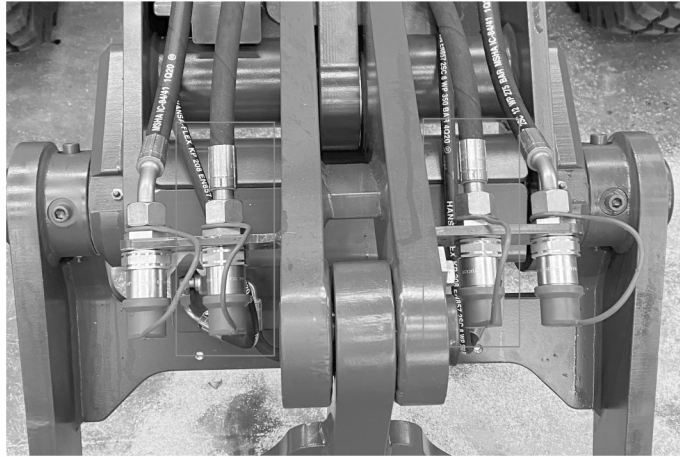


→ **AS900tele**



→ The pressure in the hydraulic lines is eliminated.

4. Disconnect the **«QUICK-RELEASE COUPLING»** from the hose line of the quick coupler of the wheel loader.
5. Secure the **«PROTECTIVE CAPS»** on the hose lines of the quick coupler of the wheel loader.
6. Secure the **«PROTECTIVE CAPS»** on the quick-release couplings of the attachment



7. Remove the attachment from the **«QUICK COUPLER»**, see Section "Removing the attachment" (Page 372).

✓ Done.

Service Check List

Customer:		Machine type:	
Day of inspection:		Chassis number:	
Operating hours:		Name of mechanic:	

Tick off the task that has been completed:

Inspection <input type="radio"/>	Exchange <input checked="" type="radio"/>	Set <input checked="" type="checkbox"/>
----------------------------------	---	---

Engine	100 h after commissioning
Engine oil	<input checked="" type="radio"/>
Engine oil filter	<input checked="" type="radio"/>
Fuel filter	<input checked="" type="radio"/>
Air filter system	<input type="radio"/>
V-belt	<input type="radio"/>
Suction line	<input type="radio"/>
Oil cooler, radiator, anti-freeze	<input type="radio"/>
Speed according to test log	<input checked="" type="checkbox"/>
Read out ECU engine faults	<input type="radio"/>
Electrical system	
Functional test	<input type="radio"/>
Braking system, inching system	
Functional test	<input type="radio"/>
Brake fluid	<input type="radio"/>
Axles, transfer box, reduction gear	
Planetary, centre gearbox oil level	<input checked="" type="radio"/>
Transfer box, reduction gear oil level	<input checked="" type="radio"/>
Hydrostatic drive train	
Filter	<input checked="" type="radio"/>
Pressures in accordance with test log	<input checked="" type="checkbox"/>
Read out ECU drive train faults	<input type="radio"/>
Operating and steering hydraulics	
Filter	<input checked="" type="radio"/>
Pressures in accordance with test log	<input checked="" type="checkbox"/>
Hydraulic fluid reservoir level	<input type="radio"/>
Check hydraulic hoses for damage and leaks	<input type="radio"/>
Threaded connections and bolt fasteners	
Engine mount	<input type="radio"/>
Cardan shafts	<input type="radio"/>
Transfer case	<input type="radio"/>
Hydraulic pumps and motors	<input type="radio"/>
Axles	<input type="radio"/>
Brake callipers	<input type="radio"/>

Service Check List

Customer:		Machine type:	
Day of inspection:		Chassis number:	
Operating hours:		Name of mechanic:	

Tick off the task that has been completed:

Inspection <input type="radio"/>	Exchange <input checked="" type="radio"/>	Set <input checked="" type="checkbox"/>
----------------------------------	---	---

Engine	M30 or annually	M40 or every 2 years
Engine oil	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Engine oil filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Fuel filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Air filter system	<input type="radio"/>	<input checked="" type="radio"/>
V-belt	<input type="radio"/>	<input type="radio"/>
Suction line	<input type="radio"/>	<input type="radio"/>
Oil cooler, radiator, anti-freeze	<input type="radio"/>	<input type="radio"/>
Speed according to test log		<input checked="" type="checkbox"/>
Read out ECU engine faults	<input type="radio"/>	<input type="radio"/>
Electrical system		
Functional test	<input type="radio"/>	<input type="radio"/>
Braking system, inching system		
Functional test	<input type="radio"/>	<input type="radio"/>
Brake fluid	<input type="radio"/>	<input type="radio"/>
Axles, transfer box, reduction gear		
Planetary, centre gearbox oil level	<input type="radio"/>	<input checked="" type="radio"/>
Transfer box, reduction gear oil level	<input type="radio"/>	<input checked="" type="radio"/>
Hydrostatic drive train		
Filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Pressures in accordance with test log		<input checked="" type="checkbox"/>
Read out ECU drive train faults	<input type="radio"/>	<input type="radio"/>
Operating and steering hydraulics		
Filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Pressures in accordance with test log		<input checked="" type="checkbox"/>
Hydraulic fluid reservoir level	<input type="radio"/>	<input type="radio"/>
Check hydraulic hoses for damage and leaks	<input type="radio"/>	<input type="radio"/>
Threaded connections and bolt fasteners		
Engine mount	<input type="radio"/>	<input type="radio"/>
Cardan shafts	<input type="radio"/>	<input type="radio"/>
Transfer case	<input type="radio"/>	<input type="radio"/>
Hydraulic pumps and motors	<input type="radio"/>	<input type="radio"/>
Axles	<input type="radio"/>	<input type="radio"/>
Brake callipers	<input type="radio"/>	<input type="radio"/>

Scratches	Dent	Damage to paintwork	Stone chipping
X	○	■	▲

[illegible]

Place, date	Signature

Next service due on: _____

Service Check List

Customer:		Machine type:	
Day of inspection:		Chassis number:	
Operating hours:		Name of mechanic:	

Tick off the task that has been completed:

Inspection <input type="radio"/>	Exchange <input checked="" type="radio"/>	Set <input checked="" type="checkbox"/>
----------------------------------	---	---

Engine	M30 or annually	M40 or every 2 years
Engine oil	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Engine oil filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Fuel filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Air filter system	<input type="radio"/>	<input checked="" type="radio"/>
V-belt	<input type="radio"/>	<input type="radio"/>
Suction line	<input type="radio"/>	<input type="radio"/>
Oil cooler, radiator, anti-freeze	<input type="radio"/>	<input type="radio"/>
Speed according to test log		<input checked="" type="checkbox"/>
Read out ECU engine faults	<input type="radio"/>	<input type="radio"/>
Electrical system		
Functional test	<input type="radio"/>	<input type="radio"/>
Braking system, inching system		
Functional test	<input type="radio"/>	<input type="radio"/>
Brake fluid	<input type="radio"/>	<input type="radio"/>
Axles, transfer box, reduction gear		
Planetary, centre gearbox oil level	<input type="radio"/>	<input checked="" type="radio"/>
Transfer box, reduction gear oil level	<input type="radio"/>	<input checked="" type="radio"/>
Hydrostatic drive train		
Filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Pressures in accordance with test log		<input checked="" type="checkbox"/>
Read out ECU drive train faults	<input type="radio"/>	<input type="radio"/>
Operating and steering hydraulics		
Filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Pressures in accordance with test log		<input checked="" type="checkbox"/>
Hydraulic fluid reservoir level	<input type="radio"/>	<input type="radio"/>
Check hydraulic hoses for damage and leaks	<input type="radio"/>	<input type="radio"/>
Threaded connections and bolt fasteners		
Engine mount	<input type="radio"/>	<input type="radio"/>
Cardan shafts	<input type="radio"/>	<input type="radio"/>
Transfer case	<input type="radio"/>	<input type="radio"/>
Hydraulic pumps and motors	<input type="radio"/>	<input type="radio"/>
Axles	<input type="radio"/>	<input type="radio"/>
Brake callipers	<input type="radio"/>	<input type="radio"/>

Scratches	Dent	Damage to paintwork	Stone chipping
X	○	■	▲

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<div style="border-bottom: 1px solid black; height: 35px; margin-bottom: 5px;"></div>	<div style="border-bottom: 1px solid black; height: 35px; margin-bottom: 5px;"></div>
Place, date	Signature

Next service due on: _____

Service Check List

Customer:		Machine type:	
Day of inspection:		Chassis number:	
Operating hours:		Name of mechanic:	

Tick off the task that has been completed:

Inspection <input type="radio"/>	Exchange <input checked="" type="radio"/>	Set <input checked="" type="checkbox"/>
----------------------------------	---	---

Engine	M30 or annually	M40 or every 2 years
Engine oil	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Engine oil filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Fuel filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Air filter system	<input type="radio"/>	<input checked="" type="radio"/>
V-belt	<input type="radio"/>	<input type="radio"/>
Suction line	<input type="radio"/>	<input type="radio"/>
Oil cooler, radiator, anti-freeze	<input type="radio"/>	<input type="radio"/>
Speed according to test log		<input checked="" type="checkbox"/>
Read out ECU engine faults	<input type="radio"/>	<input type="radio"/>
Electrical system		
Functional test	<input type="radio"/>	<input type="radio"/>
Braking system, inching system		
Functional test	<input type="radio"/>	<input type="radio"/>
Brake fluid	<input type="radio"/>	<input type="radio"/>
Axles, transfer box, reduction gear		
Planetary, centre gearbox oil level	<input type="radio"/>	<input checked="" type="radio"/>
Transfer box, reduction gear oil level	<input type="radio"/>	<input checked="" type="radio"/>
Hydrostatic drive train		
Filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Pressures in accordance with test log		<input checked="" type="checkbox"/>
Read out ECU drive train faults	<input type="radio"/>	<input type="radio"/>
Operating and steering hydraulics		
Filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Pressures in accordance with test log		<input checked="" type="checkbox"/>
Hydraulic fluid reservoir level	<input type="radio"/>	<input type="radio"/>
Check hydraulic hoses for damage and leaks	<input type="radio"/>	<input type="radio"/>
Threaded connections and bolt fasteners		
Engine mount	<input type="radio"/>	<input type="radio"/>
Cardan shafts	<input type="radio"/>	<input type="radio"/>
Transfer case	<input type="radio"/>	<input type="radio"/>
Hydraulic pumps and motors	<input type="radio"/>	<input type="radio"/>
Axles	<input type="radio"/>	<input type="radio"/>
Brake callipers	<input type="radio"/>	<input type="radio"/>

Scratches	Dent	Damage to paintwork	Stone chipping
X	○	■	▲

[illegible]

Place, date	Signature

Next service due on: _____

Service Check List

Customer:		Machine type:	
Day of inspection:		Chassis number:	
Operating hours:		Name of mechanic:	

Tick off the task that has been completed:

Inspection <input type="radio"/>	Exchange <input checked="" type="radio"/>	Set <input checked="" type="checkbox"/>
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Engine	M30 or annually	M40 or every 2 years
Engine oil	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Engine oil filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Fuel filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Air filter system	<input type="radio"/>	<input checked="" type="radio"/>
V-belt	<input type="radio"/>	<input type="radio"/>
Suction line	<input type="radio"/>	<input type="radio"/>
Oil cooler, radiator, anti-freeze	<input type="radio"/>	<input type="radio"/>
Speed according to test log		<input checked="" type="checkbox"/>
Read out ECU engine faults	<input type="radio"/>	<input type="radio"/>
Electrical system		
Functional test	<input type="radio"/>	<input type="radio"/>
Braking system, inching system		
Functional test	<input type="radio"/>	<input type="radio"/>
Brake fluid	<input type="radio"/>	<input type="radio"/>
Axles, transfer box, reduction gear		
Planetary, centre gearbox oil level	<input type="radio"/>	<input checked="" type="radio"/>
Transfer box, reduction gear oil level	<input type="radio"/>	<input checked="" type="radio"/>
Hydrostatic drive train		
Filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Pressures in accordance with test log		<input checked="" type="checkbox"/>
Read out ECU drive train faults	<input type="radio"/>	<input type="radio"/>
Operating and steering hydraulics		
Filter	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Pressures in accordance with test log		<input checked="" type="checkbox"/>
Hydraulic fluid reservoir level	<input type="radio"/>	<input type="radio"/>
Check hydraulic hoses for damage and leaks	<input type="radio"/>	<input type="radio"/>
Threaded connections and bolt fasteners		
Engine mount	<input type="radio"/>	<input type="radio"/>
Cardan shafts	<input type="radio"/>	<input type="radio"/>
Transfer case	<input type="radio"/>	<input type="radio"/>
Hydraulic pumps and motors	<input type="radio"/>	<input type="radio"/>
Axles	<input type="radio"/>	<input type="radio"/>
Brake callipers	<input type="radio"/>	<input type="radio"/>

Scratches	Dent	Damage to paintwork	Stone chipping
X	○	■	▲

[illegible]

Place, date	Signature

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[illegible]

Place, date	Signature

Next service due on: _____



MECALAC Baumaschinen GmbH

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D-24782 Büdelsdorf

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Fax: +49 (0)4331 351 491

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