Operating Instructions

Translation of original operating instructions

Installation Machine VM-301-PAVERMAX

VM-301-PAVERMAX / VM-301-KJ-PAVERMAX

Bitte beachten Sie, dass das Produkt ohne vorliegende Betriebsanleitung in Landessprache nicht eingesetzt / in Betrieb gesetzt werden darf. Sollten Sie mit der Lieferung des Produkts keine Betriebsanleitung in Ihrer Landessprache erhalten haben, kontaktieren Sie uns bitte. In Länder der EU / EFTA senden wir Ihnen diese kostenlos nach. Für Länder außerhalb der EU / EFTA erstellen wir Ihnen gerne ein Angebot für eine Betriebsanleitung in Landessprache, falls die Übersetzung nicht durch den Händler/Importeur organisiert werden kann.

Please note that the product may not be used / put into operation without these operating instructions in the national language. If you did not receive operating instructions in your national language with the delivery of the product, please contact us. In countries of the EU / EFTA we will send them to you free of charge. For countries outside the EU / EFTA, we will be pleased to provide you with an offer for an operating manual in the national language if the translation cannot be organised by the dealer/importer.

Contents

1 EC-Declaration of Conformity 4

2 Safety 5

2.1 Safety symbols 5

2.2 Definition skilled worker / specialist 5

2.3 Safety Marking 5

2.4 Personal safety requirements 8

2.5 Protective equipment 9

2.6 Noise emissions 9

2.7 Vibrations 9

2.8 Accident prevention 9

2.9 Function Control 10

2.9.1 General 10

2.9.2 Hydraulic 10

2.10 Safety procedures 10

2.10.1 Equipment attachments 10

2.10.2 Installation machine 10

2.10.3 Safety when operating the installation machine 11

2.10.4 Stability 12

3 General 13

3.1 Authorized use 13

3.1.1 Optionales Zubehör 14

3.2 Survey and construction 15

3.3 Technical data 16

4 Operation 17

4.1 Daily checks 17

4.1.1 Fuel level 17

4.1.2 Motor-oil level 17

4.1.3 Hydraulic-oil level 18

4.1.4 Cooling-water level 18

4.1.5 Main switch 18

4.1.6 Accelerator 19

4.1.7 Control displays 20

4.2 Starting the engine 21

4.3 Driving with the installation machine 21

4.4 Adjusting the driver's seat 22

4.5 Control elements 22

4.6 Attachment of additional equipment 24

5 Transport 25

5.1 Transporting the installation machine 25

5.2 Lifting the machine with a crane 27

5.3 Towing the installation machine 28

6 Storage 29

7 Maintenance and care 30

7.1 maintenance 30

7.1.1 Mechanics 30

7.1.2 Hydraulic 31
7.2 Recharging the battery 33
7.3 Lubrication Chart 34
7.4 Trouble shooting 37
7.5 Repairs 37
7.6 Safety procedures 37
7.7 Hints to the type plate 38
7.8 Hints to the renting/leasing of PROBST devices 38

1 EC-Declaration of Conformity

Description:	**Installation Machine VM-301-PAVERMAX**
Type:	**VM-301-PAVERMAX / VM-301-KJ-PAVERMAX**
Order number:	**51500020 / 51500023**
Manufacturer:	Probst GmbH Gottlieb-Daimler-Straße 6 71729 Erdmannhausen, Germany info@probst-handling.de www.probst-handling.de

The machine described above complies with the relevant requirements of the following EU directives:

EC-machinery directive 2006/42/EC

2014/30/EU (Electromagnetic compatibility)

The following standards and technical specifications were used:

DIN EN ISO 12100

Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)

DIN EN ISO 13857

Safety of machinery - safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)

DIN EN 60204-1 (IEC 60204-1)

Safety of machinery, electrical equipment of industrial machines. Part 1: General requirements.

Authorized person for EC-documentation:

Name: J. Holderied
Address: Probst GmbH; Gottlieb-Daimler-Straße 6; 71729 Erdmannhausen, Germany

Signature, information to the subscriber:

Erdmannhausen, 15.05.2019.....
(M. Probst, Managing director)

EC-Declaration of Conformity / UKCA-Declaration of Conformity

Manufacturer:	Probst GmbH Gottlieb-Daimler-Straße 6 71729 Erdmannhausen, Germany info@probst-handling.de www.probst-handling.com
Importer:	Probst Ltd Unit 2 Fletcher House Stafford Park 17 Telford Shropshire TF3 3DG, United Kingdom www.probst-handling.co.uk sales@probst-handling.co.uk

The machine described above complies with the relevant requirements of the following EU directives:
The object of the declaration described above is in conformity with the relevant UK-Regulations and UK-Guidelines:

EC-machinery directive 2006/42/EC *(Reference: OJ L 157, 09.06.2006)*

UK-Regulation: Supply of Machinery (Safety) Regulations 2008 (SI 2008 No. 1597)

2014/30/EU (Electromagnetic compatibility) / *(Reference: OJ L 96, 29.03.2014)*

UK-Regulation: Electromagnetic Compatibility Regulations 2016 (SI 2016 No. 1091)

The following standards and technical specifications were used:

DIN EN ISO 12100

Safety of machinery - General principles for design - Risk assessment and risk reduction

UK-Regulation: BS EN ISO 12100-1:2003+A1:2009

DIN EN ISO 13857

Safety of machinery - safety distances to prevent hazard zones being reached by upper and lower limbs.

UK-Regulation: BS EN ISO 13857:2019

2014/30/EU (Electromagnetic compatibility) / *(Reference: OJ L 96, 29.03.2014)*

UK-Regulation: Electromagnetic Compatibility Regulations 2016 (SI 2016 No. 1091)

DIN EN 60204-1 (IEC 60204-1)

Safety of machinery, electrical equipment of industrial machines. Part 1: General requirements.

UK-Regulation: BS EN 60204-1:2018

Authorized person for EC-documentation:

Name: Jean Holderied
Address: Probst GmbH; Gottlieb-Daimler-Straße 6; 71729 Erdmannhausen, Germany

Authorized person for UK-documentation:

Name: Nigel Hughes
Address: Probst Ltd ; Unit 2 Fletcher House; Stafford Park 17; Telford Shropshire TF3 3DG, United Kingdom

Signature, information to the subscriber:

Erdmannhausen, 02.08.2021.....
(Eric Wilhelm, Managing director)

2 Safety

2.1 Safety symbols

Danger to life!
Identifies imminent hazard. If you do not avoid the hazard, death or severe injury will result.

Hazardous situation!
Identifies a potentially hazardous situation. If you do not avoid the situation, injury or damage to property can result.

Prohibition!
Identifies imminent a prohibition. If you do not avoid the prohibition, death and severe injury, or damage to property will result.

Important informations or useful tips for use.

2.2 Definition skilled worker / specialist

Only skilled workers or specialists is it allowed to carry out the installation,- maintenance, - and repair work on these device!

Skilled workers or specialists must have for the following points (if it applies for these device), the necessary professional knowledge.

- for mechanic
- for hydraulics
- for pneumatics
- for electrics

2.3 Safety Marking

PROHIBITION SIGN

Symbol	Meaning	Order-No.	Size
	It is not allowed to stand under hanging loads. **Danger to life!**	29040210 29040209 29040204	Ø 30 mm Ø 50 mm Ø 80 mm
	It is forbidden to ride on the installation machine!°	29040762	Ø 80 mm
	Do not open the tool cover while the engine/system is running!	29040259	70 x 115 mm

WARNING SIGN

Symbol	Meaning	Order-No.	Size
	Danger of squeezing the hands.	29040221 29040220 29040107	30 x 30 mm 50 x 50 mm 80 x 80 mm
	Danger: Injury of hands and fingers – belt drive	29040451	48 x 54 mm
	Warning for hot surfaces.	29040396	31x27mm
	Warning of electric voltage.	29040397	31 x 27 mm
	Warning of battery acid.	29040551	31 x 27 mm
	Danger: Keep distance to the machine.	29040756	64 x 103 mm

REGULATORY SIGN

Symbol	Meaning	Order-No.	Size
	Each operator must have read and understood the operating instructions (and all safety instructions).	29040665 29040666	Ø 30 mm Ø 50 mm
	Seat belt duty On every drive with the machine the seat belt must always be worn.	29040450	Ø 52 mm
	Pull hand brake in idle machine time. To drive release handbrake.	29040267	45 x 80 mm

	Drive forward and backward with the right foot pedal. **The pedal must not only be operated with the tips of the shoes!** To be able to react quickly in dangerous situations, the shoe must be fully positioned on the control pedal.	29040760	68 x 43 mm
	Lifting and lowering boom arm with left foot pedal.	29040759	48 x 43 mm
	Warning – Warming up time with half throttle before doing any driving: Temperature more than 10° C: 5 Min. Temperature less than 10° C: 10 Min	29040243	150 x 55 mm
DIESEL ☑ BIO-DIESEL ☒	Fill-in only diesel – NO bio-diesel!	29040483	16 x 130 mm
	Clean the filter insert daily with compressed air. Do not knock out the filter insert! Exchange if very dirty.	29040687	Ø 50 mm
	Suspension point for transport goods for lifting (recovering) the laying machine	29040370	23 x 60 mm
	Lashing eyelet for securing the laying machine to the transport vehicle by means of chains or tension belts	29040755	Ø 60 mm
	The steering of the machine must be locked before transport!	29040818	90 x 55 mm
	Note short operating instructions	29040613	180 x 165 mm
	Make regular maintenance work.	29040610	250x180 mm

OPERATING INFORMATIONS

Symbol	Meaning	Order-No.	Size
	Max. 600 kg (1,320 lbs)→VM-301 Maximum weight paver load 320 kg (710 lbs) with counterbalance 380 kg (840 lbs)	29040616	40 x 160 mm
	Max. 650 kg (1,430 lbs)→VM-301-K Maximum weight paver load 380 kg (840 lbs) (837,8 lbs) with counterbalance 440 kg (970 lbs)	29040623	40 x 160 mm
	Button for horn / reset button: Press reset button each time for the driving, when the machine will be started and when the driving was stopped caused by the standing up of the diver from the driver´s seat (triggered by the seat switch). The reset button only works (and the driving of the machine), when the driver is sitting in the s seat.	29040716	90 x 23 mm
	Engine speed regulation.	29040485	30 x 90 mm
	Open cover hood	29040253	28 x 85 mm
	Joystick / control lever: Movement directions for the Control / operation of attachments (e.g. for opening and closing the main and side clamping at a HVZ)	29040260	50 x 50 mm
	Electronic joystick with function controls as well as activations of additional functions or similar. Function controls: for controlling of a hydraulic installation clamp (HVZ) or similar. *Additional finctions*: - Rotating movement of a hydraulic rotator - Vacuum operation (suction and release of load)	29040681	70x72 mm

2.4 Personal safety requirements

Each operator must have read and understood the operating instructions (and all safety instructions).
Only qualified, authorized personal is allowed to operate the device and all devices which are connected (lifting device/carrier).

The manual guiding is only allowed for devices with handles.

2.5 Protective equipment

The protective equipment must consist, according to the safety regulations of the following parts:

- Protective clothing
- Safety gloves
- Safety shoes

2.6 Noise emissions

The equivalent continuous sound pressure level emitted by the installation machine is below 85 dB(A).

Noise pollution can cause hearing damage. Recommendation: Wear hearing protection.

The operator must advise the operator of the installation machine to wear hearing protection.

2.7 Vibrations

The operation of the installation machine causes vibrations which are also transmitted to the body of the operator.

The operator is instructed to instruct the operators of the installation machine to undergo regular medical examinations.

2.8 Accident prevention

- The workplace has to be covered for unauthorized persons, especially children.
- Caution at thunderstorm - danger of lightning!
  Depending on the intensity of the thunderstorm, stop working with the device if necessary.

- The workplace must be sufficiently illuminated.
- With wet, frozen and dirty building materials there is a risk of the gripping good slipping out!

- The working with the device in case of atmospheric editions under 3° C(37,5° F) is **forbidden**!
  Because the goods could be fall down caused by dampness or freezing.

Caution during operation, dismantling and maintenance work on the laying machine!

There is a risk of electric shock, etching and burns from battery acid and various engine fluids.

Appropriate protective measures must be taken and protective equipment worn in order to avoid serious injuries or even death!

2.9 Function Control

2.9.1 General

- Before every usage of the device check the functions and the working condition.
- Maintenance and lubrication are only permitted when device is shut down!

- Do not use the device, until all faults which can cause safety hazards are removed.
- If there are any cracks, splits or damaged parts on any parts of the device, immediately stop using it.

- The operating instructions must be available at the workplace every time.
- Do not remove the type plate of the machine.
- Unrecognisable information signs (such as regulatory or prohibition signs) must be replaced.

2.9.2 Hydraulic

Check all hydraulic hoses and connection for tightness before every operation. Only experts are allowed to replace faulty parts (depressurized).

Ensure a clean working environment before opening the hydraulic connection.

The hydraulic hoses must be free of breaks and abrasion. Take care that there are no outstanding edges, where the hoses could hook in.

The operator of the device is responsible for a constant line pressure, which is necessary for the working with this device.

Only under these conditions is a safety gripping, lifting and transporting of the gripping goods with this device ensured.

2.10 Safety procedures

2.10.1 Equipment attachments

During all adjustments on equipment attachments (e.g. HVZ-UNI) it must be ensured that the attachment cannot close unintentionally. **Risk of injury!**

All adjustments may only be made when the laying machine is shut down (**pull handbrake**) and the engine is **switched off**!

2.10.2 Installation machine

- The installation machine has to be in good, safe working condition.
- **Never exceed the maximum capacity/working load limit (WLL) of the installation machine!**
- Only authorized and qualified persons are allowed to operate the installation machine.
- The operator must have all the necessary qualifications.

2.10.3 Safety when operating the installation machine

- Stepping in and out of the installation machine may only be allowed from the left-hand side (in the direction of travel) to prevent unintentional activation of the controls/operating elements.
- The installation machine may generally only be operated under optimum viewing conditions and sufficient lighting (e.g. daylight)!
- By retrofitting appropriate spotlights (Lighting Package VM-301), work is also allowed in the dark.
- Always lower the load to approx. 20 cm above the ground when moving!
- The **maximum load** of the installation machine, its attachments (e.g. HVZ-UNI) and the loads attached to it **must not be exceeded!**
- When leaving the installation machine, the driver must pull the handbrake and ensure that the installation machine is standing on a horizontal surface. If necessary, use chocks or the like to prevent the traverser from rolling away unintentionally.
- **It is not permitted to park the installation machine unattended on sloping and inclined surfaces!**
- During operation of the installation machine, the driver must always ensure that the machine is in a safe operating condition.

- **Never refill fuel while the engine is running, as there is a risk of explosion if the fuel overflows or spills!**
- **Never use starter spray, always use winter diesel in winter!**
- **Always disconnect the battery when working on the electrical system. Danger of electric shock!**

It is **forbidden** for persons to ride along the installation machine (by hanging on it from the outside)!
Accident/danger to life!

- Never open the motor cover while the engine is running. Always keep the motor cover closed due to the risk of injury and sound insulation.
- **It is generally forbidden for persons to stand in the working and travel area of the installation machine during installation work.**
  A minimum safety distance of 1.5 m between the person and the machine must be observed!
  Exception: It is essential due to the type of use of the implement, e.g. by manually guiding a implement at the handles.
- **It is generally forbidden to stand under a suspended load!**
- **It is strictly forbidden to stand in the steering area/kink area of the machine! Risk of crushing the feet/legs between the front wheels and the chassis.**
- **The driver must not leave the control position if the attachments of the laying machine are loaded with laying material and the system is in operation.**
- **Never let** the control lever valve (joystick) for operating the attachments, the control pedal for forward and reverse travel or the control pedal for up and down movement of the boom **spring back**. Otherwise there will be pressure surges in the forward and return lines! The laying material may fall down and the hydraulic motors may be **damaged**!

2.10.4 Stability

Danger of overturning!

Only drive at walking speed and with the boom lowered (with and without load) if the following applies:

- No attachment equipment (e.g. HVZ-UNI) mounted on boom
- **Driving curves**
- Driving in **unpaved and uneven terrain**
- Terrain with **slope**
- Machine **slope** of more than 10° (~ 18 %)

Driving faster than step speed allowed if the following applies:

- Drive straight ahead (with and without attachment equipment and stone position)
- Driving in paved and level terrain

- Check terrain in advance for **sufficient surface condition** (such as large holes or broken ground).
- When using the laying machine on roofs, parking decks or other soft ground, the **load capacity of the** ground must be checked in advance.
- In the event of accidents or when the laying machine tilts over, load-bearing parts must be inspected by a specialist workshop before the machine is put back into operation.

3 General

3.1 Authorized use

- The machine is only designed for the use specified in this documentation.
- Every other use is not authorized and is forbidden!
- All relevant safety regulations, especially regulations of the declaration of conformity, and additional local health and safety regulations have to be observed.

Prior to every operation the user must ensure that:

- the machine is suited to the intended operation, the functioning and the working condition of the equipment is examined and the loads are suitable to be handled.

Any doubts about instructions should be raised with the manufacturer prior to use.

- The installation machine VM-301-PAVERMAX in connection with the hydraulic installation clamp HVZ/HVZ-UNI is used for laying interlocking paving stones in connection with the kerb stone laying clamp VZ-H-UNI (for laying kerb stones), in combination with the EB 240 sweeping broom for efficient sweeping of sand when laying interlocking paving stones or in combination with the hydraulic vacuum laying unit HVE for laying or picking up large-format concrete or natural stone elements.
- **Only attachment equipment from Probst** may be attached to the installation machine VM-301-PAVERMAX, such as:
  - VZ-H-UNI, HVZ-STANDARD, HVZ-UNI, HVZ-UNI-II, HVZ-LIGHT,
  - and by retrofitting the hydraulic vacuum unit (HVE) also various vacuum attachments such as:
  - PJ-1650-H, VPM-2500-H, SH-1000-MINI-H, SH-1000-SUPER-JET-H).

When using third-party attachment equipment on the Probst installation machine, the relevant safety regulations and the technically necessary prerequisites (performance data) of the respective attachment must be observed. In addition, all technical requirements of the Probst installation machine must correspond to those of the third-party attachment equipment. The responsibility for this lies solely with the operator of the installation machine!

- The installation machine is **no lifting equipment!**

All instructions in the instructions handed over with the installation machine must be observed.

Danger to life!

Due to the diesel engine, the unit must not be used in closed rooms, explosion or fire danger areas.

For use in tunnels and multi-storey car parks, suitable ventilation must be provided. Otherwise there is a **risk of poisoning** by exhaust gases!

It may be necessary to retrofit a diesel particle filter. **The locally applicable exhaust gas regulations must always be observed.**

It is not allowed to use the installation machine in public traffic – only construction sites or private ground!

NOT ALLOWED ACTIVITIES:

Unauthorized alterations of the device and the use of any self-made additional equipment could cause danger and are therefore **forbidden**!

Use of the machine after substantial modification, as well as after improper troubleshooting/maintenance

Never exceed the **carrying capacity/working load limit (WLL)** and the **nominal width/nominal size** of the device.

All unauthorized transportations with the device <u>are not allowed</u>:

- Transportation of people and animals.
- Transportation of other loads and materials than described in this manual.
- Never suspend any goods with ropes, chains or similar at the device.

3.1.1 Optionales Zubehör

Type	Discription
Cabin	Retrofit kit for VM-301 W/glazing and heating (retrofit only possible at Probst company)
Light package VM-301	2 combi-headlights (near/far), 1 reversing light
Light packageVM-301-K	2 combi-headlights (near/far), 1 reversing light
Turning Light	with swing down foot inc. installation material
Exterior mirror	retrofit kit
Mounting bracket	for light package and/or exterior rear-view mirrors (is only required once)
Extra weight	to increase the working load limit by 60 kg [1)]
Diesel particle filter DPF	retrofit kit for VM-301-K, VM-301 and VM-203
Filter cartridge	for Diesel particle filter DPF
Windscreen washer	without adjustable wiping interval. Retrofit kit for VM-301-K
Adapter QJ for rotator Bini/Baltrotor	
VM-301- JMS-V	Electronic joystick and armrest incl. installation kit. To control the main gripping width, side gripping width, rotator and incl. vacuum function. (Retrofitting possible only at Probst) Incl. installation.
[1)] At adequate driving speed and lowered load. Max. weight of paver layer as per technical data.	

3.2 Survey and construction

VM-301-PAVERMAX
5150.0020

VM-301-KJ-PAVERMAX
5150.0023

3.3 Technical data

Enginepower		18,5 kW (25 PS)	
Equivalent noisepollution LpA:		79 dB	
Vibrationswerte:	Effective value of acceleration for the upper limbs:		< 2,5 m/s²
	Effective value of acceleration for the body:		< 0,5 m/s²
Stearing:		Doppelte Knicklenkung	
Speed control:		Hydrostat-stufenlos	
Maximum speed:		ca. 20 km/h	
Dimensions and weight			
Height / Width / Length:		1.980 mm / 1.220 mm / 3.610 mm	
Dead weight:		1.080 kg ** ①	
		1.200 kg ***	
Working Load Limit (WLL):		600 kg */** bzw. 650 kg */***	
Maximum weight of stone formation:		320 kg (mit Zusatzgewicht 380 kg) */**	
		380 kg (mit Zusatzgewicht 440 kg) */***	
Max. lifting height:		1.600 mm	
Turning radius inner front wheel / outer front wheel:		700 mm / 1.900 mm	
Turning radius overall:		2.450 mm	
Ground clearance:		180 mm	

Filling capacity:	Fuel tank	20 l	
	Motor oil SAE10W40	4,3 l	below 0°C:SAE10W, 0°-25°C:SAE20, over 25°C:SAE30
	Hydraulic oil	18 l	HLP 46
Kubota Diesel ecngine D 1105			Technical data see: Kubota Diesel Engine D 1105
Seat:	height adjustable (in 3 steps or stepless, back and forward), adjustable backrest, adjustable spring power		

* With adjusted travelling speed and lowered load.

** VM-301-PAVERMAX

*** VM-301-K-PAVERMAX

① Gesamtgewicht erhöht sich z.B. durch die Nachrüstung der hydraulischen Vakuumeinheit (HVE). (HVE).

4 Operation

In In conditional of the outdoor temperature it is absolute necessary to keep the warm up times at every daily use (before the first motion of travelling) of the installation machine VM-301-PAVERMAX .

outdoor temperature over 10°C(50 F): 5 minutes

outdoor temperature under 10°C(14 F): 10 minutes

Before using the installation machine VM-301-PAVERMAX account the safety instructions and carry out the maintenance work.

For a safety and trouble-free operation of the installation machine VM-301-PAVERMAX is it necessary to carry out the following the daily checks:

4.1 Daily checks

Before the first start-up and in general before every operation all fluid levels (coolant and engine and hydraulic oil) must be checked and refilled if necessary!

4.1.1 Fuel level

- Open the lock of the engine cover (1), open engine cover by pulling the release lever (2) and tip the engine cover backwards.
- You can check the fuel level visually, because the tank is transparent.
- With a full tank you can work approx. 10-12 hours.

4.1.2 Motor-oil level

- Installation machine VM-301 has to stand on even, levelled ground.
- Open the lock of the engine cover, open engine cover by using handle and tip the engine cover backwards.
- Pull the oil dip stick (1) out
- Oil level must be between the two marks
- If oil is missing fill oil into the oil filler (2).
- If there is too much oil drain the oil out through the oil drain screw on the bottom of the engine.

4.1.3 Hydraulic-oil level

- The installation machine VM-301 must stand of even and levelled ground to check the hydraulic oil.
- The lifting arm must be completely lowered down.
- The oil level must be in the middle of the inspection windows (3).

4.1.4 Cooling-water level

- The installation machine VM-301-PAVERMAX has to be on even levelled ground
- Open the engine cover as described above. By all means read the safety instructions in the Kubota engine manual carefully.
- Remove cover (7) on the water cooler (**Caution when engine is hot!**)
- Cooling water has to cover cooling fins. If not fill only anti freeze to reach this level.
- The installation machine must stand on absolutely level ground.

4.1.5 Main switch

- Before starting the VM-301-PAVERMAX put in the main switch (8)
- The main switch is below the engine cover on the right hand side.

4.1.6 Accelerator

- Lever of the accelerator (9) must stay in position by the friction of the spring washers
- To adjust the leaver of the accelerator the stop nut on the inside of the leaver must be tightened by a key size 13.

(9)

4.1.7 Control displays

Oil pressure control	The oil control light (12) has to be illuminated when the ignition (13) is on step I. The light must not be illuminated when the motor is running.
Battery control	The battery control light (14) has to be illuminated when the ignition (13) is on step 1. The light must not be illuminated when the motor is running.
Temperature control	If the water temperature control display (15) is in the red section, the air filter has to be cleaned or renewed. The cooling fins of the radiator have to be cleaned with compressed air and the cooling water has to be checked. If the temperature control display is still in the red section please contact a qualified workshop.
Pre-heat	Turn ignition to step II until the pre-heat control display (17) is illuminated After a short time (approx. 25 sec.) the pre-heat control display has to stop the illumination. This means that the engine can be started now by turning the ignition to step III
Fuse box	The fuse box is behind the covering of the control displays. For changing fuses remove the fixing bolts at the control-displays covering.
Horn/Reset – driving (safety seat switch)	Button for horn / reset button: Press reset button each time for the driving, when the machine will be started and when the driving was stopped caused by the standing up of the diver from the driver´s seat (triggered by the seat switch). **The reset button only works, when the driver is sitting on the s seat.**

1. hour counter
2. 2temperature display (cooling water)
3. oil pressure control lamp
4. battery indicator light
5. preheating control
6. ignition
7. fuse box
8. horn / reset driving
9. rotating beacon
10. light

4.2 Starting the engine

- Vor dem Starten des Motors müssen die täglichen Kontrollen durchgeführt werden
- Hauptschalter einstecken (nach Arbeitsschluss immer abziehen, Diebstahlschutz!)

The driver must be sit on the driver´s seat and the seat belt must be worn.

- Pull handbrake.
- Insert the ignition key in the ignition lock
- Turn the ignition key to stage I and check whether the indicator lights are working
- Turn the ignition key to stage II until the preheating indicator lamp goes out
- Turn ignition key to stage III => engine starts!
- Set the throttle lever to half throttle so that sufficient hydraulic pressure is built up to operate the implements.

- **Press the reset button (button for horn).**
  Horn sounds (once), to warn people standing nearby the machine, that the machine will be drive off soon.
- To stop the engine turn the ignition key to step 0.

Do not release the handbrake (on the left-hand side of the driver's seat) until the driver is seated in the driver's seat. To do this, press the button on the handbrake to release the handbrake.

When the driver leaves the driver's seat, the hand brake must be applied again!

- To stop the engine always set the ignition lock to level 0!

- Press reset button each time for the driving, when the machine will be started and when the driving was stopped caused by the standing up of the diver from the driver´s seat (triggered by the seat switch).

The reset button only works, when the driver is sitting on the s seat.

4.3 Driving with the installation machine

Driving backwards with the laying machine, take care of the **„blind angle“,** otherwise danger of accident or danger to life.

When leaving the laying machine, the attachment (e.g. HVZ) must be placed on the ground, the handbrake applied and the motor switched off!

Driving on a **hillside** (slope)observe following points:

- Lower the lifting arm with attached device (e.g. HVZ-uni) with or without load as far as possible.
- Drive very carefully and slowly (slow walking speed).
- It is not allowed to decelerate in an abrupt way (by switching the dring direction with the foot pedal)! **Tilting danger!** (danger of accident and danger to life)!!!

Emergency situations: If the machine is in danger of **tilting**, immediately lower down the lifting arm!

4.4 Adjusting the driver's seat

Adjust the adjustable driver's seat according to body height and weight:

- - Lever (1) (bottom right) for seat forward and back
- - 3-fold height adjustment: pull seat all the way up ↑
- - Lever (2) (rear left) for backrest forward and back
- - for body weight adjustment (scale) turn the rotary handle (3) (front bottom centre) to the left or right.

4.5 Control elements

- Starting the engine
- Do not release the handbrake until the driver is in the driver's seat. When the driver leaves the driver's seat, the handbrake must be applied!
- The right hand control pedal is for the hydrostatic drive. This allows stepless forward and reverse driving.
  The control pedal must never be confused with the accelerator pedal of a motor vehicle (car)!
- Tilting the operating pedal forwards: machine moves forwards
- Tilt the operating pedal backwards: Machine moves backwards

Forward and reverse movement with the right foot pedal.

The pedal must not be operated with the tips of your shoes only!

To be able to react quickly in **dangerous situations**, the shoe **must** be positioned completely on the operating pedal.

- The brake is applied by slowly moving the operating pedal to the 0 position.
- A strong braking is achieved by counteracting the operating pedal.
- The left-hand operating pedal is for lifting/lowering the jib.
- Tilting the operating pedal forwards: lowering the jib.
- Tilting the operating pedal backwards: lifting the jib.
- **Never operate the operating pedals jerkily or let them spring back, otherwise pressure jerks will occur in the forward and return flows which can damage the hydraulic motor!**
- With the mechanical cross control lever (figure 1A) or with the electronic joystick (figure 2A) the operation of the attachments is controlled. For example the opening and closing (see figure A) of a hydraulic laying clamp (HVZ).

Fig. 1A

VM-301 version (5150.0020) with mechanical cross control lever

Vacuum operation (only possible with electronic joystick):

- Press the blue button on the joystick.
- Lower the delivery arm downwards with the left foot pedal (Fig. B).
- Place the vacuum suction plate on the load (stone plate).
- Move extension arm upwards with left foot pedal (Fig. B).
- Move the load (stone slab) carefully to its destination.
- Lower the load (stone slab) (with left foot pedal (fig. B)).
- Place the load on the floor and move the joystick forward (vacuum is interrupted).
- **IMMEDIATELY** move the jib arm upwards again, otherwise the vacuum operation will be active again immediately after releasing the joystick (in middle position)!
- - Switch off vacuum Press the blue button on the joystick.

Fig. A

Fig. B

Fig. 2A

VM-301-KJ version (5150.0023) with electronic joystick

4.6 Attachment of additional equipment

Various attachments (e.g. HVZ) can be mounted on the holder.
Two separate oil circuits are available for the hydraulic supply.

5 Transport

5.1 Transporting the installation machine

No lifting gear is required to move the installation machine onto the trailer or onto the platform of a truck. The installation machine can be driven onto the platform.

Use safe drive-on planks! Note the different track widths at the front and rear!

The handbrake must be applied, the installation machine must still be secured against rolling and shifting in accordance with the regulations of the trade association!

Two **fastening eyes** are provided at the front and rear of the installation machine to secure it:

The steering of the machine must be locked before transport!

Locking the steering during transport:

- Remove the safety cotter pin (1)
- Remove the bolt (2)
- Turn the tension rod (3) onto the plate (4) so that the holes are aligned
- Insert bolt (2)
- Insert safety cotter pin (1)

Before the machine is unloaded, the steering lock must be removed again!

5.2 Lifting the machine with a crane

Under no circumstances may the fastening eyes be used as attachment points when lifting the machine!

For lifting the machine with a crane **only** the lifting eye may be used.

When the machine is suspended from the crane, all movements on the crane must be carried out with the utmost caution!

- **There must be no persons in the danger area!**
- **Let the machine swing as little as possible!**
- **Do not allow the machine or parts of the suspension to collide with other objects!**
- **All safety regulations for working with lifting equipment must be strictly adhered to!**

5.3 Towing the installation machine

A so-called bypass valve must be opened to tow the installation machine.
This allows towing without motor drive (e.g. in case of motor damage).

- Open the bonnet by pressing the release button (fig. A) and fold the bonnet backwards (fig. B).
- Operate the release lever for the driver's seat on the right rear side of the engine compartment (in the direction of travel) (fig. C and D). Then fold the driver's seat to the side (fig. E)
- Before the driver's seat can be folded to the side, the right rear window (in the direction of travel) must be removed, if present.
- The bypass screw is located on the hydrostat. Open the bypass screw **2 - 3 turns** with a suitable fork spanner (fig. F).
- Now the laying machine can be pulled/pushed onto the loading area without motor drive (only the wheels turn).

Use safe drive-on planks! Note the different track widths at the front and rear!

Before starting the engine again, ALWAYS retighten the bypass screw with a suitable open-end spanner!

6 Storage

If the installation machine is stored for a long period of time:

- Store the machine in a flat and dry place in a hall.
- When storing outdoors, place the laying machine on a wooden platform on a level and horizontal surface and cover it completely with a dark protective sheet.
- Pull hand brake!
- Use chocks or similar devices to prevent the laying machine from rolling away unintentionally.
- Protect the machine from direct sea air (risk of corrosion!)
- Retract the lifting cylinder.
- Clean and oil all components (joints) and the motor completely, or lubricate according to the lubrication plan.
- Disconnect battery.
- In the winter months fill in sufficient cooling water antifreeze and fill up with winter diesel.
- Place the attached laying tongs (HVZ) on the floor, place wooden beams under the gripping cheeks.
- Close the main clamping device on the laying clamp (HVZ).
- Open the side clamping at the laying clamp (HVZ).

7 Maintenance and care

7.1 maintenance

In order to guarantee perfect function, operational safety and service life of the laying machine, the maintenance work listed in the table below must be carried out after the specified intervals.

Only original spare parts may be used, otherwise the warranty expires.

All work may only be carried out with the laying machine stopped (apply handbrake) and the engine switched off! It must also be on a horizontal surface.
Unattended parking of the laying machine on inclined surfaces is not permitted.

When carrying out any work on attachments (e.g. HVZ-UNI), it must be ensured that the unit cannot close unintentionally. **Risk of injury**!!!

7.1.1 Mechanics

MAINTENANCE PERIOD	Work to be carried out
Initial inspection after 25 operating hours	• Check or retighten all fixing screws (may only be carried out by a qualified person).
Every 50 operating hours	• Retighten all fixing screws (make sure that the screws are retightened according to the valid tightening torques of the corresponding strength classes). • Check all existing safety elements (such as folding pins) for proper function and replace defective safety elements. → **1)** • Check all joints, guides, pins and sprockets, chains for proper function, readjust or replace if necessary. • Check gripper jaws (if present) for wear and clean, replace if necessary. • All existing guides and joints of moving parts or machine components must be greased / lubricated to reduce wear and for optimum movement sequences. • Lubricate all grease nipples (if present) with grease gun.
At least 1x per year **(shorten the inspection interval in case of harsh operating conditions)**	• Inspection of all suspension parts, as well as bolts and brackets. Inspection for cracks, wear, corrosion and functional safety by an expert.

1)

After 50 operating hours

- Retighten all 5 mounting nuts (M7) at the exhaust silencer → **18-20 Nm.**

Sequence for tightening torque: see marking ① - ⑥

7.1.2 Hydraulic

Service interval	Maintenance work
First inspection after 25 operating hours	• Control and tighten all hydraulic thread joints and connection. (The implementation is only allowed by an expert).
All 50 operating hours	• Tighten all hydraulic connections. • Check the hydraulic system for leaks. • Check the hydraulic oil filter, clean it if necessary (if available). • Check the hydraulic oil and replace it in accordance to the manufacturer information (recommended hydraulic oil: HLP 46 according to DIN 51524 – 51535). • Check the hydraulic hoses for breaks and abrasion. Damaged hydraulic hoses must be replaced (generally it is recommended to replace hydraulic hoses every 6 years). • **Only specified types of oil may be used!**

Regular Inspections (Please observe further instructions in the enclosed operating manual of the KUBOTA Diesel engine!)

To maintain efficient engine functions and to ensure long engine service life, inspections are required at scheduled intervals in accordance with the following table.

Warranty claim for this machine only apply for performance of the mandatory maintenance works (by an authorised specialist workshop)! After each completed performance of a maintenance interval the included form must be fill out, stamped, signed and send back to us immediately (via e-mail to service@probst-handling.de / via fax or post).

Nr.	**Description VM-301** (① → Order number see proof of maintenance booklet)	before each start-up	after first 50 hours	all 100 hours	all 200 hours	all 1000 hours	every year	all 2 years
1	Checking the level hydraulic oil if necessary refill	●						
2	Exchange engine oil (SAE 15W40 ~ 4 l)		●		●			
3	Exchange engine oil filter ①		●			●	●	
4	Exchange hydraulic oil (RANDO HLP 46 ~ 25 l)		●					
5	Checking hydraulic oil (RANDO HLP 46 ~ 25 l)		●			●	●	
6	Exchange hydraulic oil filter) ①		●	●			●	

7	Clean air filter (renew when strong pollution) ①		●	●			●	
8	Exchange air filter						●	
9	Clean fuel filter ① / ③		●	●				
10	Exchange fuel pre-filter ① / ③		●		●			
11	Checking the fuel pipe and clamp fitting		●		●		●	
12	Checking the fan belt tension (on fan wheel)		●	●				
13	Exchange fan belt (on fan wheel) ① / ④							
14	Checking the radiator hose and clamp fitting (if necessary renew)				●		●	
15	Remove sediments from fuel tank ④							
16	Checking the cooling ribs for pollution				●	●		
17	Checking the electric wiring for loose connections		●		●	●	●	
18	Checking the exhaust system and clamp fitting					●	●	
19	Recharge the battery (if necessary renew)					●	●	
20	Checking the cooling water level (if necessary refill)	●	●		●	●	●	
21	Exchange cooling water including antifreeze (~ 4 l)							●
22	Checking the antifreeze in cooling water (before each frost period)					●	●	
23	Checking the opening pressure of radiator cover lid				●	●		
24	Checking the jet opening pressure					●		
25	Checking the compression pressure					●		
26	Checking the hydraulic hoses on leakages (retighten connections)		● ②		●	●		
27	Checking the function of instruments and operating elements		●		●	●		
28	Checking the VM for defective, distorted construction units and abnormal noises		●		●	●		
29	Retighten all screws and nuts, replace missing screw connections		●		●	●		
30	Checking the tyre pressure (front 2,5 bar/36 psi, rear 2,2 bar/32 psi)		●		●	●		
31	Lubricate according to lubrication chart		●		●	●		
32	Check ball joint on strength (135 Nm)		●		●	●		
33	Check carrying construction units on cracks (axles, chassis, swiveljoint, steering rod)				●	●	●	
34	Retighten all wheel nuts (130 Nm)		●		●	●		
35	Checking the hand brake (if necessary readjust 3-4 teeth)		●		●	●		
36	Checking the wheel bearing and axle bearing (if necessary readjust)					●		
37	Check steering clearance (if necessary renew spherical head or tie rod ①					●		
38	Checking the dynamo machine					●		
39	Adjustment valve clearance of tilting lever (0,15 mm)					●		

To disconnect the electric system from the battery, the main switch must be activated at the VM-301-PAVERMAX at the right hand side. At about the same place, there is a lock to be pulled out to unlock the cover, where the seat is fixed to.

At welding the battery main switch must be switched off general. Otherwise the electronic could be damaged!

Daily check before starting: Engine oil level, coolant, antifreeze, mater level hydraulic fluid level, battery, "V" belt tension.

② and additionally exchange every 50 hours ③ exchange all 400 hours ④ exchange all 500 hours

7.2 Recharging the battery

To access the battery, the driver's seat must be folded to the side.

- Open the engine cover by pressing the release lever (fig. A) and fold the engine cover backwards (fig. B).
- -Operate the release lever for the driver's seat on the right rear side of the engine compartment (in the direction of travel) (fig. C and D). Then fold the driver's seat to the side (fig. E)
- Before the driver's seat can be folded away to the side, the right rear window (in the direction of travel) must be removed, if present.
- Carefully fold the driver's seat to the side to avoid the risk of injury.

7.3 Lubrication Chart

7.4 Trouble shooting

PROBLEM	CAUSE	REMEDY
Diesel engine fault		See diesel engine user manual
Motor runs, but the installation machine does not move	Seat switch is active	Press reset button (horn) 1 x
The throttle lever is loose	too little inherent friction, stop nut is loose	Tighten stop nut
The hand brake does not work	Brake pads worn out	Replace brake pads
	Hand brake cable loose	Adjusting the handbrake cable
Installation machine does not start	Main switch is not inserted	Plug in the main switch
	Fuse blown	Check fuses
	Battery defective	Check battery
	No fuel in the tank	Refuelling
	Preheating phase forgotten	Preheat, then start
Boom/jib cannot be lifted	Hydraulic system has leakage	Repair leakage
	Too little hydraulic pressure	Set the throttle lever to at least half throttle so that sufficient hydraulic pressure can be built up
		Check oil level

7.5 Repairs

Only persons with the appropriate knowledge and ability are allowed to repair the device.
Before the device is used again, it has to be checked by an expert.

7.6 Safety procedures

- It is the contractor's responsibility to ensure that the device is checked by an expert in periods of max. 1 year and all recognized errors are removed (→ see DGUV regulation 1-54 and DGUV norm 100-500).
- The corresponding legal regulations and the regulations of the declaration of conformity must be observed!
- The expert inspection can also be done by the manufacturer Probst GmbH.
  Contact us at: service@probst-handling.de
- We recommend affixing the inspection sticker "„Sachkundigenprüfung / Expert inspection" in a clearly visible place (order no.: 2904.0056+Tüv sticker with year number) after the inspection has been done.

The check by an expert must be proved!

Device	Year	Date	Expert	Company

7.7 Hints to the type plate

Type, serial-number and production year are very important for the identification of your device. If you need information to spare-parts, warranty or other specific details please refer to this information´s.

The maximum carrying capacity/working load limit (WLL) is the maximum load which can be handled with the device. **Do not exceed** this carrying capacity/working load limit (WLL).

If you use the device in combination with other lifting equipment (Crane, chain hoist, forklift truck, excavator) consider the deadweight of the device.

Example:

7.8 Hints to the renting/leasing of PROBST devices

With every renting/leasing of PROBST devices the original operating instructions must be included unconditionally (in deviation of the user´s country's language, the respective translations of the original operating instructions must be delivered additionally)!

Tragfähigkeit: 500 [kg]

Carrying Capacity: 500 [kg] / (1100 lbs.)

Installation Machine VM301 PAVERMAX

probst
the better solution

Bei Änderungen Rücksprache TB !

Gewicht: 912,4 kg

Schutzvermerk nach DIN 34 beachten!
Nachdruck nur mit unserer Genehmigung!

	Datum	Name
Erst.	17.1.2014	M.Kaltenbach
Gepr.		

Benennung
Verlegemaschine VM301
PAVERMAX
ohne Kabine, ohne HVZ-uni,mit Drehkopf GR10-2

WA:

Kunde:

Artikelnummer/Zeichnungsnummer
D51500020

Blatt 1 von 1

Zust. | Urspr. | Ers. f. | Ers. d.

probst
handling equipment

© all rights reserved conform to ISO 16016

		Datum	Name
	Erst.	5.2.2014	lukas.zannini
	Gepr.		

Benennung
Ausstattungspaket >Kabine mit Veglasung und Heizung<
für Verlegemaschine VM301

Artikelnummer/Zeichnungsnummer
E41500690

Blatt 1 von 1

Zust. | Urspr. | Ers. f. | Ers. d.

probst
the better solution

Bei Änderungen Rücksprache TB !

Gewicht: 8,1 kg

Schutzvermerk nach DIN 34 beachten!
Nachdruck nur mit unserer Genehmigung!

		Datum	Name
	Erst.	5.2.2014	lukas.zannini
	Gepr.		

Benennung
Fensterscheibe hinten links, vormontiert, für VM301
(mit Scheibe, Halter und Dichtungen)

WA:

Kunde:

Artikelnummer/Zeichnungsnummer
E41500715

Blatt 1 von 1

Zust. Urspr. EA000071-016 Ers. f. Ers. d.

probst handling equipment

© all rights reserved conform to ISO 16016

		Datum	Name
	Erst.	6.2.2014	lukas.zannini
	Gepr.	15.1.2018	M.Kaltenbach

Benennung
Türscheibenrahmen, LINKS, vormontiert, für VM301
(mit Scheibe, Schloßteile und Dichtungen)

Artikelnummer/Zeichnungsnummer
E41500711

Blatt 1 von 1

Zust. | Urspr. EA000071-017 | Ers. f. | Ers. d.

probst
the better solution

Bei Änderungen Rücksprache TB !

Gewicht: 18,1 kg

Schutzvermerk nach DIN 34 beachten!
Nachdruck nur mit unserer Genehmigung!

	Datum	Name
Erst.	17.2.2014	lukas.zannini
Gepr.		

Benennung
Frontscheibe, vormontiert, für VM301

(mit Halter, Montagematerial und Dichtungen)

WA:

Kunde:

Artikelnummer/Zeichnungsnummer
E41500713

Blatt 1 von 1

Zust. | Urspr. | Ers. f. | Ers. d.

probst handling equipment

© all rights reserved conform to ISO 16016

		Datum	Name
	Erst.	5.2.2014	lukas.zannini
	Gepr.	2.10.2019	R.Wolff

Benennung
Türscheibenrahmen, RECHTS, vormontiert, für VM301
(mit Scheibe, Schloßteile und Dichtungen)

Artikelnummer/Zeichnungsnummer
E41500712

Blatt 1 von 1

Zust. | Urspr. EA000071-018 | Ers. f. | Ers. d.

probst
the better solution

Bei Änderungen Rücksprache TB !

Gewicht: 8,1 kg

Schutzvermerk nach DIN 34 beachten!
Nachdruck nur mit unserer Genehmigung!

	Datum	Name
Erst.	6.2.2014	lukas.zannini
Gepr.		

Benennung
Fensterscheibe hinten rechts, vormontiert, für VM301
(mit Scheibe, Halter und Dichtungen)

WA:

Kunde:

Artikelnummer/Zeichnungsnummer
E41500716

Blatt 1 von 1

Zust. Urspr. EA000071-015 Ers. f. Ers. d.

VM-301 /VM-203 Ersatzteile/Spare Parts

Reparatursatz/Repair Set

Kreuzhebelventil/Joystick valve (41600008)

Rev.003

1	24100007 Kabelbinder / Cable fixer
2	21590011 Manschette Manschette (rubber cuff)
3	20040030 Senkkopfschraube (4x) countersunk head screw (4x)
4	22090021 Grundplatte / Base plate
5	21550132 O-Ring (2x) O-Ring seal (2x)
6	00000000 Blindstopfen / Dummy plug
7	20020066 Zylinderkopfschraube (3x) Cylinder head screw (3x)
8	21610007 Halter für Kugelgelenk Holder for ball and socket joint
9	00000000 Blindstopfen / Dummy plug
10	20450004 Federring (3x) Spring washer (3x)
11	21550017 O-Ring (4x) / O-Ring seal (4x)
12	21610006 Kugelgelenk (3x) Ball and socket joint (3x)
13	22090003 Betätigungsnocken Actuating cam
14	20100047 Schraubenmutter (3x) Screw nut (3x)
15	22090007 Haltenocken (2x) Holding cam (2x)

Probst GmbH
Gottlieb-Daimler-Straße 6
71729 Erdmannhausen, Germany

Telefon +49 7144 3309-0
Fax +49 7144 3309-50

www.probst-handling.de
info@probst-handling.de

Filterübersicht / Filter overview VM-301 Motor/Engine (D1105)	**Art.-Nr.**	**Hersteller & Bezeichnung** Manufacturer&Designation	
Motorölfilter **Engine oil filter**	26900019	Digöma - D105-BB-EC-1	
Kraftstofffilter(Vorfilter) **Fuel filter (prefilter)**	26900022	Digöma - KL 63 (LH1)	
Kraftstoff-Filter-Einsatz **Fuedl filter cartridge**	26900018	Digöma - DGM/K03185	
Hydraulik-Ölfilter-Einsatz **Hydraulic filter cartridge**	26900011	Digöma - DGM/H 2301	
Luftfilter-Einsatz **Air filter cartridge**	26900020	Digöma - 4510057104	
Belüftungsfilter **Aeration filter**	26900002	Fritz Stiefel GmbH	
VM203: Hydrauliköl-Saugfilter (lang) **Hydraulic suction filter (long)** **VM204: Hydrauliköl-Saugfilter (kurz)** **Hydraulic suction filter (short)**	26900014 26900010	Argo – AS 040-01K Argo – 0 007 002	
Hydrauliköl-Einbausaugfilter **Hydraulic assembly suctionn filter**	26900007	Argo – ES 074-6120	
Luft-Filter-Einsatz **Air filter cartridge**	25000019	ELSÄSSER – CF 100	
Kraftstoff-Filter **Fuel filter**	26900017	ELSÄSSER – C1112	

Ersatzteile/Spare parts: Filter VM-301 PAVERMAX
51500020 / 51500023

Ersatzteile/Spare parts: Filter VM-301 PAVERMAX
51500020 / 51500023

Ersatzteile / Spare Parts VM-301-PAVERMAX

VM-301-PAVERMAX (5150.0020 / 5150.0022)

VM-301-k-PAVERMAX (5150.0021 / 5150.0023)

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

aktuelles Bild fehlt noch siehe → hier Bsp. Bild von VM-203

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

41500211
41500209
24200001
41500019

00000000
21990002

Ersatzteile / Spare Parts VM-301-PAVERMAX

Ersatzteile / Spare Parts VM-301-PAVERMAX

AS51500020+0023
VM-301(-KJ)-PAVERMAX

probst handling equipment

Für Kunde und Service, A-Zng für Montage siehe A51500020+23

29040243 (DE/GB)
29040314 (DE/FR)

29040623
Gilt für 51500023

29040616
Gilt für 51500020

29040441

29040056

29040681
(wenn zutreffend)

Einige der Abbildungen sind möglicherweise optionales Zubehör des Gerätes/Some of pictures may be optional equipment of the device.

AS51500020+0023
VM-301(-KJ)-PAVERMAX

probst handling equipment

Für Kunde und Service, A-Zng für Montage siehe A51500020+23

Operating Instructions for Paver Max VM-301 / VM-301-K

I General

1. Maximum weight of the paving stones:
   - without counterbalance: 320 kg (705 lbs) → VM-301 / 380 kg (840 lbs) → VM-301-K
   - with counterbalance: 380 kg (840 lbs) → VM-301 / 440 kg (970 lbs) → VM-301-K
2. Driving speed shall not exceed walking speed (3,5 mph),
   - when the jib arm is lifted more than 50 cm (20 inch) above the ground,
   - when the VM-301-PAVERMAX is on s more than 10 degree slant,
   - when no equipment (e.g. HVZ) is attached.
3. Driving speed around curves and uneven terrain is not to exceed 7 km/h (4,3 mph), about 1/3 of max. speed.
4. Caution do not:
   - open the hood while the engine is running,
   - work on the electric system without disconnecting the battery,
   - leave the machine the motor running,
   - go near or under a suspended load.
5. To adjust the height of the driver's seat just lift the seat up by hand a little bit. It will lock automatically in three positions. Reaching the top position it will automatically go down to the lowest position.
6. Warming-up-time with half throttle before doing any driving movements:
   Temperature more than 10°C (41°F): 5 Min.
   Temperature less than 10°C (50°F): 10 Min.

II Operating the hydraulic installation clamp HVZ/HVZ-UNI

1. Position the open clamp over the stone package, lower the clamp until it lays flat on the top of the stone layer. The clamp fingers on the machine side should be should be touching the side of stones.
2. Closing the side clamps by moving the 4-way hydraulic control lever to the left. This lever is located to the right of the driver's seat.
3. Close the main clamps by moving the control lever to the rear until the oil pressure gauge on the installation clamp reads 150 bar.
4. Lift the installation clamp with the gripped stone layer for about ~ 10 cm (4").
5. Drive to the installation site.
6. Open the side clamps by moving the control lever outwards.
7. Position the stone layer against the installed pavers and open the main clamps by moving the control lever towards the front.
8. Pick up the installation clamp assembly and begin a new cycle.

Note the detailed operating instructions!

29040611

29040613 (DE)
29040614 (GB)
29040615 (FR)

Regelmäßige Wartung VM-301-PAVERMAX (siehe auch beiliegende Bedienungsanleitung von KUBOTA)

Um die Maschinenfunktionen aufrechtzuerhalten und eine lange Betriebsspanne des Motors zu gewährleisten, müssen die regelmäßigen Überprüfungen gemäß der unten stehenden Tabelle ausgeführt werden.

Garantieanspruch für dieses Gerät besteht nur bei Durchführung der vorgeschriebenen Wartungsarbeiten (durch eine autorisierte Fachwerkstatt)! Nach jeder erfolgten Durchführung eines Wartungsintervalls muss unverzüglich diese: Wartungsnachweis (mit Unterschrift u. Stempel) an uns übermittelt werden (per E-Mail an service@probst.eu / per Fax oder Post).

Nr.	Wartungsarbeiten (* Bestellnummer siehe Wartungsnachweis)	Intervallen 50 Std.	Alle 200 Std.	Alle 1000 Std.	Jedes Jahr
1	Auswechseln des Motorenöl (SAE 15W40 ~ 4 l)		●	●	●	
2	Auswechseln des Motorölfilter *		●	●	●	●
3	Auswechseln des Hydrauliköls (RANDO HLP 46 ~ 25 l)		●		●	●
4	Überprüfung Hydraulikstand ggf. nachfüllen (RANDO HLP 46 ~ 25 l)			●	●	
5	Auswechseln des Hydraulik-Filters *		●		●	●
6	Reinigen des Luftfilters (bei starker Verschmutzung erneuern) *		●	●	●	●
7	Auswechseln des Kraftstofffilters *		●		●	
8	Auswechseln des Kraftstoff-Vorfilters *		●	●	●	
9	Überprüfung des Kraftstoffrohrs und des Klemmbandes		●	●	●	●
10	Überprüfung des Batteriesäurestandes und oxidierte Anschlüsse		●	●	●	
11	Überprüfung Keilriemenspannung an Lüfterrad		●	●	●	
12	Austausch des Keilriemens an Lüfterrad *				●	
13	Überprüfung des Kühlerschlauches und des Klemmbandes ggf. erneuern			●	●	●
14	Entfernung der Ablagerungen aus dem Kraftstoffbehälter				●	
15	Überprüfung der Kühlrippen auf Verschmutzung			●	●	
16	Überprüfung der elektrischen Verkabelung auf lockere Anschlüsse		●	●	●	●
17	Überprüfung der Feuerungsgröße und des Klemmbandes				●	●
18	Nachladen der Batterie bei Bedarf wechseln				●	●
19	Überprüfung des Kühlwasserstandes ggf. nachfüllen		●	●	●	●
20	Austausch des Kühlwassers inklusiv Frostschutzmittel (~ 4 l)				●	●
21	Überprüfung des Frostschutzmittels im Kühlwasser (vor jeder Frosterperiode)				●	●
22	Überprüfung Öffnungsdruck des Kühlerverschlussdeckels			●	●	
23	Überprüfung des Düsenöffnungsdrucks				●	
24	Überprüfung des Kompressionsdrucks				●	
25	Überprüfung der Hydraulikschläuche auf Leckagen (Verbindungen nachziehen)		●	●	●	
26	Funktion der Instrumente und Bedienungseinrichtungen überprüfen		●	●	●	
27	VM auf schadhafte, deformierte Bauteile und abnormale Geräusche prüfen		●	●	●	
28	Alle Schrauben und Muttern nach zehen, fehlende Verschraubungen ersetzen		●	●	●	
29	Überprüfung des Reifendrucks (vorne 2,5 bar/36 psi, hinten 2,2 bar/32 psi)		●	●	●	
30	Abstellnieren laut Schmierplan		●	●	●	
31	Überprüfung Kugelgelenk auf Festigkeit (135 Nm)		●	●	●	
32	Überprüfung tragender Bauteile auf Risse			●	●	●
33	Alle Radschrauben nachziehen (130 Nm)		●	●	●	
34	Überprüfung der Handbremse (ggf. 3-4 nachstellen)			●	●	
35	Überprüfung des Radlagers u. Achsdrehlager ggf. nachstellen				●	
36	Überprüfung des Lenkungsspiels ggf. Kugelkopf oder Spurstange austauschen *				●	
37	Überprüfung der Lichtmaschine				●	
38	Einstellung Ventilspiel des Kipphebels (0,15 mm)				●	

Um das elektrische System von der Batterie abzuschalten, muss der Hauptschalter bei der VM-301-PAVERMAX an der rechten Seite des Motors unter der Motorhaube betätigt werden.
Fest an der gleichen Stelle ist noch ein Riegel, der gezogen werden muss, um die Sitzhaube zu entriegeln.
Bei Schweißarbeiten ist generell der Batterie-Hauptschalter abzuschalten, da sonst Schäden an der Elektronik entstehen können!
Sichtprüfung vor Inbetriebnahme: Keilriemenspannung. Motoröl. Hydrauliköl. Kühlwasser. Frostschutz. Batteriesäure. 29041.0620

29040610 (DE)
29040611 (GB)
29040612 (FR)

Einige der Abbildungen sind möglicherweise optionales Zubehör des Gerätes/Some of pictures may be optional equipment of the device.

AS51500020+0023
VM-301(-KJ)-PAVERMAX

probst handling equipment

Für Kunde und Service, A-Zng für Montage siehe A51500020+23

29040716

29040370

29040818

29040755

Einige der Abbildungen sind möglicherweise optionales Zubehör des Gerätes/Some of pictures may be optional equipment of the device.

AS51500020+0023
VM-301(-KJ)-PAVERMAX

probst handling equipment

Für Kunde und Service, A-Zng für Montage siehe A51500020+23

29040259

29040253

29040756

29040451

29040396

29040483

Auf beiden Seiten/on both sides

29040687

29040762
Auf beiden Seiten/
on both sides

Einige der Abbildungen sind möglicherweise optionales Zubehör des Gerätes/Some of pictures may be optional equipment of the device.

AS51500020+0023
VM-301(-KJ)-PAVERMAX

probst handling equipment

Für Kunde und Service, A-Zng für Montage siehe A51500020+23

29040551

29040485

29040260

29040450

29040267

Einige der Abbildungen sind möglicherweise optionales Zubehör des Gerätes/Some of pictures may be optional equipment of the device.

AS51500020+0023
VM-301(-KJ)-PAVERMAX

probst handling equipment

Für Kunde und Service, A-Zng für Montage siehe A51500020+23

29040759

29040760

29040666

29040220

Einige der Abbildungen sind möglicherweise optionales Zubehör des Gerätes/Some of pictures may be optional equipment of the device.

OPERATOR'S MANUAL

ENGLISH

KUBOTA DIESEL ENGINE

MODELS D905-E • V1205-E • V1505-E
D1005-E • V1205-TE • V1505-TE
D1105-E • V1305-E

D-2107

READ AND SAVE THIS BOOK

Kubota

ENGLISH

CONTENTS

⚠SAFE OPERATION ..... ⚠-1

SERVICING OF THE ENGINE 1

Operation Section

NAMES OF PARTS 2

PRE-OPERATION CHECK 3
- BREAK-IN 3
- DAILY CHECK 3

OPERATING THE ENGINE 4
- STARTING THE ENGINE (NORMAL) 4
- COLD WEATHER STARTING 5
- STOPPING THE ENGINE 6
- CHECKS DURING OPERATION 6
  - Radiator Cooling water (Coolant) 6
  - Oil pressure lamp 6
  - Fuel 7
  - Color of exhaust 7
  - Immediately stop the engine if; 7
- REVERSED ENGINE REVOLUTION AND REMEDIES 7
  - How to tell when the engine starts running backwards 7
  - Remedies 7

Maintenance Section

MAINTENANCE 8
- SERVICE INTERVALS 8

PERIODIC SERVICE 10
- FUEL 10
  - Fuel level check and refueling 10
  - Air bleeding the fuel system 11
  - Checking the fuel pipes 12
  - Cleaning the fuel filter pot 12
  - Fuel filter cartridge replacement 13
- ENGINE OIL 13
  - Checking oil level and adding engine oil 13
  - Changing engine oil 14
  - Replacing the oil filter cartridge 15
- RADIATOR 15
  - Checking coolant level, adding coolant 16
  - Changing coolant 17
  - Remedies for quick decrease of coolant 17
  - Checking radiator hoses and clamp 17
  - Precaution at overheating 17
  - Cleaning radiator core (outside) 17
  - Anti-freeze 18
  - Radiator cement 18
- AIR CLEANER 19
  - Evacuator valve 19
  - Dust indicator (optional) 19
  - For the air cleaner with a dust cup (optional) 20
- BATTERY 20
  - Battery charging 20
  - Direction for long term storage 21
- ELECTRIC WIRING 22
- FAN BELT 22
  - Adjusting Fan Belt Tension 22

CARRIAGE AND STORAGE 23
- CARRIAGE 23
- STORAGE 23

TROUBLESHOOTING 24

SPECIFICATIONS 26

WIRING DIAGRAMS 28

FOREWORD

You are now the proud owner of a KUBOTA Engine. This engine is a product of KUBOTA quality engineering and manufacturing. It is made of fine materials and under a rigid quality control system. It will give you long, satisfactory service. To obtain the best use of your engine, please read this manual carefully. It will help you become familiar with the operation of the engine and contains many helpful hints about engine maintenance. It is KUBOTA's policy to utilize as quickly as possible every advance in our research. The immediate use of new techniques in the manufacture of products may cause some small parts of this manual to be outdated. KUBOTA distributors and dealers will have the most up-to-date information. Please do not hesitate to consult with them.

⚠ SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.

⚠ **DANGER :**	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ **WARNING :**	Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.
⚠ **CAUTION:**	Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.
IMPORTANT :	Indicates that equipment or property damage could result if instructions are not followed.
NOTE :	Gives helpful information.

⚠ SAFE OPERATION

Careful operation is your best insurance against an accident. Read and understand this section carefully before operating the engine. All operators, no matter how much experience they may have had, should read this and other related manuals before operating the engine or any equipment attached to it. It is the owner's obligation to instruct all operators in safe operation.

Be sure to observe the following for safe operation.

OBSERVE SAFETY INSTRUCTIONS

- Read and understand carefully this "OPERATOR'S MANUAL" and "LABELS ON THE ENGINE" before attempting to start and operate the engine.
- Learn how to operate and work safely. Know your equipments and its limitations. Always keep the engine in good condition.
- Before allowing other people to use your engine, explain how to operate and have them read this manual before operation.
- DO NOT modify the engine by yourself. UNAUTHORIZED MODIFICATIONS to the engine may impair the function and/or safety and affect engine life.

F-8822

WEAR SAFETY CLOTHING

- DO NOT wear loose, torn or bulky clothing around the machine that may catch on working controls and projections causing personal injury.
- Use additional safety items, e.g. hard hat, safety protection, gloves, etc., as appropriate or required.
- DO NOT operate machine or any equipment attached to it while under alcohol, medication, or other drugs, or while fatigued.
- DO NOT wear radio or music headphones while operating engine.

B-1501 改

CHECK BEFORE OPERATION & STARTING THE ENGINE

- Be sure to check the engine before operation. If something is wrong with the engine, do not fail to repair it quickly.
- Keep all guards and shields in place before operating the engine. Replace any that are damaged or missing.
- Check to see if there is a safe distance from the engine before starting.
- Always keep the engine at least 3 feet (1 meter) away from buildings and other facilities.
- DO NOT allow children or livestock to approach the machine while the engine is running.
- DO NOT start the engine by shorting across starter terminals. The machine may start in gear and move.

B-1497

KEEP AROUND THE ENGINE CLEAN

- Be sure to stop the engine before cleaning.
- Keep the engine clean and free of accumulated dirt, grease and trash to avoid a fire. Store flammable fluids away from sparks and fire.
- DO NOT stop the engine without idling; Temperatures around the engine rise suddenly. Keep the engine idling for over about 5 minutes before stopping.

B-1500

SAFE HANDLING OF FUEL AND LUBRICANTS
—KEEP OFF FIRE—

- Always stop the engine before refueling or/and lubricating.
- DO NOT smoke or allow flames or sparks in your working area. Fuel is extremely flammable and explosive under certain conditions.
- Refuel at a well ventilated and open place. When fuel and lubricants are spilled, refuel after letting engine cool off.
- DO NOT mix gasoline or alcohol with diesel fuel. The mixture can cause a fire.

B-1499

EXHAUST GASES & FIRE PREVENTION

- Engine exhaust fumes can be very harmful if allowed to accumulate. Be sure to run the engine in a well ventilated place and where there are no people or livestock near the engine.
- The exhaust gas from the muffler is very hot. To prevent a fire, do not expose dry grass, mowed grass, oil and any other combustible materials to exhaust gas. Also, keep the engine and muffler clean all the time.
- To avoid a fire, be alert for leaks of flammables from hoses and lines. Be sure to check for leaks from hoses or pipes, such as fuel and hydraulic by following the maintenance check list.
- To avoid a fire, do not short across power cables and wires. Check to see that all power cables and wirings are in good condition. Keep all power connections clean. Bare wire or frayed insulation can cause a dangerous electrical shock and personal injury.

F-8842

ESCAPING FLUID

- Relieve all pressure in the air, the oil and the cooling systems before any lines, fittings or related items are removed or disconnected.
- Be alert for possible pressure when disconnecting any device from a system that utilizes pressure. DO NOT check for pressure leaks with your hand. High pressure oil or fuel can cause personal injury.
- Escaping hydraulic fluid under pressure has sufficient force to penetrate skin causing serious personal injury.
- Fluid escaping from pinholes may be invisible. Use a piece of cardbord or wood to search for suspected leaks: do not use hands and body. Use safety goggles or other eye protection when checking for leaks.
- If injured by escaping fluid, see a medical doctor immediately. This fluid can produce gangrene or severe allergic reaction.

F-8847

F-2359

CAUTIONS AGAINST BURNS & BATTERY EXPLOSION

- To avoid burns, be alert for hot components, e.g. muffler, muffler cover, radiator, pipings, engine body, coolants, engine oil, etc. during operation and just after the engine has been shut off.
- DO NOT remove the radiator cap while the engine is running or immediately after stopping. Otherwise hot water will spout out from radiator. Wait for more than ten minutes to cool the radiator, before removing the cap.
- Make sure to shut the drain valve of coolant and oil to close pressure cap, to fasten pipe band before operating. If those parts are taken off, or loosen, it will result in serious personal injury.
- The battery presents an explosive hazard. When the battery is being activated, hydrogen and oxygen gases are extremely explosive.
- Do not use or charge the battery if its fluid level stands below the LOWER mark.
  Otherwise, the component parts may deteriorate earlier than expected, which may shorten the service life or cause an explosion. Immediately, add distilled water until the fluid level is between the UPPER and LOWER levels.
- Keep sparks and open flames away from the battery, especially when charging the battery. DO NOT strike a match near the battery.
- DO NOT check battery charge by placing a metal object across the terminals. Use a voltmeter or hydrometer.
- DO NOT charge battery if frozen. It can be explosive. When frozen, warm the battery up more than 16°C (61°F).

B-1502

B-1503

F-8836

HANDS AND BODY AWAY FROM THE ROTATING PARTS

- Be sure to stop the engine before checking or adjusting belt tension and cooling fan.
- Keep your hands and body away from the rotating parts, such as cooling fan, V-belt, fan drive V-belt pulley or flywheel causing personal injury.
- DO NOT run the engine with installed safety guards detached. Install safety guards securely during operation.

B-1505

B-1506

ANTI-FREEZE & DISPOSAL OF FLUIDS

- Anti-freeze contains poison. Wear rubber gloves to avoid personal injury. In case of contact with skin, wash it off immediately.
- DO NOT mix different types of Anti-freeze. The mixture can produce chemical reaction causing harmful substances. Use approved or genuine KUBOTA Anti-freeze.
- Be mindful of the environment and the ecology. Before draining any fluids, find out the correct way of disposing of them. Observe the relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters and batteries.
- When draining fluids from the engine, place some container underneath the engine body.
- DO NOT pour waste onto the grounds, down a drain, or into any water source.

B-1508

B-1507

CONDUCTING SAFETY CHECKS & MAINTENANCE

- When checking engine or servicing, place the engine on a wide and level ground. DO NOT work on anything that is supported ONLY by lift jacks or a hoist. Always use blocks or correct stands to support the engine before servicing.
- Detach the battery from the engine before conducting service. Put a "DO NOT OPERATE!" tag in the key switch to avoid accidental starting.
- To avoid sparks from an accidental short circuit always disconnect the battery's ground cable ⊖ first and connect it last.
- Be sure to stop the engine and remove the key when conducting daily and periodic maintenance, servicing and cleaning.
- Check or conduct maintenance after the engine, coolant, muffler, or muffler cover have been cooled off completely.
- Always use the appropriate tools and jig-fixture in good condition when performing any service work. Make sure you understand how to use them before service.
- Use ONLY correct engine barring techniques for manually rotating the engine. DO NOT attempt to rotate the engine by pulling or prying on the cooling fan and V-belt. This practise can cause serious personal injury or premature machine damage to the cooling fan.
- Replace fuel pipes and lubricant pipes with their hose clamps every 2 years or earlier whether they are damaged or not. They are made of rubber and are aged gradually.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Keep first aid kit and fire extinguisher handy at all times.

B-1509

WARNING AND CAUTION LABELS

① Part No. 9077-8724-1 or 16667-8724-1
(55mm in diameter) (37mm in diameter)

② Part No. TA040-4957-1
Stay clear of engine fan and fan belt.

CARE OF WARNING AND CAUTION LABELS

(1) Keep warning and caution labels clean and free from obstructing material.
(2) Clean warning and caution labels with soap and water, dry with a soft cloth.
(3) Replace damaged or missing warning and caution labels with new labels from your local KUBOTA dealer.
(4) If a component with warning and caution label(s) affixed is replaced with new part, make sure new label(s) is (are) attached in the same location(s) as the replaced component.
(5) Mount new warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

SERVICING OF THE ENGINE

Your dealer is interested in your new engine and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.
However, when in need of parts or major service, be sure to see your KUBOTA dealer.
For service, contact the KUBOTA Dealership from which you purchased your engine or your local KUBOTA dealer.
When in need of parts, be prepared to give your dealer the engine serial number.
Locate the serial number now and record them in the space provided.

	Type	Serial No.
Engine	_____	_____

Date of Purchase _____

Name of Dealer _____
(To be filled in by purchaser)

(1) Engine serial number

NAMES OF PARTS

(1) Intake manifold
(2) Speed control lever
(3) Engine stop lever
(4) Injection pump
(5) Fuel feed pump
(6) Cooling fan
(7) Fan drive pulley
(8) Oil filter cartridge
(9) Water drain cock
(10) Oil filler plug
(11) Exhaust manifold
(12) Alternator
(13) Starter
(14) Oil level gauge
(15) Oil pressure switch
(16) Flywheel
(17) Oil drain plug
(18) Oil pan
(19) Engine hook

PRE-OPERATION CHECK

BREAK-IN

During the engine break-in period, observe the following by all means:

1. Change engine oil and oil filter cartridge after the first 50 hours of operation (See "ENGINE OIL" in PERIODIC SERVICE Section).
2. When ambient temperature is low, operate the machine after the engine has been completely warmed up.

DAILY CHECK

To prevent trouble from occurring, it is important to know the conditions of the engine well. Check it before starting.

CAUTION
To avoid personal injury:

- **Be sure to install shields and safeguards attached to the engine when operating.**
- **Stop the engine at a flat and wide space when checking.**
- **Keep dust or fuel away from the battery, wiring, muffler and engine to prevent a fire. Check and clear them before operating everyday. Pay attention to the heat of the exhaust pipe or exhaust gas so that it can not ignite trash.**

Item		Ref. page
1. Parts which had trouble in previous operation.		–
2. By walking around the machine	(1) Oil or water leaks	13 to 18
	(2) Engine oil level and contamination	13, 14
	(3) Amount of fuel	10
	(4) Amount of coolant	15 to 18
	(5) Dust in air cleaner dust cup	19, 20
	(6) Damaged parts and loosened bolts and nuts	–
3. By inserting the key into the starter switch	(1) Proper functions of meters and pilot lamps; no stains on these parts	–
	(2) Proper functions of glow lamp timer	–
4. By starting the engine	(1) Color of exhaust fumes	7
	(2) Unusual engine noise	7

OPERATING THE ENGINE

STARTING THE ENGINE (NORMAL)

CAUTION
To avoid personal injury:
- **Do not allow children to approach the machine while the engine is running.**
- **Be sure to install the machine on which the engine is installed, on a flat place.**
- **Do not run the engine on gradients.**
- **Do not run the engine in an enclosed area. Exhaust gas can cause air pollution and exhaust gas poisoning.**
- **Keep your hands away from rotating parts (such as fan, pulley, belt, flywheel etc.) during operation.**
- **Do not operate the machine while under the influence of alcohol or drugs.**
- **Do not wear loose, torn or bulky clothing around the machine. It may catch on moving parts or controls, leading to the risk of accident. Use additional safety items, e.g. hard hat, safety boots or shoes, eye and hearing protection, gloves, etc., as appropriate or required.**
- **Do not wear radio or music headphones while operating engine.**
- **Check to see if it is safe around the engine before starting.**
- **Reinstall safeguards and shields securely and clear all maintenance tools when starting the engine after maintenance.**

IMPORTANT:
- Do not use ether or any starting fluid for starting the engine, or a severe damage will occur.
- When starting the engine after a long storage (of more than 3 months), first set the stop lever to the "STOP" position and then activate the starter for about 10 seconds to allow oil to reach every engine part.

1. Set the fuel lever to "ON".

(1) Fuel lever
(A) "ON"
(B) "OFF"

2. Place the engine stop lever in the "START" position.

3. Place the speed control lever at more than half "OPERATION".

(1) Speed control lever
(2) Engine stop lever
(A) "IDLING"
(B) "OPERATION"
(C) "START"
(D) "STOP"

4. Insert the key into the key switch and turn it "ON".

(A) "SWITCHED OFF"
(B) "OPERATION"
(C) "PREHEATING"
(D) "STARTING"

(A) "PREHEATING"
(B) "SWITCHED OFF"
(C) "OPERATION"
(D) "STARTING"

5. Turn the starter switch to the "PREHEATING" position to allow the glow lamp to redden.

6. Turn the key to the "STARTING" position and the engine should start. Release the key immediately when the engine starts.

7. Check to see that the oil pressure lamp and charge lamp are off. If the lamps are still on, immediately stop the engine, and determine the cause.
(See "CHECKS DURING OPERATION" in OPERATING THE ENGINE Section)

NOTE:
- If the oil pressure lamp should be still on, immediately stop the engine and check;
  —if there is enough engine oil.
  —if the engine oil has dirt in it.
  —if the wiring is faulty.

8. Warm up the engine at medium speed without load.

IMPORTANT:
- If the glow lamp should redden too quickly or too slowly, immediately ask your KUBOTA dealer to check and repair it.
- If the engine does not catch or start at 10 seconds after the starter switch is set at "STARTING", wait for another 30 seconds and then begin the engine starting sequence again. Do not allow the starter motor to run continuously for more than 20 seconds.

COLD WEATHER STARTING

If the ambient temperature is below* -5°C(23°F) and the engine is very cold, start it in the following manner:
Take steps (1) through (4) left.

5. Turn the key to "PREHEATING(GLOW)" position and keep it there for a certain period mentioned below.

IMPORTANT:
- Shown below are the standard preheating times for various temperatures. This operation, however, is not required, when the engine is warmed up.

Ambient temperature	Preheating time	
	Ordinary heat type	With glow lamp timer
Above 10°C (50°F)	NO NEED	See NOTE:
10°C (50°F) to −5°C (23°F)	Approx. 5 seconds	
*Below -5°C (23°F)	Approx. 10 seconds	
Limit of continuous use	20 seconds	

NOTE:
- In case of installing standard glow lamp, glow lamp goes off after about 6 seconds, when the starter switch key is turned to preheating position. However if necessary, keep the starter switch key at preheating position for longer time, according to the left recommendation.

6. Turn the key to "ST (STARTING)" position and the engine should start.
(If the engine fails to start after 10 seconds, turn off the key for 5 to 30 seconds. Then repeat steps (5) and (6).)

IMPORTANT:
- Do not allow the starter motor to run continuously for more than 20 seconds.

STOPPING THE ENGINE

1. **Return the speed control lever to low idle, and run the engine under idling conditions.**
2. **Set the engine stop lever to the "STOP" position.**
3. **With the starter switch placed at the "OFF" position, remove the key. (Be sure to return the engine stop lever to the "START" position to be ready for the next start.)**

(1) Speed control lever
(2) Engine stop lever

(A) "IDLING"
(B) "OPERATION"
(C) "START"
(D) "STOP"

IMPORTANT

- If equipped with a turbo-charger, allow the engine to idle for 5 minutes before shutting it off after a full load operation.
  Failure to do so may lead to turbo-charger trouble.

CHECKS DURING OPERATION

While running, make the following checks to see that all parts are working correctly.

■ Radiator Cooling water (Coolant)

WARNING
To avoid personal injury:

- **Do not remove radiator cap until coolant temperature is well below its boiling point. Then loosen cap slightly to the stop position, to relieve any pressure, before removing cap completely.**

When the engine overheats and hot coolant overflows through the radiator and hoses, stop the engine immediately and make the following checks to determine the cause of trouble:

Check item

1. Check to see if there is any coolant leak;
2. Check to see if there is any obstacle around the cooling air inlet or outlet;
3. Check to see if there is any dirt or dust between radiator fins and tube;
4. Check to see if the fan belt is too loose;
5. Check to see if radiator water pipe is clogged; and
6. Check to see if anti-freeze is mixed to a 50/50% mix of water and anti-freeze.

■ Oil pressure lamp

The lamp lights up to warn the operator that the engine oil pressure has dropped below the prescribed level. If this should happen during operation or should not go off even after the engine is accelerated more than 1000rpm, immediately stop the engine and check the following:

1. Engine oil level (See "ENGINE OIL" in MAINTENANCE Section).
2. Lubricant system (See "ENGINE OIL" in MAINTENANCE Section).

Fuel

CAUTION
To avoid personal injury:
- **Fluid escaping from pinholes may be invisible. Do not use hands to search for suspected leaks; Use a piece of cardbord or wood, instead. If injured by escaping fluid, see a medical doctor at once. This fluid can produce gangrene or a severe allergic reaction.**
- **Check any leaks from fuel pipes or fuel injection pipes. Use eye protection when checking for leaks.**

Be careful not to empty the fuel tank. Otherwise air may enter the fuel system, requiring fuel system bleeding. (See "FUEL" in MAINTENANCE Section).

Color of exhaust

While the engine is run within the rated output range:
- The color of exhaust remains colorless.
- If the output slightly exceeds the rated level, exhaust may become a little colored with the output level kept constant.
- If the engine is run continuously with dark exhaust emission, it may lead to trouble with the engine.

Immediately stop the engine if;

- The engine suddenly slow down or accelerates.
- Unusual noises suddenly appear.
- Exhaust fumes suddenly become very dark.
- The oil pressure lamp or the water temperature alarm lamp lights up.

REVERSED ENGINE REVOLUTION AND REMEDIES

CAUTION
To avoid personal injury:
- **Reversed engine operation can make the machine reverse and run it backwards. It may lead to serious trouble.**
- **Reversed engine operation may make exhaust gas gush out into the intake side and ignite the air cleaner; It could catch fire.**

Reversed engine revolution must be stopped immediately since engine oil circulation is cut quickly, leading to serious trouble.

How to tell when the engine starts running backwards

1. Lubricating oil pressure drops sharply. Oil pressure warning light, if used, will light.
2. Since the intake and exhaust sides are reversed, the sound of the engine changes, and exhaust gas will come out of the air cleaner.
3. A louder knocking sound will be heard when the engine starts running backwards.

Remedies

1. Immediately set the engine stop lever to the "STOP" position to stop the engine.
2. After stopping the engine, check the air cleaner, intake rubber tube and other parts and replace parts as needed.

MAINTENANCE

CAUTION
To avoid personal injury:

- **Be sure to conduct daily checks, periodic maintenance, refueling or cleaning on a level surface with the engine shut off and remove the key.**
- **Before allowing other people to use your engine, explain how to operate,and have them read this manual before operation.**
- **When cleaning any parts, do not use gasoline but use regular cleanser.**
- **Always use proper tools, that are in good condition. Make sure you understand how to use them, before performing any service work.**
- **When installing, be sure to tighten all bolts lest they should be loose. Tighten the bolts by the specified torque.**
- **Do not put any tools on the battery, or battery terminals may short out. Severe burns or fire could result. Detach the battery from the engine before maintenance.**
- **Do not touch muffler or exhaust pipes while they are hot; Severe burns could result.**

B-1509

B-1497

SERVICE INTERVALS

Observe the following for service and maintenance.
The lubricating oil change intervals listed in the table below are for Classes CF, CE and CD lubricating oils of API classification with a low-sulfur fuel in use. If the CF-4 or CG-4 lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals than recommended in the table below depending on the operating condition.

Interval	Item	Ref. Page		
Every 50 hours	Check of fuel pipes and clamp bands	12		@
See NOTE:	Change of engine oil	13, 14	◎	
Every 100 hours	Cleaning of air cleaner element	19, 20	*1	@
	Cleaning of fuel filter	12		
	Check of battery electrolyte level	20		
	Check of fan belt tightness	22		
Every 200 hours	Check of radiator hoses and clamp bands	17		
	Replacement of oil filter cartridge	15	◎	
	Check of intake air line	–		@

Interval	Item	Ref. Page		
Every 400 hours	Replacement of fuel filter cartridge	13		@
Every 500 hours	Removal of sediment in fuel tank	–		
	Cleaning of water jacket (radiator interior)	15 to 18		
	Replacement of fan belt	22		
Every one or two months	Recharging of battery	20		
Every year	Replacement of air cleaner element	19, 20	*2	@
	Check of damage in electric wiring and loose connections	–		
Every 800 hours	Check of valve clearance	24		
Every 1500 hours	Check of fuel injection nozzle injection pressure	–	*3	@
Every 3000 hours	Check of turbo charger	–	*3	@
	Check of injection pump	–	*3	@
	Check of fuel injection timer	–	*3	@
Every two years	Change of radiator coolant (L.L.C.)	17		
	Replacement of battery	20		
	Replacement of radiator hoses and clamp bands	18		
	Replacement of fuel pipes and clamp bands	12	*3	@
	Replacement of intake air line	–	*4	@

IMPORTANT

- The jobs indicated by ◎ must be done after the first 50 hours of operation.

*1 Air cleaner should be cleaned more often in dusty conditions than in normal conditions.
*2 After 6 times of cleaning.
*3 Consult your local KUBOTA Dealer for this service.
*4 Replace only if necessary.

- When the battery is used for less than 100 hours in a year, check its electrolyte yearly. (for refillable battery's only)
- The items listed above (@ marked) are registered as emission related critical parts by KUBOTA in the U.S. EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.
  Please see the Warranty Statement in detail.

NOTE:

- Changing interval of engine oil depends on the conditions below.

Models	Oil pan depth	
	Above 125 mm (4.9 in.)	※below 101 mm (4.0 in.)
All models	200 Hrs	150 Hrs
Initial	50 Hrs	

※ 101mm oil pan depth is optional.
※※ Standard replacement interval
- API service classification: above CD grade
- Ambient temperature: below 35 °C (95 °F)

NOTE:

Lubricating oil

With the emission control now in effect, the CF-4 and CG-4 lubricating oils have been developed for use of a low-sulfur fuel on on-road vehicle engines. When an off-road vehicle engine runs on a high-sulfur fuel, it is advisable to employ the CF, CD or CE lubricating oil with a high total base number. If the CF-4 or CG-4 lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals.

- **Lubricating oil recommended when a low-sulfur or high-sulfur fuel is employed.**

○ : Recommendable × : Not recommendable

Lubricating oil class \ Fuel	Low sulfur	High sulfur	Remarks
CF	○	○	TBN≧10
CF-4	○	×	
CG-4	○	×	

PERIODIC SERVICE

FUEL

Fuel is flammable and can be dangerous. You should handle fuel with care.

CAUTION
To avoid personal injury:

- **Do not mix gasoline or alcohol with diesel fuel. This mixture can cause an explosion.**
- **Be careful not to spill fuel during refueling. If fuel should spill, wipe it off at once, or it may cause a fire.**
- **Do not fail to stop the engine before refueling. Keep the engine away from the fire.**
- **Be sure to stop the engine while refueling or bleeding and when cleaning or changing fuel filter or fuel pipes. Do not smoke when working around the battery or when refueling.**
- **Check the above fuel systems at a well ventilated and wide place.**
- **When fuel and lubricant are spilled, refuel after letting the engine cool off.**
- **Always keep spilled fuel and lubricant away from engine.**

Fuel level check and refueling

1. Check to see that the fuel level is above the lower limit of the fuel level gauge.
2. If the fuel is too low, add fuel to the upper limit. Do not overfill.

No.2-D is a distillate fuel oil of lower volatility for engines in industrial and heavy mobile service.
(SAE J313 JUN87)
Grade of Diesel Fuel Oil According to ASTM D975

Flash Point, °C (°F)	Water and Sediment, volume %	Carbon Residue on, 10 percent Residuum, %	Ash, weight %
Min	Max	Max	Max
52 (125)	0.05	0.35	0.01

Distillation Temperatures, °C (°F) 90% Point		Viscosity Kinematic cSt or mm $^2/_s$ at 40°C		Viscosity Sayboit, SUS at 100°F		Sulfur, weight %	Copper strip Corrosion	Cetane Number
Min	Max	Min	Max	Min	Max	Max	Max	Min
282 (540)	338 (640)	1.9	4.1	32.6	40.1	0.50	No.3	40

The cetane number is required not to be less than 45.

IMPORTANT:

- Be sure to use a strainer when filling the fuel tank, or dirt or sand in the fuel may cause trouble in the fuel injection pump.
- For fuel, always use diesel fuel. You are required not to use alternative fuel, because its quality is unknown or it may be inferior in quality. Kerosene, which is very low in cetane rating, adversely affects the engine. Diesel fuel differs in grades depending on the temperature.
- Be careful not to let the fuel tank become empty, or air can enter the fuel system, necessitating bleeding before next engine start.

Air bleeding the fuel system

CAUTION
To avoid personal injury;
- **Do not bleed a hot engine as this could cause fuel to spill onto a hot exhaust manifold creating a danger of fire.**

Air bleeding of the fuel system is required if;
- after the fuel filter and pipes have been detached and refitted;
- after the fuel tank has become empty; or
- before the engine is to be used after a long storage.

[PROCEDURE Ⓐ] (gravity feed fuel tanks only)
1. Fill the fuel tank to the fullest extent. Open the fuel filter lever.
2. Loosen air vent plug of the fuel filter a few turns.
3. Screw back the plug when bubbles do not come up any more.
4. Open the air vent plug on top of the fuel injection pump.
5. Retighten the plug when bubbles do not come up any more.

(1) Air vent plug
(2) Injection pump
(3) Fuel filter

[PROCEDURE Ⓑ]
(fuel tanks lower than injection pump)
1. For fuel tanks that are lower than the injection pump. The fuel system must be pressurized by the fuel system electric fuel pump.
2. If an electric fuel pump is not used, you must manually actuate the pump by lever to bleed.
3. The primary fuel filter ③ must be on the pressure side of the pump if the fuel tank is lower than the injection pump.
4. To bleed follow (2) through (5) above.

IMPORTANT:
- Tighten air vent plug of the fuel injection pump except when bleeding, or it may stop the engine suddenly.

(1) Fuel tank below injection pump
(2) Pre-filter
(3) Electric or Mechanical pump
(4) Main Filter
(5) Injection pump

Checking the fuel pipes

CAUTION
To avoid personal injury:
- **Check or replace the fuel pipes after stopping the engine. Broken fuel pipes can cause fires.**

Check the fuel pipes every 50 hours of operation.
When if;
1. If the clamp band is loose, apply oil to the screw of the band, and tighten the band securely.
2. If the fuel pipes, made of rubber, become worn out, replace them and the clamp bands every two years.
3. If the fuel pipes and clamp bands are found worn or damaged before two years'time, replace or repair them at once.
4. After replacement of the pipes and bands, air-bleed the fuel system.

IMPORTANT:
- When the fuel pipes are not installed, plug them at both ends with clean cloth or paper to prevent dirt from entering. Dirt in the pipes can cause fuel injection pump malfunction.

(1)Clamp band
(2)Fuel pipe

Cleaning the fuel filter pot

Every 100 hours of operation, clean the fuel filter in a clean place to prevent dust intrusion.

1. Close the fuel filter lever.

(1) Fuel filter lever *(A) "OFF"*
(2) Fuel filter pot *(B) "ON"*

2. Remove the top cap, and rinse the inside with diesel fuel.
3. Take out the element, and rinse it with diesel fuel.
4. After cleaning, reinstall the fuel filter, keeping out of dust and dirt.
5. Air-bleed the injection pump.

IMPORTANT:
- Entrance of dust and dirt can cause a mulfunction of the fuel injection pump and the injection nozzle. Wash the fuel filter cup periodically.

(1) O ring
(2) Filter element
(3) Spring
(4) Filter bowl
(5) Screw ring

Fuel filter cartridge replacement

1. Replace the fuel filter cartridge with a new one every 400 operating hours.
2. Apply fuel oil thinly over the gasket and tighten the cartridge into position by hand-tightening only.
3. Finally, vent the air.

IMPORTANT:

- Replace the fuel filter cartridge periodically to prevent wear of the fuel injection pump plunger or the injection nozzle, due to dirt in the fuel.

(1) Fuel filter cartridge
(2) Air vent plug
(3) O ring
(4) Pipe joint
(5) Cover

ENGINE OIL

CAUTION
To avoid personal injury:

- **Be sure to stop the engine before checking and changing the engine oil and the oil filter cartidge.**
- **Do not touch muffler or exhaust pipes while they are hot; Severe burns could result. Always stop the engine and allow it to cool before conducting inspections, maintenance, or for a cleaning procedure.**
- **Contact with engine oil can damage your skin.**
  Put on gloves when using engine oil. If you come in contact with engine oil, wash it off immediately.

NOTE:

- Be sure to inspect the engine, locating it on a level place. If placed on gradients accurately, oil quantity may not be measured.

Checking oil level and adding engine oil

1. Check the engine oil level before starting or more than 5 minutes after stopping the engine.
2. Remove the oil level gauge, wipe it clean and reinstall it.
3. Take the oil level gauge out again, and check the oil level.

(1) Oil filler plug
(2) Oil level gauge
[Lower end of oil level gauge]
(A) Engine oil level within this range is proper.

4. If the oil level is too low, remove the oil filler plug, and add new oil to the prescribed level.
5. After adding oil, wait more than 5 minutes and check the oil level again. It takes some time for the oil to drain down to the oil pan.

Engine oil quantity

Model	Quantity
D905-E, D1005-E, D1105-E	5.1 L (1.35 U.S.gals.)
V1205-E, V1305-E, V1505-E	6.0 L (1.59 U.S.gals.)
V1205-TE, V1505-TE	6.7 L (1.77 U.S.gals.)

Oil quantities shown are for standard oil pans.

IMPORTANT:

- Engine oil should be MIL-L-2104C or have properties of API classification CD grades or higher.
  Change the type of engine oil according to the ambient temperature.

above 25°C (77°C)	SAE30	or	SAE10W-30 SAE10W-40
0 to 25°C (32 to 77°F)	SAE20	or	SAE10W-30 SAE10W-40
below 0°C (32°F)	SAE10W	or	SAE10W-30 SAE10W-40

- When using oil of different brands from the previous one, be sure to drain all the previous oil before adding the new engine oil.

Changing engine oil

CAUTION
To avoid personal injury:

- **Be sure to stop the engine before draining engine oil.**
- **When draining engine oil, place some container underneath the engine and dispose it according to local regulations.**
- **Do not drain oil after running the engine. Allow engine to cool down sufficiently.**

1. Change oil after the initial 50 hours of operation and every 200 hours thereafter.
2. Remove the drain plug at the bottom of the engine, and drain all the old oil. Drain oil will drain easier when the oil is warm.

(1) Oil drain plug

3. Add new engine oil up to the upper limit of the oil level gauge.

Replacing the oil filter cartridge

CAUTION
To avoid personal injury:
- **Be sure to stop the engine before changing the oil filter cartridge.**
- **Allow engine to cool down sufficiently, oil can be hot and cause burns.**

1. Replace the oil filter cartridge after the initial 50 hours of operation and every 200 hours thereafter.
2. Remove the old oil filter cartridge with a filter wrench.
3. Apply a film of oil to the gasket for the new cartridge.
4. Screw in the cartridge by hand. When the gasket contacts the seal surface, tighten the cartridge enough by hand. Because, if you tighten the cartridge with a wrench, it will be tightened too much.

(1) Oil filter cartridge
Remove with a filter wrench
(Tighten with your hand)

5. After the new cartridge has been replaced, the engine oil level normally decreases a little. Thus, run the engine for a while and check for oil leaks through the seal before checking the engine oil level. Add oil if necessary.

NOTE:
- Wipe off any oil sticking to the machine completely.

RADIATOR

Coolant will last for one day's work if filled all the way up before operation. Make it a rule to check the coolant level before every operation.

WARNING
To avoid personal injury:
- **Do not stop the engine suddenly, stop it after about 5 minutes of unloaded idling.**
- **Work only after letting the engine and radiator cool off completely (more than 30 minutes after it has been stopped).**
- **Do not remove the radiator cap while coolant is hot. When cool to the touch, rotate cap to the first stop to allow excess pressure to escape. Then remove cap completely.**
  If overheats should occur, steam may gush out from the radiator or reserve tank; Severe burns could result.

Checking coolant level, adding coolant

1. Remove the radiator cap after the engine has completely cooled, and check to see that coolant reaches the supply port.

(1) Radiator pressure cap

2. If the radiator is provided with a reserve tank, check the coolant level of the reserve tank. When it is between the "FULL" and "LOW" marks, the coolant will last for one day's work.

(1) Reserve tank *(A) "FULL"* *(B) "LOW"*

3. When the coolant level drops due to evaporation, add water only up to the full level.
4. Check to see that two drain cocks; one is at the crankcase side and the other is at the lower part of the radiator as figures below.

(1) Coolant drain cock

IMPORTANT:

- If the radiator cap has to be removed, follow the caution and securely retighten the cap.
- If coolant should be leak, consult your local KUBOTA dealer.
- Make sure that muddy or sea water does not enter the radiator.
- Use clean, fresh water and 50% anti-freeze to fill the recovery tank.
- Do not refill reserve tank with coolant over the "FULL" level mark.
- Be sure to close the radiator cap securely. If the cap is loose or improperly closed, coolant may leak out and decrease quickly.

Changing coolant

1. To drain coolant, always open both drain cocks and simultaneously open the radiator cap as well. With the radiator cap kept closed, a complete drain of water is impossible.
2. Remove the overflow pipe of the radiator pressure cap to drain the reserve tank.
3. Prescribed coolant volume (U.S.gallons)

Models	Quantity
D905-E, D1005-E, D1105-E	3.1 L (0.82 U.S.gals.)
V1205-E, V1305-E, V1505-E	4.0 L (1.06 U.S.gals.)
V1205-TE, V1505-TE	5.0 L (1.32 U.S.gals.)

NOTE:
- Coolant quantities shown are for standard radiators.

4. An improperly tightened radiator cap or a gap between the cap and the seat quickens loss of coolant.
5. Coolant (Radiator cleaner and anti-freeze)

Season	Coolant
Summer	Pure water and radiator cleaner
Winter (When temperature drops below 0°C (32°F)) or all season	Pure water and anti-freeze (See "Anti-freeze" in RADIATOR section)

Remedies for quick decrease of coolant

1. Check any dust and dirt between the radiator fins and tube. If any, remove them from the fins and the tube.
2. Check the tightness of the fan belt. If loose, tighten it securely.
3. Check the internal blockage in the radiator hose. If scale forms in the hose, clean with the scale inhibitor or its equivalent.

Checking radiator hoses and clamp

CAUTION
To avoid personal injury:
- **Be sure to check radiator hoses and hose clamps periodically. If radiator hose is damaged or coolant leaks, overheats or severe burns could occur.**

Check to see if radiator hoses are properly fixed every 200 hours of operation or 6 months, whichever comes first.

1. If hose clamps are loose or water leaks, tighten hose clamps securely.
2. Replace hoses and tighten hose clamps securely, if radiator hoses are swollen, hardened or cracked.

Replace hoses and hose clamps every 2 years, or earlier, if checked and found that hoses are swollen, hardened or cracked.

Precaution at overheating

Take the following actions in the event the coolant temperature is nearly or more than the boiling point, what is called "Overheating". Take these actions if the engine's alarm buzzer sounds or the alarm lamp lights up.

1. Stop the engine operation in a safe place and keep the engine unloaded idling.
2. Do not stop the engine suddenly. Stop it after about 5 minutes of unloaded idling.
3. If the engine stalls within about 5 minutes of running under no load, immediately leave and keep yourself away from the machine. Do not open the hood and any other part.
4. Keep yourself and others well away from the engine for further 10 minutes or while the steam blown out.
5. Checking that there gets no danger such as burn, get rid of the causes of overheating according to the manual, see "TROUBLESHOOTING" section. And then, start again the engine.

Cleaning radiator core (outside)

If dust is between the fin and tube, wash it away with running water.

IMPORTANT:
- Do not clean radiator with firm tools such as spatulas or screwdrivers. They may damage specified fin or tube. It can cause coolant leaks or decrease coolings performance.

Anti-freeze

CAUTION
To avoid personal injury:
- **When using anti-freeze, put on some protection such as rubber gloves.**
- **If should drink anti-freeze, throw up at once and take medical attention.**
- **When anti-freeze comes in contact with the skin or clothing, wash it off immediately.**
- **Do not mix different types of anti-freeze.**
- **Keep fire and children away from anti-freeze.**
- **Be mindful of the environment and ecology. Before draining any fluids, find out the correct way of disposing by checking with local codes.**
- **Also, observe the relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters and batteries.**

If it freezes, coolant can damage the cylinders and radiator. It is necessary, if the ambient temperature falls below 0°C (32°F), to remove coolant after operating or to add anti-freeze to it.

1. There are two types of anti-freeze available; use the permanent type (PT) for this engine.
2. Before adding anti-freeze for the first time, clean the radiator and engine interior by pouring fresh water, and draining it a few times.
3. The procedure for the mixing of water and anti-freeze differs according to the make of the anti-freeze and the ambient temperature. Refer to SAE J1034 standard, more specifically also to SAE J814c.
4. Mix the anti-freeze with water, and then fill into the radiator.

IMPORTANT:
- When the anti-freeze is mixed with water, the anti-freeze mixing ratio must be less than 50%.

Vol % Anti-freeze	Freezing Point		Boiling Point ※	
	°C	°F	°C	°F
40	−24	−12	106	222
50	−37	−34	108	226

※ At 1.013×10^5Pa (760mmHg) pressure (atmospheric). A higher boiling point is obtained by using a radiator pressure cap which permits the development of pressure within the cooling system.

NOTE:
- The above data represents industry standards that necessitate a minimum glycol content in the concentrated anti-freeze.
- When the coolant level drops due to evaporation, add water only to keep the anti-freeze mixing ratio less than 50%. In case of leakage, add anti-freeze and water in the specified mixing ratio before filling into the radiator.
- Anti-freeze absorbs moisture. Keep unused anti-freeze in a tightly sealed container.
- Do not use radiator cleaning agents when anti-freeze has been added to the coolant. (Anti-freeze contains an anti-corrosive agent, which will react with the radiator cleaning agent forming sludge which will affect the engine parts.)

Radiator cement

As the radiator is solidly constructed, there is little possibility of water leakage. Should this happen, however, radiator cement can easily fix it. If leakage is serious, contact your local KUBOTA dealer.

AIR CLEANER

Since the air cleaner employed on this engine is a dry type, never apply oil to it.

1. Open the evacuator valve once a week under ordinary conditions — or daily when used in a dusty place. This will get rid of large particles of dust and dirt.
2. Wipe the inside air cleaner clean with cloth if it is dirty or wet.
3. Avoid touching the element except when cleaning.
4. When dry dust adheres to the element, blow compressed air from the inside turning the element. Pressure of compressed air must be under 205kPa (2.1kgf/cm², 30psi).
5. When carbon or oil adheres to the element, soak the element in detergent for 15 minutes, then wash it several times in water, rinse with clean water and dry it naturally.
6. After the element is fully dried, inspect the inside of the element with a light, and check if it is damaged or not. (referring to the instructions on the label attached to the element.)
7. Replace the element every year or every 6 cleanings.

(1) Air cleaner body
(2) Element
(3) Wing bolt
(4) Evacuator valve

IMPORTANT:

- Make sure the wing bolt for the element is tight enough. If it is loose, dust and dirt may be sucked in, wearing down the cylinder liner and piston ring earlier, and thereby resulting in poor power output.
- Do not overservice the air cleaner element. Overservicing may cause dirt to enter the engine causing premature wear. Use the dust indicator as a guide on when to service.

■ Evacuator valve

Open the evacuator valve once a week under ordinary conditions - or daily when used in a dusty place - to get rid of large particles of dust and dirt.

■ Dust indicator (optional)

If the red signal on the dust indicator attached to the air cleaner is visible, the air cleaner has reached the service level.
Clean the element immediately, and reset the signal with the "RESET" button.

(1) "RESET" button
(2) Dust indicator
(3) Service level
(4) Signal

For the air cleaner with a dust cup (optional)

Remove and clean out the dust cup before it becomes half full with dust; usually once a week, or even every day if the working surroundings are dusty.
Install the air cleaner dust cup with "TOP" indicated on the rear of the cup in the up position. (However, it may be installed in either direction when the cover is placed at the lower part.)

IMPORTANT:

- If the dust cup is mounted incorrectly, dust or dirt does not collect in the cup, and direct attachment of the dust to the element will cause its lifetime to shorten to a great extent.

(1) Air cleaner body
(2) Element
(3) Wing bolt
(4) Dust cup
(5) "TOP" mark

BATTERY

Mishandling of the battery shortens the service life and adds to maintenance costs. Obtain the maximum performance and the longest life of the battery by handling properly and with care.

CAUTION
To avoid personal injury:

- **Be careful not to let the battery electrolyte contact your body or clothing.**
- **Wear eye protection and rubber gloves, since the diluted sulfuric acid solution burns skin and eats holes in clothing. Should this occur, immediately wash it off with running water and get medical attention.**

Engine starting will be more difficult, if the battery charge is low. Be careful to recharge it at an early occasion before it is too late.

Battery charging

DANGER
The battery comes in two types: Refillable, Non-refillable.

- **For using the refillable type battery, follow the instructions below.**
  Do not use or charge the battery if its fluid level stands below the LOWER (lower limit level) mark.
  Otherwise, the battery component parts may deteriorate earlier than expected, which may shorten the battery's service life or cause an explosion.
  Immediately, add distilled water until the battery's fluid level is between the UPPER and LOWER levels.

CAUTION
To avoid personal injury:

- **When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep open sparks and flames away from the battery at all times, especially when charging the battery.**
- **When charging the battery, remove the battery vent plugs.**
- **When disconnecting the cable from the battery, start with the negative terminal, and when connecting them, start with the positive terminal first.**
- **DO NOT check the battery charge by placing a metal object across the terminals. Use a voltmeter or hydrometer.**

1. Make sure each electrolyte level is to the bottom of vent wells, if necessary, add only distilled water in a well-ventilated place.

(1) Battery electrolyte level *(A) "TOO LOW"* *(B) "PROPER"* *(C) "TOO HIGH"*

2. To slow charge the battery, connect the charger positive terminal to the battery positive terminal, and the negative to the negative, then recharge in the standard fashion.
3. Quick recharging charges the battery at a high rate in a short time. This is only for emergencies.
4. Recharge the battery as early as possible, or battery life will be extremely shortened.
5. When exchanging an old battery for a new one, use a battery of equal specifications shown in page 26, 27.

(1) Thick cable red (+)
(2) Battery case
(3) Earth cable black (–)

(1) Plug *(A) "HIGHEST LEVEL"* *(B) "LOWEST LEVEL"*

IMPORTANT:

- Connect the charger positive terminal to the battery positive terminal, and negative to the negative.
- When disconnecting the cable from the battery, start with the negative terminal first.
  When connecting the cable to the battery, start with the positive terminal first.
  If reversed, the contact of tools on the battery may cause a short.

Direction for long term storage

1. When storing the engine for long periods of time, remove the battery, adjust the electrolyte to the proper level, and store in a dry and dark place.
2. The battery naturally discharges while it is stored. Recharge it once a month in summer, and every 2 months in winter.

ELECTRIC WIRING

CAUTION
To avoid personal injury:
Shorting of electric cable or wiring may cause a fire.
- **Check to see if electric cables and wiring are swollen, hardened or cracked.**
- **Keep dust and water away from all power connections.**
  Loose wiring terminal parts, make bad connections. Be sure to repair them before starting the engine.

Damaged wiring reduces the capacity of electrical parts. Change or repair damaged wiring immediately.

FAN BELT

■ Adjusting Fan Belt Tension

CAUTION
To avoid personal injury:
- **Be sure to stop the engine and remove the key before checking the belt tension.**
- **Be sure to reinstall the detached safety shield after maintenance or checking.**

Proper fan belt tension	A deflection of between 7 to 9 mm (0.28 to 0.35 in.) when the belt is pressed in the middle of the span.

1. Stop the engine and remove the key.
2. Apply moderate thumb pressure to belt between pulleys.
3. If tension is incorrect, loosen the alternator mounting bolts and, using a lever placed between the alternator and the engine block, pull the alternator out until the deflection of the belt falls within acceptable limits.
4. Replace fan belt if it is damaged.

IMPORTANT:
- If belt is loosen or damaged and the fan is damaged, it could result in overheats or insufficient charging. Correct or replace belt.

(1) Fan belt *(A) 7 to 9 mm (0.28 to 0.35 in.)*
(2) Bolt and nut *(under load of 10 kgf (22.1 lbs))*

CARRIAGE AND STORAGE

CARRIAGE

CAUTION
To avoid personal injury:
- **Fix the engine securely not to fall during operation.**
- **Do not stand near or under the engine while carrying it.**
- **The engine is heavy. In handling it, be very alert not to get your hands and body caught in.**

1. Use carrier such as crane when carrying the engine, or hurt your waist and yourself. Support the engine securely with rope not to fall while carrying it.
2. When lifting the engine, put the hook securely to metal fittings attached to the engine. Use strong hook and fittings enough to hang the engine.

STORAGE

CAUTION
To avoid personal injury:
- **Do not clean the machine with engine running.**
- **To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.**
- **When storing the engine just after running, let the engine cool off.**

Before storing the engine for more than a few months, remove any dirt on the machine, and:

1. Drain the coolant in the radiator. Open the cock at the bottom of the radiator, and remove the pressure cap to drain water completely. Leave the cock open. Hang a note written "No water" on the pressure cap. Since water may freeze when the temperature drops below 0°C (32°F), it is very important that no water is left in the machine.
2. Remove dirty engine oil, fill with new oil and run the engine for about 5 minutes to let the oil penetrate to all the parts.
3. Check all the bolts and nuts, and tighten if necessary.
4. Remove the battery from the engine, adjust the electrolyte level, and recharge it. Store the battery in a dry and dark place.
5. When the engine is not used for a long period of time, run it for about 5 minutes under no load every 2-3 months to keep it free from rust. If the engine is stored without any running, moisture in the air may condense into dew over the sliding parts of the engine, resulting in rust there.
6. If you forget to run the engine for longer than 5-6 months, apply enough engine oil to the valve guide and valve stem seal and make sure the valve works smoothly before starting the engine.
7. Store the engine in a flat place and remove the key from engine.
8. Do not store the engine in a place where has flammable materials such as dry grass or straw.
9. When covering the engine for storage, let engine and muffler cool off completely.
10. Operate the engine after checking and repairing damaged wirings or pipes, and clearing flammable materials carried by mouse.

TROUBLESHOOTING

If the engine does not function properly, use the following chart to identify and correct the cause.

When it is difficult to start the engine.

Cause	Countermeasures
Fuel is thick and doesn't flow.	* Check the fuel tank and fuel filter. Remove water, dirt and other impurlities. * As all fuel will be filtered by the filter, if there should be water or other foreign matters on the filter, clean the filter with kerosene.
Air or water mixed in fuel sistem	* If air is in the fuel filter or injection lines, the fuel pump will not work properly. To attain proper fuel injection pressure, check carefully for loosened fuel line coupling, loose cap nut, etc. * Loosen joint bolt atop fuel filter and air vent screws of fuel injection pump to eliminate all the air in the fuel system.
Thick carbon deposits on orifice of injection nozzle.	* This is caused when water or dirt is mixed in the fuel. Clean the nozzle injection piece, being careful not to damege the orifice. * Check to see if nozzle is working properly or not. If not, install a new nozzle.
Valve clearance is wrong.	* Adjust valve clearance to 0.145 to 0.185 mm (0.0057 to 0.0072 in.) when the engine is cold.
Leaking valves	* Grind valves.
Fuel injection timing is wrong.	* Adjust injection timing * The injection timing 0.3 rad (18°) before top dead center.
Engine oil becomes thick in cold weather and engine cranks slow.	* Change grade of oil according to the weater (temperature.)
Low compression	* Bad valve or excessive wear of rings, pistons and liners cause insufficient compression. Replace with new parts.
Battery is discharged and the engine will not crank.	* Charge battery. * In winter, always remove battery from machine, charge fully and keep indoors. Install in machine at time of use.

When output is insufficient

Cause	Countermeasures
Carbon stuck around orifice of nozzle piece	* Clean orifice and needle valve, being very careful not to damage the nozzle orifice. * Check nozzle to see if good. If not, replace with new parts.
Compression is insufficient. Leaking valves	* Bad valve and excessive wear of rings, pistons and liners cause insufficient compression. Replace with new parts. * Grind valves.
Fuel is insufficient.	* Check fuel system.
Overheating of moving parts	* Check lubricating oil system. * Check to see if lubricating oil filter is working properly. * Filter element deposited with impurities would cause poor lubrication. Change element. * Check the clearance of bearing are within factory specs. * Check injection timing.
Valve clearance is wrong.	* Adjust to proper valve clearance of 0.145 to 0.185 mm (0.0057 to 0.0072 in.) with engine cold.
Air cleaner is dirty	* Clean the element every 100 hours of operation.
Fuel injection pressure is wrong.	* Adjust to proper pressure. 13.7 Mpa (140kgf/cm^2, 1991psi)
Injection pump wear	* Do not use poor quality fuel as it will cause wear of the pump. Only use No.2-D diesel fuel. * Check the fuel injection pump element and delivery valve assembly and replace as necessary.

NOTE:

- If the cause of trouble can not be found, contact your KUBOTA dealer.

When engine suddenly stops

Cause	Countermeasures
Lack of fuel	* Check the fuel tank and refill the fuel, if necessary. * Also check the fuel system for air or leaks.
Bad nozzle	* If necessary, replace with a new nozzle.
Moving parts are overheated due to shortage of lubrication oil or improper lubrication.	* Check amount of engine oil with oil level gauge. * Check lubricating oil system. * At every 2 times of oil change, oil filter cartridge should be replaced. * Check to see if the engine bearing clearances is within factory specs.

NOTE:

- When the engine has suddenly stopped, decompress the engine by the decomp and turn the engine lightly by pulling on the fan belt. If the engine turns easily without abnormalities, the cause of the trouble is usually lack of fuel or bad nozzle.

When color of exhaust is especially bad

Cause	Countermeasures
Fuel governing device bad	* Contact dealer for repairs.
Fuel is of extremely poor is quality.	* Select good quality fuel Use No. 2-D diesel fuel only.
Nozzle is bad.	* If necessary, replace with new nozzle.
Combustion is incomplete.	* Cause is poor atomization, improper injection timing, etc. Because of trouble in injection system or in poor valve adjustment, or compression leakage, poor compression, etc. Check for the cause.

When engine must be stopped immediately

Cause	Countermeasures
Engine revolution suddenly decreases or increases.	* Check the adjustments, injection timing and the fuel system.
Unusual sound is heard suddenly.	* Check all moving parts carefully.
Color of exhaust suddenly turns dark.	* Check the fuel injection system, especially the fuel injection nozzle.
Bearing parts are overheated.	* Check the lubricating system.
Oil lamp lights up during operation.	* Check lubricating system. * Check , if the engine bearing clearances are within factory specs. * Check the function of the relieve valve in the lubricating system. * Check pressure switch. * Check filter base gasket.

When engine overheats

Cause	Countermeasures
Engine oil insufficient	* Check oil level. Replenish oil as required.
Fan belt broken or elongated	* Change belt or adjust belt tension.
Coolant insufficient	* Replenish coolant.
Excessive concentration of antifreeze	* Add water only or change to coolant with the specified mixing radio.
Radiator net or radiator fin clogged with dust	* Clean net or fin carefully.
Inside of radiator or coolant flow route corroded	* Clean or replace radiator and parts.
Fan or radiator or radiator cap defective	* Replace defective part.
Thermostat defective	* Check thermostat and replace if necessary.
Temperature gauge or sensor defective	* Check temperature with thermometer and replace if necessary.
Overload running	* Reduce load.
Head gasket defective or water leakage	* Replace parts.
Incorrect injection timing	* Adjust to proper timing.
Unsuitable fuel used	* Use the specified fuel.

SPECIFICATIONS

Model	D905-E		D1005-E		D1105-E
Type	Vertical, water-cooled, 4-cycle diesel engine				
Number of cylinders	3				
Bore and atroke mm (in.)	72×73.6 (2.83×2.90)		76×73.6 (2.99×2.90)		78×78.4 (3.07×3.09)
Total displacement cm^3 (cu. in)	898 (54.80)		1001 (61.08)		1123 (68.53)	
Combustion chamber	Spherical Type (E-TVCS)				
SAE NET Intermittent H.P. (SAEJ1349) kW/min^{-1}(rpm) (HP/min^{-1}(rpm))	14.9/3000 (20.0/3000)	17.5/3600 (23.5/3600)	16.8/3000 (22.5/3000)	19.4/3600 (26.0/3600)	18.7/3000 (25.0/3000)
SAE NET Continuous H.P. (SAEJ1349) kW/min^{-1}(rpm) (HP/min^{-1}(rpm))	12.7/3000 (17.0/3999)	15.3/3600 (20.5/3600)	14.2/3000 (19.0/3000)	16.8/3600 (22.5/3600)	16.4/3000 (22.0/3000)
Maximum bare speed min^{-1}(rpm)	3200	3800	3200	3800	3200
Minimum bare idling speed min^{-1}(rpm)	350～950				
Order of firing	1-2-3				
Direction of rotation	Counter-clockwise (viewed from flywheel side)				
Injection pump	Bosch MD Type Mini Pump				
Injection pressure	13.73 MPa (140kgf/cm^2, 1991 psi)				
Injection timing (Before T.D.C.)	19°	22°	19°	22°	19°
Compression ratio	23 : 1				
Fuel	Diesel Fuel No.2-D (ASTM D975)				
Lubricant (API classification)	above CD grade				
Dimensions (length×width×height) mm (in.)	497.8×396×608.7 (19.60×15.59×23.96)				
Dry weight kg (lbs.)	93 (205.0)				
Starting system	Cell starter (with glow plug)				
Starting motor	12 V, 1,0 kW				
Chargine generator	12V, 360 W				
Recommended battery capacity	12V, 65 AH, equivalent				

NOTE:

- Specifications are subject to change without notice.

V1205-E		V1205-TE		V1305-E		V1505-E	V1505-TE
Vertical, water-cooled, 4-cycle diesel engine							
4							
72×73.6 (2.83×2.90)				76×73.6 (2.99×2.90)		74×78.4 (3.07×3.09)	
1198 (73.11)				1335 (81.47)		1498 (91.41)	
Spherical Type (E-TVCS)							
20.1/3000 (27.0/3000)	23.5/3600 (31.5/3600)	25.4/3000 (34.0/3000)	29.8/3600 (40.0/3600)	22.4/3000 (30.0/3000)	25.7/3600 (34.5/3600)	25.0/3000 (33.5/3000)	31.3/3000 (42.0/3000)
17.2/3000 (23.0/3000)	20.1/3600 (27.0/3600)	21.6/3000 (29.0/3000)	25.7/3600 (34.5/3600)	19.0/3000 (25.5/3000)	22.4/3600 (30.0/3600)	21.6/3000 (29.0/3000)	27.2/3000 (36.5/3000)
3200	3800	3200	3800	3200	3800	3200	
800~900							
1-3-4-2							
Counter-clockwise (viewed from flywheel side)							
Bosch MD Type Mini Pump							
13,73 MPa (140kgf/cm^2, 1991 psi)							
19°	22°	19°	22°	19°	22°	19°	
23 : 1		22.5 : 1		23 : 1			22.5 : 1
Diesel Fuel No.2-D (ASTM D975)							
above CD grade							
583.8×396×613.7 (22.98×15.59×24.16)		591.3×439.2×613.7 (23.28×17.29×24.16)		583.8×396×613.7 (22.98×15.59×24.16)		591.3×396×613.7 (23.28×15.59×24.16)	591.3×439.2×631.3 (23.18×17.29×24.16)
110 (242.5)		114 (251.3)		110 (242.5)			114 (251.3)
Cell starter (with glow plug)							
12 V, 1.2 kW							
12V, 360 W							
12V, 70AH, equivalent							

WIRING DIAGRAMS

EC standard (Energize to run)

★ The parts boxed in ⋮.....⋮ are reference, NOT equiped for standard engine spec.
★ Non marked wire dia. is 0.8~1.25 mm².

KTC/SAE standard (Energize to run)

★ The parts boxed in ⋮.....⋮ are reference, NOT equiped for standard engine spec.
★ Non marked wire dia. is 0.8~1.25 mm².

ILLUSTRATED PARTS LIST
LISTE DES PIECES
STÜCK LISTE

KUBOTA

MODEL
MODELE
MODELL

D1105-E2B-EU-XL1

DIESEL ENGINE
MOTEUR DIESEL
DIESEL MOTOREN

Kubota

97898-61870
JAN.
JANVIER 2004
JAN.

NOTICE

This Parts List is for the following purposes.

1. When ordering parts, check with this Parts List to confirm the part number and the name of parts.
2. When making repairs, refer to the illustrations in this Parts List.
3. This Parts List is subject to change without notice.

NOTE

Utilisation de ce livre

1. A la commande d'une pièce, chercher la référence et le nom de la pièce.
2. Pour les rèparations, employez les illustrations.
3. La liste des pièces peut-être modifiè sans préavis.

ACHTUNG

Die vorliegende Stückliste ist zur Verwendung der folgenden Fälle aufzubewahren:

1. Bei Bestellung der Teile anhand dieser Liste die Kennzahl und die Bezeichnung der Teile feststellen.
2. Bei Reparatur auf die Figur in der Stückliste Bezug nehmen.
3. Änderungen dieser Bestandteilliste vorbehalten.

MODEL MODELE MODELL	CODE No. No. DE CODE CODE-Nr.
D1105-E2B-EU-XL1	1G905-21000

INSTRUCTIONS
INSTRUCTION
ERKLÄRUNG

① ⑪ ②

0102 PISTON AND CRANKSHAFT
PISTON ET VILEBREQUIN
KOLBEN UND KURBELWELLE

〔B〕 **B02-R**

⑩ → S.No. ; A:<=15000, B:14000 to 15000

⑤ ⑥ ⑦ ⑧ ⑥ ⑨

A:XXXX, B:XXXX

REF.No. POS.No BILD-Nr.	PART No. REFERENCE BESTELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15800-0000-0	PISTON	PISTON	KOLBEN	1 ~15000	1 ~15000		〔Example—1〕
010	15800-0000-2	PISTON	PISTON	KOLBEN	1 15001~	1 15001~		〔Exemple—1〕 〔Beispiel—1〕
020	15800-1000-0	PIN,PISTON	AXE DE PISTON	KOLBENBOLZEN	1 ~15000	1 ~15000		
020	15800-1000-2	PIN,PISTON	AXE DE PISTON	KOLBENBOLZEN	1 15001~	1 15001~		〔Example—2〕 〔Exemple—2〕 〔Beispiel—2〕
030	15800-2000-0	ASSY PISTON RING	ENS.JEU DE SEGMENTS	KOLBENRINGE	1 ~15000	1 ~15000		
030	15830-2000-0	ASSY PISTON RING	ENS.JEU DE SEGMENTS	KOLBENRINGE	1 15001~	1 15001~		〔Example—3〕 〔Exemple—3〕 〔Beispiel—3〕

① No. de Fig ..... Représente le No. de chaque nom de groupe.

② No.d'emplacement ... Représente le substitut du numérotage de page ordinaire. Les pages du côté gauche de la liste des pièces détachées sont numérotées en XXX-L.
Celles du côté droit sont numérotées en XXX-R. Les No. d'emplacement sont également utilisés dans l'index numérique à la fin de la liste des pièces détachées.

③ Composantes ..... Les composantes d'un ensemble sont identifiées par des parenthèses en pointillé.

④ Point ..... Indique que la pièce n'est pas à vendre toute seule.
Elle doit être commandée avec l'ensemble (POS.No. 060) qui la contient.

⑤ POS.No. ..... Des numéros de position sont donnés aux pièces représentées dans l'illustration.
Le référence d'une pièce de l'illustration peut être identifié en se reportant au même numéro de position indiqué dans la liste des pièces détachées.

⑥ Nom de type ..... Le nom du type de base est indiqué dans cette colonne. Les autres modèles sont indiqués dans la colonne des "REMARQUES" ⑨.

⑦ No. S. (No. de série) ..... Indique un groupe de numéros de série qui a subit des modifications de modèle.

⑧ I. C. (permutabilité) ..... Indique la permutabilité des pièces due à un changement dans le modèle.

Exemple-1 ..... indique que la nouvelle pièce peut remplacer la vieille, mais pas vice versa.
Le 15800-0000-0 s'applique au premier numéro de série jusqu'au No.S. 15000.
Le 15800-0000-2 s'applique au premier numéro de série et à ceux ci-dessus.

Exemple-2 ..... indique que la nouvelle et vielle pièces sont permutables.
Le 15800-1000-0 s'applique au premier numéro de série jusqu'au No.S. 15000.
Le 15800-1000-2 s'applique au No.S. 15001 et à ceuxci-dessus.

Exemple-3 ..... indique que la nouvelle piése et la vielle piéce sont interchangeable. Toules deux numéros 15800-2000-0 et 15830-2000-0 sont applicables a premier numéro de cette depuis.

⑨ REMARQUES 1 ... Cette colonne renferme d'autres noms de modèles applicables, les dimensions et autres éléments spéciaux.
Les symboles abréviations suivants sont utilisés dans l'ensemble de ce manuel.
29∗12.00-15 .... Dimension des pneus
sq.m ..... m^2 sq.mm .... mm^2
cu.m ..... m^3 cu.mm .... mm^3
D .... Diamètre L .... Longueur

⑩ REMARQUES 2 ... Les expressions suivantes sont utilisées dans la NOTE de chaque groupe.
Les numéros de série des machines sont indiqués de la manière suivante.
<=15000 ..... Numéros de série au-dessous de 15000.
>=15001 ..... Numéros de série au-dessus de 15001.
14000 to 15000 ..... Numéros de série 14000 á 15000.
Pour certaines modèles, les expressions ci-dessus peuvent aussi être utilisées dans la rubrique des REMARQUES 1 ⑨.

⑪ Spécifications (pour modèles soeurs) ..... Les types et les destinations des modèles soeurs sont indiqués. Ces indications sont données pour donner leurs pages relatives dans ce livre.

① Fig. No. ..... Represents No. corresponding to each group name.

② L. No. (location No.) ..... Substitute for conventional page numbering. Left-hand pages of the parts list are numbered in XXX-L, and the right-hand pages in XXX-R.
The location No. are also used in numerical index at the end of parts list.

③ Components ..... The components of an assembly are identified by a bracket of dotted lines.

④ Point ..... Indicates that the parts is not sold independently.
The assembly (Ref.No.060) containing the part needs to be ordered.

⑤ REF. No. ..... Reference numbers are assigned to parts in the illustration. The code number of a part in the illustration can be identified by referring to the same reference number in the parts list.

⑥ Model name ..... The name of the basic model is indicated in this column. Other applicable models are indicated on the "REMARKS" column ⑨.

⑦ S. No. (serial No.) ..... Indicates a group of serial numbers to which a design change is applied.

⑧ I. C. (interchangeability) ..... Indicates the interchangeability of parts due to design change.

Example-1 ..... ⇄ indicates that a new part can replace an old part, but not vice versa.
15800-0000-0 is applicable to the first serial number to S. No. 15000.
15800-0000-2 is applicable to the first serial number and above.

Example-2 ..... ⇄ indicates that the new and old parts are not interchangeable.
15800-1000-0 is applicable to the first serial number to S. No. 15000.
15800-1000-2 is applicable to S. No. 15001 and above.

Example-3 ..... ⇄ indicates that the new and old parts are interchangeable.
Both 15800-2000-0 and 15830-2000-0 are applicable to the first serial number and above.

⑨ REMARKS 1 ..... In this column, enter other applicable model names, dimensions and other special items.
The following symbols and abbreviations are used throughout this book.
29*12.00-15 .... Tire size
sq.m ..... m^2 sq.mm .... mm^2
cu.m ..... m^3 cu.mm .... mm^3
D .... Diameter L .... Length

⑩ REMARKS 2 ..... The following expressions are used in NOTE for each group.
Machines' serial numbers are indicated as follows.
<=15000 ..... Serial number below 15000.
>=15001 ..... Serial number above 15001.
14000 to 15000 ..... Serial number 14000 to 15000.
For some models, the above expressions may also be used REMARKS 1 ⑨.

⑪ Specifications (for sister models) ..... The types and destinations of sister models are indicated. These indications are given to tell their relevant pages in this book.

① Abb. Nr. ..... Diese Nummer bezieht sich auf die jeweilige Gruppenbezeichnung.

② Such-Nr. ..... Diese Nummer ersetzt die Seitenzahl. Die linken Seiten der Ersatzteilliste tragen die Nummern XXX-L, die rechten Seiten die Nummern XXX-R.
Die Such-Nr. wird ebenfalls im numerischen Index am Ende der Ersatzteilliste aufgeführt.

③ Einzelteile ..... Die Einzelteile einer Baugruppe sind durch eine Klammer aus gestrichelten Linien gekennzeichnet.

④ Punkte ..... Punktierung zeigt an, daß das entsprechende Teil nicht einzeln erhältlich ist. Die gesammte Baugruppe, die dieses Teil beinhaltet muß bestellt werden. (BILD-Nr. 060).

⑤ BILD-Nr. ..... Die Teile in den Abbildungen sind mit Bezugsnummern versehen. Die Kennummer eines der abgebildeten Teile erhalten Sie, wenn Sie unter der Bezugsnummer in der Ersatzteilliste nachsehen.

⑥ Typenbezeichnung ... In dieser Spalte wird die Bezeichnung des Grundtype aufgeführt. Weiter Modelle, die verwendet werden können werden unter "BEMERKUNGEN" in Spalte ⑨ angegeben.

⑦ S. Nr. ..... (Serien Nr.) Bezeichnet eine Gruppe Seriennummern, bei der Änderungen in der Ausführung vorgenommen wurden.

⑧ I. C. ..... (Austauschmöglichkeit) Bezeichnet die Austauschmöglichkeit der Teile untereinander bei einer Änderung in der Ausführung.

Beispiel- 1 ..... ⮌ besagt, daß das alte Teil durch ein neues ersetzt werden kann, nicht jedoch umgekehrt. 15800-0000-0 bezieht sich auf die erste Serien Nr.bis S.Nr. 15000.
15800-0000-2 bezieht sich auf die erste Serien Nr.und darüber.

Beispiel- 2 ..... ⮌ besagt, daß alte und neue Teile nicht austauschbar sind.
15800-1000-0 bezieht sich auf die erste Serien Nr.bis S.Nr. 15000.
15800-1000-2 bezieht sich auf S.Nr. 15001 und darüber.

Beispiel- 3 ..... ⮌ besagt, daß alte und neue Teile austauschbar sind.
Beiderseitig 15800-2000-0 und 15830-2000-0 bezieht sich auf die erste Serien Nr. und darüber.

⑨ BEMERKUNGEN 1 ... In dieser Spalte finden Sie weitere verwendbare Modellbezeichnungen, Abmessungen und andere besondere Angaben.
Die folgenden Symbole und Abkürzungen werden im Gesamettext des Buches benutzt :
29∗12.00-15 ..... Reifengrößen
sq.m ..... m^2 sq.mm ..... mm^2
cu.m ..... m^3 cu.mm ..... mm^3
D ..... Durchmesser L ..... Länge

⑩ BEMERKUNGEN 2 ... Die folgenden Ausdrücke werden in "NOTE" für jede Gruppe verwendet.
Seriennummern von Maschinen werden wie folgt angezeigt :
<=15000 ... Seriennummern unter 15000.
>= ..... Seriennummern über 15001.
14000 bis 15000 ..... Seriennummern 14000 bis 15000.
Bei einigen Modellen können die oben genannten Ausdrücke auch in "ANMERKUNGEN 1 ⑨" verwendet werden.

⑪ Spezifikationen (für Schwestermodelle) .... Die Typen und Bestimmungsorte der Schwestermodelle sind angegeben. Die Angaben beziehen sich auf die entsprechenden Seiten in diesen Handbuch.

SOMMAIRE

[D1105-E2B-EU-XL1]

0001 BLOC MOTEUR 1
0002 CARTER D'HUILE 2
0003 CULASSE 3
0004 CARTER DE DISTRIBUTION 4
0005 COUVRE-CULASSE 5
0006 FILTRE D'HUILE 6
0007 JAUGE D'HUILE ET GUIDE 7
0100 PALIERS DE VILEBREQUIN 8
0101 ARBRE A CAMES ET ARBRE DE PIGNON DE RALENTI 9
0102 PISTON ET VILEBREQUIN 10
0103 VOLANT MOTEUR 12
0105 ARBRE A CAMES DE CARBURANT ET ARBRE REGULATEUR 13
0180 DISPOSITIF DE RALENTISSEUR 14
0201 SOLENOIDE D'ARRET 15
0202 POMPE D'INJECTION 16
0204 REGULATEUR DE VITESSES 17
0205 PLAQUE DE VITESSE-CONTROLE 18
0206 PORTE-INJECTEUR ET BOUGIE DE PRECHAUFFAGE 19
0207 PORTE-INJECTEUR (PARTIES COMPOSANTES) 20
0300 FILTRE A CARBURANT 21
0302 POMPE D'ALIMENTATION (ELECTRIQUE) 22
0402 ALTERNATEUR 23
0403 ALTERNATEUR (PARTIES COMPOSANTES) 24
0404 DEMARREUR 25
0405 DEMARREUR (PARTIES COMPOSANTES) 26
0406 CONTACT A HUILE ET OBTURATEUR 27
0500 BRIDE A EAU ET THERMOSTAT 28
0501 POMPE A EAU 29
0503 TUYAU D'EAU 30
0504 VENTILATEUR 31
0600 SOUPAPES ET CULBUTEURS 32
0601 COLLECTEUR D'ADMISSION 33
0602 COLLECTEUR D'ECHAPPEMENT 34
0800 INDICATEUR DE PRECHAUFFAGE ET TEMPORISATEUR 35
0808 ACCESSOIRES ET PIECES DE SERVICE 36
0809 MANUEL DE L'UTILISATEUR 37

■ INDEX NUMERIQUE 38

CONTENTS

[D1105-E2B-EU-XL1]

0001 CRANKCASE 1
0002 OIL PAN 2
0003 CYLINDER HEAD 3
0004 GEAR CASE 4
0005 HEAD COVER 5
0006 OIL FILTER 6
0007 DIPSTICK AND GUIDE 7
0100 MAIN BEARING CASE 8
0101 CAMSHAFT AND IDLE GEAR SHAFT 9
0102 PISTON AND CRANKSHAFT 10
0103 FLYWHEEL 12
0105 FUEL CAMSHAFT AND GOVERNOR SHAFT 13
0180 IDLE APPARATUS 14
0201 STOP SOLENOID 15
0202 INJECTION PUMP 16
0204 GOVERNOR 17
0205 SPEED CONTROL PLATE 18
0206 NOZZLE HOLDER AND GLOW PLUG 19
0207 NOZZLE HOLDER (COMPONENT PARTS) 20
0300 FUEL FILTER 21
0302 FUEL PUMP (ELECTRICAL) 22
0402 ALTERNATOR AND PULLEY 23
0403 ALTERNATOR (COMPONENT PARTS) 24
0404 STARTER 25
0405 STARTER (COMPONENT PARTS) 26
0406 OIL SWITCH AND PLUG 27
0500 WATER FLANGE AND THERMOSTAT 28
0501 WATER PUMP 29
0503 WATER PIPE 30
0504 FAN 31
0600 VALVE AND ROCKER ARM 32
0601 INLET MANIFOLD 33
0602 EXHAUST MANIFOLD 34
0800 GLOW LAMP AND TIMER 35
0808 ACCESSORIES AND SERVICE PARTS 36
0809 OPERATOR'S MANUAL 37

■ NUMERICAL INDEX 38

INHALTSVERZEICHNIS

[D1105-E2B-EU-XL1]

0001 KURBELGEHAEUSE 1
0002 OELWANNE 2
0003 ZYLINDERKOPF 3
0004 GETRIEBEGEHAEUSE 4
0005 ZYLINDERKOPF-DECKEL 5
0006 OELFILTER 6
0007 OELMESSSTAB UND FUEHRUNG 7
0100 HAUPTLAGERGEHAEUSE 8
0101 NOCKENWELLE UND FREILAUFGETRIEBEWELLE 9
0102 KOLBEN UND KURBELWELLE 10
0103 SCHWUNGRAD 12
0105 KRAFTSTOFF-NOCKENWELLE UND ACHSE 13
0180 FREILAUFAPPARAT 14
0201 ABSTELLSOLENOID 15
0202 EINSPRITZENPUMPE 16
0204 REGLER 17
0205 GESCHWINDIGKEITS-REGLERPLATTE 18
0206 DUESENHALTER UND GLUEHKERZE 19
0207 DUESENHALTER (EINZEL-TEIL) 20
0300 KRAFTSTOFFILTER 21
0302 KRAFTSTOFFPUMPE (ELEKTRISCH) 22
0402 WECHSELSTROMMASCHINE 23
0403 WECHSELSTROMMASCHINE (EINZEL-TEIL) 24
0404 ANLASSER 25
0405 ANLASSER (EINZEL-TEIL) 26
0406 OELSCHALTER UND VERSCHILUSSSTOPFEN 27
0500 WASSERFLANSCH UND THERMOSTAT 28
0501 WASSERPUMPE 29
0503 WASSERROHR 30
0504 VENTILATOR 31
0600 VENTIL UND KIPPENARM 32
0601 ANSAUGENLEITUNG 33
0602 AUSPUFFRUEMMER 34
0800 GLUEHLAMPE UND ZEITMESSER 35
0808 ZUBEHOER UND BEDIENUNG-TEIL 36
0809 HANDHABUNG-GEBRAUCHSANWEISUNG 37

■ NUMERISCHEN INDEX 38

0001 CRANKCASE
BLOC MOTEUR
KURBELGEHAEUSE

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	1G662-0101-0	COMP. CRANKCASE	BLOC MOTEUR COMPLET	KOMP. KURBELGEHAEUSE	1	-		
020	15451-9627-0	CAP, SEALING	PASTILLE	STEPSEL, ABDICHTU	4	-		
030	15221-0349-0	CAP, SEALING	PASTILLE	STEPSEL, ABDICHTU	1	-		
040	15261-9601-0	PLUG	BOUCHON	STOPFEN	3	-		
050	16683-9602-0	PLUG	BOUCHON	STOPFEN	1	-		
060	16241-9601-0	PLUG	BOUCHON	STOPFEN	3	-		
070	15521-9602-0	PLUG	BOUCHON	STOPFEN	2	-		
080	17391-9616-0	PLUG, EXPANSION	BOUCHON EXPANSIBLE	STOEPSEL, AUSDEHNUNG	3	-		
090	16271-9616-0	PLUG, EXPANSION	BOUCHON EXPANSIBLE	STOEPSEL, AUSDEHNUNG	1	-		
100	05012-00508	PIN, STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	2	-		
110	05012-00814	PIN, STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	2	-		
120	16221-9452-0	PIN, STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	2	-		
130	15231-3396-0	PIN, PIPE	GICLEUR	ROHRSTIFT	2	-		
140	16241-3365-0	PIN, PIPE	GICLEUR	ROHRSTIFT	1	-		
150	16241-9626-2	PLUG, FUEL CAMSHAFT	BOUCHON	STOPFEN	1	-		
160	16261-5628-0	PIN, START SPRING	GOUPILLE DU RESSORT	STARTFEDERSTIFT	1	-		
170	16241-2406-0	COMP SHAFT, IDLE	COMP. ARBRE D'INTERM.	KOMP. FREILAUFWELLE	1	-		
175	15521-9361-0	SCREW, SET	VIS D'ARRET	ANSCHLAGSCHRAUBE	1	-		
180	16271-5535-0	BUSH, GOVERNOR GEAR	BAGUE DE REG. PIGNON	BUCHSE	1	-		
190	15221-3361-0	PLUG	BOUCHON	STOPFEN	1	-		
200	15021-3366-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
210	15221-3370-0	O RING	JOINT TORIQUE	O RING	1	-		
220	15841-7302-0	ASSY COCK, DRAIN	ENS. ROBINET VIDANGE	GRP. ABLASSHAHN	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0002 OIL PAN / CARTER D'HUILE / OELWANNE

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16613-0150-0	COMP.OIL PAN	CARTER D'HUILE COMP.	KOMP.OELWANNE	1	-		
020	----	BLANK	BLANC	LEERE SPALTE	-	-		
030	16221-9112-0	BOLT	VIS	BOLZEN	22	-		
040	15707-3375-0	PLUG,DRAIN	BOUCHON DE VIDANGE	ENTLEERUNGSSTOPFEN	1	-		
050	6C090-5896-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
060	15221-3375-0	PLUG	BOUCHON	STOPFEN	1	-		
070	15451-9667-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
080	16226-3211-0	FILTER,OIL	FILTRE D'HUILE	OELFILTER	1	-		
090	01123-60816	BOLT	VIS	BOLZEN	1	-		
100	04814-00160	O RING	JOINT TORIQUE	O RING	1	-		

⟷ Interchangeable: ≠ not interchangeable: ⟵ new for old: ⟶ old for new

0003 CYLINDER HEAD
CULASSE
ZYLINDERKOPF

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16241-0175-0	HOOK, ENGINE	ANNEAU DE LEVAGE	MOTOR-ANKERHAKEN	1	-		
020	16241-0177-0	HOOK, ENGINE	ANNEAU DE LEVAGE	MOTOR-ANKERHAKEN	1	-		
030	01123-60814	BOLT	VIS	BOLZEN	2	-		
040	1G053-0304-0	COMP. CYLINDER HEAD	CULASSE COMPLET	KOMP. ZYLINDERKOPF	1	-		
050	15321-9626-0	CAP, SEALING	PASTILLE	STEPSEL, ABDICHTU	1	-		
060	15261-9601-0	PLUG	BOUCHON	STOPFEN	2	-		
070	16261-1354-0	GUIDE, INLET VALVE	GUIDE SOUP. D'ADMISS.	EINLASSVENTILFUHRUNG	3	-		
080	16261-1356-0	GUIDE, EXHAUST VALVE	GUIDE SOUP. D'ECHAP.	AUSLASSVENTILFUHRUNG	3	-		
090	15261-0337-0	CAP, SEALING	PASTILLE	STEPSEL, ABDICHTU	2	-		
100	16241-0345-0	BOLT, CYLINDER HEAD	VIS DE CYLINDRE	ZYLINDERKOPFSCHRAUBE	14	-		
110	1E038-0331-0	GASKET, CYL. HEAD	JOINT	DICTUNG, ZYLINDERKOPF	1	-		
120	15221-3370-0	O RING	JOINT TORIQUE	O RING	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0004 GEAR CASE
CARTER DE DISTRIBUTION
GETRIEBEGEHAEUSE

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16251-0402-7	COMP. CASE, GEAR	CARTER DISTR. COMP.	KMP. GETRIEBEGEHAEUSE	1	-		
020	16241-9602-0	PLUG	BOUCHON	STOPFEN	2	-		
025	15521-9602-0	PLUG	BOUCHON	STOPFEN	1	-		
030	04011-50180	WASHER, PLAIN	RONDELLE FREIN	SCHEIBE	1	-		
040	15241-3229-0	JOINT, PIPE	RACCORD DE TUYAU	VERBINDUNGSSTUECK	1	-		
050	16241-3695-0	SPRING	RESSORT	FEDER	1	-		
060	16241-3693-0	SEAT, VALVE	SIEGE DE SOUPAPE	SITZ, VENTIL	1	-		
070	07715-00201	BALL	BILLE	KUGEL	1	-		
080	16241-3507-0	ASSY ROTOR, OIL PUMP	ROTOR DE POMPE HUILE	OLFORDERPUMPE LAUFER	1	-		
085	16251-3513-0	COVER, OIL PUMP	COUV. POMPE A HUILE	OELPUMPEDECKEL	1	-		
090	03017-50620	SCREW, CR-REC-BD-HD	VIS	SCHRAUBE	5	-		
100	05012-00410	PIN, STRAIGHT	GOUPILLE CYLINDLIQUE	ZYLINDERSTIFT	2	-		
110	16264-0413-0	GASKET, GEAR CASE	JOINT	DICHTUNGGETRIEBEGEH.	1	-		
120	01023-50645	BOLT	VIS	BOLZEN	3	-		
130	01023-60650	BOLT	VIS	BOLZEN	4	-		
140	01023-50655	BOLT	VIS	BOLZEN	4	-		
150	01023-50665	BOLT	VIS	BOLZEN	1	-		
160	16241-9104-0	BOLT	VIS	BOLZEN	1	-		
170	16245-9153-0	STUD	GOUJON	STEHBOLZEN	1	-		
180	02056-50060	NUT	ECROU	MUTTER	1	-		
190	04512-60060	WASHER, SPRING	RONDELLE GROWER	FEDERRING	1	-		
200	16241-0421-2	SEAL, OIL	BAGUE JOINT	OELDICHTUNGSRING	1	-		
210	16245-9154-0	STUD	GOUJON	STEHBOLZEN	2	-		
220	16264-8334-2	COVER, GEAR CASE	COUV. CARTER DISTRIB	DECKEL, GETRIEGEHAEUS	1	-		

⟷ interchangeable; ≠ not interchangeable; ⟵ new for old; ⟶ old for new

0005 HEAD COVER
COUVRE-CULASSE
ZYLINDERKOPF-DECKEL

1G995-002-10

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	1G032-1450-0	ASSY COVER, CYL. HEAD	ENS. COUVERCLE	ZYLINDERKOPFHAUBE	1	-		
020	1G032-0537-0	SHIELD, BREATHER	BOUCLIER DE HUILE	OELSCHILD, ENTLUEFTER	1	-		
030	16261-1452-0	GASKET, HEAD COVER	JOINT COUVRE-CULASSE	DICHTUNG, KOPFDECKEL	1	-		
040	1G911-0520-0	COMP. VALVE, BREATHER	ENS. ROBINET DE REIN.	GRP. HAHNENTLUFTUNGS	1	-		
050	1G911-0512-0	COVER, BREATHER	COUVERCLE ASPIRATEUR	ENTLUEFTERDECKEL	1	-		
060	03054-50510	SCREW, PAN-HEAD	VIS	SCHRAUBE	4	-		
070	17331-7334-2	PIPE, WATER RETURN	TUYAU RETOUR D'EAU	WASSERROHR	1	-		
080	15952-9233-0	NUT	ECROU	MUTTER	3	-		
090	15951-9666-0	GASKET	JOINT	DICHTUNGSPLATTE	3	-		
100	1G032-0551-0	TUBE, BREATHER	TUYAU DE REINFLARD	ENTLUFTUNGSROHR	1	-		
110	09318-88150	CLAMP, HOSE	COLLIER DE DURITE	SCHLAUCHBINDER	1	-		
120	16259-0558-0	CLAMP, HOSE	COLLIER DE DURITE	SCHLAUCHBINDER	1	-		
130	E9151-3314-0	PLUG, OIL FILLER	BOUCHON, REMPLIS. H/L	OELEINFUELLSSTOPFEN	1	-		
140	04814-50300	O RING	JOINT TORIQUE	O RING	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0006 OIL FILTER
FILTRE D'HUILE
ÖELFILTER

16615-003-10

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16271-3209-2	ASSY CARTRIDGE, OIL	ENS. CART. D'HUILE	MONTAGE, ZUSAMMENBAU	1	–		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0007 DIPSTICK AND GUIDE
JAUGE D'HUILE ET GUIDE
OELMESSSTAB UND FUEHRUNG

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16611-3641-2	GAUGE, OIL	JAUGE D'HUILE	OELMESSSTAB	1	-		
020	16282-3650-0	ASSY GUIDE, OIL GAUGE	ENS. JAUGE ET GUIDE	GRP. FUEHRUNG	1	-		
030	04814-00090	O RING	JOINT TORIQUE	O RING	1	-		
040	01123-60814	BOLT	VIS	BOLZEN	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0100 MAIN BEARING CASE
PALIERS DE VILEBREQUIN
HAUPTLAGERGEHAEUSE

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16241-0409-2	ASSY CASE, MAIN BRG.	ENS. PALIER VILEBREQ.	GRP. LAGERGEHAEUSE	1	-		
020	16241-0454-0	BOLT, BEARING CASE	VIS	BOLZEN, LAGERKASTEN	6	-		
030	16264-0436-0	GASKET, BRG. CASE	JOINT	DICHTUNG, LAGER	1	-		
040	16241-0481-3	COVER, BEARING CASE	PORTE JOINT	DECKEL, LAGERKASTEN	1	-		
050	16241-0446-0	SEAL, OIL	BAGUE JOINT	OELDICHTUNGSRING	1	-		
060	16264-0482-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
070	01023-50625	BOLT	VIS	BOLZEN	8	-		
080	01023-50620	BOLT	VIS	BOLZEN	9	-		
090	16261-0404-0	ASSY CASE, MAIN BRG.	ENS. PALIER VILEBREQ.	GRP. LAGERGEHAEUSE	1	-		
100	16241-0456-0	BOLT, BEARING CASE	VIS	BOLZEN, LAGERKASTEN	2	-		
110	16261-0405-0	ASSY CASE, MAIN BRG.	ENS. PALIER VILEBREQ.	GRP. LAGERGEHAEUSE	1	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0101 CAMSHAFT AND IDLE GEAR SHAFT
ARBRE A CAMES ET ARBRE DE PIGNON DE RALENTI
NOCKENWELLE UND FREILAUFGETRIEBEWELLE

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16261-1555-0	TAPPET	POUSSOIR	STOSSEL	6	-		
020	16241-1511-0	PUSH ROD	TIGE DE POUSSOIR	STOSSELSTANGE	6	-		
030	16261-1601-0	ASSY CAMSHAFT	ENS. ARBRE A CAMES	GRP. NOCKENWELLE	1	-		
040	15521-9361-0	SCREW, SET	VIS D'ARRET	ANSCHLAGSCHRAUBE	1	-		
050	16241-1651-0	GEAR, CAM	PIGNON	ZAHNRAD	1	-		
060	05712-00518	KEY, FEATHER	CLAVETTE	KEIL	1	-		
070	16241-1627-0	STOPPER, CAMSHAFT	BOUCHON ARBRE A CAME	NOCKENWELLESPERRPLA.	1	-		
080	01023-50616	BOLT	VIS	BOLZEN	2	-		
090	16271-2401-0	COMP GEAR, IDLE	PIGNON. COMP	KOMP. LEERLAUFGETRIEB	1	-		
100	16271-2498-0	BUSH, IDLE GEAR	BAGUE DU PIGNON	BUCHSE, LEERLAUFGETR.	1	-		
110	16271-2402-0	COMP GEAR, IDLE	PIGNON. COMP	KOMP. LEERLAUFGETRIEB	1	-		
120	16271-2498-0	BUSH, IDLE GEAR	BAGUE DU PIGNON	BUCHSE, LEERLAUFGETR.	1	-		
130	16241-2436-0	COLLAR, IDLE GEAR	COLLIER DE PIGNONF.	HUELSELEERLAUFGETRI.	2	-		
140	16241-2437-0	COLLAR, IDLE GEAR	COLLIER DE PIGNONF.	HUELSELEERLAUFGETRI.	2	-		
150	16241-2432-0	CIR CLIP, IDLE GEAR	CIRCLIP	SEEGERING	2	-		
160	16241-2425-0	SHAFT, IDLE GEAR	ARBRE DE PIGNON FOU	WELLE, FREILAUFGETR.	1	-		
170	01023-50616	BOLT	VIS	BOLZEN	3	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0102 PISTON AND CRANKSHAFT
PISTON ET VILEBREQUIN
KOLBEN UND KURBELWELLE

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16060-2111-0	PISTON	PISTON	KOLBEN	3	-		STD
010	16060-2191-0	PISTON	PISTON	KOLBEN	3	-		+0.50mm
020	16261-2105-0	ASSY PISTON RING	ENS. SEGMENT	GRP. KOLBENRING	3	-		STD
020	16261-2109-0	ASSY PISTON RING	ENS. SEGMENT	GRP. KOLBENRING	3	-		+0.50mm
030	16241-2131-0	PIN, PISTON	AXE DE PISTON	KOLBENBOLZEN	3	-		
040	16241-2133-0	CIR CLIP, PISTON PIN	CIRCLIP	SEEGERING	6	-		
050	16241-2201-2	ASSY ROD, CONNECTING	ENS. BIELLE	TRIEBSTANGE KOMP	3	-		
060	16241-2198-2	BUSH, PISTON PIN	BAGUE DE BIELLE	BUCHSE, KOLBENSTIFT	3	-		
070	16241-2214-2	BOLT, CONNECTING ROD	VIS DE BIELLE	BOLZEN	6	-		
080	16241-2231-0	METAL, CRANKPIN	COUSSINET DE BIELLE	METALLTEIL	3	-		STD SET
080	16241-2297-0	METAL, CRANKPIN	COUSSINET DE BIELLE	METALLTEIL	3	-		-0.20mm SET
080	16241-2298-0	METAL, CRANKPIN	COUSSINET DE BIELLE	METALLTEIL	3	-		-0.40mm SET
090	16265-2301-3	COMP. CRANKSHAFT	VILEBREQUIN COMPLET	KOMP. KURBELWELLE	1	-		
100	07715-00401	BALL	BILLE	KUGEL	3	-		
110	16241-2411-0	GEAR, CRANK	PIGNON	ZAHNRAD	1	-		
120	16271-9523-0	KEY	CLAVETTE	KEIL	1	-		
130	16241-3563-0	GEAR, OIL PUMP DRIVE	PIGNON ENTRAIN. POMPE	GETRIEBE	1	-		
140	16241-2328-0	SLEEVE, CRANKSHAFT	FRETTE ARRIERE	MUFFE	1	-		
150	16241-2325-0	COLLAR, CRANKSHAFT	COLLIER VILEBREQUIN	HALSRING	1	-		
160	04814-10280	O RING	JOINT TORIQUE	O RING	1	-		
170	16241-2347-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		STD
170	16241-2391-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.20mm
170	16241-2392-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.40mm
180	16241-2348-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	2	-		STD SET
180	16241-2393-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	2	-		-0.20mm SET
180	16241-2394-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	2	-		-0.40mm SET
190	16292-2349-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		STD SET
190	16292-2386-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.20mm SET
190	16292-2387-0	METAL, CRANKSHAFT	COUSSINET DE VILEBR.	METALLTEIL	1	-		-0.40mm SET
200	15521-2353-0	METAL, SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	-		STD

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0102 PISTON AND CRANKSHAFT
PISTON ET VILEBREQUIN
KOLBEN UND KURBELWELLE

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
200	15521-2395-0	METAL, SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		+0.20mm
200	15521-2396-0	METAL, SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		+0.40mm
210	19202-2354-0	METAL, SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		STD
210	19202-2397-0	METAL, SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		+0.20mm
210	19202-2398-0	METAL, SIDE	COUSSINET DE LATERAL	METALLSEITENRING	2	–		+0.40mm

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0103 FLYWHEEL
VOLANT MOTEUR
SCHWUNGRAD

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STOECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16692-2501-3	COMP. FLYWHEEL	VOLANT MOTEUR COMP.	KOMP. SCHWUNGRAD	1	-		
020	16813-6382-0	GEAR, RING	COURONNE DE DEMARRE.	ZAHNKRANZ	1	-		
030	16241-2516-0	BOLT, FLYWHEEL	VIS DE VOLANT	BOLZEN, SCHWUNGRAD	6	-		
040	16241-0462-0	PLATE, REAR END	PLAQUE ARRIERE-TRAIN	PLATTE	1	-		
050	15261-9119-0	BOLT	VIS	BOLZEN	8	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0105 FUEL CAMSHAFT AND GOVERNOR SHAFT
ARBRE A CAMES DE CARBURANT ET ARBRE REGULATEUR
KRAFTSTOFF-NOCKENWELLE UND ACHSE

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16020-1617-0	CAMSHAFT, FUEL	ARBRE A CAMES	NOCKENWELLE	1	-		
020	16261-9730-0	BEARING, BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
030	16261-9731-0	BEARING, BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
040	----	BLANK	BLANC	LEERE SPALTE	-	-		
050	----	BLANK	BLANC	LEERE SPALTE	-	-		
060	16241-9233-0	NUT	ECROU	MUTTER	1	-		
070	16272-5115-0	GEAR, INJECTION PUMP	ENGRE. POMPE D' INJEC.	GETRIEBEZAHNRAD	1	-		
080	16241-9523-0	KEY, WOODRUFF	CLAVETTE WOODRUFF	SCHEIBEN-KEIL	1	-		
090	16241-1632-0	STOPPER, FUEL. C/SHAFT	BOUCHON	STOPFENNOCKENWELLE	1	-		
100	01023-50616	BOLT	VIS	BOLZEN	2	-		
110	16261-5501-3	ASSY SHAFT, GOVERNOR	ENS. ARBRE REGULAT.	ACHSE	1	-		
120	16241-5539-2	HOLDER, GOVERNOR GEAR	SUPPORT REGUL-PIGNON	HALTER	1	-		
130	16271-5532-0	GEAR, GOVERNOR	ENGRENAGE DE REGULAT	REGELERZAHNRAD	1	-		
140	16241-5527-0	HOLDER, GOV. WEIGHT	SUPPORT POIDS REGUL.	HALTER, GEWICHT	1	-		
150	16271-5506-0	COMP. WEIGHT, GOVERNOR	POIDS COMP. REGUL.	GEWICHT KOMP.	2	-		
160	16241-5526-0	SHAFT, GOV. WEIGHT	ARBRE DE POIDS REG.	WELLE	2	-		
170	19484-5544-0	ROLLER	ROULEAU	ROLLE	2	-		
180	16241-5545-0	SLEEVE, GOVERNOR	BAGUE DE REGULATEUR	REGLERMUFFE	1	-		
190	16241-5546-3	WASHER, THRUST	RONDELLE DE BUTEE	DRUCKSCHEIBE	1	-		
200	16261-9732-0	BEARING, BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
210	16271-5541-0	CIR CLIP, GOV. SHAFT	CIRCLIP DE REG. ARBRE	SPRENGRING	1	-		
220	16241-5555-4	SCREW, SET	VIS D' ARRET	ANSCHLAGSCHRAUBE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0180 IDLE APPARATUS
DISPOSITIF DE RALENTISSEUR
FREILAUFAPPARAT

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16285-5409-3	APPARATUS, IDLING	DISPOSITIF DE RALENT	BAUTEIL, FREILAF-APPA	1	-		
020	16285-5410-3	ASSY BOLT, ADJUSTMENT	ENS. BOULON AU POINT	GRP. BOLZENFEINEINST.	1	-		
025	16285-5426-0	SPRING	RESSORT	FEDER	1	-		
030	15841-9202-0	NUT	ECROU	MUTTER	1	-		
040	15841-9233-0	NUT	ECROU	MUTTER	1	-		
050	15601-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
060	16221-5442-0	CAP	BOUCHON	KAPPE	1	-		
070	16241-5412-2	BOLT, ADJUSTING	VIS REGLAGE	EINSTELLBOLZEN	1	-		
080	1G031-5421-0	NUT, LOCK	CONTRE-ECROU	MUTTER	1	-		
090	15841-9233-0	NUT	ECROU	MUTTER	1	-		
100	15601-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
110	1G021-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
120	16264-8315-2	COVER, HYDRAULIC PUMP	COUVERCLE, POMPE HYD.	DECKELHYDRAULIKPUMPE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0201 STOP SOLENOID
SOLENOIDE D'ARRET
ABSTELLSOLENOID

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. O'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	17208-6001-0	ASSY SOLENOID, STOP	ENS. SOLENOIDE	DRAHTSPULE, KOMP	1	-		
020	----	BLANK	BLANC	LEERE SPALTE	-	-		
030	01311-10614	BOLT, HEX-SOC-HD	VIS	BOLZEN	2	-		
040	04512-60060	WASHER, SPRING	RONDELLE GROWER	FEDERRING	2	-		

⟷ Interchangeable; ≠ not interchangeable; ⟵ new for old; ⟶ old for new

0202 INJECTION PUMP
POMPE D'INJECTION
EINSPRITZENPUMPE

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16271-9569-0	JOINT, EYE	RACCORD	VERBINDUNGSSTUCK	1	-		
020	16030-5101-0	ASSY PUMP, INJECTION	ENS. POMPE INJECTION	GRP. EINSPRITZPUMPE	1	-		
030	16006-5209-2	SHIM, INJECTION PUMP	CALE, POMPE INJECTION	ABSTANDSSCHEIBE	1	-		0.20mm
030	16006-5211-2	SHIM, INJECTION PUMP	CALE, POMPE INJECTION	ABSTANDSSCHEIBE	1	-		0.25mm
040	16006-5212-2	SHIM, INJECTION PUMP	CALE, POMPE INJECTION	ABSTANDSSCHEIBE	1	-		0.30mm
050	01311-10620	BOLT, HEX-SOC-HD	VIS	BOLZEN	2	-		
060	15841-9150-0	STUD	GOUJON	STEHBOLZEN	2	-		
070	15841-9232-0	NUT	ECROU	MUTTER	2	-		
080	04512-60060	WASHER, SPRING	RONDELLE GROWER	FEDERRING	4	-		
090	16030-5132-0	BOLT, JOINT	VIS	BOLZEN, ABSCHLUSS	1	-		
100	15841-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
110	15841-5135-0	SCREW	VIS	SCHRAUBE	1	-		
120	15841-9666-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
130	16030-9601-0	PLUG	BOUCHON	STOPFEN	1	-		
140	15861-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0204 GOVERNOR
REGULATEUR DE VITESSES
REGLER

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16261-5648-0	SPRING, START	RESSORT DE SURCHARGE	STARTERFEDER	1	-		
020	16285-5641-2	SPRING, GOVERNOR	RESSORT DE REGULATEU	REGLERFEDER	1	-		
030	1G069-5601-3	ASSY LEVER, FORK	ENS. LEVIER A FOURCHE	GRP. GABELHEBEL	1	-		
040	1G032-5613-0	LEVER, FORK	LEVIER A FOURCHE	HEBEL, GABEL	1	-		
050	1G032-5615-0	SHAFT, FORK LEVER	ARBRE DE FOUR-LEVIER	GABELHEBELWELLE	1	-		
060	1G032-5647-0	SHAFT, FORK LEVER	ARBRE DE FOUR-LEVIER	GABELHEBELWELLE	1	-		
070	16241-5633-0	BEARING, MINIATURIZE	ROULEMENT	KUGELLAGER	1	-		
080	16241-5625-0	COVER, FORK LEV. SHAFT	COUV. FOURCHE ARBRE	DECKEL	1	-		
090	16299-5626-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
100	01023-50614	BOLT	VIS	BOLZEN	2	-		
110	16241-5621-0	COLLAR	COLLIER	HUELSE	1	-		
120	16241-5634-0	BEARING, MINIATURIZE	ROULEMENT	KUGELLAGER	1	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0205 SPEED CONTROL PLATE
PLAQUE DE VITESSE-CONTROLE
GESCHWINDIGKEITS-REGLERPLATTE

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16299-5701-5	ASSY PLATE, CONTROL	PLATEAU DE COMMANDE	GRP. REGELPLATTE	1	-		
020	16271-5715-0	LEVER, SPEED CONTROL	LEVIER DE VIT-CONTRO	DREHZAHLVERSTELHEBEL	1	-		
030	16241-5716-0	LEVER, SPEED CONTROL	LEVIER DE VIT-CONTRO	DREHZAHLVERSTELHEBEL	2	-		
040	04814-00100	O RING	JOINT TORIQUE	O RING	1	-		
050	05411-00420	PIN, SPRING	GOUPILLE-RESSORT	STIFT, FEDR	2	-		
060	16241-9402-0	WASHER, PLAIN	RONDELLE FREIN	SCHEIBE	2	-		
070	16241-9202-0	NUT	ECROU	MUTTER	2	-		
080	16271-5602-3	COMP. LEVER, GOVERNOR	AXE D'ACCELERATEUR	KOMP. REGLERHEBEL	1	-		
090	16271-5772-0	LEVER, ENGINE STOP	LEVIER D'ARRET	MOTOR-STOPHEBEL	1	-		
100	15471-5798-0	SEAL, OIL	BAGUE JOINT	OELDICHTUNGSRING	1	-		
110	16222-5751-0	SPRING, RETURN	RESSORT DE RAPPEL	RUECKZUGFEDER	1	-		
120	16271-5774-0	SHAFT, STOP LEVER	ARBRE D'ARRET-LEVIER	WELLE	1	-		
130	16264-5721-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
140	01023-50616	BOLT	VIS	BOLZEN	1	-		
150	16245-9154-0	STUD	GOUJON	STEHBOLZEN	2	-		
160	02056-50060	NUT	ECROU	MUTTER	2	-		
170	04512-60060	WASHER, SPRING	RONDELLE GROWER	FEDERRING	2	-		
180	01053-50618	BOLT	VIS	BOLZEN	1	-		
190	15601-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0206 NOZZLE HOLDER AND GLOW PLUG
PORTE-INJECTEUR ET BOUGIE DE PRECHAUFFAGE
DUESENHALTER UND GLUEHKERZE

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. C'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16261-4250-2	ASSY PIPE, OVER FLOW	ENS. TUYAU TROP-PLEIN	GRP. UEBERLAUFROHR	1	-		
020	15841-5136-0	SCREW, AIR BREEDER	VIS DE AIR-AVICLTEUR	SCHRAUBE	1	-		
030	15601-9665-0	GASKET	JOINT	DICHTUNGSPLATTE	1	-		
040	15841-4250-0	ASSY PIPE, OVER FLOW	ENS. TUYAU TROP-PLEIN	GRP. UEBERLAUFROHR	1	-		
050	14971-4275-0	CLIP, PIPE	ATTACHE	ROHRKLEMME	2	-		
060	1G065-5390-0	KIT HOLDER, NOZZLE	ENS. PORTE-INJECTEUR	GRP. DUESENHALTER	3	-		
070	15841-5362-2	GASKET	JOINT	DICHTUNGSPLATTE	3	-		
075	19077-5365-0	SEAL, HEAT	JOINT DE CHALEUR	DICHTUNG	3	-		
080	16271-5371-2	PIPE, INJECTION	TUYAU D'INJECTEUR	EINSPRITZROHR	1	-		
090	16271-5372-2	PIPE, INJECTION	TUYAU D'INJECTEUR	EINSPRITZROHR	1	-		
100	16271-5373-2	PIPE, INJECTION	TUYAU D'INJECTEUR	EINSPRITZROHR	1	-		
110	15841-5385-0	CLAMP, PIPE	COLLIER DE TUYAU	ROHRKLEMME	2	-		
120	15841-5386-0	CLAMP, PIPE	COLLIER DE TUYAU	ROHRKLEMME	2	-		
130	03024-50520	SCREW, WITH WASHER	VIS	SCHRAUBE	2	-		
140	16851-6551-0	GLOW PLUG	BOUGIE, PRE-CHAUFFAGE	GLUEHSTOEPSEL	3	-		
150	16261-6556-0	CORD, GLOW PLUG	FILDEBOUG. PRECHAUFF.	GLUEHKERZEKORD	1	-		
160	16261-4203-0	ASSY PIPE, OVER FLOW	ENS. TUYAU TROP-PLEIN	GRP. UEBERLAUFROHR	1	-		
165	09661-40230	TUBE, FUEL	TUYAU	KRAFTSTOFFROHR	1	-		
170	16241-4232-0	BAND, PIPE	COLLIER DE TUYAU	ROHRBAND	2	-		
180	K3511-5839-0	JOINT, T-PIPE	RACCORD DE TUYAU	VERBINDUNGSSTUECK	1	-		
190	09661-40080	TUBE, FUEL	TUYAU	KRAFTSTOFFROHR	1	-		
200	16241-4232-0	BAND, PIPE	COLLIER DE TUYAU	ROHRBAND	2	-		
210	02761-50040	NUT, FLANGE	ECROU A EMBASE	FLANSCHEN-MUTTER	3	-		

⟷ Interchangeable; ≠ not interchangeable; ⟵ new for old; ⟶ old for new

0207 NOZZLE HOLDER (COMPONENT PARTS)
PORTE-INJECTEUR (PARTIES COMPOSANTES)
DUESENHALTER (EINZEL-TEIL)

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	1G065-5390-0	KIT HOLDER, NOZZLE	ENS. PORTE-INJECTEUR	GRP. DUESENHALTER	3	-		
020	16032-9203-0	NUT	ECROU	MUTTER	3	-		
030	16032-5323-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		
040	16032-5317-0	SPRING, NOZZLE	RESSORT D'INJECTEUR	FEDER	3	-		
050	16032-5335-0	SPACER, DISTANCE	ENTRETOISE	DISTANZSCHEIBE	3	-		
060	16032-5316-0	PUSH ROD	TIGE DE POUSSOIR	STOSSELSTANGE	3	-		
070	16032-5328-0	NUT, NOZZLE	ECROU D'INJECTEUR	MUTTER	3	-		
080	16032-9404-0	WASHER, PLAIN	RONDELLE FREIN	SCHEIBE	3	-		
090	1G065-5361-0	PIECE, NOZZLE	ELEMENT D'INJECTEUR	DUESENSTUECK	3	-		
100	16032-9810-0	ASSY WASHER, ADJUST	ENS. RONDELLE	GRP. EINSTELLSCHEIBE	3	-		OPTION
110	16032-9850-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.10mm
110	16032-9851-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.20mm
110	16032-9852-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.30mm
110	16032-9853-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.40mm
110	16032-9854-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.50mm
110	16032-9855-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.52mm
110	16032-9856-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.54mm
110	16032-9857-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.56mm
110	16032-9858-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.68mm
110	16032-9859-0	WASHER, ADJUSTING	RONDELLE DE REGLAGE	EINSTELLSCHEIBE	3	-		0.80mm
120	15841-5362-2	GASKET	JOINT	DICHTUNGSPLATTE	3	-		
130	19077-5365-0	SEAL, HEAT	JOINT DE CHALEUR	DICHTUNG	3	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0300 FUEL FILTER
FILTRE A CARBURANT
KRAFTSTOFFILTER

12691-010-10

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	12581-4301-2	ASSY FILTER, FUEL	ENS. FILTRE, COMBUST	GRP. KRAFTSTOFFILTER	1	–		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0302 FUEL PUMP (ELECTRICAL)
POMPE D'ALIMENTATION (ELECTRIQUE)
KRAFTSTOFFPUMPE (ELEKTRISCH)

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15852-5285-0	COVER	COUVERCLE	DECKEL	1	-		
020	16264-5214-0	GASKET, FUEL PUMP	JOINT DE POMP. CARB.	DICHTUNG, PUMPE	1	-		
030	02056-50060	NUT	ECROU	MUTTER	2	-		
040	04512-60060	WASHER, SPRING	RONDELLE GROWER	FEDERRING	2	-		
050	68371-5121-0	ASSY PUMP, FUEL	ENS. POMPE D'ALIMEN.	GRP. KRAFTSTOFFPUMPE	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0402 ALTERNATOR AND PULLEY
ALTERNATEUR
WECHSELSTROMMASCHINE

A:D1105-E2B-EU-XL1

REF. No. POS. No. BEZ.-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16678-6401-2	ASSY ALTERNATOR	ALTERNATEUR COMPLET	GRP. WECHSELSTROMDYN.	1	-		12V 40A
020	16241-6442-0	STAY, DYNAMO	TENDEUR	DYNAMOSTANGE	1	-		
030	01123-50830	BOLT	VIS	BOLZEN	1	-		
040	01173-51085	BOLT	VIS	BOLZEN	1	-		
050	02176-50100	NUT	ECROU	MUTTER	1	-		
060	04011-50100	WASHER, PLAIN	RONDELLE FREIN	SCHEIBE	1	-		
070	04512-60100	WASHER, SPRING	RONDELLE GROWER	FEDERRING	1	-		
080	04015-60080	WASHER, PLAIN	RONDELLE FREIN	SCHEIBE	1	-		
090	01023-50616	BOLT	VIS	BOLZEN	1	-		
100	16241-7425-0	PULLEY, FAN	POULIE VENTILATEUR	VENTILATORSCHEIBE	1	-		
110	16229-7428-0	PULLEY, FAN DRIVE	POULIE ENTRAIN. VENT.	RIEMENSCHEIBE	1	-		
120	16241-9102-0	BOLT, FAN DRIVE	VIS	BOLZEN	1	-		
130	16282-9701-0	V BELT	COURROIE	RIEMEN	1	-		37.5in
140	16678-6583-0	ASSY CONNECTOR, 2	ENS. CONNECTEUR	GRP. ANSCHLUBE	1	-		
150	16631-6584-0	CONNECTOR	CONNECTEUR	ANSCHLUBE	1	-		
160	19237-6591-0	TERMINAL	DEBORNE	ANSCHLUBKLEMME	3	-		
170	1C010-6583-0	ASSY COUPLER	ENS. COUPLEUR	GRP. KUPPLER	1	-		
180	1C010-6588-0	CONNECTOR	CONNECTEUR	ANSCHLUBE	1	-		
190	1C010-6591-0	TERMINAL	DEBORNE	ANSCHLUBKLEMME	2	-		
200	16662-6583-0	ASSY COUPLER, CONNEC.	ENS. COUPLEUR CONNEC.	GRP. KUPPLERANSCHLUBE	1	-		
210	19872-6584-0	CONNECTOR	CONNECTEUR	ANSCHLUBE	1	-		
220	19237-6591-0	TERMINAL	DEBORNE	ANSCHLUBKLEMME	6	-		
230	19215-6375-0	TERMINAL	DEBORNE	ANSCHLUBKLEMME	1	-		
240	11521-6592-0	CONNECTOR	CONNECTEUR	ANSCHLUBE	1	-		
250	11521-6597-0	TERMINAL	DEBORNE	ANSCHLUBKLEMME	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0403 ALTERNATOR (COMPONENT PARTS)
ALTERNATEUR (PARTIES COMPOSANTES)
WECHSELSTROMMASCHINE (EINZEL-TEIL)

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16678-6401-2	ASSY ALTERNATOR	ALTERNATEUR COMPLET	GRP. WECHSELSTROMDYN.	1	-		
020	15881-6411-0	PULLEY, DYNAMO	POULIE D'ALTERNATEUR	RIEMENSCHEIBE, DYNAMO	1	-		
030	15881-9201-0	NUT	ECROU	MUTTER	1	-		
040	15881-6415-0	COLLAR	COLLIER	HUELSE	1	-		
050	66436-6404-0	ROTOR	ROTOR	ROTOR	1	-		
060	15881-6480-0	COVER, BEARING	COUVERCLE	DECKEL	1	-		
070	16652-6477-0	BEARING, BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
080	15881-6481-0	WASHER, THRUST	RONDELLE DE BUTEE	DRUCKSCHEIBE	1	-		
090	66436-6402-0	ASSY FRAME, DRIVE END	ENS. BATI ARRIERE	GRP. ANTRIEBSRAHMEN	1	-		
100	15881-6471-0	PLATE, RETAINER	PLAQUE RETENUE	HALTEPLATTE	1	-		
110	15881-9301-0	SCREW, ROUND HEAD	VIS A TETE RONDE	RUNDKOPFSCHRAUBE	4	-		
120	15881-6426-0	BOLT, THROUGH	VIS, PASSANT	DURCHGEHENDERBOLZEN	2	-		
130	16652-6478-0	BEARING, BALL	ROULEMENT A BILLES	KUGELLAGER	1	-		
140	16678-6406-0	FRAME, END	BATI	RAHMEN	1	-		
150	16678-6423-0	COVER, END	PALIER ARRIERE	DECKEL	1	-		
160	15881-6485-0	ASSY RECTIFIER	REDRESSEUR	MONT. GLEICHRICHTER	1	-		
170	15881-6490-0	BUSH, INSULATION	BAGUE ISOLANTE	BUCHSE	1	-		
180	16652-6431-0	HOLDER, BRUSH	PORTE-BALAI	BUERSTEN HALTER	1	-		
190	15881-6409-0	BRUSH	PATTE D'ATTACHE	BUERSTE	2	-		
200	15881-6433-0	SPRING, BRUSH	RESSORT DE BALAI	SCHLEIFBUERSTENFEDER	2	-		
210	15881-9302-0	SCREW, ROUND HEAD	VIS A TETE RONDE	RUNDKOPFSCHRAUBE	2	-		
220	15881-9303-0	SCREW, ROUND HEAD	VIS A TETE RONDE	RUNDKOPFSCHRAUBE	6	-		
230	15881-9304-0	SCREW, ROUND HEAD	VIS A TETE RONDE	RUNDKOPFSCHRAUBE	1	-		
240	15881-9104-0	BOLT	VIS	BOLZEN	3	-		
250	15881-9202-0	NUT	ECROU	MUTTER	2	-		
260	15881-9105-0	BOLT	VIS	BOLZEN	2	-		
270	14182-9203-0	NUT	ECROU	MUTTER	1	-		
280	16652-6460-0	ASSY REGULATOR	REGULATEUR	REGULATOR	1	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0404 STARTER DEMARREUR ANLASSER

16222-038-10

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16235-6301-0	ASSY STARTER	ENS. DEMARREUR	GRP. ANLASSER	1	–		12V 1.4kW
020	01123-50830	BOLT	VIS	BOLZEN	2	–		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0405 STARTER (COMPONENT PARTS)
DEMARREUR (PARTIES COMPOSANTES)
ANLASSER (EINZEL-TEIL)

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16235-6301-0	ASSY STARTER	ENS. DEMARREUR	GRP. ANLASSER	1	-		
020	16661-6308-0	ASSY YOKE	ENS. CHAPE	GRP. GABELGELENK	1	-		
030	11197-6307-0	ASSY ARMATURE	ENS. ARMATURE	GRP. ARMATUR	1	-		
040	11460-6350-0	BEARING	ROULEMENT	LAGER	1	-		
050	11460-6353-0	BEARING	ROULEMENT	LAGER	1	-		
060	16235-6304-0	KIT, STARTER	BORNE ET PLONGEUR	ANLASSER, ZUSAMMENBAU	1	-		
070	16235-6303-0	ASSY HOUSING, STARTER	ENS. CARTER DEMARREUR	GRP. GEHAEUSE	1	-		
080	16611-6302-0	ASSY SWITCH, MAGNETIC	SOLENOIDE	GRP. MAGNETSCHALTER	1	-		
090	17341-6320-0	FRAME, END	BATI	RAHMEN	1	-		
100	11197-6338-0	ASSY HOLDER, BRUSH	ENS. SUPPORT	GRP. BUERSTENHALTER	1	-		
110	15401-6339-0	SPRING, BRUSH	RESSORT DE BALAI	SCHLEIFBUERSTENFEDER	4	-		
120	11460-6327-0	GEAR	ENGRENAGE	GETRIEBE	1	-		
130	11460-6311-0	RETAINER	SUPPORT	HALTESCHEIBE	1	-		
140	19212-6310-0	ROLLER	ROULEAU	ROLLE	5	-		
150	11460-6312-0	SPRING	RESSORT	FEDER	1	-		
160	19212-9713-0	BALL	BILLE	KUGEL	1	-		
170	11460-9331-0	BOLT	VIS	BOLZEN	2	-		
180	15511-9666-0	O RING	JOINT TORIQUE	O RING	2	-		
190	11197-6332-0	BOLT	VIS	BOLZEN	2	-		
200	15511-6376-0	ASSY BOLT	ENS. VIS	GRP. BOLZEN	2	-		
210	16611-6345-0	COVER	COUVERCLE	DECKEL	1	-		
220	13963-9201-0	NUT, HEXAGON	ECROU HEXAGONAL	MUTTER	1	-		
230	16611-6366-0	CORD, STOP SOLENOID	PRISE DE SOLENOIDE	CABLESTOPSOLENOID	1	-		
240	16285-9201-0	NUT, HEXAGON	ECROU HEXAGONAL	MUTTER	1	-		
250	16285-6357-0	PIPE, DRAIN	TUYAU DE DRAINAGE	DRANLEITUNG	1	-		
260	16612-6310-0	BAND, COVER	BANDE, COUVERCLE	FLACHRIEMEN	1	-		
270	16285-9805-0	ASSY COVER	ENS. COUVERCLE	GRP. DECKEL	1	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0406 OIL SWITCH AND PLUG
CONTACT A HUILE ET OBTURATEUR
OELSCHALTER UND VERSCHILUSSSTOPFEN

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15841-3901-0	SWITCH, OIL	MANO-CONTACT D'HUILE	OELDRUCKSCHALTER	1	-		
020	15841-9602-0	PLUG	BOUCHON	STOPFEN	1	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0500 WATER FLANGE AND THERMOSTAT
BRIDE A EAU ET THERMOSTAT
WASSERFLANSCH UND THERMOSTAT

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	19008-7270-0	COMP FLANGE, WATER	ENS. BRIDE A EAU	KOMP. FLANSCH	1	-		
020	16241-7337-0	PIPE, WATER RETURN	TUYAU RETOUR D'EAU	WASSERROHR	1	-		
030	06311-55030	PLUG	BOUCHON	STOPFEN	1	-		
040	16261-9671-0	GASKET	JOINT	DICHTUNGSPLATTE	2	-		
050	16264-7292-0	GASKET, WATER FLANGE	JOINT DE BRIDE	DICHTUNG	1	-		
060	01023-50616	BOLT	VIS	BOLZEN	3	-		
070	01023-50655	BOLT	VIS	BOLZEN	1	-		
080	16241-7335-0	PIPE, WATER RETURN	TUYAU RETOUR D'EAU	WASSERROHR	1	-		
090	16241-7336-0	BAND, PIPE	COLLIER DE TUYAU	ROHRBAND	2	-		
100	16222-8304-0	ASSY THERMOSWITCH	ENS. THERMOINTERRUPT.	GRP. THERMOZUENDSCHA.	1	-		
110	16222-7284-0	ADAPTER	ADAPTATEUR	ZWISCHENSTUECK	1	-		
120	19434-7301-4	ASSY THERMOSTAT	THERMOSTAT COMP.	GRP. THERMOSTAT	1	-		
130	16219-7326-0	COVER, THERMOSTAT	COUV. DE THERMOSTAT	DECKEL, THERMOSTAT	1	-		
140	16221-7327-0	GASKET, THERMOSTAT	JOINT	DICHTUNG	1	-		
150	01123-50835	BOLT	VIS	BOLZEN	2	-		

⟷ Interchangeable; ≠ not interchangeable; ⟵ new for old; ⟶ old for new

0501 WATER PUMP
POMPE A EAU
WASSERPUMPE

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16251-7303-4	ASSY PUMP, WATER	ENS. POMPE A EAU	GRUPPE WASSERPUMPE	1	–		
020	16259-7352-0	FLANGE, WATER PUMP	BRIDE DE POMPE A EAU	FLANSCH, PUMPE	1	–		
030	16259-7355-2	BEARING	ROULEMENT	LAGER	1	–		
040	1G642-7305-0	ASSY SEAL, MECHANICAL	ENS. JOINT MECANIQUE	GRP. MECH. DICHTUNG	1	–		
050	16259-7351-2	IMPELLER, WATER PUMP	TURBINE DE POMPE	FLUEGELRAD	1	–		
060	16241-7334-0	PIPE, WATER RETURN	TUYAU RETOUR D'EAU	WASSERROHR	1	–		
070	16239-7343-0	GASKET, WATER PUMP	JOINT DE POMPE A EAU	DICHTUNG, WASSERPUMPE	1	–		
080	01023-50630	BOLT	VIS	BOLZEN	4	–		
090	01023-50685	BOLT	VIS	BOLZEN	2	–		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0503 WATER PIPE
TUYAU D'EAU
WASSERROHR

1G225-020-10

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	17203-7286-0	PIPE, WATER	TUYAU D'EAU	WASSERROHR	1	-		
020	1G680-7287-0	PIPE, WATER	TUYAU D'EAU	WASSERROHR	1	-		
030	36200-8272-0	CLAMP	ATTACHE	KLAMMER	2	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0504 FAN
VENTILATEUR
VENTILATOR

16611-026-10

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I. C.	REMARKS REMARQUES BEMERKUNGEN
010	16265-7411-0	FAN	VENTILATEUR	VENTILATOR	1	-		
020	01754-50610	BOLT, FLANGE	VIS DE BUTEE	FLANSCHEN-BOLZEN	4	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0600 VALVE AND ROCKER ARM
SOUPAPES ET CULBUTEURS
VENTIL UND KIPPENARM

A:D1105-E2B-EU-XL1

REF. No. POS. No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S. No. Q'TE/No. S. STUECK/S. Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16241-1311-0	VALVE, INLET	SOUPAPE D'ADMISSION	EINLASSVENTIL	3	–		
020	16241-1312-0	VALVE, EXHAUST	SOUPAPE D'ECHAPMENT	AUSLASSVENTIL	3	–		
030	16271-1324-0	SPRING, VALVE	RESSORT DE SOUPAPE	VENTIL-FEDER	6	–		
040	16261-1333-0	RETAINER, SPRING	ARRETOIR DE RESSORT	HALTBUEGEL, FEDER	6	–		
050	15261-1336-0	COLLET, VALVE SPRING	DEMI CLAVETTE	KLEMMSCHEIBE	6	–		SET
060	1C010-1315-0	SEAL, VALVE STEM	JOINT DE SOUPAPE	VENTILDICHTUNG	6	–		
070	16241-1328-0	CAP, VALVE	CHAPEAU DE SOUPAPE	VENTILKAPPE	6	–		
080	16261-1426-4	SHAFT, ROCKER ARM	ARBRE DE CULBUTEUR	KIPPHEBELWELLE	1	–		
090	01023-50610	BOLT	VIS	BOLZEN	2	–		
100	16241-1435-0	BRACKET, ROCKER ARM	SUPPORT DE CULBUTEUR	KIPPHEBELHALTER	3	–		
110	05411-00428	PIN, SPRING	GOUPILLE-RESSORT	STIFT, FEDR	1	–		
120	16241-1443-0	WASHER, R-ARM. SHAFT	RONDELLE	SCHEIBE	2	–		
130	15841-9402-2	WASHER, PLAIN	RONDELLE FREIN	SCHEIBE	2	–		
140	16241-1431-0	SPRING, ROCKER ARM	RESSORT DE CULBUTEUR	FEDER, KIPPHEBEL	2	–		
150	——	BLANK	BLANC	LEERE SPALTE	–	–		
160	16241-1403-2	ASSY ROCKER ARM	ENS. CULBUTEURS	GRP. KIPPHEBEL	6	–		
170	16241-1423-0	SCREW, ADJUSTING	VIS DE REGLAGE	STELLSCHRAUBE	6	–		
180	16241-1424-0	NUT	ECROU	MUTTER	6	–		
190	16241-1441-0	STUD	GOUJON	STEHBOLZEN	3	–		
200	15261-9201-0	NUT	ECROU	MUTTER	3	–		
210	15261-9401-0	WASHER, PLAIN	RONDELLE FREIN	SCHEIBE	3	–		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0601 INLET MANIFOLD
COLLECTEUR D'ADMISSION
ANSAUGENLEITUNG

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. G'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	17407-1177-0	ASSY MANIFOLD, INLET	ENS. COLLECTEUR D'AD.	GRP. ANSAUG-ROHRKRUE.	1	-		
020	16241-0555-0	JOINT, BREATHER PIPE	RACCORD D'ASPI-TUYAU	ANSCHLUSSTEIL	1	-		
030	16261-1182-2	GASKET, IN-MANIFOLD	JOINT DE COLL. ADM.	DICHTUNG ANSAUGROHR	1	-		
040	01023-50618	BOLT	VIS	BOLZEN	3	-		
050	01023-50630	BOLT	VIS	BOLZEN	1	-		
060	01023-60650	BOLT	VIS	BOLZEN	2	-		
070	15272-6759-0	CLAMP, CORD	ATTACHE-FILS	KABELKLEMME	1	-		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0602 EXHAUST MANIFOLD
COLLECTEUR D' ECHAPPEMENT
AUSPUFFRUEMMER

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. G'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16265-1231-2	MANIFOLD, EXHAUST	COLLECTEUR D'ECHAPP.	AUSPUFFROHR	1	–		
020	16261-1235-0	GASKET, EX-MANIFOLD	JOINT DE COLL. ECHAP.	DICHTUNG, AUSPUFFROHR	1	–		
030	16241-9149-0	STUD	GOUJON	STEHBOLZEN	6	–		
040	16271-9201-0	NUT	ECROU	MUTTER	6	–		

↔ Interchangeable; ≠ not interchangeable; ← new for old; → old for new

0800 GLOW LAMP AND TIMER
INDICATEUR DE PRECHAUFFAGE ET TEMPORISATEUR
GLUEHLAMPE UND ZEITMESSER

19077-079-20

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	17558-6599-0	TIMER,GLOW LAMP	TEMPORISATEUR	LAMPETREMBLEUR	1	-		

⟷ interchangeable; ≠ not interchangeable; ⟵ new for old; ⟶ old for new

19077-004-10

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	15263-1237-0	GASKET, MUFFLER NA	JOINT	DICHTUNG, AUSPUFFT. NA	1	--		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

0809 OPERATOR'S MANUAL
MANUEL DE L'UTILISATEUR
HANDHABUNG-GEBRAUCHSANWEISUNG

16201-028-10

A:D1105-E2B-EU-XL1

REF.No. POS.No. BILD-Nr.	PART No. REFERENCE BESELL-Nr.	PART NAME	DESIGNATION	BEZEICHNUNG	Q'TY/S.No. Q'TE/No.S. STUECK/S.Nr. A	B	I.C.	REMARKS REMARQUES BEMERKUNGEN
010	16622-8916-4	OPERATOR'S MANUAL	MANUEL DE L'UTILISA.	DETDIENUNGSANLEITUNG	1	-		

↔ interchangeable; ≠ not interchangeable; ← new for old; → old for new

NUMERICAL INDEX
INDEX NUMERIQUE
NUMERISCHEN INDEX

PART No. REFERENCE BESELL-Nr.	PAGE PAGE SEITE	REF. No. POS. No. BILD-Nr.
E9151-3314-0	5	130
K3511-5839-0	19	180
01023-50610	32	090
01023-50614	17	100
01023-50616	9	080
	9	170
	13	100
	18	140
	23	090
	28	060
01023-50618	33	040
01023-50620	8	080
01023-50625	8	070
01023-50630	29	080
	33	050
01023-50645	4	120
01023-50655	4	140
	28	070
01023-50665	4	150
01023-50685	29	090
01023-60650	4	130
	33	060
01053-50618	18	180
01123-50830	23	030
	25	020
01123-50835	28	150
01123-60814	3	030
	7	040
01123-60816	2	090
01173-51085	23	040
01311-10614	15	030
01311-10620	16	050
01754-50610	31	020
02056-50060	4	180
	18	160
	22	030
02176-50100	23	050
02761-50040	19	210
03017-50620	4	090
03024-50520	19	130
03054-50510	5	060
04011-50100	23	060
04011-50180	4	030
04015-60080	23	080
04512-60060	4	190
	15	040
	16	080
	18	170
	22	040
04512-60100	23	070
04814-00090	7	030
04814-00100	18	040
04814-00160	2	100
04814-10280	10	160
04814-50300	5	140
05012-00410	4	100
05012-00508	1	100
05012-00814	1	110
05411-00420	18	050
05411-00428	32	110
05712-00518	9	060
06311-55030	28	030
07715-00201	4	070
07715-00401	10	100
09318-88150	5	110
09661-40080	19	190
09661-40230	19	165
11197-6307-0	26	030
11197-6332-0	26	190
11197-6338-0	26	100
11460-6311-0	26	130
11460-6312-0	26	150
11460-6327-0	26	120
11460-6350-0	26	040
11460-6353-0	26	050
11460-9331-0	26	170
11521-6592-0	23	240
11521-6597-0	23	250
12581-4301-2	21	010
13963-9201-0	26	220
14182-9203-0	24	270
14971-4275-0	19	050
15021-3366-0	1	200
15221-0349-0	1	030
15221-3361-0	1	190
15221-3370-0	1	210
	3	120
15221-3375-0	2	060
15231-3396-0	1	130
15241-3229-0	4	040
15261-0337-0	3	090
15261-1336-0	32	050
15261-9119-0	12	050
15261-9201-0	32	200
15261-9401-0	32	210
15261-9601-0	1	040
	3	060
15263-1237-0	36	010
15272-6759-0	33	070
15321-9626-0	3	050
15401-6339-0	26	110
15451-9627-0	1	020
15451-9667-0	2	070
15471-5798-0	18	100
15511-6376-0	26	200
15511-9666-0	26	180
15521-2353-0	10	200
15521-2395-0	11	200
15521-2396-0	11	200
15521-9361-0	1	175
15521-9361-0	9	040
15521-9602-0	1	070
	4	025
15601-9665-0	14	050
	14	100
	18	190
	19	030
15707-3375-0	2	040
15841-3901-0	27	010
15841-4250-0	19	040
15841-5135-0	16	110
15841-5136-0	19	020
15841-5362-2	19	070
	20	120
15841-5385-0	19	110
15841-5386-0	19	120
15841-7302-0	1	220
15841-9150-0	16	060
15841-9202-0	14	030
15841-9232-0	16	070
15841-9233-0	14	040
	14	090
15841-9402-2	32	130
15841-9602-0	27	020
15841-9665-0	16	100
15841-9666-0	16	120
15852-5285-0	22	010
15861-9665-0	16	140
15881-6409-0	24	190
15881-6411-0	24	020
15881-6415-0	24	040
15881-6426-0	24	120
15881-6433-0	24	200
15881-6471-0	24	100
15881-6480-0	24	060
15881-6481-0	24	080
15881-6485-0	24	160
15881-6490-0	24	170
15881-9104-0	24	240
15881-9105-0	24	260
15881-9201-0	24	030
15881-9202-0	24	250
15881-9301-0	24	110
15881-9302-0	24	210
15881-9303-0	24	220
15881-9304-0	24	230
15951-9666-0	5	090
15952-9233-0	5	080
16006-5209-2	16	030
16006-5211-2	16	030
16006-5212-2	16	040
16020-1617-0	13	010
16030-5101-0	16	020
16030-5132-0	16	090
16030-9601-0	16	130
16032-5316-0	20	060
16032-5317-0	20	040
16032-5323-0	20	030
16032-5328-0	20	070
16032-5335-0	20	050
16032-9203-0	20	020
16032-9404-0	20	080
16032-9810-0	20	100
16032-9850-0	20	110
16032-9851-0	20	110
16032-9852-0	20	110
16032-9853-0	20	110
16032-9854-0	20	110
16032-9855-0	20	110
16032-9856-0	20	110
16032-9857-0	20	110
16032-9858-0	20	110
16032-9859-0	20	110
16060-2111-0	10	010
16060-2191-0	10	010
16219-7326-0	28	130
16221-5442-0	14	060
16221-7327-0	28	140
16221-9112-0	2	030
16221-9452-0	1	120
16222-5751-0	18	110
16222-7284-0	28	110
16222-8304-0	28	100
16226-3211-0	2	080
16229-7428-0	23	110
16235-6301-0	25	010
	26	010
16235-6303-0	26	070
16235-6304-0	26	060
16239-7343-0	29	070
16241-0175-0	3	010
16241-0177-0	3	020
16241-0345-0	3	100
16241-0409-2	8	010
16241-0421-2	4	200
16241-0446-0	8	050
16241-0454-0	8	020
16241-0456-0	8	100
16241-0462-0	12	040
16241-0481-3	8	040
16241-0555-0	33	020
16241-1311-0	32	010
16241-1312-0	32	020
16241-1328-0	32	070
16241-1403-2	32	160
16241-1423-0	32	170
16241-1424-0	32	180
16241-1431-0	32	140
16241-1435-0	32	100
16241-1441-0	32	190
16241-1443-0	32	120
16241-1511-0	9	020
16241-1627-0	9	070
16241-1632-0	13	090
16241-1651-0	9	050
16241-2131-0	10	030
16241-2133-0	10	040
16241-2198-2	10	060
16241-2201-2	10	050
16241-2214-2	10	070
16241-2231-0	10	080
16241-2297-0	10	080
16241-2298-0	10	080
16241-2325-0	10	150
16241-2328-0	10	140
16241-2347-0	10	170
16241-2348-0	10	180
16241-2391-0	10	170
16241-2392-0	10	170
16241-2393-0	10	180

NUMERICAL INDEX
INDEX NUMERIQUE
NUMERISCHEN INDEX

PART No. REFERENCE BESELL-Nr.	PAGE PAGE SEITE	REF. No. POS. No. BILD-Nr.
16241-2394-0	10	180
16241-2406-0	1	170
16241-2411-0	10	110
16241-2425-0	9	160
16241-2432-0	9	150
16241-2436-0	9	130
16241-2437-0	9	140
16241-2516-0	12	030
16241-3365-0	1	140
16241-3507-0	4	080
16241-3563-0	10	130
16241-3693-0	4	060
16241-3695-0	4	050
16241-4232-0	19	170
	19	200
16241-5412-2	14	070
16241-5526-0	13	160
16241-5527-0	13	140
16241-5539-2	13	120
16241-5545-0	13	180
16241-5546-3	13	190
16241-5555-4	13	220
16241-5621-0	17	110
16241-5625-0	17	080
16241-5633-0	17	070
16241-5634-0	17	120
16241-5716-0	18	030
16241-6442-0	23	020
16241-7334-0	29	060
16241-7335-0	28	080
16241-7336-0	28	090
16241-7337-0	28	020
16241-7425-0	23	100
16241-9102-0	23	120
16241-9104-0	4	160
16241-9149-0	34	030
16241-9202-0	18	070
16241-9233-0	13	060
16241-9402-0	18	060
16241-9523-0	13	080
16241-9601-0	1	060
16241-9602-0	4	020
16241-9626-2	1	150
16245-9153-0	4	170
16245-9154-0	4	210
	18	150
16251-0402-7	4	010
16251-3513-0	4	085
16251-7303-4	29	010
16259-0558-0	5	120
16259-7351-2	29	050
16259-7352-0	29	020
16259-7355-2	29	030
16261-0404-0	8	090
16261-0405-0	8	110
16261-1182-2	33	030
16261-1235-0	34	020
16261-1333-0	32	040
16261-1354-0	3	070
16261-1356-0	3	080
16261-1426-4	32	080
16261-1452-0	5	030
16261-1555-0	9	010
16261-1601-0	9	030
16261-2105-0	10	020
16261-2109-0	10	020
16261-4203-0	19	160
16261-4250-2	19	010
16261-5501-3	13	110
16261-5628-0	1	160
16261-5648-0	17	010
16261-6556-0	19	150
16261-9671-0	28	040
16261-9730-0	13	020
16261-9731-0	13	030
16261-9732-0	13	200
16264-0413-0	4	110
16264-0436-0	8	030
16264-0482-0	8	060
16264-5214-0	22	020
16264-5721-0	18	130
16264-7292-0	28	050
16264-8315-2	14	120
16264-8334-2	4	220
16265-1231-2	34	010
16265-2301-3	10	090
16265-7411-0	31	010
16271-1324-0	32	030
16271-2401-0	9	090
16271-2402-0	9	110
16271-2498-0	9	100
	9	120
16271-3209-2	6	010
16271-5371-2	19	080
16271-5372-2	19	090
16271-5373-2	19	100
16271-5506-0	13	150
16271-5532-0	13	130
16271-5535-0	1	180
16271-5541-0	13	210
16271-5602-3	18	080
16271-5715-0	18	020
16271-5772-0	18	090
16271-5774-0	18	120
16271-9201-0	34	040
16271-9523-0	10	120
16271-9569-0	16	010
16271-9616-0	1	090
16272-5115-0	13	070
16282-3650-0	7	020
16282-9701-0	23	130
16285-5409-3	14	010
16285-5410-3	14	020
16285-5426-0	14	025
16285-5641-2	17	020
16285-6357-0	26	250
16285-9201-0	26	240
16285-9805-0	26	270
16292-2349-0	10	190
16292-2386-0	10	190
16292-2387-0	10	190
16299-5626-0	17	090
16299-5701-5	18	010
16611-3641-2	7	010
16611-6302-0	26	080
16611-6345-0	26	210
16611-6366-0	26	230
16612-6310-0	26	260
16613-0150-0	2	010
16622-8916-4	37	010
16631-6584-0	23	150
16652-6431-0	24	180
16652-6460-0	24	280
16652-6477-0	24	070
16652-6478-0	24	130
16661-6308-0	26	020
16662-6583-0	23	200
16678-6401-2	23	010
	24	010
16678-6406-0	24	140
16678-6423-0	24	150
16678-6583-0	23	140
16683-9602-0	1	050
16692-2501-3	12	010
16813-6382-0	12	020
16851-6551-0	19	140
17203-7286-0	30	010
17208-6001-0	15	010
17331-7334-2	5	070
17341-6320-0	26	090
17391-9616-0	1	080
17407-1177-0	33	010
17558-6599-0	35	010
19008-7270-0	28	010
19077-5365-0	19	075
	20	130
19202-2354-0	11	210
19202-2397-0	11	210
19202-2398-0	11	210
19212-6310-0	26	140
19212-9713-0	26	160
19215-6375-0	23	230
19237-6591-0	23	160
	23	220
19434-7301-4	28	120
19484-5544-0	13	170
19872-6584-0	23	210
1C010-1315-0	32	060
1C010-6583-0	23	170
1C010-6588-0	23	180
1C010-6591-0	23	190
1E038-0331-0	3	110
1G021-9665-0	14	110
1G031-5421-0	14	080
1G032-0537-0	5	020
1G032-0551-0	5	100
1G032-1450-0	5	010
1G032-5613-0	17	040
1G032-5615-0	17	050
1G032-5647-0	17	060
1G053-0304-0	3	040
1G065-5361-0	20	090
1G065-5390-0	19	060
	20	010
1G069-5601-3	17	030
1G642-7305-0	29	040
1G662-0101-0	1	010
1G680-7287-0	30	020
1G911-0512-0	5	050
1G911-0520-0	5	040
36200-8272-0	30	030
66436-6402-0	24	090
66436-6404-0	24	050
68371-5121-0	22	050
6C090-5896-0	2	050

KUBOTA

THE BASIC NECESSITIES GIANT

"Technology for the Needs of Tomorrow" is the ambition of everyone at Kubota. Through research and the development of new products for agriculture, industry, construction, and many other areas of modern life, we at Kubota hope to realize this goal.

GEANT DES NECESSITES FONDAMENTALES

"La Technologie pour les Besoins de Demain" est l'ambition de chacun CHEZ KUBOTA. A travers la recherche et le développement de nouveaux produits pour l'Agriculture, l'Industrie, la Construction et plusieurs autres domaines de la vie moderne, Nous KUBOTA, espérons atteindre ce but.

GIGANT DER FUNDAMENTALEN NOT WENDIGKEITEN

"Technologie für die Welt von Morgen"
Wir bei KUBOTA arbeiten ständig an diesem Ziel durch Forschung und Entwicklung neuer Produkte für den Agrarsektor, die Industrie, die Bauwirtschaft und viele andere Bereiche unserer modernen Zeit. Die Zielfinie verschiebt sich ständig, aber wir kommen ihr näher.

PRINTED in JAPAN
IMPRIME Au JAPON
DRUCK JAPAN

Proof of maintenance

Warranty claim for this machine only apply for performance of the mandatory maintenance works (by an authorised specialist workshop)! After each completed performance of a maintenance interval the included form must be fill out, stamped, signed and send back to us immediately [1].

1) via e-mail to service@probst-handling.de / via fax or post

Operator: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Device type: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **Article -No.:** _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Device-No.: _ _ _ _ _ _ _ _ _ _ _ _ **Year of make:** _ _ _ _

First inspection after 25 operating hours

Date:	Maintenance work:	Inspection by company:
		Company stamp
		…… *Name* *Signature*

All 50 operating hours

Date:	Maintenance work:	Inspection by company:
		Company stamp
		…… *Name* *Signature*
		Company stamp
		…… *Name* *Signature*
		Company stamp
		…… *Name* *Signature*

Minimum 1x per year

Date:	Maintenance work:	Inspection by company:
		Company stamp
		…… *Name* *Signature*
		Company stamp
		…… *Name* *Signature*

GB

Probst GmbH
Gottlieb-Daimler-Straße 6
71729 Erdmannhausen, Germany

Telefon +49 7144 3309-0
Fax +49 7144 3309-50

www.probst-handling.de
info@probst-handling.de