

# Boeing 737 Limitations

## Speed

VMO		
MMO		
Max Speed for Turbulence		280 kias/ .73 M
Max Speed F1°		230 kts
Max Speed F2°		230 kts
Max Speed F5°		225 kts
Max Speed F10°		210 kts
Max Speed F15°		195 kts
Max Speed F25°		190 kts
Max Speed F30°		185 kts
Max Speed F40°		158 kts
Max Speed Alt Flap Extension		230 kts
Maximum Gear Operating Speed	<b>To Extend</b>	270 kts / .82 M
Maximum Gear Operating Speed	<b>To Retract</b>	235 kts
Maximum Gear Operating Speed	<b>Extended</b>	320 kts / .82 M
Maximum Tyre Speed		195 kts

	at or below 53 070 kgs	above 53 070 kgs
Maneuvring Speed FUP	210 kts	220 kts
Maneuvring Speed FUP	*220 kts	*230 kts
Maneuvring Speed F1°	190 kts	200 kts
Maneuvring Speed F1°	*200 kts	*210 kts
Maneuvring Speed F5°	180 kts	190 kts
Maneuvring Speed F5°	*190 kts	*200 kts
Maneuvring Speed F10°	170 kts	180 kts
Maneuvring Speed F15°	150 kts	160 kts
Maneuvring Speed F25°	140 kts	150 kts

**REM: \*speed with rpr deactivated or not installed**  
**3rd weight restriction: 62823 kgs**

## Operating Altitude

Maximum Operating Altitude	37 000 ft
Maximum TO and Landing Altitude	8 400 ft
Maximum Flaps Operating Alt	20 000 ft

## Load Factor

Flaps Up	+ 2.5 to -1.0 g
Flaps Down	+ 2.0 to -0.0 g

## Altimeter

Max ≠ between Capt. and FO S.L.	40 ft
Max ≠ between Capt. and FO 5000 ft	45 ft
Max ≠ between Capt. and FO 10 000 ft	50 ft
Max ≠ between Rwy and Capt./FO	75 ft
Max ≠ between Capt. And FO in Flight	200 ft

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## Runway

Max Slope		+/- 2 %
Max Tail Wind For TO and Landing		10 kts
Max X-Wind	<b>Rwy Dry</b>	35 kts
Max X-Wind	<b>Rwy Wet</b>	30 kts
Max X-Wind	<b>Standing Water/Slush</b>	20 kts
Max X-Wind	<b>Snow - No Melting</b>	20 kts
Max X-Wind	<b>Ice - No Melting</b>	15 kts
Max X-Wind	<b>BA Good</b>	25 kts
Max X-Wind	<b>Medium to Good</b>	20 kts
Max X-Wind	<b>Medium to Good</b>	15 kts
Max X-Wind	<b>Medium to Poor</b>	10 kts
Max X-Wind	<b>Poor</b>	5 kts
Max X-Wind	<b>0.36 and Above</b>	25 kts
Max X-Wind	<b>0.30 - 0.35</b>	20 kts
Max X-Wind	<b>0.26 - 0.29</b>	15 kts
Max X-Wind	<b>0.20 - 0.25</b>	10 kts
Minimum Braking Coefficient $\mu$		0.20

## Fuel

Maximum A/C Capacity	<b>( Less if Higher t° )</b>	16 140 kgs
Maximum Wing Tank Capacity		4 555 kgs
Maximum Center Tank Capacity		7 029 kgs
Maximum $\neq$ Between Main Tanks		453 kgs
Max in Center with Wing not Full		453 kgs
Max Fuel Temperature		49 °C
Min Fuel Temperature		-45 °C/ +3 °C Above Freez Point

## APU

Maximum Operating Altitude	<b>No Load</b>	37 000 ft
Maximum Start EGT		760 °C
Maximum Continuous EGT		710 °C
Maximum Operating Altitude	<b>Bleed and Electrics</b>	10 000 ft
Maximum Operating Altitude	<b>Bleed</b>	17 000 ft
Maximum Operating Altitude	<b>Electrics</b>	35 000 ft
Maximum Recommended Start Alt.		25 000 ft
Starter Limit	<b>2nd Start</b>	No limit
	<b>Between 2nd and 3rd</b>	5 min cooling
	<b>After 3rd Start</b>	1 hour cooling
Start APU restriction		Do not start APU when fuel hose connected

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<b><u>Engine</u></b>	Max Time Limit TO Thrust		5 Min	
	Max N1 RPM	<b>with N1 Red Limit</b>	106%	
	Max N2 RPM		105%	
	Max TO EGT	<b>with EGT Red Limit</b>	930 °C	
	Max Continuous EGT	<b>with EGT Amber Limit</b>	895 °C	
	Max Start EGT		725 °C	
	Min Oil Pressure		13 PSI	
	Max Oil Temperature	<b>for 15'</b>	165 °C	
	Max Oil Temperature	<b>continuous</b>	160 °C	
	Minimum Pneum. Press. For Start	<b>-0.5 PSI/ 1000'</b>	30 PSI	
	Starter Limitation	<b>1 Attempt</b>	2' ON/ 20" OFF	
	Starter Limitation	<b>subsequent Attempt</b>	2' ON/ 3' OFF	
	No TAI in Climb or Cruise		if SAT below -40 °C	
	Minimum Oil for Dispatch Outbound LGG		4	
Minimum Oil for Dispatch Inbound LGG		3		
<b><u>Electrical</u></b>	Max GEN Drive Oil Temperature		157 °C	
<b><u>Hydraulic</u></b>	Minimum Fuel In Tank Prior Operating Elec. Pump		760 kgs	
	Minimum Pressure		2800 PSI	
	Maximum Pressure		3500 PSI	
<b><u>Autopilot</u></b>	Minimum Engagement Altitude for TO		1 000 ft	
	Minimum Engagement Altitude for Landing on 1 channel		50 ft	
<b><u>Pneumatic</u></b>	Maximum differential pressure		8,65 PSI	
<b><u>RVSM</u></b>	Minimum Equipment		2 Air Data Computer 2 Altimeters 1 Autopilot 1 Altitude Alert Device 1 Transponder TCAS according to the state AIP's	
	<b><u>Cargo Door</u></b>	Max Wind from any Direction	<b>with both Actuators ON</b>	20 kts
		Max Wind from +/- 5° up to 135°	<b>with both Actuators ON</b>	60 kts
		Max Wind from +/- 5° up to 80°	<b>with both Actuators ON</b>	40 kts
		Max Wind for OOTND up to 80°	<b>with one Actuator ON</b>	10 kts
Max Wind for OOTND Full Open		<b>with both Actuators ON</b>	40 kts	
<b><u>Loading</u></b>	Max Dry Ice in Cargo w/o notice to crew		200 kgs	
	Max Total TI in position G + H	<b>TNA - TNB</b>	50	
	Max TI in position G	<b>TNA - TNB</b>	40	
	Max Fuel Discrepancy	<b>2,5% of fuel capacity</b>	400 kgs	
	Max Moving Weight Variation		600 kgs	

# Boeing 737 Limitations

B 1.1-1

B12: 9.10.10

B12: 14.10.1

Cockpit Companion

B 2.1-40

B 1.1-1

B12 9.20.14

CBT Lufthansa

B 1.1-2

# Boeing 737 Limitations

B 4.1-2

B (chapter perfo)

Cock. Comp. Bill Bulfer

B 1.1-6

Study Guide ...

B 1.1-5

B 2.3-43 Supp. 2.3.7.6

# Boeing 737 Limitations

B 1.1-4

B 1.1-5

KLM Info

B 1.1-3

B 1.1-7

Web site Boeing 737

B1.1-3

B12:

MEL

B 1.1-7

B1.1-8

B 7.2-22

B 7.2-23

B 6.1-1