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# TYPE-CERTIFICATE DATA SHEET

NO. EASA.IM.A.266

**For Type**  
Mooney Model M20

**Type Certificate Holder**  
Mooney Airplane Company Inc.  
165 Al Mooney Drive North  
Kerrville, Texas 78028  
USA

For variants:     M20M  
                          M20R



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- C. Technical Characteristics and Operational Limitations
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## **SECTION 1: GENERAL, Model M20MType Design**

### **A. General**

Data Sheet No.: EASA.IM.A.266	Issue: 02
1. a) Type:	Model M20M
b) Variant:	N/A
2. Airworthiness Category:	Normal Category
3. Type Certificate Holder:	Mooney Airplane Company Inc. 165 Al Mooney Drive North Kerrville, Texas 78028 USA
4. Manufacturer:	Mooney Airplane Company Inc. 165 Al Mooney Drive North Kerrville, Texas 78028 USA
5. JAA Certification Application Date:	N/A
6. JAA recommendation Date:	N/A
7. EASA Type Certification Date:	1 Jul 2009 (for S/N equipped with G1000) 28 June 1989

### **B. Certification Basis**

1. Reference Date for determining the applicable requirements:	FAA application date 6 June 2006
2. (Reserved)	
3. (Reserved)	
4. Certification Basis:	As defined in EASA CRI A-01
5. Airworthiness Requirements:	1. CAR 3 and FAR 23 as defined in FAA TCDS 2A3, and JAR-23, Change 1, plus Special Conditions as defined in EASA CRI A-01, Issue 4, for the G-1000 Integrated Avionics System. 2. Mooney Airplane Company Drawing 940175 "European Union Aircraft-Retrofit" Revision A of 21 April 2008, or later FAA Approved Revision.
6. Requirements elected to comply:	None
7. EASA Special Conditions:	As defined in EASA CRI A-01.
8. (Reserved)	



## **SECTION 1: GENERAL, Model M20M Type Design**

### **B. Certification Basis (continued)**

- |                                      |  |
|--------------------------------------|--|
| 9. EASA Exemptions:                  | None   |
| 10. EASA Equivalent Safety Findings: | None   |
| 11. EASA Environmental Standards:    | CS 36(ICA0 Annex 16, Volume I, as applicable.) |

### **C. Technical Characteristics and Operational Limitations**

- |                            |  |
|----------------------------|--|
| 1. Type Design Definition: | Master Drawing List, Document No.110029, Applicable revision per Serial Number.  |
| 2. Description:            | Single-engine, all-metal, four-place, low-wing airplane, retractable tricycle landing gear.  |
| 3. Equipment:              | Equipment list found in AFM/POH No. 350(X) Applicable revision per Serial Number. See Section 1; Paragraph D.  |
| 4. Dimensions:             |  |
| Span                       | 10.9954 m (36 ft. 1 in)  |
| Length                     | 8.1534 m (26 ft 9 in)  |
| Height                     | 2.54 m (8 ft. 4 in)  |
| Wing Area                  | 16.2487 m <sup>2</sup> (174.9 ft <sup>2</sup> )  |
| 5. Engines:                |  |
|                            | 1. Textron-Lycoming, TIO-540-AF1A<br>The EASA Engine Type Certification standard includes that of FAA TCDS E14EA ,based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards conforming to TC/TCDS standards certified by individual EU member states prior to 28 September 2003 are also acceptable.  |
|                            | 2. Textron-Lycoming, TIO-540-AF1B (OPT. 27-0001 THRU 27-0210) Standard 27-0211 Thru 27-0355.<br>The EASA Engine Type Certification standard includes that of FAA TCDS E14EA, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards conforming to TC/TCDS standards certified by individual EU member states prior to 28 September 2003 are also acceptable. |
| 5.1 Engine Limits:         | For Engines 1 and 2: For all operations: 2575 RPM; 38.0 in. MP (270 hp)<br>For power-plants limits refer to AFM/POH No. 350(X) applicable revision per Serial Number. See Section 1; Paragraph D.  |
| 6. (Reserved)              |  |



## **SECTION 1: GENERAL, Model M20M Type Design**

### **C. Technical Characteristics and Operational Limitations (continued)**

7. Propellers:
- McCauley constant speed propeller installation  
(a) McCauley, B3D32C417 hub blades 82 NRD-7  
Weight: 34 kg (75.0 lbs.) at F.S. -1.26 m (- 49.5 in.)  
Pitch setting at 762 mm (30.0 in.) blade station:  
Low  $15.1^\circ \pm 0.2^\circ$  High  $43.0^\circ \pm 0.5^\circ$   
Diameter: 1.905 m (75.0 in.)  
The EASA Propeller Type Certification standard includes that of FAA TCDS P58GL, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards conforming to TC/TCDS standards certified by individual EU member states prior to 28 September 2003 are also acceptable.  
No operating limitations to 2575 RPM  
No reduction permitted.  
(b) Spinner assembly, McCauley D-6204  
(c) Spinner assembly, McCauley D-6204-1  
(d) Propeller governor, McCauley C290D( )/T  
(e) Propeller de-icing boots, McCauley 690003-501 (S/N 27-0001 and on) 9 lbs. -49.50  
(f) Propeller governor, McCauley DC 290D(x)/T(x) 3.2 lbs. -35.80
8. Fluids:
- 8.1 Fuel: 100/100LL minimum grade aviation gasoline
- 8.2 Oil: Engine MIL-L-22851 or SAE J1899 Aviation Grade  
Ashless Dispersant Oil and as approved by Textron Lycoming. Reference Engine Operators Manual.
- 8.3 Coolant: Not Applicable
9. Fluid capacities:
- 9.1 Fuel: Total: 359.6 litres (95 US Gallons)  
Usable: 336.8 litres (89 US Gallons)  
Two 179.8 litre (47.5 gal.) tanks in wings at 1.2544 m (49.23 inches) aft of datum.  
See Note 1 for data on unusable fuel.
- 9.2 Oil: Total Capacity: 9.5 Litres (10 Quarts)  
Minimum: 5.7 Litres (6 Quarts)
10. Air Speeds:
- |                                       |                     |
|---------------------------------------|---------------------|
| Maneuvering $V_A$ (@ GW)              | 127 KIAS (126 KCAS) |
| Never exceed $V_{NE}$                 | 195 KIAS (195 KCAS) |
| Flaps extended $V_{FE}$               | 110 KIAS (109 KCAS) |
| Landing gear retraction $V_{LO(RET)}$ | 106 KIAS (104 KCAS) |
| Landing gear extension $V_{LO(EXT)}$  | 140 KIAS (139 KCAS) |
| Landing gear extended $V_{LE}$        | 165 KIAS (165 KCAS) |
| Maximum structural cruising $V_{NO}$  | 174 KIAS (174 KCAS) |



11. Maximum Operating Altitude: 7620 m (25,000 Feet). See Note 4
12. Operational Capability: VFR Day and Night  
IFR Day and Night

**SECTION 1: GENERAL, Model M20M Type Design (continued)**  
**C. Technical Characteristics and Operational Limitations (continued)**

13. Maximum Masses:

a. (Normal Category):

S/N 27-0001 thru S/N 27-0052:	
Ramp	1452 kg (3200 lb.)
Take-Off	1452 kg (3200 lb)
Landing	1452 kg (3200 lb)

S/N 27-0053 and on, and those aircraft S/N 27-0001 thru  
27-0052 that have complied with Mooney Service Bulletin

M20-248:	
Ramp	1528 kg (3368 lb.)
Take-Off	1528 kg (3368 lb)
Landing	1452 kg (3200 lb)

14. Centre of Gravity Range:  
(Normal Category):

C.G. Range (Landing gear extended) S/N 27-0001 thru 27-0052	<u>1452 kg (3200 lb.) C.G. limits</u> (+1.14 m) to (+1.29 m) [(+45.0 in) to (+51.0 in)] At 1451.5 kg (3200 lbs.). (+1.09 m) to (+1.29 m) [(+43.0 in) to (+51.0 in)] at 1361 kg (3000 lbs.). (1.04 m) to (1.29 m) [(+41.0) to (+51.0) at 1102Kg (2430 lbs.) or less. (Straight line variation between points Retraction moment 708.55kg-cm (615 in. -lbs.)
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C.G. Range (Landing gear extended) S/N 27-0053 thru 27-0355, aircraft S/N 27-0001 thru 27-0052 that have complied with Mooney S/B M20-248.	<u>1528 kg (3368 lb.) C.G. limits</u> (+1.143 m) to (+1.295 m) [(+46.0 in) to (+51.0 in)] at 1528 kg (3368 lbs.). (+1.118 m) to (+1.295 m) [(+44.0 in) to (+51.0 in)] at 1497 kg (3300 lbs.). (1.041 m) to (1.295 m) [(+41.0) to (+51.0)] at 1102 kg (2430 lbs.) or less. (Straight line variation between points given). Retraction moment 708.55kg-cm (615 in. -lbs.)
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15. Datum: F.S. 0.00 is 330.2 mm (13 inches) aft of the centerline  
of the nose gear support bolts.
16. (Reserved)
17. Levelling Means Levelling screws located above left side tailcone  
access door. Spirit level to be placed on screws for  
levelling.
18. Minimum Flight Crew: 1 (Pilot)
19. Maximum Passenger Seating Capacity: 3
20. (Reserved)



21. Baggage / Cargo Compartment 54.43 kg (120 lbs) at F.S. +2.58 m (+101.5 in)  
4.54 kg (10 lbs) at F.S. +3.2 m (+110 in)

**SECTION 1: GENERAL, Model M20M Type Design (continued)**

**C. Technical Characteristics and Operational Limitations (continued)**

22. Wheels and Tires

Two Main Wheel/Brake Assemblies, 6.00-6  
(a) \*Cleveland Wheel Assembly,  
Wheel, Model No. 40-86/Brake Assembly No. 30-56A  
*\*Optional - Cleveland, 40-86E, 30-56D*  
(b) Cleveland wheel assembly, model 40-90A,  
Brake Assembly No. 30-652 (27-0117 thru 27-0116)

Two main wheel, 6-ply rating, tires  
6.00-6, Type III w/ regular tubes

One, Nose Wheel, 5.00-5  
Cleveland, wheel assembly, Model 40-87

One, Nose Wheel, 6-Ply Rating tire  
(a) 5.00-5, Type III w/ regular tube

23. Control Surface Movements

Wing flaps

	Takeoff Position		Down	10° ± 1°
	Landing Position		Down	33° ± 0°, -2°
Elevator		Up	22° +0°, -2°	Down 22° +0°, -2°
Ailerons		Up	12.5° to 14.5°	Down 8° ± 1°
Aileron Static Position				Down 0° to 2°
Rudder		Left	23° to 24°	Right 23° to 24°
Stabilizer (L.E.)		Up	3.8° to 4.2°	Down 6.5° to 7.0°

Elevator Trim Assist

With stabilizer set to maximum positive setting and elevators full down, adjust turnbuckle for a 6.35 to 7.26 kg (14.0 to 16.0 lbs) tensionometer reading on cable. Check for positive clearance between cable and pulley sheave.

**D. Operating and Service Instructions**

Airplane Flight Manual (AFM):

3500: S/N 27-0002 thru 27-0052, latest approved revision.  
3501: S/N 27-0053 thru 27-0107, latest approved revision.  
3502: S/N 27-0108 thru 27-0317, 27-0319 thru 27-0325, latest approved revision.  
3502: S/N 27-0318, 27-0326 thru 27-0355, latest approved revision. See NOTE 3.

Airplane Maintenance Manual (AMM)  
(Including Airworthiness Limitations)

Manual No. MAN152, latest revision





## **SECTION 1: GENERAL, Model M20M Type Design (continued)**

### **E. Notes**

#### **Equipment**

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification.

#### **NOTE 1:**

Current weight and balance report, including list of equipment included in certificated empty weight and loading instructions, when necessary, must be in each aircraft at the time of original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system.) The certificated empty weight and the corresponding center of gravity location must include unusable fuel (not included in fuel capacity) as follows: (+49.23) for the M20M (S/N 27-0001 thru 27-0355), 36 lbs.

#### **NOTE 2:**

Required Placards: All placards required to be installed on the aircraft, and their locations, are found in the respective AFM according to aircraft S/N.

#### **NOTE 3:**

G-1000 Equipped Aircraft: The G-1000 Integrated Avionics System is installed in S/N 27-0318, 27-326 thru 27-0355. The AFM for these aircraft is 3502, Latest Revision. In addition, a copy of FAA Approved Flight Manual Supplement Garmin G1000 Integrated Avionics System installed in the Mooney M20M, Revision 11-2004 or later FAA Approved Revision, must be on board the aircraft for all flight operations.

#### **NOTE 4:**

Operating altitude limitations are established in the applicable Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. The Mooney Oxygen System Installation is an approved oxygen installation on the M20M, per Mooney Drawing 870029-513.



## **SECTION 2: GENERAL, Model M20R Type Design**

### **A. General**

Data Sheet No.: EASA	Issue: 02
1. a) Type:	Model M20R
b) Variant:	N/A
2. Airworthiness Category:	Normal Category
3. Type Certificate Holder:	Mooney Airplane Company Inc. 165 Al Mooney Drive North Kerrville, Texas 78028 USA
4. Manufacturer:	Mooney Airplane Company Inc. 165 Al Mooney Drive North Kerrville, Texas 78028 USA
5. JAA Certification Application Date:	N/A
6. JAA recommendation Date:	N/A
7. EASA Type Certification Date:	1 Jul 2009 (for S/N equipped with G1000) 04 October, 1995

### **B. Certification Basis**

1. Reference Date for determining the applicable requirements:	FAA application date 6 June 2006
2. (Reserved)	
3. (Reserved)	
4. Certification Basis:	As defined in EASA CRI A-01
5. Airworthiness Requirements:	1. CAR 3 and FAR 23 as defined in FAA TCDS 2A3, and JAR-23, Change 1, plus Special Conditions as defined in EASA CRI A-01, Issue 4, for the G-1000 Integrated Avionics System. 2. Mooney Airplane Company Drawing 940175 "European Union Aircraft-Retrofit" Revision A of 21 April 2008, or later FAA Approved Revision.
6. Requirements elected to comply:	None
7. EASA Special Conditions:	As defined in EASA CRI A-01.
12. (Reserved)	



## **SECTION 2: GENERAL, Model M20R Type Design**

### **B. Certification Basis (continued)**

- |                                      |  |
|--------------------------------------|--|
| 13. EASA Exemptions:                 | None   |
| 14. EASA Equivalent Safety Findings: | None   |
| 15. EASA Environmental Standards:    | CS 36(ICA0 Annex 16, Volume I, as applicable.) |

### **C. Technical Characteristics and Operational Limitations**

- |                            |  |
|----------------------------|--|
| 1. Type Design Definition: | Master Drawing List, Document No.110071, Applicable revision per Serial Number.  |
| 2. Description:            | Single-engine, all-metal, four-place, low-wing airplane, retractable tricycle landing gear.  |
| 3. Equipment:              | Equipment list found in AFM/POH No:<br><u>3600</u> (29-0001 thru 29-0170, 29-0182, 29-0184 thru 29-0199) Applicable revision per Serial Number.<br><u>3800</u> (29-0183, 29-0200 thru 29-0494) Applicable revision per Serial Number.<br><u>3810</u> (29-0495 and on) Applicable revision per Serial Number.<br>See Section 2; Paragraph D.  |
| 4. Dimensions:             |  |
| Span                       | 10.9954 m (36 ft. 1 in)  |
| Length                     | 8.1534 m (26 ft 9 in)  |
| Height                     | 2.54 m (8 ft. 4 in)  |
| Wing Area                  | 16.2487 m <sup>2</sup> (174.9 ft <sup>2</sup> )  |
| 5. Engines:                | Teledyne Continental Motors, IO-550-G(5); -G(6)*; or -G(7) *(6) configuration is same as (5) configuration, and may be used, when dry pad adapter is required. The EASA Engine Type Certification standard includes that of FAA TCDS E3SO, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards conforming to TC/TCDS standards certified by individual EU member states prior to 28 September 2003 are also acceptable. |
| 5.1 Engine Limits:         | For all operations: 2500 RPM (280 hp).<br>For power-plants limits refer to AFM/POH applicable revision per Serial Number. See Section 2; Paragraph D.  |
| 6. (Reserved)              |  |



## **SECTION 2: GENERAL, Model M20R Type Design**

### **C. Technical Characteristics and Operational Limitations**

#### 7. Propellers:

1. McCauley constant speed propeller installation  
McCauley, 3A32C418-G Hub/Blades (-) -82 NRC-9  
Pitch setting at 762 mm (30.0 in.) blade station:  
Low  $16.1^\circ \pm 0.2^\circ$  High  $40.0^\circ \pm 0.5^\circ$   
Diameter: 1.85 m (73.0 in.) - $\frac{1}{2}$  in. Reduction permitted.  
The EASA Propeller Type Certification standard includes that of FAA TCDS P47L, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards conforming to TC/TCDS standards certified by individual EU member states prior to 28 September 2003 are also acceptable.

- (a) Spinner assembly, McCauley D-7192 (painted)
- (b) Spinner assembly, McCauley D-7192-1 (polished)
- (c) Propeller governor, Mooney 660115-511
- (d) Propeller De-Icing Boots, McCauley, 690005-501 (Serial No. 29-0199, excluding 29-0183).

2. McCauley constant speed 241 propeller installation  
(a) McCauley, 2A34C241-G hub, blades 82PGC-6  
Pitch setting at 762 mm (30.0 in.) blade station:  
Low  $20.0^\circ \pm .5^\circ$   
High  $37.5^\circ \pm .5^\circ$   
Diameter: 1.93 m +0,-12 mm (76.0 in. + 0, -.5)  
The EASA Propeller Type Certification standard includes that of FAA TCDS P3EA, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards conforming to TC/TCDS standards certified by individual EU member states prior to 28 September 2003 are also acceptable.

- (b) Spinner assembly, McCauley D-7579-2 (painted)
- (c) Spinner assembly, McCauley D-7579-1 (polished)
- (d) Propeller governor, Mooney 660115-511
- (e) Propeller De-Icing Boots, McCauley, 690005-501 (S/N 29-0001 thru 29-0199, excluding 29-0183)
- Propeller de-icing boots, McCauley, 690003-501 (S/N 29-0001 thru 29-0199, excluding 29-0183)

3. Hartzell constant speed propeller installation

- (a) Hartzell Hub/Blade Model Number  
PHC-J3YF-1RF/F7693DF(B)-2 or  
PHC-J3YF-1RF/F7693DF-2  
Pitch settings at 762 mm (30 in.) blade station:  
Low  $16.5^\circ \pm 0.2^\circ$  High  $38.0^\circ \pm 1.0^\circ$   
Diameter -1.93 m (76.0 in.)  
12 mm (1/2in.) Reduction permitted.

The EASA Propeller Type Certification standard includes that of FAA TCDS P36EA, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards conforming to TC/TCDS standards certified by individual EU member states prior to 28 September 2003 are also acceptable.

- (b) Spinner assy, Hartzell A-2295-10P (polished)
- (c) Propellor governor, McCauley C290D3X/T45
- (d) Propellor governor, McCauley D-20960-1 (Alternate)



## **SECTION 2: GENERAL, Model M20R Type Design**

### **D. Technical Characteristics and Operational Limitations**

8. Fluids:
- 8.1 Fuel: 100/100LL minimum grade aviation gasoline
- 8.2 Oil: Engine MHS-24( ), MHS-25( ) and TCM Approved oils.
- 8.3 Coolant: Not Applicable
9. Fluid capacities:
- 9.1 Fuel: Total: 359.6 litres (95 US Gallons)  
Usable: 336.8 litres (89 US Gallons)  
Two 179.8 litre (47.5 gal.) tanks in wings at 1.2544 m (49.23 inches) aft of datum.  
See Note 1 for data on unusable fuel.
- 9.2 Oil: Total Capacity: 7.57 Litres (8 Quarts)  
Minimum: 5.7 Litres (6 Quarts)
10. Air Speeds:
- (S/N 29-0001 thru 29-0494)
- |                                       |                     |
|---------------------------------------|---------------------|
| Maneuvering $V_A$ (@ GW)              | 127 KIAS (126 KCAS) |
| Never exceed $V_{NE}$                 | 195 KIAS (195 KCAS) |
| Flaps extended $V_{FE}$               | 110 KIAS (109 KCAS) |
| Landing gear retraction $V_{LO(RET)}$ | 106 KIAS (104 KCAS) |
| Landing gear extension $V_{LO(EXT)}$  | 140 KIAS (139 KCAS) |
| Landing gear extended $V_{LE}$        | 165 KIAS (165 KCAS) |
| Maximum structural cruising $V_{NO}$  | 174 KIAS (174 KCAS) |
- (S/N 29-0495 and on)
- |                                       |                     |
|---------------------------------------|---------------------|
| Maneuvering $V_A$ (@GW)               | 127 KIAS (128 KCAS) |
| Never exceed $V_{NE}$                 | 194 KIAS (196 KCAS) |
| Flaps extended $V_{FE}$               | 110 KIAS (111 KCAS) |
| Landing gear retraction $V_{LO(RET)}$ | 106 KIAS (107 KCAS) |
| Landing gear extension $V_{LO(EXT)}$  | 140 KIAS (141 KCAS) |
| Landing gear extended $V_{LE}$        | 164 KIAS (166 KCAS) |
| Maximum structural cruising $V_{NO}$  | 173 KIAS (175 KCAS) |
11. Maximum Operating Altitude: 6096 m (20,000 Feet). See Note 4
12. Operational Capability: VFR Day and Night  
IFR Day and Night
13. Maximum Masses:
- a. (Normal Category):
- |          |                    |
|----------|--------------------|
| Ramp     | 1528 kg (3368 lb.) |
| Take-Off | 1528 kg (3368 lb.) |
| Landing  | 1452 kg (3200 lb.) |
14. Centre of Gravity Range:
- (Normal Category):
- |                         |   |
|-------------------------|---|
| C.G. Range              | <u>1528 kg (3368 lb.) C.G. limits</u>               |
| (Landing gear extended) | (+1.143 m) to (+1.295 m) [(+46.0 in) to (+51.0 in)] |
| S/N 29-0001 and on      | at 1528 kg (3368 lbs.).                             |
|                         | (+1.118 m) to (+1.295 m) [(+44.0 in) to (+51.0 in)] |
|                         | at 1497 kg (3300 lbs.).                             |
|                         | (1.041 m) to (1.295 m) [(+41.0) to (+51.0)] at 1102 |
|                         | kg (2430 lbs.) or less.                             |



**SECTION 2: GENERAL, Model M20R Type Design (continued)**

**C. Technical Characteristics and Operational Limitations (continued)**

15. Datum: F.S. 0.00 is 330.2 mm (13 inches) aft of the centerline of the nose gear support bolts.

16. (Reserved)

17. Levelling Means Levelling screws located above left side tailcone Access door. Spirit level to be placed on screws for levelling.

24. Minimum Flight Crew: 1 (Pilot)

25. Maximum Passenger Seating Capacity: 3

26. (Reserved)

27. Baggage / Cargo Compartment 54.43 kg (120 lbs) at F.S. +2.58 m (+101.5 in)  
4.54 kg (10 lbs) at F.S. +3.2 m (+110 in)

28. Wheels and Tires  
Two Main Wheel/Brake Assemblies, 6.00-6  
(a) \*Cleveland Wheel Assembly, Wheel, Model No. 40-86 /Brake Assembly No. 30-56A  
\*Optional - Cleveland, 40-86E, 30-56D  
(b) Cleveland wheel assembly, model 40-90A, Brake Assembly No. 30-652 (27-0117 thru 27-0116)

Two main wheel, 6-ply rating, tires  
6.00-6, Type III w/ regular tubes

One, Nose Wheel, 5.00-5  
Cleveland, wheel assembly, Model 40-87

One, Nose Wheel, 6-Ply Rating tire  
(a) 5.00-5, Type III w/ regular tube

29. Control Surface Movements  
Wing flaps

	Takeoff Position	Landing Position	Down	10° ± 1°
Elevator	Up	22° +0°, -2°	Down	33° ± 0°, -2°
Ailerons	Up	12.5° to 14.5°	Down	8° ± 1°
Aileron Static Position			Down	0° to 2°
Rudder	Left	23° to 24°	Right	23° to 24°
Stabilizer (L.E.)	Up	3.8° to 4.2°	Down	6.5° to 7.0°

Elevator Trim Assist  
With stabilizer set to maximum positive setting and elevators full down, adjust turnbuckle for a 6.35 to 7.26 kg (14.0 to 16.0 lbs) tensionometer reading on cable [9.07 kg (20 lb) maximum permissible]. Check for positive clearance between cable and pulley sheave.

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## **SECTION 2: GENERAL, Model M20R Type Design (continued)**

### **D. Operating and Service Instructions**

Airplane Flight Manual (AFM):

3600G: S/N 29-0001 thru 29-0182, 29-0184 thru 29-0199.

3800: S/N 29-0183, 29-0200 thru 0296.

3800A: S/N 29-0297 thru 29-0332.

3800B: S/N 29-0333 thru 29-0494 (Garmin G-1000) See NOTE 3.

3810: 29-0495 and on (Garmin G-1000 and Improved Static Port Design) See NOTE 3.

Airplane Maintenance Manual (AMM)  
(Including Airworthiness Limitations)

Manual No. MAN161, latest revision

### **E. Notes**

#### **Equipment**

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification.

#### NOTE 1:

Current weight and balance report, including list of equipment included in certificated empty weight and loading instructions, when necessary, must be in each aircraft at the time of original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system.) The certificated empty weight and the corresponding center of gravity location must include unusable fuel (not included in fuel capacity) as follows: (+49.23) for the M20R (S/N 29-0001 and on) 36 lbs.

#### NOTE 2:

Required Placards: All placards required to be installed on the aircraft, and their locations, are found in the respective AFM according to aircraft S/N.

#### NOTE 3:

G-1000 Equipped Aircraft: The G-1000 Integrated Avionics System is installed in S/N 29-0333 and on The AFM for these aircraft is 3800B, Latest Revision and 3810, Latest Revision. In addition, for all manuals except 3810, a copy of FAA Approved Flight Manual Supplement Garmin G1000 Integrated Avionics System installed in the Mooney M20R, Revision 11-2004 or later FAA Approved Revision, must be on board the aircraft for all flight operations.

#### NOTE 4:

Operating altitude limitations are established in the applicable Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. The Mooney Oxygen System Installation is an approved oxygen installation on the M20R, per Mooney Drawing 870029-513.



**SECTION 3: Change Record**

<b>Issue</b>	<b>Date</b>	<b>Changes</b>	<b>TC Issue No. &amp; Date</b>
Issue 01	01/07/2009	Initial issue M20M and M20R equipped with Garmin G1000 avionics	18/04/2016
Issue 02	06/04/2022	Correction to M20R Engine and Propeller TCDS references	06/04/2022

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