Falcon 7X

Limitations

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Passengers and Crew

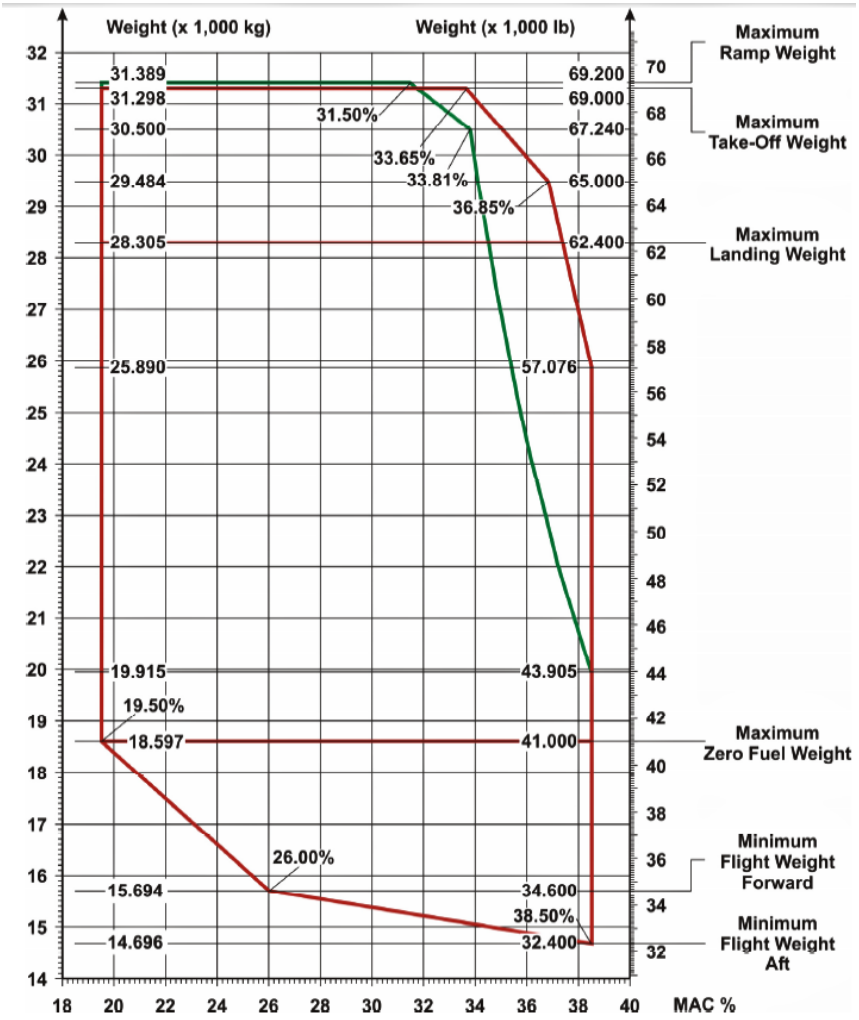
Pilots	2 – PILOT AND COPILOT
Maximum number of passengers	19

Weight and Center of Gravity

STRUCTURAL LIMITATIONS
- Maximum ramp weight ..... 69,200 lb (31,389 kg)
- Maximum take-off weight ..... 69,000 lb (31,298 kg)
- Maximum landing weight ..... 62,400 lb (28,305 kg)
- Maximum zero fuel weight ..... 41,000 lb (18,597 kg)
- Minimum flight weight ..... 32,400 lb (14,696 kg)

Limitations Due to Performance

The maximum take-off weight and the maximum landing weight given as structural limitations may have to be reduced to comply with performance and operating requirements .



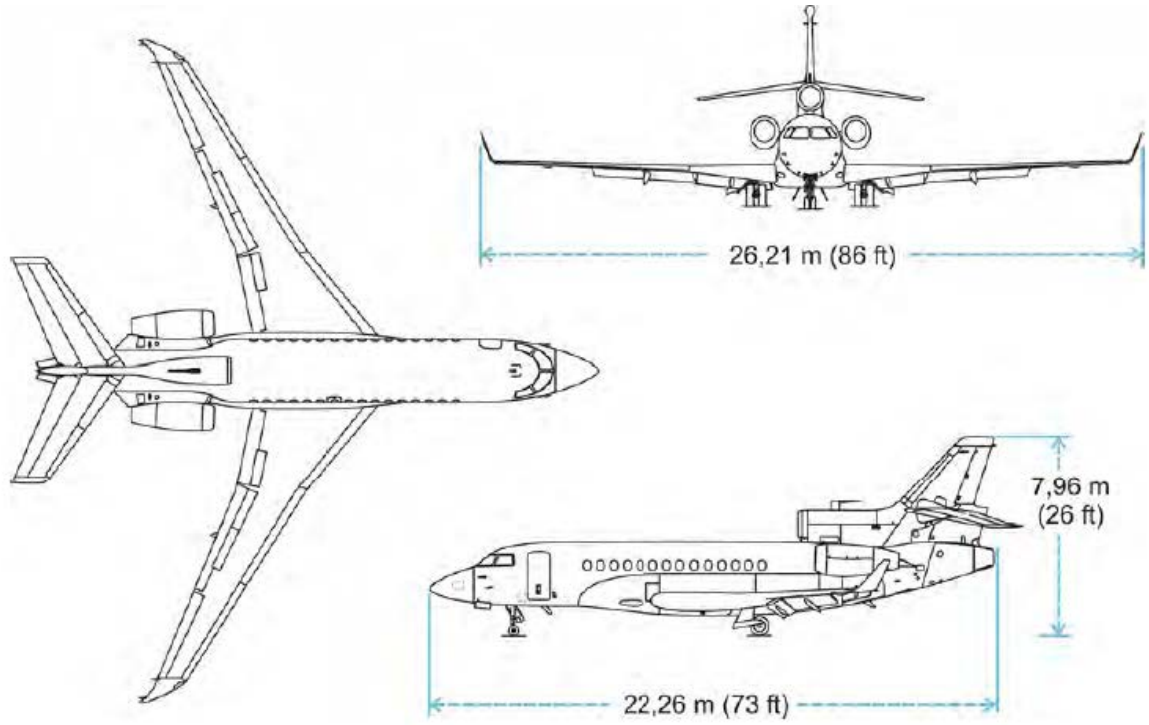
The red line shows the in-flight limits.
The green line shows the on-ground limits.

DATUM
Datum is 25% of mean aerodynamic chord (MAC) which coincides with fuselage station (12,183 mm).
Origin of Fuselage Station is the forward end of the airplane nose cone

MEAN AERODYNAMIC CHORD
Length: 3,347.54 mm.
Zero % MAC is at Fuselage Station + 11,346.1 mm.

Structural Characteristics

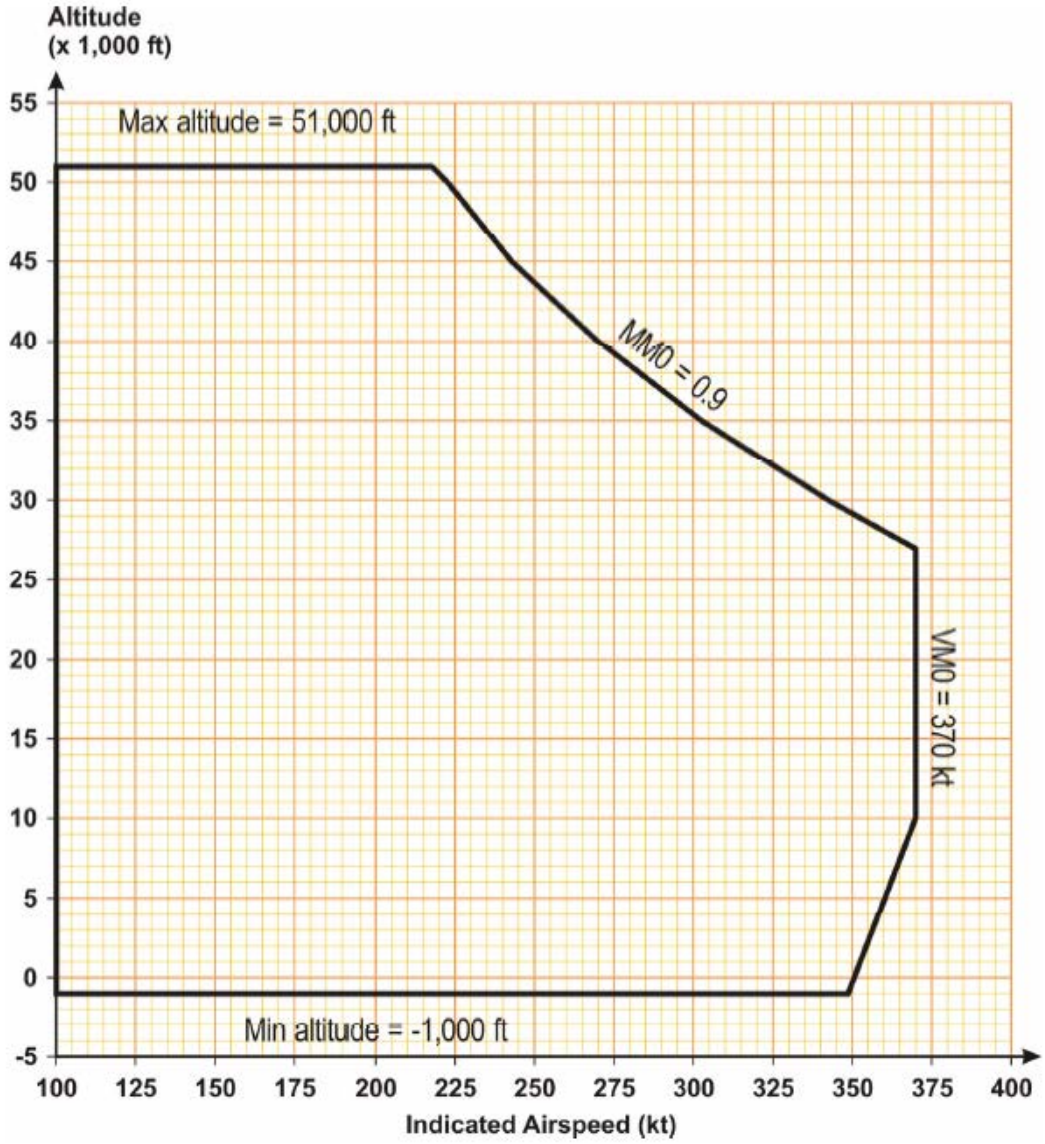
Main structural characteristics of the Falcon 7X are:

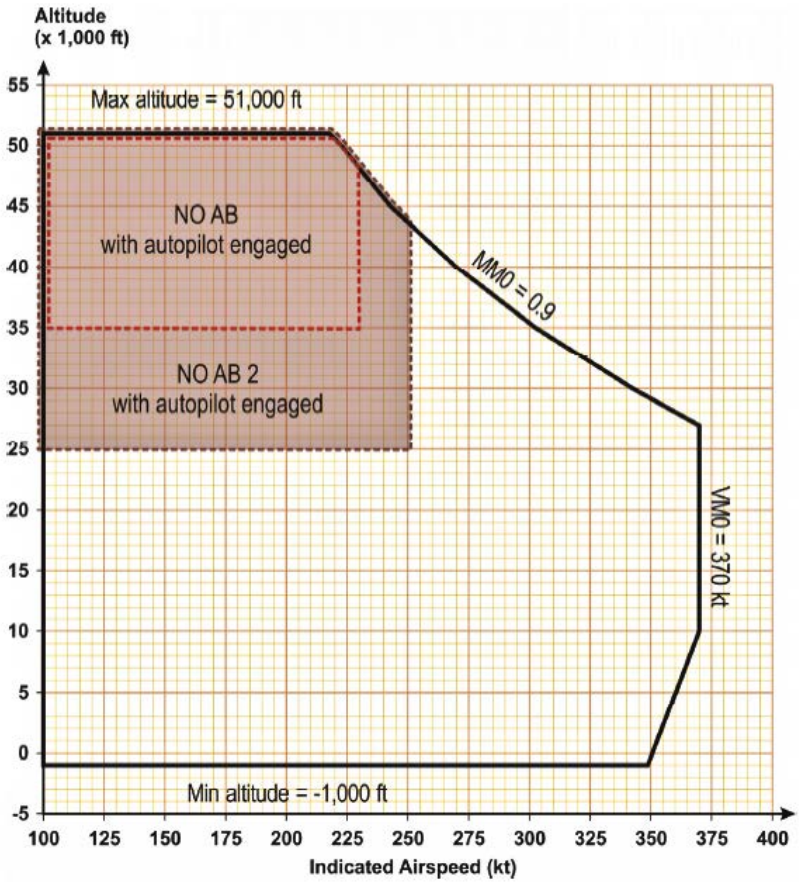


Operating Speed

VMO / MMO ENVELOPE

Unless otherwise specified, limits are expressed in terms of indicated values.
Instrument error is assumed to be zero.





MANEUVERING SPEED

VA (alternate or direct laws) ..... 218 KIAS.

HIGH LIFT DEVICES OPERATING OR EXTENDED LIMIT SPEEDS: VFE

SF 1:..... 200 KIAS
SF 2:..... 190 KIAS
SF 3:..... 180 KIAS

MAXIMUM LANDING GEAR OPERATING SPEED: VLO / MLO

VLO ..... 200 KIAS
MLO..... 0.7

MAXIMUM LANDING GEAR EXTENDED SPEED: VLE / MLE

VLE..... 245 KIAS
MLE 0.75

MINIMUM CONTROL SPEED IN THE AIR: VMCA

VMCA ..... 80 KIAS.

MINIMUM CONTROL SPEED DURING LANDING AN D APPROACH: VMCL

All engines operating..... VMCL = 84 KIAS.

One engine inoperative ..... VMCL-2 = 84 KIAS.

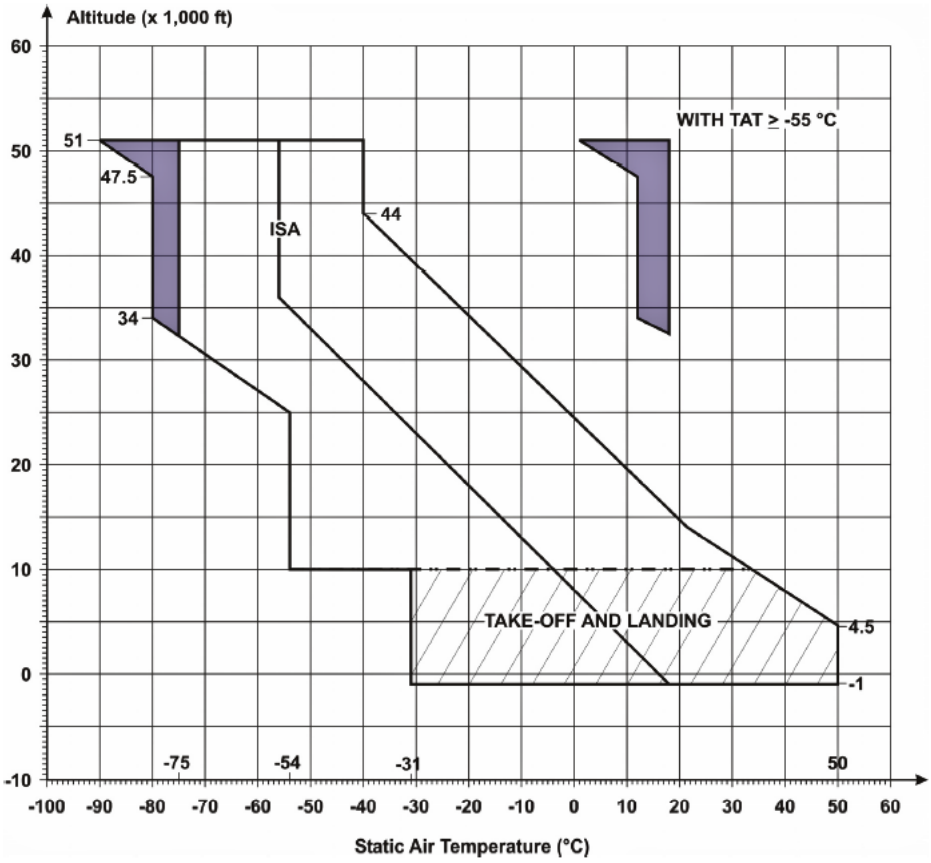
MINIMUM CONTROL SPEED ON THE GROUND: VMCG

VMCG ..... 81.3 KIAS.

MISCELLANEOUS LIMIT SPEEDS

Tire maximum operating speed ..... 195 kt (225 mph), ground speed.

Temperature and Altitude Limits



Engine Limitations

THRUST RATINGS (UNINSTALLED, SEA LEVEL, ISA).

- Take–off .....6405 lb (2849 daN)
- Maximum continuous .....6405 lb (2849 daN)

THRUST SETTING

The engine low pressure rotor speed N1 is used as the thrust setting parameter.

MAXIMUM ENGINE ROTOR SPEEDS: N1 AND N2

Condition of use	N1	N2
Take–off - Maximum continuous	101.0 %	100.0 %
Transient .... 10 second max. allowable		100.5 %
Transient .... 15 second max. allowable	101.6 %	

- 100 % N1 = 11000 rpm
- 100 % N2 = 28500 rpm

MAXIMUM INTERSTAGE TURBINE TEMPERATURE: ITT

Ground start		950 °C
Air start		950 °C
Take-off	5 minutes max.	920 °C
Maximum continuous		920 °C

OIL PRESSURE

Thrust setting	Minimum pressure	Maximum pressure
Ground idle	20 psid	145 psid
Flight idle and above	35 psid	145 psid
Transient		200 psid less than 4 minutes

OIL TEMPERATURE

Thrust setting	Minimum temperature	Maximum temperature
Starting	-40°C	
Above ground idle	25°C if SAT < 5°C 16°C if SAT ≥ 5°C	
Steady state		141°C
Transient		146°C less than 5 minutes