MAINTENANCE AND SERVICE MANUAL TRANSIT CONCRETE MIXER

MIXERS KEL-BERG®

Tel 01869 343 511
Email: mixerinfo@kelberg.com

Middleton Stoney Road,
Bicester OX25 3TH

KBM/32/3
Version 1 | 11/19

KEL-BERG® TRAILERS AND TRUCKS LIMITED

Dear customer,

Truck-mounted concrete mixers are machines that are the result of mounting a concrete mixer onto a vehicle. This system is intended for the transport and mixing of concrete, mortar or other bulky, non-hazardous materials in such a way that these materials can be handled without risk of contamination.

This manual contains general features, safety and maintenance operations. This will help you to ensure that your machine will function properly, profitably, free of risks and breakdowns during its working life.

With this in mind, we would ask you, before operating your “KEL-BERG TRAILERS & TRUCKS” concrete mixer, **to read this manual carefully**.

Great service is our priority, that is why we have an after-sales service that will resolve any issues you may have and supply you with any spare parts that your concrete mixer may need.

Any information needed concerning the operation and maintenance of your concrete mixer can be found within this manual.

Photo of maker plate

For any questions or suggestions you may wish to consult with us, feel free to call us on our office number: 01869 343 511

We are grateful for any suggestions that might help us in our efforts to constantly improve our product.

Thank you for your business.

1. WARRANTY

Kel-Berg concrete mixers components has a valid warranty for two years as of the date of delivery and a third year covers the structure of the concrete mixer.

Any repairs that may be needed during this period must be performed by our technical staff. If third party repairs are required, they must be requested and approved by us beforehand.

The warranty offered does not cover breakdowns that are caused by improper use of the vehicle, a lack of maintenance or accidents.

1 year full

2. SAFETY REGLATIONS

KEL-BERG TRAILERS & TRUCKS, in a continued attempt to offer top quality in its products, feels that safety is imperative to this quality. We have therefore manufactured our machines with this in mind, in compliance with the European safety regulations that are currently in effect.

We believe that it is not enough to rely on the technical means that we have provided in order to prevent risks and comply with the European safety requirements. The user must also adopt the following measures:

- The handling and maintenance of the concrete mixer must be the responsibility of the authorised operator or staff, someone who has been properly trained and designated by the owner or his/her authorised manager.

- The handling and operation of this machine is not highly complex. The person designated to use the machine a need simply follow the instructions in this manual in order to be able to handle it perfectly. Even if the operator should have some doubts that could lead to errors in the handling of the machine, KEL-BERG TRAILERS & TRUCKS can provide training courses, if the user requests at an additional cost.

- The operator or designated person must be properly equipped with the clothing needed for his/her personal protection, keeping in mind the likelihood of falling elements, the working environment, etc.

We would remind you that it is imperative that these three regulations be carried out and complied with both by the operator and by the person authorised by the company.

In order to ensure that the concrete mixer will be properly handled, the following operations must be performed:

1. Starting-up must always be done with the speed and rotation lever as well as the motor revolutions set at “0” (see control settings in the control section)

2. Never approach the area between the drum and the vehicle chassis or the machine’s mounted chassis when the latter is turning.

3. The extension chutes that run along the side of the chassis and over the vehicle’s mudguards must only be handled or moved in order to place them in position for the transport if the drum is stopped.

4. Adjusting the height of the rotating discharge chute must only be done, if it has a manual elevator, from the left-hand side of the vehicle (left-hand side in the direction of the vehicle when in motion).

5. Once the load has been discharged, the nearside chute must be lifted up and and placed back in slots on top of mudguards. They must be turned leaving the discharge opening towards the right-hand side of the vehicle (the offside side in the direction of the vehicle in motion) and must be fixed using the brake gear so that it cannot be moved. Never drive with swivel chute extension attached or without having set the brake gear.

6. If your concrete mixer comes with drive controls in the cab of the vehicle, whenever any manoeuvre is performed from this position in the cab, it is imperative that the discharge chute be handled by another person.

7. Every time the ladder that gives you access to the platform is used it must be put away and secured. Never drive with the ladder unfolded.

8. When you have to work with the hydraulic system, take the necessary steps to avoid being burnt.

9. Before checking or working inside the drum, the concrete mixer must first be disconnected from the vehicle and drum dead bolt must also be applied

3. TECHNICAL FEATURES

Your machine's main technical features are as follows:

	6m³	8m³
TYPE	**AMN-6/11**	**AMN-8/11**
DRUM NO.		
WATER PUMP NO.		
HYDRAULIC PUMP NO.		
GEARBOX NO.		
MOTOR NO.		
YEAR OF MANUFACTURE		
NOMINAL VALUE		**8m³**
WATER TANK CAPACITY		**400 litres**
WATER PUMP DISCHARGE		**300 l/min**
DRUM TILT ANGLE		**11°**
MAXIMUM WIDTH	**2550 mm**	**2550 mm**
MAXIMUM HEIGHT	**3000 mm**	**3000 mm**
LENGTH	**8130 mm**	**9250 mm**

*** Regardless of the m³ capacity of the concrete mixer, there is a legal weight limit for road transport which can be found on the vehicle's technical card.**

The operator must make sure that there is no-one in a position to handle or be near a hazardous area when the concrete mixer is in operation.

If the concrete mixer is moved when it is empty, the condition of the terrain must be taken into account so that the drum will not be moved about nor damaged or dropped from the vehicle.

The operator must, in order to prevent possible risks and breakdowns, follow all the instructions and regulations to be found in the opening of this manual.

4. START-UP

4.1 Preliminary Controls

Every machine, when it leaves the factory, has been checked from top to bottom. However, before starting up, it is necessary to check:

- Oil level in the gearbox.
- Oil level in the hydraulic circuit.
- Water level in the tank.
- Lubrication of the points in the section “lubrication points”.
- Oil level in the auxiliary motor on the version that have it.
- Opening of the shut off key on the hydraulic circuit oil reservoir on the versions that have it.

4.2 Start-up

Ensure that the control levers for speed and rotation direction as well as for the revolutions of the motor are set so that the drum does not move.

Simply connect the vehicle’s engine or the auxiliary motor and the movement will be transmitted to the hydraulic pump. There are no exceptions in some vehicles where the movement must be transmitted to the hydraulic pump by first starting the vehicles ignition then engaging the P.T.O.

The use of the controls for the speed and rotation as well as for the revolutions of the motor covered in point 10.

5. WINTER SERVICE

Given the adverse weather conditions in winter, the following precautions must be taken.

5.1 Before beginning work

If there is a water pump, check to be sure that it has no ice; even if the water system has been completely emptied, the pump wheel could become blocked by a build-up of humidity in the pump. Use hot water to remove ice.

5.2 When finished work

- Turn on all the quick close taps and leave them open.
- Open the water circuit drain-off valve located on the top.
- Open the water pump drain-off screw, if there is one, so that the pump can turn for a short length of time.

6. OPERATIONS WITH CONCRETE

6.1 Loading concrete

- For dry loads, accelerate the vehicle engine or auxiliary motor to as many revolutions as it can take so that it will be capable of absorbing the load without the engine stalling. If the concrete is mixed, it will be enough to simply accelerate the engine to about 1000 r.p.m
- Increase the rotating speed of the drum to 14 r.p.m. (maximum drum revolutions)
- Begin discharging the concrete from the plant into the concrete mixer.
- Once the loading has been completed, clean the loading hopper.

6.2 Transporting concrete

Reduce the drum rotation to about 2 ~ 4 r.p.m while maintaining the engine at high revolutions.

6.3 Unloading concrete

- Accelerate the engine before allowing the hydraulic pump oil to circulate.
- Adjust the control for the speed and rotation direction of the drum in order to achieve the discharge speed best suited to the specific needs.

NOTE: When engaging the rotation direction of the drum, it is important to take advantage of the swinging movement of the drum when it is stopped in order not to put too much strain on the transmission.

7. CLEANING THE MACHINE

As with any other aspect of maintenance, the cleaning of the machine must be carried out to contribute to its proper conservation and long life. This must be done as follows:

1. Once the machine has been loaded at the plant, clean the loading hopper.

2. Once the emptying process has been completed, clean the hoppers and chutes with cleaning hose.

3. Before returning to the plant for another load, fill the drum with 150 to 200 litres of water and keep the drum at its concrete transporting setting (2 ~ 4 r.p.m). Once back at the plant, before taking on a new load, remove the water from the drum.

4. At the end of the day, clean more thoroughly. Bits of concrete, dirt, etc must be removed from outside. The drum must also be filled to the top with water and then turned at maximum revolutions for as long as may be needed to ensure that an inspection of the inside of the drum will reveal no remains of concrete.

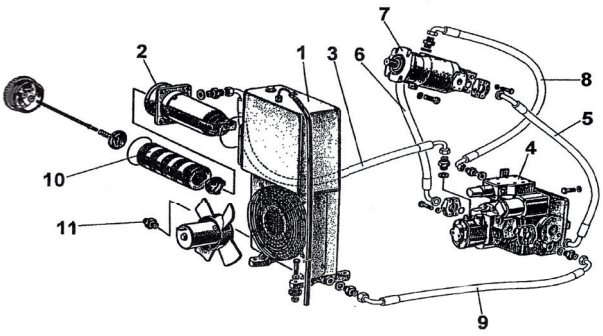
5. The concrete mixer should only be cleaned with pressurised water, maximum 4kg/cm².

6. When cleaning the concrete mixer, the only detergents or removers that may be used are those that have no acid content whatsoever so that the paint will not come off and rust will not appear in corners or on the chassis.

7. Do not splash water on gauges or controls.

8. HYDARUALIC SYSTEM

8.1 Hydraulic System



1. Cooler with oil tank
2. Intake filter
3. Hydraulic pump
4. Hydraulic Pump
5. Hydraulic Motor Flexible Feed Pipe (High Pressure)
6. Hydraulic Motor Flexible Feed Pipe (High Pressure)
7. Hydraulic Motor
8. Flexible Drain Pipe from Hydraulic Motor to Hydraulic Pump
9. Flexible Drain Pipe from Hydraulic Motor to Hydraulic Pump
10. Cartridge Filter
11. Thermostat

8.2 Hydarualic System Maintenance

1. Check the flexible system pipes and connectors daily, tightening or changing them whenever necessary.

2. Check the levels of the oil for hydraulic system in the reservoir and in the gearbox every day. In the oil reservoir, depending on the version, the level will be at the maximum setting or will cover the mark completely. In the gearbox the gearbox will cover the mark completely.

3. Change the filter after the first 50 hours of work, and also every time the oil in the system is changed or work is being done in highly polluted environments.

4. Check and clean the cooling tubes daily, cleaning them with compressed air or water.

5. Change the oil and filter following the maintenance plan included in this manual.

6. Do not use oils having characteristics that differ from those shown in the table of lubricants. Do not mix oils of different brands ; if you do not have any oil of the same brand available, you must proceed to empty it completely and refill it with the brand you do have available, provided it complies with the specifications shown on the table of lubricants.

7. Change the filter if the response of the drum movements appears to be somewhat slow.

8. The temperature of the thermometer in the oil reservoir should not exceed 60 degrees clecius.

9. When the only thing being changed in machines that have a separate oil reservoirs is the filter, close the shutoff key before making the change and remember to change the O-ring gasket.

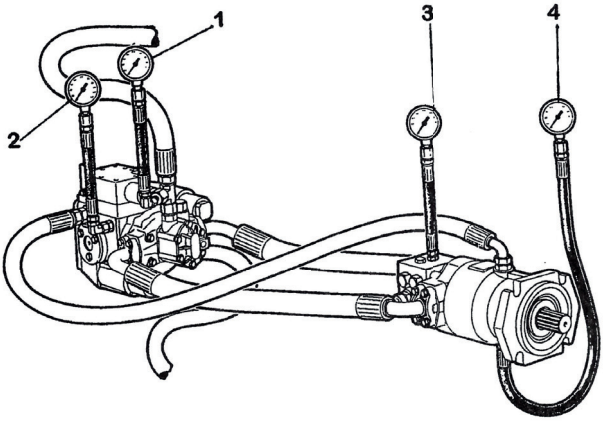
10. Once the oil has been changed, check the leak-tightness of the system, readjusting the screws and bolts, bleeder screws and belts. Check to see if any O-rings or gaskets need to be changed.

11. If a flexible pipe is broken, clean the replacement pipes thoroughly. The least bit of dirt can be the cause of a failure in any hydraulic circuit component.

12. Readjust the screws and bolts only when the system is without pressure.

THE OIL IN THE GEARBOX IS DIFFERENT TO THE OIL IN THE HYDRAULIC CIRCUIT!

8.3 Pressure in the hydraulic system



When ever you need to chack that the hydraulic system is working properly, make sure the pressures are as follows:

8.3.1 Intake Pressure (1)

Should show a value of less than 1 bar and close to it. An extremely low value indicates a very dirty filter.

8.3.2 Pressure when filling the feed pump (2)

Should show a value of between 10 and 13 bar when working. An

extremely low value indicates a problem in the pump, a blocked jet, or excessive dirt in the filter.

8.3.3 High pressure circuit (working pressure) (3)

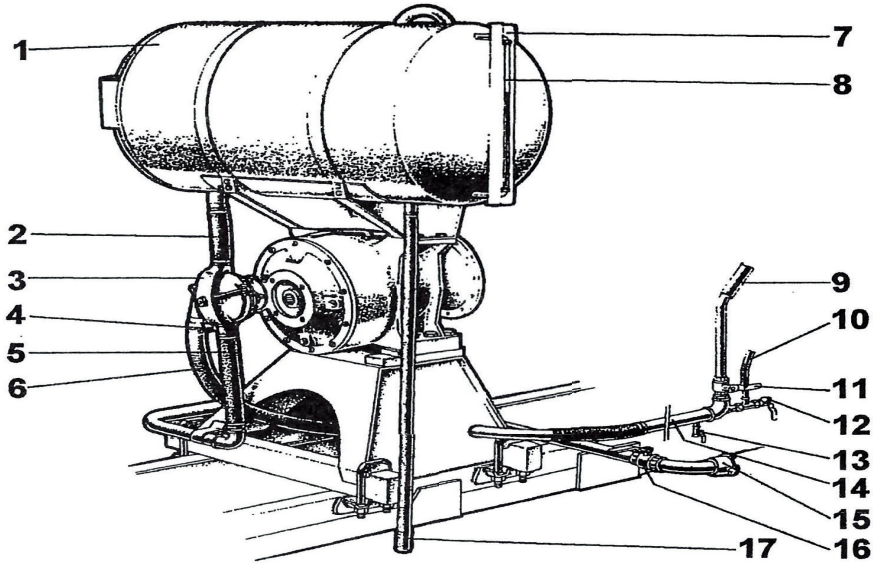
Should show a value of between 220 and 250 bar, depending on the load that the concrete mixer is carrying. If these values cannot be reached, there may be a problem in the high pressure valves or some kind of internal leak in the system.

8.3.4 Return Pressure (4)

Should show a maximum value of 2.5 bar, although variations if up to 5 bar are permissible. Any higher value will indicate some kind of blockage in the return circuit.

9. WATER SYSTEM

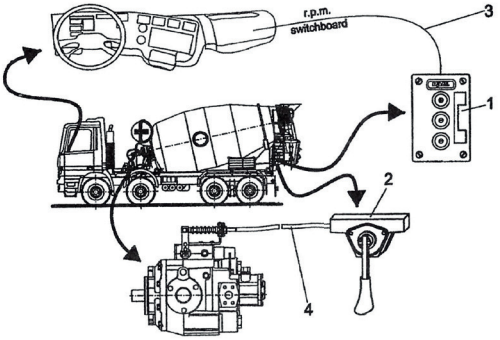
9.1 Fundamental components of the water system with impeller-type pump



1. Water Tank
2. Inlet water hose in the tank
3. Water Pump
4. Water Pump Bleeder Screw
5. Tank feed pipes
6. Feed pipes for rear cleaning hose and for adding water to the drum
7. Chart indicating litres in the drum
8. Water Level marker
9. Feed hose for adding water to the drum
10. Feed hose for washdown (top)
11. Shutoff tap for adding water to the drum
12. Shutoff key for the feed hose rear washdown hse (bottom)
13. Bleeding tap
14. Rear feed pipes for cleaning hose and for adding water to the drum
15. Coupling nozzle for filling the tank
16. Shutoff tap for the coupling nozzle for filling the tank
17. Overflow hose

10. CONTROLS

10.1 Fundamental compenets of control system



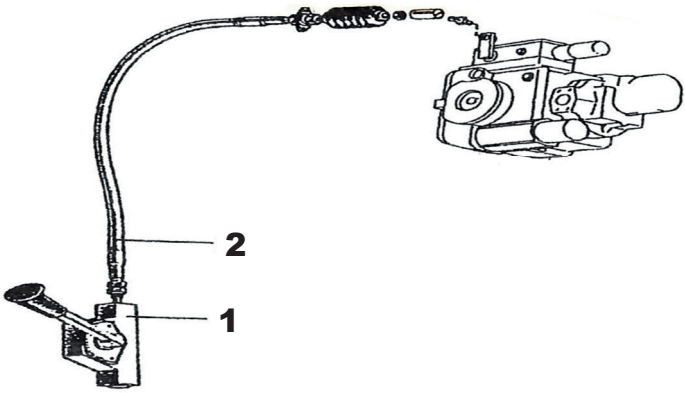
1. Push button to adjust the r.p.m of vehicle engine.

2. Lever to adjust speed and rotation of the drum.

3. Cable connecting thepush-button control that adjusts the r.p.m of the engine to the accelerator of the vehicle's engine.

4. Cable Connecting the lever that controls the speed and rotation direction to the hydraulic pump.

10.2 Fundamental Controls of standard in cab controls



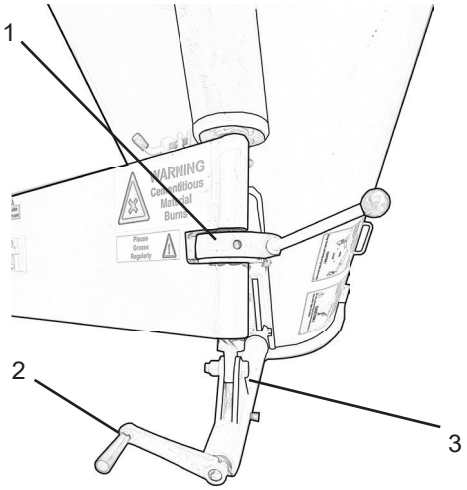
1. Lever controlling the speed and rotation / Vdirection of the drum.

2. Cable connecting the lever that controls the speed and rotation direction to the hydraulic pump.

11. CONTROLS FOR MOVING PARTS

In order to position the swivel discharge chute, unlock the swivel shaft by activating the brake lever counter-clockwise. In this way we can obtain the horizontal positioning. The vertical position can be achieved by turning the spindle crank clockwise to raise it and counter-clockwise to lower it.

When driving your concrete mixer, whether loaded or empty, be sure that the swivel chute has been put away (the discharge mouth facing towards the right-hand side in the direction the vehicle is travelling) and that the swivel has been locked in place.



1. Swivel Shaft Lock Lever
2. Spindle Crank
3. Manual Spindle

11.1 Operating the rear platform ladder

Your concrete mixer comes with a ladder to access the rear platform. In order to use the ladder, unhook the ring lock and pull ladder down. To store, lift ladder back up and secure the ring lock.

NEVER DRIVE WITH THE LADDER UNFOLDED

12. BREAKDOWNS AND POSSIBLE SOLUTIONS

SYMPTOMS	CHECK
The drum will not turn in any direction.	1. Check oil level. 2. The oil filter may be blocked; change if necessary. 3. Check the cable activates the speed and rotation direction of the drum. 4. Check the pump servo-control by activating it manually. 5. Contact our technical service.
The drum will only turn in one direction.	1. Check the cable that activates the speed and rotation direction of the drum. 2. Check the pump servo-control by activating it manually. 3. Possible blocking of a high pressure valve in the hydraulic motor valve block. Interchange them and check to see if the drum will now turn in the opposite direction. 4. Contact our technical service.
Slow response from the drum.	1. Very dirty filter. Change it. 2. The swivel plates on the pump or the hydraulic motor may be scratched. They should be changed. 3. Contact our technical service.
The drum movements are not smooth. A buzzing noise can be heard.	1. A problem in one or some of the high pressure valves. Remove and clean them. 2. Check the cable that activates the speed and rotation direction of the drum. 3. Contact our technical service.
The oil is hotter than 80 degrees celsius.	1. Check the oil level. 2. Check oil colour, if dark change. 3. Remove dirt from the cooling circuit. 4. Contact our technical service.

If all of the above fail to resolve the problem, contact KEL-BERG TRAILERS & TRUCKS. Please have this information ready before you call:

- Drum Installation Number (this can be found on a plate on the side of the drum).
- The registration of the vehicle.
- Your location.

If something has broken on the unit, please take a photo of the broken part and email it to us before calling. service@kelberg.com **01869 343 511**

13. EMERGENCY DISCHARGE

If some failure should occur in the hydraulic system when the concrete mixer is full of concrete, and the problem were to be due to a failure in the hydraulic pump, the concrete can be discharged with the assistance of a second auxiliary vehicle as follows:

1. Remove all flexible pipes from the hydraulic motor of the failed vehicle.

2. Remove all the flexible pipes from the hydraulic pump of the auxiliary vehicle.

3. Fit some flexible pipes, making sure that they're long enough, between the pump of the auxiliary vehicle and the hydraulic motor of the failed vehicle.

4. Activate the drum of the failed vehicle from the auxiliary vehicle.

13.1 In case of a failed T.M.E controller or pump control valve.

In case, **STOP the truck engine** first and proceed as follows:

1. Remove plug M12 x 1.5 from actuating cylinder.

2. Install screw M12 x 1.5 with seal lock nut into the actuating cylinder until (approx. 80mm) you feel noticeable resistance (when screw comes in contact with actuating piston).

3. Start truck engine (low idle is recommended for slow discharge).

4. Turn screw clockwise against actuating piston so the pump displacement increases and the drum turns in discharge direction at desired speed.

5. Tighten lock nut to prevent external leakage during operation.

13.2 Hydraulic motor failure

If the failure is due to some problem in the hydraulic motor, replace it as follows:

1. Remove all flexible pipes from the hydraulic motor of the failed vehicle.

2. Remove the hydraulic motor of the gearbox

3. Mount a new hydraulic motor.

4. Connect the flexible pipes to the hydraulic motor.

If you have no hydraulic motor available for replacement, go to your nearest authorised workshop.

THE HYDRAULIC MOTOR MUST NEVER BE DISMOUNTED AND REPLACED BY ANY KIND OF MANUAL LEVER IN ORER TO MAKE THE REDUCER TURN.

14. CARRYING OUT REPAIRS ON THE DRUM

For any repairs that may have to be done on the drum, always keep in mind the safety measures that must be adopted in accordance with THE SAFTEY REGULATIONS in this manual.

14.1 Welding on the drum

Before beginning, and during the welding operations, perfect ventilation conditions must be guaranteed so that no gases, vapours or unhealthy dust will accumulate and concentrate in the area and so that no shortage of oxygen will occur.

The operator who is to do the welding must be equipped with the necessary safety measures.

It is forbidden to ventilate with oxygen.

Before performing any welding operations, the positive and negative points of the vehicle battery must be removed.

When arc welding or cutting, the personal safety of the operators must be properly ensured by considering the following:

a) If they are in places where the walls are conductors of electricity.

b) If they are working in narrow places among parts that are conductors of electricity

c) If they are working in damp/hot areas.

In those cases where the welding is carried out using an electrical apparatus, the ground terminal must be directly connected to the part that is to be welded.

There are vehicle manufacturers that use plastic to make the pipes for air conducts, brakes and other elements. So remember to protect these areas when any welding is to be done.

14.2 Blades life

The flats on the top of the blades should be checked periodically and replaced if they are worn. If this is done, the blades are sure to last much longer.

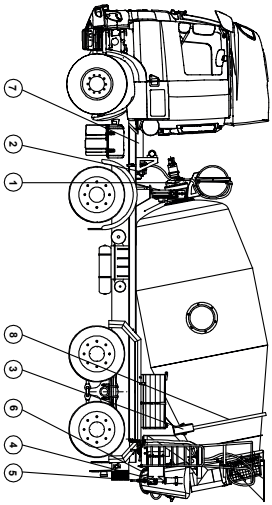
14.3 Welding on the machine or on the vehicle

Before doing any welding on any element of the concrete mixer, consult beforehand with technical department at KEL-BERG TRAILERS & TRUCKS.

Every vehicle manufacturer has its own specific rules for making changes on its chassis. Consult with the vehicle manufacturer or with the technical department at KEL-BERG TRAILERS & TRUCKS before doing so.

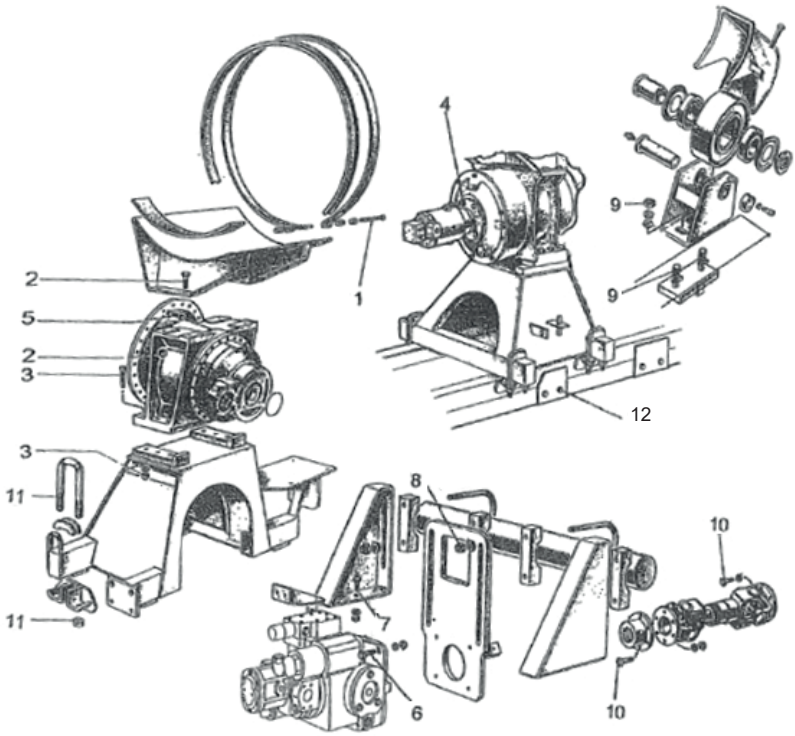
15. OILS & MAINTENANCE

KEL-BERG®



No.	PART	FREQUENCY	OILS
1	GEARBOX	Check Level 10 Hours 1st Change 500 Hours Then Every 2000 Hours	85W-90 Gear Oil
2	HYDRAULIC CIRCUIT	1st Change 500 Hours Then Every 2000 Hours	ISO 46 HYDRAULIC OIL
3	CARRYING ROLLERS	Each Part Every 50 Hours	GREASE
4	SUPPORT ARM		LITHIUM COMPLEX EP2
5	SPINDLE		
6	CRANK CHUTE COMPONENTS	Each Month / 100 Hours	
7	CARDON SHAFT		
8	RING ROLLER	10 Hours	GRAPHITE GREASE
	Look at the service and maintenance manual for the different brands of lubricants recommended by Kel-Berg		

15.1 Torque Settings



Location	Torque	Bolt	Strength
1. Water Tank Anchoring Clamp	60 Nm	M14	8.8
2. Water Tanks Bracket On Gearbox	220Nm	M20	10.9
3. Gearbox Anchor Bolts	580 Nm	M20	10.9
4. Hydraulic Motor Anchor to Gearbox	75Nm	M12	10.9
5. Gearbox to Drum Bolts	225Nm	M16	10.9
6. Hydraulic Pump Support Plate	75Nm	M12	10.9
7. Hydraulic Pump Support Mounts	90Nm	M16	10.9
8. U-Clamp for Hydraulic Pump Support	225Nm	M16	a
9. Support for Rollers	300Nm	M22	10.9
10. Cardan Shaft Clamping Screws	30Nm	M8	8.8
11. Chassis U-Bolts	360Nm	M20	8.8
12. Frame Clamping Plates	280Nm	M16	10.9

Action Required	Time of Service					
	1 day 10 h	1 week 50 h	1 month 200 h	3 months 500h	6 months 1000	1 year 200 h
Check the level of oil in the hydraulic circuit	SI					
Change Hydraulic circuit oil				1		SI
Check the oil level in the reducer	SI					
Change the oil in the reducer				1		SI
Change the intake filter	1	2		3		SI
Check the flexible pipes, sealing gaskets and possible leaks	SI					
Check the condition of oil cooling circuit	SI					
Check the oil level in the auxiliary motor	SI					
Change the oil in the auxiliary motor		SI				
Lubricate rolling ring	SI					
Lubricate rollers, spindle, chute and gear		SI				
Lubricate cardan		SI				
Check screws and bolts on hydraulic motor pump and reducer				SI		
Check tightness of clamping screws on sub-frame		1			SI	
Check the reducer and water tank locking screws					SI	
Check cardan screw tightness		1		SI		
Check alignment of support rollers with rlling ring.		1			SI	
Check pump and motor control cables					SI	
Check blade and hopper wear				SI		

1 = First Insection
2 = Second inspection
3 - Third Inspection
SI = Subsequent Inspection

Mixer Helpline: 01869 343 511
mixerinfo@kelberg.com

Spare Parts: www.kelberg.com/part

Get 20% off your first order if you order on our website

Version 2 | 05/20

KEL-BERG
TRAILERS AND TRUCKS LIMITED