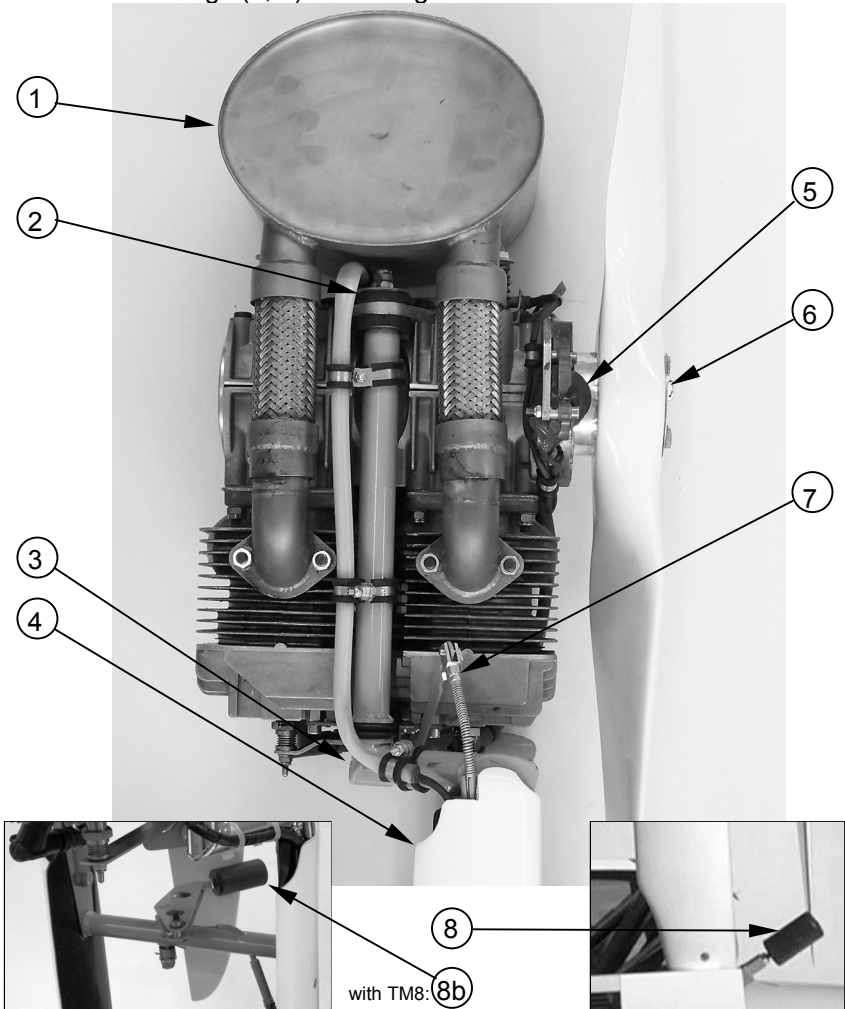


## 2.13 Power-plant

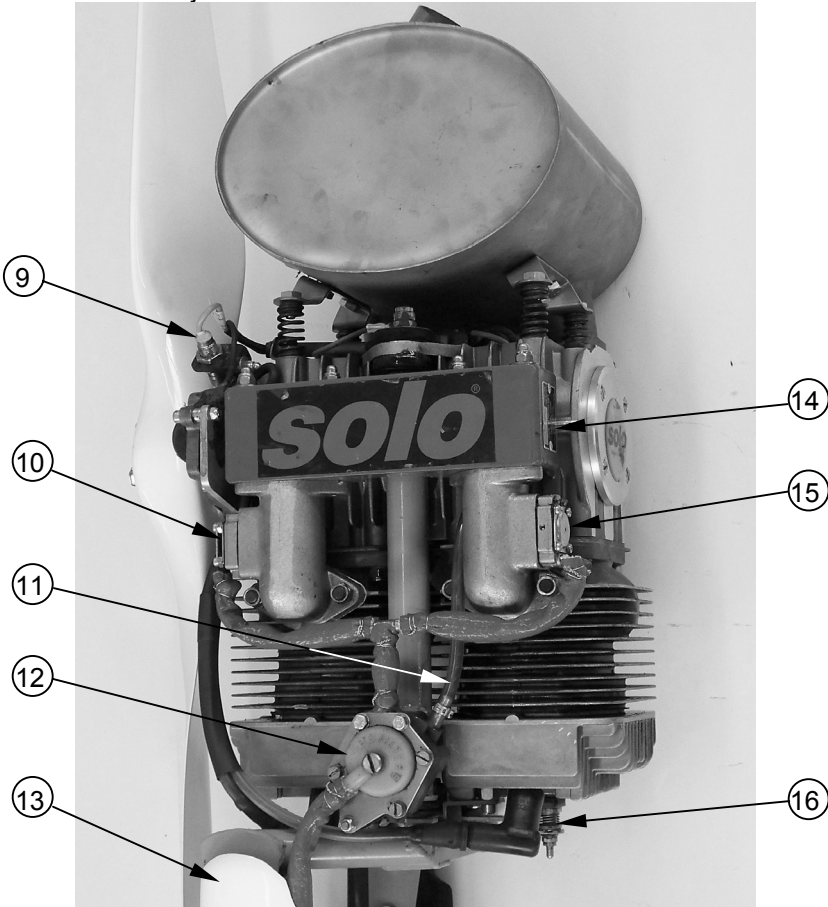
### 2.13.1 Description of Components

#### Power-plant Configuration

The propeller is bolted with five screws M8x1 (6) to the crankshaft of the engine (Solo 2350) and secured with lock wire. The engine is mounted on rubber bearings (2, 3) at the engine mount carrier.



The pneumatic fuel pump (12) and the lever (7) for actuating the decompression valves are mounted on this likewise. The engine mount carrier is supported on two CRP-swords. An electric spindle (25) moves the whole unit out of the engine bay. Nearby a gas spring (27) takes most of the weight. A limit switch (26) confirms the extended state of the power-plant. In the extended state, a toggle strut (30) holds up the engine installation and supports itself on the cross tube between the lift pins. The strut is just racked in the extended state.



### 2.13.2 Dismantling & Re-Assembling of Components

#### **Propeller**

The propellers approved for the ASW 28-18E are specified in the flight manual chapter 2.4.

Remove and install the propeller according to the manuals of the propeller. Strictly observe the specified torque of the screws. The installation of the propeller has to be checked by an inspector!

Minimum material necessary for re-assembly:

Lock wire

#### **Exhaust**

The silencer together with the two bows can be screwed off directly at the spiral springs. In case one of the inserts twists out off the spiral spring, it can be retained with a pair of tongs. The silencer should not be screwed off from the bows, because the screws are mounted with temperature resistant silicon.

If the silencer is loose, it can be removed together with the flexible exhaust tubes from the manifolds. One o-ring from Viton (Ø38x2 FKM) is found in a groove in every of the two sliding pieces, whose condition should be checked and renewed if applicable. The manifolds are removed by unscrewing the four Thermag-nuts.

Prevent in any case impurities from entering the combustion chambers or the exhaust pipes. Therefore always lock the openings (e.g. with a clean rag).

The re-assembly follows in reverse order. All screw connections are secured with tooth lock washers, which must be replaced. Installing the manifolds again, new Thermag-nuts and new gaskets have to be used. When the silencer is being put on again, take care for the o-rings. The installation of the exhaust has to be checked by an inspector.

Minimum material necessary for re-assembly:

Silencer: 4 Schnorr – tooth lock washers, S8x13x0,8

Manifold: 4 Thermag-nuts SW12 M8 SSN 441

4 Schnorr – tooth lock washers, S8x13x0,8

2 gaskets, 1,5mm thick

## Engine

The engine can be more easily handled, if propeller and exhaust have been screwed off before. Unplug the spark plug caps.

All the wiring remains in the aircraft. Unscrew the speed sensor (9) from its supporting angle. Three wires coming from the fuselage control the ignition coils. One line is attached to each ignition coil with a push-on contact. Carefully remove the silicone around the coils to access and separate these contacts. Unscrew the third line, which is attached to the base plate of the coils. To loosen the cable ducts on top of the crank case, remove one screw and the two forward springs supporting the exhaust. To loosen the cable duct on the right side unscrew its clamps.

Disconnect the fuel line at a suitable place, either at the T-piece between the carburettors (10, 15) or at the fuel-pump. The impulse hose (11) between crankcase and fuel pump must be deducted from the pump. The hoses have to be secured against penetrating dirt.

Disconnect the screw joints between the engine and the engine mount carrier (two set of counted nuts at the crankcase, and two nuts below the bar between the cylinder heads). The engine can then be deducted along the engine mount carrier. Take care, that nothing falls into the air intake case (14) near by.

The re-assembly follows in reverse order. When assembling, do not forget the ground line between upper cable ducts and the top of the left vertical strut. Replace Thermag-nuts and Schnorr tooth lock washers with new ones. Tie up the screw joints of the engine mount carrier so far, that the rubber elements are compressed to about 9 mm (3/8 in.). The speed sensor must be adjusted so that it reacts to the magnetized side of the pole wheel, but not to the opposite side („react“ means, that a yellow light at the rear of the speed sensor lights up, assumed all wires are connected and the power-plant instrument is switched on). Thereby, a

slit of about 6 mm (1/4 in.) between speed sensor and magnetized pole results. Secure the nut of the speed sensor and the screw of the upper cable duct with Loctite 242. Apply temperature resistant silicone around the ignition coils after reconnecting the ignition lines. The installation of the exhaust has to be checked by an inspector.

Minimum material necessary for re-assembly:

2 Schnorr – tooth lock washers, S8x13x0,8

4 Thermag-nuts SW12 M8 SSN 441

4 self-locking nuts M5

Loctite 242

Temperature resistant silicone

Hose clips, lock wire

### 2.13.3 Temporarily shut down of the Power-plant

If an engine is not going to be operated for longer than two months, it has to be preserved according to the Engine Manual:

Drain the fuel system. Inject about 5 cm<sup>3</sup> (0.3cu.in.) two-stroke oil through the intake system into both intake ports. With the ignition turned off, and open decompression valve, turn with the propeller about 10 revolutions.

Lock the entrance opening at the air intake and the exhaust opening.

### 2.13.4 Power-plant Dismantling & Re-Assembling

To simplify the work, the rubber chords of engine bay doors can be disconnected, or the doors can be held open a strut.

Extract the power-plant just short before its fully extended position. Detach the fairing of the right sword with the two cross recess screws and take it away sideways and rearwards. Unhook the clevis at the decompression lever and unscrew it from the bowden cable, as well remove the counter nut and spiral spring.

With the variant of the propeller stopper pivoting rearwards, unengage the stopper with the power-plant lever. Moving the stopper forward by hand, relaxes the bowden cable enough, so it can be unhooked. Then detach the fuselage sided spiral spring.

With the sideways pivoting variant, screw off the C-shaped bearer. With variant (8b) screw off the cylindrical carrier. In both cases leave the unit in the plane. If otherwise the sticking of the Bowden cable is opened, a new traction must be applied when reinstalling the engine.

The electric plug-in connector (23) has a bayonet coupling.

**IMPORTANT NOTE:** *If connector (23) is pulled, the ignition is definitively on! Therefore, also pull the spark plug caps!*

Pinch off the fuel line at the lower end of the left-hand sword, and close both ends, so no dirt can penetrate. Screw off the end switch (26) at the toggle strut and open the cable fixer at the strut.

Open the shrink hose covering the electric lines of the spindle and disconnect the terminals. Screw off the spindle at both ends and take it out.

**IMPORTANT NOTE:** *If the gas spring is intact, the power-plant will keep on staying unsupported in its extended position. If, however, the toggle strut is pushed in, the power-plant will flip in violently. Therefore, a helper should secure the toggle strut and the engine.*