



Top 80

Manual



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Service

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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Introduction

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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Assembling

The starter rope is hooked into the loop on the upper right cage.



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

Designation of the prop:
H30 F 1,25R-M-06-2



The prop must be tightened by 4 screws .(M8 x 35;10mm Nm) onto the flange



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Assembling

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 carburetor

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 come into the carburetor.

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

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



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.

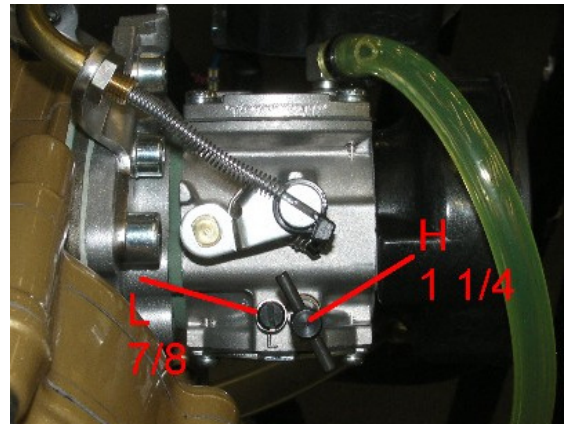
After a tough pull the engine should start within the first 5 attempts. Normally a small amount of throttle needs to be used while pull starting. If the engine doesn't start then repeat the steps to prime the motor with ball pump and membrane on the carburettor as already described. If the engine is "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% 2T CASTROL SUPER WITH 95 OCTANE FUEL)..

Basic adjustment for WB 37

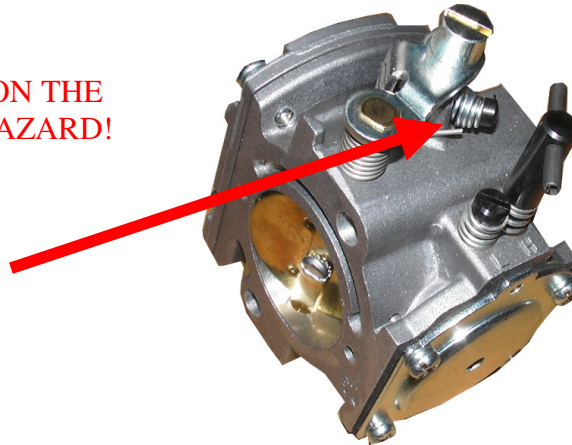
Close the both mixture screws L and H
Open the Screw L 7/8
Open the Screw H 1 1/4

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



!WARNING! !DO NOT START ENGINE ON THE GROUND-THERE IS A HIGH INJURIE HAZARD!

Idle Screw



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Start the Engine



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.

Before you change both settings at once, try one change at a time, as this may produce the results required.

Always reassure yourself, that all shackles are screwed in all the way and are secured with the keyrings (small picture)

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Pilot suspension

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



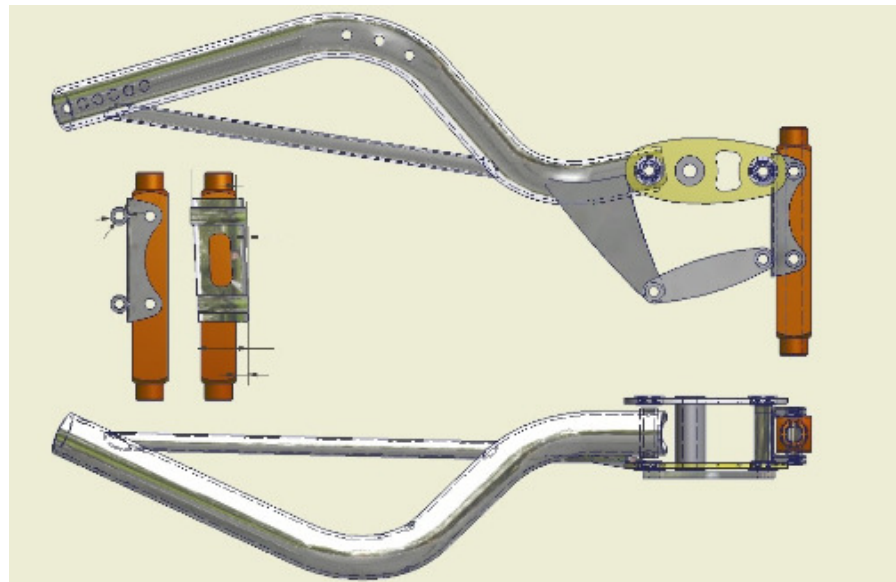
The harness is now connected to the upper strut with the Velcro to the back frame.



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



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Seating position in flight



Landing position



After the take off, it's recommended to use the foot strap to slip easy into the harness

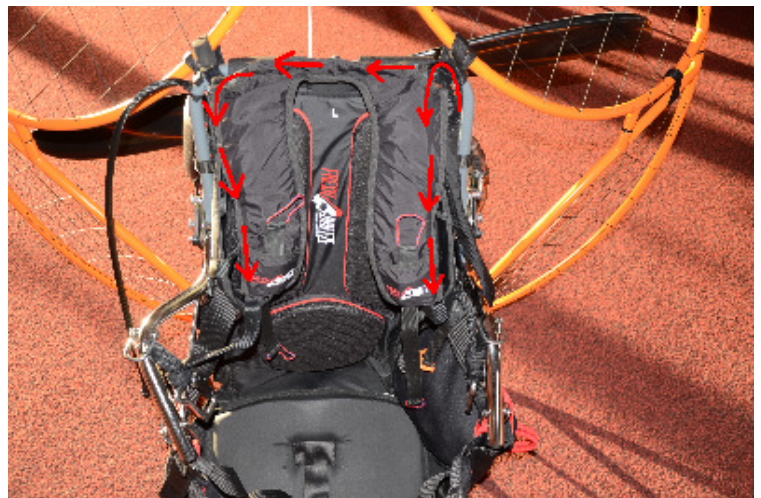
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Pilotsuspension and Harness

This integrated rescuessystem grant best comfort. The V line must pass outside the pushrod and inside the fabric tunnel in the direction of shoulder



There, it divides over the right and left should inside the harness



and ends in the main carabiners.



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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 instructors 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 you 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.



Now you're ready to start, remember always fly safe!

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Throttle lever

THE FOLLOWING POINTS SHOULD BE CARRIED OUT BEFORE
EVERY START!

01. CHECK ALL PARTS FOR TIGHTNESS, CHECK ALL FASTENERS!
02. VISUAL INSPECTION OF CAGE AND FRAME FOR FRACTURES!
03. PROPELLER HUB WITHOUT CLEARANCE?
04. EXHAUST SPRINGS OK?
05. EXAMINATION OF EXHAUST RUBBER ELEMENTS!
06. PETROL FILTER NOT SOILED?
07. MOTOR, CARBURETTOR AND TANK LEAK-PROOF?
08. SUFFICIENT SUPPLY OF PETROL?
09. PILOT SUSPENSION UNDAMAGED?
10. CANOPY UNDAMAGED?
11. GAS LEVER POSITION?
12. TRAVELLING LOCK RELEASED?
13. FUEL TAP OPEN?
14. VENTILATED TANK LID ON TANK?
15. PROPELLER CLEAR – START MOTOR!
16. CARRY OUT A TEST AT FULL THROTTLE!
17. TEST THE OFF-SWITCH FUNCTION
18. PILOT PROPERLY HOOKED IN?
19. WIND DIRECTION AND WIND FORCE?
20. TAKE-OFF STRETCH CLEAR?
21. FUEL TANK IS FIXED AND THE GAP BETWEEN EXHAUST-FUEL TANK ASSURED

EVERYTHING O.K.? CLEAR FOR TAKE-OFF!

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Start check

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CHECK BEFORE EACH FLIGHT

- CAGE SECURED ON THE FRAME
- CAGE IN GOOD SHAPE
- PROPELLER-CLEARANCE
- PROPELLER WITHOUT FREE SPACE
- PROPELLER WITHOUT DAMAGE
- KILLSWITCH O.K.
- FUEL MIN.98 OCTANE OR HIGHER
- FUEL TANK LEAKY
- PILOT SUSPENSION AND STRAP WITHOUT STRESSMARKS
- SPARKING PLUG AND WIRE WELL FIXED
- TANK-LID WITH TUBE ON THE TANK
- PROOF GLIDER,LINES AND RISER FOR STRESSMARKS OR DAMAGE´S.
- INTAKESILENCER AND IT´S FIRMNESS
- FULL RPM MIN 9000 U/MIN

CHECK ALL 10 HOURS

- FUEL FILTER
- CLEAN THE CARBCHAMBER
- BELTS IN GENERALL
- EXHAUST INCL. THE SELAINGRINGS AND THE SCREWS.
- ALL CONNECTION FROM THE WIRES
- EXHAUSTCONNECTOR AND SPRINGS
- FUNKTION OF CARRINGSTRAPS

CHECK ALL 50 HOURS

- METAL-WIRE FROM THROTTLE
- REPLACE THE SPARKING PLUG AND THE CONNECTOR
- REPLACE ALL RUBBERJOINT FROM EXHAUSTSYSTEM
- REPLACE THE SEALINGRINGS AND THE SCREWS
- CHECK ALL SCREWS
- ALL WIRES WITH IT´S CONNECTIONS
- TANK
- REPLACE STARTERFINGER
- CHECK PROPELLERBALANCE

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Check list

CHECK ALL 100 HOURS

- CLEANING THE DECOMPRESSIONHOLE INSIDE THE CYLINDER
- PISTONRINGS
- REPLACE NEEDLE BEARINGS FROM PISTON
- REPLACE INTAKE DIAPHRAGM
- REPLACE KARABINER FROM PILOTSUSPNSION
- REPLACE DIAPHRAGM SETS OF THE CARBURETTOR
- GENERAL MAINTENANCE IN FACTORY

CHECK ALL 300 HOURS

- THE ENGINE AND HIS COMPONENTS SHOULD SEND TO THE MANUFACTURING FOR
- GENERAL MAINTENANCE

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 CHECK'S NO WARRENTY OR OTHER CLAIMS!
PLEASE USE ONLY FRESH BREEZE GENUINE SPARPARTS.THIS WILL TAKEN POSSESSION
ALL SAFETY AND STIFFNESS WHICH IS REQUIERED 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 GRAP 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.

- Unexperienced pilot's should have minimum 80 kg (176 lbs).Otherwise you risk a stall or twist in while of full throttle

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Motor	1 Cylinder 2 Stroke
Cooling	Air Fan
Bore Stroke	80 ccm
Power	11 kw bei 9300 1/min
Cylinder	Aluminium with Gilnilsilcoat
Compression Ratio	12,5:1
Intake	Membran
Carburettor	Walbro WB37
Airfilter	Airbox
Ignition	Electronic
Altinator	Non
Fuel	95 Octan or higher,unleaded
Gear Box	Helical teeth in oil and ratio 3,84
Clutch	Centrifugal clutch, dry
Starter	Reversierstarter
Exhaust	Resonator with integrated silencer
Fuel Consumption	2,7-3 liter per h at rpm=30 kg static thrust
Propeller	Clockwise
Idle Speed	2000-2400 1/min
Max Rpm	9000-9300 1/min

Anzugsdrehmomente

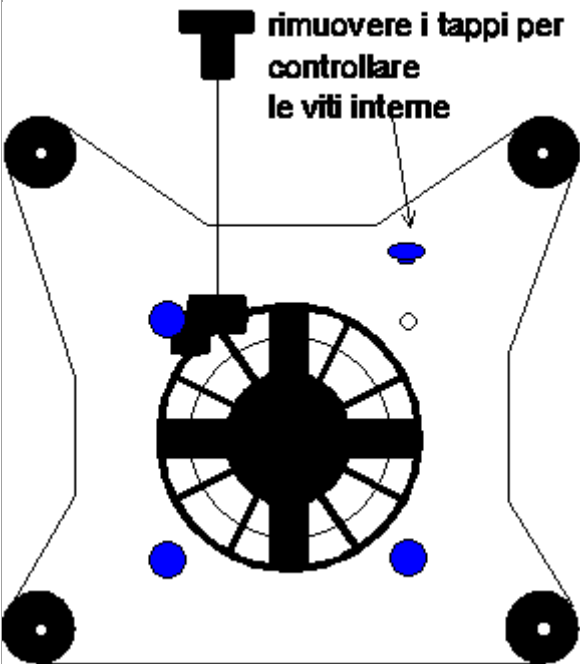
Head Screw	10 Nm
Crankshaft Clutch Side	60 Nm
Crankshaft Ignitionside	40 Nm
Propeller H30F 1,25 R-M-06-2	10 Nm
Sparc Plug BR9ES	15 Nm
Crankshafthouse	8 Nm

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	28,0	36,0	85,0	125,0	145,0

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Technical Data

MAINTENANCE TIMETABLE

DEADLINES	INSPECTIONS	TO REPLACE
DURING AND AFTER RUNNING-IN	by sight all the screws and the seal of the motor head after the removal of the air conveyer.	
before each engine starting	remember the check list, see also : engine starting	
after first 5 hours	<p style="text-align: center;">T rimuovere i tappi per controllare le viti interne</p>  <p style="text-align: right;">all the screws (remember the 4 screws inside the air conveyer) ></p>	
after first 10 hours	remove the gear oil, check and clean the magnetic tap for metal parts	refill with 50 cc of 80-140 grade oil
every 25 hours	<ul style="list-style-type: none"> • Guarding net • propeller: inspections • Inside cleaning of the pressurized gas pipe (only for float-type carburetor) • muffler elastic shock absorbers 	
deadlines	TO CHECK	TO REPLACE
every 50 hrs.	<ul style="list-style-type: none"> • intake reeds (elasticity and sealing) • cleanliness around the clutch bell • cleaning and/or decarbonizing of the head and piston • piston ring sealing 	<ul style="list-style-type: none"> • spark plug • 5 mm clutch screws (3 pads clutch, delivered on 2008) • gear oil - 50 cc of 80 140 grade gear oil

	(compression test) • spark cap	
every 100 hrs.	<ul style="list-style-type: none"> • crankshaft sealers • crankshaft roller bearing (tolerance and noise) • clutch diameter and clearance • string, springs and plastic parts of the starter system • roughness and bore of the cylinder • may be necessary a polishing and a new piston with the adequate size 	<ul style="list-style-type: none"> • piston roller-cage bearing • piston ring • propeller screws and nuts • clutch connectors and springs (2 pads version)
every 150/200 hrs.	<ul style="list-style-type: none"> • ball bearings (tolerance and noise) 	<ul style="list-style-type: none"> • piston • crankshaft sealers • cooling fan
every one year (even if the engine has not been used)	<ul style="list-style-type: none"> • gas pump and/or carburetor diaphragms • crankshaft sealers • all plastic parts • wood propeller 	<ul style="list-style-type: none"> • rubber shock absorbers • gasoline pipes
DEADLINES	INSPECTIONS	TO REPLACE

LOCKING TORQUES

bolts and knots	Metric	metric wrench (mm)	torque (N.m)	torque (lbf.in)
motor cylinder-head studs	M6	hexagon 10	9 do check for the symmetric fastening.	80
prop	M6	Allen 5 - hexagon 10	9 / 11 go to prop setting	80 - 100

engine elastic mountings	M6	Allen 4	10	90
	M8	hex 13 or Allen 6	15	140
5 mm fastening for diaphragm carburetor and plastic flange	M5 (Black anodized aluminum)	Allen 4 or hex 8	4	
crankshaft nuts (clutch and ignition flyweel)	M 10 x 1,25	hexagon wrench 17	35 right screw thread	330
spark plug			please refer to manufacturer manual (remind the 2 mm washer, use 2,5 or 3 mm washer with very poor octan number)	
muffler flange	M6	hexagon wrench 10	hand fasten and stops 1-2 mm before the compression of the spring (5) about 1,5 turn.	
engine mountings				
miscellaneous	4 mm	attention: reduce by 50% with screws made of aluminum or sheet	2,5 - 3	
miscellaneous	5 mm		4 - 5	
	6 mm diameter		9 - 11	

	8 mm diameter	or short threads on aluminum, reduce by 60% with screw on plastic	20 - 24	
for each bolt/nut you can use 1 or 2 drops of medium strength screw glue				

Spare parts main features

spark plugs	NGK B9ES NGK B9EG or similar	for low temperatures
	NGK B10ES NGK B10EG or similar	for high temperatures
starting string	Polyamide 3,5 mm, length 110 cm	
net straining rope	coated Kevlar 1,3 mm	
gas pipe	6mm 55cm, 4mm 20 cm we strongly advise the use of original spare parts	
gas filter	paper filter porosity of 20 micron	
	porex filter inside the tank	
gas wire	1,2 mm	
safety gas wire (metallic gas handle before 2004)	2 mm o 1,2 mm	