

Type 2625 01 i	Manual	 <small>KLEINMOTOREN GMBH Stuttgarter Str. 41 D 71050 Sindelfingen, Germany</small>
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1. General engine description

- Twin - cylinder in line - two - stroke - engine
- Liquid cooling
- Lubrication by fuel-oil-mixture
- Electronic fuel injection
- Dual electronic high-voltage ignition
- Crankshaft layout for belt transmission
- AC generator

2. Technical data

Displacement	625 cm ³ bore 76 mm stroke 69 mm
Compression ratio	9,5 : 1
Ignition unit	Dual electronic high-voltage ignition, mapped
Spark plugs	BOSCH W5 AC or NGK B7HS, air gap at electrodes 0.5 mm
Fuel injection	Electronic, two butterfly shutters, mapped
Sense of rotation	Clockwise in flight direction
Fuel	Premium unleaded Min. 95 RON , AVGAS100LL, or mixtures of the two fuels
Lubrication	Fuel oil mixture 1:50 (2%), Oils according to the specification JASO FC or FD, recommended oil SOLO Two Stroke Oil
Dry weight	24 kg without exhaust (according to airframe manufacturer)
Generator	12 V 500 W
Coolant	Engine coolant (Glysantin BASF G48), tap water (0-20°dh) in a mixture of 40:60 (27°C)

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3. Operational data and limitations

Take-off-speed, power	6 250 rpm with a power of 45 kW (61 hp)
Max. cont. speed, power	6 250 rpm with a power of 45 kW (61 hp) /
Max. rpm	6 600 rpm
Cut off speed by CPU	6 600 rpm
Idle rpm	approx. 2 300 rpm
Max. temp. cooling liquid	115 °C (240°F) measured in the cylinder - head
Fuel consumption	Max. continuous power approx. 24 l/h

4. Installing Instructions

The engine can be mounted at the drive side flange with 4 bolts M8. At the cylinder heads there are 4 more threads M8 and at the bottom of the crankcase there are 4 threads M10. The cylinders have to be in vertical position when the engine is its operating position.

The load on the mounting threads can be 5 kN each.

The fuel line has to be protected against fire.

A fuel pump with a fuel pressure of min.3.5 bar and a maximum pressure of 5 bars is to be used. In the return line a fuel pressure regulator has to be installed which regulates the fuel pressure to 3 bars.

Upstream to the fuel pump a fuel filter with a mesh size of 60 to 100 µm has to be installed. After the pump a micro filter with a mesh size of 10 µm has to be installed. (A suggested fuel scheme see chapter 9)

A water cooler with a cooling capability of 15 kW has to be used.

If an electric starter is used, its power has to be at least 400 W.

If the propeller is driven by a belt the belt tension may not be higher than 5 000 N

For the electrical wiring see the diagrams in chapter 8.

Table of torques

Spark plug	20 Nm
Drive pulley on crankshaft	100 Nm
Bolts and nuts M 6	12 Nm
Bolts and nuts M 8	20 Nm
Bolts and nuts M 10	40 Nm
Magneto on crankshaft	80 Nm

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5. Operating instructions

For correct function of the engine it is absolutely necessary to follow exactly the following operating and maintenance instructions.

<p>Before starting the engine</p>	<p>Has daily check been made? Open throttle lever fully. Check throttle lever for free movement on full range. Ignition: „OFF“. Turn propeller several times by hand to check for abnormal noise or hard motion of the engine. Move throttle lever to idle position</p>
<p>Starting the engine</p>	<p>Main switch on. Throttle lever in idle Open fuel cock. CPU and ignition "ON". Check for safety around the propeller. Engage the wheel brake. Start the engine.</p>
<p>Take off and climbing</p>	<p>Conduct an ignition check at approx. 4 000 RPM .Maximum rpm - drop 300 RPM. Accelerate to full throttle. Limits of RPM and temperatures may not be exceeded.</p>
<p>Stopping the engine</p>	<p>Switch off ignition.</p>
<p>Starting the engine in flight</p>	<p>Bring the engine into flight position. Disengage the propeller stop. Throttle in idle position. Fuel cock open. CPU and ignition "On". Start until engine runs. Throttle into full.</p>

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6. Maintenance instructions

Daily check before flight	Check fuel quantity. Check throttle lever for free movement. Check outside of engine, engine compartment, belt transmission and mountings for proper condition. Check level of cooling liquid.
Inspection after 25 hours of operation or after 1 year.	Check spark plugs. Check entire engine for loose parts and bolts. Check for leaks of water and fuel. Check all Bowden cables and controls. Check wires and electrical connections. Check belt tension. Clean the engine and engine compartment. Put grease on starter gears.
Inspection after 400 hours of operation.	Inspection and overhaul by the manufacturer.
Conservation and storage of the engine.	If the engine is stored for more than 2 months or it is out of use, preserve and store it as follows: Inject approx. 2.5 ml of two stroke oil into each throttle body and crank the engine 10 turns by hand. Cover intake openings on carburettors.

7. Trouble shooting

Engine does not start

No fuel supply	Check fuel line to the injectors. Check function of fuel pump.
No spark on both spark plugs of ignition circuit	Weak battery. Charge battery. Defective wires or ignition coil defective.
No spark on one spark plug of ignition circuit	Defective spark plug. Defective wires or ignition coil.

Engine does not run properly

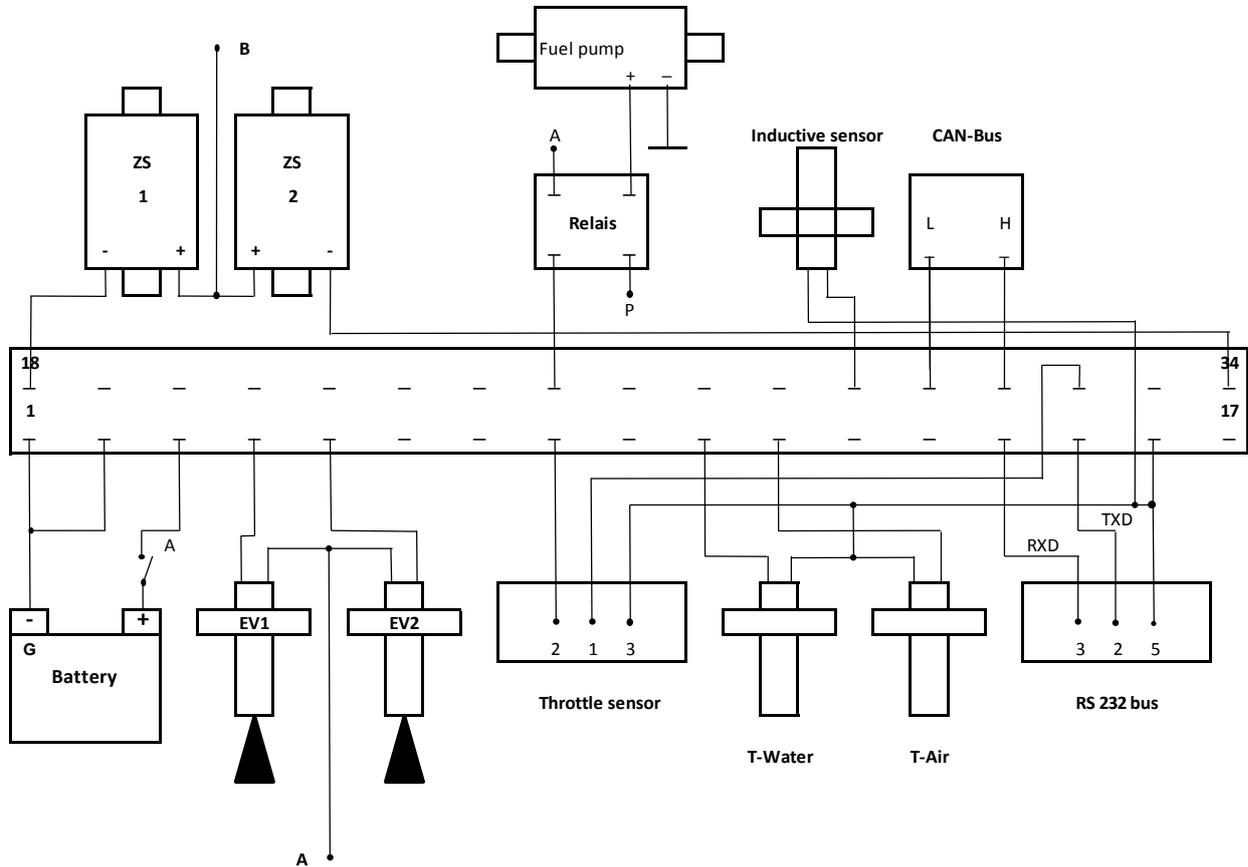
Engine gets too hot	Cooling liquid level low. Water pump faulty. Fuel pressure not sufficient.
Engine does not reach full rpm	Fuel pressure not sufficient. Fuel filter clogged. Throttle does not open completely. Defective fuel pump. Defective spark plugs.

Failure memory

The ECU has a failure memory, which detects and stores failures of the system. This memory can be checked with the software WinTrijekt.

8. Wiring diagram

Connection of the ECU to the engine

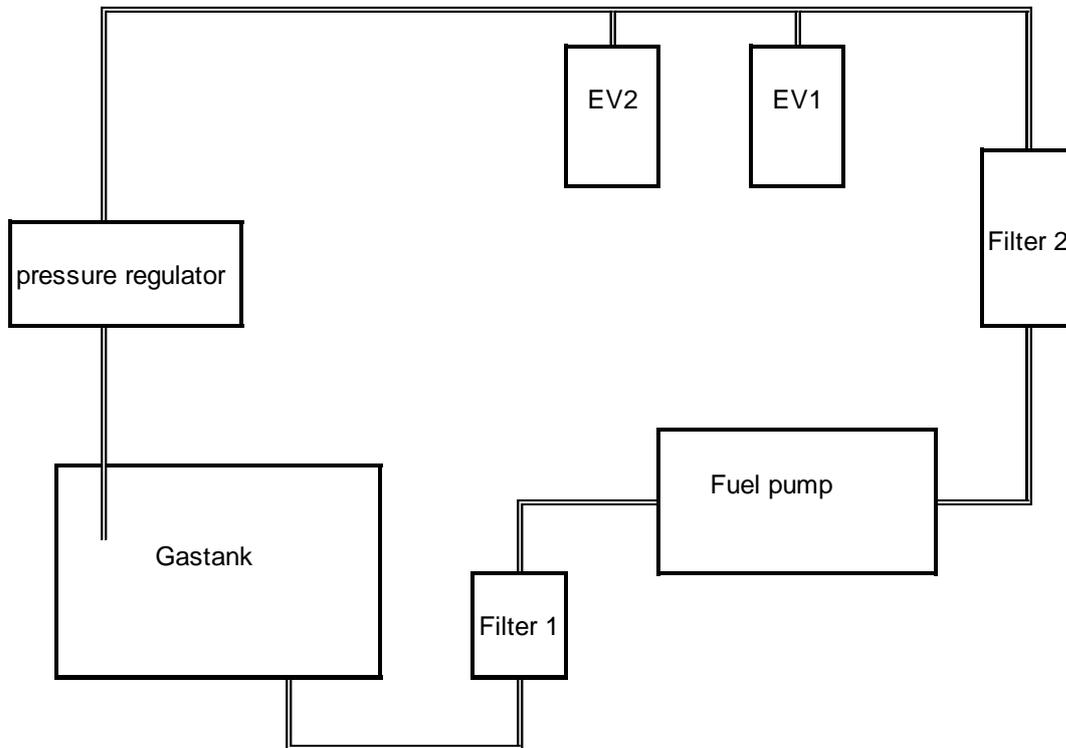


G = Ground
 A = Power Engine System (Fuse 5A)
 B = Power Ignition (Fuse 10A)
 P = Power Fuel pump (Fuse 15A)

Plug connection ECU

1 & 2	Power Ground	18	Ignition coil 1
3	Power Engine System	34	Ignition cCoil 2
4	Injection Valve 1 (Alternator side)	25	Relay Fuel Pump
5	Injection Valve 2 (Drive side)	29	RPM Transducer
8	Signal Throttle Valve Transducer	16	Ground RPM Transducer
32	Power 5V Throttle Valve Transducer	30	CAN-Bus (CANL)
16	Ground Sensors	31	CAN-Bus (CANH)
10	Signal Water Temperature Sensor		
11	Signal Air Temperature Transducer		
14	Computer Interface RXD		
15	Computer Interface TXD		
16	Computer Interface Ground		

Fuel supply system



- EV 1 : Fuel injection valve ignition side
- EV 2 : Fuel injection valve drive side
- Filter 1 : Fuel filter (60 bis 100 µm)
- Filter 2 : Fine Fuel filter (ca. 10 µm)

9. Power sheet

