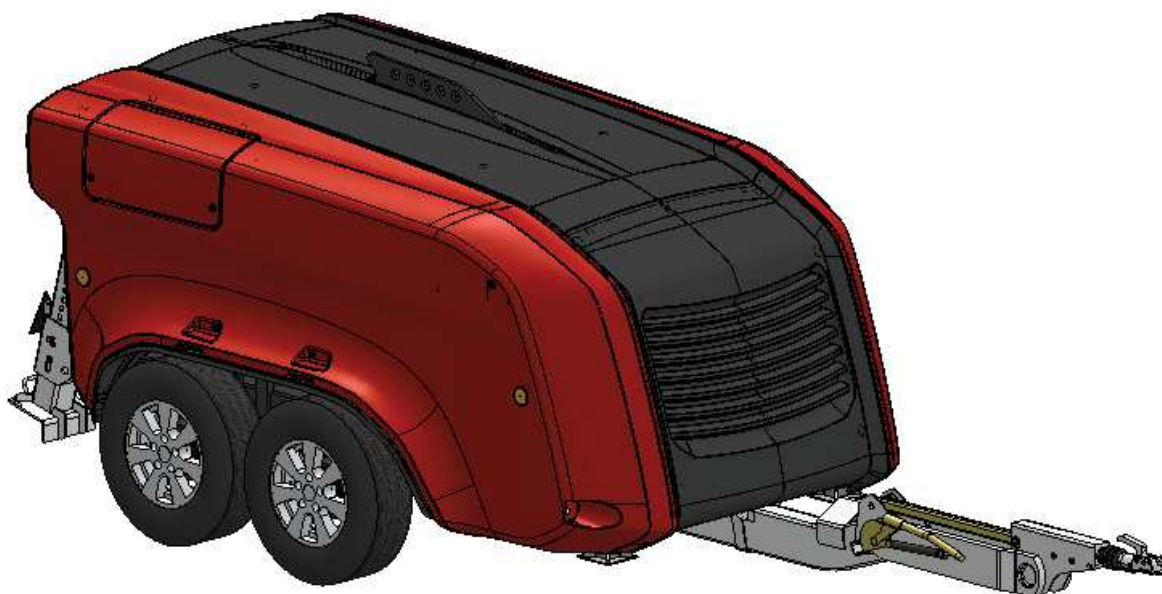




Operating instructions

Spare parts list



RW 50.10



Originalbetriebsanleitung

Bagela Baumaschinen GmbH & Co. KG

Gottlieb-Daimler Str. 5
24568 Kaltenkirchen/GERMANY
Telefon: +49 (0) 41 91 99 33-0
Telefax: +49 (0) 41 91 99 33 99
E-Mail: info@bagela.de
Internet: www.bagela.de



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1 Safety Precautions for pipe renewal and cable winches

1. Do not attempt the winch unless you are sufficiently familiar with the machine and its function.
2. Read the manufacturer's operating instruction carefully.
3. The winch should only be used with all safety devices in place.
4. Before operation, make sure all operating controls function properly and all safety devices are effective.
5. If the safety devices are ineffective or if any other faults are found that may impair safe operation, inform your supervisor immediately.
6. If any faults are found which may impair operation safety, stop using the winch immediately.
7. Bagela capstan winches are constructed for horizontal pulls only. Other application of the machine must be certificated by the winch manufacturer.
8. Make sure that nobody loiters near appliance which is connected with the rope under tension.
9. Excavation pits should be barred off properly and must not be entered during pulling.
10. Put up the winch in such a way that it does not interfere with normal traffic. If necessary, put up barriers, signs and warning lights.
11. Do not leave the machine unless you have switched off the engine and secured the winch against accidental movement and unauthorised start-up.
12. Carry out maintenance and repair works only with the winch out of operation, unless operation is necessary for special maintenance or adjustment jobs.
13. After any maintenance or repair jobs make sure the safety devices are refitted.
14. At least once a year the winch should be inspected for good function by a qualified specialist.

OPERATION MANUAL

(Short version)

Setting up the winch

- If possible, keep the winch coupled to the towing vehicle
- Apply the parking brake
- Pull out the rear props, press them firmly into the ground and secure them in that position

Starting the engine

- Shut down the line-speed control
- Start the engine as described in engine manufacturers manual

Winching out (payout)

- Set line speed selector to maximum speed
- Press button „OUT“
- Set pulling force selecting lever to medium pulling force (only for RW)
- Set line-speed control to maximum
 - The rope pays out as long it is being pulled
 - Rope pay- out stops when no longer being pulled or when the „STOP“ button is pressed.

Winching in

- Shut down the line-speed control
- Set line speed selector to the required pulling force
- Set pulling force selecting lever to required pulling force (only for RW)
- Press button „IN“
- Increase the line-speed control slowly – the rope pulls in

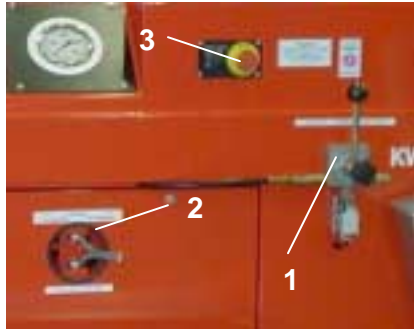
10 to	Pulling Force kN	Speed
Stage 0	0-12,5	Max. Speed
Stage 1	0-25	1/2 Speed
Stage 2	0-50	1/4 Speed
Stage 3	0-100	1/8 Speed



- When operating the winch, the remote control or dummy plug must always be connected to the appropriate socket to ensure the failsafe function of the hydraulic system.
- When the winching process has been finished and the engine is stopped close the line speed control completely!
This ensures in case of a restart of the engine that the rope thimble will not be pulled into the swivel pulley if the „winching in“ function has not been stopped or if the „IN“ button has been pressed before start of the engine.

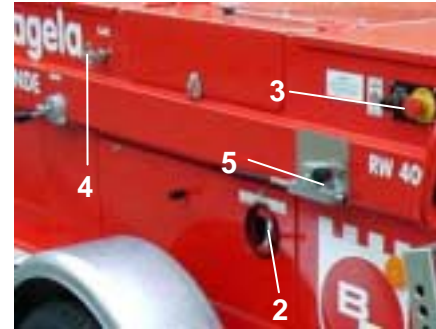
3 General description

KW



- 1 winching lever
- 2 stage selection lever
- 3 emergency stop

RW/RKW



- 1 line speed throttle
- 2 stage selection lever
- 3 line pull pre- selection lever
- 4 emergency stop

Bagela capstan winches are manufactured in two different types: KW and RW

The main difference is the handling of both.

The KW is operated via the winching lever 1. Line speed, pulling force, winching in or out are controlled with this lever. On a RW the functions pulling in or out are switched on either with buttons or with a lever of a manual control valve, the line speed is controlled with the hand wheel 4. The required pulling force must be pre- selected on the lever 5

Both types of winches are fitted with the stage selection lever 2 and emergency-stop 3

Types

KW..02 Series



Cable- or pipe renewal winch of the ..02 series
In compact design

RW..02 Series



KW 2-5



Cable- or pipe renewal winch for pulling forces 20-50 kN

RW 2-5



Types

KW10 / KW 5010



Cable- or pipe renewal winches with a pulling force up to 100 kN

RW 10



RW 20



Pipe renewal winches with pulling forces from 200kN up to 400 kN

RW 40



The winch is mounted, depending on the type, on a sturdy single or double axle (tandem) trailer with rubber suspension, rigid or height-adjustable towing bar, overrun and automatic reversing brake.

All winches may be delivered without trailer as a type to mount it onto a wide range of vehicles.

All steel parts are primed and finished.

The frame mounted winch is fully protected by steel-sheet sides and top. After being secured against movement it is ready for immediate use. Several types of BAGELA winches are internally lined with sound-proofing material which reduces operating noise to a minimum.

4 Winch construction

4.1 The main components of the winch

4.1.1 Capstan assembly



The capstans are of equal diameter and each single driven by a hydraulic motor. These capstans generate the entire pull on the load, the rope being moved in grooves of the capstans. The capstans are made of low-wear, case-hardened steel and run on ball or self-aligning roller bears.

4.1.2 Rope storage drum



Irrespective of the line pull exerted, the rope is wound with moderate take-up tension onto the rope storage drum which is driven by a separate hydraulic motor. The rope is neatly stacked on the drum by an automatic spooling mechanism. The take-up tension is about 3% of the line pull, which prevents undue chafing of the rope on the drum.

4.1.3 Hydraulic power pack and drive



The hydraulic power is generated by an axial piston pump which is driven by an IC engine or electric motor. The hydraulic flow of the pump determines the line's speed which is infinitely variable by a throttle valve with hand wheel or an electronically activated proportional control valve. All BAGELA cable laying winches of type KW are controlled by a winching lever.

4.1.4 Selector for speed ranges



All BAGELA winches are equipped with a selector for two speed ranges, with which the line speed required for the job in hand may be pre-selected. In both speed ranges the line speed can be varied from zero to maximal, although in the second speed range the winch will develop only half its rated line pull.

4.2 Function of the hydraulic system

4.2.1 Cable laying winches

The pulling direction, winching-in or winching-out is controlled by a winching lever which will be swung either to the left or to the right side. As more the lever will be swung out, as higher increases the hydraulic oil flow from the pump which determines the line speed. The pressure in this closed hydraulic circuit is controlled automatically depended on the load to be pulled.

In order that the engine power determines the winch performance, the operator should set the winching lever in such a position to keep a balanced ratio that pulling force bears to line speed.

4.2.2 Pipe renewal winches with „automatic hold-on” system

For pulling out the rope the pump needs to generate a minimum oil flow in the system, for which the line pull pre-selector has to be set to about half of the maximum line pull. When, in process of pulling the load, the pre-selected line pull is reached, the pump will automatically reduce the oil flow to a minimum rate, just enough to make up the internal leakage in the various hydraulic components. While doing so, the pre-selected line pull on the rope is maintained. As soon as the pull resistance slackens or when the pre-selector is set to a higher line pull, the pump will increase the oil flow accordingly, and the rope will start pulling again gently and without jerks.

5 Operation of the winch

In general, operating the winch should not pose any problems, but the potential operator is advised to familiarise himself with the various functions of the winch before starting his job in order to avoid any trouble during the pulling process.

5.1 Setting up the winch



If possible, keep the winch coupled to the towing vehicle. To avoid lateral movement or lifting of the tow bar during operation, the winch must be secured with ropes, chains or lashing straps at the anchor points of the winch.

- Apply the parking brake of both, towing vehicle and winch.
- Pull out the rear props, press them firmly into the ground and secure them in that position (see figure below).
- Turn down the jack at the towing bar.

5.2 Propping up the winch

Anchoring winches of type **..02** and **W 3000**

Winches of both types are fitted with two crotches.

For anchoring open the tommy screw, pull off the securing bolt and lower the crotch. Lower the front jack until a bore of the crotch meets a bore of the bracket.

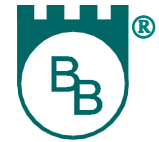
Insert the securing bolt and turn up the front jack until the winch is properly anchored.



tommy screw



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Anchoring winches of type 2-5

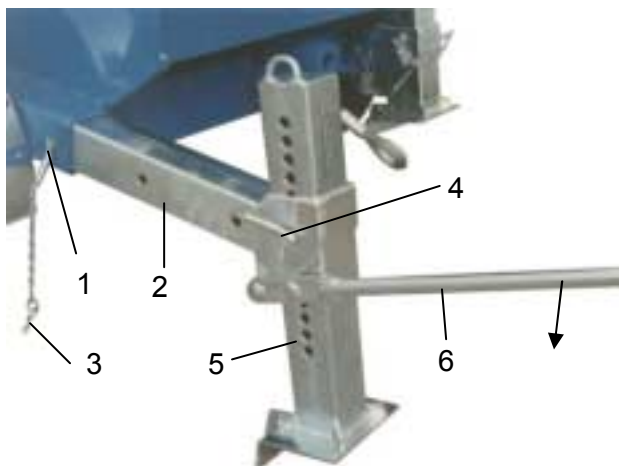
Winches of type 2-5 are fitted with prop legs which are placed in horizontal beams and can be pulled out of the chassis. The horizontal beams will be secured on the chassis with the appropriate bolts.

For anchoring the winch pull out the beams to the required length and lower the prop legs.

Push the prop legs down to the ground with the spanner.

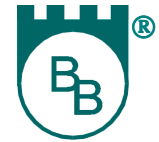


Tensioning of the rear prop legs with the wrench



- remove fixing pin (1)
- pull out horizontal propping beam (2) as far as required
- re-insert fixing pin (1) when bores are in line and secure (3) in place
- remove fixing pin (4) of prop (5) holding it to prevent it from falling
- let prop (5) slip down to ground
- insert jacking-up wrench (6) with its front pin into the pivoting bore and its second pin into the upper prop bore
- press wrench (6) down until fixing pin (4) fits into next upper bore
- insert fixing pin (4) and remove jacking-up wrench, repeat jacking-up procedure as required
- secure fixing pin (4) in place

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Anchoring winches of type **5010 / 10** and **20**

Winches of that type are fitted with additional front prop legs which must be set up first.

Pull out the bolt and lower the leg. Turn the front jack down until the bolt fits through a bore of the leg. Turn up the jack until the prop legs are tensioned.

Set up the rear prop legs as described on page 9.



Caution:

When setting up the winch make sure that it cannot move during pulling process.



If the winch cannot be set up against rigid parts (kerbstone etc.) on soft ground it could be required to mount steel supports into the ground on which the winch can be anchored safely.

As higher the pulling force of the winch than more carefully the winch must be anchored.



Never connect parts of the overrun brake, towing bar or axles with chains or ropes to rigid parts as buildings, trees etc.! The components of the overrun brake and chassis are not designed to resist the pulling forces of the winch.

Otherwise parts of the overrun brake could be damaged or destroyed completely.

5.3 Before starting the winch

Check the contents of the fuel tank and, if necessary fill with petrol or diesel fuel as required.

Check the motor oil and hydraulic oil levels and top up if necessary (for the type of oil to be used see Technical Specification)

Put the winching lever to neutral position (0) (cable laying winch type KW)

Turn the hand wheel of line speed control to „0“ or on proportionally controlled winches turn control to „0“

Make sure that the remote control or dummy plug is connected to the winch!

NOTE:



Make sure that the control panel and all controls are unobstructed and freely accessible!

Check whether the rope is properly bedded in all pulley grooves, in particular the tail pulley.

5.4 Starting the engine

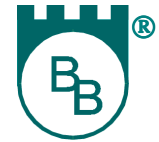
Observe the engine manufacturers instruction



For starting some types of diesel engine it is important to observe the heating period of the glow plugs! Do not start the engine before the control lamp is off. Otherwise too long starts may fail the electric starter.



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5.5 Rope pay-out

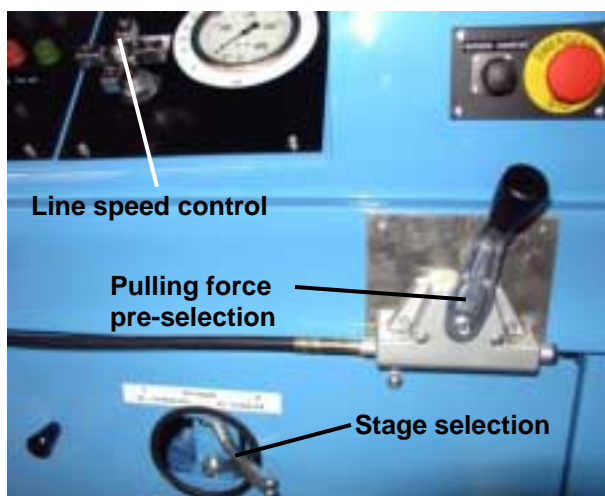
5.5.1 Rope pay-out on a cable laying winch (KW)



Set the engine speed to maximum. Set the stage selection lever to “stage 2”. Pull the winching lever into position “pull out”. Pull out the rope.

The rope pays out as long as it is pulled, but stops when no longer pulled or when the winching lever is set to neutral.

5.5.2 Rope pay-out on a pipe renewal winch (RW)



Set the engine speed to maximum. Set the stage selection lever to “stage 2”.

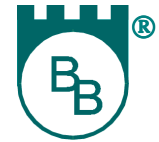
Set the pulling force selection lever into a medium range. Open the line speed throttle completely (anticlockwise).

Push the button „pulling out“.

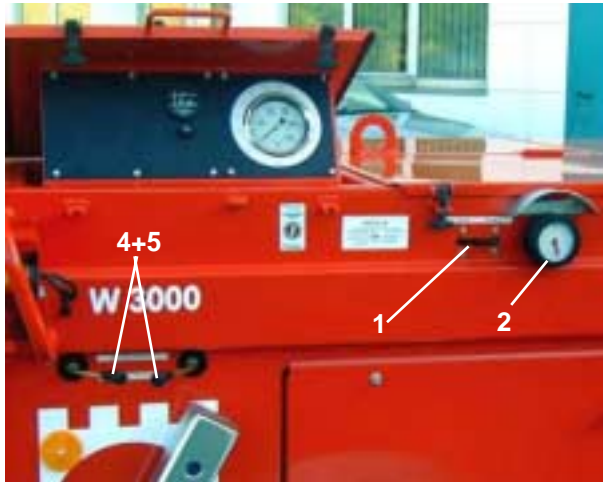


The rope pays out as long as it is pulled, but stops when no longer pulled or when the “stop” button has been pressed.

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5.5.3 Rope pay-out on winches of type W 2000/3000



Turn the pulling force pre-selection hand wheel **2** into a medium range
Set stage selection lever to „stage2“.

Push up both winching levers **4+5** to “pulling-out” position

Set engine speed lever **1** to maximum

The rope pays out as long as it is pulled, but stops when no longer pulled or when the winching levers are set to “stop”

CAUTION!



- Take care that a new winch or a winch fitted with a new wire rope does not pay-out the rope automatically although there is no pull on the rope. Otherwise the winch hydraulic must be readjusted to make sure that the rope will not shape loops which may cause damages to it.
- Stop pulling out any more rope when the red-painted length appears, which indicates that no more than one layer of rope is left the drum.
- After the required length has been pulled out, put the winching lever back to neutral position or press the “stop” button. Turn the hand wheel to “0” (RW and RKW).

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5.6 Pulling in

5.6.1 Pulling in with a cable laying winch (KW)



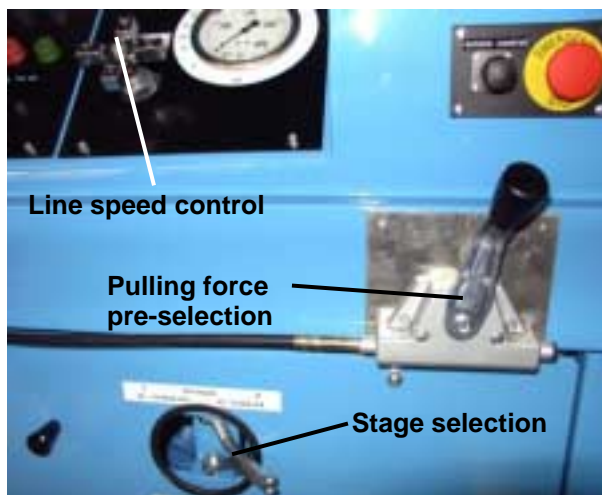
Set the stage selection lever to “stage1” or “stage 2”

Push the winching lever slowly to position “pulling in”.

As lower the needed pulling force is than more the winching lever may be turned down to increase the pulling speed.

As higher the needed pulling force is than slower the pulling speed must be controlled with the winching lever

5.6.2 Pulling in with a pipe renewal winch (RW)



Set the stage selection lever to “stage1” or “stage 2”

Close the line speed throttle (clockwise).

Set the pulling force selection lever to a range of the required pulling force.

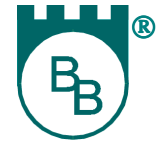
Push the button “pulling in”.

Open the throttle slowly. (anticlockwise)

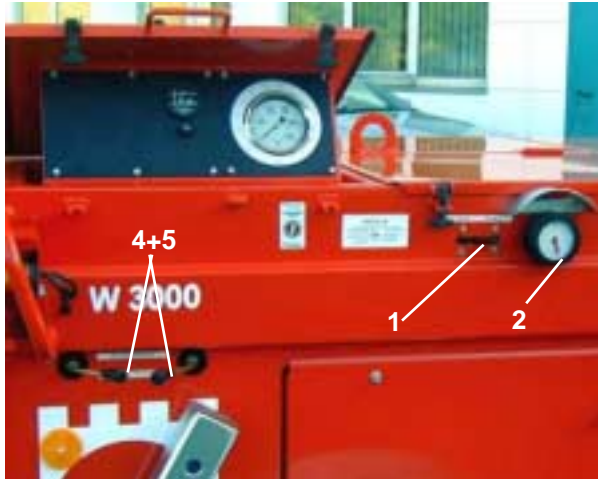


The line speed throttle must be controlled according to the actual pulling force. As higher the pulling force is than more the line speed must be decreased.

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5.6.3 Pulling in with winches of type W2000/3000



Set the stage selection lever to “stage1” or “stage 2”

Turn the pulling force pre-selection hand wheel **2** to required pulling force

Push the winching lever (4 or 5) down into position “pulling in”

Set engine speed 1 slowly to maximum.

Rope is pulled in.

lever 4 = low speed

lever 5 = medium speed

lever 4+5 = high speed

CAUTION!



- Switch the pulling force pre-selection lever only without any load to the rope! Turn the lever fully into final position.
- Never pull the thimble at the end of the rope into the tail pulley of the winch

Remote control



1



2

All winches except of type W 3000 may be stopped via a remote stop cable **1**.

Winches of type RW may also controlled with a remote control with buttons for “stop” - “pulling in” - “pulling out” **2**

When the winch has been stopped with the remote control or with the emergency stop button or if the winch has been tripped off from the electronic printer, the winching lever of a cable laying winch must be set into “zero” position to a restart pulling process.

To restart a pipe renewal winch the line speed throttle should be closed first before the “pulling in” button is pressed.



3

The socket from the remote control is cloth to the emergency stop button. If the remote control is not used a “dummy plug” must be connected to the socket to close the electric circuit.

CAUTION :



- During pulling reduce the engine speed to a level where a good balance is kept between line speed and required line pull. This will save fuel and will further reduce the noise level of the sound-proofed winch. Where only low line pull and low line speed are required, the engine will do quite well in the lower to medium speed range.

- The line pull is indicated on the hydraulic oil pressure gauge or on the electronic printer, if fitted.



The scale of the metal ring around the pressure gauge dial is calibrated for the speed range 1. When working in speed range 2, the indicated values is only half as shown on the scale.

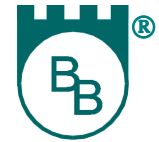
- The electronic printer records the pulling forces, length of rope which has been pulled and the line-speed during operation. A record may be printed out as a bar diagram.
- Some printers are fitted with a switch-off contact which stops winching immediately as soon the pre-selected pulling force has been exceeded. (For detailed information see manual of the printer).

CAUTION :



- The exact value of pulling force is indicated at the printer only.
- There may be a discrepancy between the indicated pulling force on the pressure gauge and the printer and depends on increasing temperature of the oil during operation.
- The pre-selected line pull should be regarded as a guiding value only for basic setting.

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5.7 Stopping winch operation

At the end of winching, push the winching lever to neutral (or press the “0” button). Turn line speed control hand wheel (or electronic control) to zero in order to avoid the thimble being inadvertently pulled into the tail pulley upon a restart (pipe renewal winches RW/RKW only). Set the engine speed to zero and switch off the ignition key.

5.8 Operation with the deflection boom



For some underground pipe renewal jobs a deflection boom will be required. Such a boom may order as an extra accessory. The working depth of the boom is variable in several steps.

Connect the deflection boom to the tail pulley **1** of the winch and secure it with the appropriate spring pin.

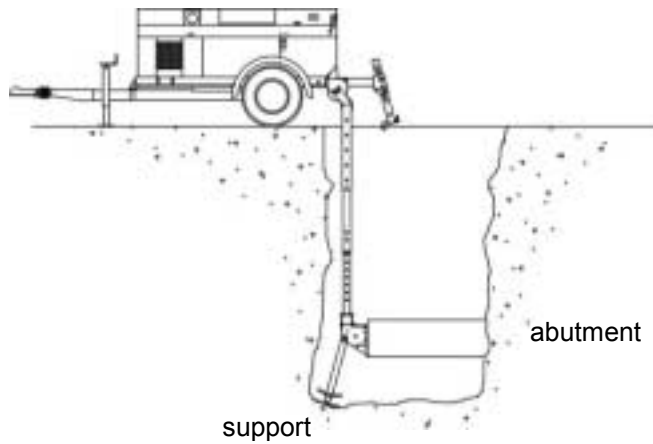


Extend it to the required working depth and secure it in that position with the both appropriate clamps **2**.

The deflection boom bottom should be secured against lateral movement. The thrust plate of the boom must bear at the end of the main or an abutment plate fitted to the main.

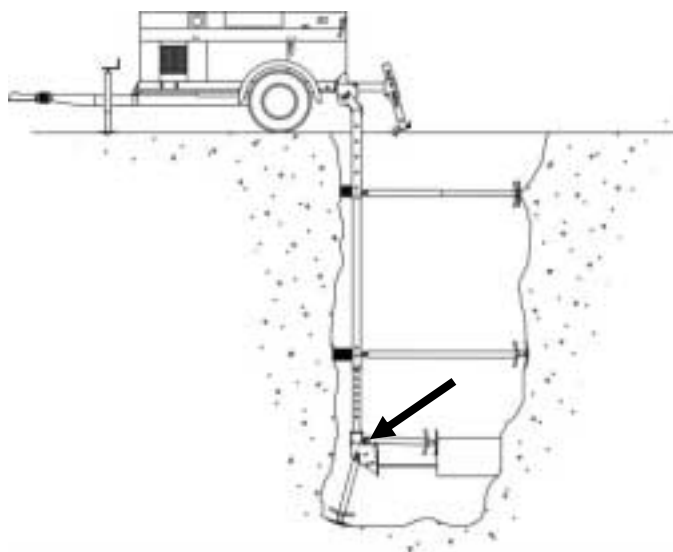
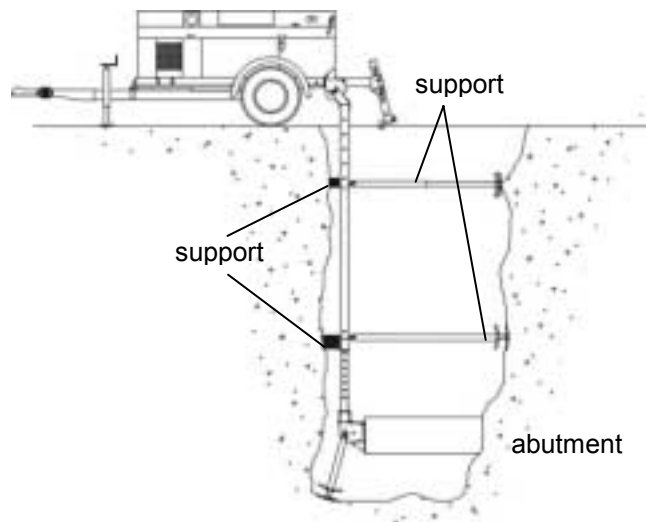
Break off the ends of the main as squarely as possible to give maximum bearing area for the thrust plate. Long jagged projections will brake off under load and may cause the boom to jerk.

Bagela[®] Capstan winch



During renewal jobs using deflection booms up to 2.50 m operation length there is need of additional supports. They just have to be supported at the bottom of the manhole.

Deflection booms of more than 2,50 m length have to be supported laterally at the manhole walls so that buckling stress is reduced



ATTENTION:

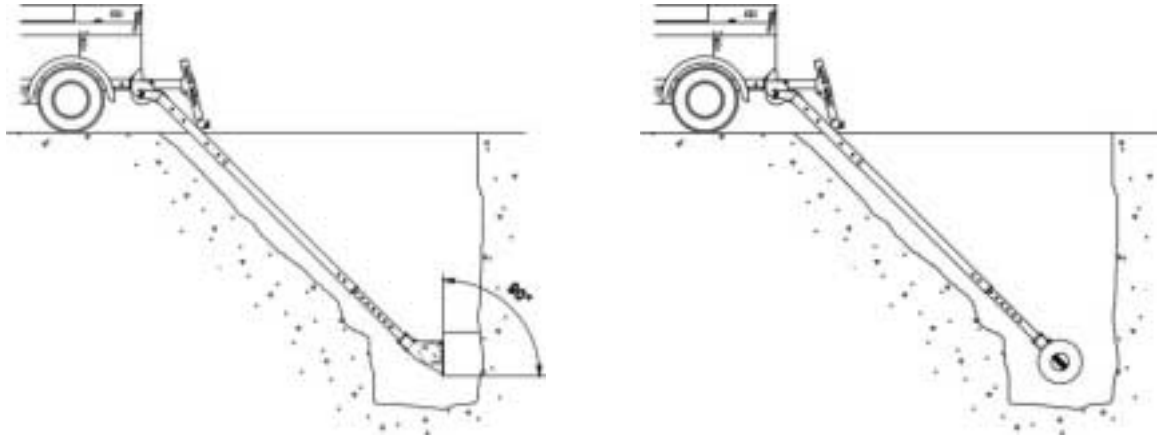


Never pull without abutment, risk of fracture!

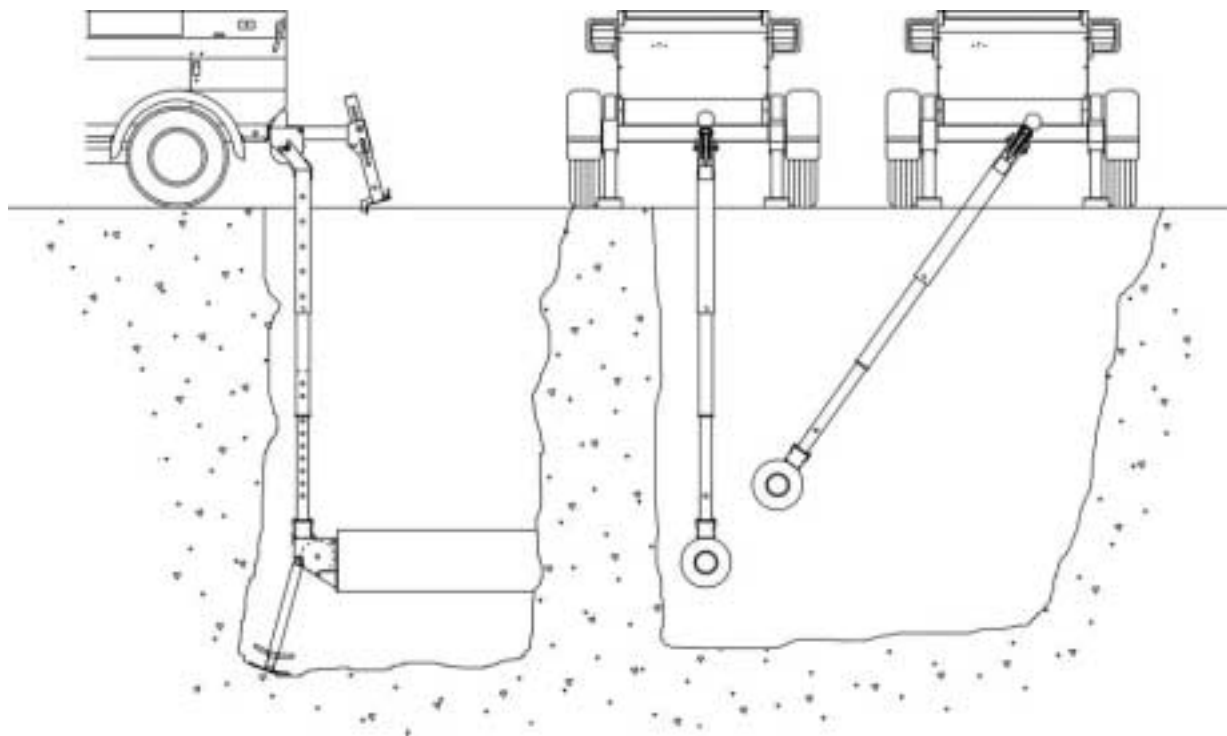
Bagela[®] Capstan winch



Possible applications of the deflection boom



The end of the mains should be roughly at the right angle to the axis of the main.

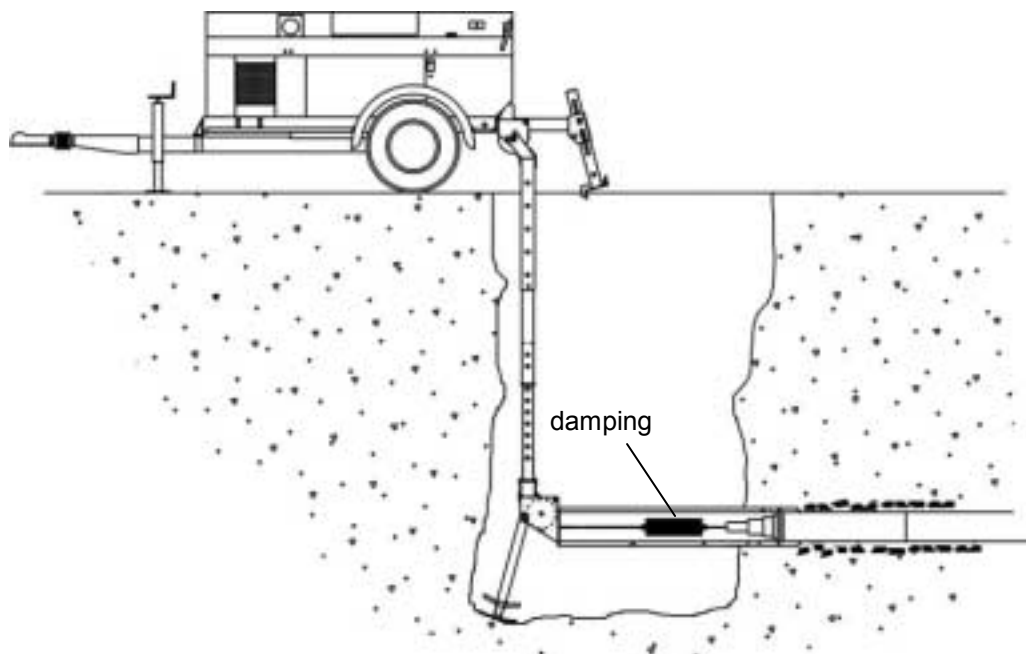
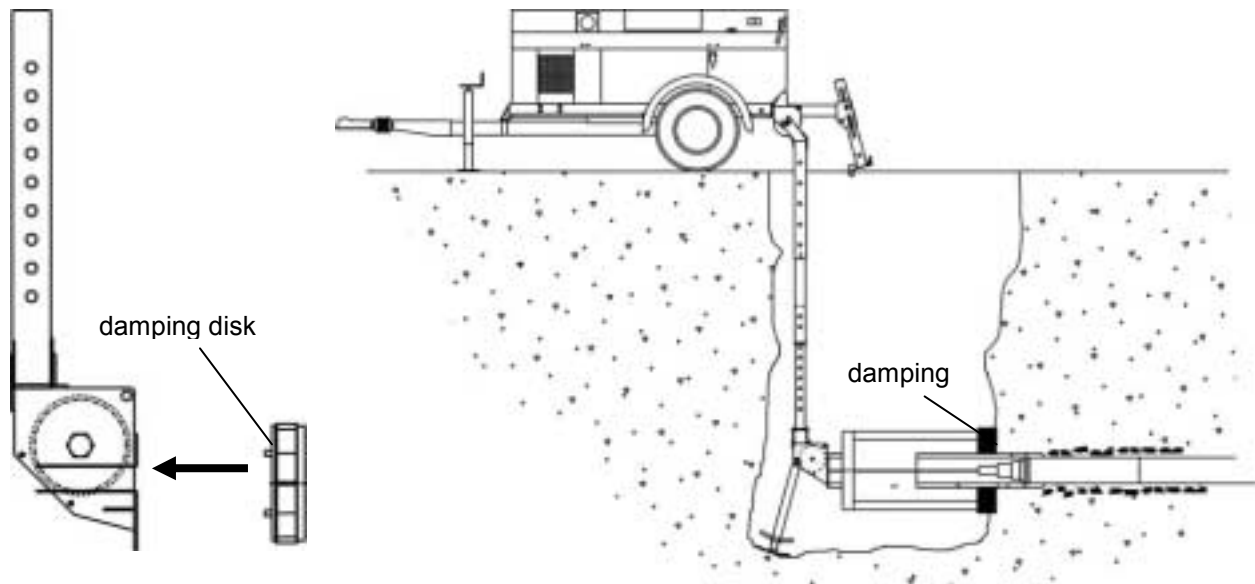


Bagela[®] Capstan winch



Attention!

During pipe-cracking jobs never work without damping device



5.9 Parking the winch

On level ground simply apply the parking brake of the winch before uncoupling it from the towing vehicle.

In down-hill position apply the parking brake of the winch and put the chocks (held on the side of the winch) in front of both wheels.

In up-hill position allow the towing vehicle to roll back far enough to let the brake system engage into reverse mode, apply parking brake and put the chocks behind both wheels.

5.10 Lifting the winch

For lifting the winch by crane, use the two lifting eyes on top of the winch. Use a lifting beam to ensure that the lifting eyes are stressed only vertically.



correct



incorrect

6 Towing the winch

It is the user's responsibility to ensure that the trailer-mounted winch, its running gear, rear lights, tow bar and coupling as well as all electrical connections meet the statutory regulations of the country in which the winch is to operate.

The standard design of BAGELA winches meets the German Road Traffic Regulations and the relevant EU Regulations.

However, upon the user's request the carriage, lighting and brakes will be designed to meet local regulations. Winches which are ordered without lighting and overrun brakes are not permitted to be towed on public roads.

Bagela[®] Capstan winch



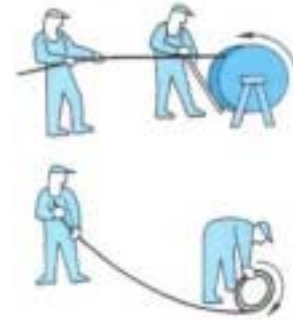
7 Rope handling

Incorrect uncoiling/unreeling of wire ropes will cause stresses in the lay of the rope and may eventually affect its structure. Moreover, kinks may develop which will make rope handling more difficult.

incorrect



correct

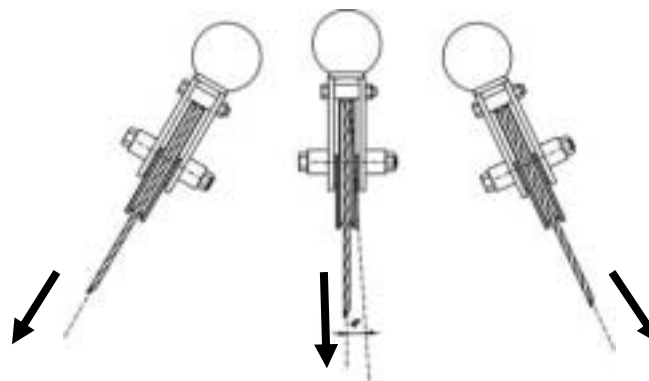


Do not pull the rope over fixed objects or edges to prevent the strands from untwisting

incorrect

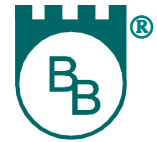


Always adjust rope pulleys in line with the pulling direction!



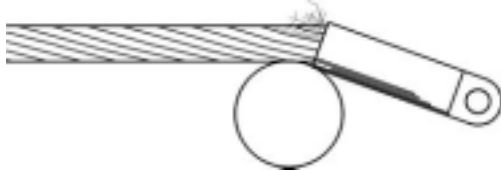
Max. deflection angle 4°!

Bagela[®] Capstan winch

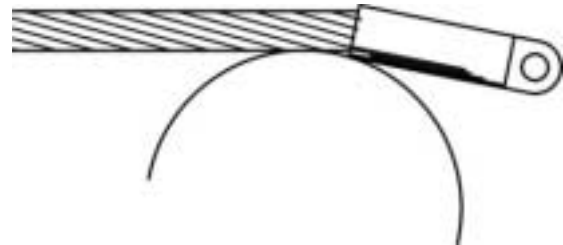


Do not pull rope clamps over sharp angles or narrow bends to avoid tearing rope strands out of the pressing.

incorrect



incorrect

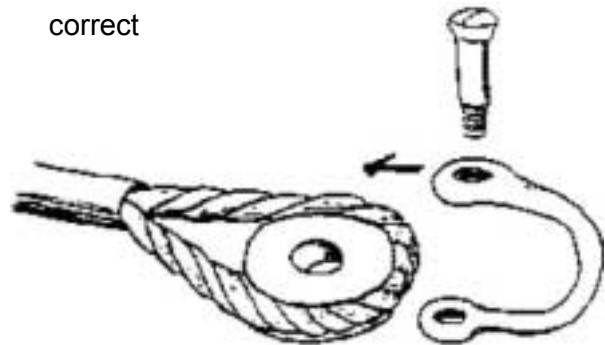


Rope loops should be laid around circular fittings to prevent sharp bending and eventually breakage of the single wire strands.

incorrect

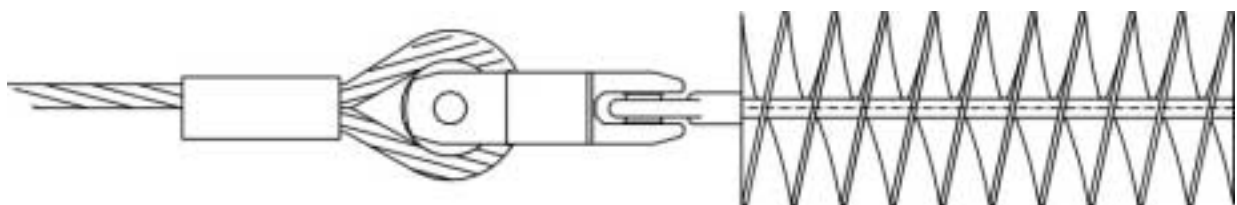


correct



Rotating tools (such as duct brushes and the like) should be connected with a swivel joint in between. Make sure that the rotating tool connected (via swivel joint) tends to twist the rope tighter, i.e. that the direction of the rotation corresponds to the lay of the pulling rope!

correct

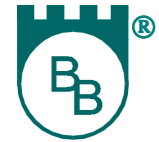


right-laid winded rope

swivel joint

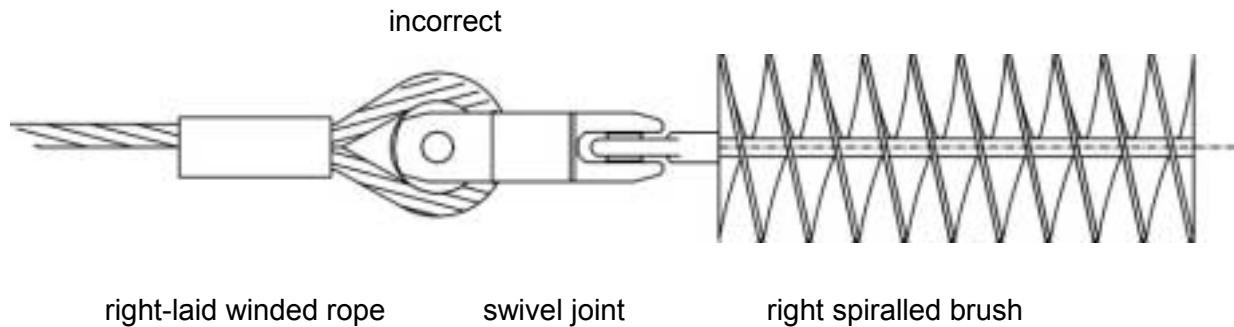
left-spiralled brush

Bagela[®] Capstan winch



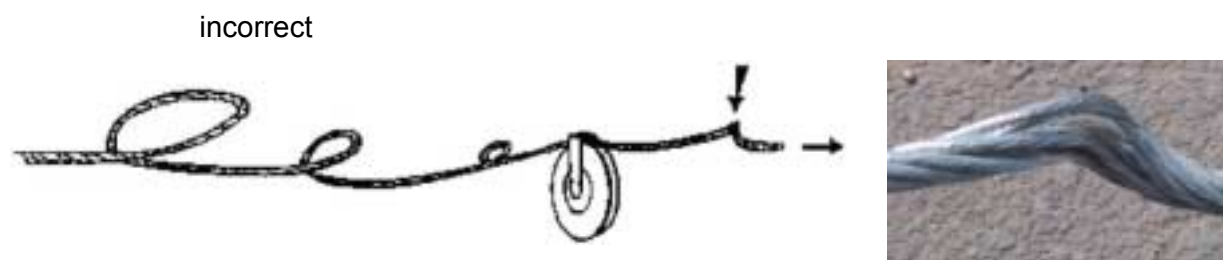
A rotation of the tool against the direction of the lay of the pulling rope will tend to untwist the rope strands in spite of the swivel joint and thus impair the tensile strength of the rope.

Attention: Breaking!



To make sure that no rotation will be caused from the rope, a non-rotating rope should be used.

However, every rotating tool will tend to transmit a slight twist to the rope, even with the use of a good swivel joint and a tool whose rotation corresponds to the lay of the rope strands. Hence, the rope may develop small loops which should be untwisted by hand before the rope is pulled in, but shrink into kinks which, when passing forcibly through narrow passages (guiding pulley etc.), may damage the rope badly.



Pull out the rope only at its end, if possible use an anti-twist swivel. Lay down the rope on the ground always flat in-line.

Never allow the rope to lay down in loops! Otherwise loops could be pulled into the winch and damage the rope!

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Always adjust pulleys in line with the direction of pull. Max. deflection angle 4°



The diameter of external pulleys should not be smaller than the tail pulley of the winch!



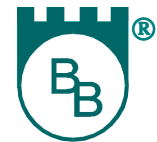
incorrect



incorrect

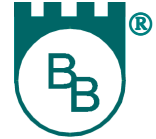
8 Trouble shooting

Trouble observed	Possible cause	Correction
IC engine stalls	Line speed setting too high	First set line speed zero and increase slowly in proportion with line pull
	Hydraulic pump defect	Replace pump
Rope can not be pulled in or out	„Emergency-stop“ button has been pressed	Engage „emergency-stop“ button
No hydraulic pressure on the gauge Green control lamp on panel board is out. Capstans do not revolve	Remote control socket is unplugged	Put remote control or dummy plug to the socket
	Poor contact of electrical wires	Fit the cables of the solenoid valve directly to the battery
	Coupling has become loosen and is off the pump shaft	Refit the pump from the IC-engine, replace the coupling and secure it
	Pivot pin of the pump will not be pushed by the Bowden cable of the line-pull selection	Adjust bowden cable as per instruction
	Pump control unit defect	Replace pump
Rope does not pull out	Controls not properly set	Set controls as per operating instruction
Rope pulls out very slowly	Engine speed to low	Increase engine speed
	Line speed control not at max.	Set line speed control to max.
	Line pull selection lever at stage 1	Set line pull selection lever to stage 2
	Line pull selection lever is set too low	Set the line pull selection lever to a higher value
Rope drum overruns when rope is pulled out	Brake pressure too low	Increase brake pressure at the brake pressure valve
Winch stops at low line pull and line speed	Resistance in oil flow to capstan motors too low	At low line pull and line speed the speed selection lever should be in stage 1
	Grease on the rope	Clean the rope or use a new rope
Winch stops although pre-selection lever is set in range 2	Resistance in oil flow to capstan motors too low	Readjust resistance valve by turning the socket screw 1or2 turns into housing
Winch does not develop full line pull	Hydraulic pressure too low	Increase pressure at pressure valve -pre-selector
	Pump defect	Replace pump



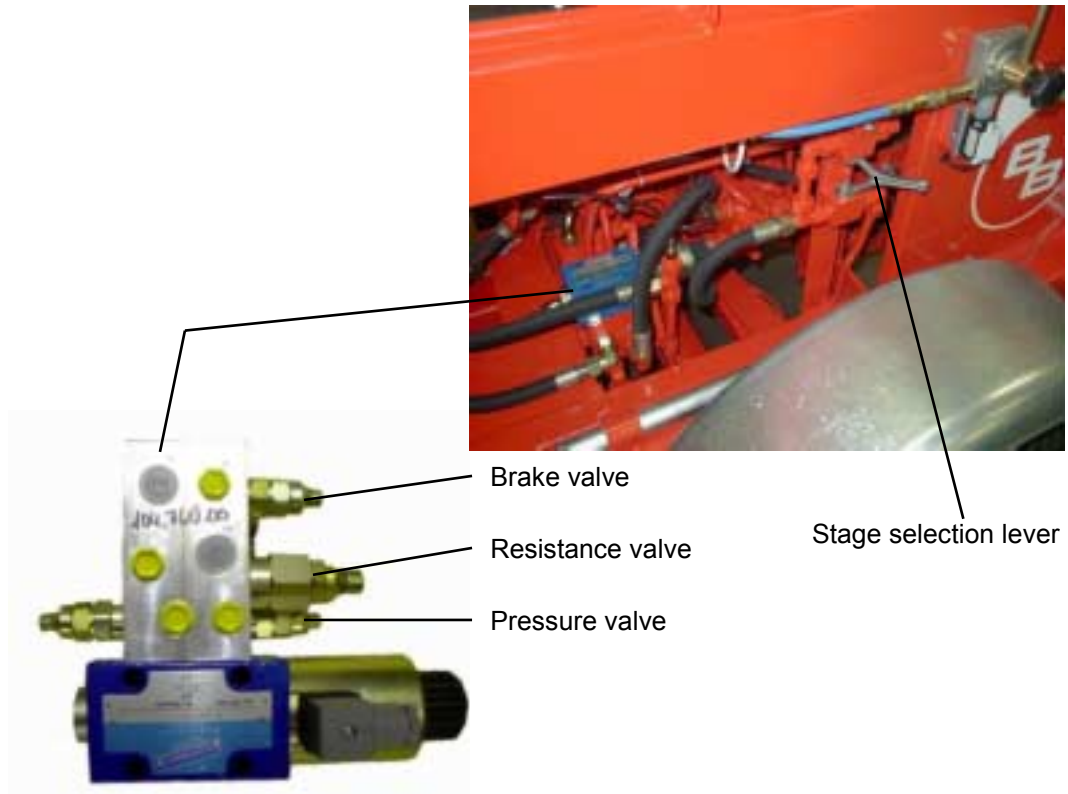
Trouble Observed	Possible Cause	Correction
Winch does not pull (capstans turning)	Controls not properly set	Set controls as per operation instruction
	Rope drum blocked by foreign Object.	Remove foreign object that ma block or brake rope drum
	Driving chain broken or fixed	Replace chain
	Oil motor has no advance	Increase advance at the resistance valve
	Oil motor of rope drum defect	Replace oil motor
Winch does not pull, oil pressure increases	Rope twisted on capstans capstan covering worn out	Repair or replace capstan covering
	Oil motor of capstan defect	Repair or replace capstan motor
Line pull indicator and pre-selector differ widely	Bowden cable has become loosen or out of adjustment	Turn setting screw of bowden cable to exact position as per line pull indicator
At stage 2 winch pulls normally but at stage 1 full line pull is not reached	3-way ball valve defective: leakage between ball and housing; test by disconnecting pipe at ball cock; if ball lies loose in the housing, cock defective	Replace ball valve
	Capstan motor defective: oil leakage due to mechanical failure; test by measuring leakage oil; disconnect leakage line on upper motor and close line to tank with a plug; connect hose to leakage oil socket and hold it into a receptacle; start winch and pull rope in under load; leakage oil flow should not exceed 0,5 l/min; repeat check with lower capstan motor	Replace oil motor
Winch does not pull, no hydraulic pressure in low line speed range		

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8.1 Place of the valves

8.1.1 Cable laying winch KW



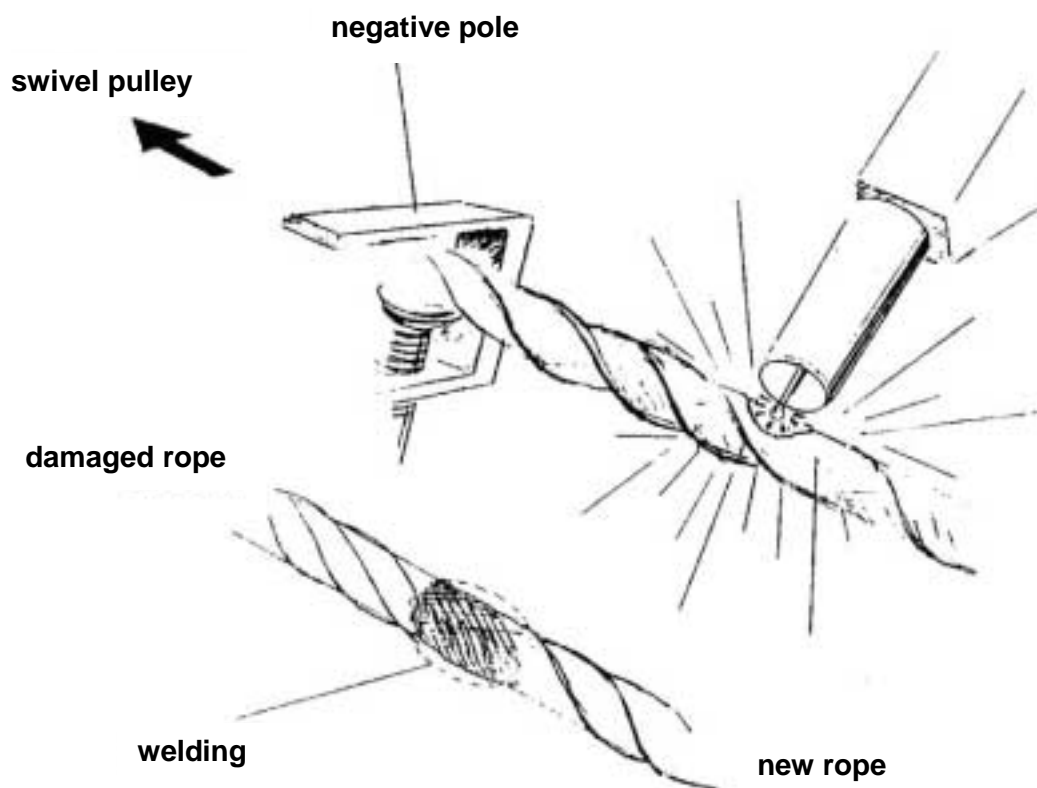
8.1.2 Pipe renewal winches – RW, RKW



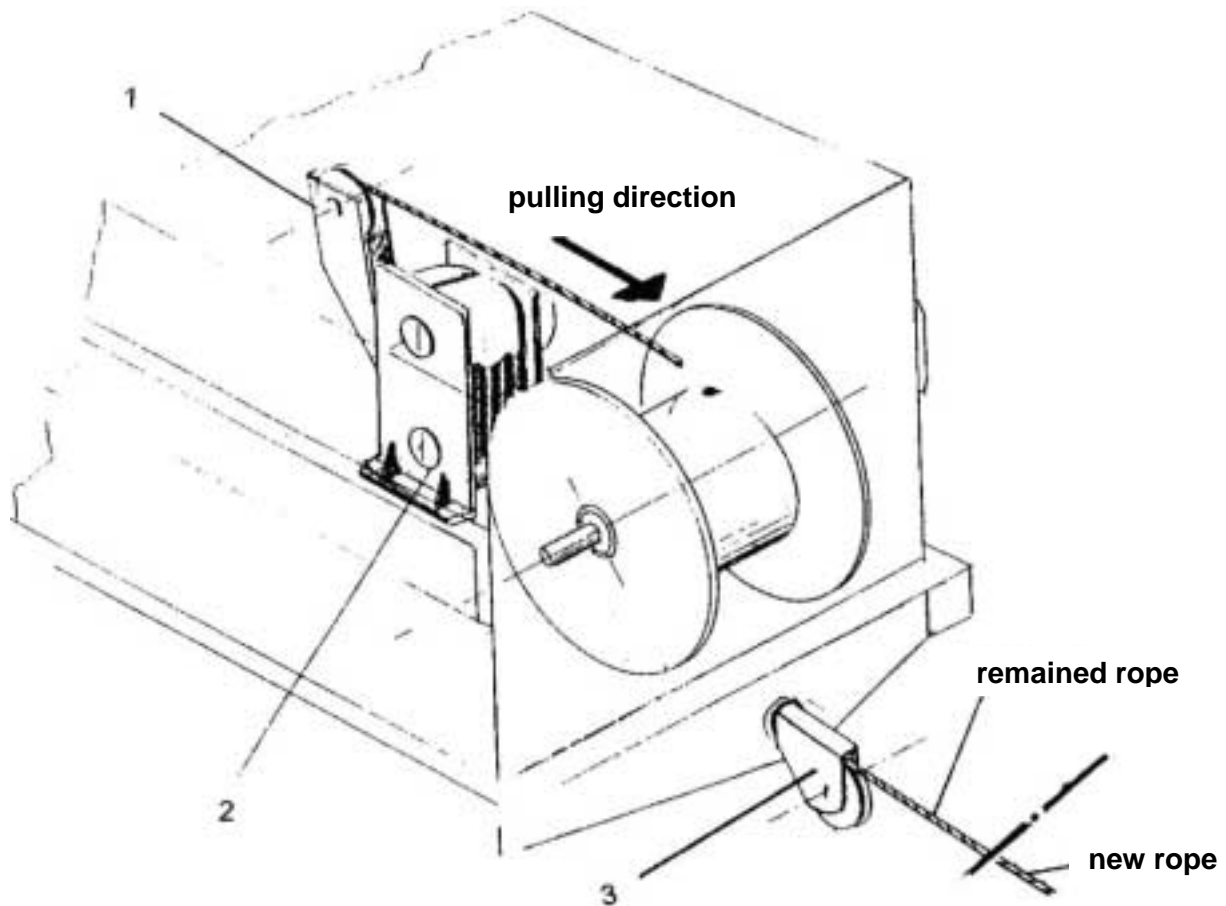
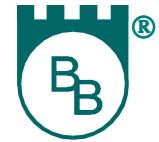
9 Replacement of a damaged rope

Before replacing a damaged rope, take off the rear flap of the winch to be able to observe the uncoiling of the rope.

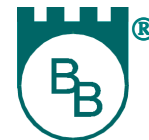
- Start engine (follow the manufacturer's operation manual)
- Put the line speed pre-selector to range 2
- Push the winching lever to "OUT", or press the "OUT" button
- Turn the hand wheel to maximum (RW/RKW)
- Pull out the rope until only five windings are left on the drum
- Stop winching out, set the winching lever to "0" or press the "Stop" button.
- The rope should be cut off approximately 1-2 meters behind the tail pulley (3) of the winch, which should be preferably being done with an electric welder.
- Adjust the welding generator to a high current and connect the negative pole to the rope (not to the winch chassis!) In the cutting process the ends of the wires in the strands are welded together.



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- Weld the end of the new and old rope together and grind the welding joints down to the original rope diameter by using an angle grinder.
- Start “winching-in” and stop as soon as five windings of the new rope are wound onto the drum.
- Turn the storage drum by hand in opposite direction, disconnect the rope from the drum and cut off the end of the old rope.
- Insert the end of the new rope into the hole of the drum core, and wind the new rope slowly and evenly onto the drum. The first layer of the rope should be marked with red paint in order to signal the winch operator, when he pulls out the rope that only one layer is left on the drum.
- Pull in the new rope and close the flap.



10 Maintenance of the winch

The winch needs only a minimum of maintenance effort, but whatever checks and manipulations are required should be done regularly to ensure trouble free and safe operation of the winch.

Regularly checks and works:

Relubricate according to lubrication chart

Regularly check of hydraulic oil level, top up if necessary.

Check the hydraulic system for good performance and any oil leakage's, retighten the connections.

Before operating with the winch, check motor oil level, top up if necessary.

Take care of the engine according engine manufacturer's manual.

Check tyre pressure regularly.

Lubricate moving parts of the overrunning brake according to manufacturer's instruction.

Recommended lubricants:

Hydraulic oil: HLP-Oil ISO VG 46 (SHELL TELLUS 46) or ISO VG 68

Motor oil: see engine manufacturer's instruction.

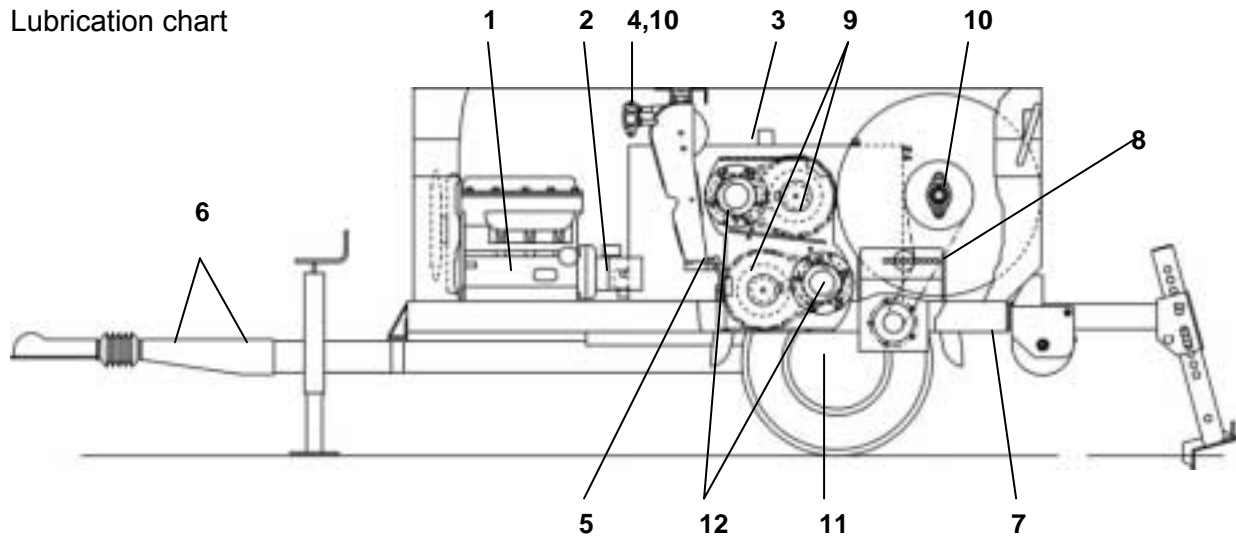
Gear oil: Hypoid gear oil (SHELL Spirax MB 90)


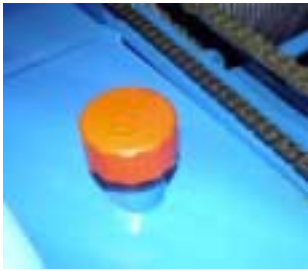

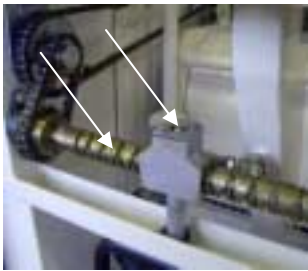
Grease: multi-purpose grease

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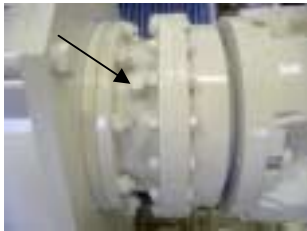


Lubrication chart



<p>1</p>	<p>engine oil</p>  <p>oil grade: according to engine manufacturer's manual</p>	<p>check daily</p>	<p>check monthly</p>	<p>hydraulic oil</p>  <p>oil grade: hydraulic oil 46 cSt or 63 cSt</p>	<p>3</p>		
<p>change once a year</p>		<p>2</p>	<p>pump lever</p>  <p>multi purpose grease</p> <p>only RW 2-20</p>	<p>grease every 3 month</p>	<p>grease weekly</p>	<p>cross grooved spindle</p>  <p>multi purpose grease</p>	<p>4</p>

<p>5</p>	<p>layering arm</p>  <p>multi purpose grease</p>	<p>grease every 3 month</p>	<p>sprocket chains</p>  <p>multi purpose grease</p>	<p>8</p>
<p>6</p>	<p>overrun device</p> 	<p>grease every 3 month</p> <p>KW/RW 2-4</p> <p>KW/RW 5-10</p> <p>RW 20</p>	<p>capstan bearings</p> 	<p>9</p>
<p>7</p>	<p>swivel pulley</p>  <p>multi purpose grease</p>	<p>grease every 3 month</p>	<p>flange bearings</p>  <p>multi purpose grease</p>	<p>10</p>

11	<p>wheel bearings</p>  <p>multi purpose grease</p>	<p>grease every 3 month</p>	<p>check every 3 month</p> <p>change oil once a year</p>	<p>gearbox oil</p>  <p>Hypoid gearbox oil</p>	12
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CAUTION:



In the wide range of winch types different petrol or diesel engines from different manufactures are used. Detailed instructions and lubricant specification will be found in the engine manufacturer's manual. Read the manual carefully and follow the instruction to ensure trouble-free and safe operation of the winch.

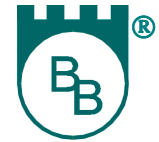


A detailed maintenance instruction for the overrun- or air brake system will be found in the attachment. Service and repair of the brake system should only be done by specialist or an authorized workshop.

For repairs use only original spare parts to keep the operation safe.

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Capstan winch



Attachment

- I. Attestation of conformity
- II. Technical Data
- III. Diagram of the hydraulic system
- IV. Diagram of the engine electric
- V. Diagram of the winch electronic
- VI. Diagram of the lighting system
- VII. Care and maintenance of the brake system

EC-Declaration of Conformity
acc. 2006/42/EG

Bagela Baumaschinen GmbH & Co.
Gottlieb-Daimler-Straße 5
24568 Kaltenkirchen / Germany
Tel.: +49 (0) 41 91 99 33 0



Name and address of manufacturer: Bagela Baumaschinen GmbH & Co.
Gottlieb-Daimler-Straße 5
24568 Kaltenkirchen / Germany
Tel.: +49 (0) 41 91 99 33 0
Fax.: +49 (0) 41 91 99 33 99

Description: Designation: Pipe renewal and pulling winches
Type: RW, RKW, KW, W
Pulling force: 10 - 400 kN
Ident. No.: WB82W..SKBW0001 to WB82W..SKBW0699

Legal provisions:	2006/42/EG	Machinery Directive	29.12.2009
	2004/108/EC	EMC Directive	15.12.2004

Harmonised standards: EN ISO 12100-1 Safety of machines; Part 1, terminology and methodology
EN ISO 12100-2 Safety of machines; Part 2, Technical Guidelines
EN ISO 13857 Safety of machines; Safety distances
EN ISO 13849-1 Safety of machines; Part 1, General principles for design
EN ISO 14121-1 Risk Assessment; Part 1, Summary
EN ISO 60204-1 Safety of machines; General Electrical equipment of machines

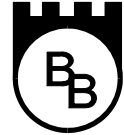
National standards and technical specifications: DGUV 54 Hoisting, lifting and pulling devices

Unterzeichner:

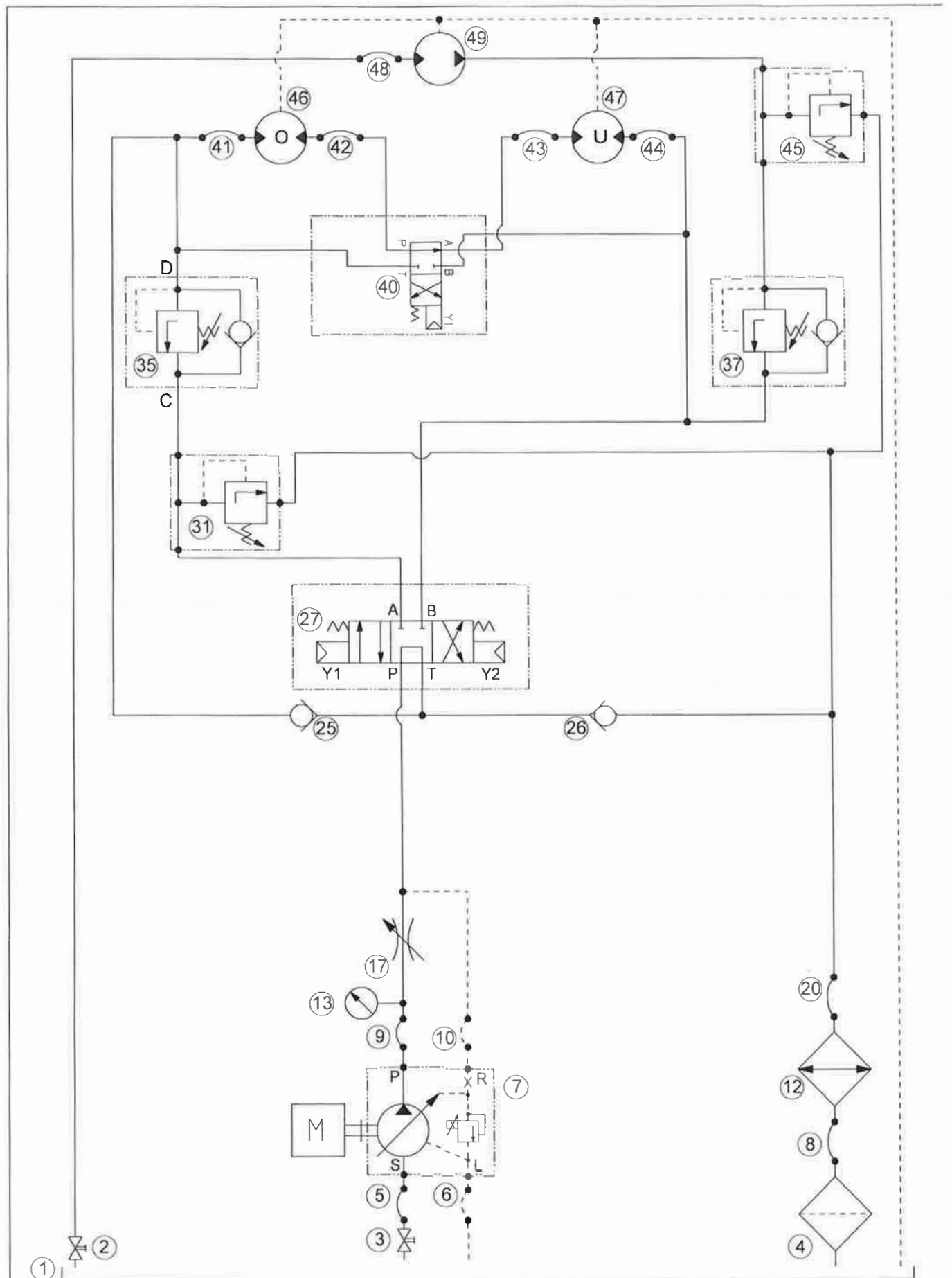
Kaltenkirchen, d. 02.01.2025


Marco Bartz – General Manager

BAGELA - Capstan winches



Winch type:	RW 50.10	
Serial No.:	WB82W0500SKBW0143	
Pulling force:	50 kN	
Pulling speed at 50kN:	5 m/min	
Pulling speed max.:	84 m/min	
Pulling- out speed:	103 m/min	
Rope diameter:	12 mm	
Rope length:	1250 m	
Rope guiding:	cross groove spindle	
Drive engine:	4cyl. diesel engine	
Power:	17 KW	
A-sound level (medium value at a distance of 7 m and 1 m height)		
idle running	59	dB(A)
max. speed	74 dB(A)	
Measuring system	PC 410	
Chassis	tandem-chassis overrunning brake automatic reversing brake system height adjustable draw bar	
admissible weight	3000 kg	
coupling height	400-1100 mm	
tyres	195/70 R15C	
Length	4355 mm	
Width	1820 mm	
Height	1450 mm	
Weight: (without deflection boom)	2490 kg	



Bagela
Baumaschinen GmbH & Co.

Gottlieb-Daimler-Straße 5
24568 Kaltenkirchen
Telefon: 04191/9933-0
Telefax: 04191/9933-99
www.bagela.de

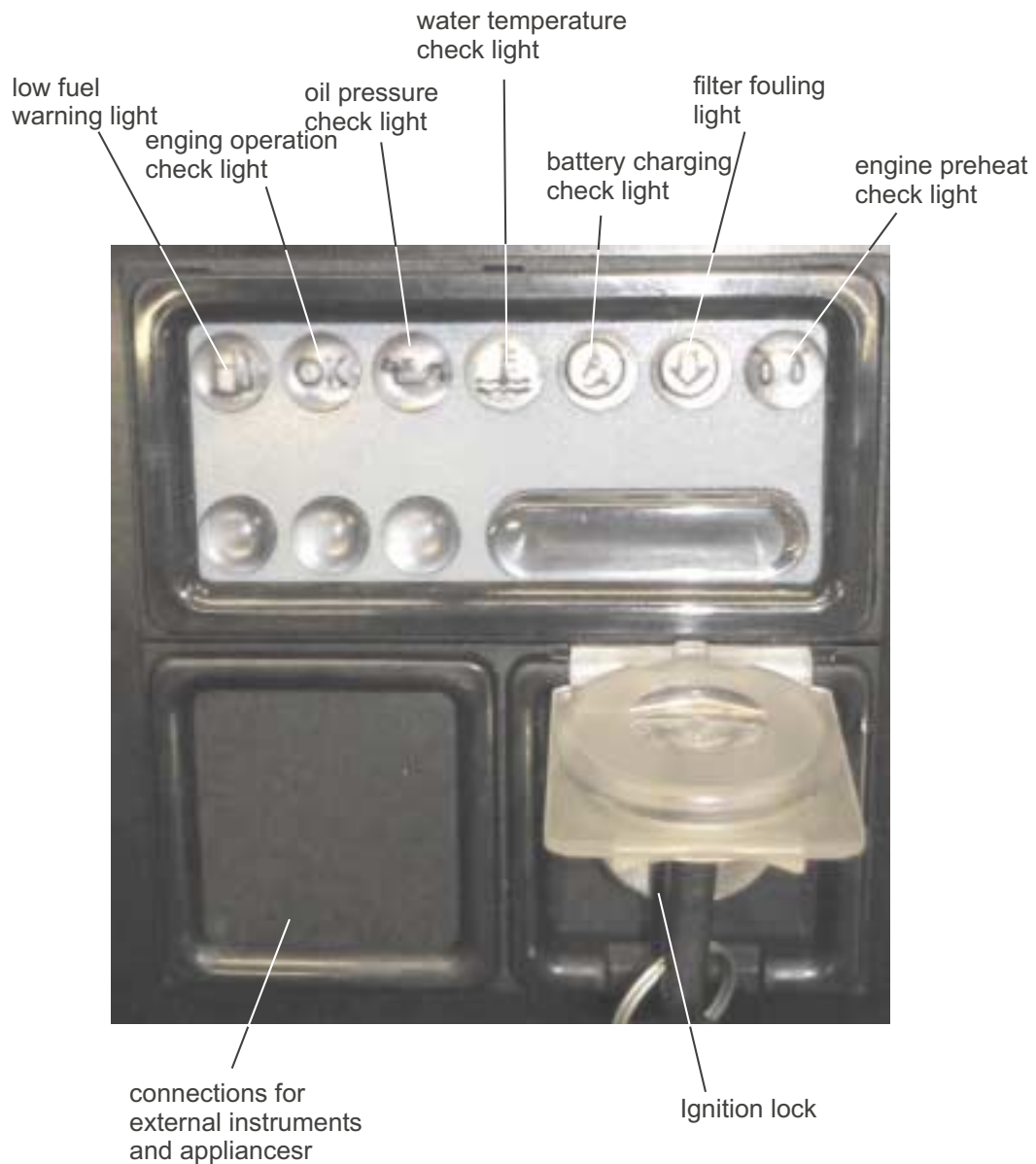
Benennung

R(K)W mit E-Steuerung
kleiner Pumpe, E-Strg.

Mundt 18.07.18
Maßstab RW 2-5

Zeichnungs-Nr.
03-499.06

Control board for LDW 1003 und LDW 1404

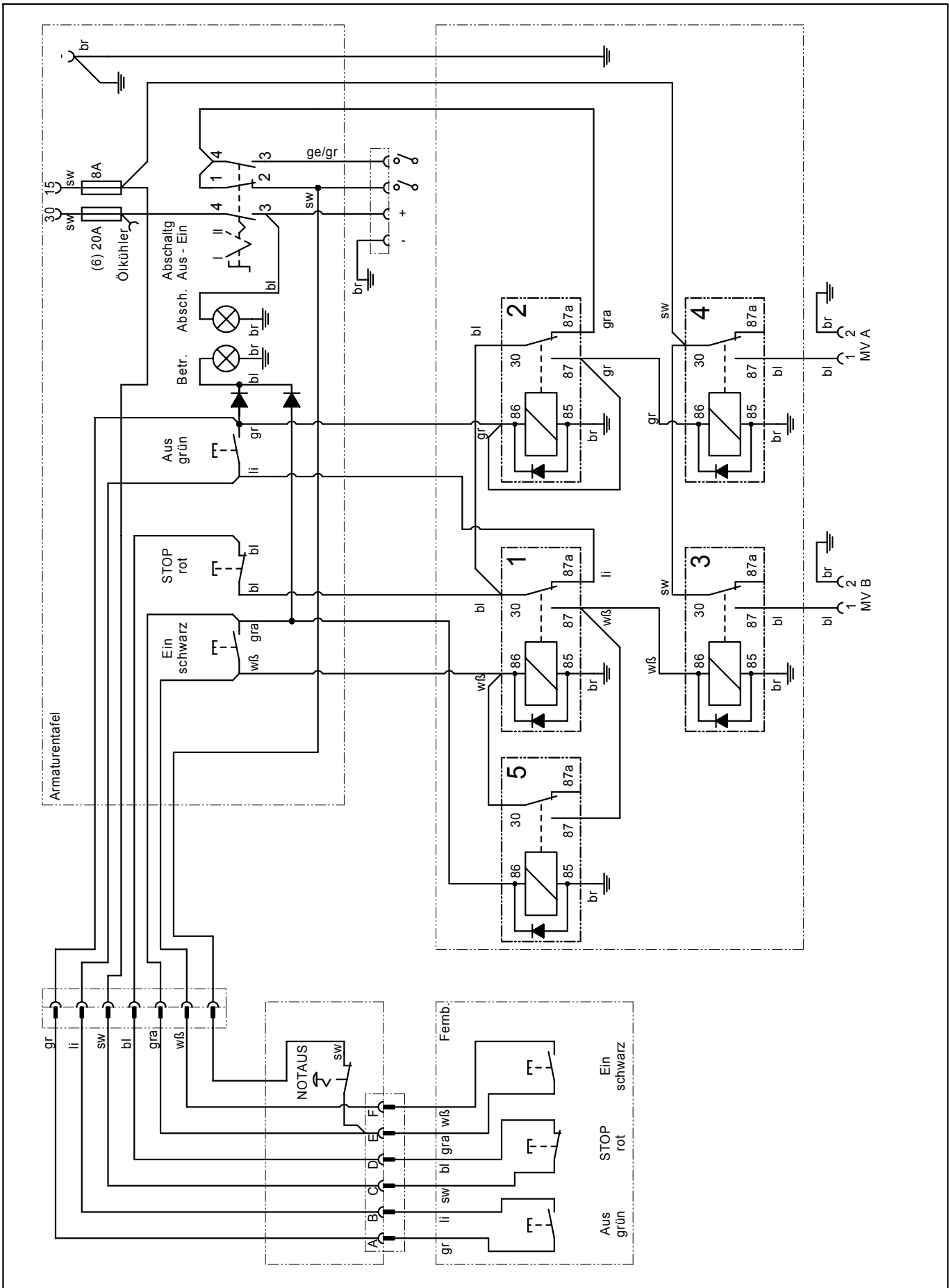


Do not start the cold engine before the yellow glow plug control lamp goes off.

Increase the engine speed until the red battery charging check light goes off the green engine operation check light goes on.

If the red air filter check light goes on, clean the air filter or replace it. Subsequently press the little red button at the transmitter behind the air filter to extinguish the check light.

Carry out regular maintenance work according to the engine manufacturer's operating instructions.



Bagela
Baumaschinen GmbH & Co.

Gottlieb-Daimler-Straße 5
24568 Kaltenkirchen
Telefon: 04191/9933-0
Telefax: 04191/9933-99
www.bagela.de

RV.4: 29.03.07 Mu

Benennung

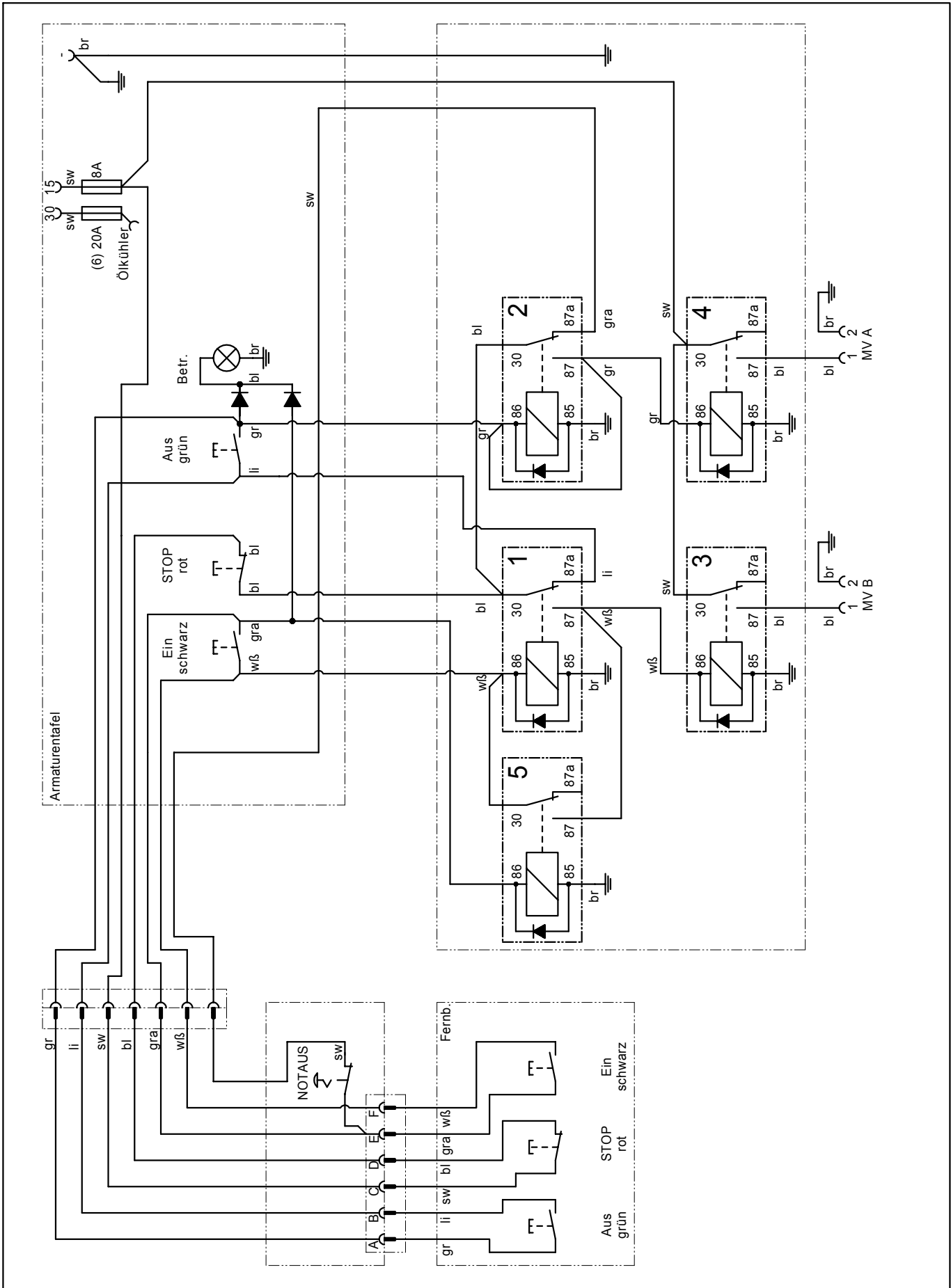
Schaltbild RKW
Vor-Stop-Rück
für Drucker

Mundt 12.01.96

Maßstab RKW

Zeichnungs-Nr.

03-057.01



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Gottlieb-Daimler-Straße 5
24568 Kaltenkirchen
Telefon: 04191/9933-0
Telefax: 04191/9933-99
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RV.1: 29.03.07 Mu

Benennung

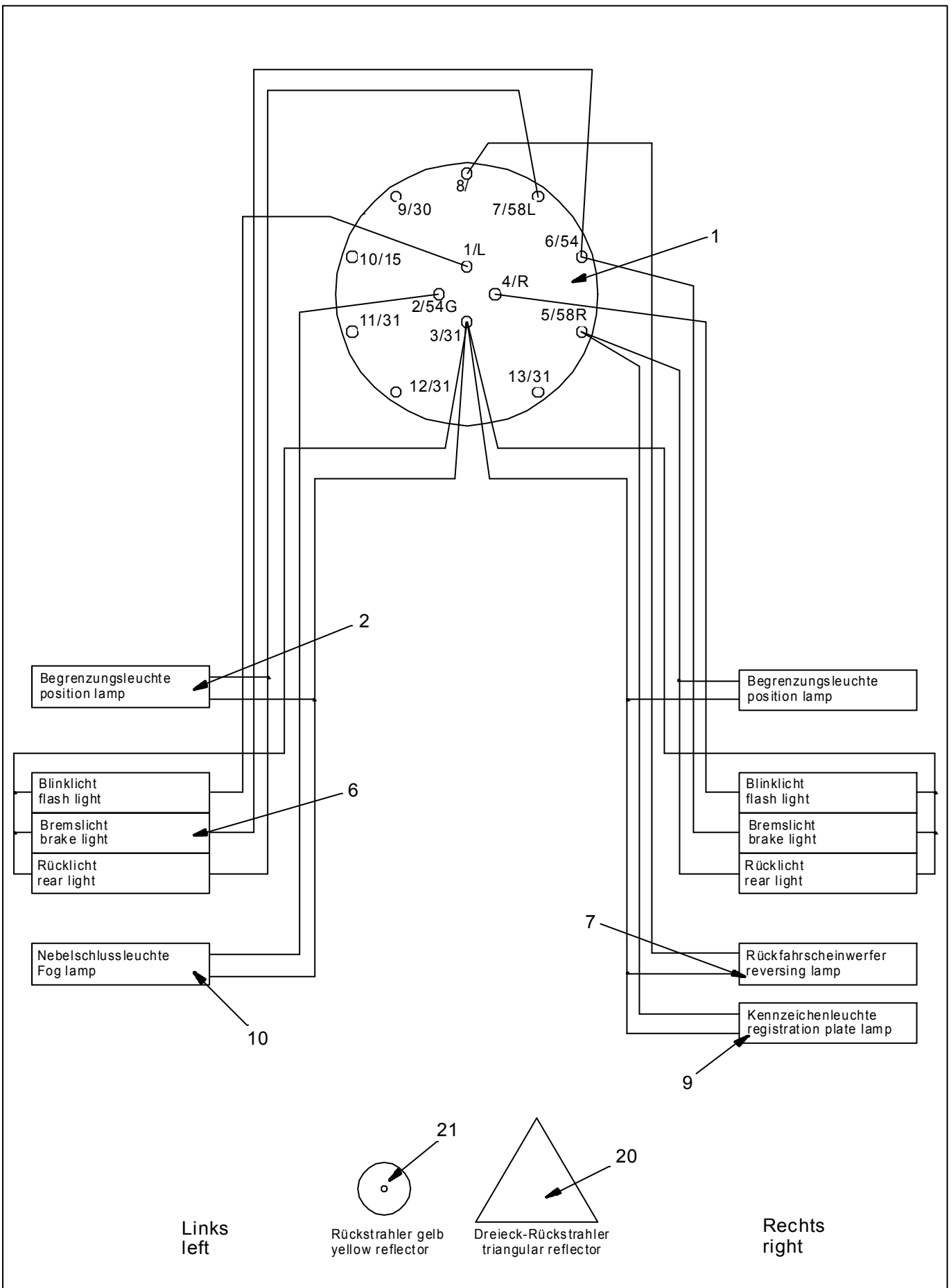
Schaltbild RKW
Vor-Stop-Rück

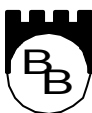
Mundt 12.01.96

Maßstab RKW

Zeichnungs-Nr.

03-057.00



 <p>Bagela Baumaschinen GmbH & Co.</p> <p>Gottlieb-Daimler-Straße 5 24568 Kaltenkirchen Telefon: 04191/9933-0 Telefax: 04191/9933-99 www.bagela.de</p>	Benennung		Groth	23.09.09
	Lichtanlage Lighting System 12V 13pol.		Maßstab	Winden
			Zeichnungs-Nr.	
		003.014.30		

Maintenance and care of the braking system

The following maintenance work should be carried out as and when required or after six months at the latest by a duly qualified mechanic (chassis manufacturer or service station).

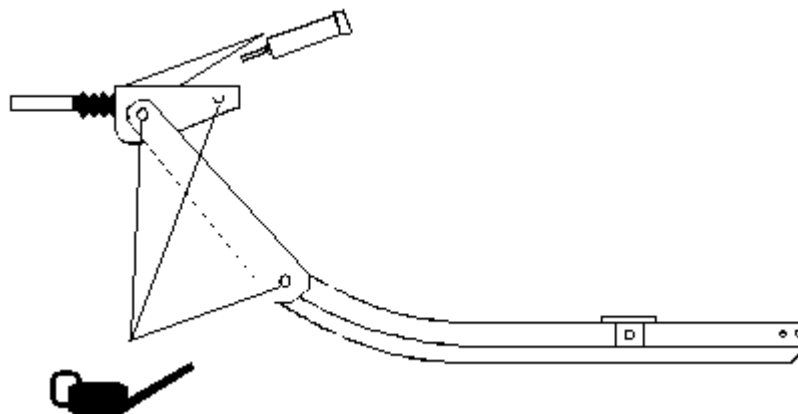
Overrunning brake system

Checking of the pulling tube:

- Take off the transmission mechanism between the adjustment parts either from the upper or the lower reversing lever. After pushing in the pulling tube, it should come out on its own. If it does not or if it can be pushed in by hand easily, the damper will be defective and should be replaced.
- Check the brake ropes and replace them if necessary.

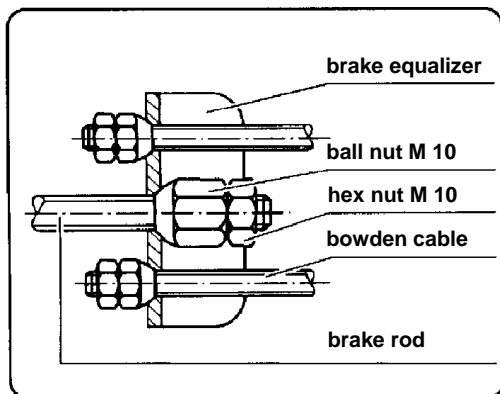
Lubrication plan:

- Lubricate the pulling tube at the points indicated.
- Lubricate all gliding areas with a multi-purpose grease according to DIN 51825 KTA 3K
- If the towing bar is permanently adjusted to a fixed height, rust may develop between the contact areas with the result that the toothed disk gets stuck. To avoid such contact rusting, clean the tooth disk regularly (at least every 6 months) and apply water-repellent grease. This will also prevent dropping out of rusty from the draw bar.
- Use a multi-purpose grease according to DIN 51502 KPF 2C
- Lubricate all other links and movable parts with oil.

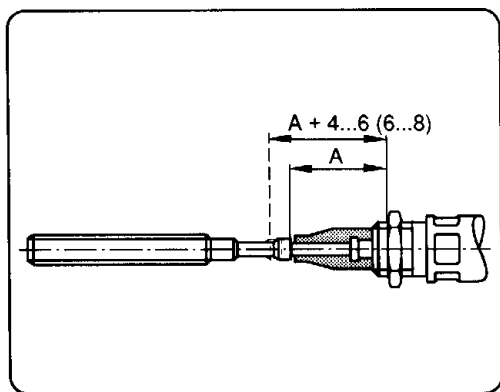


Maintenance and care of the braking system

Adjustment of wheel brakes



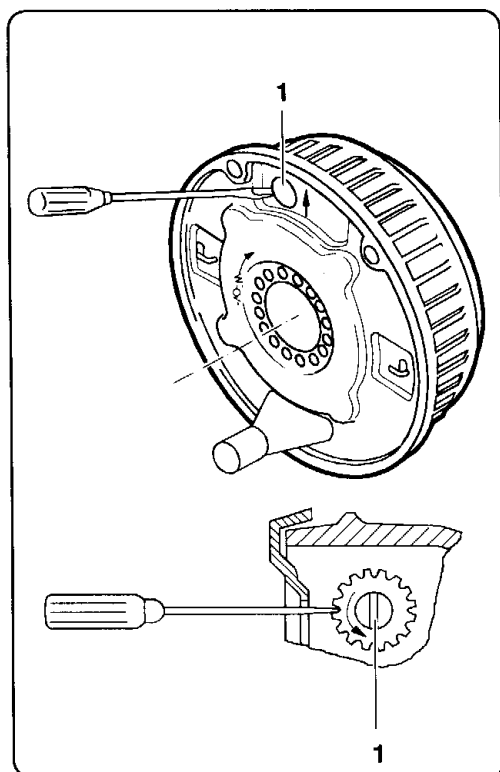
- Raise the trailer on a car lift
- Pull out the towing tube against its stop and release parking brake.
- Loosen the brake rod and equalizer completely (ball and hex nuts).
- Check the clearance in the wheel brake; it should stay equal after two or four brake applications.



Check the clearance in the wheel brake.

It should stay equal after two or four brake applications.

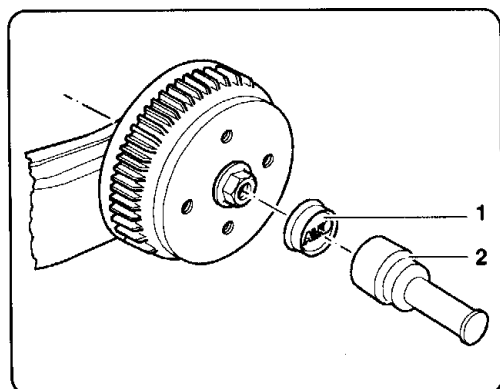
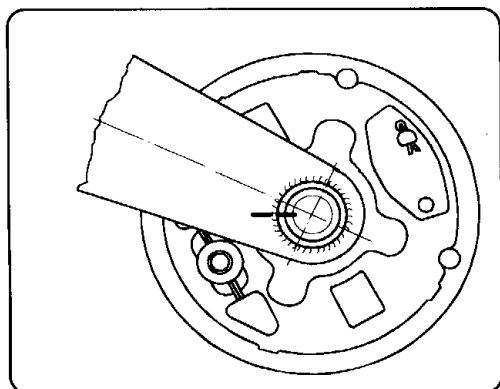
Recommended clearance: 6-8 mm, measured at bowden cable



- Adjust/readjust the wheel brake only at position (1); tighten or loosen the wheel brake respectively in or against the direction of the arrow.
- Reconnect the brake rod with the equalizer and vigorously apply hand brake lever several times in order to allow the brake system to settle itself. By tightening the ball nut apply a slight pretension to the bowden cable. i. e. pull it out 1-2 mm.
- Grease the contact areas of the ball nut and lock it when in place.

Maintenance and care of the braking system


Maintenance of the wheel brake



Dismantling of wheel brake

- Unscrew the wheel
- Mark the position of the plastic cap on the swing axle bracket by means of a felt-tip pencil in order to detect and correct any turning of the axle stub.

- Remove cap (1) with hammer and blunt chisel. Afterwards refit new cap (1) and drive home with appropriate punch.
- Remove the flanged nut. Afterwards refit a new self-locking flange nut.

 **Attention: Apply appropriate torque to the flange nut to ensure easy turning of the wheel (280-300 Nm)**

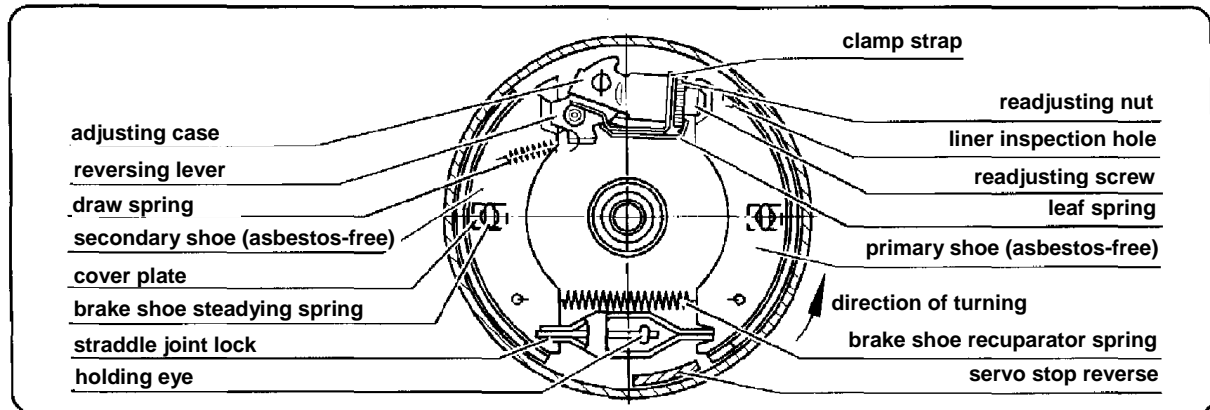
- Pull out the towing tube against its stop and fully release the hand brake lever; loosen the adjusting nut, if required.
- Turn the brake drum slightly and pull it off; if it will not come off readily, apply slight blows with rubber mallet to the cooling fins.

 **Attention: Brake drums must not be turned out!**

- Replace worn-out (scored) or severely corroded brake drums.

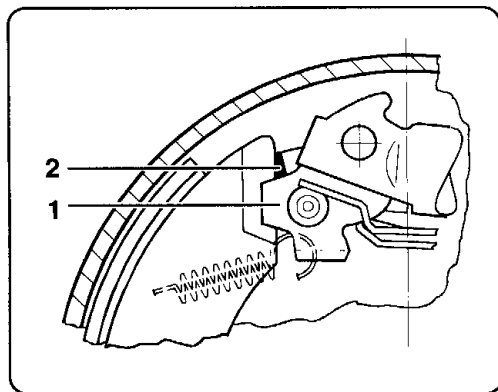
Maintenance and care of the braking system

Visual checks



- Check the condition of the brake liners.

The wear of the brake liners is most severe at the inspection hole. In a simplex brake the primary shoe is pressed against the drum, whereas the secondary shoe is pressed away from it. This causes unbalanced wear of the pair of brake liners.



- The reversing lever (1) should press against the back of the readjusting case (2).

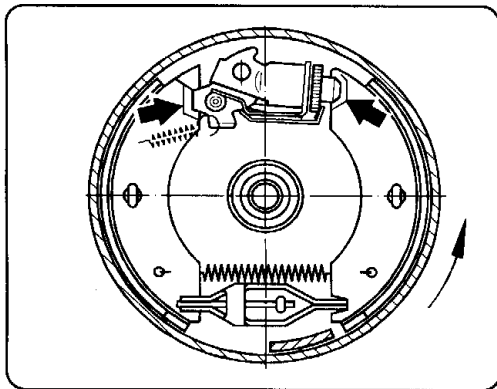
Functional check

- Check the bearing of the straddle joint lock, the readjusting nut and the reversing lever for easy movability.
- Check whether the leaf spring has enough tension and engages with the readjusting nut.
- Check the tension of the brake shoe steadying springs.

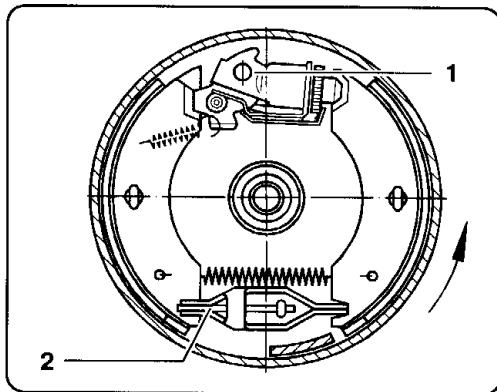
Maintenance and care of the braking system

Replacement of the brake shoes

- For dismantling parts from the wheel brake, loosen the bowden cable from the equalizer and remove at the straddle joint lock.
- Replace the brake shoe if the liner has worn down to less than 2 mm thickness
- Replace also the brake shoe steadying springs.



- Preferably replace also the brake shoe recuperator spring



Straddle joint lock

- Relubricate jammed bearings of the straddle joint locks.
- Replace straddle joint locks with corroded bearings.
- Ensure correct refitting: straddle joint (2) relative to reversing lever (1).



Attention: Any confusion may affect the brake application stroke and hence deteriorate the braking efficiency!

Brake shoe recuperator springs

- Replace fatigued or damaged brake shoe recuperator springs.

Reversing lever

- Replace jammed reversing levers and regrease bearings.
- Replace corroded reversing levers including bearing bolt.
- If the lever does not press against the back of the adjusting case replace the drawing spring.

Readjusting nut

- Regrease jammed readjusting nuts.
- Unscrew the nut and regrease thread.
- Replace corroded readjusting screw including nut.

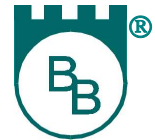
Leaf spring

- Replace fatigued leaf springs.



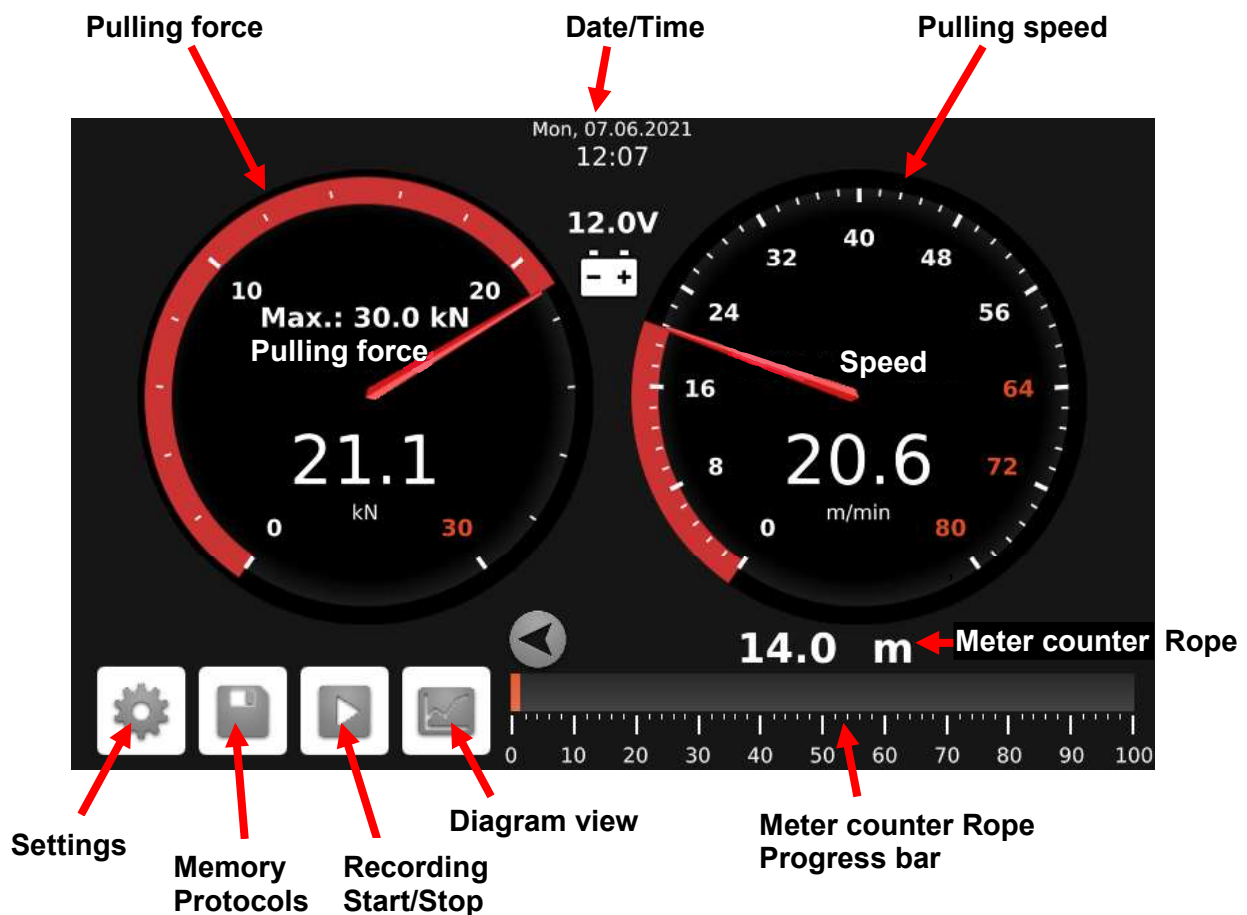
Lubricate all gliding areas with Wolfracoat C, No. 099 113

Bagela[®] Capstan winches



Operating instructions for the winch control PC 410

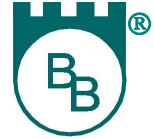
1 Displays and controls



2 Operating mode

2.1 Switch on winch control

After the winch control is switched on, the main menu screen appears as shown above.



Operating instructions for the winch control PC 410

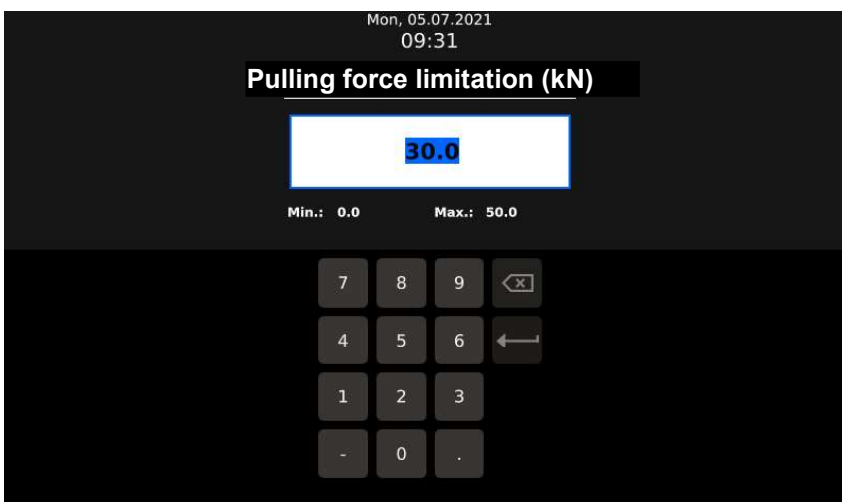
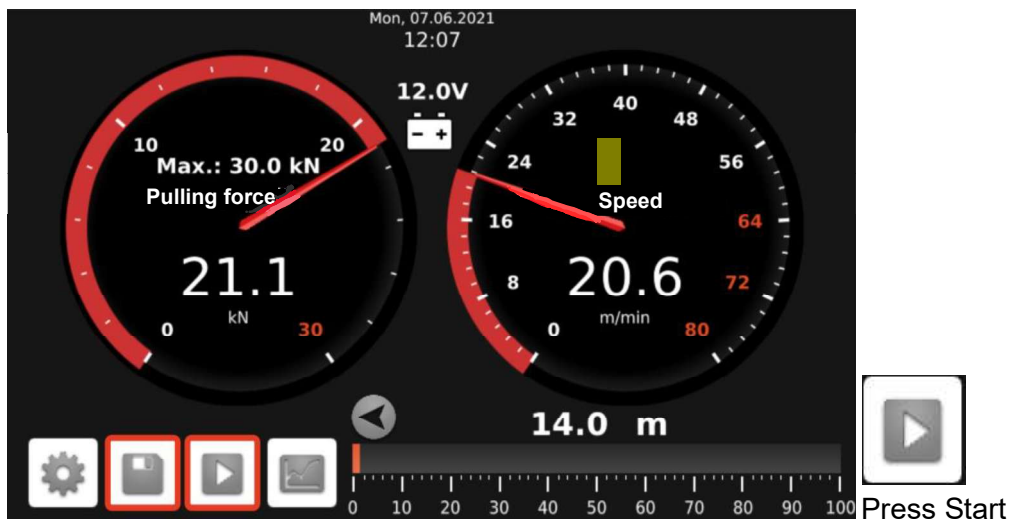
2.2 Pull out the rope

To pull out the rope the winch control is not programmed. The left display shows the pulling force applied to the rope in the winch. The right display shows the current speed and underneath the progress bar of the pulled out rope length.

Attention: Before starting the recording, pull out the winch cable to the required length. Do not start recording until the winch cable is pulled in.

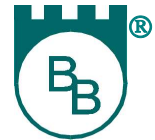
2.3 Pull in the rope and start / stop logging

To start the recording for pulling in, the winch control must first be programmed.

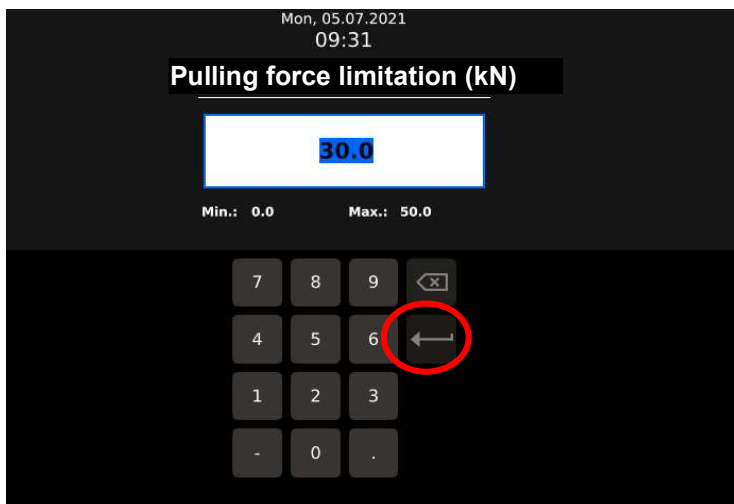


Press on empty field in display to set the kN limit and a keyboard appears.

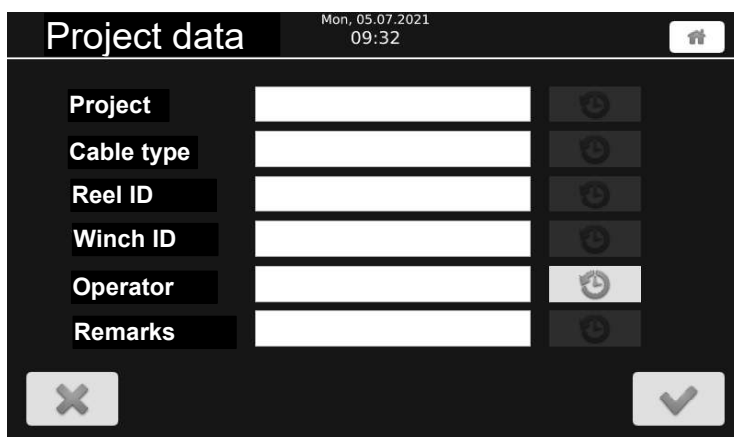
Bagela® Capstan winches



Operating instructions for the winch control PC 410



Input of the pulling force limit value via the keyboard for the winch switch-off or the measuring range for the printout. Confirm the entered value with Enter



After entering the pulling force limit value, a window for entering the project data appears. The data are transferred to the log.



Cancel entry

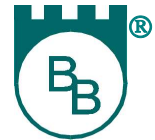


Confirmation and start of recording.



When recording starts, the previously pulled out rope length is displayed as 100% on the progress bar. When pulling in, the length of the rope that has been pulled in is displayed and the progress bar shows the percentage of the pulled out rope that has been pulled in again. At 0% the rope is completely pulled in. A blue marker in the pulling force display marks the pulling force limit. A red dot at the top right of the display indicates that logging is in progress. The settings menu and the log memory are locked during the recording.

Bagela® Capstan winches

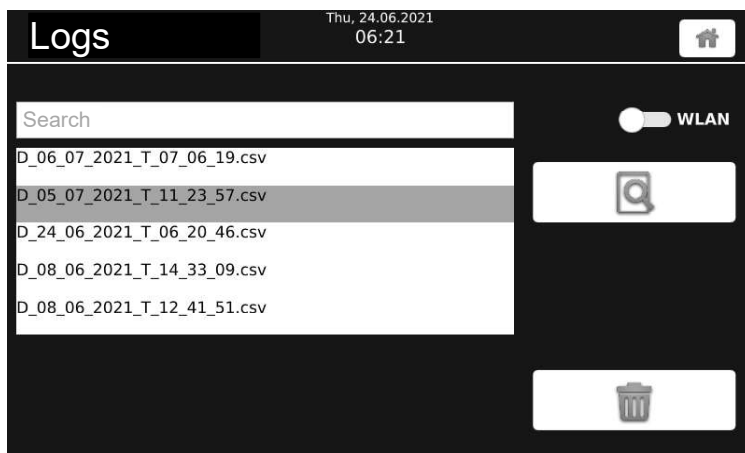


Operating instructions for the winch control PC 410

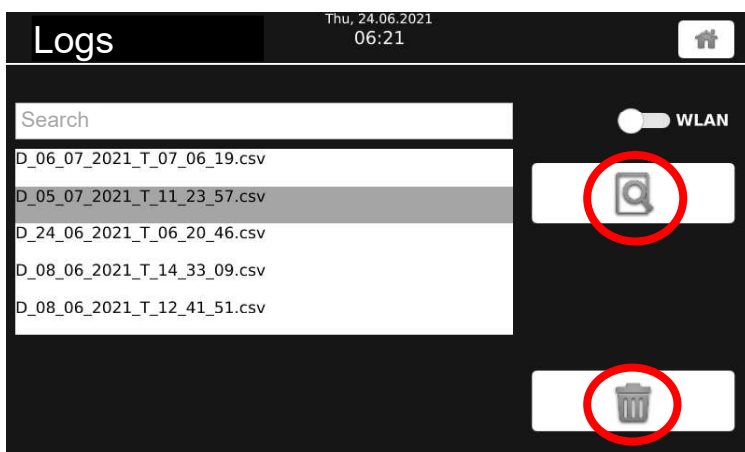


You can end the logging by pressing the "Start log" key during logging. Before the end of the process, you will be asked whether the logging should actually be ended. Press "Save log" to save the protocol. After pressing the "Continue" button, the log recording is continued. By using the "Delete log" the current log is stopped and the recorded data is deleted.

2.4 Export logs



Pressing the disk symbol takes you to the protocol overview. It is now possible to download the protocol to a USB stick via the USB connection or via WLAN connection.

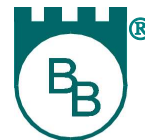


The logs are saved under the date and time. Individual protocols can be searched for using the search field.

The logs can be selected in the list and displayed by pressing the log view.

The marked logs can be deleted with the trash can symbol.

Bagela® Capstan winches



Operating instructions for the winch control PC 410

Limit= m	50.0 kN kN	05.07.2021 m/min	11:19:47 t
0	7,1	0,0	11:19:47
1	7,1	59,7	11:20:02
2	7,1	60,6	11:20:03
3	7,1	59,7	11:20:04
4	7,1	58,9	11:20:05

In the individual log view, all parameters of the recording are displayed: length, pulled force, rope speed and time. With a memory stick or a WLAN connection, the opened log can be downloaded as a CSV or PDF file.

The opened log is deleted by pressing the trash can symbol. The folder symbol takes you back to the overall overview of the logs.

Export via memory stick:

Insert the memory stick into the USB socket. Select the individual protocol from the overall overview and display it in the protocol view. Now press the CSV or PDF field to save the log on the USB stick.

Export via W-LAN

To establish a connection, switch on the WLAN function in the overview.

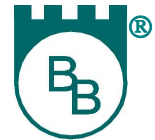
For transmission via W-LAN, the settings in the terminal configuration must be observed. The logs can be accessed via the browser using the host name and IP address. The host name can be freely selected, while the IP address cannot be changed.

Hostname	bagela
IP-Adresse	192.168.10.1
WLAN SSID	bagela_wifi
WLAN PSK	bagela_password

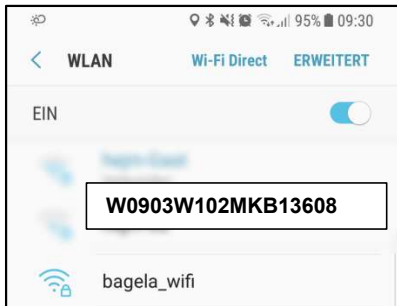
WLAN SSID: Name of the WLAN.

WLAN PSK: WLAN password bagela4191 which must be entered when connecting.

Bagela[®] Capstan winches



Operating instructions for the winch control PC 410

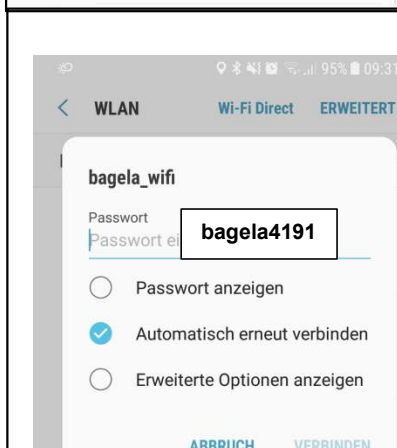


Establish a WLAN connection with the end device:

Select the WLAN in the settings

Example ID no. of the winch:

W0903W102MKB13608



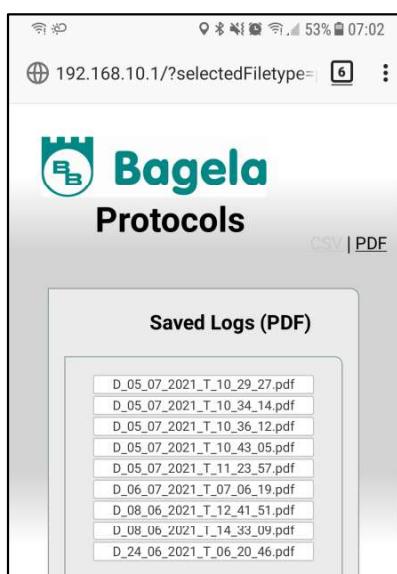
Enter the WiFi PSK password:

bagela4191



Then open a browser and enter the IP address in the browser bar:

192.168.10.1



The Bagela Protocols web page opens. On the right side appears: "PDF".

After pressing "PDF", all PDF protocols appear in the selection of the browser window.

Tapping on the logs will download them one by one. The downloaded logs are saved in the download folder.

Ersatzteilliste spare part list

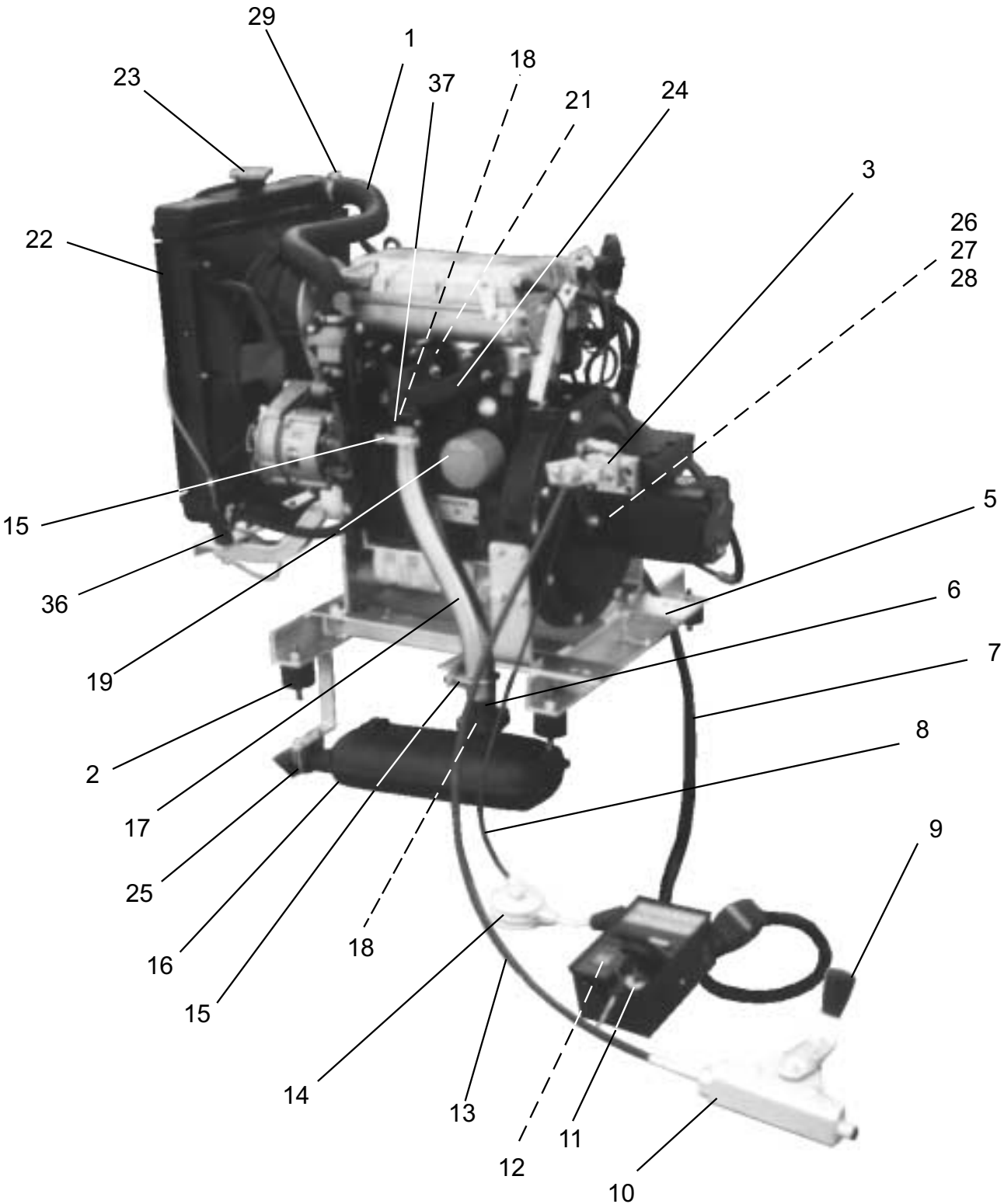
Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!
Attention! If you order spareparts, please indicate Serial-No.!

Table of contents

Type: RW 50.10
Serial No.: WB82W0500SKBW0143

Bezeichnung	Description	Seite	Bild
LDW 1404	LDW 1404	A0415375	A0202312
RW 10 LDW 1204-1404 / gr. Pumpe	LDW 1204-1404	A0417125	A020213X
RW 10/ 123.448.00 E-Bremse 10x2 1/4	RW 10/ 123.448.00 Electric Brake 10x2 1/4	B0405156	B0401172
E-Bremse 10 x 2 1/4	Electric Brake 10 x 2 1/4	B91032Z2	BE1361Y1
003.014.30/31 Beleuchtung 12/24V	Vehicle lighting	C02031.99	00301430
Gehäuse LDW 1204/1404	Shell / Covering	D0403131	D0403131
003.499.12 RW 10 /E-St/gr./Ölk/St.motor	003.499.12 RW 10	E04309.ZF	00349912
RW 10 LDW PC 310	RW 10 LDW / Printer	F04037.5G	F04037.5G
Meßkassette	Measuring cassette	G04012.7C	G02012.7C
Schwenkrolle 002.132.01	Tail pulley	H04011YW	H02011YW
Trommel 750/200/600	Rope storage drum	I0403127	I02011XW
Schwenkarm (Spindel)	Swivel arm	I04051XX	I04051XX
Kreuzgewindespindel	Cross groove spindle	I04061.3F	I004061.3F
RW 10 Seilrollen	rope pulley	I0420134	I0220134
Spillabdeckung 10t	Capstan cover plate 10 t	K040125Y	K040125Y
RW 10 Spill	RW 10 capstan	K0403144	K0403144
RW 10 U-Baum 004.001....	Telescopic deflection boom	L0402152	L0402152
Maschinenzubehör	Machine accessories	L041013X	L041013X

Antriebsaggregat Driving assembly



A020213X

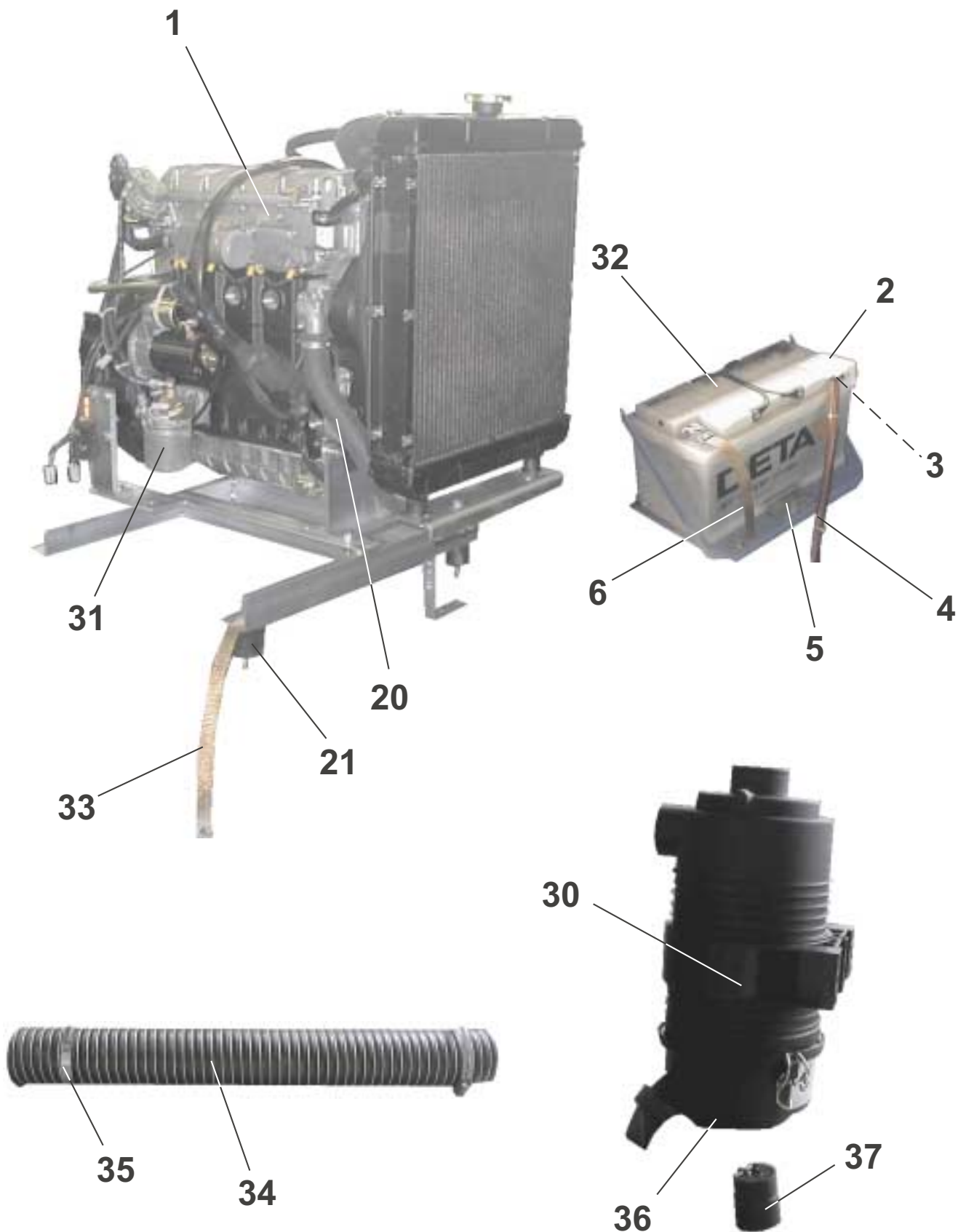
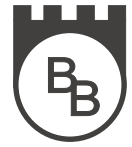
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Kühlerschlauch oben LDW 903/1204	Radiator tube above LDW 903/1204	102.500.15
2	Puffer	rubber	126.040.00
3	Pumpenverstelleinheit PVWH 06-10	pump regulation unit	002.113.00
	Pumpenverstelleinheit PVWH 11-15	pump regulation unit	002.412.00
5	Motorkonsole universal	engine support universal	001.182.10
6	Auspuffflansch unten LDW 903/1204	Exhaust flange LDW 903/1204	001.182.07
7	Verbindungskabel 14Pol.LDW903/1204	Connecting cable 14d.LDW 903/1204	102.500.11
8	Bowdenzug H1300/1500	engine throttle cable H1300/1500	122.238.04
9	Handhebel mit Zeiger	hand lever with indicator	119.022.01
10	Geberdose	transmitter block	119.021.00
11	Zündschlüssel 14644 (M516)	ignition key 14644 (M516)	122.020.04
12	Sicherung	FUSE	122.351.02
13	Bowdenzug 1350mm	bowden cable 1350mm	119.026.00
14	Regulierhebel LDW	engine accellerator lever	122.209.00
15	Bügelschelle	clamp fitting	122.188.00
16	Schalldämpfer LDW 903/1204	exhaust silencer LDW 903/1204	102.500.12
17	Flexibler Abgasschlauch LDW 903	flexible exhaust pipe LDW 903	133.207.02
18	Dichtung Flansch LDW 903/1204	Gasket flange LDW 903/1204	102.500.22
19	Ölfilter LDW 1204	oil filter LDW 1204	102.550.07
21	Krümmerdichtung	Manifold gasket	102.500.20
22	Kühler LDW 903/1204	radiator LDW 903/1204	102.500.13
23	Kühlerverschluß LDW 903/1204	Radiator sealing cap LDW903/1204	102.500.14
24	Krümmer LWD 1204 FOCS	Manifold LWD 1204 FOCS	102.550.16
25	Bügelschelle	clamp fitting	122.187.00
26	BoWex Kupplung	coupling	131.019.10
27	Kupplungsflansch Lombardini	coupling flange	131.036.02
28	Pumpenanbauflansch 82,5	Pump fitting flange	131.039.00
29	Schlauchschellen	hose clamps	122.440.10
36	Schwingungsdämpfer	vibration damper	102.500.17
37	Auspuffflansch oben LDW 903/1204	Exhaust flange LDW 903/1204	001.182.15

Antriebsaggregat Driving assembly



A0202312

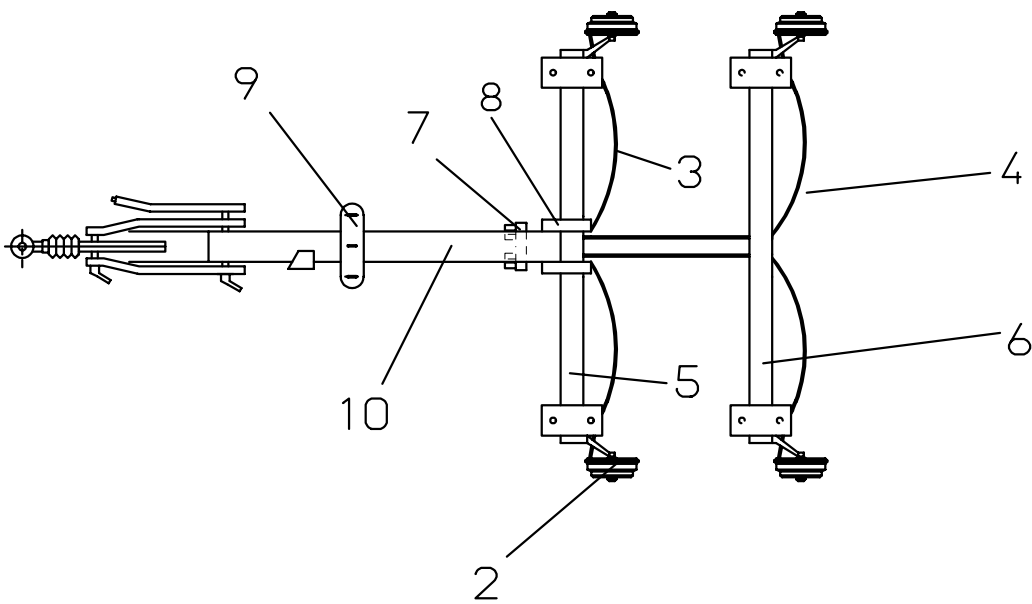
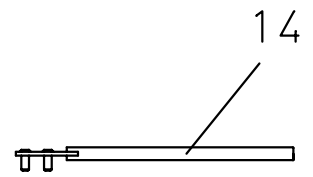
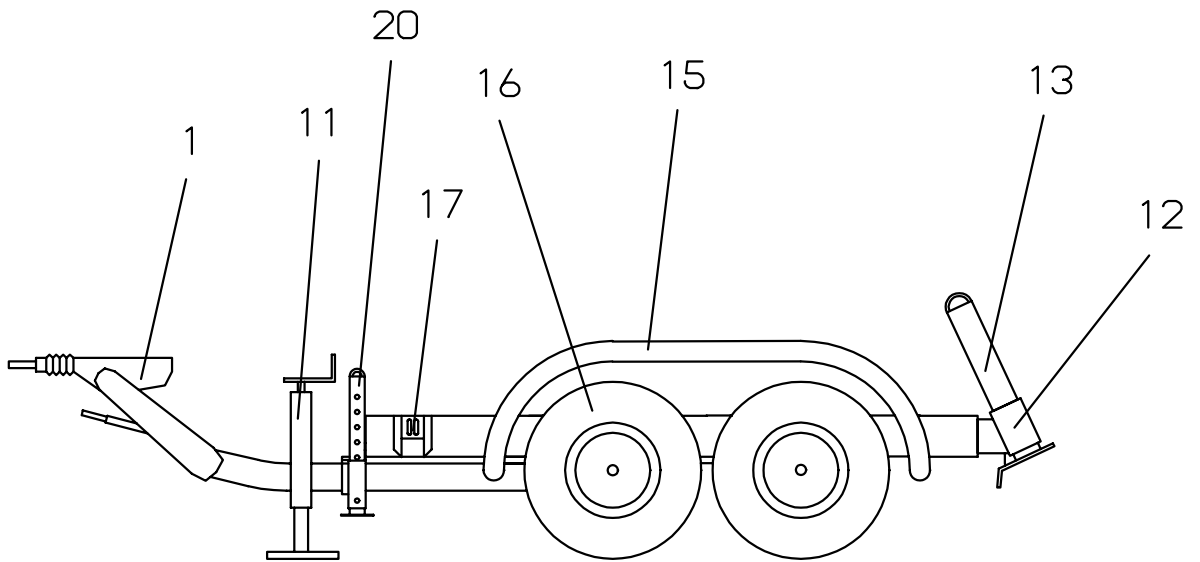
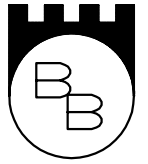
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Lombardini Diesel LDW 1404 FOCS	Lombardini diesel LDW 1404	102.580.00
2	Pol-Abdeckhaube	pole cover	122.142.00
3	Batterieklamme + links	bridge connector + left	122.007.00
4	Batteriekabel kompl. 900 mm	battery cable, compl.	121.020.04
5	Batterieklemmbügel	battery clamp	006.222.00
6	Batterie Masseband	battery earthing strap	122.026.00
20	Kühlerschlauch unten LDW 903/1204	Radiator tube below LDW 903 / 1204	102.500.16
21	Puffer	rubber	126.040.00
30	Luftfiltergehäuse LWD 1404/1204TB	air cleaner, LDW 1404 / 1204 TB	102.580.02
31	Kraftstofffilter LDW 903/1204 FOCS	fuel filter LDW 903/1204 FOCS	102.500.03
32	Batterie 12V 88 Ah	battery, 12V 88 Ah	122.004.00
33	Motor-Masseband	engine ground strip	122.010.00
34	Spiralschlauch	Spiral Hose	124.801.00
35	Schlauchschellen	hose clamps	122.440.10
36	Luftfiltereinsatz rund, außen	outer air filter inset	102.550.20
	Luftfiltereinsatz rund, innen	inner air filter inset	102.550.21
37	Kontrolle f. Luftfilter	air cleaner control	102.500.27

Fahrgestell Undercarriage



B0401172

Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

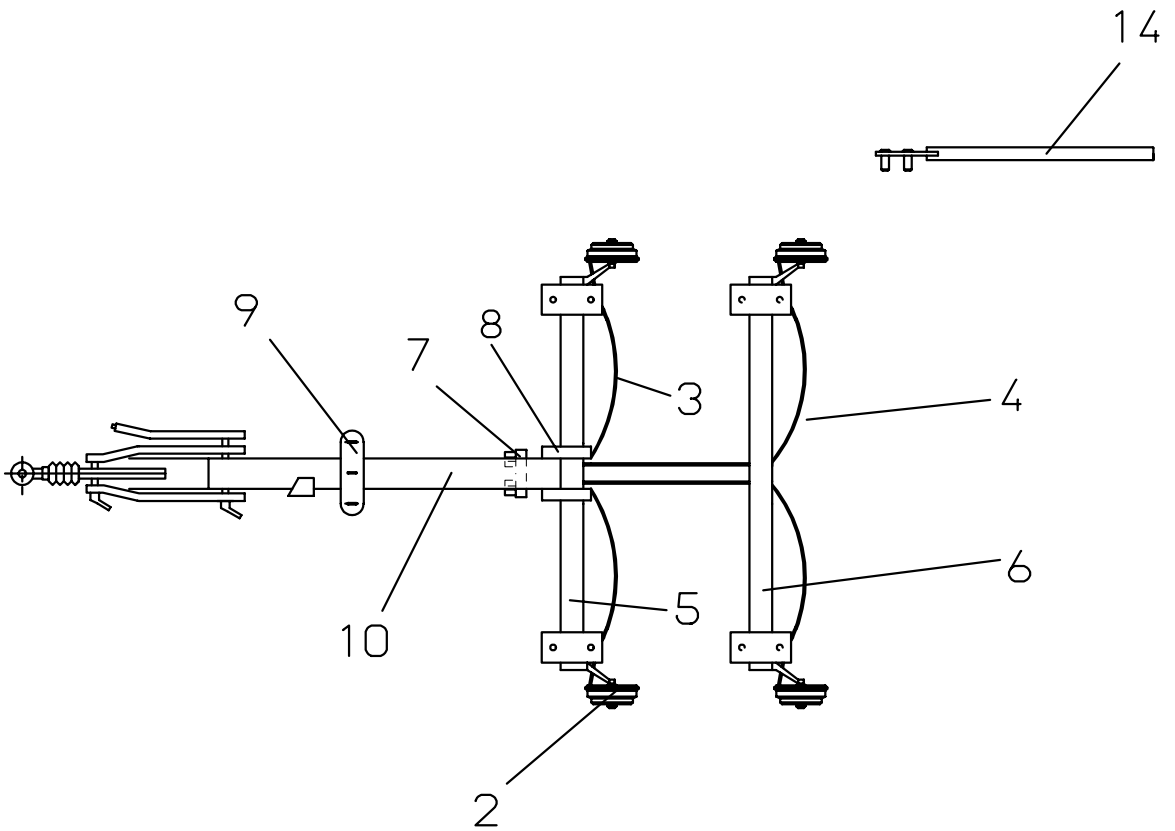
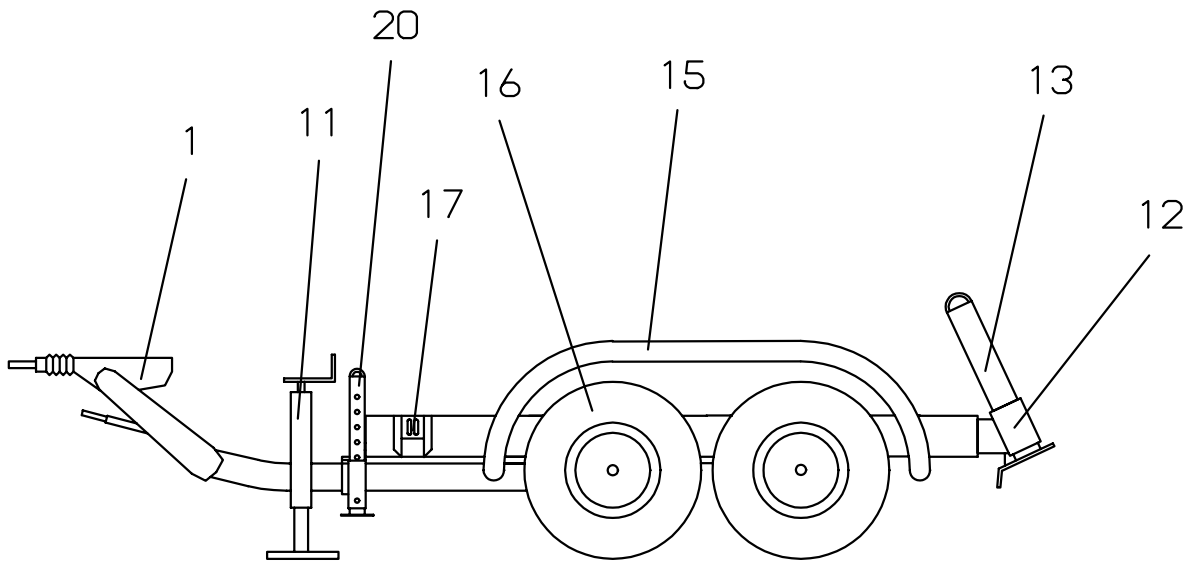
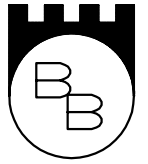
Pos.	Bezeichnung	Description	Best.-Nr
1	Zugeinrichtung mit Zwischenstück	pulling device	223.580.29
	Frankreich-Zugöse	trailer coupling ring (F)	223.580.34
	DIN-Zugöse	towing eye type DIN	223.580.35
	Zugeinrichtung ohne Zwischenstück	pulling device	223.580.30
	Kugelkupplung 251 VB kompl.	spherical type coupling 251 VB	223.500.17
	Zwischenstück	intermediat piece, welded	223.580.00
	Zugöse Nato	trailer coupling ring (NATO)	223.402.00
	Italien-Zugöse	IT ring eye	223.350.10
3	Bremsseil EL 980/770	brake cable EL 980/770	123.794.10
4	Bremsseil EL 1510/1320	brake cable back	123.140.10
5	Vorderachse	front axle	123.344.02
6	Hinterachse	rear axle	123.344.01
7	Tandem-Bremsausgleich	brake compensator for double-axle	123.200.00
8	Schraub - Klemmverbindung	towbar-axle clamps	223.736.00
9	Auflagebock	support	223.580.09
10	Zugdeichsel	tow bar	223.580.08
11	Stützwinde mit Halter	propping jack	123.376.01
	Kurbel f.Stützwinde	crank for supporting jack	123.376.50
	Axial-Rillenkugellager	deep groove ball thrust bearing	116.654.00
	Feststellschraube	fixing bolt	001.090.03
12	Stützträger rechts	prop carrier, right	002.136.01
	Vorsteckbolzen Ø20 x NL145mm	propping pin Ø20 x 145mm	014.580.00
	Klappsplint Ø6mm	linch pin Ø6mm	123.173.00
	Sicherungskette 250mm	safety chain 250 mm	133.015.03
	Stützträger links	prop carrier, left	002.136.00
13	Stütze hinten	rear prop	002.137.00
	Sicherungskette 250mm	safety chain 250 mm	133.015.03
	Vorsteckbolzen Ø20 x NL145mm	propping pin Ø20 x 145mm	014.580.00
	Klappsplint Ø6mm	linch pin Ø6mm	123.173.00
14	Stützenhebel	propping wrench	002.139.00
	Sicherungskette	securing chain	122.069.00
	Federstecker Ø4mm	spring pin Ø4mm	123.069.00
15	Kotflügel verz. Tandem	mudguard galv.	123.041.00
16	Felge 5 1/2 J x 14 1453	rim 5 1/2 J x 14 1453	124.214.00
	Rad kompl. 195 R14 C m. Felge	wheel cpl. with rim 195 R14 C	124.131.50
	Reifen 195 R14 C	tyre 195 R14 C	124.131.00
17	Unterlegkeil	wheel chock	123.058.00

B04012Z8

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04. 04.2011

Fahrgestell Undercarriage



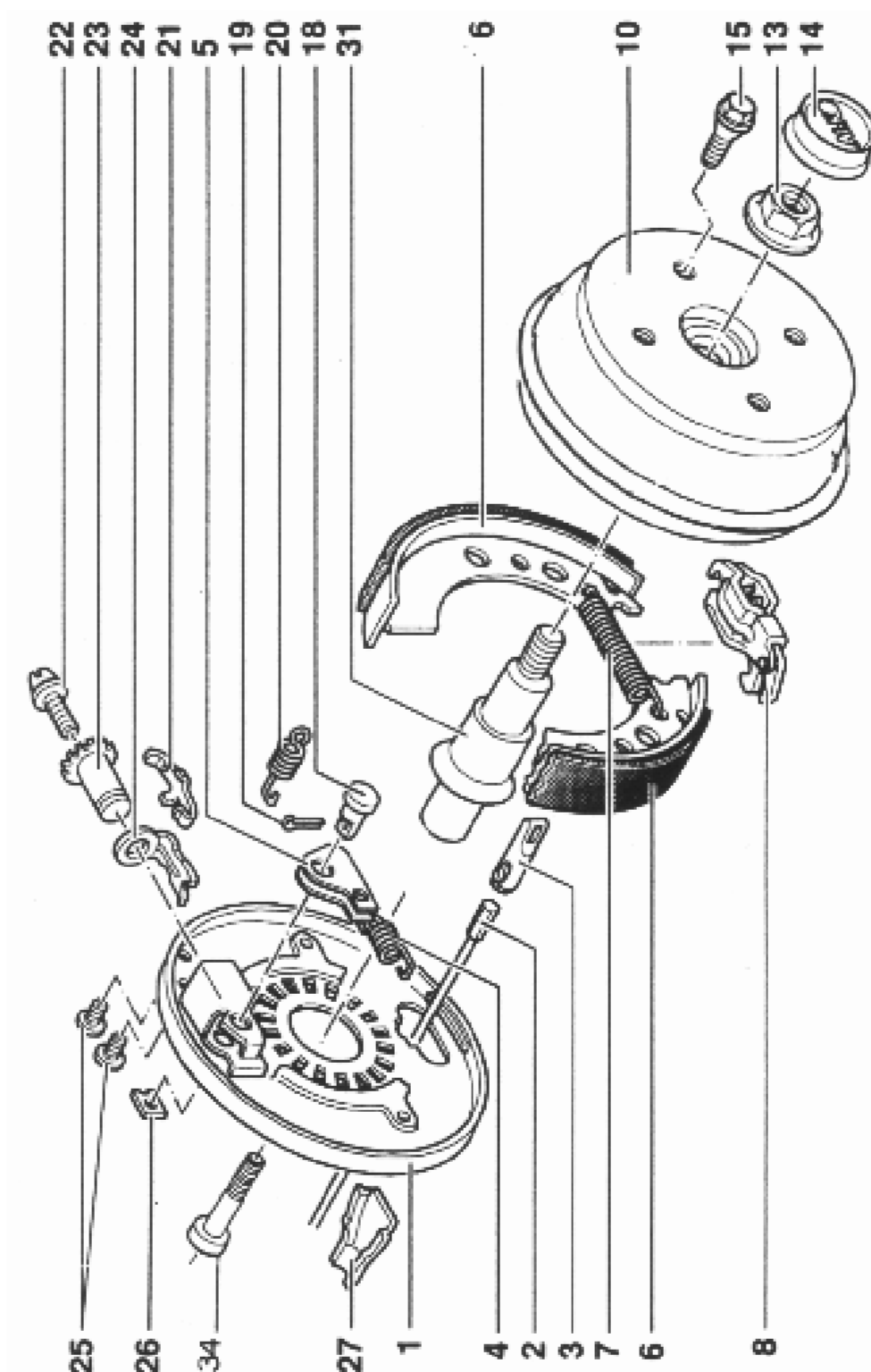
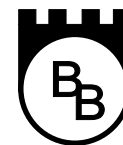
B0401172

Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!
Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
17	Halter für Unterlegkeil	chock carrier	123.063.00
20	Stütze vorn	front prop	002.138.00
	Vorsteckbolzen Ø 16 NL 90	bolt ø 16 NL 90	014.559.00
	Klappsplint Ø6mm	linch pin Ø6mm	123.173.00
	Sicherungskette 250mm	safety chain 250 mm	133.015.03

Radbremse wheel brake 2051 ETI 811.157



BE1571XX

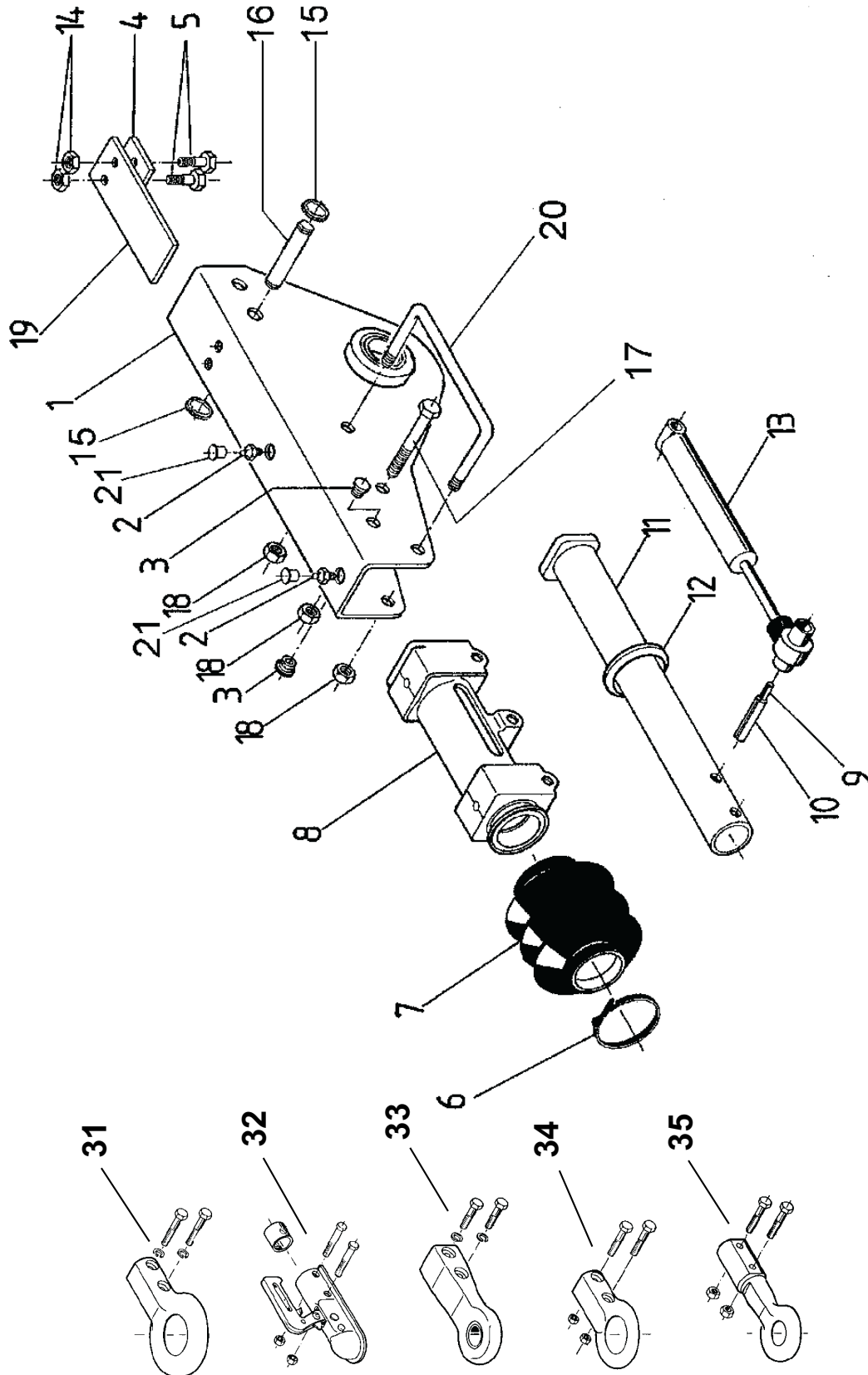
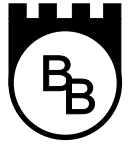
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Bremsschild geschweißt links	brake blade, welded, left	223.250.00
	Bremsschild geschweißt rechts	brake blade, welded, right	223.250.01
3	Einhängeöse	insert coupling	223.250.08
4	Zugfeder	tension spring	123.861.00
5	Rückmatikhebel rechts	recoil blocking lever, right	223.268.03
	Rückmatikhebel links	recoil blocking lever, left	223.268.02
6	Bremsbacke	brake clip	223.228.01
7	Zugfeder	tension spring	123.851.00
8	Spreizgelenkschloß	expanding joint lock	223.268.04
10	Bremstrommel	brake drum	123.230.02
13	Flanschmutter	flange nut	223.250.03
14	Kappe	cap	223.250.04
15	Radschraube Kugel 12 x 1,5	wheel bolt ball 12 x 1,5	223.236.00
18	Lagerbolzen	bearing bolt	223.240.00
19	Splint	splint pin	223.570.00
20	Druckfeder	pressure spring	123.855.00
21	Blattfeder	plate spring	223.243.00
23	Nachstellmutter kompl.	adjustment nut	223.245.00
24	Druckbügel	pressure bow	223.246.00
25	Stopfen	plug	223.094.00
26	Abdeckblech	protection plate	223.248.00
27	Schale	shell	223.249.00
31	Achsstummel	axle stup	123.230.03
34	Schraube m. Sicherung	screw w. securing	123.230.04

Auflaufeinrichtung Overrun device 251 VB ETI 811.345



BE345142

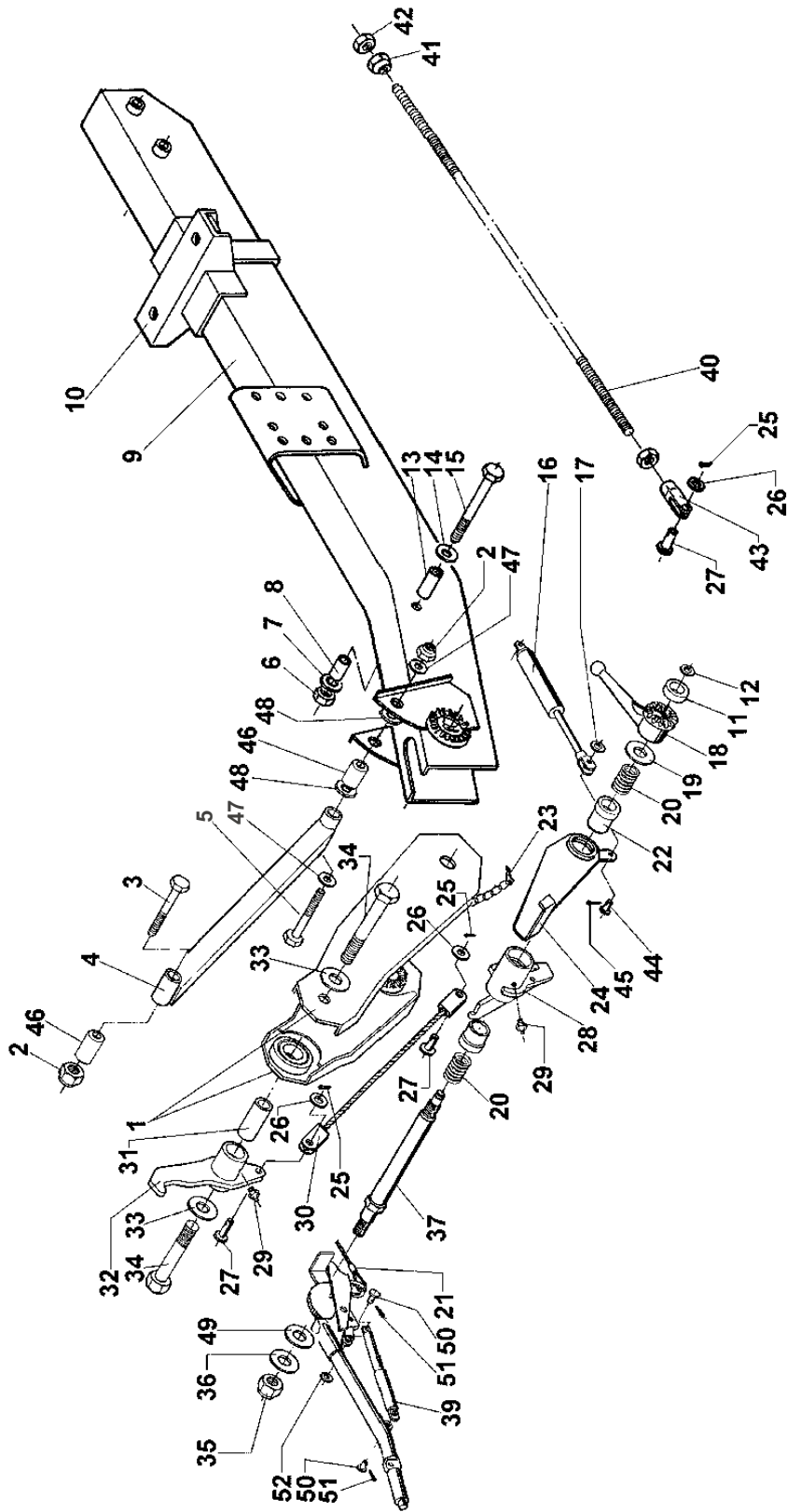
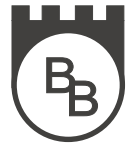
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Zugeinrichtung ohne Zwischenstück	pulling device	223.580.30
2	Kegelschmiernippel	lubricating nipple	223.301.00
3	Stopfen	plug	223.392.00
4	Anschlag	buffer	223.500.01
5	Sechskantschraube	hexagonal bolt	125.161.06
6	Kabelbinder	cable connector	223.560.00
7	Faltenbalg	bellow	223.305.00
8	Lagerkartusche	bearing	223.580.22
9	Spannhülse 7 x 50	tensioning bushing	125.268.16
10	Spannhülse 12 x 50	tensioning bushing	125.271.16
11	Zugrohr	pulling tube	223.580.23
12	Dämpfungsgummi	rubber buffer	223.500.04
13	Stoßdämpfer	shock absorber	223.509.00
14	Sechskantmutter	hex nut	223.580.21
15	Sicherungsring	securing ring	223.580.25
16	Lagerbolzen	bearing bolt	223.580.26
17	Sechskantschraube	hexagonal screw	125.174.11
18	Sechskantmutter	hex nut	223.601.23
19	Platte	plate	223.580.27
20	Handgriff	hand lever	223.580.28
21	Stopfen	plug	223.391.00
31	Zugöse Nato	trailer coupling ring (NATO)	223.402.00
32	Kugelkupplung 251 VB kompl.	spherical type coupling 251 VB	223.500.17
33	Italien-Zugöse	IT ring eye	223.350.10
34	Frankreich-Zugöse	trailer coupling ring (F)	223.580.34
35	DIN-Zugöse	towing eye type DIN	223.580.35

Auflaufeinrichtung Overrun device 251 VB ETI 811.345



BE345242

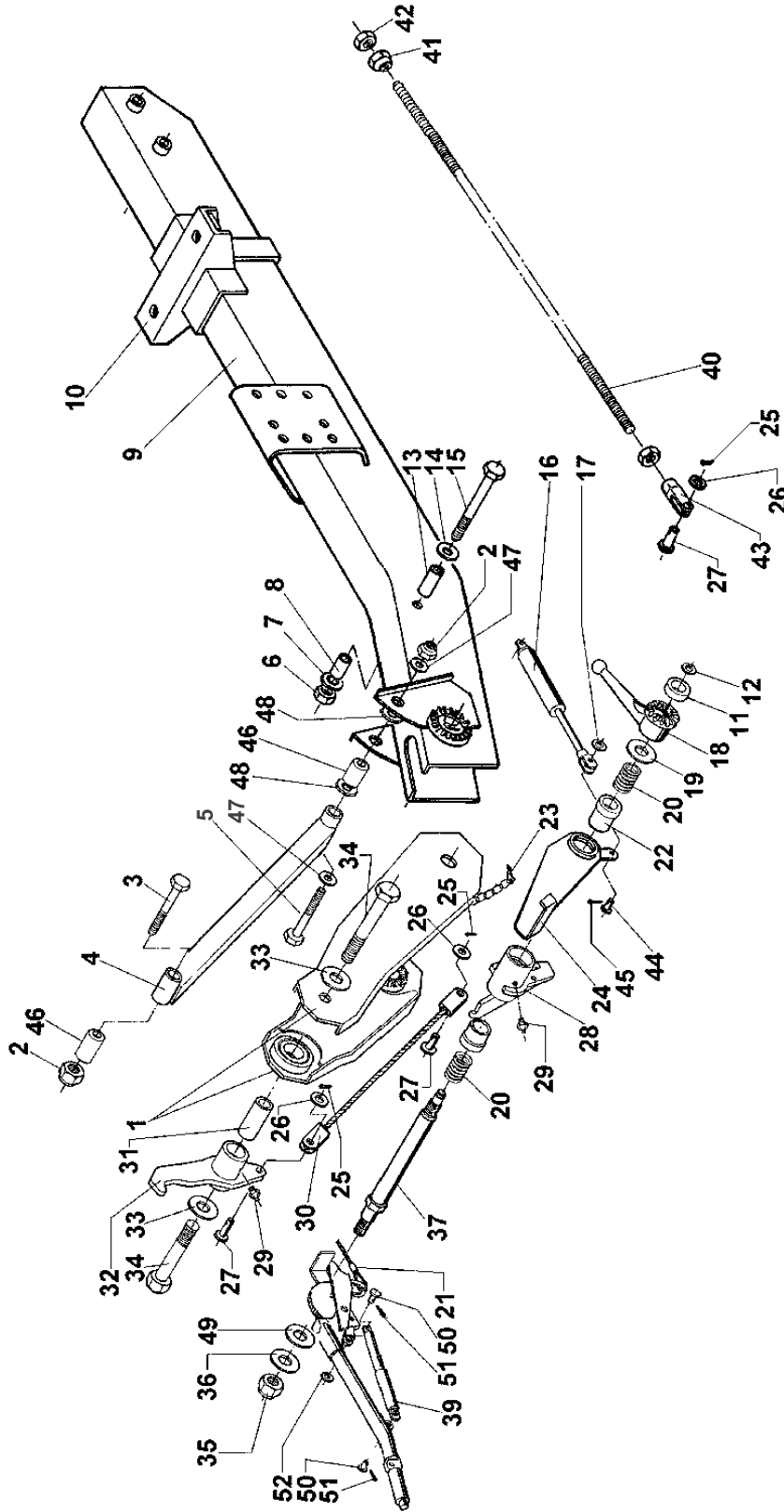
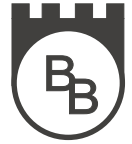
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Zwischenstück	intermediat piece, welded	223.580.00
2	Sechskantmutter M16 selbsts.	hex nut M16 self-cutting	223.638.02
3	Sechskantschraube	bolt	223.580.01
4	Steuerstange	Guiding Rod	223.580.05
5	Sechskantschraube	bolt	223.580.02
6	Mutter	nut	223.271.06
7	Scheibe	disc	223.500.11
8	Hülse	bushing	223.580.06
9	Zugdeichsel	tow bar	223.580.08
10	Auflagebock	support	223.580.09
11	Buchse	bushing	223.627.00
12	Sprengring A22	snap ring A22	223.532.00
13	Hülse	bushing	223.580.07
14	Scheibe	disc	223.500.11
15	Sechskantschraube	bolt	223.580.03
16	Gasfeder Höhenverstellung	pneumatic spring (height adjustm.)	223.400.00
17	Scheibe	disc	223.500.11
18	Feststellknebel	adjusting toggle	223.617.00
19	Scheibe	disc	223.500.26
20	Druckfeder	pressure spring	223.580.10
21	Abreißseil 1600 mm	contact-breaking cable 1600 mm	223.600.26
22	Lagerbuchsen	bushing	223.350.06
23	Kette m. Federstecker	chain w. spring connector	223.580.11
24	Hebel	lever	223.350.07
25	Splint	pin	223.500.08
26	Scheibe	disc	223.600.18
27	Bolzen	bolt	223.500.12
28	Umlenkhebel	reversing lever	223.580.12
29	Schmiernippel	lubricating nipple	123.817.00
30	Seilzug 700 mm	bowden control 700 mm	223.580.13
31	Distanzbuchse	distance bushing	223.580.14
32	Umlenkhebel	reversing lever	223.580.15
33	Scheibe	disc	223.580.16
34	Sechskantschraube	bolt	223.580.04
35	Sechskt.Mutter M12	hexagonal nut M12	223.313.00
36	Scheibe	disc	223.600.07
37	Lagerschraube	bearing bolt	223.527.00

Auflaufeinrichtung Overrun device 251 VB ETI 811.345

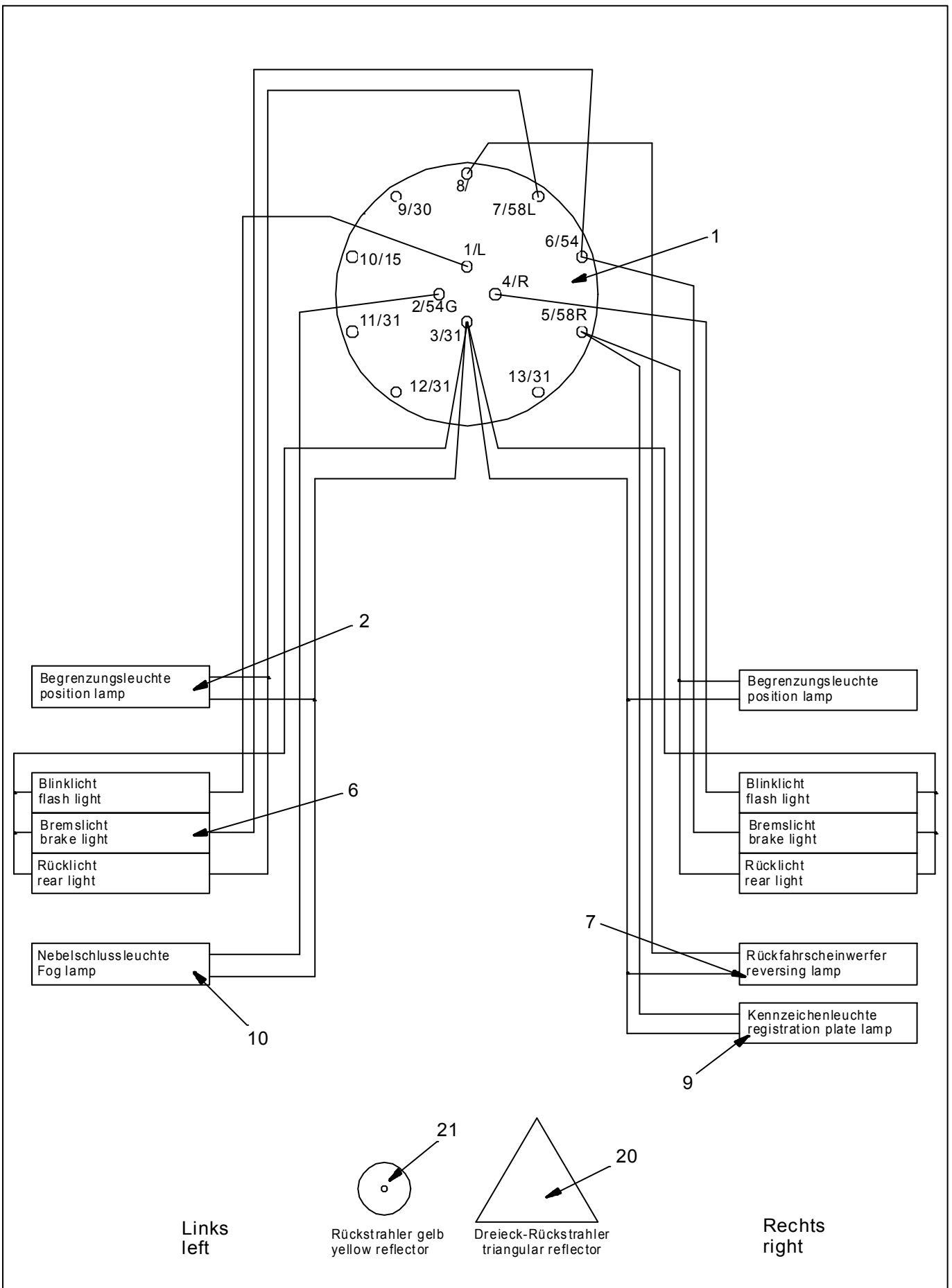


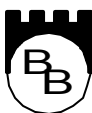
BE345242

Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!
Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
38	Handbremshebel kompl.	hand brake lever	223.600.13
39	Druckzylinder	pressure cylinder	123.212.00
40	Gestänge (Bitte Länge angeben)	rod assembly (indicate length)	123.823.00
41	Kugelmutter M10	ball nut M10	123.150.12
42	Mutter M10	nut	223.300.04
43	Gabelkopf	fork link	223.388.00
44	Bolzen	bolt	223.500.13
45	Splint	pin	223.500.09
46	Buchse	bushing	223.580.18
47	Scheibe A17	washer A17	223.504.00
48	Scheibe	disc	223.580.19
49	Federscheibe	spring disc	223.574.01
50	Bolzen	bolt	123.178.02
51	Splint	split-pin	123.150.07
52	Scheibe	disc	223.600.08



 <p>Bagela Baumaschinen GmbH & Co.</p> <p>Gottlieb-Daimler-Straße 5 24568 Kaltenkirchen Telefon: 04191/9933-0 Telefax: 04191/9933-99 www.bagela.de</p>	Benennung	Groth	23.09.09
	<p>Lichtanlage Lighting System 12V 13pol.</p>	Maßstab	Winden
		Zeichnungs-Nr.	

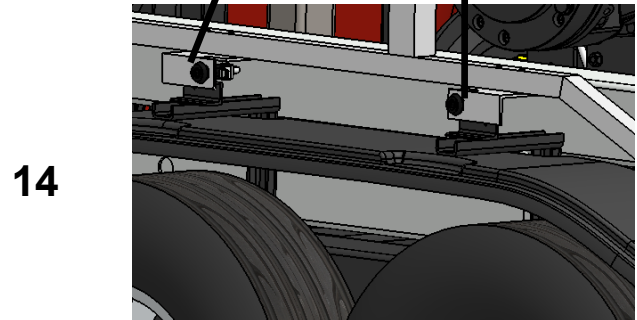
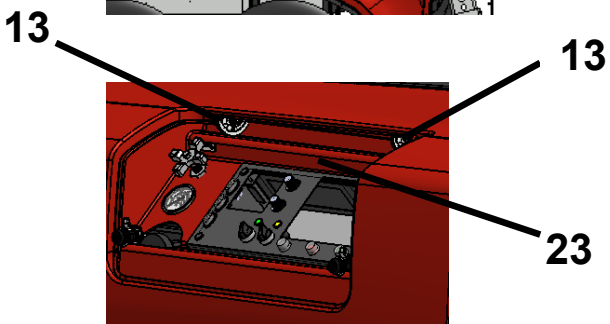
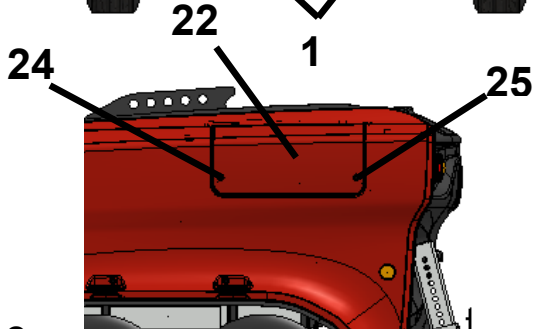
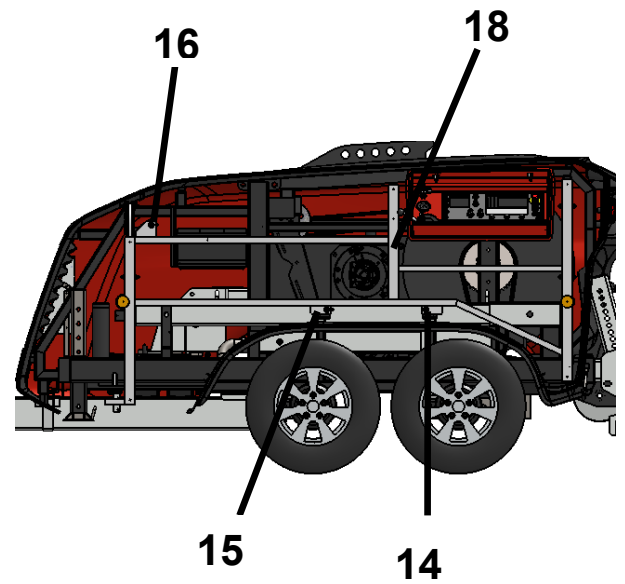
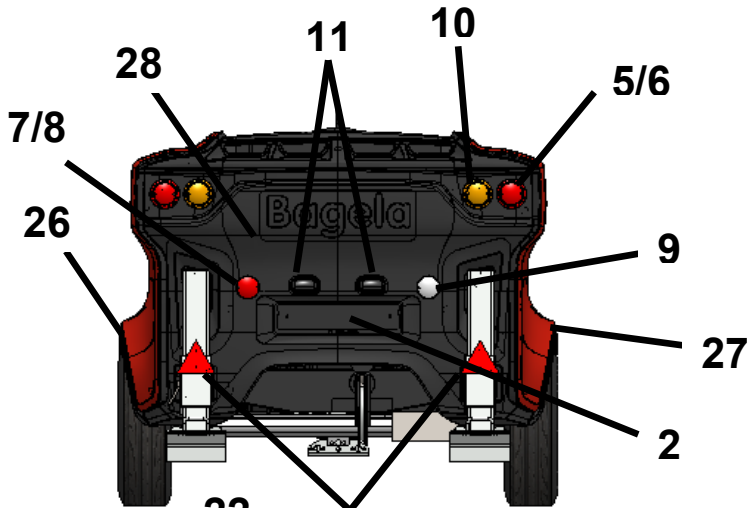
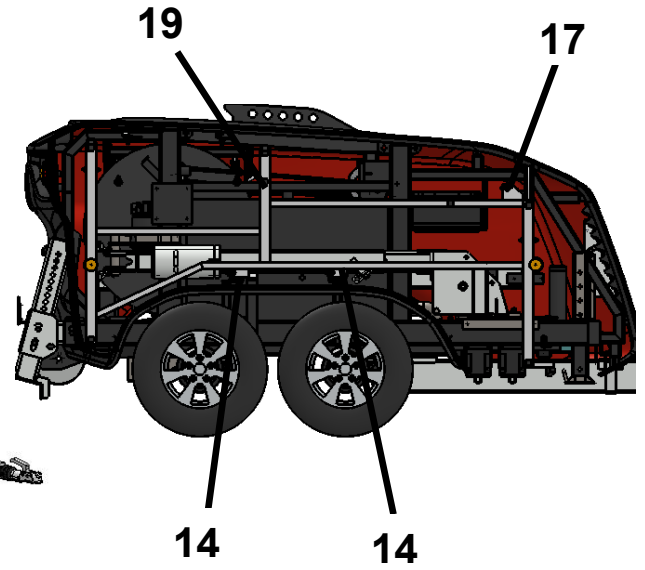
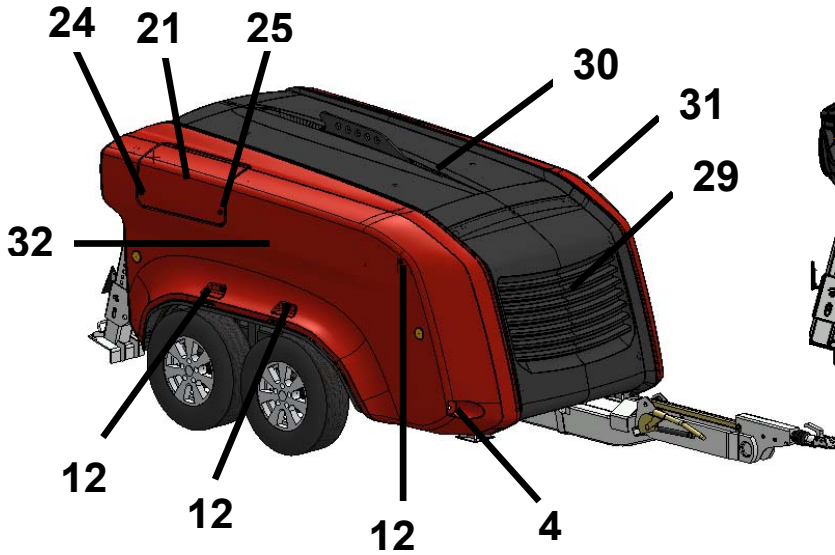
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Steckdose 13 pol.	13 channel socket	122.087.50
	Steckdosenunterlage		122.087.51
	Stecker 13 pol.	13 channel plug	122.090.00
	Zwischenkabel 13 polig 12V	13 channel connection cable	123.067.50
2	Sofittenlampe 12V 5W	linolite lamp, 12V 5W	122.098.00
	Sofittenlampe 24V 5W	linolite lamp, 24V 5W	122.098.01
	Positionsleuchte	marker light	122.129.00
	Pendelhalter	flex. reflector carrier	123.074.01
6	Kugelleuchte 24V 10W	ball bulb, 24V 10W	122.096.01
	Ersatzglas BB-Schlussleuchte	rear-light cover glass	122.100.00
	Kugelleuchte 12V 10W	ball bulb, 12V 10W	122.096.00
	Kugelleuchte 12V 21W	ball bulb, 12V 21W	122.095.00
	BB Schlussleuchte 120mm	brake + flash indicator lamp	122.085.00
	Kugelleuchte 24V 21W	ball bulb, 24V 21W	122.095.01
7	Ersatzglas	cap lamp	122.137.51
	Rückfahrleuchte eckig	lamp	122.137.50
9	Kennzeichenleuchte	number plate lamp	122.106.00
	Sofittenlampe 12V 5W	linolite lamp, 12V 5W	122.098.00
	Sofittenlampe 24V 5W	linolite lamp, 24V 5W	122.098.01
10	Ersatzglas	cap for rear flog lamp	122.137.01
	Nebelschlussleuchte eckig	rear fog lamp	122.137.00
	Kugelleuchte 12V 21W	ball bulb, 12V 21W	122.095.00
	Kugelleuchte 24V 21W	ball bulb, 24V 21W	122.095.01
20	Dreieck-Rückstrahler	triangular reflector	122.094.00
	Pendelhalter	flex. reflector carrier	123.074.00
21	Rückstrahler gelb	yellow reflector	122.093.00

Gehäuse Shell



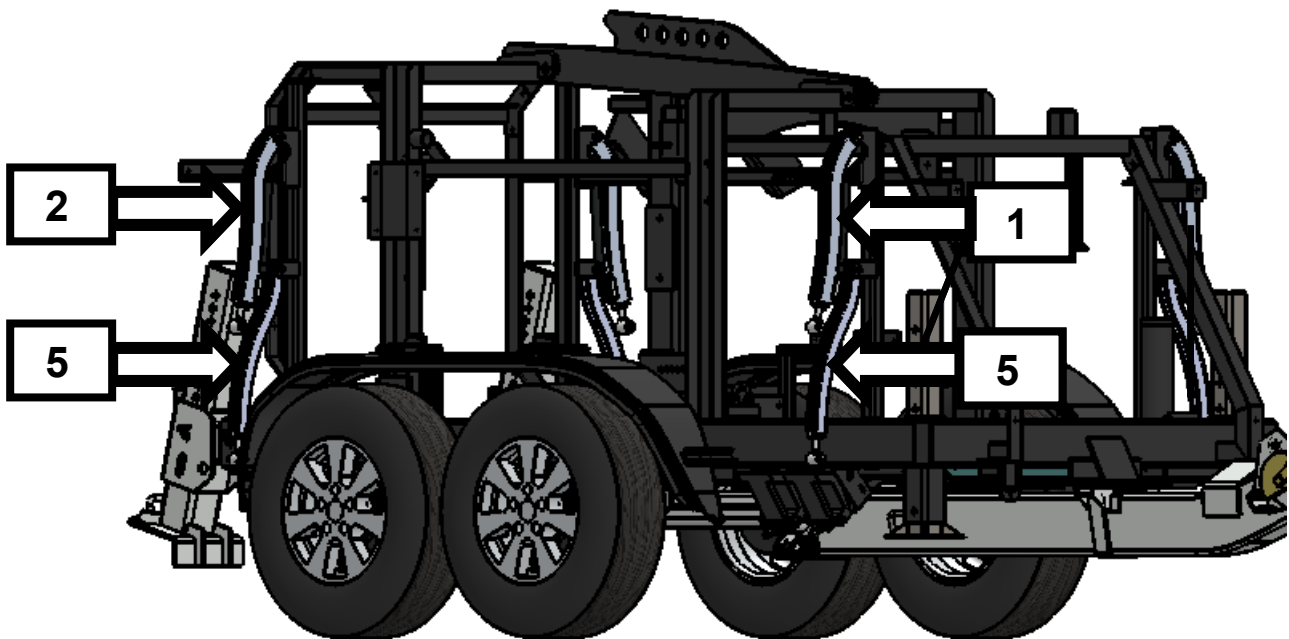
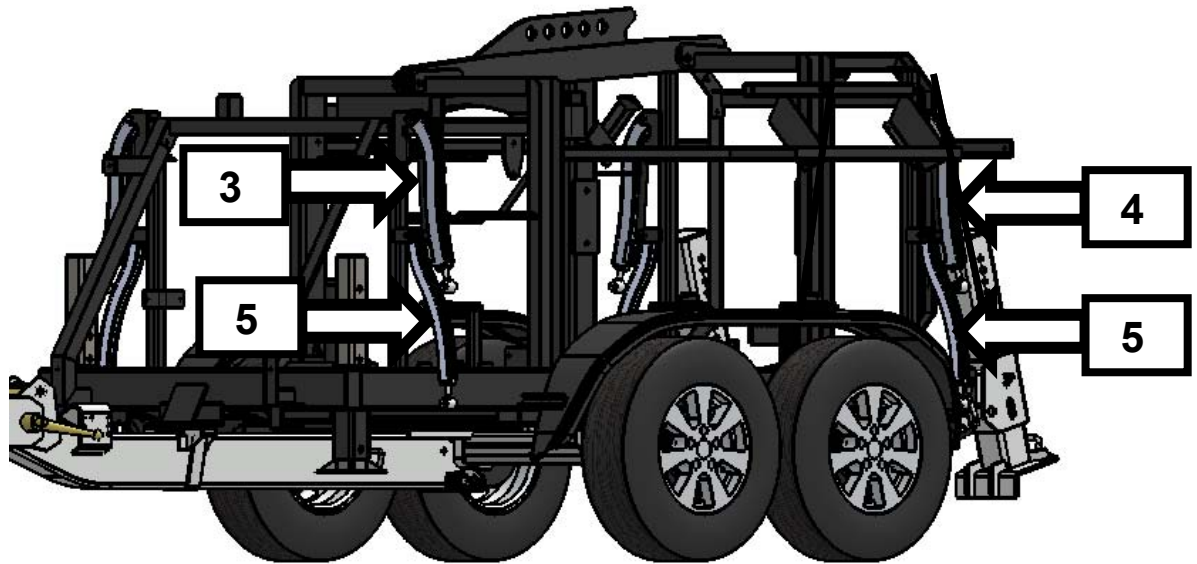
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Dreieck-Rückstrahler	triangular reflector	122.094.00
2	Kennzeichenhalter	Number plate bracket	123.996.00
3	Rückstrahler gelb	yellow reflector	122.093.00
4	Begrenzungsleuchte PLR 60b/12V	Position light PLR 60b/12V	122.127.00
5	Zierring 710 > gelb	Ring yellow	122.134.03
6	Blinkleuchte gelb	Indicator light yellow	122.134.02
7	Zierring	Ring	122.134.01
8	Nebelschlussleuchte SN 710/12V	Fog rear light SN 710/12V	122.134.04
9	Rückfahrleuchte	Reversing light	122.134.05
10	Brems-Schlussleuchte	Brake light	122.134.00
11	Kennzeichenleuchte seitlich	number plate light	122.402.00
12	Kompressionsverschluss	Compression Latch large	123.938.00
13	Scharnier innenliegend	Hinges concealed 180 degree	123.952.00
14	Verschlusshalter unten	Lower catch holder	032.184.53
15	Verschlusshalter unten	Lower catch holder	032.184.52
16	Verschlusshalter links	Left catch holder	032.184.51
17	Verschlusshalter rechts	Right catch holder	032.184.50
18	Rahmen Seitenteil links	Left frame	032.184.21
19	Rahmen Seitenteil rechts	Right frame	032.184.20
21	Toolbox-Abdeckung RW 10, rot	Toolbox cover RW 10 red	126.412.02
22	Bedienpultabdeckung RW 10, rot	Control panel cover RW 10, red	126.411.02
23	Bedienpultumrandung RW 10, rot	Control panel frame RW 10, red	126.411.03
24	Kompressionsverschluss	Compression latch large	123.937.01
25	Kompressionsverschluss	Compression latch large	123.937.00
26	Radlauf, links RW 10	Left wheel house RW 10	126.416.00
27	Radlauf, rechts RW 10	Right wheel house RW 10	126.416.10
28	Verkleidung Heck RW 10	rear covering RW 10	126.413.00
29	Verkleidung Front RW 10	front covering RW 10	126.414.00
30	Verkleidung Top RW 10	top covering RW 10	126.415.00
31	Seitenteil RW 10 links, rot	side covering left RW 10, red	126.411.01
32	Seitenteil RW 10 rechts, rot	side covering right RW 10, red	126.412.01

Gehäuse Shell

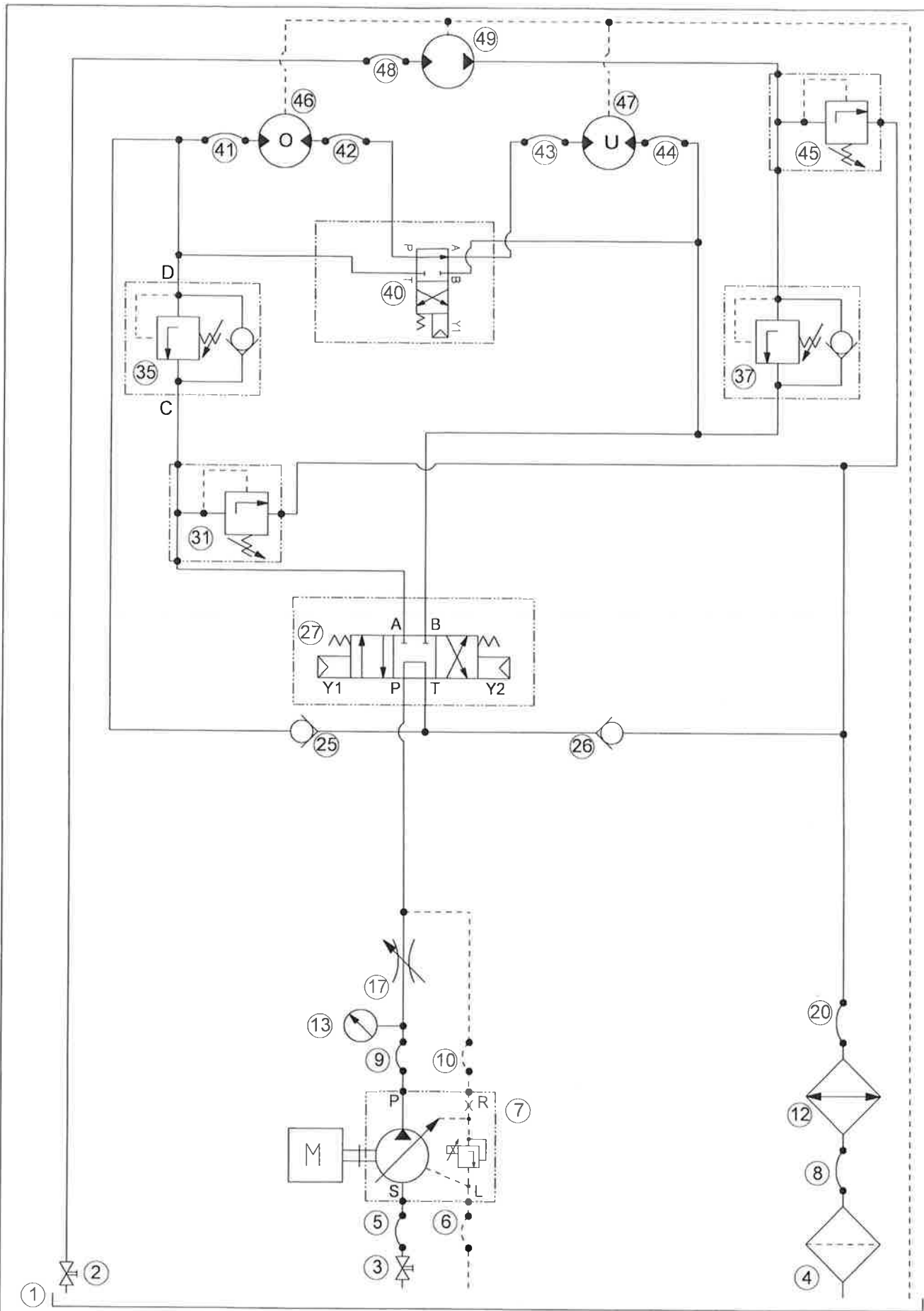


Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Hubmechanismus, vorn rechts	Lifting lever, front right	032.178.00
2	Hubmechanismus, hinten rechts	Lifting lever, rear right	032.178.02
3	Hubmechanismus, vorn links	Lifting lever, front left	032.178.01
4	Hubmechanismus, hinten links	Lifting lever, rear left	032.178.03
5	Hubmechanismus unten	Lifting lever, lower section	032.178.04




Bagela
Baumaschinen GmbH & Co.
 Gottlieb-Daimler-Straße 5
 24568 Kaltenkirchen
 Telefon: 04191/9933-0
 Telefax: 04191/9933-99
 www.bagela.de

Benennung
 R(K)W mit E-Steuerung
 kleiner Pumpe, E-Strg.

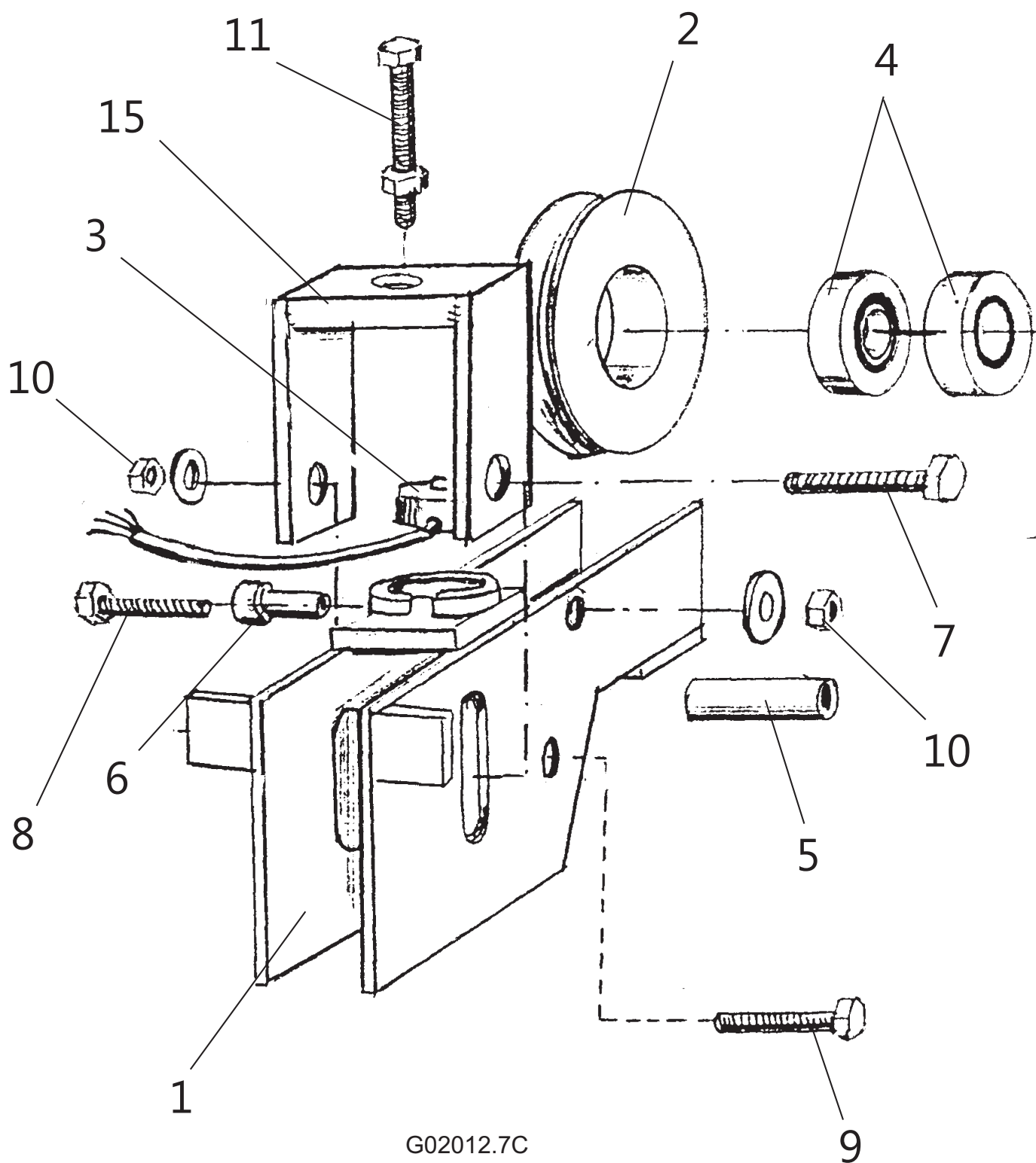
Mundt	18.07.18
Maßstab	RW 2-5
Zeichnungs-Nr.	03-499.06

Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!
Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Hydrauliköltank	oil reservoir	002.157.00
	Spannband Hydrauliköltank	tension band - hydraulic oil tank	002.157.01
	Hydrauliköltank m Reinigungsöffnung	oil reservoir	002.157.02
	Entlüftungsschraube	filling and venting screw	119.003.00
2	Doppeldruckventil	Double pressure valve	104.096.50
3	Saugfilter	suction filter	104.015.00
4	Hydraulikpumpe AGPV 50-35	hydraulic pump AGPV 50-35	104.229.40
5	Rückschlagventil	back pressure valve	114.784.00
6	Druckbegrenzungsventil	pressure control valve	204.003.00
7	Rückschlagventil	back pressure valve	114.784.00
8	Druckbegrenzungsventil 75 bar	Pressure control valve 75 bar	104.089.00
9	Messverschraubung	pressure gauge connector	114.812.00
10	Wechselventil 12S	shuttle valve 12S	104.225.00
11	Rückschlagventil	back pressure valve	114.695.01
12	Wegeventil	directional control valve	104.202.00
13	Druckmanometer 400 bar Ø63	oil pressure gauge 400 bar Ø63	104.086.00
	Druckmanometer 400 bar Ø100	oil pressure gauge 400 bar Ø100	104.087.10
	Messverschraubung	pressure gauge connector	114.812.00
15	Wegeventil NG6	directional control valve	104.221.01
17	Stufenmotor BD2 500-125 + R07	stage motor BD2 500-125 + R07	104.129.80
20	Hydraulikmotor SAI GM05-110	hydraulic motor SAI GM05-110	104.194.50
	Kettenrad 3/4" Z12	sprocket wheel, 12 teeth	112.278.01
23	HD-Schlauch 22-550	high-pressure hose 22-550	114.055.00
24	HD-Schlauch 20-800	high-pressure hose 20-800	114.068.00
26	HD-Schlauch 28-900	high-pressure hose 28-900	114.024.00
27	HD-Schlauch 20-700	high-pressure hose 20-700	114.065.00
30	Muffenschieber	check valve	114.988.00
31	4/2 Wegeventil NG 10	directional control valve	104.459.60

Meßkassette measuring cassette



G02012.7C

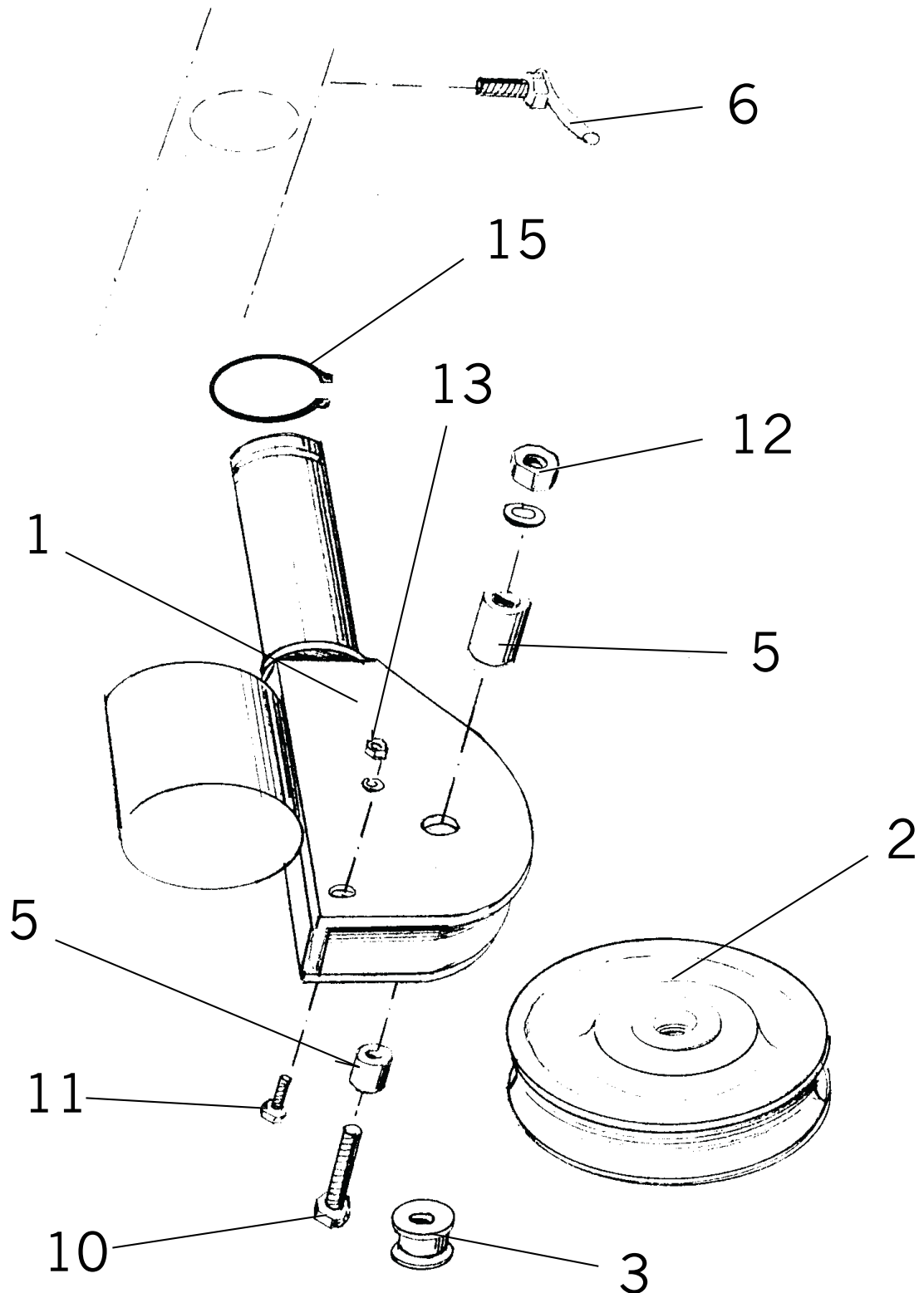
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Meßkassette Rahmen kompl.	frame of measuring cassette cpl.	001.413.01
	Meßkassette kompl.	measuring cassette cpl.	001.413.02
2	Seilführungsrolle kompl. mit Lager	rope guiding roller	004.097.11
	Seilführungsrolle	rope guiding roll	004.097.01
3	Miniatur-Kraftaufnehmer 20kN	miniature force transducer 20kN	110.081.01
4	Rillenkugellager	deep groove ball bearing	116.389.00
5	Meßkassette Laufrollenachse	roller axle of measuring cassette	001.416.00
6	Meßkassette Meßrollenachse	measuring roller axle of meas.cass	001.417.00
7	Sechskantschraube M12 x 70	hexagonal screw M12 x 70	125.174.06
8	Sechskantschraube M12 x 60	hexagonal screw	125.174.04
9	Sechskantschraube	hexagonal screw	125.174.10
10	Sechskantmutter M12	hexagonal nut	125.186.11
11	Sechskantmutter M 14	hexagonal nut	125.193.09
	Sechskantschraube	hexagonal screw	125.431.27
15	Meßkassette Bügel	bow of measuring cassette	001.415.00

Schwenkrolle tail pulley



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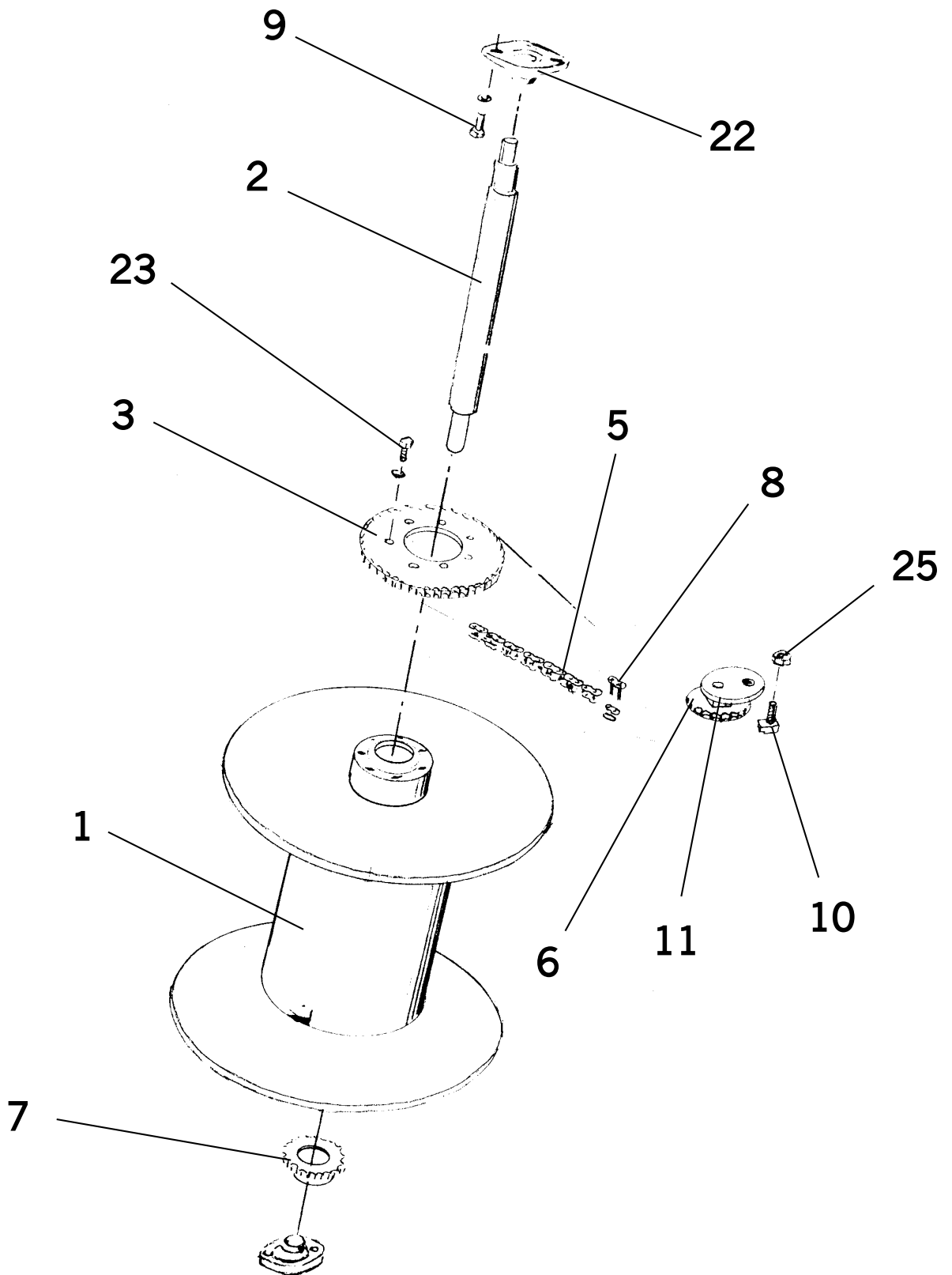
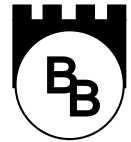
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Schwenkrollenhalter	tail pulley carrier	002.132.00
	Schwenkrollenhalter kompl.	tail pulley carrier cpl.	002.132.01
2	Seilscheibe mit Lager ø258	tail pulley with bearings	107.005.10
3	Laufrolle für Schwenkrolle	roller	001.090.01
5	Buchse	bushing	001.263.01
6	Feststellschraube	fixing bolt	001.090.03
10	Sechskantschraube	hexagonal screw	125.179.09
11	Sechskantschraube M12 x 70	hexagonal screw M12 x 70	125.174.06
12	Federring M24	Spring washer M24	125.189.17
	Sechskantmutter M24	hexagonal nut	125.186.17
13	Federring M12	Spring washer M12	125.189.11
	Sechskantmutter M12	hexagonal nut	125.186.11
15	Sicherungsring A	securing ring	125.111.01

Speichertrommel rope storage drum



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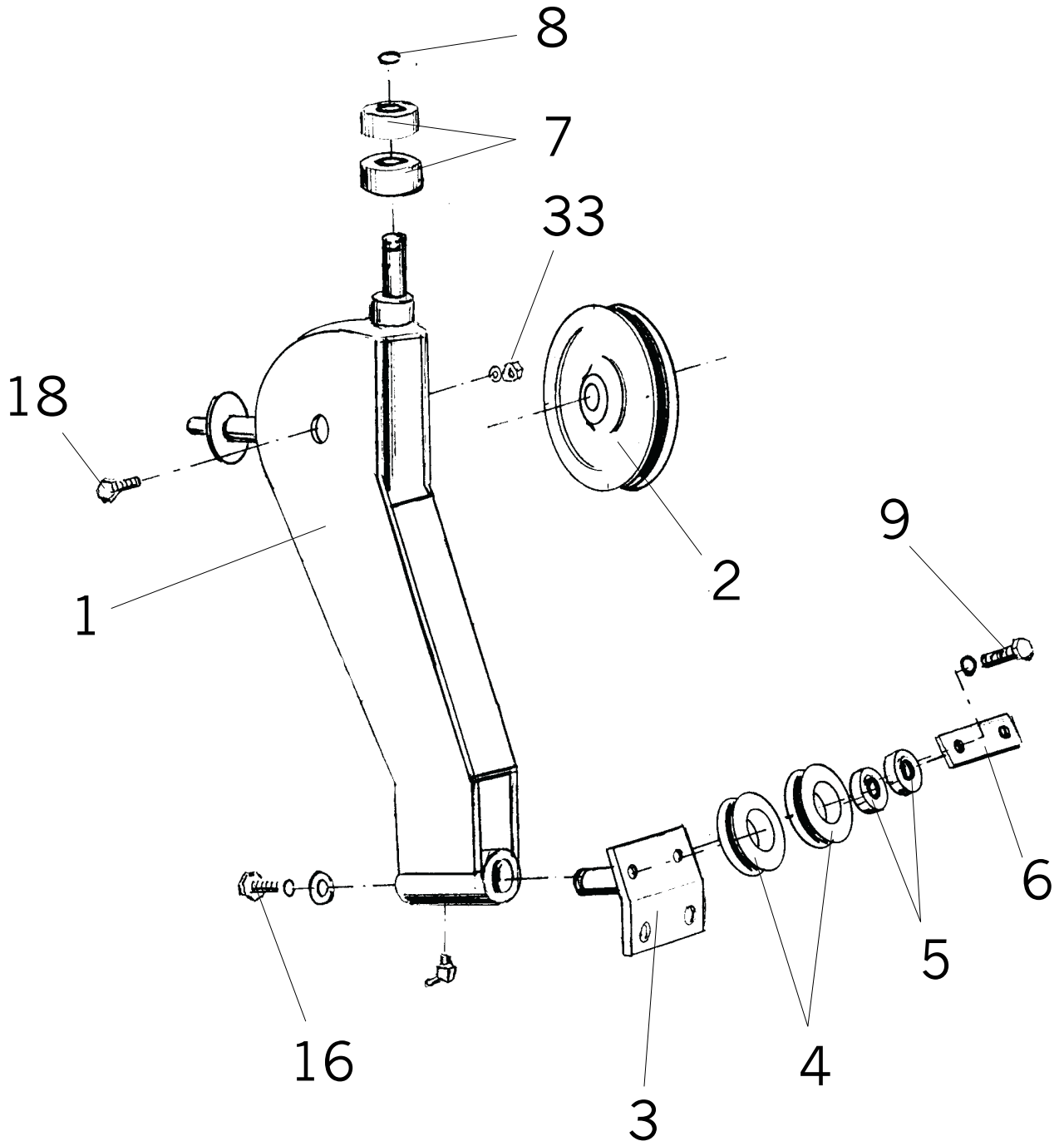
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
0	Stahldrahtseil verz. Ø16mm	Steel rope galv. Ø16mm	107.116.00
	Stahldrahtseil verz. Ø14mm	Steel rope galv. Ø14mm	107.115.00
	Stahldrahtseil verz. Ø12mm	Steel rope galv. Ø12mm	107.113.00
1	Speichertrommel	rope storage drum	002.061.00
2	Speichertrommelwelle ø50x920	shaft for rope storage drumø50x920	002.231.00
3	Kettenradscheibe Z45 3/4"	sprocket wheel	112.287.00
5	Rollenkette 3/4"	roller sprocket chain	112.331.01
6	Kettenspannrad 3/4" Z15	chain tension sprocket, 15 te.	112.276.00
7	Kettenrad m. Nabe Z21	sprocket wheel with hub, 21 teeth	112.412.02
8	Steckglied f. Rollenk. verst.	pin	112.332.00
9	Sechskantschraube	hexagonal screw	125.164.04
10	Klemmschraube	clamp bolt	005.177.00
11	Kettenspannscheibe	chain tensioning sprocket	005.178.00
22	Flanschlagereinheit	flanged bearing	116.010.00
23	Sechskantschraube M12 x 30	hexagonal screw	125.162.05
25	Sechskantmutter M16	hexagonal nut	125.186.13

Schwenkarm swivel arm



I04051XX

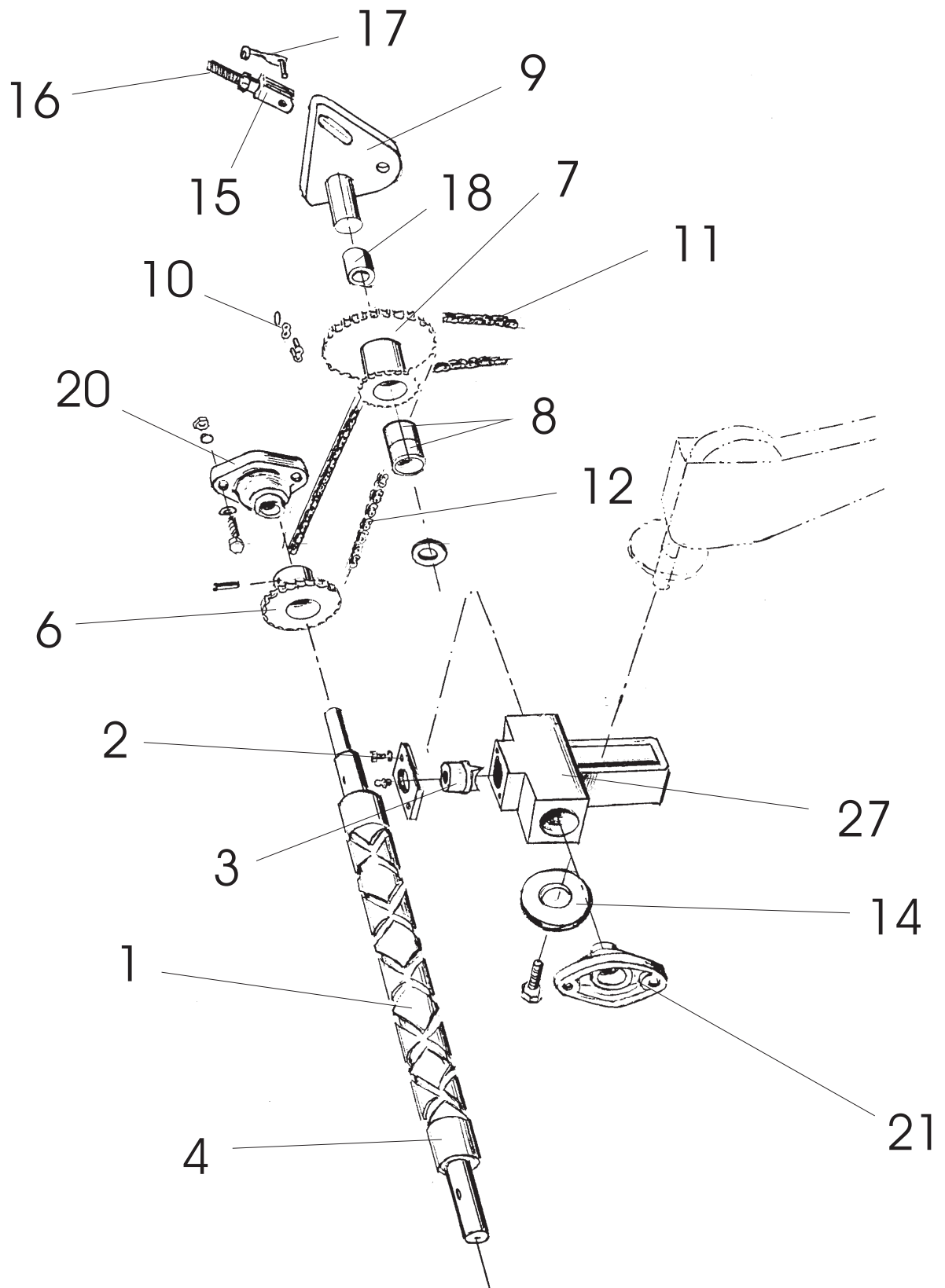
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Schwenkarm kompl.	swivel arm compl.	002.031.01
2	Seilscheibe kompl. Ø198	rope disc, cpl.	107.012.00
3	Schwenkarmhalter	swivel arm pivot	002.108.00
4	Seilführungsrolle 80 kpl.	rope guide pulley	002.042.01
	Seilführungsrolle 80	rope guide pulley, 80	002.042.00
5	Rillenkugellager	deep groove ball bearing	116.388.00
6	Führungsrollenlasche	guide arm bracket	002.037.00
7	Laufrolle	guide roller	116.214.00
8	Sicherungsring A	securing ring	125.106.03
9	Sechskantschraube M12 x 50	hexagonal screw	125.162.09
16	Sechskantschraube M12 x 30	hexagonal screw	125.162.05
18	Sechskantschraube	hexagonal screw	125.176.02
33	Sechskantmutter M16	hexagonal nut	125.186.13

Kreuzgewindespindel cross groove spindle



I04061.3F

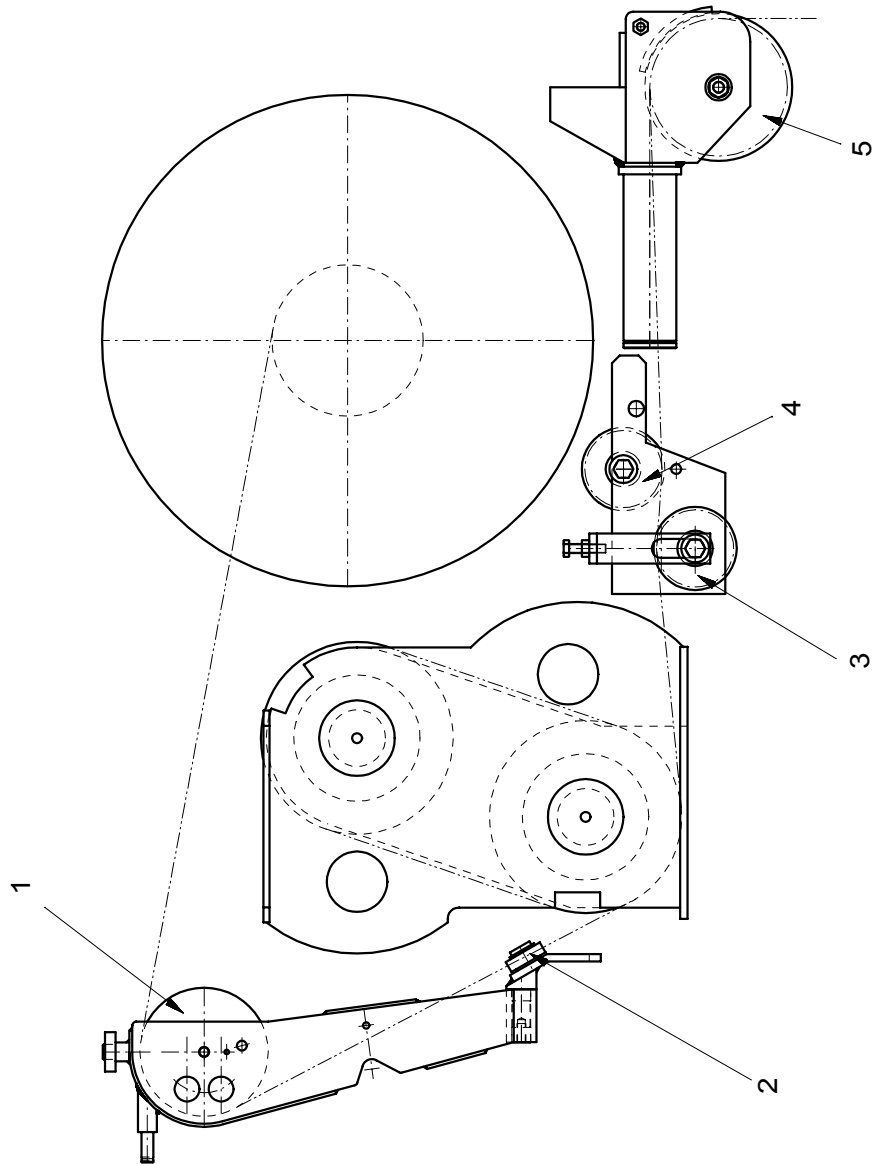
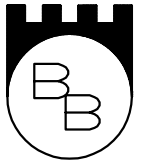
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Kreuzgewindespindel RW 10	cross groove spindle, RW 10	002.247.00
2	Deckel für Führungsmutter	cover for guiding nut	001.932.02
3	Führungsmesser	shuttle	001.611.00
4	Umlenkbuchse	Deviation box	001.610.00
6	Kettenrad m. Nabe Z30 1/2"	sprocket wheel with hub, 30 teeth	112.421.02
	Kettenrad m. Nabe Z25	sprocket wheel with hub, Z25	112.416.02
	Kettenrad m. Nabe Z24	sprocket wheel with hub, Z24	112.415.02
	Kettenrad m. Nabe Z23	sprocket wheel with hub, Z23	112.414.02
	Kettenrad m. Nabe Z22	sprocket wheel with hub, Z22	112.413.02
7	Zwischenrad m. Spannplatte kompl.	sproc.wheel with fixing plate cpl.	002.253.00
	Kettenzwischenrad kompl.	chain intermediate wheel	001.618.00
8	Permaglide-Buchse	Permaglide bushing	116.492.00
9	Spannplatte mit Bolzen	clamping plate	002.253.01
10	Steckglied m. Federverschluss 1/2"	chain connection pin 1/2"	112.351.00
11	Einfach Rollenkette 1/2" 885lang	roller chain 1/2", 885 mm	112.350.04
12	Einfach Rollenkette 1/2" 2525lang	roller chain 1/2", 2525 mm	112.350.03
14	Scheibe f.Führung	guiding disk	002.249.01
15	Gabelgelenk	fork joint	119.257.00
16	Kettenspanner Zugstück kompl.	pulling piece for chain tensioner	001.635.00
17	Bolzen f. Gabelgelenk	bolt for fork joint	119.257.01
18	Abstandsbuchse	distance bushing	002.250.00
20	Flanschlagereinheit	flange bearing unit	116.004.00
21	Flanschlagereinheit	slange bearing unit	116.005.00
27	Führungsmutter kompl.	guiding nut compl.	002.248.00

Seilführungsrollen
rope guide pulley



I0220134

Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

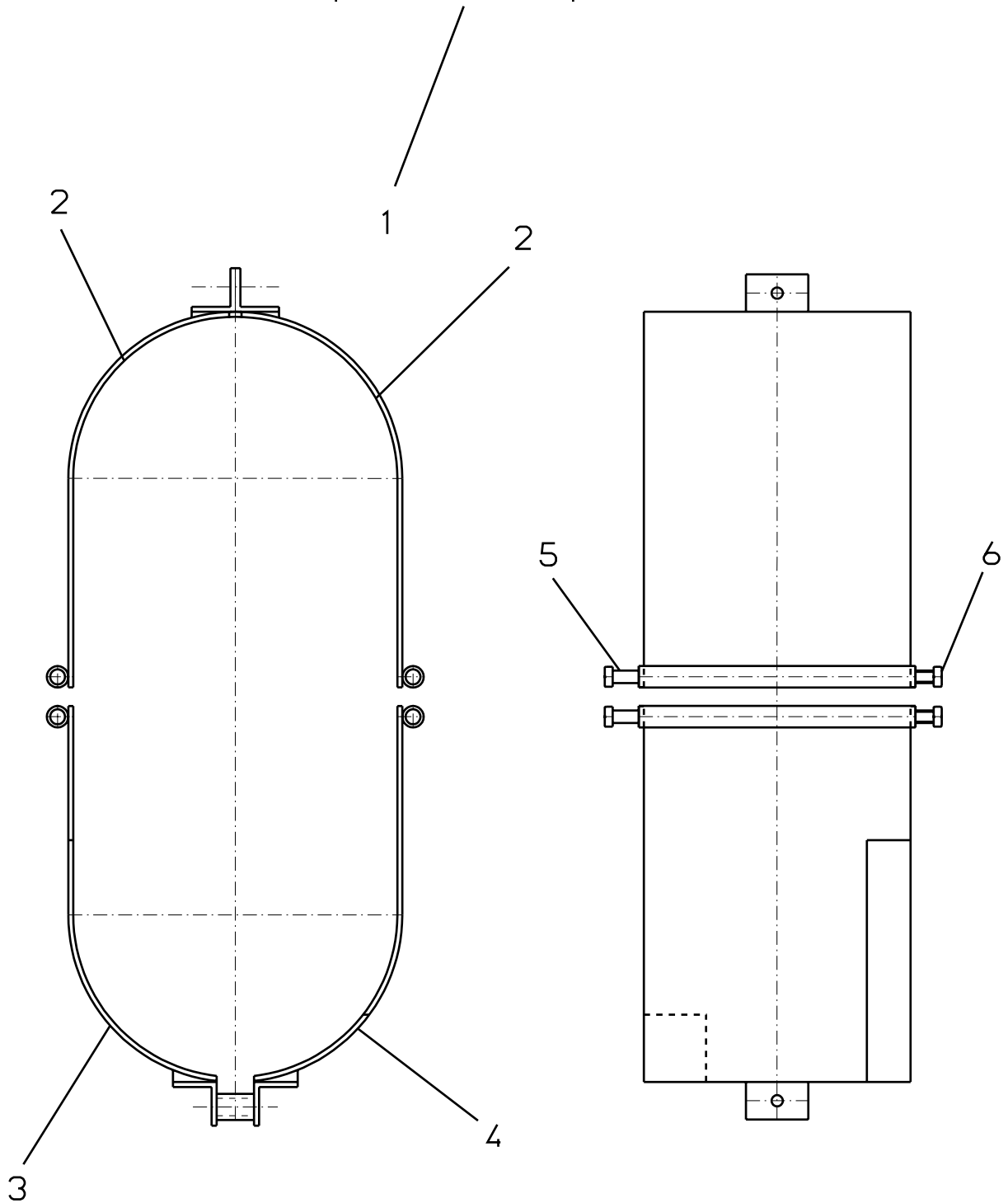
Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Seilscheibe kompl. Ø198	rope disc, cpl.	107.012.00
2	Seilführungsrolle 80 kpl.	rope guide pulley	002.042.01
3	Seilführungsrolle kompl. mit Lager	rope guiding roller	004.097.11
4	Seilführungsrolle kompl. mit Lager	rope guiding roller	004.097.11
5	Seilscheibe mit Lager ø258	tail pulley with bearings	107.005.10

Spill Capstan



Spillabdeckung kompl.
capstan cover plate



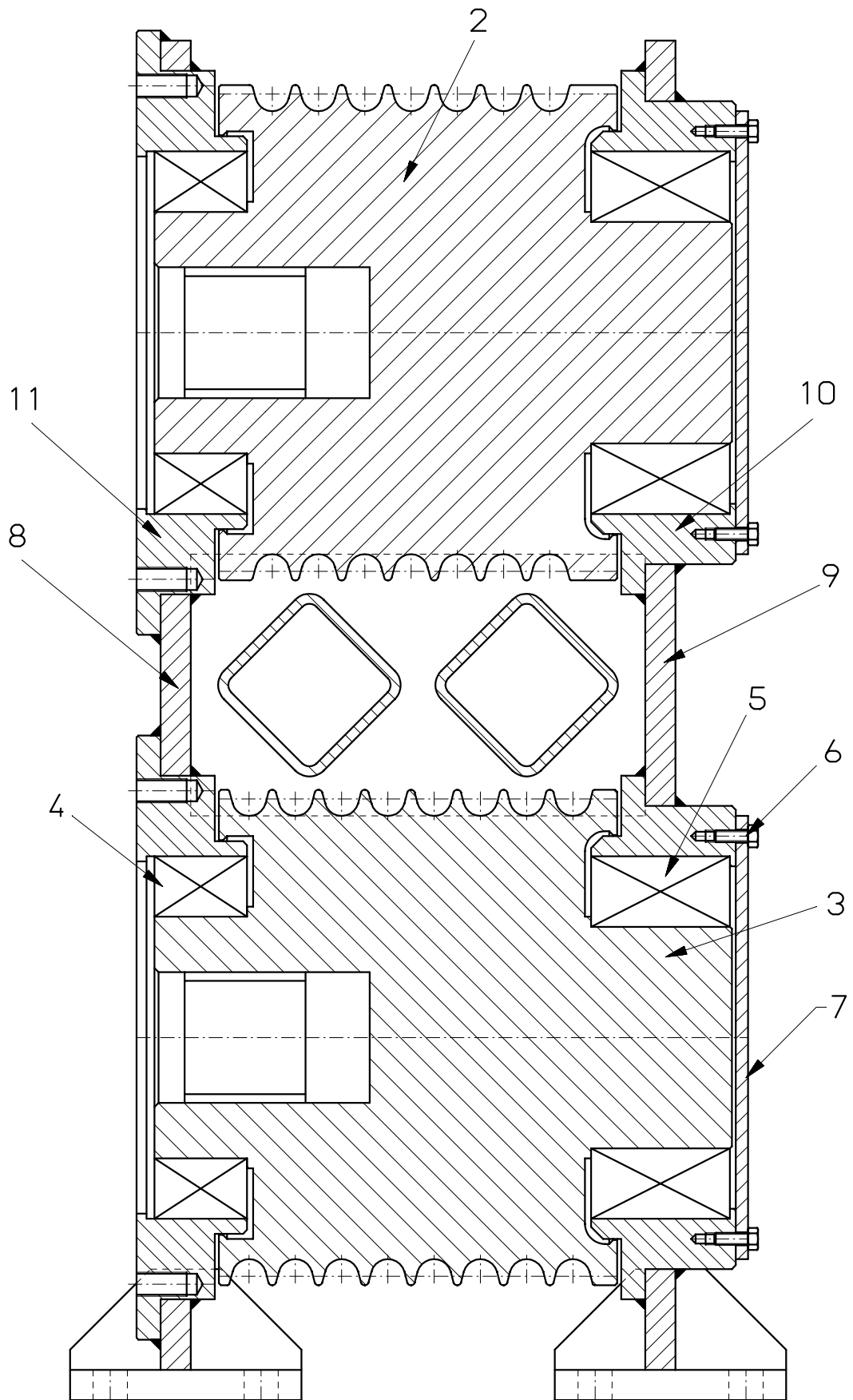
K040125Y

Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Spillabdeckung kompl.	capstan guard, compl.	002.134.00
2	Spillabdeckung oben	capstan protection, top	002.134.01
3	Spillabdeckung unten hinten	capstan protection, below rear	002.134.02
4	Spillabdeckung unten vorne	capstan protection, below front	002.134.04
5	Gewindestange M10x275	threaded rod M10x275	002.134.05
6	Sechskantmutter M10	hexagonal nut M10	125.186.10
	Federring M10	Spring washer M10	125.189.10



Bagela-
 Baumaschinen GmbH & Co.
 Gottlieb-Daimler Straße 5
 24568 Kallenkirchen
 Telefon: 04191/99330
 Telefax: 04191/99339
 Telex: 2180291 bage

Bagela-
 Maschinenfabrik GmbH & Co. KG
 Gölzer Straße 6
 19258 Bolzenburg
 Telefon: 038847/4080
 Telefax: 038847/40818

Benennung

Spill komplett
 002.063.06

Maßstab

080301

RW 10

Zeichnungs-Nr.

K0403144

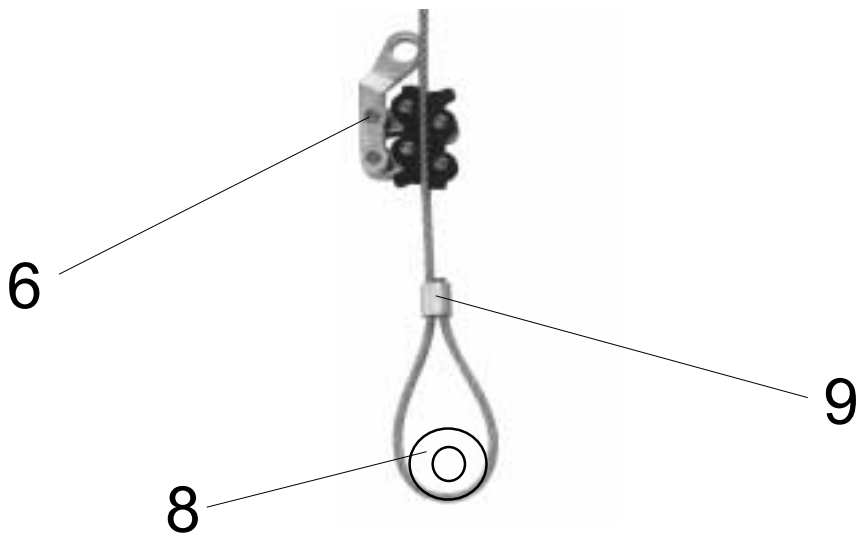
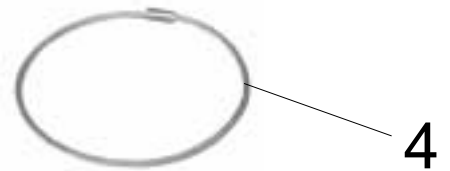
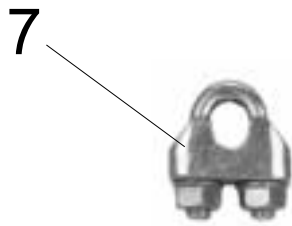
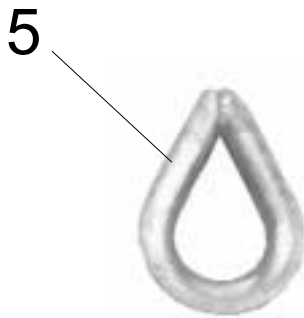
Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
1	Spill kompl. RW10	capstan compl. RW10	002.063.06
2	Spill m. 7 Rillen	upper capstan	002.045.04
3	Spill m. 8 Rillen	lower capstan	002.044.04
4	Pendelrollenlager	cylindrical roller bearing	116.273.00
5	Pendelrollenlager	spherical roller bearing	116.270.00
6	Sechskantschraube	hexagon screw	125.158.05
7	Sicherungsscheibe	securing disk	002.058.02
8	Spill-Seitenteil	capstan side part,	002.143.00
9	Spill-Seitenteil	capstan side part,	002.144.00
10	Spill-Lagerflansch rechts	capstan bearing flange	002.049.02
11	Spill-Getriebeflansch	capstan gearbox flange	002.048.02

Maschinenzubehör Machine accessories



Maschinenzubehör nicht im Lieferumfang enthalten !
a.m. accessories are not concluded in standard delivery !

Ersatzteilliste spare part list

Achtung! Bei Ersatzteilbestellung Fabrik-Nr. angeben!

Attention! If you order spareparts, please indicate Serial-No.!

Pos.	Bezeichnung	Description	Best.-Nr
2	Drallfänger 110 kN Ø60mm	Anti-twist swivel 110 kN Ø60mm	009.568.30
3	Schäkel Ø 12 mm	Shackle	107.071.00
4	Seilring Ø6mm / 200mm	Rope sling Ø6mm / 200mm	107.130.00
5	Seilkausche verz. NG 16	Rope thimble galv. NG 16	107.146.00
6	Seilspannklemme 12 - 26mm	rope clamp 12 - 26mm	107.422.03
	Seilspannklemme 8 - 16mm	rope clamp 8 - 16mm	107.422.02
7	Seilklemme f. 16mm Seil	rope clamp	107.404.00
8	Seilführungshülse f. 16er Seil	rope guiding ring rope dia. 16mm	107.266.12
9	Preßmuffe für Seil-Ø16mm	Pressed sleeve for rope-Ø16mm	107.209.00