

Mooney M20J V _{speeds}	KIAS
V _X (Sea Level)	66
V _X (each 5,000 ft MSL)	+1
V _Y (Sea Level)	86
V _Y (10,000 ft MSL)	80
V _{FE}	112
V _{LE}	132
V _{LO} (EXT)	132
V _{LO} (RET)	107
V _S	62
V _{SO}	58
V _A (2,250 lbs)	104
V _A (2,470 lbs)	109
V _A (2,740 lbs)	115
V _A (2,900 lbs)	118
V _{NO}	174
V _{NE}	196
V _{glide} (2,900 lbs)	93
V _{glide} (2,740 lbs)	90
V _{glide} (2,500 lbs)	87
V _{glide} (2,300 lbs)	84
V _{Rotate}	60
V _{Approach}	90 - 100
V _{final}	75 - 80

Mooney M20J Emergency Speeds	KIAS
Engine Failure after Takeoff	
Flaps Up	85
Flaps Down	75
Emergency Descent	
Smooth - Gear Up	196
Smooth - Gear Down	132
Turbulent @ 2,900 lbs	120
Turbulent @ 2,740 lbs	115
Turbulent @ 2,470 lbs	109
Turbulent @ 2,250 lbs	104
Maneuvering Speed	
V _A @ 2,900 lbs	118
V _A @ 2,740 lbs	115
V _A @ 2,470 lbs	109
V _A @ 2,250 lbs	104
Glide Speed	
Glide @ 2,900 lbs	93
Glide @ 2,740 lbs	90
Glide @ 2,500 lbs	87
Glide @ 2,300 lbs	84

Mooney M20J Arcs	KIAS
White	58 - 112
Green	62 - 174
Yellow	174 - 196
Red Line	196

Mooney M20J Other	KIAS	MP	RPM
Enroute Climb	100	26"	2600
Descent	100	22"	2200
	132		
Approach	90	19"	2200
	100		
Final	75	15"	Full
	80		

Pre-Flight Inspection

- 1. Cockpit
 - Gear Switch Down
 - Magneto/Starter Switch Off
 - Master Switch On
 - Wing Flaps Check operation
 - Rocker Switches Off
 - Circuit Breakers In
 - Battery Voltage Check (22 - 24 Volts)
 - Internal/External Lights Check Operation
 - Fuel Gauges / Quantity Check
 - Pitot Heat Switch Check Annunciator
 - Master Switch Off
- 2. Right Fuselage / Tail Cone
 - Static Port Unobstructed
 - Access Panels Secure
 - Tie Down Remove
- 3. Empennage
 - Elevator and Rudder attach points Inspect
 - Control Linkage attachments Inspect
- 4. Left Fuselage / Tail Cone
 - Fresh Air Vent (Dorsal Fin) Clear
 - Static Port Unobstructed
 - Access Doors Secure
 - Static System Drain Valve Push up for 5 seconds
- 5. Left Wing
 - Flap and attach points Inspect
 - Aileron and attach points Inspect
 - Control Linkages Inspect
 - Wing Tip, Lights, and Lens Inspect
 - Pitot Tube Unobstructed
 - Landing / Taxi Lights Inspect
 - Stall Warning Vane Unobstructed
 - Fuel Tank Check Quantity / Secure Cap
 - Tie Down Remove
 - Tank Vent Unobstructed
 - Wheel Chock Remove
 - Left Main Gear, Shock Discs, Tires, Doors, and Linkages Inspect
 - Fuel Tank Sump Drain Drain until Clear

- Pitot System Drain Valve Push up for 3 - 5 seconds
- Gascolator Drain Valve Closed, Check for drips
- 6. Left Cowl Area
 - Windshield Clean
 - Cabin Air Inlet Unobstructed
 - Engine Cowl Fasteners Secure
 - Cowl Flap Inspect
- 7. Propeller / Spinner & Front Cowl
 - Blades Inspect for nicks & oil leaks
 - Spinner Secure, Inspect for cracks
 - Intake Unobstructed
 - Nose Gear, Shock Discs, Tires, Doors, and Linkages Inspect
 - Wheel Chock Remove
- 8. Right Cowl Area
 - Engine Cowl Fasteners Secure
 - Engine Oil Level Check (6 qts min)
 - Exhaust Pipe Secure
 - Cowl Flap Inspect
 - Windshield Clean
 - Cabin Air Inlet Unobstructed
- 9. Right Wing
 - Fuel Tank Sump Drain Drain until Clear
 - Right Main Gear, Shock Discs, Tires, Doors, and Linkages Inspect
 - Wheel Chock Remove
 - Tank Vent Unobstructed
 - Tie Down Remove
 - Landing / Taxi Lights Inspect
 - Fuel Tank Check Quantity / Secure Cap
 - Wing Tip, Lights, and Lens Inspect
 - Aileron and attach points Inspect
 - Flap and attach points Inspect
 - Control Linkages Inspect
- 10. Baggage Door Secured
- 11. Cockpit
 - Fuel Selector (Select Right) Pull gascolator ring 5 seconds
 - Fuel Selector (Select Left) Pull gascolator ring 5 seconds
 - Master Switch Off

Before Starting Check

Preflight Inspection	Completed
Seats, Seat Belts, & Shoulder Harnesses	Adjusted & Secured
Magneto/Starter Switch	Off
Master Switch	Off
Alternator Field Switch	Off
Radio Master Switch	Off
Alternate Static Source	Push Off
Rocker Switches	Off
Directional Gyro	Slaved
Circuit Breakers	Check
ELT	Arm
Throttle	Closed
Propeller	High RPM
Mixture	Idle Cutoff
Cowl Flaps	Open
Parking Brake	Set
Wing Flap Switch	Flaps Up
Cabin Vent	As desired
Cabin Heat	Off
Defrost	Off
Fuel Selector	Emptiest Tank
Landing Gear Switch	Down
RED Emergency Gear Handle	Down & Latched
Internal Lights	Off
Passengers	Briefed
Master Switch	On
Alternator Field Switch	On
Annunciator Lights	Press to Test

Cold Engine Start

Before Starting Checklist	Completed
Throttle	¼ open
Propeller	Full Forward
Mixture	Full Forward
Fuel Boost Pump	On
Mixture	Idle Cutoff
Propeller Area	Clear
Magneto/Starter Switch	Turn & Push to Start

Mixture Move slowly & smoothly to Rich

Flooded Engine Start

Before Starting Checklist	Completed
Fuel Boost Pump	Off
Throttle	Full Forward
Propeller	Full Forward
Mixture	Idle Cutoff
Propeller Area	Clear
Magneto/Starter Switch	Turn & Push to Start
Mixture	Move slowly & smoothly to Rich

Warm Engine Start

Before Starting Checklist	Completed
Fuel Boost Pump	Off
Throttle	Slightly Open
Propeller	Full Forward
Mixture	Idle Cutoff
Propeller Area	Clear
Magneto/Starter Switch	Turn & Push to Start
Mixture	Move slowly & smoothly to Rich

After Engine Start

Throttle	Set at 1000 - 1200 RPM
Engine Oil Pressure	Green Arc in 30 seconds
Ammeter	Turn on landing light observe negative needle movement
Internal/External Lights	As desired
Engine Instruments	Checked
MiniFlo Fuel Flow System	Reset for Fuel Status
• Tanks Topped Off	Move toggle switch to Full Fuel Window displays 64 gallons Press Enter Center the toggle switch Move toggle switch to Fuel Rem Hold toggle switch on Add Fuel Move toggle switch to Fuel Rem , Hold until 50 gallons in Window Press Enter
• Tanks to Tabs	to verify

Before Taxi

Engine Start Checklist	Completed
Radio Master Switch	On
Elevator Trim Switch	On
Flight Director Control Panel - Trim	Press to Test
Annunciator Panel	Press to Test
Internal/External Lights	As desired
Rotating Beacon & Strobes	On
Directional Gyro	Slaved
Instruments	Normal indications
Fuel Selector	Switch to fullest tank
Cowl Flaps	Check operation, Full open
Fuel Boost Pump	Off

Taxi

Before Taxi Checklist	Completed
Parking Brake	Release
Brakes	Check during taxi
Directional Gyro	Proper indication during turns
Turn Coordinator	Proper indication during turns
Flight Director	Erect during turns
Throttle	Minimum Power
Cowl Flaps	Full Open
Propeller	Full Forward

Before Takeoff

Taxi Checklist	Completed
Parking Brake	Set
Door	Closed and Latched
Flight Controls	Free and Correct
Seat Belts & Shoulder Harnesses	Fastened and Secure
Fuel Selector	Fullest Tank
Propeller	High RPM
Mixture	Full Forward
Throttle	1900 - 2000 RPM
Magnetos	Both to L, Both to R, Both
	Max Drop 175 RPM,
	Max Diff 50 RPM
Propeller	Cycle / return High RPM 3 times
	Max Diff 500 RPM

Ammeter	Check positive charge indication
Annunciator Panel	Check Alt Volts lights off
	Check Hi / Lo Vac lights off
	Close
Throttle	Reset to 1000 - 1200 RPM
Throttle	Takeoff setting
Trim	Set to Takeoff position
Wing Flaps	Check & Set
Avionics & Auto Pilot	Check, Set frequencies
Radios	Set to field elevation
Altimeter	Set to Altitude
Transponder	Set
VORs	Set
LORAN	Set
Pilot's Window	Closed
RED Emergency Gear Handle	Down & Latched
Speed Brakes	Retracted
Fuel Boost Pump	On
Annunciator Lights	Check proper indications
Parking Brake	Release

Takeoff (Normal)

Before Takeoff Checklist	Completed
Power	Full Throttle (2700 RPM)
Mixture	Full Rich (Lean high elevation)
Annunciator Panel	Check proper indications
Engine Instruments	Check proper indications
Liftoff / climb speed	60 KIAS
Landing Gear	Retract when no runway available
Wing Flaps	Retract

Cruise Climb (Above 500 ft AGL)

Fuel Boost Pump	Off
Throttle	26" Hg MP
Propeller	2600 RPM
Mixture	Full Rich (Lean high elevation)
Cowl Flaps	Full Open
Airspeed	100 KIAS
<i>Maintain these power settings and attitude until 3000 ft AGL or cruise altitude.</i>	

*Manifold pressure will drop with increasing altitude at any throttle setting.
Power can be restored by gradually opening the throttle.*

Climb (Best Rate V_Y)

Power Full Throttle and 2700 RPM
Mixture Full Rich (Lean high elevation)
Cowl Flaps Full Open
Airspeed 86 KIAS at sea level
decreasing to 80 KIAS at 10,000 ft

Climb (Best Angle V_X)

Power Full Throttle and 2700 RPM
Mixture Full Rich (Lean high elevation)
Cowl Flaps Full Open
Airspeed 66 KIAS at sea level

Enroute Cruise

At cruise altitude Accelerate to cruise airspeed
Throttle Set MAP per Cruise Power Chart
Propeller Set RPM per Cruise Power Chart
Mixture Lean using EGT gauge
Economy Cruise 14°C (25°F) below peak
Best Power Mixture 55°C (100°F) below peak
Cowl Flaps Closed

Increasing Power

1. Mixture Return to full rich
2. Propeller increase RPM
3. Throttle increase manifold pressure

Decreasing Power

1. Throttle decrease manifold pressure
2. Propeller decrease RPM

Final Approach to Landing

Internal/External Lights As desired
Seat Belts & Shoulder Harnesses Fastened and Secure
Speed Brakes Extend if necessary
Wing Flaps Full down below 112 KIAS

Throttle
GUMP Check
Gas

Undercarriage

Mixture
Propeller
AirSpeed
Trim
Parking Brake

Go Around (Balked Landing)

Power Full Throttle / 2700 RPM
Mixture Full rich
Speed Brakes Retract
AirSpeed 65 KIAS
Wing Flaps Centered after climb established
Trim Nose down to reduce control force
AirSpeed Accelerate to 76 KIAS
Landing Gear Retract
Wing Flaps Retract
Cowl Flaps Full Open
AirSpeed Accelerate to 86 KIAS

Taxi After Landing

Throttle 1000 - 1200 RPM
Wing Flaps Retract
Cowl Flaps Full Open
Trim Reset to Takeoff
Radios As required
Internal/External Lights As required

ShutDown

Parking Brake Set
Throttle 1000 - 1200 RPM
Radio Master Off
Internal/External Lights Off
Magneto/Starter Switch Grounding Check
Mixture Idle Cutoff

Magneto/Starter Switch	Off when propeller stops
Alternator Field Switch	Off
Master Switch	Off
 Securing Aircraft	
Magneto/Starter Switch	Off / key removed
Master Switch	Verify Off
Radio Master	Verify Off
Electrical Switches	Verify Off
Parking Brake	Release and install wheel chocks
Pitot Tube	Cover if parked outside
Control Wheel	Secure with seat belts if parked outside
Cabin Vents	Close if parked outside

Emergency Procedures for an in flight engine failure

1. Establish best glide speed for flying weight.
2. Select suitable landing field. Head to field immediately.
3. Attempt to restart engine:
 - Fuel Selector Switch tanks.
 - Fuel Pressure Verify in Green arc
 - Boost Pump On, if required.
 - Throttle Full Forward
 - Propeller Full Forward
 - Mixture Full Forward
 - Magneto/Starter Switch Verify on both
4. If engine does not restart after initial attempt:
 - Mixture Idle Cutoff
 - Mixture Move slowly to Rich
5. Initiate distress call:
 - Broadcast Frequency 121.5
 - Transponder Mayday! Location
 - Squawk 7700.
6. Establish landing approach to selected field:
 - ELT Arm
 - Seat Belts & Shoulder Harnesses Fastened and Secure
 - Cabin Door Unlatch
 - Mixture Idle cutoff
 - Fuel selector Off
 - Magneto/Starter Switch Off

Speed Brakes	Extend if necessary
Wing Flaps	Full (33°)
Landing Gear	Down or Up Depending on terrain
Approach Speed	As slow as possible
Master Switch	Off
Landing Attitude	Wings level Slightly tail low
Brakes	Apply heavily, if gear down

Failure of Landing Gear to Extend

Airspeed	132 KIAS or less.
Landing Gear Actuator Circuit Breaker	Pull.
Gear Switch	Down.
Manual Gear Extension Mechanism	Latch Forward Lever Back
T-Handle	Pull 7 - 20 times Stop at resistance
Gear Down light	Illuminated Green
Visual Gear Down Indicator	Check
Manual Gear Extension Mechanism	Lever to Normal Position Latch Secured.
Landing Gear Actuator Circuit Breaker	Reset.

Failure of Landing Gear to Retract

<i>If possible</i>	Return to airport, <i>Otherwise</i>
Airspeed	Below 107 KIAS.
Gear Switch	Up.
Gear Safety Bypass Switch	Press, Hold until gear retracted
Gear Down light	Extinguished
Gear Unsafe Light	Extinguished
Landing Gear Relays Circuit Breaker	Pull

Mooney MSE - N1084B - Checklist
Checklist

Mooney MSE - N1084B -

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