EN

LISSMAC
CONSTRUCTION TECHNOLOGY

OPERATING MANUAL
FLOOR SAW

MULTICUT 570

LISSMAC Corporation
17 Route 146
Mechanicville, NY 12118, USA
Telephone 518-326-9094
Fax 518-326-9098
sales@lissmac-corporation.com
www.lissmac-usa.com

Imprint

This operating manual is valid for:
LISSMAC floor saw

- MULTICUT 570

US Production facility:

LISSMAC Corporation
17 Route 146
Mechanicville, NY 12118, USA
Telephone 518-326-9094
Fax 518-326-9098
sales@lissmac-corporation.com
www.lissmac-usa.com

Company headquarters:

LISSMAC Maschinenbau GmbH
Lanzstrasse 4
D - 88410 Bad Wurzach
Phone: +49 (0) 7564 / 307 – 0
Fax: +49 (0) 7564 / 307 – 500
lissmac@lissmac.com
www.lissmac.com

Original operating manual
Issue date: 08-2020

Save this manual for future reference!

Distribution and duplication

compensation for damages. All rights reserved for the purpose of patent, utility model, or design patent registration.

BASIC SAFETY INFORMATION

Warning notes and symbols in this manual

	SIGNAL WORD
 Hazard symbol	**Type and source of the hazard** Consequence of non-compliance. ➢ Action to avert the danger

The signal word after the hazard symbol indicates the level of danger:

DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates information considered important but not hazard related.

	General information is marked with this icon.

Call for action	Actions required for the safe handling of the machine: 1. Actions that require to be performed in the given order. • Actions that are not required to be performed in a certain order.

Limitations	The warning and safety notes contained are not exhaustive. Lissmac cannot foresee every potential hazard arising from neglect or misuse. Reasonable safety rules and precautions must be followed as with any other machine, in terms of working methodology and operation.

For California residents:	⚠WARNING: Operating, servicing and maintaining this machine can expose you to chemicals and compounds including engine exhaust, carbon monoxide, benzene, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The following hazard symbols and safety notes are used:


Read the operating manual


Wear hearing protection


Wear safety goggles


Wear work gloves


Wear protective helmet


Attachment point for crane transports


Remove the ignition key before servicing the unit


Cut hazard at the rotating tool

Wait for all parts to stop


Do not relocate the machine with rotating tool


Extremely flammable fuel vapors


Crushing hazard.


Ejected parts hazard


Suspended loads hazard


Burn hazard


Suffocation hazard from of toxic exhaust fumes


Battery acid hazard


Explosion hazard


Entanglement hazard at belt drive


Cut hazard at rotating tool


High-pressure fluid injection hazard


Do not use high pressure cleaners


Use by unauthorized persons not permitted


No smoking


Hazardous material: fine silica dust


Do not work on machine while the tool is spinning


Instruction for damage prevention.


Lashing point for vehicle transport

Sound power level of the machine


Visual check


Grease gun


Spray-on grease

OPERATING MANUAL

Preface

This operating manual is designed to give an overview of the machines features and functionality, as well as guidance with its intended use and applications.

The operating manual contains important information on how to operate the machine safely, properly, and economically. Following its recommendations will help to avoid risk, repair costs, and downtime, and to increase the reliability and lifespan of the machine.

The operating manual is to be supplemented by directives for accident prevention and environmental protection, as mandated by applicable national and local requirements.

The operating manual must be kept permanently available at the machine location.

The operating manual must be read by every person assigned to work with the machine, and its instructions must be followed during all situations and activities, such as:

- Operation, including setting, troubleshooting whilst operating, removal of production waste, care, disposal of media and consumables
- Maintenance (servicing, inspection and repair) and/or
- Transportation

In addition to the operating manual and the binding regulations for accident prevention which apply in the user's country and at the place of use, the acknowledged rules for safe work practice must also be observed.

Tools required

Operation of the floor saw requires the use of suitable diamond blades.

Additional documents

As a supplement to this operating manual, additional documentation regarding individual machine components is available by the respective component manufacturer:

- HATZ Diesel Engine Operating Manual

LISSMAC does not assume responsibility or liability regarding correctness and completeness of third-party documentation.

Changes and reservations

We are committed to ensuring accuracy and timeliness of the presented operating manual. However, to maintain our technological lead, it may be necessary at times to make changes to the product and its operation, without advance notice.

We accept no liability for malfunctions, downtimes or damage caused by failure to observe these changes.

Target group

These operating instructions are intended for trained and instructed personnel from the fields of structural mechanics, concrete cutting technology, road construction, structural and civil engineering.

Notes:

Table of contents

1. FEATURES & BENEFITS

Industry requirements were implemented in the design of these versatile power pack. Put to the test by industry professionals, this diesel floor saws features impressive price-performance ratio, rugged design, and exceptional ease of operation.

- High-performance V-belts for optimal power transmission
- Torsion-resistant frame design
- The compact design and balanced chassis permit easy maneuvering around the construction site
- Low center of gravity allows for precise cutting
- Adjustable rear axle for precise straight cuts
- Electro-hydraulic diamond blade lift
- Height-adjustable handles for ergonomic operation
- Front of blade guard can be raised for cuts up against walls and obstacles
- Rapid changeover from left to right-hand cutting
- Convenient access for routine maintenance work (air filter, battery, oil and fuel filter)

2. GENERAL SAFETY NOTES

2.1. Principle of intended use

	Manufacturer's warranty obligation is voided in case of improper or non-intended use. Any changes to the machine, except by manufacturer, is prohibited. Changes, removal from, or addition of parts to the floor saw only permitted with express written approval of the manufacturer. The machine is constructed according to the latest state of the art technology, while following all generally recognized technical safety rules. Nonetheless, as with the use of all power machinery, danger to the user's or third parties' life and limb, and/or damage to the machine or other property may arise from its use. Machine should only be used while in proper working order, without any known defects or safety hazards. User must comply with all safety and danger warnings, follow all instructions, and only employ per intended use, as outlined in the operating manual. Malfunctions which could potentially compromise safety must be addressed immediately, and rectified by properly trained personnel.
Intended use	The LISSMAC floor saw is defined as a floor cutting-off machine and is designed exclusively for wet-cutting joints in concrete or asphalt. The cutting requires a tool in form of a diamond diamond blade. The floor saw may only be operated by one person. The operator must remain behind the handlebars as long as the machine is running. Any other use above and beyond is considered unintended use. Intended use also includes compliance with the operating manual and compliance with the inspection and maintenance manual.
Unintended use	Foreseeable misuse / unintended use: • Cutting with guards removed • Cutting without water • Cutting on steep slopes • Cutting of loose material • The cutting of narrow radii • Cutting wood, plastics or metal (except for embedded rebar in reinforced concrete) • Design modifications which alter the safety or design type of the floor saw

2.2. General safety measures

The operating manual must be easily accessible at all times, at the location of the floor saw.

In addition to the operating manual, directives for accident prevention and environmental protection, as mandated by applicable national and local requirements are to be followed! Such obligations may include, amongst others, handling of hazardous materials, wearing of personal protective gear, and following of traffic regulations.

Floor saw operators must have read and understood the operating manual, especially the Safety Instructions chapter, before using the saw. This particularly applies to personnel who only use the saw on occasion, such as those involved in repair and maintenance.

Safe work practices by all operators must be ensured, and operating manual safety instructions must be followed at all times!

Safety instructions and danger warnings adhered to the floor saw must be kept in legible condition at all times! Replace safety and danger instructions as well as warning labels that are damaged or illegible.

If concerns with safety and/or operating performance arise, turn off machine immediately and mark appropriately, to ensure other users will not turn machine back on prior to problem resolution. Report issue immediately to the assigned supervisor!

Changes, removal from, or addition of parts to the floor saw are not permitted, unless express written approval by the manufacturer is obtained! Instructions of the diamond blade manufacturer must be followed as well.

Use only original spare parts of the manufacturer.

Adhere to prescribed periods for inspection or those specified in the operating manual.

Perform all required and/or recommended inspections as outlined in the operating manual, in a timely manner.

Machines with internal combustion engines must not be used indoors.

Before cutting, always be sure to obtain information about underground lines and pipes, and follow all necessary precautions.

2.3. Personnel Qualification and Responsibilities

Only qualified personnel, 18 years of age or older, may operate the floor saw. All operators must be appropriately trained in the operation, and be explicitly authorized in writing by the company to operate the floor saw.

Personnel responsibilities pertaining to the operation, set-up, servicing, and repair of the machine must be established and monitored by management.

The operator must wear personal protective equipment such as safety shoes, gloves, safety goggles and hearing protection, which comply with the safety regulations.

Only the operator of the floor saw is allowed in the working area while the machine is in operation. Block off the working area, if necessary.

During all movement of the floor saw, operating personnel must ensure safe operating procedures. All obstacles which may hinder the operation or moving of the machine must be removed from the work area.

Work on the electrical equipment or engine of the machine may only be performed by qualified electricians or trained service personnel.

Any personnel in training or not fully authorized to independently operate or service the saw may only work with the machine under the continual supervision of an experienced operator!

2.4. Safety notes regarding the operating phases

2.4.1. Transport, assembly and installation

Transport, assembly and installation of the floor saw may only be performed in transport position while machine is fully lowered and hub is touching the ground surface. Secure the floor saw against rolling or sliding.

Diamond blade must be removed for transport.

Transport the floor saw in compliance with the maximum operating weight of your equipment.

Transport may only be performed after all machine parts have been checked and secured, so parts cannot fall or come loose during transport.

2.4.2. Commissioning

When fitting the diamond blade, protect your hands from sharp edges.

When installing the diamond blade, observe the running direction. The cutting must always be in the direction of travel (down-cut).

Visual check of the entire floor saw for any damage and defects. Separate check of the protective devices.

Setup stable water supply for diamond blade cooling.

Smoking is absolutely prohibited when refueling the diesel engine.

Particular care should be taken during refueling. Engine parts that became hot during operation pose a fire hazard.

Fuel must only be stored in approved containers.

The permissible speed of the tool must always match or exceed the maximum nominal speed of the cutting shaft.

Defective or broken tools must be replaced immediately.

Ensure that the working surface can handle the weight of the machine and operator.

2.4.3. Operation

Do not use any unsafe method of working.

Take measures to ensure that the floor saw is only used if it is safe and in functional condition.

If the floor saw malfunctions, shut it down immediately and secure it. Have faults corrected immediately. Electrical installation work may only be carried out by trained electrical personnel.

To protect against acceleration, the diamond blade must be lowered slowly and in steps into the aggregate. Avoid any and all contact with the running tool.

Cutting without the blade guard or drive belt cover is prohibited.
The operator must be protected from rotating parts.

2.4.4. Maneuvering the floor saw

The floor saw may only be relocated when the diamond blade is standing still.

Gearbox hast to be set to NEUTRAL for relocating with ground drive.

Before leaving the operating position on the floor saw, the Diesel engine must be switched off and the diamond blade must come to a complete stand still. A rotating diamond blade poses a serious cut hazard.

2.4.5. Servicing

Follow all setup, maintenance, and inspection guidelines and schedules as outlined in the operating manual, including all information about the replacement of parts and assemblies! These activities may only be carried out by qualified service technicians.

Before cleaning, cover and seal all openings and components that are susceptible to damage due to water or cleaning agents. Electric components, switches and plugs are especially at risk. After cleaning, remove the covers and seals completely!

During service and repair work, always tighten loose bolts and fittings!

If it is necessary to remove safety gear during set-up, service work, or repair, the safety gear must be reinstalled and checked for correct functionality immediately after work is completed!

2.5. Note relating to special types of danger

2.5.1. Dangers for the operator from the machine

Before leaving the operating position on the floor saw, the internal combustion engine must be switched off and the diamond blade must be stationary.

The outlet of the exhaust pipe must always point away from the operator. Do not inhale exhaust fumes.

The exhaust pipe gets hot during operation. Avoid contact and wear personal protective equipment.

2.5.2. Cutting with open blade guard

Removing or opening the blade guard, or reaching into the diamond blade during cutting or while the blade is spinning, is prohibited. The engine must be stopped.

When cutting with an open blade guard, the blade guard does not cover the front area.
Use extreme caution and avoid operating with the front blade guard open immediately after operation.

Establish safety perimeter around cutting area.

2.5.3. Electrical Energy

Only use original fuses with the prescribed rating. The floor saw must be switched off immediately in the event of faults. Electrical work may only be carried out by certified and qualified technical personnel.

The electrical equipment of a machine must be inspected regularly. Defects such as loose connections and damage cables must be repaired immediately. The machine must be tagged-out to prevent accidental startup.

2.5.4. Dust

When working in close quarters, follow all OSHA regulations and guidelines!

The use of a dust mask APF 10 (N-95) is mandatory for working in enclosed areas.

To prevent airborne dust and provide cooling during cutting, the diamond blade must be continuously sprayed with water. Dry cutting is prohibited. Do not eat, drink or smoke in the work area.

2.5.5. Noise

See section: 3.3

2.5.6. Exhaust fumes

Machines with internal combustion engine must not be operated indoors.

2.6. Transport

Lifting gear of sufficient load-bearing capacity must be used when transferring by crane.

Rigging equipment must be checked to ensure it is in proper working order, before use.

Only lift the floor saw as described in the operating manual using suitable lifting gear.

Only use a suitable transport vehicle with an adequate load-bearing capacity.

Secure the machine properly in compliance with the regulations. Use suitable lashing points.

2.7. Packing and storage

In order to ensure sufficient protection during dispatch and transport, the machine and its components were carefully packed. The machine should be checked for damage upon receipt. The machine's packaging consists of recyclable materials. Please separately collect the different materials and place them in the appropriate containers for recycling.

In the case of damage, the machine must not be turned on or used. Damaged cables and/or plugs also pose a safety risk and the unit must not be used. If this occurs, please contact the manufacturer immediately.

If the machine is not immediately put into operation after unpacking, it must be protected from moisture and dirt.

2.8. Environmental protection

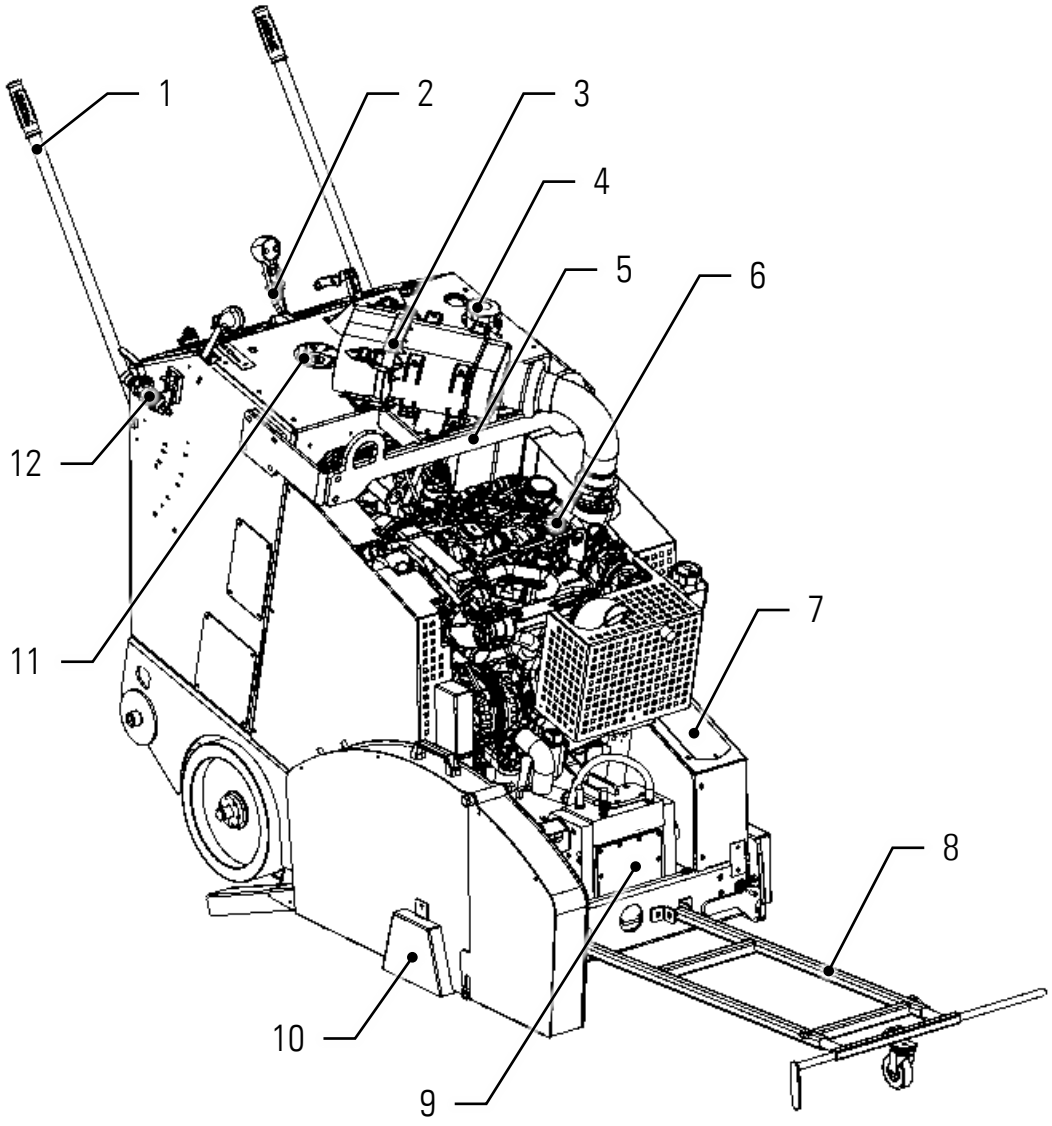
Packaging material, cleaning agents, used or residual operating materials, as well as removed wear parts, such as V-belts or engine oils must be properly disposed as per locally applicable regulations for environmental protection.

2.9. Waste disposal

Dispose of the device according to the environmental regulations of your country. Electrical waste may not be disposed of as household waste. Should you wish to dispose of the machine, be sure to take it to an authorized waste collection center.

3. DEVICE DESCRIPTION

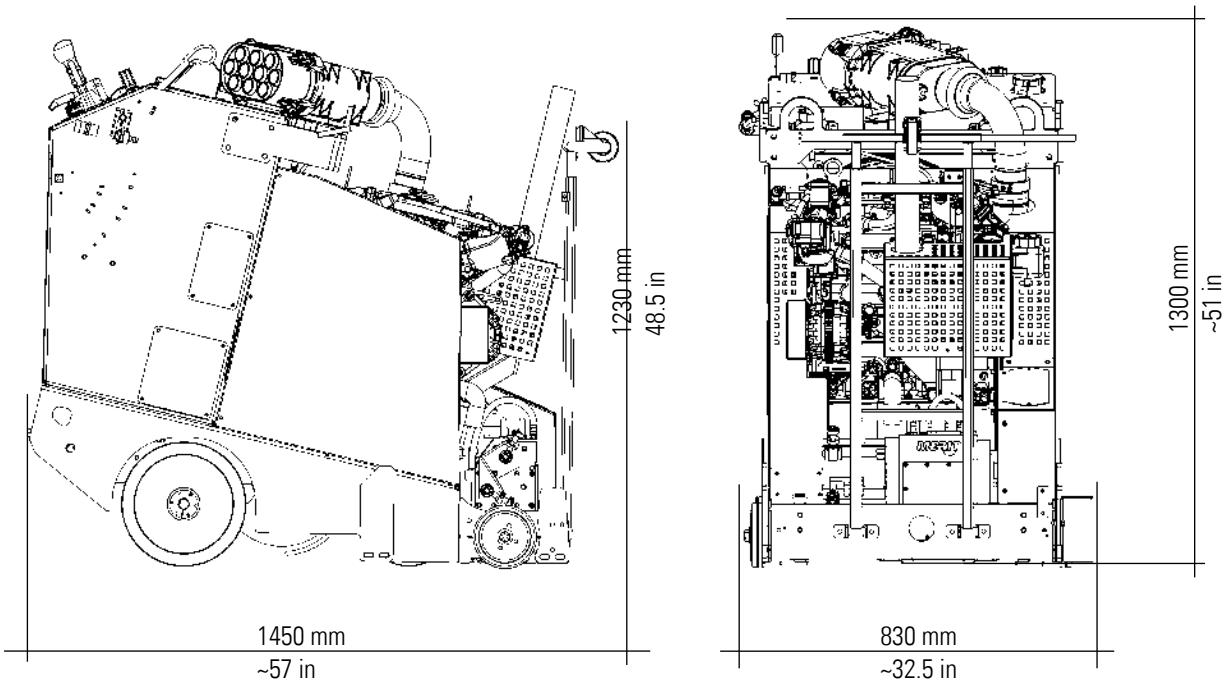
3.1. Designation of machine parts



Pos. 1	Handlebars	Pos. 9	Gearbox
Pos. 2	Control console	Pos. 10	Blade guard and Sawblade flange
Pos. 3	Air filter	Pos. 11	Engine Radiator filler neck
Pos. 4	Diesel Tank	Pos. 12	Pocket for water supply and ball valve
Pos. 5	Attachment point for Crane hook		
Pos. 6	Engine		
Pos. 7	Belt guard		
Pos. 8	Pointer		

3.2. Technical specifications

	MULTICUT 570 Gearbox M	MULTICUT 570 Gearbox T
Max. cutting depth	420 mm (16.7 in)	
Max. diamond blade diameter	1000 mm (39.4 in)	
Diamond blade arbor	25,4 mm (1.0 in)	
Nominal speed 1. gear	800 1/min	1050 1/min
Nominal speed 2. gear	1300 1/min	1600 1/min
Nominal speed 3. gear	1900 1/min	2400 1/min
Nominal speed 4. gear	2800 1/min	3000 1/min
Engine	HATZ 3-Cylinder Turbodiesel EU Stage V & EPA Tier 4 final or Turbodiesel EU Stage IIIB / Tier 4 final	
Power (kW/HP)	42 kW / 55 hp	
Fuel type	Diesel	
Forward drive speed	Hydrostat stepless 0-50 m/min (0 – 165 ft/min)	
Reverse drive speed	Hydrostat stepless 0-25 m/min (0 – 83 ft/min)	
Diamond blade lifting mechanism	Electro-hydraulic	
Diamond blade drive	V-belt	
Weight	765 kg (1686 lbs)	
Dimensions LxWxH in mm	1450 x 830 x 1300	



3.3. Sound power level

WARNING

Danger of hearing damage

Wearing hearing protection is mandatory at sound power level of above 85 dB (A).

- Wear your personal hearing protection.

The detail defines the volume of the noise relative to the operator's workplace and to the sound power level of the floor saw.

The measured sound power level L_{wA} 93,5 dB(A)
The emission sound power level at the operator's workplace L_{pA} 91,4 dB(A)

The guaranteed sound power level is:

Multicut 570	96 dB(A)

Measurement tolerances:
2.5 dB for the A-weighted sound power level
4 dB for the A-weighted emission sound power level

The emission sound power level was measured in accordance with
EN ISO 3744 and EN 13862 standards and the 2000/14/EC Directive.

3.4. Hand-Arm Vibration

WARNING

Vibration hazard

Vibration can lead to bone or joint damage as well as circulatory disorders.

- Take regular breaks when working with the machine

The stated value was measured using a diamond blade with 1000 mm in diameter.
The effective values may be inversely proportional to the weight of the operator.

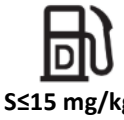
Vibration total value:

Multicut 570	a_{HV}	below 2,5 m/s^2

The measurement were taken in accordance with the following standards:
EN ISO 5349, VD 2057 Part 2, 2002/42/EC Directive.

4. COMISSIONING

4.1. Consumables

Diesel		Only use Diesel fuel according to EN 590 / ASTM D 975-09a 1-D S15 or 2-D S15 with a Sulfur content of <15 mg/kg. So-called Ultra Low Sulfur Diesel (ULSD). When using other fuels, the emission levels change and the warranty is voided.
Engine Oil		Only use HATZ-approved engine oil. Use at least quality grade ACEA E6. We recommend SAE 10W-40. The use of lower qualities will halve the maintenance intervals and the warranty may be voided. Dispose of old engine oil properly with your disposal company in an environmentally conscious manner. Observe the engine manufacturer's operating instructions, enclosed with each machine. Pay particular attention to the safety and maintenance instructions.
Antifreeze		Use only antifreeze approved by HATZ. Use release grade H50. The use of lower qualities will halve the maintenance intervals and the warranty may be voided.
Lubricant		Only use quality grease on the grease nipple. The manufacturer uses "Energrease LS2 BP". (Lithium-based multi-purpose grease of NLGI grade 2 according to DIN 51818/NLGI GC - LB grade 2)
Hydraulic oil		The hydraulic fluid used must be of HVLP (High Volume Low Pressure) quality (according to DIN 51524-3 / ISO 6743/4) in the ISO viscosity class 68.
Transmission fluid Hydrostatic drive		Use synthetic 5W-50.
Gearbox oil option T		Use Castrol Syntax Universal Plus 75W90 (SAE J2360)
Gearbox oil option M		Use USW 85 – 140 Lucas Oil
Water		The water pressure in the supply line must not exceed 5 bar (72 psi). If necessary, use a pressure reducer.

These specifications refer to the usual operational and ambient conditions.
Other specifications may be required for use under extreme climatic conditions.

Observe the engine manufacturer's operating instructions, enclosed with each machine.
Pay particular attention to the safety and maintenance instructions.

NOTICE

Tool selection

Never use a rotating tool, with a maximum speed rating lower than the rated speed of the machine.
Defective or broken tools must be replaced immediately.

Selecting a diamond blade

See section 9 Blade Speed

Storing tools

The tools used must be protected from moisture. The diamond segments must be protected from damage.

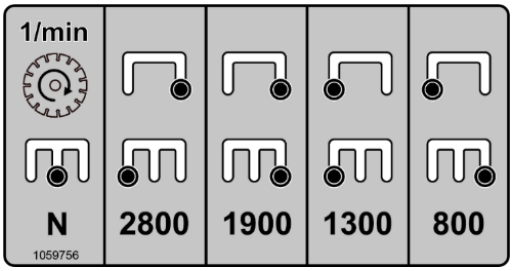
Blade speeds

For best cutting results, the diamond blade speed must be adjusted to the aggregate to be cut.
Diamond blade speed is governed by the Engine RPM and can be monitored on the multi-function display.

Rcommended Blade RPM

	Blade diameter		In	16	20	24	28	32	36	40
			mm	400	500	600	700	800	900	1000
	Blade speed									
Concrete	45 m/s	150 ft/s	1/min	2150	1720	1450	1230	1080	960	860
Asphalt	55 m/s	180 ft/s	1/min	2630	2100	1750	1500	1310	1170	1050

Gear selection Option M



Gear selection Option T

4.3. Refueling

WARNING

Extremely flammable fuel vapors

Risk of serious injury from fire or explosion.

- Do not refuel with the engine running
- Smoking is prohibited during the process.
- Remove all sources of ignition.
- Do not overfill tank or spill fuel.

NOTICE

Store fuel safely

Fuel must only be stored in approved containers.
The containers must be marked accordingly.

Sequence

- **Stop engine**
- Clean tank lid, then open
- Fill in fuel with a clean funnel
- Do not spill, do not overfill.
- Securely close lid.

5. TRANSPORT

5.1. Transport position

WARNING

Crush hazard from unsecured machine

Personal damage from unintentional position change of the machine or falling of parts.

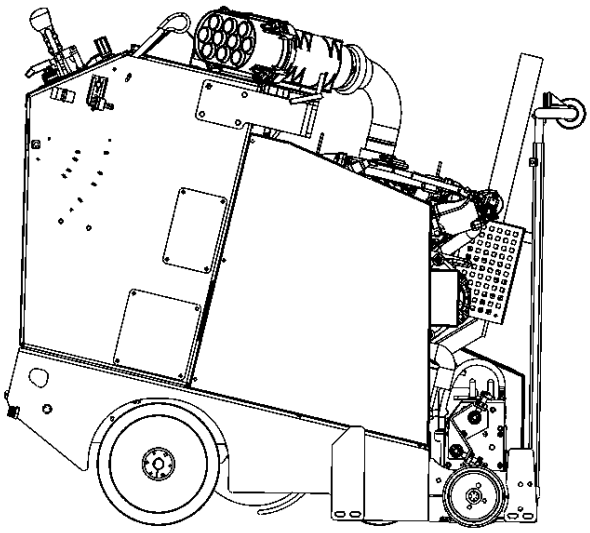
- ➢ Only transport the floor saws in the transport position
- ➢ Secure the floor saw at the lashing points

NOTICE

Transport of the machine

Large inclined positions must be avoided during the transport of the floor saw.
Fuel can spill or engine oil can enter the combustion chamber of the motor and damage the motor.

All movable parts, which could fall, swing during transport must be removed.



Transport position

- Stop engine
- Activate parking lock
- Remove blade guard
- Remove diamond blade
- Fold up and secure steering rod with rope
- Remove or secure any loose parts

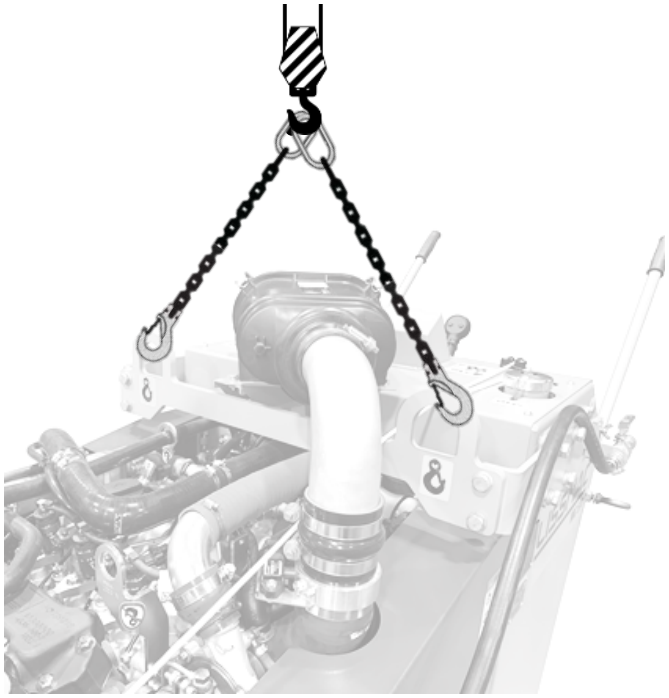
5.2. Relocating by crane

WARNING

Suspended loads

Crush hazard from falling parts.

- Do not step under raised machines or parts
- Only use undamaged lifting devices with sufficient load capacity and length
- The machine may only be moved in the transport position



Sequence

- Establish the transport position (see: 5.1)
- Hang the floor saw into the crane lug with a slinging means with sufficient load capacity
- Appoint a competent signalperson for the lifting process
- Use only a suitable transport vehicle with sufficient load capacity
- Lift carefully and observe the center of gravity
- Always keep an eye on the floor saw
- For recommissioning proceed in accordance with the operating manual

5.3. Tie down for transport

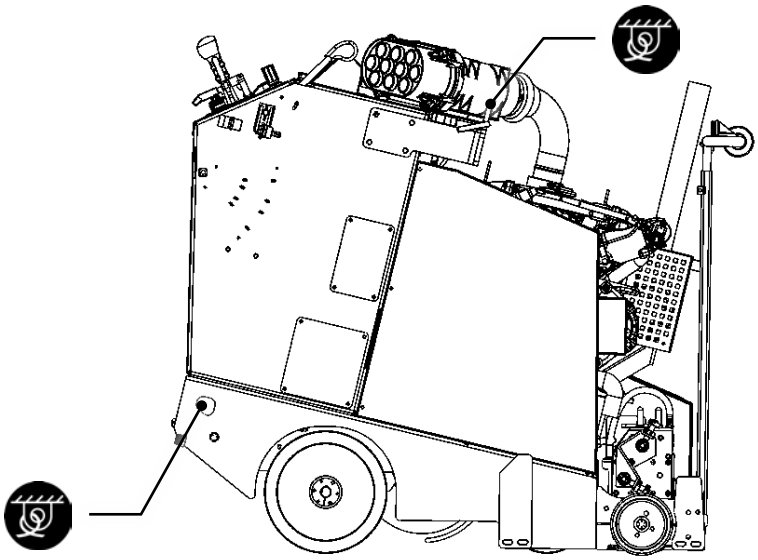
⚠ WARNING

Crush hazard due to slipping or tilting of the machine

Unintentional changes in the position of the machine can crush people.

- ➢ Only transport the floor saw in transport position.
- ➢ Secure the floor saw over the attachment points.
- ➢ Use suitable lifting and lashing straps.
- ➢ Observe maximum payload of the transport vehicle

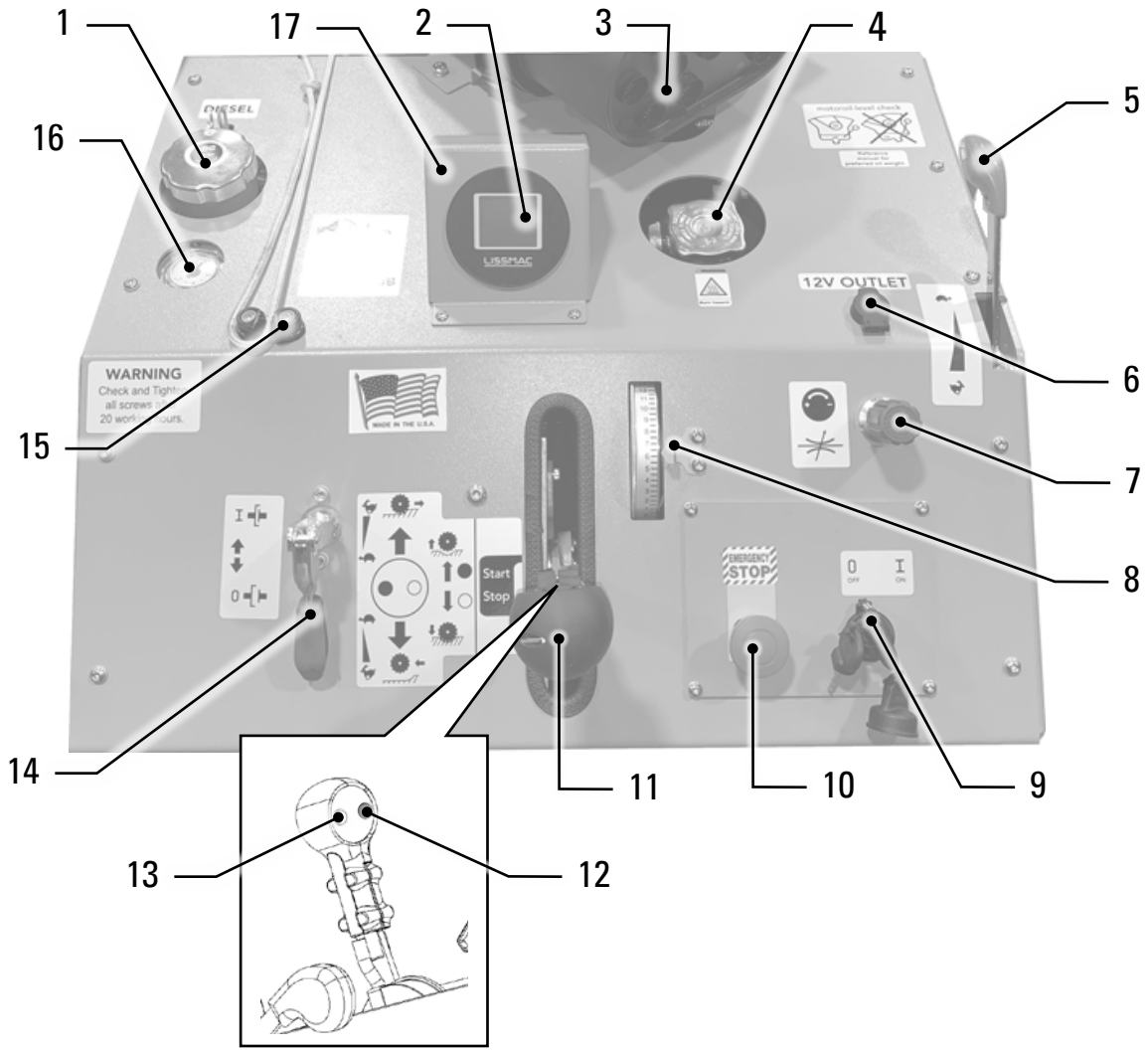
Tie down points



Sequence

- Establish transport position (see 5.1)
- Use suitable and sufficient lashing equipment and tie-down points

6. CONTROL CONSOLE



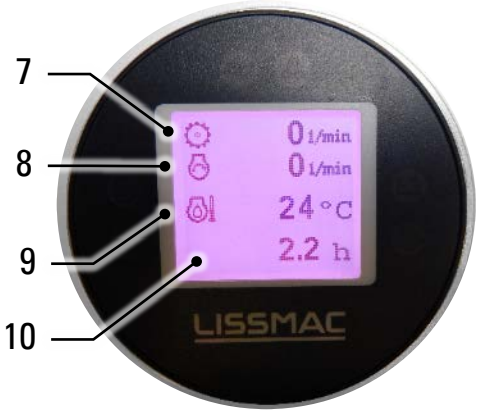
Pos. 1	Diesel Tank filler cap	Pos. 9	Ignition switch
Pos. 2	Multifunction display	Pos. 10	Emergency Stop Button
Pos. 3	Engine air filter	Pos. 11	Drive lever (forward / reverse)
Pos. 4	Radiator filler cap	Pos. 12	Switches for raising the frame
Pos. 5	Engine throttle	Pos. 13	Switches for lowering the frame
Pos. 6	Socket for water pump (12V)	Pos. 14	Clutch for ground drive
Pos. 7	Throttle valve for saw arm lowering speed	Pos. 15	Clamp for pointer rope
Pos. 8	Cutting depth indicator	Pos. 16	Fuel gauge
		Pos. 17*	Enable DPF catalyst regeneration (*Stage V only)

Emergency stop is an emergency shutdown device and does not serve as a circuit breaker.
The ignition key must be used to switch off the machine.

NOTICE

Heed monitor warning lights

As a functional control, all six warning lights around the LCD display must light up with active ignition. The alternator and oil level warning light remain lit until the engine is running.



Warning lights

Pos. 1		Service interval
Pos. 2		General engine malfunction
Pos. 3		Preheating
Pos. 4		Fuel level warning
Pos. 5		Battery/Alternator malfunction
Pos. 6		Engine oil level/pressure

LCD Display

Pos. 7		Current diamond blade RPM	
Pos. 8		Current Engine RPM	
Pos. 9		Engine oil temperrature	
	-		(alternating display)
		Coolant temperature	
Pos. 10	-	Operating hours of machine	

6.2. Warning lights

NOTICE

Heed dashboard warning lights

Warning signals indicate a fault in the engine. To avoid damage to the machine the indicated fault must be corrected as soon as possible.

Oil level warning lamp

Lights up red with ignition. Goes out a soon as the engine is running.

If signal lights up during operation, the oil level is too low.

- **Stop engine**
- Check oil level and replenish as required

(also see engine operating manual for details)

Engine malfunction

If this warning signal indicates a general engine fault if it lights up while the engine is running.

- **Stop engine**
- Check oil level check air filter, check coolant level

(also see engine operating manual for details)

Battery / Alternator malfunction

Lights up with active ignition and goes out when the motor is running.
If signal lights up during operation, the alternator is defective.

- Check alternator
- **Attention**: Engine starter and saw arm lift will not work with a drained battery

Fuel level warning

Fuel tank reserve reached

- Refuel with Diesel

Maintenance interval reached

- Service machine in a timely manner

7. OPERATION

7.1. Safety

General principles

- The floor saw may only be operated by one person.
  Direct other people out of the work area or build a barrier.
- The operator may not leave the machine while the engine is running.
- Never start the machine when the diamond blade rests on the ground.
  The drive will be overloaded.
- Do not correct cutting errors "by force".
  This will only damage the diamond blade and the machine.
- Do not switch off a cutting machine. Always lift the blade out of the kerf first.
- Do not operate the machine in case of fatigue and exhaustion or under the influence of alcohol, drugs or medication.
- Use only diamond blades of the suitable type and size.
- NEVER use damaged diamond blades.
- Keep the machine clean and operate only in a technically flawless condition.
- Ensure stable water supply.
- Remove all obstacles from the cutting area.
- Ensure good lighting at night.
- Only cut in a straight line.

DANGER

Poisonous exhaust fumes

The exhaust gases of the internal combustion engine contain carbon monoxide. It is invisible, odorless and tasteless, and can cause unconsciousness and suffocation. It can quickly accumulate in confined spaces and stay there for hours, even after the engine has been turned off.

- ➢ Never operate machines with internal combustion engines indoors or in confined spaces
- ➢ If you feel dizzy or nausea, turn off the engine immediately. Get fresh air. Go see a doctor.
  You may suffer from carbon monoxide poisoning.

WARNING

Danger from underground supply lines

Risk of cutting into water, electricity, gas or telecommunication lines.
Possible electric shocks, burns, explosions and the interruption of emergency call facilities.

- ➢ Consult your local authorities for detailed information on cables and wiring in the work area before cutting.
- ➢ Create an emergency plan. Have the contact number of the utility companies available.
- ➢ Inform the responsible utility companies.
- ➢ Wear personal protective equipment.

⚠ WARNING

Cut hazard form rotating diamond blade

Severe cut injuries from to rotating diamond blade or ejected parts.

- Only cut with the blade guard in closed position.
- Keep safety distance.
- Never touch the rotating blade.
- Wear personal protective equipment.

⚠ WARNING

Break-in hazard

Death or injury from break-in or tipping over.

- Make sure the aggregate surface has sufficient load-bearing capacity.
- When cutting, make sure the floor saw and the staff are not on the side to be cut off.

⚠ CAUTION

Burn hazard

The engine parts like muffler and tailpipe become hot during operation and may cause burns.

- Avoid skin contact.
- Wear personal protective equipment.
- Allow parts to cool before performing work.

For California residents

⚠ WARNING

California Prop 65 Warning

⚠ WARNING: The use of this product can cause exposure to materials known to the State of California to cause cancer and / or birth defects or other reproductive harm.

⚠ WARNING: Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and / or birth defects or other reproductive harm.

⚠WARNING: Some dust created by power sanding, sawing and grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products

⚠WARNING: The wires of this product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

⚠WARNING: Motor vehicles contain fuel, oils and fluids, battery posts, terminals and related accessories which contain lead and lead compounds and other chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. These chemicals are found in vehicles, vehicle parts and accessories, both new and as replacements. When being serviced, these vehicles generate used oil, waste fluids, grease, fumes and particulates, all known to the State of California to cause cancer, birth defects, and reproductive harm.

For more information go to www.P65warnings.ca.gov.

NOTICE

Cutting without obstacles

Damage of articles located in the cutting area or the diamond blade.

- ➢ Remove all obstacles from the cutting area and
- ➢ Provide good lighting of the work area.

Start preparation

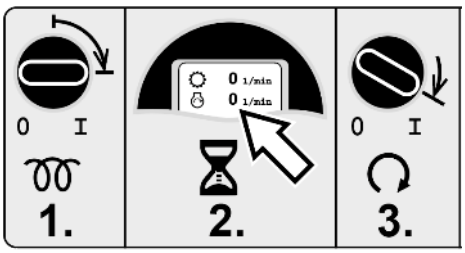
The following conditions must be fulfilled in order to use the floor saw safely and as intended:

- Check of the floor saw for damages, loose screw connections and for the completeness of the attachments
- Check of the engine oil level
- The fuel tank is filled with sufficient fuel
- A reliable water supply is provided
- A suitable diamond blade is correctly mounted
- The water cooling system is fully functional
- The cutting area is cleared from any obstacles
- The parking lock is activated
- The diamond blade must be in a lifted position**- no ground contact!**
- The drive lever must be in neutral center position

7.3. Engine starting and stopping

Starting

1. set the ignition key to ignition
2. **wait** until the multifunction display has booted and the "0" appears in the speed display for the gearbox and engine speed. (3-4 seconds)
3. then start the engine.



NOTICE

Error message when trying to start without completing the boot process

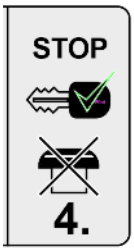
If an attempt is made to start the engine without starting the multifunction device, the following permanent error message will appear:

SPN 986 FMI 9

➢ The error message cannot be acknowledged. It appears permanently alternating with the regular display and must be reset by a service employee if necessary.

Stopping

1. set the ignition key to "0
2. wait until the multifunction display is completely powered down and the display has gone out
3. only then can the power supply be disconnected.



DO NOT

stop the machine

via emergency stop!

NOTICE

Use the Emergency Stop button only in case of an emergency

If the emergency stop is used as a stop button, the control unit cannot shut down correctly.
The following permanent error message may occur after 5 times of triggering:

SPN 2634 FMI 11

➢ The error message cannot be acknowledged. It appears permanently alternating with the regular display and must be reset by a service employee if necessary.

7.4. Adjusting lowering speed of saw arm

The throttle valve should be fully closed first. Then gradually open the throttle as you perform test runs to set the right lowering speed.

lower faster   lower slower

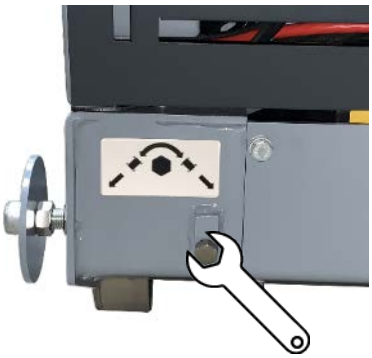
7.5. Adjusting the operating position

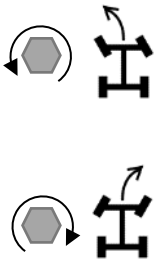
Install the handle bars in the most convenient position for the operator.

- Loosen the eye bolt
- Insert handle bar in the desired position
- Secure in position by tightening eye bolt

WARNING! Do not use eyebolts as lifting or lashing points or for transport.

7.6. Drift compensation





The diamond blade has a tendency to pull the machine to one side when engaged. This drift is completely normal and can easily be corrected by the toe-in adjustment to ensure a straight cut.

- Turning the bolt to the right (clockwise) -> Floor saw runs to the right
- Turning the bolt to the left (counterclockwise) -> Floor saw runs to the left

7.7. Diamond blade installation and removal

WARNING

Cut and crush hazard from rotating parts

Rotating diamond blade or flange can pull in clothes and sever or body parts.

- Switch off the engine and remove the ignition key.
- Before working on the machine, all parts must be stationary.
- Secure the machine against restart

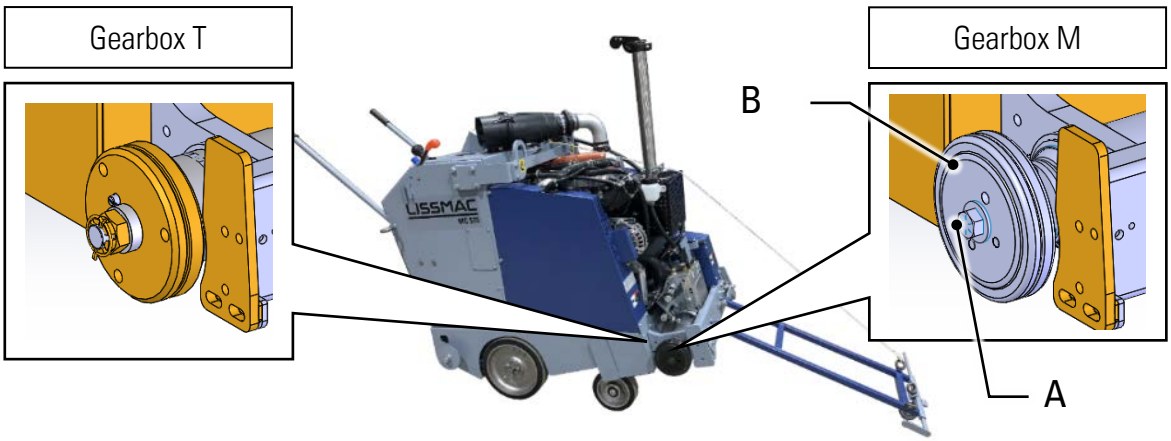
Always check diamond blades before installation!

- Blade for wet cutting? (1)
- Blade suitable and approved for cutting work? (5)
- Blade and arbor are of the right size? (2) (7)
- Permissible cutting speed maintained? (3) (4)
- Direction of rotation? (6)
- Shear pin size correct (8)
- All segments available?
- Blade was overheated? (bare steel, blue tarnish = do not use!
- No cracks in the blade?

  Check: Knock with piece of wood

  Blade reverberates = OK

  Blade sounds dull = do not use! (Exception: Sandwich-type silent blades)



NOTICE

Diamond blade installation

Appropriate diamond blades must be used, with the correct shear pin size and the correct arbor diameter to fit on the shaft. Ensure flange surfaces to be clean before installing the diamond blade. The diamond blade has to rest evenly on the flange. Pay attention to the sense of rotation and align marking on the blade with cutting shaft rotation (down-cut).

Blade removal

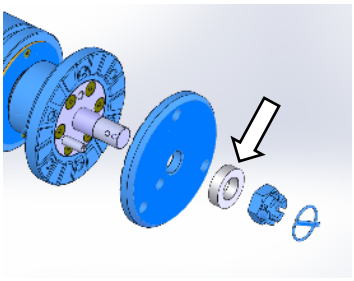
1. Unlock the blade guard at the front and remove by pulling upwards at the handle.
2. Disconnect the water supply to the blade guard.
3. Slowly lower the machine until the diamond blade touches the ground.
4. Loosen the flange screw connection **A** with the supplied spanner.
5. Lift and remove the machine and remove the pressure disc **B**.
6. Remove the diamond blade.

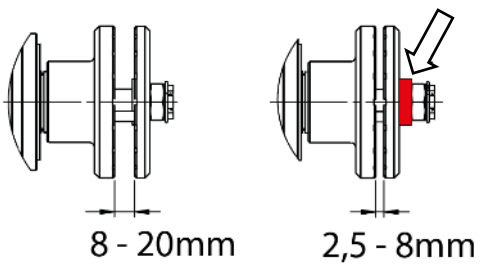
Blade installation

1. Place the diamond blade and pressure disc on the flange and tighten the flange screw hand-tight.
2. Slowly lower the machine until the diamond blade touches the ground.
3. Tighten the flange screw with 204 Nm.
4. Put on the blade guard and connect its' water supply

Clamping spacer

Gearbox T





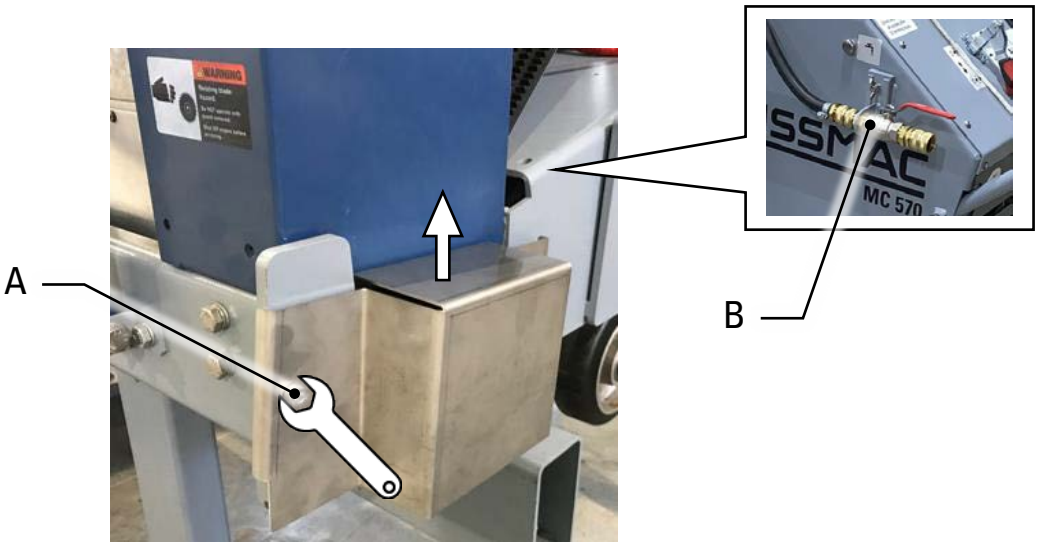
7.8. Change from right to left cut

⚠ WARNING

Cut and crush hazard from rotating v-belt drive

When touching the rotating v-belt, hands and clothing can become entangled and pulled in, resulting in cut and crush injuries including dismemberment.

- Do not open or remove the belt guard or touch the v-belt while it rotates.
- Only perform this work with the engine turned off and pulleys standing still.



Sequence

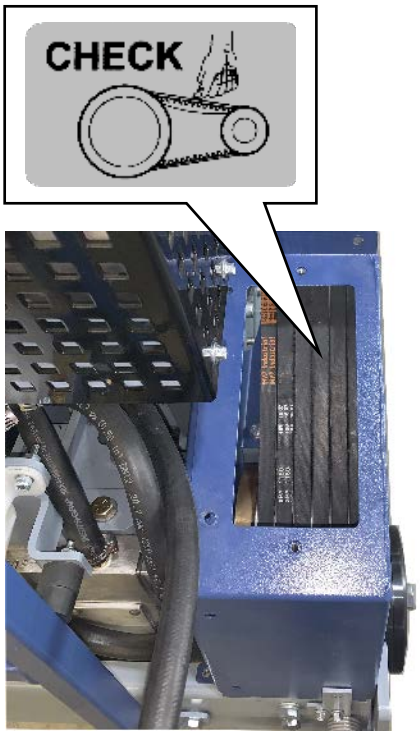
1. Lift diamond blade to highest position and remove ignition key
2. Remove blade guard and diamond blade. (see section 7.7)
3. Loosen bolt **A**, pull up to remove flange cover, and install on opposite side.
4. Install diamond blade on other side. (see section 7.7)
5. Install blade guard
6. Reroute and reconnect the water supply hose on the opposite side B.
7. Flip pointer to opposite side and realign with diamond blade.

WARNING

Cut and crush hazard from rotating v-belt drive

When touching the rotating v-belt, hands and clothing can become entangled and pulled in, resulting in cut and crush injuries including dismemberment.

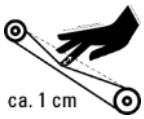
- Do not open or remove the belt guard or touch the v-belt while it rotates.
- Only perform this work with the engine turned off and pulleys standing still.



Check

V-belt tension can be checked by pushing them with a finger.

1. Remove the belt cover
2. Check by pushing with a finger, the drive belts must yield about one belt strength



Effects of incorrectly tightened drive belts:

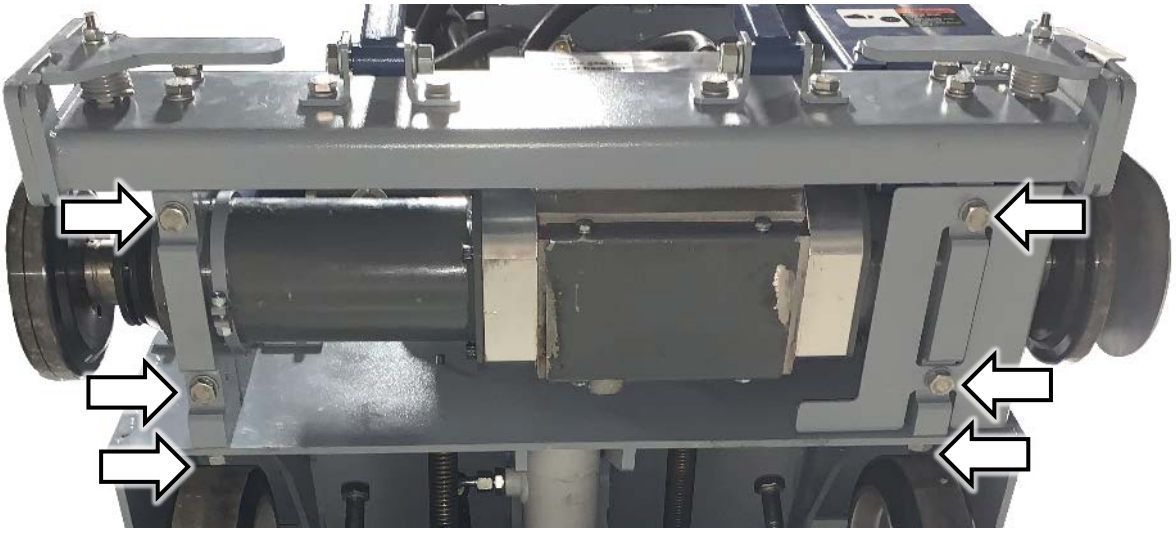
- Drive belts too loose:
  The drive belts slip on the V-belt sheave.
  Excessive wear and no or poor power transmission.
- The drive belt is tightened too much:
  Excessive wear and heating of the V-belt and sheave with subsequent damages

WARNING

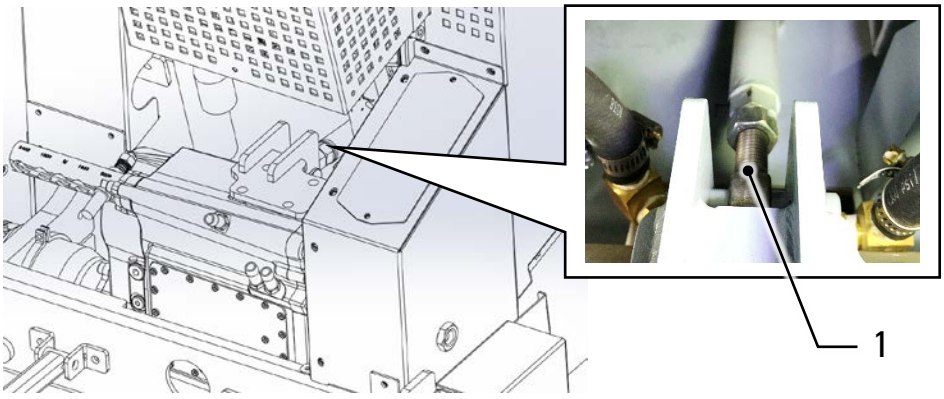
Cut and crush hazard from rotating v-belt drive

When touching the rotating v-belt, hands and clothing can become entangled and pulled in, resulting in cut, and crush injuries including dismemberment.

- Do not open or remove the belt guard or touch the v-belt while it rotates.
- Only perform this work with the engine turned off.



Gearbox M



Gearbox T

Tensioning of v-belts

- Loosen all the marked bolts
- Loosen nut on turnbuckle (Pos. 1)
- To tighten or loosen the belts, expand or retract the turnbuckle respectively
- Once at required tension, tighten turnbuckle nut (Pos. 1)
- Tighten all the marked bolts

NOTICE

Belt replacement

Do not mix different belt types or manufacturers. We strongly recommend exchanging belts as a full matching set. Especially mixing used and new belts will reduce service life of new belts by half.

7.11. Gear selection

NOTICE

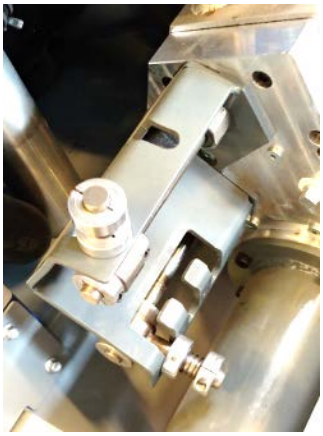
Change gears only at standstill

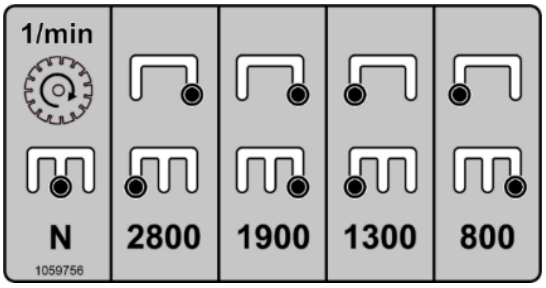
The four gears allow the tool's speed setting to be adjusted to each diamond blade diameter and aggregate to be cut. Incorrect operation will cause severe damage to the gearbox.

- Only change gears with the engine stopped.
- Wait for all parts to stand still.
- The gears always have to engage perceptibly in the end position.
  Never leave the selector between end points.

Selecting gears

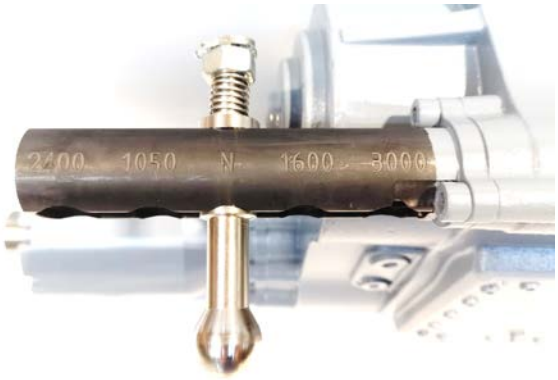
Option M

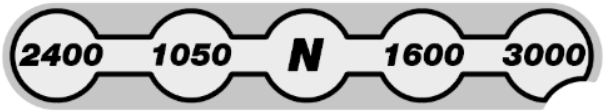




Selecting gears

Option T





WARNING

Ejected parts hazard

If the diamond blade is not supplied with a sufficient amount of cooling water, the blade can overheat and cutting segments may break off and be ejected. Grinding dust is not bound effectively.

- Always ensure a sufficient supply of cooling water for the diamond blade
- Wear personal protection equipment

WARNING

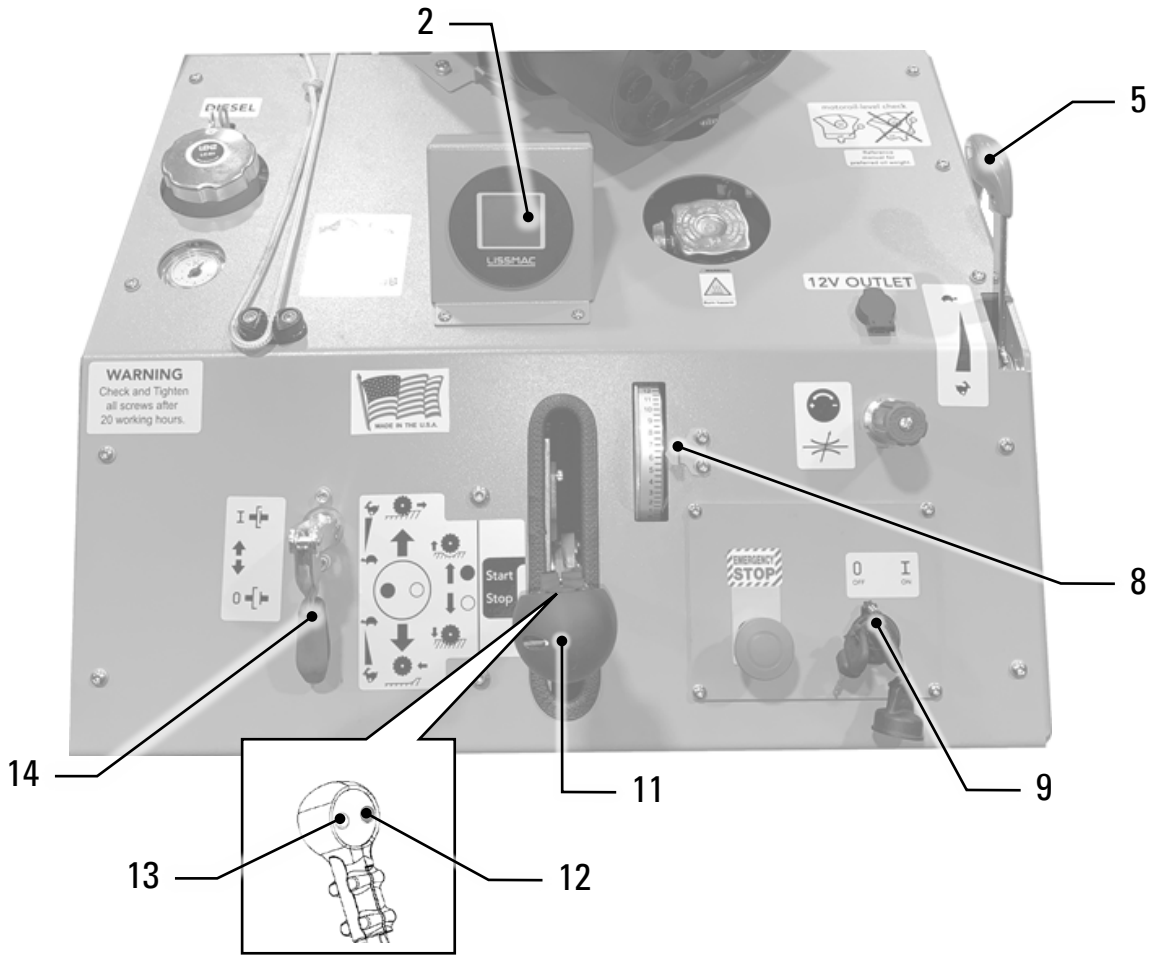
Ejected parts hazard

If the diamond blade is lowered abruptly, the blade can get bent and cutting segments may break off and be ejected.

- Lower diamond blade gradually
- Set up a safety zone around the cutting area
- Wear personal protection equipment

Always perform straight cuts and be careful not to cant or jam the diamond blade in the kerf.
Perform all steering and control commands in a smooth and controlled fashion.

Deep cuts shall be made in several passes. Pre-cut with a small blade first and then deepen the cut with a larger-diameter blade. The lager blade always has to be thinner than the preceding one in order not to get stuck in the kerf.



Cutting

1. Place drive lever in neutral start positon
2. Start engine with ignition key (Pos. 9).
3. Lower pointer with rope (Pos. 15) and maneuver flor saw into position
4. Adjust cutting shaft speed with engine throttle (Pos. 5)
   check shaft RPM in the multifunction display (Pos. 2)
5. Activate water supply by opening ball valve.
6. Lower saw arm via switch (Pos. 13) until diamond blade scratches the surface
   and zero the depth gauge ((Pos. 8).
7. **Gradually** lower the diamond blade via switch (Pos. 13) to the desired cutting depth
8. Engage ground drive lever (Pos.14)
9. Initiate feed movement by **gradually** pushing drive lever forward (Pos. 6)
10. Adjust feed speed to cutting conditions.
11. Monitor cutting parameter on the multifunction display (Pos. 2)

End of Cut

1. Lift blade from kerf with switch (Pos 12).
2. Stop water flow and engine.

7.13. Maneuvering the floor saw

WARNING

Cut hazard from rotating diamond blade

By touching the rotating diamond blade clothes can be pulled in and limbs severed.

- Any movement of the machine outside the area where cutting work is to be performed must be done with a non-rotating tool.
- Always pay attention to the surroundings while traversing and drive at a suitable speed.

WARNING

Cut Hazard in the work area

The running machine can be a potential source of injury if not used responsibly and used and operated as prescribed.

- The operator has to remain behind the handlebars during all cutting operation
- The floor saw may only be operated by a single person. Instruct other persons to clear the work area. Cordon off work area if required.
- Activate the parking lock is equipment is not in use.
- The feed lever must not be adjusted jerkily between maximum forward and backward movement. Otherwise the machine may lift off and perform uncontrolled movements.

Maneuvering the floor saw

1. Raise diamond blade to have ample ground clearance.
2. Deactivate the water pump.
3. Set engine throttle forward to idle.
4. Stop engine and let diamond blade coast down to standstill.
5. Activate parking lock by engaging ground drive.
6. Set gearbox to neutral.
7. Restart engine and reposition machine with ground drive.

7.14. Floor saw shut-down

⚠ WARNING

Crush hazard from unintended movement

Personal and material damage from accidentally rolling machine.

- ➢ Always activate the parking lock before leaving the machine

Floor saw shutdown

1. Raise diamond blade to have ample ground clearance.
2. Deactivate the water pump.
3. Set engine throttle forward to idle.
4. Stop engine and let diamond blade coast down to standstill.
5. Remove ignition key.
6. Place wheel chocks for added safety.

7.15. Conversion from left- to right-cutting

⚠ WARNING

Cut and entanglement hazard

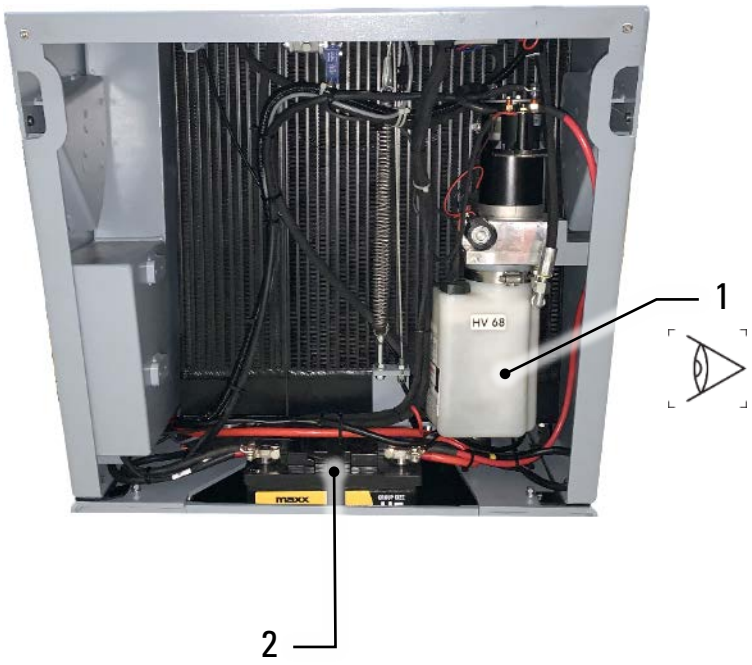
When touching the rotating v-belt, hands and clothing can become entangled and pulled in, resulting in cut and crush injuries including dismemberment.

- ➢ Do not open or remove the blade guard or touch the diamond blade while it rotates.
- ➢ Only perform this work with the engine turned off and secured against inadvertent reactivation.

Sequence

- Raise cutting shaft to top position and remove ignition key.
- Disconnect water hose from blade guard.
- Remove flange cover and diamond blade one side and shaft guard on the other side.
- Reinstall components on the opposite side.

7.16. Service compartment



Pos. 1 Reservoir for cutting shaft lifting unit (HV68)

Hydraulic oil fill level can only be checked correctly when the machine is lowered completely.

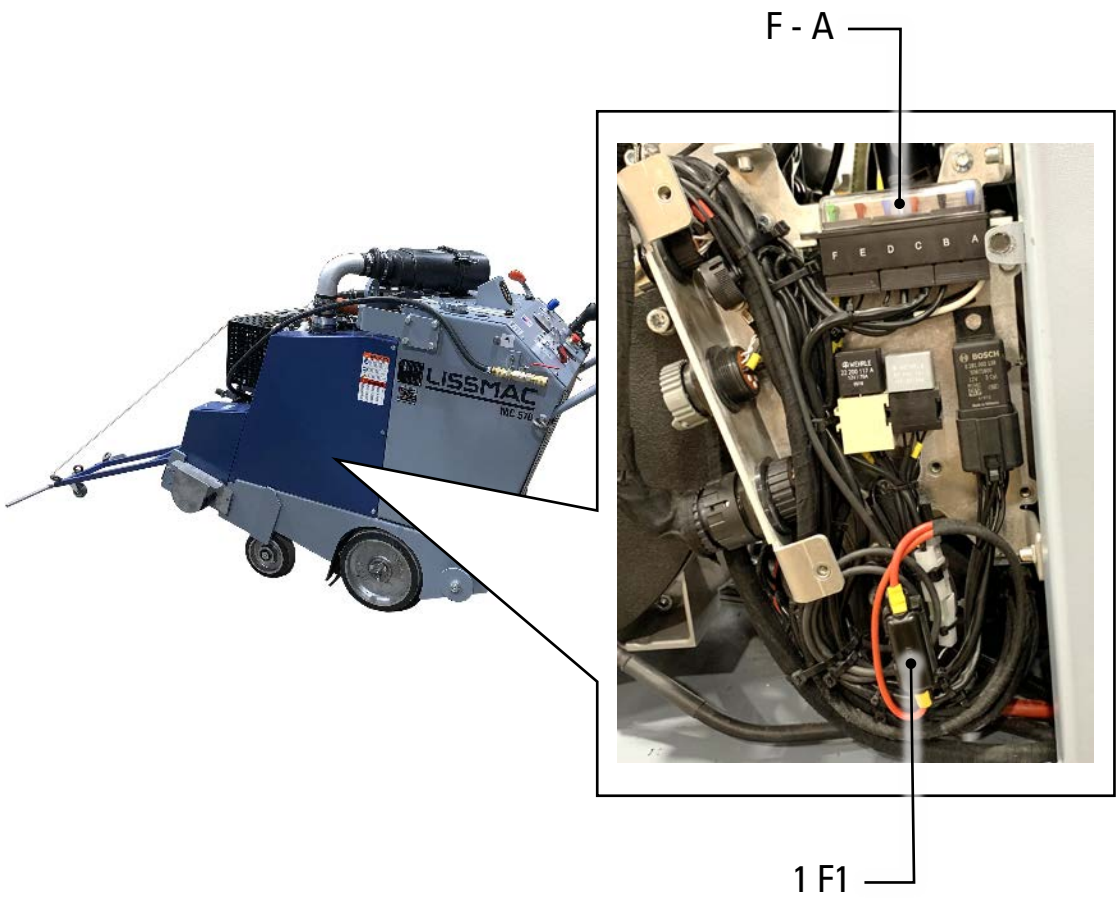
Pos. 2 Battery

7.17. Fuses

The machine uses standard automotive ATO blade Type C fuses (ISO 8820-3).

Replace only with same type and current rating.

Fuse	Rating	Function	Holder
1F1	35 A	Main fuse	
F	30 A	ECU	
E	10 A	Fuel pump	
D	15 A	Power supply	
C	40 A	Glow plug	
B	1 A	T15/50 control unit	
A	15 A	Power supply ECU	



7.18. Battery

12V - 650A cold cranking amps (DIN H5 / EN LN2 / BCI 47 - Replace with same type only)

If battery tension drops below 6V at any point, the control unit will deactivate. Check battery tension regularly in the control menu section. Recharge or replace weak batteries.

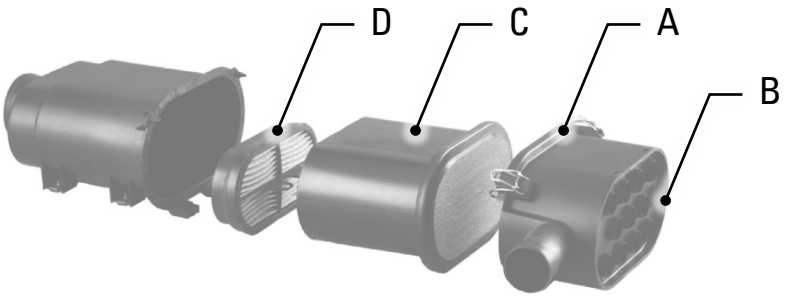
WARNING

Explosion and corrosion hazard

When charging batteries, explosive oxyhydrogen gas is produced. Battery acid is corrosive.

- Keep ignition sources away.
- Pay attention to correct polarity.
- Wear personal protective equipment.
- Before welding work on the machine, always disconnect the negative battery pole and the electronic control system as far as possible.

7.19. Air filter cartridge replacement



The air filter retains the dust particles suspended in the ambient air and keeps from entering the engines combustion chamber. The deposited particles gradually build up, limiting the air flow to the engine. .

Power is reduced and the engine may be damaged as a result.

We recommend checking and replacing the air filter regularly.

Replacing the air filter cartridge

- Open clamps **A** and remove cover **B**
- Remove filter cartridge **C**
- Carefully remove security filter **D** gently tap to clean. Replace with every third filter cartridge.
- Reinsert filter cartridges as required and reattach cover

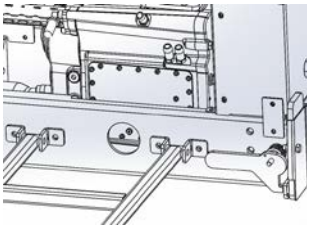
7.20. Draining gearbox cooling water

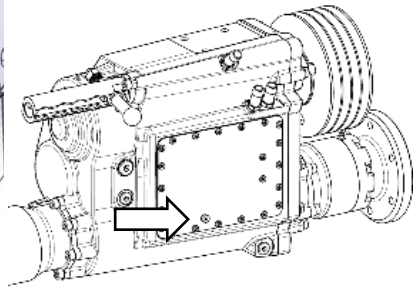
NOTICE

Drain water if there is risk of frost

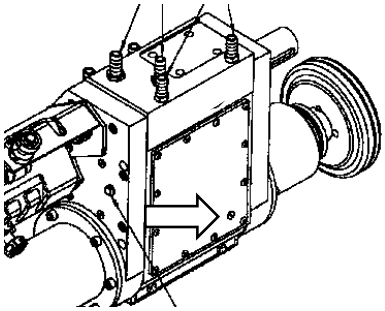
If there is risk of frost, the cooling water must be drained from the gearbox via the ball valve.

If there is no ball valve installed use pressurized air to blow out the water.





Option T



Option M

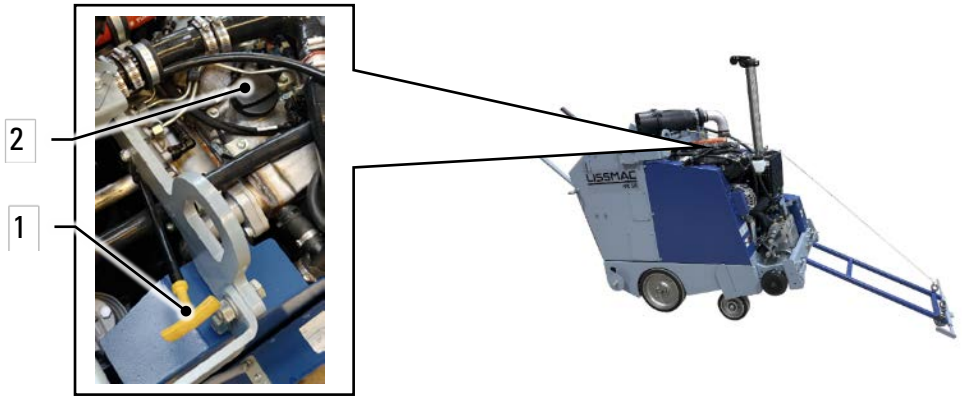
Sequence

- Stop engine,
- **Wait for all parts to stand still.**
- Remove tool and lower frame.
- Drain water.

7.21. Checking engine oil

Check engine oil level daily before use.

Let Engine cool down first. Do not spill. Do not overfill.



Sequence

- Check oil level with dipstick (Pos. 1)
- Replenish SAE 10W-40 as required via previously cleaned filler neck (Pos. 2).

7.22. Cutting with open blade guard

⚠ WARNING

Ejected parts and cut hazard

Serious personal injury from contact with running blade or ejected parts when cutting with open blade guard.

- ➢ Cordon off cut area
- ➢ Never touch the rotating blade
- ➢ Wear hard hat, goggles and safety boots
- ➢ Stop engine and wait for all parts to stand still before working on the blade guard.

Sequence

The front part of the blade guard can be folded up. This function is used to make corner cut at walls.

- **Stop engine and wait for all parts to stand still**
- Pull up latching lever at front of frame (Pos. 1)

- Fold up front part of blade guard

After the cut

- **Stop engine and wait for all parts to stand still**
- Close blade guard immediately and secure with latching lever.

8. MAINTENANCE

8.1. Service

WARNING

Cut and crush hazard from rotating objects

Rotating objects can cut, crush or sever limbs on contact.

- Maintenance and repair may only be performed with the machine switched off
- Maintenance and repair may only be performed by trained personnel
- The machine must be secured against accidental startup
- Replace all damaged or illegible safety signs

Cleaning

To protect the painted surfaces, no aggressive cleaning agents may be used.

High-pressure cleaners may not be used on engine and control components.

Replacement parts

Only use genuine replacement parts from the manufacturer.

Material

See: 4.1 Consumables for details

	Before each use	daily	weekly	monthly
Conduct a visual inspection for obvious damage and defects.	●			
Thoroughly clean the floor saw (depending on the application).		●		
Check engine oil and transmission oil level	●			
Change engine oil and transmission oil with respective filters	every 6 Months or 250 operating hours			
Gearbox oil change	Gearbox T: Initially after 500 h, then every 1500 h Gearbox M: Initially after 50, then every 100 operating hours.			
Check air filter cartridge	●			
Replace air filter cartridge	every 6 Months, or if required			
Replace hydraulic oil and filter	Initially after 100 then every 500 operating hours			
Grease at grease points				●
Check safety features				●
Check hydraulic lines and fittings				●
Check v-belt tension (after 2h then)			●	
Bolted connections	Check and tighten all bolted connections after 20 operating hours			
These stated qualities apply to the standard use of the machine in average climatic conditions. For extremely heavy-duty use under extreme climatic conditions, other specifications may be required.				

8.2. Changing motor oil

NOTICE

Engine oil disposal

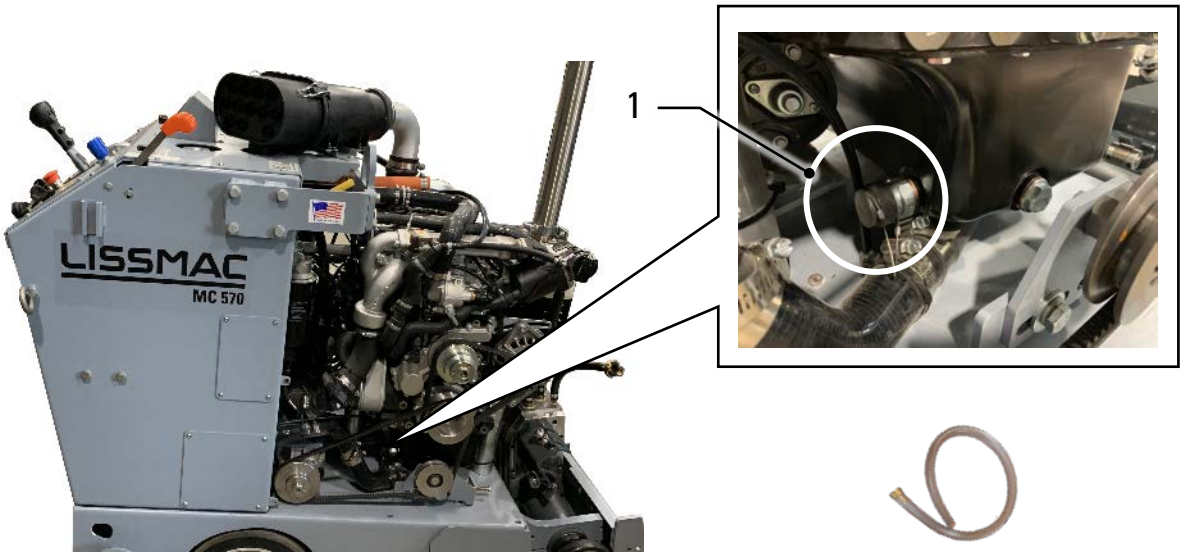
Disopse of used engine oil an enviromentally friendly and in accordance with national environmental protection laws.

- Use a colletion tray when drainig the engine oil
- Observe the engine manufacturer's operating instructions, enclosed with each machine. Pay particular attention to the safety and maintenance instructions.

The engine oil need to be at an operating temperature (80°C / 175°F) before it is drained.

Sequence

1. Remove right-side Engine cover.
2. Raise the machine all the way up and place a collection tray underneath
3. Stop engine (we recommend using a crane for securing the machine)
4. Unscrew protective cap (Pos. 1) from oil drain valve
   (Integrated check valve, oil will only flow with the drain hose being screwed on)
5. Screw on supplied drain hose and drain oil to collection tray



Observe the engine manufacturer's operating instructions, enclosed with each machine.
Pay particular attention to the safety and maintenance instructions related to lubrication.
Engine must be in a horizontal position before checking the oil level.

8.3. Grease points

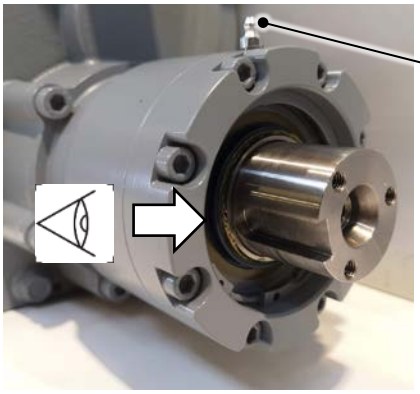
Before performing service or maintenance work, the engine has to be switched off.

Secure machine against inadvertent activation.

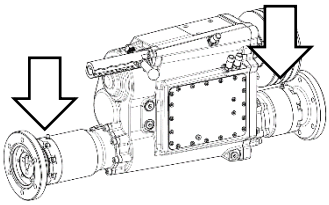
Service and maintenance work may only be carried out by qualified personnel.

Secure machine with a crane when working underneath.

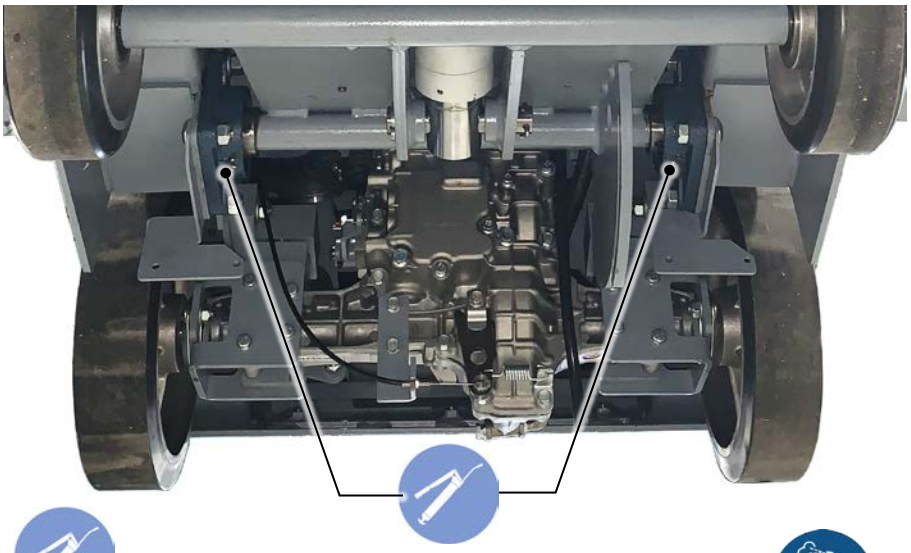
daily

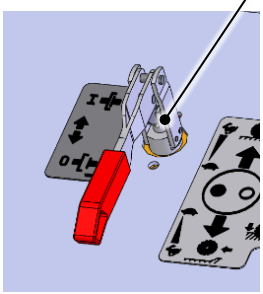


Both sides, until grease escapes.



monthy





8.4. Transaxle oil change

⚠ WARNING

Crush hazard from active drive unit

Body parts and clothing may become entangled or pulled in if the drive unit is active.
Danger of cut and crush injuries including dismemberment.

- ➢ Remove ignition key before performing any service on the machine

Required Material

Oil: 5W50 ca. 2,5L (2.6 Quarts)

Change interval

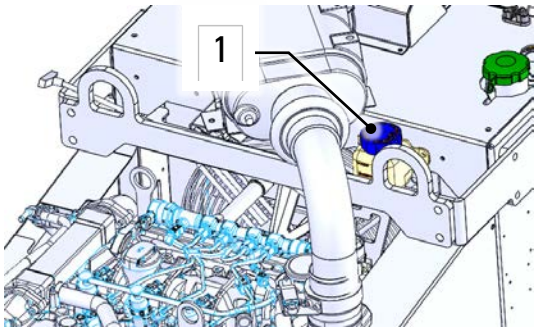
Initially after 50, then every 200 operating hours.

Sequence

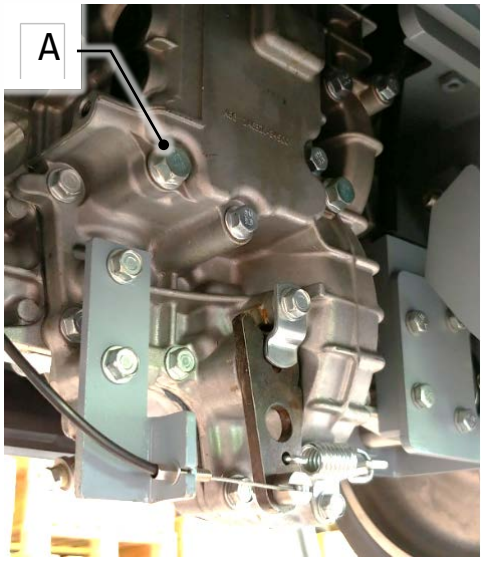
1. Rest the machine safely on trestles or pull it up by crane.

2. Remove the cover of the expansion tank. (Pos. 1)

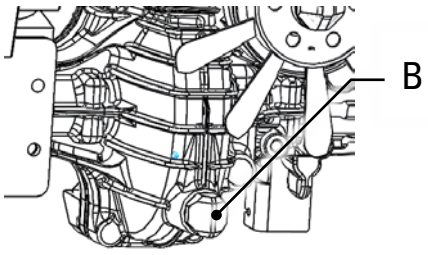
3. Place the collection container underneath.



4. Remove drain screw **A** and drain oil.



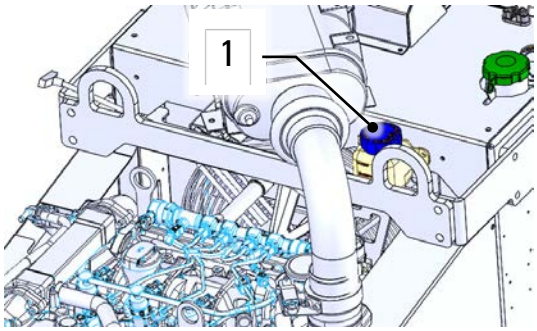
5. Remove drain screw **B** and drain oil.



6. Fit the drain plugs with new sealing washers and screw them back in.

7. Fill the extension tank with 2.6 qt./US liq (2.5l)

This process takes some time to complete, as the oil spreads slowly inside the housing and the oil cannot be filled in one go.



8. Check the tightness and firm seating of the screws

9. Purging is not necessary, the gearbox purges itself.

⚠ WARNING

Crush hazard from active drive unit

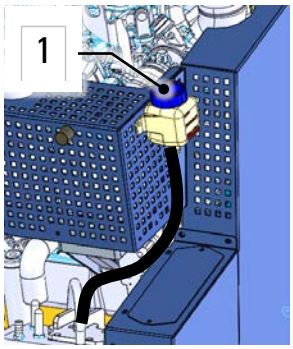
Body parts and clothing may become entangled or pulled in if the drive unit is active.
Danger of cut and crush injuries including dismemberment.

- ➢ Remove ignition key before performing any service on the machine

Required Material	Gearbox T	Castrol Syntrax Universal Plus 75W90 (SAE J2360) ca. 3,5L
	Gearbox M	Lucas 85W140
Change interval	Gearbox T	Initially after 500, then every 1500 operating hours. In case of long periods of standstill (winter break) the oil must be changed before commissioning.
	Gearbox M	Initially after 50, then every 100 operating hours.

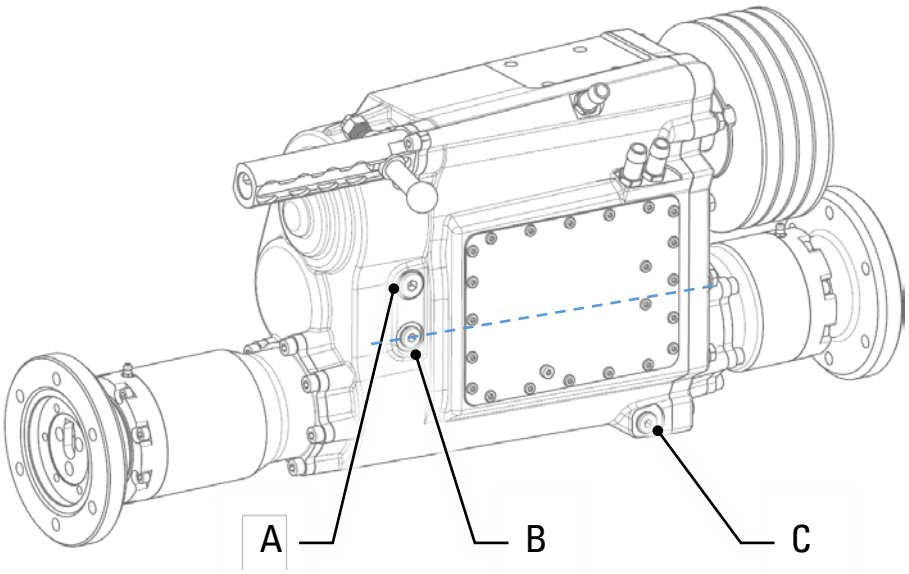
Sequence Gearbox T

1. Rest the machine safely and horizontally on trestles.
2. Remove the cover of the expansion tank. (Pos. 1)
3. Place the collection container underneath.



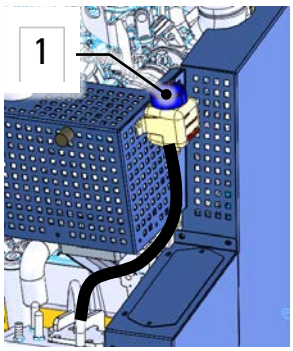
4. Remove drain plug **C** and drain oil.
5. Remove screw from oil inlet **A** and screw plug B.
6. Screw in drain plug **C** again when no more oil escapes.
7. Fill oil through oil inlet **A** until oil emerges from opening **B**.
8. Screw in screw from oil inlet **A** and screw plug **B**.
9. Screw in the cover of the expansion tank (Item 1).

Gearbox T



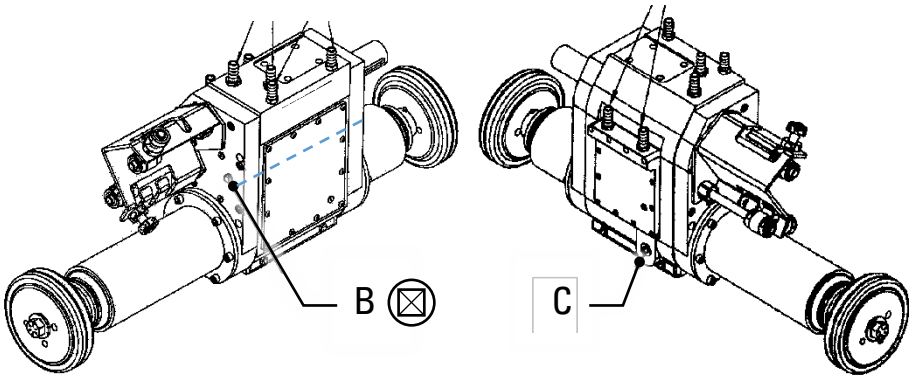
Sequence Gearbox M

1. Rest the machine safely and horizontally on trestles.
2. Remove the cover of the expansion tank. (Pos. 1)
3. Place the collection container underneath.



4. Remove drain plug **C** and drain oil.
5. Remove screw plug **B**.
6. Screw in drain plug **C** again.
7. Fill in oil until oil emerges from port **B**.
8. Screw in screw plug **B**.
9. Screw in the cover of the expansion tank (item 1).

Gearbox M



NOTICE

Storing the 4-speed gearbox

During prolonged storage or periods of nonuse, internal components will lose their lubrication film.

- ➢ Start the machine or manually turn the gears at least once every 6 months to reestablish the protective lubricating film.

8.7. Regeneration of the Diesel Particulate Filter (Stage V Engine only)

DPF regeneration

During regular operation, the soot particles are automatically burned once a certain exhaust gas temperature is reached.
However, over time, some ash and soot particles may still deposit in the particulate filter system. This may require a manually initiated pyrolytic cleaning process of the catalyst. This process has to be carried out with the machine being stationary. Hence the name stand-still regeneration.
The catalyst is especially loaded with soot if:

- The engine only runs for short intervals
- The engine load is constantly low

Stand-still regeneration

The engine control unit issues a regeneration reminder after 60 working hours without regeneration (short-term use) or if the catalyst is loaded at above 90%.

The operator must initiate the regeneration process manually. We recommend a prompt execution in order to avoid damage to the catalyst or the activation of automatic engine protection measures.

The regeneration of the catalyst may take up to 35 min!

Refer to the engine manufacturer manual for further details.

Level	Soot level of DPF	Regeneration	Symbol Color	Behaviour	Display	System reaction
0	0-90%	Not required				---
0	>90%	possible (recommended)	yellow	flashing	 SPN 3701:00 DPF XXX%	---
				every 300 sec for 3 sec		
1	>100%	urgent	yellow	flashing	 SPN 3701:01 DPF XXX%	---
				every 60 sec for 3 sec		
2	>124%	mandatory!			 SPN 3701:10 DPF XXX%	---
			red	static		
2	Ab 136%	→**Emergency Operation** HATZ Service required			 SPN 3701:10 DPF XXX%	-50% Power -40% RPM
			red	static		

WARNING

Burn hazard

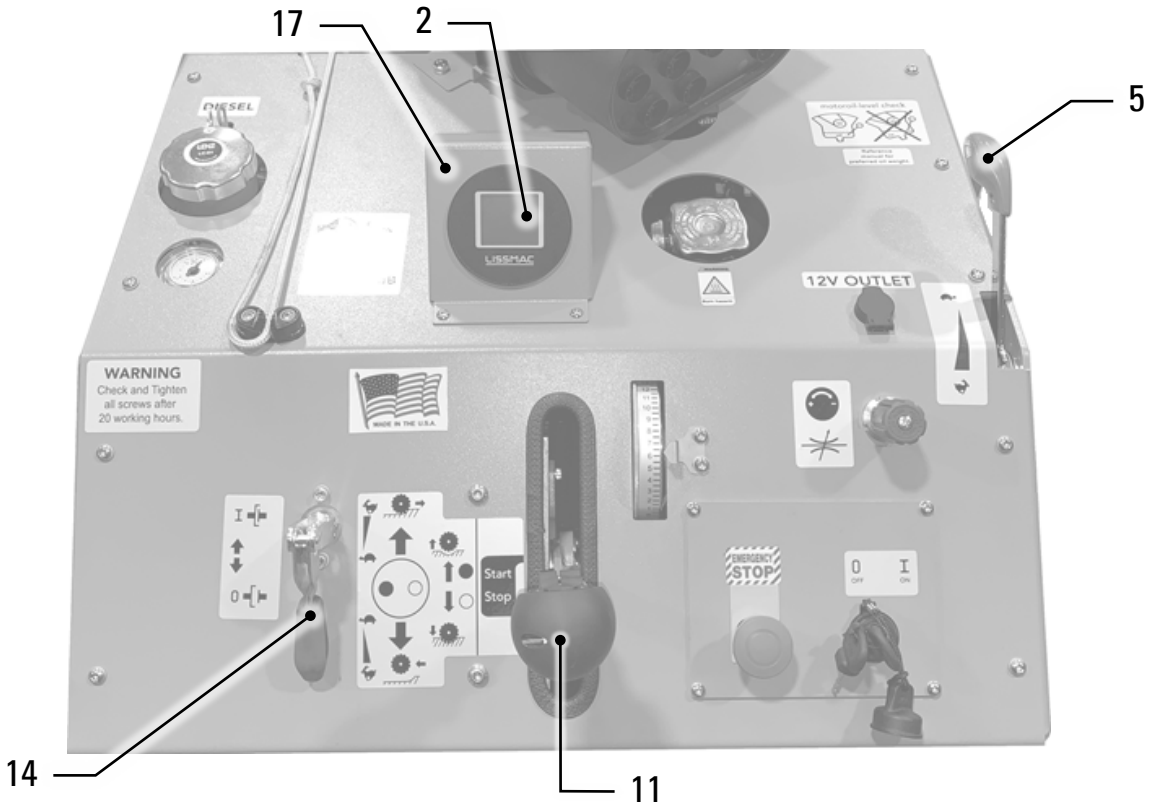
During the regeneration process exhaust system temperatures may be as high as 600°C (1120°F)

Skin kontakt will result in severe burns.

- ➢ Avoid skin contact
- ➢ Keep flammable substances away

Preparation

1. Securely park floor saw in an open space with ample distance to flammable objects.
2. Remove Saw blade. Install blade guard.
3. Place wheel chocks to immobilize machine.



Initiate

4. Set engine RPM (Pos. 5) to idle.
5. The engine coolant temperature must be above 75°C (167°F).
6. Set drive lever (Pos. 11) to neutral position
7. Engage Differential lock (Pos. 14)
8. Place wheel chocks for added safety.
   ➔ Press start button at control panel (Pos. 17) **for 3 seconds**.

Regeneration process now runs automatically.
Depending on the degree of soiling the process may take up to 35 minutes.
The exhaust gas temperature should be above 500°C during the entire process.

End

After a successful completion or after a 35 minute cycle, the DPF symbol (Pos.2) goes out.

Abort

The process can be aborted at any time by initiating the drive function.

NOTICE

Do not abort regeneration process

We strongly recommend aborting the process only in an emergency!

The prompt will remain until the regeneration process is completed successfully.
If the soot load is too high due to multiple interruption of the regeneration, the filter can only be regenerated by HATZ.

8.8. Troubleshooting

Stop engine before carrying out any service or repair work.

Secure machine against accidental startup.

Maintenance and service work may only be carried out by qualified technical personnel.

NOTICE

The following points must be checked first with cutting problems:

- Diamond blade blunt, glazed or defective?
- Sufficient water supply to the diamond blade?
- Correct diamond blade selected?
- Full power or engine RPM available?

Problem	Possible cause	Solution
Poor cutting performance	Diamond blade is dull or not suitable	Replace or exchange diamond blade
	Not enough water	Clean water strainer or Flush water supply system with a maximum of 5 bar
	Slipping v-belts	Retention v-belts
	Engine does not generate full power	Consult engine manufacturer manual
Engine does not start	Fuel tank empty	Refuel
	Fuel filter clogged	Clean or replace fuel filter
	Drive lever not in center position	Set Drive lever to center position
	Battery drained	Recharge battery
Lifting mechanism does not work	Pump defective	Check or replace pump
	Hydraulic reservoir empty	Replenish reservoir
	Battery drained	Recharge battery

8.9. Maintenance plan

This section shall serve as proof maintenance already performed and as service booklet.
All maintenance and service work must be entered as proof.

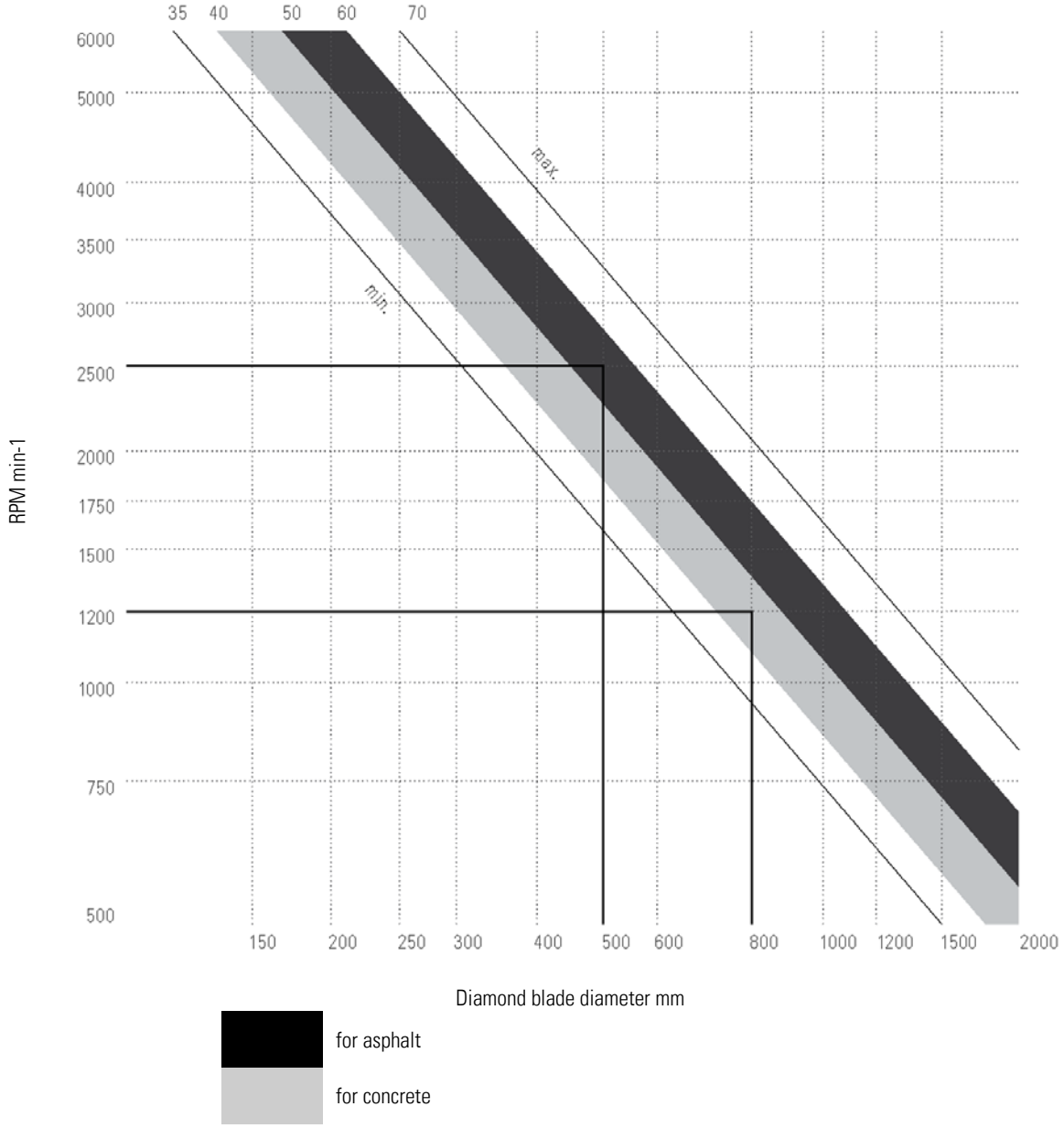
Machine/Type: Serial number/year of manufacture:

Date	Implemented maintenance or service work	Date/signature

9. BLADE SPEED

Circumferential speed m/s

speed	ft/s	115	128	160	194	230		
	m/s	35	39	49	59	70		
Blade diameter	inch	16	20	22	30	32	36	40
	mm	400	500	600	700	800	900	1000



for asphalt

for concrete

All tools in the area of the diamond tools are marked in color. The tools differ depending on the application purpose and area of application. The parameters must be correct in order to achieve the best results. The optimum cutting performance can be determined with this diagram.

10. WARRANTY

The warranty for this machine is 12 months. For the wear parts listed in the following, warranty is only granted if the wear is not due to operation.

Wear parts are those parts, which are subject to an operational wear with an intended use of the machines. The wear time cannot be defined in a uniform manner, it differs according to the usage intensity. The wear parts must be maintained, adjusted and if necessary exchanged in a device-specific manner according to the operating manual of the manufacturer.

Operational wear does not presuppose any claims for defects.

- Feed and drive elements such as racks, gear wheels, pinions, spindles, spindle nuts, spindle bearings, ropes, chains, chain wheels, belts
- Seals, cables, hoses, collars, plugs, clutches. Water, pneumatic or hydraulic valves and electric switches
- Guide elements such as guide bars, guide bushes, guide rails, rollers, bearings, slide protection supports
- Clamping elements of fast separating systems
- Rinsing head seals
- Slide and rolling bearings which do not run in the oil bath
- Shaft seals and sealing elements
- Friction and overload clutches, brakes
- Carbon brushes, collectors
- Quick-release rings
- Control potentiometer and manual logic elements
- Fuses and lights
- Auxiliary and operating materials
- Bowden cables
- Fins
- Diaphragms
- Spark plugs, glow plugs
- Sealing brushes, sealing rubber, splash guard cloths
- Filters of all types
- Drive, deflection rollers and bandages
- Run and drive wheels
- Water pumps
- Drill, separation and cutting tools
- Energy storage devices

EC – Declaration of Conformity

CE

This EC declaration of conformity is valid for the following machine:
LISSMAC Floor Saw MULTICUT 570.

This declaration only relates to the machine in the state, in which it was placed on the market; parts attached subsequently by the end user and / or interventions carried out subsequently remain unconsidered. It is confirmed that the machine corresponds to the relevant regulations of the guideline 2006/42/EC and 2000/14/EC.

Manufacturer:

LISSMAC Corporation
17 Route 146
Mechanicville, NY 12118, USA

Technical documentation is stored by
LISSMAC Maschinenbau GmbH, D-88410 Bad Wurzach

Person authorized to compile the technical files: Head of Engineering / Technical Documentation

Machine description:

The LISSMAC Floor Saw pertains to floor cutting-off machines and is exclusively intended for wet-cutting joints in concrete or asphalt using a diamond tipped tool.

	MULTICUT 570
Max cutting depth	420 mm
Mas. diamond blade diameter	1000 mm
Diamond blade arbor	25,4 mm
Engine	HATZ Turbodiesel EU Stage V & EPA Tier 4 final
alternatively	HATZ Turbodiesel EU Stage IIIB & EPA Tier 4 final
Power rating (kW/HP)	42 / 55
Nominal shaft speed Option M	800 / 1300 / 1900 / 2800 RPM
Nominal shaft speed Option T	1050 / 1600 / 2400 / 3000 RPM
Weight	765 kg

Harmonized standards:

EN 13862:2010-03
EN ISO 12100:2011-03
EN 60204-1; VDE 0113-1/A1:2009-10

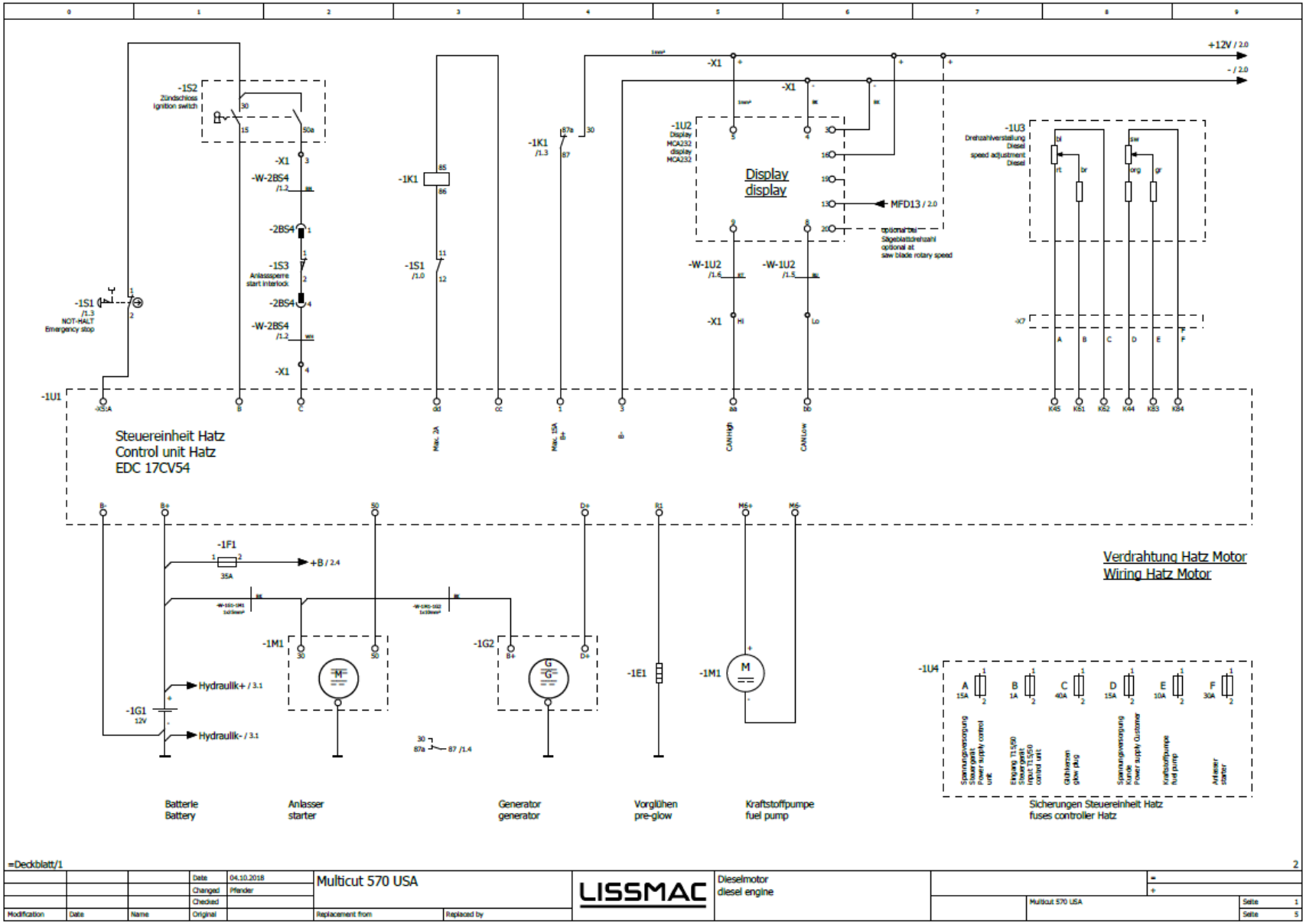
Authorized representative:

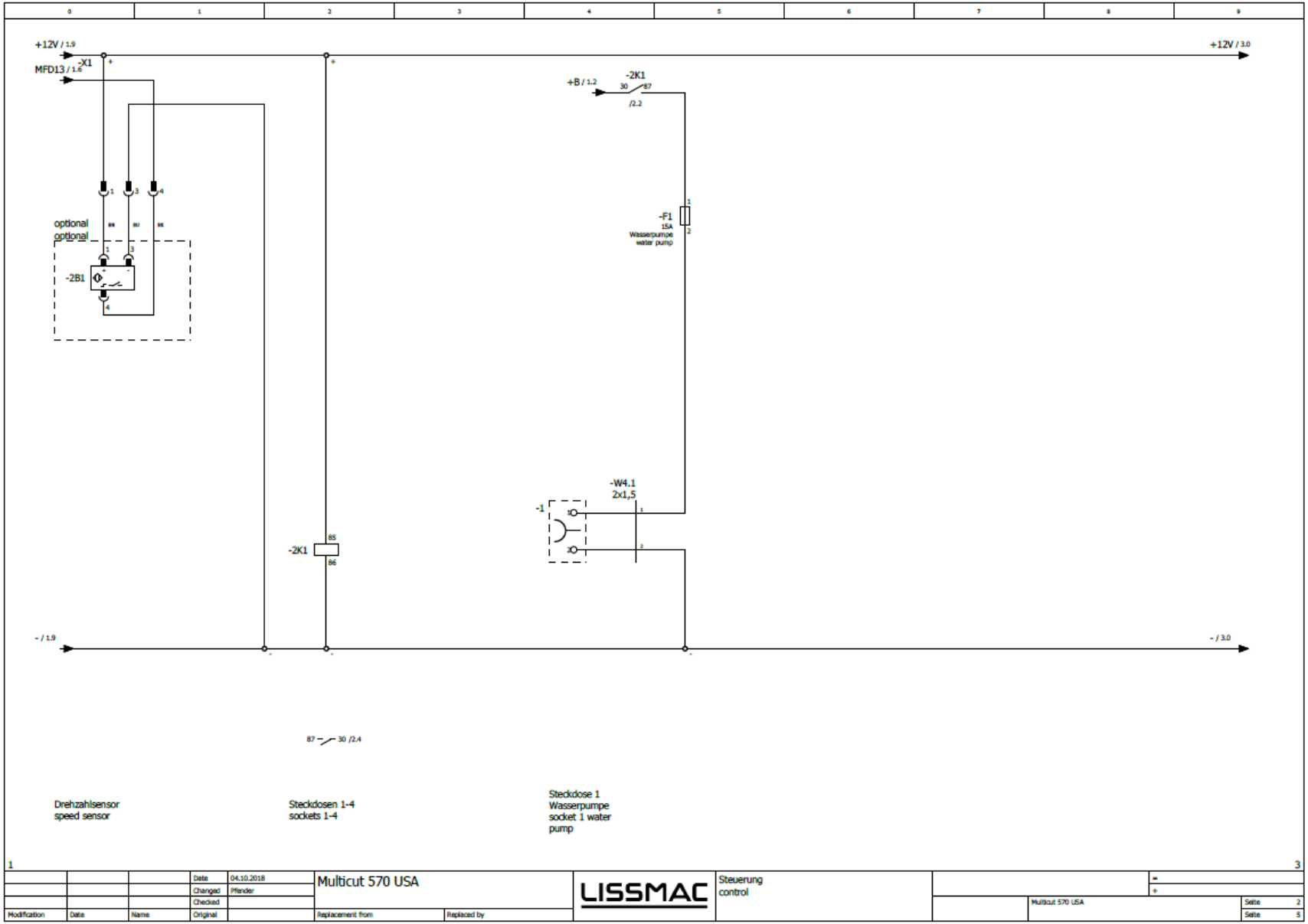
LISSMAC Corporation
17 Route 146
Mechanicville, NY 12118, USA
Mail: sales@lissmac-corporation.com
www.lissmac-usa.com

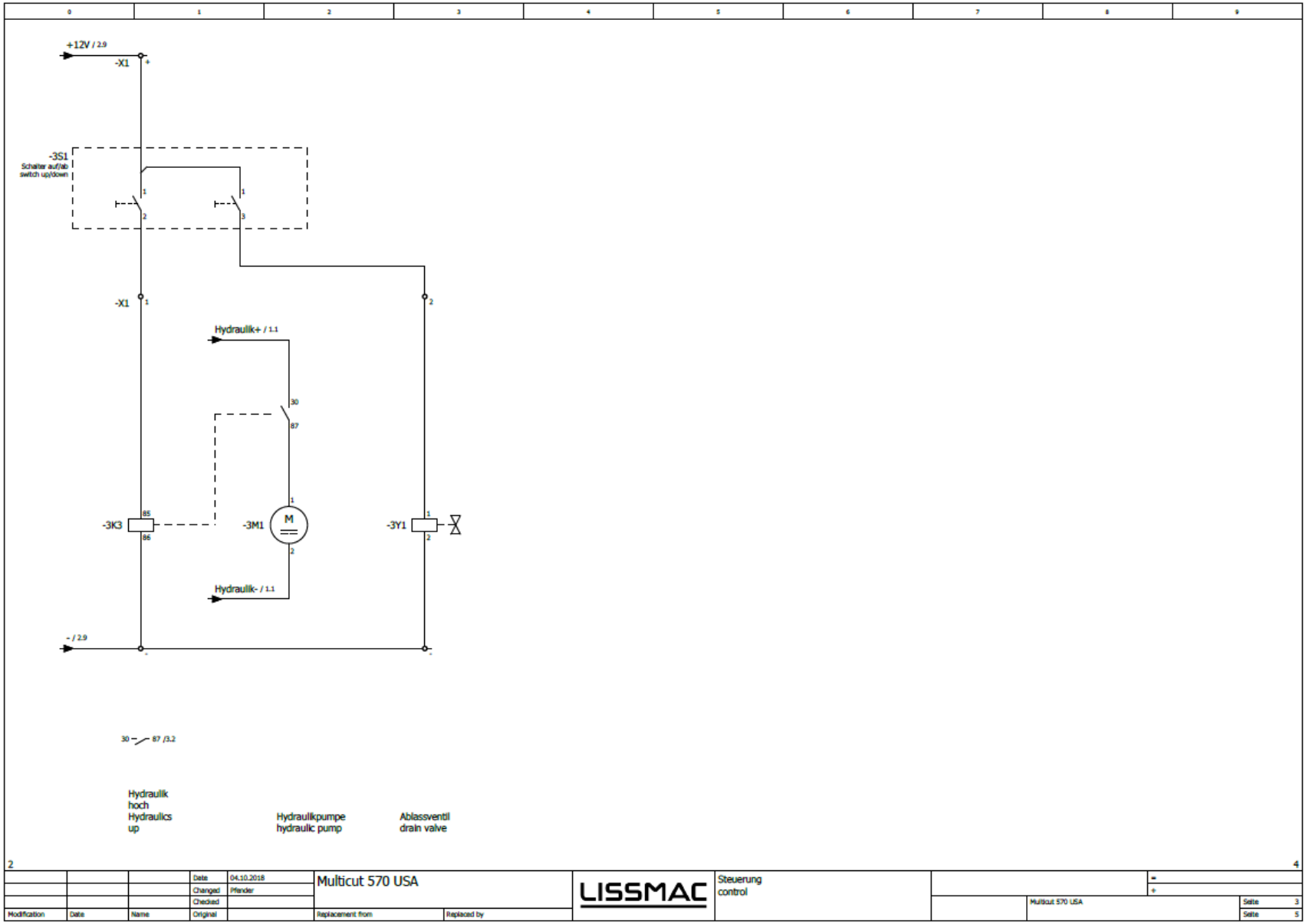
Mechanicville 10-07-2020

ppa. Ingo Heiland
(Branch Manager)

11. CIRCUIT DIAGRAM


+12V / 2.0
- / 2.0
-1S2
Zündschloss
Ignition switch
-1S1
/1.3
NOT-HALT
Emergency stop
-1S3
Anlassersperre
start interlock
-W-2BS4
/1.2
-2BS4
-1K1
/1.3
-1S1
/1.0
-X1
-1U2
Display
MCA232
display
MCA232
Display
display
MFD13 / 2.0
optional bei Sägeblattdrehzahl
optional at
saw blade rotary speed
-W-1U2
/1.6
-W-1U2
/1.5
-1U3
Drehzahlverstellung
Diesel
speed adjustment
Diesel
-X7
-1U1
Steuereinheit Hatz
Control unit Hatz
EDC 17CV54
CANHigh
CANLow
-1F1
35A
+B / 2.4
Hydraulik+ / 3.1
Hydraulik- / 3.1
-1G1
12V
-1M1
-1G2
-1E1
-1M1
Verdrahtung Hatz Motor
Wiring Hatz Motor
-1U4
A 15A
B 1A
C 40A
D 15A
E 10A
F 30A
Spannungsversorgung Steuergerät
Power supply control unit
Eingang T1/S50 Steuergerät
input T1/S50 contol unit
Glühkerzen
glow plug
Spannungsversorgung Kunde
Power supply Customer
Kraftstoffpumpe
fuel pump
Anlasser
starter
Batterie
Battery
Anlasser
starter
Generator
generator
Vorglühen
pre-glow
Kraftstoffpumpe
fuel pump
Sicherungen Steuereinheit Hatz
fuses controller Hatz
=Deckblatt/1
2
Multicut 570 USA
LISSMAC
Dieselmotor
diesel engine
04.10.2018
Pfender
Modification
Date
Name
Original
Replacement from
Replaced by
Seite 1
Seite 5


+12V / 1.9
-X1
MFD13 / 1.6
+12V / 3.0
+B / 1.2
-2K1
30
87
/2.2
optional
optional
-2B1
-F1
15A
Wasserpumpe
water pump
-W4.1
2x1,5
-1
-2K1
85
86
- / 1.9
- / 3.0
87 30 /2.4
Drehzahlsensor
speed sensor
Steckdosen 1-4
sockets 1-4
Steckdose 1
Wasserpumpe
socket 1 water
pump
1
3
Date
04.10.2018
Changed
Pfender
Checked
Original
Modification
Date
Name
Multicut 570 USA
Replacement from
Replaced by
LISSMAC
Steuerung
control
Multicut 570 USA
Seite 2
Seite 5


0
1
2
3
4
5
6
7
8
9
+12V / 2.9
-X1
+
-3S1
Schalter auf/ab
switch up/down
1
2
1
3
-X1
1
2
Hydraulik+ / 1.1
30
87
1
-3K3
85
86
-3M1
M
2
-3Y1
1
2
Hydraulik- / 1.1
- / 2.9
-
-
30 87 /3.2
Hydraulik
hoch
Hydraulics
up
Hydraulikpumpe
hydraulic pump
Ablassventil
drain valve
2
4
Date
04.10.2018
Changed
Pfender
Checked
Modification
Date
Name
Original
Multicut 570 USA
Replacement from
Replaced by
LISSMAC
Steuerung
control
-
+
Multicut 570 USA
Seite 3
Seite 5

12. APPENDIX A: ERROR CODE LIST HATZ

05653401 CAN-Fehlerliste C81 V600 - gültig für Softwarestand V600

Component	SPN	FMI	FaultCheckDescription
Oil Pressure	100	31	Defect fault check for minimum oil pressure from digital sensor
Oil Pressure	100	2	Defect fault check for plausibility test in case of digital sensor
Oil Pressure	100	0	Maximum oil pressure error in plausibility check
Oil Pressure	100	1	Minimum oil pressure error in plausibility check
Oil Pressure Sensor	100	19	Signal erroron CAN for oil pressure sensor
Oil Pressure Sensor	100	3	SRC high for oil pressure sensor
Oil Pressure Sensor	100	4	SRC low for Oil pressure sensor
Intake Manifold Pressure	102	0	Physical Range Check high for air pressure at the upstream of intake valve sensor
Intake Manifold Pressure	102	1	Physical Range Check low for air pressure at the upstream of intake valve sensor
Intake Manifold Pressure	102	16	Plausibility Check for air pressure at the upstream of intake valve sensor
Intake Manifold Pressure	102	18	Plausibility Check for air pressure at the upstream of intake valve sensor
Intake Manifold Pressure Sensor	102	3	Diagnostic fault check for SRC high in air pressure upstream of intake valve sensor
Intake Manifold Pressure Sensor	102	4	Diagnostic fault check for SRC low in air pressure upstream of intake valve sensor
Turbo Charger Actuator	103	0	Turbocharger over speed monitoring
Brake System	1045	0	Sig Error for Main Brake
Brake System	1046	2	Sig Error for Redundant Brake
Intercooler Downstream Temperature	105	0	Physical Range Check high for Charged Air cooler down stream temperature
Intercooler Downstream Temperature	105	1	Physical Range Check low for Charged Air cooler down stream temperature
PFM	105	9	initialization error for SENT transmission for Charged Air cooler down stream temperature
PFM	105	2	sensor internal diagnosis for Charged Air cooler down stream temperature, SENT
Intercooler Downstream Temperature Sensor	105	3	SRC High for Charge air cooler downstream Temperature
Intercooler Downstream Temperature Sensor	105	4	SRC low for Charge air cooler downstream Temperature
Air Filter	107	14	Error path for Clog Detection in Air filter
Air Filter Downstream Pressure	107	2	Signal non-plausible for AirFltDs pressure sensor
Air Filter Downstream Pressure	107	0	Physical Range high error for Inlet air pressure (P1) sensor
Air Filter Downstream Pressure	107	1	Physical Range low error for Inlet air pressure (P1) sensor
Air Filter Differential Pressure Sensor	107	3	SRC High for Controller Mode Switch
Air Filter Differential Pressure Sensor	107	4	SRC low for Controller Mode Switch

Component	SPN	FMI	FaultCheckDescription
Air Filter Downstream Pressure Sensor	107	5	SRC high for AirFltDs pressure sensor
Air Filter Downstream Pressure Sensor	107	6	SRC low for AirFltDs pressure sensor
Air Filter Differential Pressure	107	9	Air Filter differential pressure check for warning condition
Metering Unit	1076	5	open load of metering unit output
Metering Unit	1076	12	over teperature of device driver of metering unit
Metering Unit	1076	16	short circuit to battery of metering unit output
Metering Unit	1076	18	short circuit to ground of metering unit output
Sensor Supply Monitoring 1	1079	3	Overvoltage at Sensor supply 1
Sensor Supply Monitoring 1	1079	4	Short to GND at Sensor supply 1
Sensor Supply Monitoring 1	1079	14	Undervoltage at Sensor supply 1
Ambient Pressure	108	0	Ambient air pressure sensor range chack max-error
Ambient Pressure	108	1	Ambient air pressure sensor range check min-error
Ambient Pressure Sensor	108	3	fault check max signal range violated for ambient air pressure sensor
Ambient Pressure Sensor	108	4	fault check min signal range violated for ambient air pressure sensor
Ambient Pressure Sensor	108	2	Ambient air pressure sensor sensor error by component self diagnosis
Sensor Supply Monitoring 2	1080	3	Overvoltage at Sensor supply 2
Sensor Supply Monitoring 2	1080	4	Short to GND at Sensor supply 2
Sensor Supply Monitoring 2	1080	14	Undervoltage at Sensor supply 2
Coolant Temperature	110	17	defect fault check for Absolute plausibility test
Coolant Temperature	110	18	defect fault check for dynamic plausibility test
Coolant Temperature	110	16	Engine coolant temperature too high plausibility error
Coolant Temperature	110	0	Physical Range Check high for CEngDsT
Coolant Temperature	110	1	Physical Range Check low for CEngDsT
Coolant Temperature Sensor	110	3	SRC High for Engine coolant temperature(down stream)
Coolant Temperature Sensor	110	4	SRC low for Engine coolant temperature(down stream)
Injection Cut Off	1109	11	Injection cut off demand (ICO) for shut off coordinator
Coolant Level	111	18	Fault Detection For The Digital Input
Coolant Level	111	17	Range Fault Detection
Coolant Level Sensor	111	3	Fault Detection For Signal range check high

Component	SPN	FMI	FaultCheckDescription
Coolant Level Sensor	111	4	Fault Detection For Signal range check low
Boost Pressure Governor	1127	13	Time to reactivate PCR control monitoring
Boost Pressure Governor	1127	31	Time to first activation of PCR control monitoring
ECU Temperature	1136	16	Diagnostic Fault Check for Physical Signal above maximum limit
ECU Temperature	1136	18	Diagnostic Fault Check for Physical Signal below minimum limit
ECU Temperature Sensor	1136	0	
ECU Temperature Sensor	1136	1	
ECU Temperature Sensor	1136	13	Diagnostic Fault Check for SMP480 ECU Temperature Plausibility
Turbo Charger Upstream Pressure Sensor	1176	3	SRC High for TrbnUs Pressure sensor
Turbo Charger Upstream Pressure Sensor	1176	4	SRC low for TrbnUs Pressure sensor
Turbo Charger Upstream Temperature	1180	13	Non Plausibility error for TTrbnUs
Turbo Charger Upstream Temperature	1180	0	Physical Range Check high for turbine upstream temperature sensor
Turbo Charger Upstream Temperature	1180	1	Physical Range Check low for turbine upstream temperature sensor
Turbo Charger Upstream Temperature Sensor	1180	3	SRC High for TrbnUs Temperature
Turbo Charger Upstream Temperature Sensor	1180	4	SRC low for TrbnUs Temperature sensor
MIL	1213	5	No load error
MIL	1213	12	No load error
MIL	1213	3	Short circuit to battery error
MIL	1213	4	Short circuit to ground error
CAN	1231	14	BusOff error CAN B
CAN	1235	14	error passive CAN C
CAN	1235	9	BusOff error CAN C
Pressure Control Valve	1244	5	open load of pressure control valve output
Pressure Control Valve	1244	12	over teperature of device driver of pressure control valve
Pressure Control Valve	1244	16	short circuit to battery of pressure control valve output
Pressure Control Valve	1244	18	short circuit to ground of the pressure control valve output
Pressure Control Valve	1244	4	signal range check high error of pressure control valve AD-channel
Pressure Control Valve	1244	3	signal range check low error of pressure control valve AD-channel
PFM	132	13	Error path of the offset diagnosis of the PFM differential pressure sensor in bank 1

Component	SPN	FMI	FaultCheckDescription
PFM	132	0	Error path of the upper out-of-range diagnosis of the PFM differential pressure sensor in bank 1
PFM	132	1	Error path of the lower out-of-range diagnosis of the PFM differential pressure sensor in bank 1
PFM	132	2	Error path to indicate internal errors of the PFM differential pressure sensor in bank 1
PFM	132	20	Error path of the upper physical range diagnosis of the PFM air mass flow signal in bank 1
PFM	132	21	Error path of the lower physical range diagnosis of the PFM air mass flow signal in bank 1
Fuel Filter	1382	0	Signal error for fuel filter Clg detection
Fuel Filter	1382	13	Plausibility error for fuel filter Clg detection
Fan	1550	12	Over temperature error
Injection System	157	18	check for rail pressure build up during start
High Pressure System	157	16	Rail pressure raw value is intermittent
High Pressure System	157	0	rail pressure raw value is above maximum offset
High Pressure System	157	1	rail pressure raw value is below minimum offset
Rail Pressure Sensor	157	3	Sensor voltage above upper limit
Rail Pressure Sensor	157	4	Sensor voltage below lower limit
Fan	1639	8	DFC for reporting DCM timer overflow error
Fan	1639	0	Fan speed above maximum threshold
Fan	1639	1	Fan speed below minimum threshold
Engine Compartment Button	1656	12	fault path for signal check
Engine Compartment Button	1656	14	fault path for signal check
CAN	1668	14	error passive CAN D
CAN	1668	9	BusOff error CAN D
Alternator Monitoring	167	7	Plausibility check for input signal for monitoring the alternator
Battery/Electric Supply	168	3	Diagnostic Fault Check for Signal Range Max Check of Battery Voltage
Battery/Electric Supply	168	4	Diagnostic Fault Check for Signal Range Min Check of Battery Voltage
Ambient Temperature Sensor	171	3	max-error of ambient air temperature sensor
Ambient Temperature Sensor	171	4	min-error of ambient air temperature sensor
Air Temperature	172	8	SRC high for period duration of air temperature sensor
Air Temperature	172	9	SRC low for period duration of air temperature sensor
Air Temperature Sensor	172	3	SRC high for air temperature sensor

Component	SPN	FMI	FaultCheckDescription
Air Temperature Sensor	172	4	SRC low for air temperature sensor
Air Temperature Sensor	172	2	Diagnostic fault check for air temperature sensor
Fuel Low Pressure Temperature	174	0	Physical Range Check high for fuel temperature
Fuel Low Pressure Temperature	174	1	Physical Range Check low for fuel temperature
Fuel Low Pressure Temperature Sensor	174	3	SRC high for fuel temperature sensor
Fuel Low Pressure Temperature Sensor	174	4	SRC low for fuel temperature sensor
Fuel Low Pressure Temperature Sensor	174	11	DFC for fuel temperature plausibility check function
Oil Temperature	175	2	Plausibility check for Oil Temperature
Oil Temperature	175	13	Oil temperature too high plausibility error
Oil Temperature	175	0	Physical Range Check high for Oil Temperature
Oil Temperature	175	1	Physical Range Check low for Oil Temperature
Oil Temperature Sensor	175	3	SRC High for Oil Temperature
Oil Temperature Sensor	175	4	SRC low for Oil Temperature
Engine Protection	1769	11	Overspeed detection in component engine protection
Camshaft Speed Sensor	190	8	DFC for camshaft signal diagnose - disturbed signal
Camshaft Speed Sensor	190	12	DFC for camshaft signal diagnose - no signal
Camshaft Speed Sensor	190	2	DFC for camshaft offset angle exceeded
Crankshaft Speed Sensor	190	9	DFC for crankshaft signal diagnose - disturbed signal
Crankshaft Speed Sensor	190	18	DFC for crankshaft signal diagnose - no signal
RmtAPP Poti 1	20277	3	Signal Range Check High for RmtAPP1
RmtAPP Poti 1	20277	4	Signal Range Check Low for RmtAPP1
RmtAPP Poti 2	20278	3	Signal Range Check High for RmtAPP2
RmtAPP Poti 2	20278	4	Signal Range Check Low for RmtAPP2
CAN	22000	14	error passive CAN A
CAN	22001	15	error passive CAN B
CAN	22040	19	Timeout Error of CAN-Receive-Frame TSC1TE
Battery/Electric Supply	23618	3	The DFC is set if the battery voltage exceed the higher calibrated limit longer than the debounce time. If the DFC is set, diagnoses of the power stages can be disabled.
Battery/Electric Supply	23618	4	The DFC is set if the battery voltage exceed the lower calibrated limit longer than the debounce time. If the DFC is set, diagnoses of the power stages can be disabled.

Component	SPN	FMI	FaultCheckDescription
CAN	2541	9	Timeout Error of CAN-send-Frame ACK
Turbo Charger Actuator	2633	7	
Turbo Charger Actuator	2633	0	
Turbo Charger Actuator	2633	1	
Main Relay	2634	11	Early opening defect of main relay
Main Relay	2634	12	DFC for stuck main relay error
EGR Monitoring	2659	7	Sooting in EGR Line
EGR Monitoring	2659	18	High flow error 1 in EGR system
EGR Monitoring	2659	1	High flow error 2 in EGR system
EGR Valve	27	17	
CAN	2791	9	Timeout Error of CAN-Transmit-Frame EEC5
EGR Monitoring	2791	6	
EGR Valve	2791	15	
EGR Valve	2791	12	
EGR Valve	2791	18	
EGR Valve	2791	16	
EGR Valve	2791	1	
EGR Valve	2791	0	
EGR Valve	2791	20	
EGR Valve	2791	21	
EGR Valve	2791	7	
EGR Valve	2791	13	
EGR Valve	2791	14	
EGR Valve	2791	11	
Turbo Charger Actuator	2795	21	
Turbo Charger Actuator	2795	20	
ECU Internal	2802	14	EEP Read Error based on the error in reading blocks from memory media
ECU Internal	2802	12	EEP Write Error based on the error in storing the blocks in memory media
APP Poti 2	29	3	Signal Range Check High for APP2

Component	SPN	FMI	FaultCheckDescription
APP Poti 2	29	4	Signal Range Check Low for APP2
APP Synchronsition Error	29	2	In case of dual analog accelerator pedal, it is the plausibility check between RmtAPP1 and RmtAPP2 and in case of potentiometer switch accelerator pedal, it is the plausibility check between APP1 and idle switch
Air Condition Compressor	3062	5	No load error on power stage for the reduce torque instruction
Air Condition Compressor	3062	12	Over temperature error on powerstage for the reduce torque instruction
Air Condition Compressor	3062	3	Short circuit to battery error on power stage for the reduce torque instruction
Air Condition Compressor	3062	4	Short circuit to ground error on power stage for the reduce torque instruction
Particulate Filter Upstream Temperature	3242	0	Physical Range Check high for particulate filter upstream temperature sensor
Particulate Filter Upstream Temperature	3242	1	Physical Range Check low for particulate filter upstream temperature sensor
CAN	3244	9	Timeout error of aftertreatment 1 Diesel Particulate Filter Intake Gas Temperature
Particulate Filter Upstream Temperature	3244	2	Diagnostic fault check for Plausibility errors in Particle filter upstream temperature
Particulate Filter Upstream Temperature Sensor	3244	3	Diagnostic fault check for Signal Range Check max error for the temperature sensor installed at the upstream of particulate filter.
Particulate Filter Upstream Temperature Sensor	3244	4	Diagnostic fault check for Signal Range Check min error for the temperature sensor installed at the upstream of particulate filter.
Particulate Filter Downstream Temperature	3248	2	Diagnostic fault check for plausibility of particle filter downstream temperature
Particulate Filter Downstream Temperature Sensor	3248	3	DFC for Max-error of Signal-Range-Check
Particulate Filter Downstream Temperature Sensor	3248	4	DFC for Min-error of Signal-Range-Check
Particulate Filter Differential Pressure Sensor Hoseline	3251	13	Fault check for Hoseline connection
Particulate Filter Differential Pressure Sensor	3251	2	Fault check for the pressure sensor plausibility
CAN	3252	9	Timeout Error of CAN-Transmit-Frame AT1IMG
Particulate Filter Monitoring	3253	0	Diagnostic fault check for maximum pressure differential charecterstics
Particulate Filter Monitoring	3253	1	Diagnostic fault check for minimum pressure differential charecterstics
Particulate Filter Monitoring	3253	2	Check for minimum exhaust gas differential pressure for high load
Particulate Filter Monitoring	3253	12	Diagnostic fault check for min deviation measure from simulated and measured particulate mass
CAN	3353	9	Timeout Error of CAN-Transmit-Frame AS
CAN	3361	9	Time out BAM to packet
CAN	3361	10	Time out Packet to packet
Turbo Charger Actuator	3470	21	
Turbo Charger Actuator	3470	20	
Turbo Charger Actuator	3470	12	

Component	SPN	FMI	FaultCheckDescription
Turbo Charger Actuator	3470	14	
Sensor Supply Monitoring 1	3509	2	Voltage fault at Sensor supply 1
Sensor Supply Monitoring 2	3510	2	Voltage fault at Sensor supply 2
Sensor Supply Monitoring 3	3511	2	Voltage fault at Sensor supply 3
Particulate Filter Differential Pressure	3609	16	Enhanced SRC high for PFlt differential pressure sensor
Particulate Filter Differential Pressure	3609	18	Enhanced SRC low for PFlt differential pressure sensor
Particulate Filter Differential Pressure	3609	9	DFC for dynamic plausibility check for differential pressure across the Particulate filter
Particulate Filter Differential Pressure	3609	12	DFC to check for hoseline error
Particulate Filter Differential Pressure	3609	31	Diagnostic Fault Check for Soot on hoseline monitoring
Particulate Filter Differential Pressure Sensor	3609	3	SRC High for PFlt differential pressure sensor
Particulate Filter Differential Pressure Sensor	3609	4	SRC low for PFlt differential pressure sensor
Turbo Charger Actuator	3675	8	
Turbo Charger Actuator	3675	14	
Turbo Charger Actuator	3675	0	
Turbo Charger Actuator	3675	1	
Turbo Charger Actuator	3675	3	
Turbo Charger Actuator	3675	4	
Fuel Filter Heater	4009	5	No load error in powerstage of fuel filter heating
Fuel Filter Heater	4009	12	Over Temperature error in powerstage of fuel filter heating
Fuel Filter Heater	4009	3	Short circuit to battery error in powerstage of fuel filter heating
Fuel Filter Heater	4009	4	Short circuit to ground error in powerstage of fuel filter heating
Turbo Charger Actuator	4228	0	
Starter Relay	430	3	Short circuit to battery error at High side of coil in Inhibit starter strategy
Starter Relay	430	12	Indicates if starter is overheated
EGR Monitoring	4752	1	DFC for monitoring EGR cooler efficiency
CAN	4770	9	Timeout Error of CAN-Transmit-Frame A1DOC
Particulate Filter Monitoring	4781	0	To check if volume of Ash load has exceeded the limit
Particulate Filter Monitoring	4781	1	Diagnostic fault check for particulate filter efficiency
Particulate Filter Monitoring	4781	8	Diagnostic fault check for too frequent regeneration of the particulate filter

Component	SPN	FMI	FaultCheckDescription
Particulate Filter Monitoring	4781	31	Diagnostic fault check for incomplete regeneration of particulate filter
Particulate Filter Monitoring	4781	16	Diagnostic fault check for pressure differential charecterstics
Particulate Filter Monitoring	4781	18	Diagnostic fault check for pressure differential charecterstics
Particulate Filter Monitoring	4781	13	Diagnostic fault check for Maximum soot mass
Particulate Filter Monitoring	4781	7	torque soot mass limit dfc
CAN	4785	9	Timeout Error of CAN-Transmit-Frame DPF1S
Oxidation Catalyst Heater Plugs	4791	5	DFC for open circuit to ground, K20 line for the DOC Heater feedback relay diagnosis line
Oxidation Catalyst Heater Plugs	4791	6	DFC for short circuit to ground, K20 line for the DOC Heater feedback relay diagnosis line
Oxidation Catalyst Heater Plugs	4791	3	DFC for open circuit to ground, K59 line for the DOC Heater feedback relay diagnosis line
Oxidation Catalyst Heater Plugs	4791	4	DFC for short circuit to ground, K59 line for the DOC Heater feedback relay diagnosis line
Oxidation Catalyst Heater Relay	4793	5	No load error
Oxidation Catalyst Heater Relay	4793	12	Over temperature error
Oxidation Catalyst Heater Relay	4793	3	Short circuit to battery error
Oxidation Catalyst Heater Relay	4793	4	Short circuit to ground error
Warning Lamp	5077	5	No load error
Warning Lamp	5077	12	Over Temperature error
Warning Lamp	5077	3	Short circuit to battery error
Warning Lamp	5077	4	Short circuit to ground error
Throttle Valve	51	6	
Throttle Valve	51	0	
Throttle Valve	51	12	
Throttle Valve	51	13	
Throttle Valve	51	1	
Coolant Temperature Display	5100	5	No load error
Coolant Temperature Display	5100	12	Over temperature error on ECU powerstage coolant temperature PWM output
Coolant Temperature Display	5100	3	Short circuit to battery error
Coolant Temperature Display	5100	4	Short circuit to ground error
Throttle Valve	511	0	
Throttle Valve	511	12	

Component	SPN	FMI	FaultCheckDescription
Throttle Valve	511	13	
Throttle Valve	511	7	
Throttle Valve	511	3	
Throttle Valve	511	4	
Throttle Valve	511	14	
Throttle Valve	512	12	
Throttle Valve	515	0	
PFM	516096	0	DFC to indicate the occurrence of maximum plausibility error for PFM
PFM	516096	1	DFC to indicate the occurrence of minimum plausibility error for PFM
PFM	516097	8	Error path to display communication errors of the 2nd SENT line of the PFM sensor in bank 1
PFM	516097	0	Error path of electrical line hi diagnosis of the 2nd SENT line of the PFM sensor in bank 1
PFM	516097	1	Error path of electrical line low diagnosis of the 2nd SENT line of the PFM sensor in bank 1
PFM	516098	19	Error path to display communication errors of the SENT line of the PFM sensor in bank 1
PFM	516098	0	Error path of electrical line hi diagnosis of the SENT line of the PFM sensor in bank 1
PFM	516098	1	Error path of electrical line low diagnosis of the SENT line of the PFM sensor in bank 1
CAN	520	2	DFC for DLC Error of CAN-Receive-Frame TSC1TR
CAN	520	9	Timeout Error of CAN-Receive-Frame TSC1TR
Air Condition Compressor	522001	14	Plausibility error for CAN input
Air Condition Compressor	522002	14	Signal error for CAN input
CAN	522003	9	Timeout Error of CAN-Transmit-Frame EEC@
CAN	522004	9	Timeout Error of CAN-Transmit-Frame EFL_P1
CAN	522005	12	DFC for DLC Error of CAN-Receive-Frame ETC2
CAN	522005	9	Timeout Error of CAN-Receive-Frame ETC2
CAN	522006	9	Timeout Error of CAN-Transmit-Frame FIC
CAN	522008	19	Timeout Error of Engine Retarder Configuration BAM message
CAN	522009	9	Timeout Error of Engine Retarder Configuration packet frame
CAN	522010	2	DFC for DLC Error of CAN-Receive-Frame TCO1
CAN	522011	9	Timeout Error of CAN-Receive-Frame TI1
CAN	522012	2	DFC for DLC Error of CAN-Receive-Frame TimeDate

Component	SPN	FMI	FaultCheckDescription
CAN	522012	9	Timeout Error of CAN-Receive-Frame TimeDate
CAN	522013	9	Passive DFC TimeOut of TSC1DR Message
CAN	522014	9	Passive DFC TimeOut of TSC1DR Message
CAN	522015	9	Active DFC TimeOut of TSC1PE Message
CAN	522016	9	Passive DFC TimeOut of TSC1PE Message
CAN	522017	9	Active Time out for TSC1VE
CAN	522018	9	Passive Time out for TSC1VE
CAN	522019	9	Active Time out for TSC1VR
CAN	522020	9	Passive Time out for TSC1VR
CAN	522021	2	DFC for DLC Error of CAN-Receive-Frame TSC1DE
CAN	522021	9	Timeout Error of CAN-Receive-Frame TSC1DE
CAN	522022	2	DFC for DLC Error of CAN-Receive-Frame TSC1DR
CAN	522022	9	Timeout Error of CAN-Receive-Frame TSC1DR
CAN	522023	2	DFC for DLC Error of CAN-Receive-Frame TSC1PE
CAN	522023	9	Timeout Error of CAN-Receive-Frame TSC1PE
CAN	522024	2	DFC for DLC Error of CAN-Receive-Frame TSC1VE
CAN	522024	9	Timeout Error of CAN-Receive-Frame TSC1VE
CAN	522025	2	DFC for DLC Error of CAN-Receive-Frame TSC1VR
CAN	522025	9	Timeout Error of CAN-Receive-Frame TSC1VR
CAN	522026	9	Timeout DFC for NOxSensGlbReqTx.
CAN	522027	9	Timeout DFC for TxPGNRQ.
CAN	522028	9	Timeout Error of CAN-Transmit-Frame VD
CAN	522029	9	Timeout Error of CAN-Transmit-Frame VEP1
CAN	522030	9	Timeout Error of CAN-Transmit-Frame WFI
High Pressure System	522041	0	DFC for monitoring the positive rail pressure deviation during CSERS and active RHU
High Pressure System	522041	1	DFC for monitoring the negative rail pressure deviation during CSERS and active RHU
High Pressure System	522041	18	Common DFC for monitoring the negative rail pressure deviation for CSERS during RHU (pressure to high)
High Pressure System	522042	1	check of minimum rail pressure
High Pressure System	522042	0	check for TTC rail pressure build up during start

Component	SPN	FMI	FaultCheckDescription
Air Control Governor	522052	0	Positive governor deviation above limit for regeneration
Air Control Governor	522052	1	negative governor deviation below limit for regeneration
Air Control Governor	522053	0	Status of diagnostic fault check for maximum airmass governor deviation
Air Control Governor	522054	1	Status of diagnostic fault check for minimum airmass governor deviation
Air Control Governor	522055	9	Error path for too longtime spent in transtion mode Rgn to Nrm
Air Control Governor	522056	9	Error case for SlowResponse of the air mass in case of a negative gradient of the air mass setpoint
Air Control Governor	522056	10	Error case for SlowResponse of the air mass in case of a positive gradient of the air mass setpoint
Air Control Governor	522057	0	Status of diagnostic fault check for maximum airmass governor deviation
Air Control Governor	522057	1	Status of diagnostic fault check for minimum airmass governor deviation
Air Control Governor	522058	9	Status of diagnostic fault check to monitor time to activate close loop control system for airmass
Air Control Governor	522058	10	Status of diagnostic fault check to monitor time to start close loop control system for airmass
High Pressure System	523010	2	setpoint of metering unit in idle mode not plausible
CAN	523011	0	Error path SPN1 matching of DM1DCU message
CAN	523012	0	Error path SPN2 matching of DM1DCU message
CAN	523013	0	Error path SPN3 matching of DM1DCU message
CAN	523014	0	Error path SPN4 matching of DM1DCU message
CAN	523015	0	Error path SPN5 matching of DM1DCU message
CAN	523016	9	Time out for DM1DCU BAM or single message
CAN	523017	9	Timeout Error of CAN-Transmit-Frame PROSCR1
CAN	523018	9	Timeout Error of CAN-Transmit-Frame PROSCR2
CAN	523019	2	DFC for RESETRx Frame Non Plausible error
CAN	523020	9	Timeout Error of CAN-Transmit-Frame StOut
Error Lamp	523021	5	No load error
Error Lamp	523021	12	Over temperature error
Error Lamp	523021	3	Short circuit to battery error
Error Lamp	523021	4	Short circuit to ground error
Fuel Consumption Display	523022	5	No load error for Fuel consumption display signal component
Fuel Consumption Display	523022	12	Over Temperature error for Fuel consumption display signal component
Fuel Consumption Display	523022	3	Short circuit to battery error for Fuel consumption display signal component

Component	SPN	FMI	FaultCheckDescription
Fuel Consumption Display	523022	4	Short circuit to ground error for Fuel consumption display signal component
Fuel Balance Control Monitoring	523023	0	FBC correction quantities at limitation
Fuel Balance Control Monitoring	523024	0	FBC correction quantities at limitation
Fuel Balance Control Monitoring	523025	0	FBC correction quantities at limitation
Fuel Balance Control Monitoring	523026	0	FBC correction quantities at limitation
Fuel Level Lamp	523027	5	Open load of Fuel Level lamp output
Fuel Level Lamp	523027	12	Over temperature error on ECU powerstage for Fuel Level lamp
Fuel Level Lamp	523027	3	Short circuit to battery of Fuel Level lamp output
Fuel Level Lamp	523027	4	Short circuit to ground of Fuel Level lamp output
Turbo Charger Upstream Temperature Lamp	523028	5	No load error
Turbo Charger Upstream Temperature Lamp	523028	12	No load error
Turbo Charger Upstream Temperature Lamp	523028	3	Short circuit to battery error
Turbo Charger Upstream Temperature Lamp	523028	4	Short circuit to ground error
High Pressure System	523029	0	set value of PCV not in plausibility range
High Pressure System	523030	0	minimum rail pressure exceeded
High Pressure System	523031	0	maximum rail pressure exceeded
High Pressure System	523032	0	Rail pressure monitor for rail pressure deviation
High Pressure System	523033	0	Exceeding of max. rail pressure level, that is an alarm (Alrm) sign and might need action soon.
High Pressure System	523034	0	Exceeding of max. rail pressure level, that needs immediate (Imdt) action
High Pressure System	523035	0	Activating reactions for fighting the over pressure
High Pressure System	523036	0	Maximum number of activations of the reaction that fights the over pressure exceeeded
High Pressure System	523037	0	maximum positive deviation of rail pressure exceeded
High Pressure System	523038	0	maximum positive deviation of rail pressure exceeded concerning set value PCV
High Pressure System	523039	0	maximum negative rail pressure deviation with closed pressure control valve exceeded (second stage)
High Pressure System	523040	0	maximum negative rail pressure deviation with closed pressure control valve exceeded
High Pressure System	523041	0	minimum rail pressure exceeded
High Pressure System	523042	0	maximum rail pressure exceeded (second stage)
High Pressure System	523043	0	maximum rail pressure exceeded
High Pressure System	523044	16	Common DFC for monitoring the positive rail pressure deviation for CSERS during RHU (pressure to high)

Component	SPN	FMI	FaultCheckDescription
CAN	523211	12	DFC for DLC Error of CAN-Receive-Frame EBC1
CAN	523211	9	Timeout Error of CAN-Receive-Frame EBC1
CAN	523213	9	Timeout Error of CAN-Transmit-Frame ERC1
CAN	523214	12	DFC for DLC Error of CAN-Receive-Frame ETC1
CAN	523214	9	Timeout Error of CAN-Receive-Frame ETC1
CAN	523218	2	DFC for DLC Error of CAN-Receive-Frame RxCCVS
CAN	523218	9	Timeout Error of CAN-Receive-Frame ETC1
CAN	523222	9	Timeout Error of CAN-Receive-Frame TCO1
Glow Control Unit	523324	8	DFC for short circuit to battery error
Glow Control Unit	523324	5	DFC for open load error
Glow Control Unit	523324	6	DFC for Over load error
Glow Control Unit	523324	3	DFC for short circuit to ground error
Glow Control Unit	523325	8	DFC for short circuit to battery error
Glow Control Unit	523325	5	DFC for open load error
Glow Control Unit	523325	6	DFC for Over load error
Glow Control Unit	523325	3	DFC for short circuit to ground error
Glow Control Unit	523326	8	DFC for short circuit to battery error
Glow Control Unit	523326	5	DFC for open load error
Glow Control Unit	523326	6	DFC for Over load error
Glow Control Unit	523326	3	DFC for short circuit to ground error
Glow Control Unit	523327	8	DFC for short circuit to battery error
Glow Control Unit	523327	5	DFC for open load error
Glow Control Unit	523327	6	DFC for Over load error
Glow Control Unit	523327	3	DFC for short circuit to ground error
Injection System	523350	4	Short circuit of the power stage high-side (bank error)
Injection System	523352	4	Short circuit of the power stage high-side (bank error)
PTO	523450	2	Diagnostic fault check non plausibility of COM message
PTO	523450	19	Diagnostic fault check for signal error of COM message
Boost Pressure Governor	523460	0	positive governor deviation above limit

Component	SPN	FMI	FaultCheckDescription
Boost Pressure Governor	523460	16	Error case for the collected max error status
Boost Pressure Governor	523460	15	Error case for boost pressure crossing max limit for open-loop mode
Boost Pressure Governor	523460	13	Error case for permanent control max deviation for partial load
Boost Pressure Governor	523461	1	negative governor deviation below limit
Boost Pressure Governor	523461	18	Error case for the collected min error status
Boost Pressure Governor	523461	17	Error case for boost pressure crossing min limit for open-loop mode
Boost Pressure Governor	523461	13	Error case for permanent control min deviation for partial load
Vehicle Speed Sensor	523591	2	Signal error for vehicle speed over CAN
Vehicle Speed Sensor	523592	0	Max error for vehicle speed signal over Tachomter sensor
Vehicle Speed Sensor	523592	1	Min error for vehicle speed signal over Tachomter sensor
Vehicle Speed Sensor	523592	2	Signal error for vehicle speed over Tachometer
Sensor Supply Monitoring 3	523601	3	Overvoltage at Sensor supply 3
Sensor Supply Monitoring 3	523601	4	Short to GND at Sensor supply 3
Sensor Supply Monitoring 3	523601	14	Undervoltage at Sensor supply 3
Sensor Supply Monitoring	523602	12	Sensor supply over temperature
CAN	523605	2	DFC for DLC Error of CAN-Receive-Frame TSC1AE
CAN	523605	9	Timeout Error of CAN-Receive-Frame TSC1AE
CAN	523606	2	DFC for DLC Error of CAN-Receive-Frame TSC1AR
CAN	523606	9	Timeout Error of CAN-Receive-Frame TSC1AR
High Pressure System	523613	0	maximum positive deviation of rail pressure exceeded
High Pressure System	523613	1	minimum rail pressure exceeded
High Pressure System	523613	16	maximum rail pressure exceeded
High Pressure System	523613	2	setpoint of metering unit in overrun mode not plausible
Metering Unit	523615	2	Intermittent contact between ECU and MeUn
Metering Unit	523615	5	signal range check high error of metering unit AD-channel
Metering Unit	523615	6	signal range check low error of metering unit AD-channel
Injection System	523616	14	Number of injections is limited by charge balance of booster capacity
Glow Plugs	523676	14	DFC for T30 missing error in GCU-T
Glow Plugs	523676	0	DFC for wrong glow plug type

Component	SPN	FMI	FaultCheckDescription
Glow Plugs	523676	12	DFC for glow module error in GCU-T
Glow Plug Relay	523677	5	No load error for Standard Voltage System
Glow Plug Relay	523677	12	Over temperature error on ECU powerstage for Glow plug Standard Voltage System
Glow Plugs	523677	3	Short circuit to battery error for Standard Voltage System
Glow Plugs	523677	4	Short circuit to ground error for Standard Voltage System
CAN	523703	9	Timeout Error of CAN-Transmit-Frame EEC1
CAN	523704	9	Timeout Error of CAN-Transmit-Frame EEC3
CAN	523705	9	Timeout Error of CAN-Transmit-Frame EngTemp
CAN	523706	9	Timeout Error of CAN-Transmit-Frame FlEco
CAN	523714	9	Timeout Error of CAN-TransmitFrame
CAN	523717	9	Timeout Error of CAN-Transmit-Frame AmbCon
CAN	523741	14	Engine shut off request through CAN
CAN	523747	9	Timeout Error of CAN-Transmit-Frame INCON
Particulate Filter Lamp	523762	5	No load error
Particulate Filter Lamp	523762	12	Over temperature error
Particulate Filter Lamp	523762	3	Short circuit to battery error
Particulate Filter Lamp	523762	4	Short circuit to ground error
CAN	523763	9	Timeout Error of CAN-Transmit-Frame ShutDwn
CAN	523766	9	Active DFC TimeOut of TSC1AE Message
CAN	523767	9	Passive DFC TimeOut of TSC1AE Message
CAN	523768	9	Active DFC TimeOut of TSC1AR Message
CAN	523769	9	Passive DFC TimeOut of TSC1AR Message
CAN	523770	9	Passive DFC TimeOut of TSC1DE Message
CAN	523771	9	Passive DFC TimeOut of TSC1DE Message
CAN	523776	9	Active Time out for TSC1VE
CAN	523777	9	Passive Time out for TSC1TE
CAN	523778	9	Active Time out for TSC1TR
CAN	523779	9	Passive Time out for TSC1TR
CAN	523867	12	Timeout Error of CAN-Transmit-Frame UAA1

Component	SPN	FMI	FaultCheckDescription
CAN	523878	12	Timeout Error of CAN-Transmit-Frame UAA1
CAN	523882	12	Timeout Error of CAN-Transmit-Frame UAA3
CAN	523883	12	Timeout Error of CAN-Transmit-Frame UAA4
CAN	523884	12	Timeout Error of CAN-Transmit-Frame UAA5
CAN	523885	12	Timeout Error of CAN-Transmit-Frame UAA6
CAN	523886	12	Timeout Error of CAN-Transmit-Frame UAA7
CAN	523887	12	Timeout Error of CAN-Transmit-Frame UAA8
Intake Air Heater	523891	14	DFC to SRC High error when heater is Off
Injection System	523901	11	Detection of Failed Engine Start
Zero Fuel Learning Monitoring	523946	0	DFC reporting error state on comparing energising time to Max value
Zero Fuel Learning Monitoring	523946	1	DFC reporting error state on comparing energising time to Min value
Zero Fuel Learning Monitoring	523947	0	DFC reporting error state on comparing energising time to Max value
Zero Fuel Learning Monitoring	523947	1	DFC reporting error state on comparing energising time to Min value
Zero Fuel Learning Monitoring	523948	0	DFC reporting error state on comparing energising time to Max value
Zero Fuel Learning Monitoring	523948	1	DFC reporting error state on comparing energising time to Min value
Zero Fuel Learning Monitoring	523949	0	DFC reporting error state on comparing energising time to Max value
Zero Fuel Learning Monitoring	523949	1	DFC reporting error state on comparing energising time to Min value
Exhaust Gas Temperature Monitoring	523961	3	Diagnostic Fault Check for enhanced SRC-Max of First exhaust gas temperature
Exhaust Gas Temperature Monitoring	523961	4	Diagnostic Fault Check for enhanced SRC-Min of First exhaust gas temperature
Exhaust Gas Temperature Monitoring	523961	2	Diagnostic Fault check array for cold start condition of exhaust-gas temperature
Exhaust Gas Temperature Monitoring	523961	14	Diagnostic Fault check for Model based plausiblity check of exhaust-gas temperature sensor 1
Exhaust Gas Temperature Monitoring	523962	3	Diagnostic Fault Check for enhanced SRC-Max of Second exhaust gas temperature
Exhaust Gas Temperature Monitoring	523962	4	Diagnostic Fault Check for enhanced SRC-Min of Second exhaust gas temperature
Exhaust Gas Temperature Monitoring	523962	2	Diagnostic Fault check array for cold start condition of exhaust-gas temperature
Exhaust Gas Temperature Monitoring	523962	14	Diagnostic Fault check for Model based plausiblity check of exhaust-gas temperature sensor 2
Exhaust Gas Temperature Monitoring	523963	3	Diagnostic Fault Check for enhanced SRC-Max of third exhaust gas temperature
Exhaust Gas Temperature Monitoring	523963	4	Diagnostic Fault Check for enhanced SRC-Min of third exhaust gas temperature
Exhaust Gas Temperature Monitoring	523963	2	Diagnostic Fault check array for cold start condition of exhaust-gas temperature
Exhaust Gas Temperature Monitoring	523963	14	Diagnostic Fault check for Model based plausiblity check of exhaust-gas temperature sensor 3

Component	SPN	FMI	FaultCheckDescription
Exhaust Gas Temperature Monitoring	523964	3	Diagnostic Fault Check for enhanced SRC-Max of Fourth exhaust gas temperature
Exhaust Gas Temperature Monitoring	523964	4	Diagnostic Fault Check for enhanced SRC-Min of Fourth exhaust gas temperature
Exhaust Gas Temperature Monitoring	523964	2	Diagnostic Fault check array for cold start condition of exhaust-gas temperature
Exhaust Gas Temperature Monitoring	523964	14	Diagnostic Fault check for Model based plausiblity check of exhaust-gas temperature sensor 4
Exhaust Gas Temperature Monitoring	523965	3	Diagnostic Fault Check for enhanced SRC-Max of fifth exhaust gas temperature
Exhaust Gas Temperature Monitoring	523965	4	Diagnostic Fault Check for enhanced SRC-Min of fifth exhaust gas temperature
Exhaust Gas Temperature Monitoring	523965	2	Diagnostic Fault check array for cold start condition of exhaust-gas temperature
Exhaust Gas Temperature Monitoring	523965	14	Diagnostic Fault check for Model based plausiblity check of exhaust-gas temperature sensor 5
Exhaust Gas Temperature Monitoring	523966	3	Diagnostic Fault Check for enhanced SRC-Max of sixth exhaust gas temperature
Exhaust Gas Temperature Monitoring	523966	4	Diagnostic Fault Check for enhanced SRC-Min of sixth exhaust gas temperature
Exhaust Gas Temperature Monitoring	523966	2	Diagnostic Fault check array for cold start condition of exhaust-gas temperature
Exhaust Gas Temperature Monitoring	523966	14	Diagnostic Fault check for Model based plausiblity check of exhaust-gas temperature sensor 6
Exhaust Gas Temperature Monitoring	523967	2	Diagnostic Fault check during cold start condition of exhaust-gas temperatures
Performance Limiter	523970	11	performance limiter is active.
Engine Speed Output	523994	5	No load error on the engine speed output
Engine Speed Output	523994	12	Over Temperature error on the engine speed output
Engine Speed Output	523994	3	Short circuit to battery error on the engine speed output
Engine Speed Output	523994	4	Short circuit to ground error on the engine speed output
Performance Limiter	523995	0	Third level of performance limiter is active
ECU Internal	524054	3	Low-idle Speed above Limit
ECU Internal	524054	4	Low-idle Speed below Limit
ECU Internal	524058	2	Not plausible fault: PhyMod_trq2qBas_MAP contains non strictly monotonus q curves
ECU Internal	524059	12	Diagnostic fault check to report the ADC test error
Oxidation Catalyst Monitoring	524059	1	Diagnostic fault check for characteristic of OxiCat
ECU Internal	524060	12	Diagnostic fault check to report the error in Voltage ratio in ADC monitoring
Oxidation Catalyst Monitoring	524060	1	DFC for passive monitoring of the oxidation catalyst during rapid heat up
ECU Internal	524061	12	Diagnostic fault check to report errors in query-/response-communication
ECU Internal	524062	12	Diagnostic fault check to report errors in SPI-communication
ECU Internal	524063	12	Diagnostic fault check to report multiple error while checking the complete ROM-memory

Component	SPN	FMI	FaultCheckDescription
ECU Internal	524064	12	Loss of synchronization sending bytes to the MM from CPU.
ECU Internal	524065	12	DFC to set a torque limitation once an error is detected before MoCSOP's error reaction is set
ECU Internal	524066	12	Wrong set response time
ECU Internal	524067	12	Too many SPI errors during MoCSOP execution.
ECU Internal	524068	12	Diagnostic fault check to report the error in undervoltage monitoring
ECU Internal	524069	12	Diagnostic fault check to report that WDA is not working correct
ECU Internal	524070	12	OS timeout in the shut off path test. Failure setting the alarm task period.
ECU Internal	524071	12	Diagnostic fault check to report that the positive test failed
ECU Internal	524072	12	Diagnostic fault check to report the timeout in the shut off path test
ECU Internal	524073	12	Diagnostic fault check to report the error in overvoltage monitoring
ECU Internal	524074	12	Diagnostic fault check to report the accelerator pedal position error
ECU Internal	524075	12	Diagnostic fault check to report the engine speed error
ECU Internal	524076	12	Diagnostic fault check to report the plausibility error between level 1 energizing time and level 2 information
ECU Internal	524077	12	Diagnostic fault check to report the error due to plausibility between the injection begin v/s injection type
ECU Internal	524078	12	Diagnostic fault check to report the error due to non plausibility in ZFC
ECU Internal	524079	12	Diagnosis fault check to report the demand for normal mode due to an error in the PoI2 quantity
ECU Internal	524080	12	Diagnosis fault check to report the error to demand for an ICO due to an error in the PoI2 shut-off
ECU Internal	524081	12	Diagnosis fault check to report the error to demand for an ICO due to an error in the PoI3 efficiency factor
ECU Internal	524082	12	Diagnostic fault check to report the error due to Over Run
ECU Internal	524083	12	Diagnostic fault check to report the error due to cooling injection in Over Run
ECU Internal	524084	12	Diagnostic fault check to report the error due to injection quantity correction
ECU Internal	524085	12	Diagnostic fault check to report the plausibility error in rail pressure monitoring
ECU Internal	524086	12	Diagnostic fault check to report the remote accelerator pedal position error
ECU Internal	524087	12	Diagnostic fault check to report the error due to torque comparison
ECU Internal	524088	12	Diagnosis of curr path limitation forced by ECU monitoring level 2
ECU Internal	524089	12	Diagnosis of lead path limitation forced by ECU monitoring level 2
ECU Internal	524090	12	Diagnosis of set path limitation forced by ECU monitoring level 2
ECU Internal	524091	3	Reported OverVoltage of VDD5
ECU Internal	524092	4	Reported UnderVoltage of VDD5

Component	SPN	FMI	FaultCheckDescription
ECU Internal	524093	12	Diagnostic fault check to report the plausibility error for Blankshot injection
ECU Internal	524098	12	Diagnostic fault check to report "WDA active" due to errors in query-/response communication
ECU Internal	524099	12	Diagnostic fault check to report "ABE active" due to undervoltage detection
ECU Internal	524100	12	Diagnostic fault check to report "ABE active" due to overvoltage detection
ECU Internal	524101	12	Diagnostic fault check to report "WDA/ABE active" due to unknown reason
High Pressure System	524103	0	maximum positive deviation of rail pressure exceeded concerning set flow of fuel
High Pressure System	524104	0	leakage is detected based on fuel quantity balance
High Pressure System	524105	0	maximum negative rail pressure deviation with metering unit on lower limit is exceeded
High Pressure System	524106	0	maximum negative rail pressure deviation with metering unit on lower limit is exceeded (second stage)
High Pressure System	524107	0	maximum rail pressure exceeded (second stage)
High Pressure System	524108	0	positive deviation of rail pressure under fast condition exceeded
High Pressure System	524109	0	maximum rail pressure exceeded - overrun detection
Injection System	524110	14	Number of injections is limited by quantity balance of high pressure pump
Injection System	524111	14	Number of injections is limited by system
Injection System	524112	14	Number of injections is limited by runtime
Intake Air Heater	524113	14	DFC to SRC Low error when heater is Off
Intake Air Heater	524114	14	DFC to SRC High error when heater is On
Intake Air Heater	524115	14	DFC to SRC Low error when heater is On
ECU Internal	524120	14	Visibility of SoftwareResets in DSM
ECU Internal	524121	14	Visibility of SoftwareResets in DSM
ECU Internal	524122	14	Visibility of SoftwareResets in DSM
ECU Internal	524124	12	Diagnostic fault check to report the NTP error in ADC monitoring
ECU Internal	524128	12	function monitoring: fault in the monitoring of the start control
ECU Internal	524131	12	CY327 SPI Communication Error
Creep Mode	524131	31	
Creep Mode	524132	31	
Creep Mode	524133	31	
Creep Mode	524134	31	
Creep Mode	524135	31	

Component	SPN	FMI	FaultCheckDescription
Oxidation Catalyst Monitoring	524136	1	Diagnostic fault check for active oxidation catalyst monitoring
Particulate Filter Monitoring	524137	0	Diagnostic fault check for maximum number of regenerations of the particulate filter by the driver
Particulate Filter Monitoring	524138	0	Diagnostic fault check for the engine protection
Particulate Filter Monitoring	524139	0	Diagnostic fault check for SRC high in Flow Resistance
Particulate Filter Monitoring	524140	0	Diagnostic fault check for SRC low in Flow Resistance
High Pressure System	524141	1	Common DFC for negative rail pressure(pressure to high)
High Pressure System	524142	0	Common DFC for positive rail pressure (pressure to low)
High Pressure System	524143	1	Common DFC for MeUn negative rail pressure(pressure to high)
High Pressure System	524144	0	Common DFC for MeUn positive rail pressure(pressure to high)
High Pressure System	524145	1	Common DFC for PCV negative rail pressure(pressure to high)
High Pressure System	524146	0	Common DFC for PCV positive rail pressure(pressure to high)
	524148	0	Error in boost protection limitation
Error in Limiter	524149	0	Error in engine protection limitation
Error in Limiter	524150	0	Error in injetion systems limitation
Error in Limiter	524151	0	Error in limitation
Error in Limiter	524153	0	Error in differential protection
Error in Limiter	524154	0	Error in performance limitation
Error in Limiter	524155	0	Error in smoke limitation
Cruise Control	527	11	Fault path which indicates the invalid combination of cruise control keys pressed
Oxidation Catalyst Monitoring	5317	16	DFC for soot load monitoring in first threshold
Oxidation Catalyst Monitoring	5317	0	DFC for soot load monitoring in first threshold
Particulate Filter Monitoring	5319	2	Diagnostic fault check for driver demand regeneration button stuck
Particulate Filter Monitoring	5319	0	Diagnostic fault check for a locked regeneration
Glow Plugs	5324	11	Array of DFCs for failure in i+1th Glow Plug
Glow Plugs	5324	4	Array of DFCs for short circuit in i+1th Glow Plug
Glow Plugs	5324	0	Array of DFCs for resistance out of rane of i+1th Glow Plug
Glow Plugs	5324	14	Array of DFCs for wrong type of i+1th Glow Plug
Glow Plugs	5325	11	Array of DFCs for failure in i+1th Glow Plug
Glow Plugs	5325	4	Array of DFCs for short circuit in i+1th Glow Plug

Component	SPN	FMI	FaultCheckDescription
Glow Plugs	5325	0	Array of DFCs for resistance out of rane of i+1th Glow Plug
Glow Plugs	5325	14	Array of DFCs for wrong type of i+1th Glow Plug
Glow Plugs	5326	11	Array of DFCs for failure in i+1th Glow Plug
Glow Plugs	5326	4	Array of DFCs for short circuit in i+1th Glow Plug
Glow Plugs	5326	0	Array of DFCs for resistance out of rane of i+1th Glow Plug
Glow Plugs	5326	14	Array of DFCs for wrong type of i+1th Glow Plug
Glow Plugs	5327	11	Array of DFCs for failure in i+1th Glow Plug
Glow Plugs	5327	4	Array of DFCs for short circuit in i+1th Glow Plug
Glow Plugs	5327	0	Array of DFCs for resistance out of rane of i+1th Glow Plug
Glow Plugs	5327	14	Array of DFCs for wrong type of i+1th Glow Plug
Glow Plugs	5328	11	Array of DFCs for failure in i+1th Glow Plug
Glow Plugs	5328	4	Array of DFCs for short circuit in i+1th Glow Plug
Glow Plugs	5328	0	Array of DFCs for resistance out of rane of i+1th Glow Plug
Glow Plugs	5328	14	Array of DFCs for wrong type of i+1th Glow Plug
Glow Plugs	5329	11	Array of DFCs for failure in i+1th Glow Plug
Glow Plugs	5329	4	Array of DFCs for short circuit in i+1th Glow Plug
Glow Plugs	5329	0	Array of DFCs for resistance out of rane of i+1th Glow Plug
Glow Plugs	5329	14	Array of DFCs for wrong type of i+1th Glow Plug
Turbo Charger Actuator	5369	3	
Turbo Charger Actuator	5369	4	
Throttle Valve	5375	5	
Throttle Valve	5375	6	
Throttle Valve	5375	3	
Throttle Valve	5375	4	
Throttle Valve	5375	8	
Throttle Valve	5375	11	
Throttle Valve	5375	14	
Throttle Valve	5377	3	
Throttle Valve	5377	4	

Component	SPN	FMI	FaultCheckDescription
Turbo Charger Actuator	5386	5	
Turbo Charger Actuator	5386	12	
Turbo Charger Actuator	5386	3	
Turbo Charger Actuator	5386	4	
Fuel Filter Downstream Pressure Sensor	5579	3	Short circuit to battery error on fuel filter clog detection sensor ecu pin
Fuel Filter Downstream Pressure Sensor	5579	4	Short circuit to ground error on fuel filter clog detection ECU pin
Brake System	5609	31	Plausibility check for Brake
Brake System	5609	14	Plausibility check for Brake
PFM	5631	3	DFC: SRC high in throttle valve upstream pressure sensor Bank1
PFM	5631	4	DFC: SRC low in throttle valve upstream pressure sensor Bank1
PFM	5631	9	Plausibility high fault boost pressure sensor bank1
PFM	5631	10	Plausibility low fault boost pressure sensor bank1
PFM	5631	0	Physical Range high fault boost pressure sensor bank1
PFM	5631	1	Physical Range low fault boost pressure sensor bank1
PFM	5631	16	Fault boost pressure sensor range high bank1
PFM	5631	18	Fault boost pressure sensor range low bank1
PFM	5631	12	Fault boost pressure sensor self diagnosis bank1
EGR Valve	5763	5	
EGR Valve	5763	6	
EGR Valve	5763	12	
EGR Valve	5763	3	
EGR Valve	5763	4	
EGR Valve	5763	11	
EGR Valve	5770	3	
EGR Valve	5770	4	
EGR Valve	5770	6	
EGR Valve	5771	4	
Throttle Valve	5784	12	
Oxidation Catalyst Upstream Temperature	5797	2	Diagnostic fault check for Plausibility errors in Oxidation Catalyst upstream temperature

Component	SPN	FMI	FaultCheckDescription
Oxidation Catalyst Upstream Temperature	5797	0	Physical Range Check high for temperature sensor upstream oxidation catalyst
Oxidation Catalyst Upstream Temperature	5797	1	Physical range check low for temperature sensor upstream oxidation catalyst
Oxidation Catalyst Upstream Temperature Sensor	5797	3	Diagnostic fault check for SRC high in Oxidation Catalyst upstream temperature
Oxidation Catalyst Upstream Temperature Sensor	5797	4	Diagnostic fault check for SRC low in Oxidation Catalyst upstream temperature
Cruise Control	5826	0	
Brake System	597	2	Plausibility check for Brake
Brake System	597	7	Plausibility check for Brake
Clutch	598	2	Plausibility check for Clutch
Clutch	598	19	Sig Error for Clutch
CAN	604	12	DLC Error of CAN-Receive-Frame ETC5
CAN	604	9	Timeout Error of CAN-Receive-Frame ETC5
Gear Neutral Switch	604	2	Alive Detection for Gbx_stNPos
Gear Neutral Switch	604	0	Plausibility check for Gbx SCB
Gear Neutral Switch	604	1	Plausibility check for Gbx SCG
Gear Neutral Switch	604	2	Check for error for CAN input
Stop Lamp	623	5	No load error
Stop Lamp	623	12	No load error
Stop Lamp	623	3	Short circuit to battery error
Stop Lamp	623	4	Short circuit to ground error
Pressure Control Valve	633	0	lerning valu too high
Pressure Control Valve	633	1	lerning value too low
Pressure Control Valve	633	16	lerning factor too high
Pressure Control Valve	633	18	lerning factor too low
Pressure Control Valve	633	7	number of startup attempts exceeded the limit
Starter Relay	6385	12	Over temperature error for Starter high side
Starter Relay	6385	3	Short circuit to battery error for Starter high side
Starter Relay	6385	4	Short circuit to ground error for Starter high side
CAN	639	14	BusOff error CAN A
Turbo Charger Actuator	641	8	

Component	SPN	FMI	FaultCheckDescription
Turbo Charger Actuator	641	5	
Turbo Charger Actuator	641	6	
Turbo Charger Actuator	641	12	
Turbo Charger Actuator	641	14	
Turbo Charger Actuator	641	4	
Injection System	651	5	Open load on the power stage
Injection System	651	3	Short circuit of the power stage low-side (cylinder error)
Injection System	651	4	Short circuit between high-side and low-side of the power stage (high-side non plausible error)
Injection System	651	14	measured injection closing time exceeds a limit
Injection System	651	13	check of missing injector adjustment value programming
Injection System	652	5	Open load on the power stage
Injection System	652	3	Short circuit of the power stage low-side (cylinder error)
Injection System	652	4	Short circuit between high-side and low-side of the power stage (high-side non plausible error)
Injection System	652	14	measured injection closing time exceeds a limit
Injection System	652	13	check of missing injector adjustment value programming
Injection System	653	5	Open load on the power stage
Injection System	653	3	Short circuit of the power stage low-side (cylinder error)
Injection System	653	4	Short circuit between high-side and low-side of the power stage (high-side non plausible error)
Injection System	653	14	measured injection closing time exceeds a limit
Injection System	653	13	check of missing injector adjustment value programming
Injection System	654	5	Open load on the power stage
Injection System	654	3	Short circuit of the power stage low-side (cylinder error)
Injection System	654	4	Short circuit between high-side and low-side of the power stage (high-side non plausible error)
Injection System	654	14	measured injection closing time exceeds a limit
Injection System	654	13	check of missing injector adjustment value programming
Pre Supply Pump	6719	5	open load of pre-supply pump output
Pre Supply Pump	6719	12	Over temperature error on ECU powerstage for Pre supply pump
Pre Supply Pump	6719	3	short circuit to battery of pre-supply pump output
Pre Supply Pump	6719	4	short circuit to ground of pre-supply pump output

Component	SPN	FMI	FaultCheckDescription
Glow Lamp	675	5	No load error
Glow Lamp	675	12	Over temperature error
Glow Lamp	675	3	Short circuit to battery error
Glow Lamp	675	4	Short circuit to ground error
Glow Plugs	676	21	DFC for coding error when selected coding is not working
Glow Plugs	676	11	DFC for faulty diagnostic data transmission or protocol error
Glow Plugs	676	2	DFC for coding error when different coding words were received in a coding cycle
Glow Plug Relay	676	5	No load error for Low Voltage System
Glow Plug Relay	676	12	Over temperature error on ECU powerstage for Glow plug Low Voltage System
Glow Plug Relay	676	3	Short circuit to battery error for Low Voltage System
Glow Plug Relay	676	4	Short circuit to ground error for Low Voltage System
Glow Plugs	676	13	DFC for SVS GCU faulty diagnostic glow plug or relay error
Glow Plugs	676	9	DFC for SVS GCU faulty diagnostic sticking relaycerror
Starter Relay	677	0	only a dummy - do not use!
Starter Relay	677	12	Over temperature error for Starter low side
Starter Relay	677	3	Short circuit to battery error for Starter low side
Starter Relay	677	4	Short circuit to ground error for Starter low side
Starter Relay	677	5	No load error for Starter
Terminal 50	677	10	Defective T50 switch
Hand Brake Switch	70	2	Alive Detection for HndBrk_stDebVal
Air Filter Lamp	702	5	No load error
Air Filter Lamp	702	12	Over temperature error
Air Filter Lamp	702	3	Short circuit to battery error
Air Filter Lamp	702	4	Short circuit to ground error
Oil Pressure Lamp	705	5	defect fault check for open load error
Oil Pressure Lamp	705	12	defect fault check for over temperature error
Oil Pressure Lamp	705	3	defect fault check for short circuit to battery error
Oil Pressure Lamp	705	4	defect fault check for short circuit to ground error
Intake Air Heater	729	9	DFC to indicate to an always switched ON Grid Heater

Component	SPN	FMI	FaultCheckDescription
Intake Air Heater	729	5	DFC for open load on power stage for intake air heaters
Intake Air Heater	729	12	DFC for over temperature on power stage for intake air heaters
Intake Air Heater	729	3	DFC for short circuit to battery on power stage for intake air heaters
Intake Air Heater	729	4	DFC for short circuit to ground on power stage for intake air heaters
Intake Air Heater	729	2	DFC for short circuit to ground, Over Current, Over Temperature in the Intake Air Heater feedback diagnosis line
Intake Air Heater	730	2	DFC for Open load in the Intake Air Heater feedback diagnosis line
Energizing Time Control	7332	16	Error path for not reaching the setpoint of the inner loop with maximal control variable
Energizing Time Control	7332	18	Error path for not reaching the setpoint of the inner loop with minimal control variable
Energizing Time Control	7332	9	Error path for response time of inner loop
Energizing Time Control	7332	15	Error path for not reaching the setpoint of the outer loop with maximal control variable
Energizing Time Control	7332	17	Error path for not reaching the setpoint of the outer loop with minimal control variable
Energizing Time Control	7332	10	Error path for response time of outer loop
Glow Control Unit	7576	2	DFC for error in reception
Glow Control Unit	7576	4	DFC for chargepump under voltage
Glow Control Unit	7576	3	DFC for Over Voltage error
Glow Control Unit	7576	12	DFC for PRFlag =0 if GE_SET has been sent
Glow Control Unit	7576	14	DFC for T30 missing error
Glow Control Unit	7576	31	DFC for GCU4 variant error
Glow Control Unit	7576	13	DFC for wrong GCU type
Glow Control Unit	7577	12	DFC for Over temperature error
CAN	7759	2	Non Plausible check Error of CAN-Receive-Frame Cab Message 1
Vehicle Speed Sensor	84	0	Maximum threshold error for vehicle speed
	84	5	NPL error for vehicle speed signal over Tachomter or hardware sensor
Vehicle Speed Sensor	84	13	Plausibility defect for vehicle speed
Vehicle Speed Sensor	84	3	signal level low error for vehicle speed signal over Tachomter or hardware sensor
	84	4	signal level low error for vehicle speed signal over Tachomter or hardware sensor
Air Condition Compressor	876	5	No load error on power stage for the compressor
Air Condition Compressor	876	12	Over temperature error on powerstage for the compressor
Air Condition Compressor	876	3	Short circuit to battery error on power stage for the compressor

Component	SPN	FMI	FaultCheckDescription
Air Condition Compressor	876	4	Short circuit to ground error on power stage for the compressor
CAN	898	2	DFC for DLC Error of CAN-Receive-Frame TSC1TE
APP Poti 1	91	3	Signal Range Check High for APP1
APP Poti 1	91	4	Signal Range Check Low for APP1
APP Synchronsition Error	91	11	In case of dual analog accelerator pedal, it is the plausibility check between APP1 and APP2 and in case of potentiometer switch accelerator pedal, it is the plausibility check between APP1 and idle switch
APP Synchronsition Error	91	2	In case of Double Poti LIS acceleration pedal there are 2 analog accelerator pedal potentiometers and a low idle switch. It is the plausibility check between APP1 , APP2 and idle switch.
Fuel Low Pressure System	94	9	Maximum fuel pressure error in dynamic plausibility test
Fuel Low Pressure System	94	10	Minimum fuel pressure error in dynamic plausibility test
Fuel Low Pressure System	94	13	Low fuel pressure error monitoring
Fuel Low Pressure System	94	19	DFC for CAN message
Fuel Low Pressure Sensor	95	3	SRC High for Environment Pressure
Fuel Low Pressure Sensor	95	4	SRC low for Environment Pressure
Fuel Level Plausibility	96	2	Fuel Level Sensor Plausibility Error
Fuel System	96	1	fuel tank below critical level or danger of an air contaminated hydraulic system
Water in Fuel	97	15	Water in fuel detected
Water in Fuel	97	31	Error in water in Fuel Detection switch
Fuel Level	97	17	Fuel Level unplausible
Fan	975	5	No load error
Fan	975	12	Over temperature error
Fan	975	3	Short circuit to battery error
Fan	975	4	Short circuit to ground error
Fan	975	8	No load error
Fan	975	14	Over temperature error
Fan	976	5	No load error
PTO	976	3	Diagnostic fault check for max error of COM message
PTO	976	4	Diagnostic fault check for min error of COM message
Fan	977	3	Short circuit to battery error

Component	SPN	FMI	FaultCheckDescription
Fan	977	4	Short circuit to ground error
Fan	977	5	Short circuit to battery error
Fan	977	6	Short circuit to ground error
Oil Level	98	3	Duty cycle greater than maximum
Oil Level	98	4	Duty cycle lesser than minimum
Oil Level	98	2	Plausibility Check
Oil Level	98	0	Plausibility Check
Oil Level	98	1	Plausibility Check
CAN	986	12	DFC for DLC Error of CAN-Receive-Frame Cab Message 1
CAN	986	9	Timeout Error of CAN-Receive-Frame Cab Message 1
SVS	987	5	No load error
SVS	987	12	No load error
SVS	987	3	Short circuit to battery error
SVS	987	4	Short circuit to ground error

LISSMAC

UNS BEWEGEN IDEEN