



Thorix 80

Manual

Construction



Operation



Maintenance

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Content

Prior to operation of this paramotor the pilot should familiarize themselves with this manual. It contains operating instructions and details pertaining to the maintenance of the Thorix model.

The owner needs to become familiar with all aspects of operation and maintenance prior to the use of this motor. The owner needs also to adhere to laws pertaining to their own country regarding flight restrictions and maintenance as well as what is contained in this manual.

Information regarding important updates to this model will be made available via your importer, and published in the relevant national flying magazines under <http://www.fresh-breeze.de/en/service/dfgdfg.html>

Please note:-Do not make any flights in turbulent weather conditions through as a paraglider in principle receives its shape only by the internal pressure. This can be established only when normal air flow conditions prevail. You need to fly with increased caution when thunderstorms are near by or forecasted.

Under no circumstances should a pilot fly too close to the storm front. Land if ever in doubt. Other areas in your country will also have flight restrictions and laws of entry. These include but are not limited to military zones, controlled aircraft areas and populated areas. Seek information about an area before taking flight as well as the appropriate licensing.

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At first, the motor is positioned upright, and the lower two cage parts are mounted.



Thereafter, the two upper parts of the cage are inserted into the frame / cage.



All seven Velcro straps that hold the cage together and the frame must be fixed.



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Assembly

The starter rope is hooked into the eyelet at the upper right cage



The propeller is in two parts. Before installation the prop must be plugged together.

Designation of the prop:

2 Blade

6° Pitch

1,25 m

H 25 F 1,25 R-S-06-2.

Do not fly at any time with an unbalanced propeller.



The propeller is screwed by means of the 6 screws (M6 x 50mm; 10 Nm).

The adapter plate grant the correct gap from the propeller to the cage.

It is positioned between the propeller and the propeller hub.



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The engine will be delivered with 2 tank lids. One is with a ventilation hole for flight operations. The other is closed for transport. Before each flight, ensure that the ventilation cap is screwed on.

Failure to do so may result in engine failure due to the tank pressure.

Use the closed lid only for transportation. Beware that a closed tank will expand as temperatures rise, as well as shrink as conditions get cooler and deform the fuel tank- check the correct cap is fitted before each flight and the tank is not expanded.

Fuel flows from the fuel tank through a 90° outlet and then through a fuel filter- check before each flight.

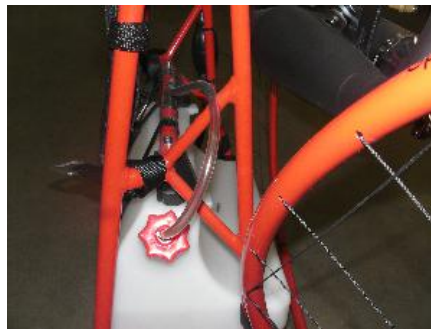
After the fuel filter there is the ball pump that allows the fuel to be primed into the carburettor

The membrane carburetor has no special choke system. A cold engine needs to be primed.

To prime your engine squeeze the ball pump. Simultaneously press in the carburetor membrane to allow fuel to come into the carburettor.

It is important to release the membrane before releasing the pump. Repeat this until you see fuel enter into the carburettor via the fuel line and your finger feels a little pressure.

Now you have the right amount of gas in your carburetor.



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Fuel and Oil

Make sure the area you start the motor is clear from people. The preferred method is to put the motor on your back. You can reach for the starter handle over your shoulder. The throttle lever should be in your hands while pulling the cord. Identify the kill switch in case you need to stop the motor.



After a tough pull the engine should start within the first 5 attempts. Normally a small amount of throttle needs to be used while pull starting. If the engine doesn't start then repeat the steps to prime the motor with ball pump and membrane on the carburettor as already described. If the engine is "flooded", you may have to use larger amounts of throttle. Beware that a motor starting on full throttle has significant risks.

THE ENGINE RUNS WITH A 1:50 FUEL/OIL MIXTURE

(2% Special Blu 2T and SUPER 95 OCTANE FUEL # 80059)

Basic adjustment for WB 37

Close the both mixture screws L and H

Open the Screw L 1,3

Open the Screw H 1,5

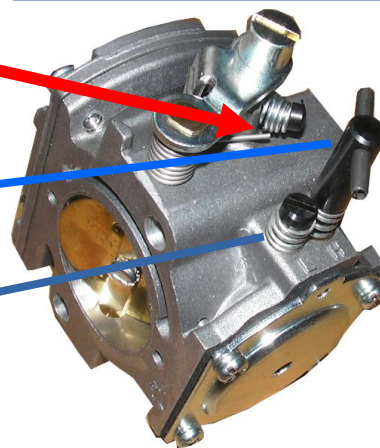
Screw "in" means the engine runs leaner
Screw "out" means the engine works richer



Idle Screw

H Screw 1,5 turn out

L Screw 1,3 turn out



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Start Engine



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!! All 4 shackles must be secured with the keyrings !!



As people weights vary it is important to set up your motor to ensure your weight will result in a safe and comfortable flight. Test hang your motor to simulate the in-flight position and re test hang after each adjustment. The aim is to have a safe thrust line position as well as a comfortable position to fly in. Use another person preferably an instructor to help you adjust this tilt angle. Aim for between 5-20 deg. A 5 degree thrust line means the thrust is pointing 5 degrees down. The higher the angle the more tilt back. Beware this may result in more difficulty getting out into hang for landing. Higher tilt back angle may also result in premature sitting down on launch.

Factory settings on the low hang bars are the the middle position in both holes, test hang in this position first. As a general rule.

Heavy pilots should use the glider position hole **1** and the harness position **3**
Lighter pilots use position **3** for Glider shackle and pos. **1** for the harness shackle.

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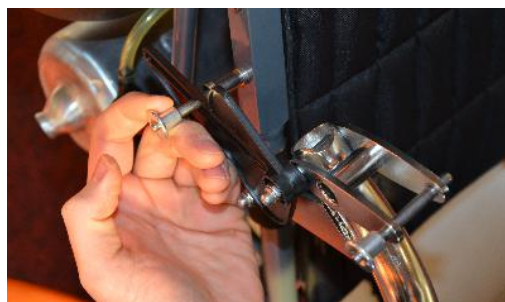
Pilot Suspension

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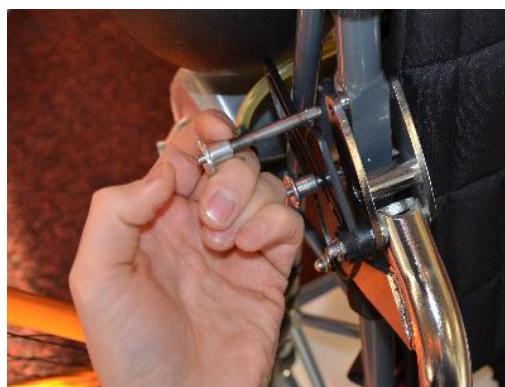
First, attach the harness to the lower frame locks



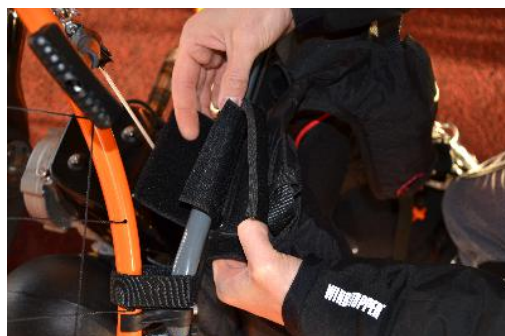
Thereafter, the moving pushrods with associated Quickpin be attached to the frame. One example of the lower Quickpin is first plugged into the bushing



Then the upper



The harness is now connected to the upper strut with the Velcro to the back frame.



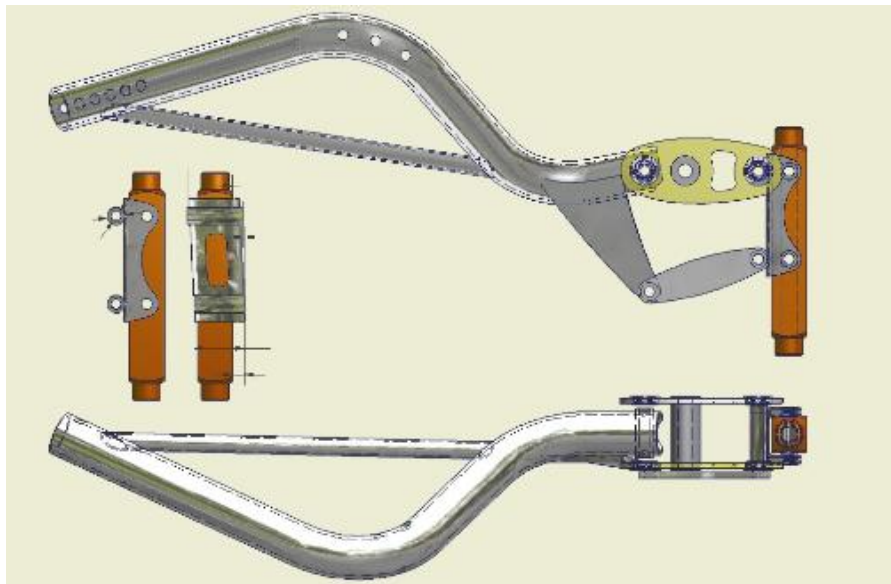
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Pilotsuspension and Harness

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The left pushrod is twisted outward. This compensates the constant left-hand twist very efficient.



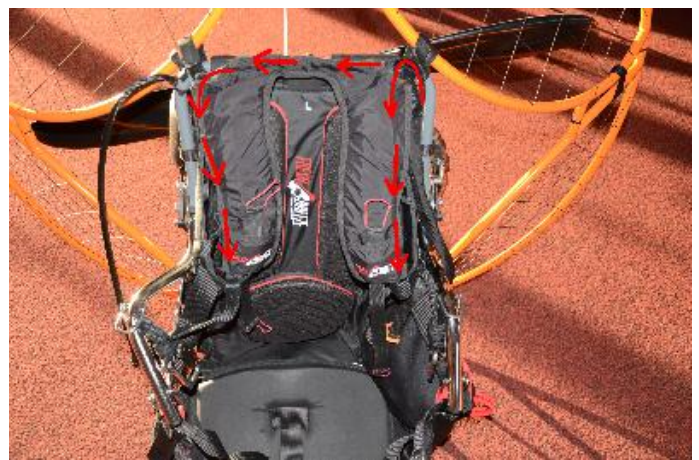
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Pilotsuspension and Harness

The integrated rescue provides a maximum comfort. The V-line must be externally installed on the push bar. The red arrows in the picture show the laying direction of the V-line



Here the V-Line is splitted for the left and right shoulder. The V-line runs integrated over the shoulder in a cloth cover of the harness and ends in the main carabiners for the glider.



Optionally, there is the harness also available in a light version. For this harness we recommend our frontcontainer system (# 80053.1). This saves additional weight.

Seatposition in Flight



Landingposition



After „Take off „use the leg strap to slip easy into the harness.

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Pilotsuspension and Harness

The throttle lever is secured in your hand via the hand strap. Secure the throttle lever prior to flight. As some methods for launch set up involve taking the brakes first, refer to your instructor's advice for the best sequence for launching.



While doing a forward inflation ensure the A-lines don't get caught on the cruise control. Adjust this knob for the optimum position to avoid this getting caught. If you ordered your throttle lever upside down there is less chance for this to occur.



Consult your instructor for the best method for inflation.

Shown in this picture the set up of a powered forward inflation.



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Throttle Lever

Attention!
Only when the engine is cold open the lid. Risk of burns!

The cooling liquid is safe until minus 30 ° C (-22 Fahrenheit)
Should a small amount of liquid is missing, this can be filled with normal tap water.

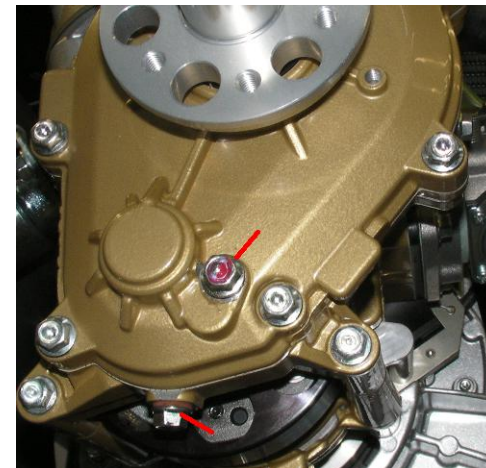
Should more be refilled, a coolant is required for aluminum engines
The color of the fluid is pink.

Caution: Never mix pink with green liquid!
In the bottle must always coolant

The pinion gear has an oil filling
The oil level can be checked through the inspection plug. 1
The Level is reached when oil runs out of this hole.
Oil can refilled even through this hole

The transmission oil is discharged through the opening. 2
Specification of gear oil

ELF MOTO GEAR OIL 10 W 40 oder Shell Advance Gear SAE 10 W 40 API GL-3



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Coolant and Gearboxoil

FOLLOWING INSPECTIONS HAVE AT LEAST BEOR EVERY TAKE OFF

- Secured Proepller Cage to the Frame
- Check Propeller Cage on Deformations
- Propellerhub without big „Dead Idle“
- All Rubber Mounts heck for Chrecks
- Test Killswitch at Full Throttle
- Max RPM min. 10.000 U/MIN
- Correct amount of petrol in the fuel tank. 95 Oct
- Check fuel system for leaks
- Check Pilot Suspension for Wear . Retaining rings installed properly.
- Vented Fuel Cap screwd on
- Check the Glider for damages
- Rescuesystem operational
- Cooling Liquid Level ok.

FOLLOWING INSPECTIONS HAVE AT LEAST EVERY 10 H BE PERFORMED

- Fuel Filter clear
- Spring on Exhaust o.k
- Propellerscrew fix
- Check Exhaust for Fissures
- Fuel tank no damage
-

FOLLOWING INSPECTIONS HAVE AT LEAST EVERY 50 H BE PERFORMED

- Ceck all Wires with it's Connections
- Throttlecable especially near the Lever
- Replace the Sparc Plug RN2C
- Replace all Rubber Mount on Exhaust
- Check Fuse Wire for Exhaust Spring
- Visual Inspection of he intake Silencer. Thigthen the Clamp
- All Bolt's,Screw's and Clamp are tight?
- Changing the Transmission Oil

ELF MOTO GEAR OIL 10 W 40 oder Shell Advance Gear SAE 10 W 40 API GL-3

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FOLLOWING INSPECTIONS HAVE AT LEAST EVERY 100 H BE PERFORMED

- Check the Piston rings for free gear. This can be carried out from Exhaust Outlet Channel
- Open the Gear Box and inspect the Pinion
- Replace the Carabiner from the Pilot Suspension
- Replace the Webbing from the Pilot Suspension
- Replace Starter Rope
- Replace all Rubber Mount
- Replace the Intake Membran
- Replace Piston Pin and Needle Bearing

FOLLOWING INSPECTIONS HAVE AT LEAST EVERY 200 H BE PERFORMED

- Replace piston and rings

FOLLOWING INSPECTIONS HAVE AT LEAST EVERY 100 H BE PERFORMED/CHANGED

- Replace all Ball Bearing
- Replace the Crank Shaft
-

THE FOLLOWING PARTS NEED TO BE REPLACED EVERY 5 YEARS

- Carabiner from the Pilot suspension

GLIDER

- THE GLIDER SHOULD BE CHECKED ALL 2 YEARS. SEND TO THE MANUFACTURER

MOTOR

- THE ENGINE SHOULD BE CHECKED EACH YEAR ALIKE HOW MUCH HOURS IT'S USED

**WITHOUT THESE CHECKS NO WARRANTY OR OTHER CLAIMS!
PLEASE USE ONLY FRESH BREEZE GENUINE SPARPARTS. THIS WILL BE TAKEN INTO CONSIDERATION
ALL SAFETY AND STIFFNESS WHICH IS REQUIRED FROM DULV.**

!!!

**BE SURE TO FOLLOW THIS SAFETY ADVICE EVERY TIME YOU USE
FRESH BREEZE MOTORS !**

- USE YOUR ENGINE CAREFULLY. DISREGARDING ANY SAFETY ADVICES AND INCAUTIOUS BEHAVIOUR MAY LEAD TO SERIOUS INJURIES.
- NEVER COME CLOSE OR GRAB INTO THE SPINNING PROPELLER. HIGH RISK OF SERIOUS INJURIES.
- THE ENGINE MAY NOT BE STARTED WHEN IT IS STANDING ON THE GROUND. HIGH RISK OF SERIOUS INJURIES.
- NEVER TOUCH HOT PARTS (ENGINE, EXHAUST). HIGH RISK OF BURNING.

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Engine	1 Cylinder 2 Stroke
Kühlung	Liquid cooled with forced fan
Bore / Stroke	
Volume	86 ccm
Power	? kw bei 10.000 1/min
Cylinder	Aluminium with Gilnisilcoating
Bore / Stroke Ratio	?:1
Intake	Diaphragm Design
Carburettor	Walbro WB37
Airfilter	Airbox
Igintion	Electronic kontaktless
Altinator	Non
Fuel	95 Oktan
Gearbox	Gear Transmission in oilbath
Clutch	Centrifugal Clutch, dry
Starter	Reversierstarter/Flashstarter
Exhaust	Resonator with Silencer
Milage	2,7-3 Liter pro h at rpm=30 kg Static thrust
Rotation of the Prop	Anti Clockwise
Idle Running	2000 1/min
Max RPM	10250 1/min

Tightening Torques

Headscrew	? Nm
Crankshaft Ignition Side	? Nm
Crankshaft Gearbox Side	? Nm
Propeller 6°	10 Nm
Sparc Plug Champion RN 2C	15 Nm
Crankshafthouse	? Nm

Regelgewinde										
Abmessung	Vorspannkraft (kN)					Anziehmoment (Nm)				
Festigkeits- klasse	4.6	5.6	8.8	10.9	12.9	4.6	5.6	8.8	10.9	12.9
M 4x0,70	1,29	1,71	3,9	5,7	6,7	1,02	1,37	3,0	4,4	5,1
M 5x0,80	2,1	2,79	6,4	9,3	10,9	2,0	2,7	5,9	8,7	10
M 6x1,00	2,96	3,94	9,0	13,2	15,4	3,5	4,6	10,0	15,0	18,0
M 8x1,25	5,42	7,23	16,5	24,2	28,5	8,4	11,0	25,0	36,0	43,0
M 10x1,50	8,64	11,5	26,0	38,5	45,0	17,0	22,0	49,0	72,0	84,0
M 12x1,75	12,6	16,8	38,5	56,0	66,0	29,0	39,0	85,0	125,0	145,0
M 14x2,00	17,3	23,1	53,0	77,0	90,0	46,0	62,0	135,0	200,0	235,0

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Technical Info

