

Test Bench For Fuel Cylinder

>TFTZ1<



The test stand has been developed to test Rafale M88 engine-cylinders.

Cylinders for the following components can be tested:

- > Starter with / without servo valve
- > Nozzle with / without LVDT
- > Low pressure compressor with servo valve

It can be adapted for other cylinders.

- > Primary explosion protection according to ATEX- directive 94/9/EC
- > Extensive explosion-proof concept with venting system, gas warning equipment and overtemperature shutdown under the flashpoint
- > Test chamber with lockable safety door, good access for UUT exchange and inspection possible during the tests
- > Manual and semi-automatic test procedures
- > High pressure supply via compressed air operated proportional amplifier

GENERAL INFORMATION

- > Effective noise protection by sound insulated setup
- > Ergonomic design
- > Operation via mobile control console with extractable keyboard and integrated printer
- > Additional screen beside the test chamber
- > Cooling run after overtemperature shutdown to reduce medium temperature
- > Extremely maintenance friendly by accessible hydraulic room
- > Adapter cabinet to store the UUT adapters and other accessories
- > Drip tray in the base frame to collect leakage during maintenance or in case of failure
- > Medium leaking during UUT exchange can be pumped back automatically into the main tank via the drip tray and the return tank
- > By the stainless steel setup as well as the anodized aluminium front panels, the test stand is resistant against the test medium and cleaning detergents
- > LAN- connection enables maintenance of the TEST-FUCHS test stand software, test procedures, network printer as well as trouble shooting on the device
- > Easy and quick calibration via the TEST-FUCHS standard software

APPLICATION AREA

- > Vérin Tuyère M88
- > Vérin Maître Tuyère M88
- > Vérin de Stator M88
- > Vérin Roue Directrice d'Entrée M88
- > Vérin Maître Stator M88

TECHNICAL DATA

> Hydraulic supply (requirements):

Medium:	water
Cooling water agent:	Antifrogen N
Temperature:	max. 18°C (64.4°F)
Pressure:	4 to 5bar (58 to 72.5psi)
Quality:	Industrial quality (at least VDI2035, VDI 3803)
Water hardness:	<6°dH
Chlorine content:	<250 mg/l (0.002086lb/USgal)

> Hydraulic parameters:

Medium:	F35
Temperature:	max. 33°C (91.4°F), during cooling run max. 60°C (140°F)
Main tank:	Volume approx. 120l (31.7USgal), Stainless steel
Low pressure pump:	max. 50l/min at 80bar, (13.2USgal/min at 1,160psi) max. 165bar (2,400psi)
High pressure pump:	static, max. 285bar (4,130psi)

> Electrical supply (requirements):

Mains connection:	3/PE AC 50Hz 400V
Nominal current:	70A
Nominal power:	48.5kVA
Prefuse:	125A

> Pneumatic supply (requirements):

- Pneumatic supply

Flow:	max. 250NI/min (8.83scfm)
Pressure:	20bar (290psi) (dry and oil-free)
Quality:	ISO 8573-1 ISO Code 1-4-2
Temperature:	15 to 35°C (59 to 95°F)

- Ventilation system

Supply air by test room:	min. 350m ³ /h (12,400ft ³ /h)
Temperature:	max. 35°C (95°F)



Switch cabinet



Control console



Hydraulic room



Adaption cabinet

TECHNICAL DATA

> Measurements:

- Temperature:
(2 off) 0 to 70°C (32 to 158°F) ±0.5°C (0.9°F)
- LVDT-stroke measurement:
(4 off) 0 to 7VRMS ±0.05% o.f.s.
(2 off) 0 to 5mARMS ±1% o.f.s.
(2 off) 0 to 1mADC ±5% o.f.s.
(2 off) -50 to +50mm (-1.97 to +1.97in)
±0.03mm (0.001in)
(1 off) -40 to +40mm (-1.57 to +1.57in)
±0.03mm (0.001in)
- Servo:
(1 off) 0 to 105mADC ±0.5% o.f.s.
(2 off) 0 to 20VDC ±1% o.f.s.
- Compressed air
(1 off) 0 to 25bar (0 to 363psi) ±0.5% o.f.s.
- Pressure fuel
(1 off) 0 to 6bar (0 to 87psi) ±0.5% o.f.s.
(1 off) 0 to 40bar (0 to 580psi) ±0.5% o.f.s.
(1 off) 0 to 300bar (0 to 4,350psi) ±0.33% o.f.s.
(3 off) 0 to 300bar (0 to 4,350psi) ±0.5% o.f.s.
- Mass flow fuel
(2 off) 0.1 to 60kg/min (0.22 to 132lb/min)
±0.2% o.f.s.
- Density fuel
(2 off) 0.7 to 0.9kg/l (5.84 to 7.51lb/USgal)
±0.005kg/l (0.042lb/USgal)
- Volume flow fuel
(1 off) 0.4 to 80l/min (0.106 to 92.5USgal/min)
±0.5% o.f.s.

> Dimensions and weight:

- Test stand, network cabinet and adaption cabinet
(without ventilation)
Length: approx. 2,950mm (116in)
Depth: approx. 2,600mm (102in)
Height: approx. 3,550mm (140in)

Weight: approx. 2,580kg (5,690lb)
- Switch cabinet
Length: approx. 1,050mm (41.3in)
Depth: approx. 550mm (21.7in)
Height: approx. 2,050mm (80.7in)

Weight: approx. 250kg (550lb)
- Control console
Length: approx. 800mm (31.5in)
Depth: approx. 750mm (29.5in)
approx. 1,200mm (47.2in) (keyboard extracted)
Height: approx. 2,150mm (84.6in)

Weight: approx. 160kg (350lb)

> Operating conditions:

- Operating temp.: 5 to 35°C (59 to 86°F)
- Storage temp.: 0 to 55°C (41 to 140°F)
- Height: up to 1,000m (3,280ft) via MSL
- Rel. air humidity: 10 to 95% (non-condensing)
- Installation: in a non-explosive area
- Permanent noise emission: max. 72.5dB(A)
in 1m (39.4in) distance

OPTIONS

A wide range of options is available to fulfil our customers' requirements.
e.g.: Adaption to numerous UUTs, requirements to the test program, dimensioning,...