

## Test stand for air turbine starters

### > TATS2EF <



The test stand is designed to test Air Turbine Starters for the aircraft types Eurofighter "EF2000" and "F18-Hornet". It is developed for tests in combination with the Air Turbine Starter Motor Control Valve.

It is possible to adapt this equipment for other aircraft types

- > Tests can be carried out manually, semi-automatic or fully automatic
- > An electric motor is used to simulate the starter moment of inertia, and returns generated current into the power system
- > Gearbox:
  - One shaft with a max. of 70 000 rpm
  - One shaft with speeds of 3 000 / 10 000 rpm (hydraulically switched)
- > Case drain testing is carried out
- > All required parameters e.g. pressure, flow, temperature, torque, rpm, vibration, time and resistance are measured, indicated and stored electronically

## MISCELLANEOUS

- > Two lubricating oil units are provided. One for the UUT and one for the test stand
- > The temperature can be regulated during lubrication of the UUT
- > A separate air supply is provided
- > A separate control console for use outside the test chamber is also supplied
- > A modem is fitted to the test stand to allow the software to be maintained directly at the factory
- > Calibration is carried out autonomously by the software

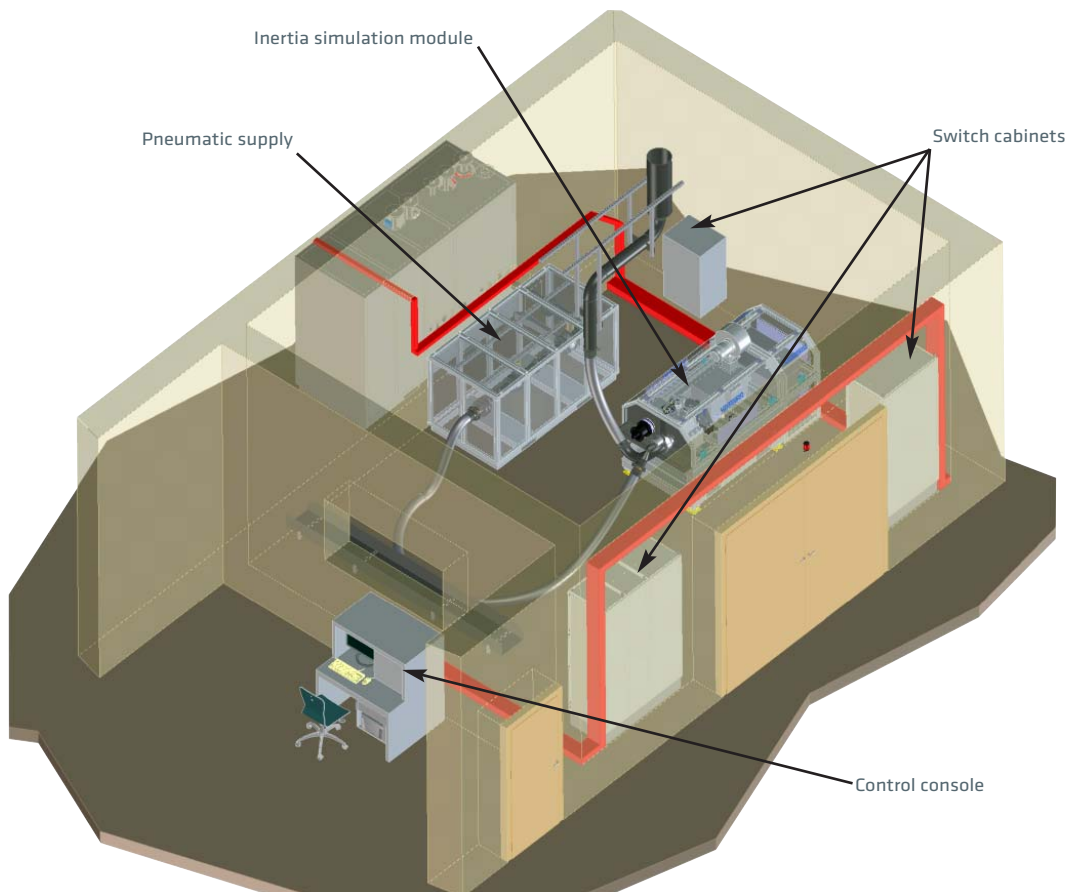
## TECHNICAL DATA

<p>&gt; <b>Pneumatic parameters:</b></p> <p>Compressed air supply for the starter inlet (dynamic):</p> <table border="0"> <tr><td>Pressure</td><td>0-7 bar (0-102 psi)</td></tr> <tr><td>Temperature</td><td>up to 250°C (482°F)</td></tr> <tr><td>Flow</td><td>max. 1 kg/s (max. 132 ppm)</td></tr> <tr><td>Connector</td><td>4"</td></tr> </table> <p>Outflow air for the starter outlet:</p> <table border="0"> <tr><td>Pressure</td><td>ambient</td></tr> <tr><td>Temperature</td><td>max. 250°C (482°F)</td></tr> <tr><td>Flow</td><td>max. 1 kg/s (max. 132 ppm)</td></tr> <tr><td>Connector</td><td>5"</td></tr> </table> <p>Leakage test circuit for the housing (static):</p> <table border="0"> <tr><td>Pressure</td><td>0-2 bar (0-29 psi)</td></tr> <tr><td>Temperature</td><td>ambient</td></tr> </table>	Pressure	0-7 bar (0-102 psi)	Temperature	up to 250°C (482°F)	Flow	max. 1 kg/s (max. 132 ppm)	Connector	4"	Pressure	ambient	Temperature	max. 250°C (482°F)	Flow	max. 1 kg/s (max. 132 ppm)	Connector	5"	Pressure	0-2 bar (0-29 psi)	Temperature	ambient	<p>&gt; <b>Hydraulic parameters (Lubricating oil unit for the gearbox):</b></p> <p>Hydraulic power unit:</p> <table border="0"> <tr><td>max. 6 bar / max. 20.0 lpm</td></tr> <tr><td>(max. 87 psi / max. 5.3 USgpm)</td></tr> <tr><td>Oil temperature: max. 45°C (113°F)</td></tr> <tr><td>Capacity reservoir: 80 l (21.1 USgal)</td></tr> </table>	max. 6 bar / max. 20.0 lpm	(max. 87 psi / max. 5.3 USgpm)	Oil temperature: max. 45°C (113°F)	Capacity reservoir: 80 l (21.1 USgal)
Pressure	0-7 bar (0-102 psi)																								
Temperature	up to 250°C (482°F)																								
Flow	max. 1 kg/s (max. 132 ppm)																								
Connector	4"																								
Pressure	ambient																								
Temperature	max. 250°C (482°F)																								
Flow	max. 1 kg/s (max. 132 ppm)																								
Connector	5"																								
Pressure	0-2 bar (0-29 psi)																								
Temperature	ambient																								
max. 6 bar / max. 20.0 lpm																									
(max. 87 psi / max. 5.3 USgpm)																									
Oil temperature: max. 45°C (113°F)																									
Capacity reservoir: 80 l (21.1 USgal)																									
<p>&gt; <b>Hydraulic parameters (Lubricating oil unit for the UUT):</b></p> <p>Hydraulic power unit:</p> <table border="0"> <tr><td>max. 5 bar / max. 4.0 lpm</td></tr> <tr><td>(max. 73 psi / max. 1.1 USgpm)</td></tr> <tr><td>Oil temperature: up to 100°C (212°F)</td></tr> <tr><td>Capacity reservoir: 30 l (7.9 USgal)</td></tr> </table>	max. 5 bar / max. 4.0 lpm	(max. 73 psi / max. 1.1 USgpm)	Oil temperature: up to 100°C (212°F)	Capacity reservoir: 30 l (7.9 USgal)	<p>&gt; <b>Medium (for the lubricating oil units):</b></p> <p>MIL-PRF 23699F Grade STD</p>																				
max. 5 bar / max. 4.0 lpm																									
(max. 73 psi / max. 1.1 USgpm)																									
Oil temperature: up to 100°C (212°F)																									
Capacity reservoir: 30 l (7.9 USgal)																									
	<p>&gt; <b>Electrical supply:</b></p> <p>3/N/PE AC 50 Hz 400 V (test stand)</p> <table border="0"> <tr><td>Nominal current: 220 A</td></tr> <tr><td>Power: 140 kVA</td></tr> <tr><td>Fuse: 250 A</td></tr> </table> <p>1/N/PE AC 50 Hz 230 V (control panel)</p> <table border="0"> <tr><td>Nominal current: 13 A</td></tr> <tr><td>Fuse: 16 A</td></tr> </table>	Nominal current: 220 A	Power: 140 kVA	Fuse: 250 A	Nominal current: 13 A	Fuse: 16 A																			
Nominal current: 220 A																									
Power: 140 kVA																									
Fuse: 250 A																									
Nominal current: 13 A																									
Fuse: 16 A																									

## TECHNICAL DATA

> Measurement range:			> Dimensions:		
Pressure:	0-7 bar (0-102 psi)	Cl. 0.25	<b>Inertia simulation module</b> Length: 2450 mm (8.0 ft) Width: 1150 mm (3.8 ft) Height: 1800 mm (5.9 ft)		
	0-2.5 bar (0-36 psi)	Cl. 1			
	0-6 bar (0-87 psi)	Cl. 0.25			
Differential pressure:	0-200 mbar	Cl. 0.25	<b>Control console</b> Length: 1300 mm (4.3 ft) Width: 950 mm (3.1 ft) Height: 1370 mm (4.5 ft)		
Flow:	0-1 kg/s (0-132 ppm)	Cl. 2			
Temperature:	0-300°C (572°F)	± 2°C (36°F)			
Vibration:	0-5 g	± 7% o.m.r.			
Speed:	0-12000 rpm	± 2 rpm			
Torque:	0-500 Nm	Cl. 1			
Resistance:	0-600 Ohm	± 1 Ohm			

## TYPICAL INSTALLATION OF THE FACILITY





Pneumatic supply



Switch cabinet



Measuring cabinet

## OPTIONS

Many options are possible for adaption, e.g. adaption to other aircraft types, to different touch-screens etc.

Technical data are subject to change!