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EuroFOX Aviation is a trading name of Ascent industries Ltd. Company registration nr 7731403

Pilot operating handbook Appendix 1

EuroFOX Aviation

EuroFOX

EuroFOX Aviation Approved Microlight at 560 Kg MAUW

All performance figures in this POH are based on 560 kg MAUW.

Appendix 1 Towing Gliders

This appendix contains information for towing gliders and complements the main EuroFOX POH specification which is important for maintenance flight performance of the Eurofox.

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RECORD OF REVISIONS

Any revisions or amendments to the present manual shall be issued in the form of bulletins with attached new pages. It is in the interests of every user to enter such revision into the table of revisions and to replace the existing page by the new one. The revised or corrected text shall be indicated by a vertical line on left page margin and the page shall bear revision number and date of its issue.

Rev. No.	Pages Affected	Date of Issue	Change	New Page Inserted	Signature EuroFOX Aviation
1.0	All	May 2022	First issue.		
2.0	Various	Feb 2023	Glider MAUW increased to 850kgs for 915iS		

NORMAL PROCEDURES for towing gliders

Before Take Off

- Brake set the brake
- Electric fuel pumps Switch On
- RPM 2500 rpm, check Lanes
- Pitch propeller fixed, should be the approved towing propeller
- Trim functional check, set half way
- Wing flaps Set as appropriate - generally 1/2 flap
- Master switch On
- Ignition On
- Other switches On as necessary
- Main fuel tap On
- Wing tank fuel taps open, fuel quantity check and that the panel low fuel light warning light is not illuminated (check bulb)
- Instruments check temperatures and QFE or QNH setting as needed
- doors secure at both closing points. Check seat belts or anything else is hanging out of the closed doors
- Check runway Check there is no traffic on the runway or on approach
- Check towing rope When advised by ground crew, take up slack in tow rope or winch and check in the mirror
- Ready to Take Off When given signal by ground crew

Take off:

- take off roll Push throttle fully forward and raise the tail off the ground (if a tail wheel aircraft) and maintain max power (generally 5500rpm or less)
- speed When airborne at approx 45 kts, hold aircraft in ground effect at 5 feet above runway and build up speed to minimum glider tow speed and then climb out
- Flaps Return to zero as soon as airborne
- airspeed in climb Is dependant of type of glider on tow, but normally 50kts - 80kts IAS
- engine instruments Check within limits throughout the climb

Caution	During Take Off roll and climb check attitude of glider with the mirror.
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Climbing:

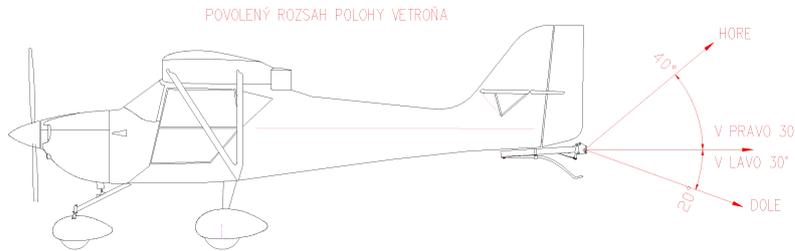
- Maintain full throttle and speed in range 50kts-80kts depending on the type of glider
- Check RPM less than 5500 rpm continuous in the climb rpm. At height if more than 5500rpm is seen, reduce throttle setting so that 5500 is indicated
- Check attitude and the glider in the mirror
- Check engine settings are within limits throughout the climb
- Maintain airspeed if tug pilot decides to make any gentle turns

Warning	Maintain airspeed during climb in required glider range
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- Cruising speed in accordance with the glider requirements but not less than 50kts

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- Descend after releasing the glider, maintain around 3000 rpm
- Before landing make sure tow rope will not catch any trees or high objects. If Winch is fitted, ensure the rope is fully retracted before landing. Mark (coloured) the rope in the baggage bay so pilot can see the rope is fully retracted before landing. Retract speed 65-70kts.
- Approach and landing according to the main POH



Placarding

- The tow release handle should be coloured yellow or orange and be clearly placarded "Tow release"
- Within sight of the pilot, there must be a placard noting the maximum weight of any glider that is allowed to be towed by the Eurofox.

Example of typical glider towing performance figures

Note: Ground roll distances shown on the table below were measured on a slightly rising tarmac surface with a 10kt crosswind, add approx 30% for wet grass. A 10kt headwind will shorten these figures by approx 15%

All tows providing this data was at 5500rpm or less. Maximum glider on tow weight of 850kgs may not be possible at very short airfields (less than 500 metres) or with airfields with high trees. The owner/operator is advised to make their own gradual incremental testing with their glider fleet.

However as a guide and if you already operate a high power Pawnee, the limits you set on this aircraft will be suitable for the 915 EuroFOX.

Ref nr	EuroFOX 915iS take off weight	Glider type, POB and MAUW	Ground roll distance tarmac	Time to 2000 feet from "all out" and start of ground roll	Best rate of climb towing speed	Distance to clear 15m obstacle
1	550kgs	Oly 2b Vintage One POB 304kg	170m	2.14 Mins	50 kts @ 1/2 flap	60m
2	540kgs	K13 2 POB 280kg	190m	2.43 Mins	60kts	70m
3	560kgs 2 POB	K21 2 POB 600kg	220m	3.05 Mins	60kts	75m
4	530kgs	Duo Discuss 2 POB - 700kg	205m	3.16 Mins	65-70kts	80m
5	530 kgs	Ash 25 2 POB 750kg	220m	3.43 Mins	70-75kts	90m
6	525kg	Discuss single seat - 525kg	170m	2.35 Mins to 2500ft	60kt	60m
7	550kgs	Arcus M - 850kg	240m	4.22 Mins	75 kts	70m

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Operating notes and advice on aerotowing with EuroFOX nose and tail wheel version aircraft.

- The powerful Rotax engine will require a reasonable amount of right rudder to compensate for the initial thrust. Be ready and quick to react to rudder input requirements For those pilots who are not 'au fait' with flying this type of light aircraft, the following should be taken into consideration.
- The EuroFOX is a delight to fly possessing light powerful controls, needing coordinated rudder and aileron to maintain the ball in the middle. Sloppy handling, coupled with an iron grip on the stick to shove the stick to all four points of the compass, will not get the best from the EuroFOX.
- The EuroFOX side-slips beautifully and easily and is well coordinated when doing so. This more than compensates for the fact that when the flapperons are drooped in flap mode, you don't get a large amount of drag. You will get a very nice nose down pitch enabling an excellent view over the nose for landing.

Take off

During ground roll balance the aircraft on its mains and accelerate to build up speed The EuroFOX tug needs to be kept low (3-6ft) to pick up the necessary speed (for the glider on tow) before climbing away, therefore avoiding compromising the glider.

With the tail dragger version of EuroFOX, it is recommended to use half flap for take-off, raise the tail quickly off the surface, running on the main wheels during ground roll, the EuroFOX rudder is very powerful. As soon as airborne, fairly smartly retract the flap.

On short hard grass surfaces or tarmac/concrete, we would not use any flap. With both versions of the EuroFOX, we would suggest that tug masters form their own opinion by "experimenting" with the use of flap for take-off to suit your own site. W

What does need to be recognized for both types, is that they can be classed as low kinetic energy aircraft, meaning in reality that lift-off can be fairly quick, and often before the glider. The EuroFOX must be held down at just above the runway to pick up the necessary speed before climbing out satisfactorily with the glider behind. Conversely on landing, the speed will decay more rapidly than a much heavier aircraft.

It has been demonstrated with an experienced pilot that the Eurofox is able to with crosswinds up to 20kts, however, the POH maximum figure should be used.

During the tow

Normally the tug pilot should give the glider 5kts more on the ASI Than needed. So a glider needing 60kts should be towed with 65kts on the eurofox ASI.

During the tow and when 'boxing the tow' the EuroFOX has proven to be well capable of contending with all the out of balance towing forces with its powerful controls. Once off tow, particularly if very close to the launch point, the throttle can be closed to a min of 3000rpm and the aircraft accelerated downwards at 100 knots if the air is smooth.

Summary and other points

Other benefits of the EuroFOX tug, is that it has a superb towing mirror which doesn't vibrate at any engine rpm. It is very easy to take up slack in the rope to the point of all out, just by use of the mirror alone.

We set the propeller so that at the higher towing speed of 70-75kts, 5,500 rpm shows on the gauge. This may mean that at slower speeds the rpm seen may be 5300-5400, but there is ample power to tow all gliders. If at towing speeds over 70kts, the rpm may go above 5500, this is permitted for a short time, but the best approach is to reduce power so that 5500 rpm is indicated. There is ample power during this stage of the tow.

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