



**I. Model 177, Cardinal, 4 PCLM (Normal Category), 2 PCLM (Utility Category)** (cont'd)

Maximum Baggage	120 lbs. (+162.0)		
Fuel Capacity	49 gal. (two 24.5 gal. fuel bays in wing at sta. +112, 48 gal. usable) <i>See Note 1 for data on system fuel.</i>		
Oil Capacity	8 qt. (+44) (2 qt. unusable) <i>See Note 1 for data on undrainable oil.</i>		
Control Surface Movements	Wing flaps		Down 30° ± 2°
	Aileron	Up 20° ± 2°	Down 15° ± 2°
	Stabilator	Up 20° ± 1°	Down 5° ± 1°
	Stabilator tab	Up 2° ± 1°	Down 7° ± 1°
	Rudder (measured perpendicularly to hinge line)	Right 24° ± 1°	Left 24° ± 1°
Serial Numbers Eligible	661, 17700001 and 17700003 through 17701164		

**II. Model 177A, Cardinal, 4 PCLM (Normal Category), approved June 22, 1968**  
**2 PCLM (Utility Category), approved June 28, 1968**

Engine	Lycoming O-360-A2F		
*Fuel	100/130 minimum grade aviation gasoline		
*Engine Limits	For all operations, 2700 rpm (180 hp)		
Propeller and Propeller Limits	McCauley 1A170/EFA Diameter: not over 76 in., not under 74 in. Static rpm, at maximum permissible throttle setting: not over 2460, not under 2360 No additional tolerance permitted		
*Airspeed Limits (CAS)	Never exceed	185 mph (160 knots)	
	Maximum structural cruising	150 mph (130 knots)	
	Maneuvering	117 mph (101 knots)	
	Flaps extended	105 mph (91 knots)	
C.G. Range	Normal category: (+101.0) to (+114.5) at 2000 lbs. or less (+107.4) to (+114.5) at 2500 lbs. Straight line variation between points given Utility category: (+101.0) to (+109.0) at 2000 lbs. or less (+103.6) to (+109.0) at 2200 lbs.		
Empty Weight C.G. Range	None		
*Maximum Weight	Normal category	2500 lbs.	
	Utility category	2200 lbs.	
Number of Seats	4 (2 at sta. +93.0, 2 at sta. +134.0)		
Maximum Baggage	120 lbs. (+162.0)		
Fuel Capacity	49 gal. (two 24.5 gal.) fuel bays in wing at sta. +112; 48 gal. usable) <i>See Note 1 for data on system fuel.</i>		
Oil Capacity	8 qt. (+44) (2 qt. unusable) <i>See Note 1 for data on undrainable oil.</i>		

**II. Model 177A, Cardinal, 4 PCLM (Normal Category), 2 PCLM (Utility Category)** (cont'd)

Control Surface Movements	Wing flaps		Down	30° ± 2°
	Aileron	Up	20° ± 2°	Down 15° ± 2°
	Stabilator	Up	20° ± 1°	Down 5° ± 1°
	Stabilator tab	Up	6° + 2°, -0°	Down 12° + 0°, -2°
	Rudder (measured perpendicularly to hinge line)	Right	24° ± 1°	Left 24° ± 1°
Serial Numbers Eligible	17701165 through 17701370			

**III. Model 177B, Cardinal, 4 PCLM (Normal Category), approved July 28, 1969  
2 PCLM (Utility Category), approved July 28, 1969**

Engine	Lycoming O-360-A1F6 or O-360-A1F6D		
*Fuel	91/96 or 100/130 grade aviation gasoline (S/N 17701371 through 17702522) 100LL/100 grade aviation gasoline (S/N 17702523 and on)		
*Engine Limits	For all operations, 2700 rpm (180 hp)		
Propeller and Propeller Limits	(1) (a)	McCauley 2D34C202/82PA-6	
		Diameter: not over 76 in., not under 75 in.	
		Pitch setting at 30 in. sta.: low 12.1°, high 26.0°	
		No additional tolerance permitted.	
		(b) Cessna spinner 0752637	
		(c) McCauley hydraulic governor C290D2/T11 or C290D3/T11	
		(d) Woodward hydraulic governor C210460	
	(2) (a)	McCauley B2D34C206/78TA-0	
		Diameter: not over 78 in., not under 74 in.	
		Pitch setting at 30 in. sta.: low 11.6°, high 27.5°	
		No additional tolerance permitted.	
		(b) Cessna spinner 0752637	
		(c) McCauley hydraulic governor C290D2/T11 or C290D3/T11	
	(d) Woodward hydraulic governor C210460		
(3) (a)	McCauley B2D34C208/82PA-6 or B2D34C211/82 PCA-6		
	Diameter: not over 76 in., not under 75 in.		
	Pitch setting at 30 in. sta.: low 12.1°, high 26.0°		
	No additional tolerance permitted.		
	(b) Cessna spinner 0752637		
	(c) McCauley hydraulic governor C290D2/T11, C290D3/T11 (O-360-A1F6) or C290D2/T12, C290D3/T12 (O-360-A1F6D)		
	(d) Woodward hydraulic governor C210460 (O-360-A1F6 only)		
*Airspeed Limits (CAS)	<u>17701371 through 17702313</u>		
	Never exceed	185 mph (160 knots)	
	Maximum structural cruising	155 mph (135 knots)	
	Maneuvering	117 mph (101 knots)	
	Flaps extended	105 mph (91 knots)	
(IAS)	<u>17702314 and up</u>		
(See Note 4 on use of IAS)	Never exceed	167 knots	
	Maximum structural cruising	138 knots	
	Maneuvering	102 knots	
	Flaps extended	90 knots	
C.G. Range	Normal category: (+101.0) to (+114.5) at 2000 lbs. or less (+102.2) to (+114.5) at 2250 lbs. (+105.7) to (+114.5) at 2500 lbs. Straight line variation between points given		

**III. Model 177B, Cardinal, 4 PCLM (Normal Category), 2 PCLM (Utility Category)** (cont'd)

G.G. Range (cont'd)	Utility category: (+101.0) to (+109.0) at 2000 lbs. or less (+102.0) to (+109.0) at 2200 lbs.		
Empty Weight C.G. Range	None		
*Maximum Weight	Normal category	2500 lbs.	
	Utility category	2200 lbs.	
Number of Seats	4 (2 at sta. +93.0), 2 at sta. +135.0)		
Maximum Baggage	120 lbs. (+162.0)		
Fuel Capacity	50 gal. (two 25 gal. fuel bays in wing at sta. +112; 49 gal. usable) <i>See Note 1 for data on unusable fuel.</i>		
Oil Capacity	8 qt. (+44) (1 at. (+45) with oil filter) (3 qt. unusable - 2 qt. in sump plus 1 qt. in oil filter) <i>See Note 1 for data on undrainable oil.</i>		
Control Surface Movements	Wing flaps	Down	30° ± 2°, -0°
	Aileron	Up 20° ± 1°	Down 15° ± 2°
	Stabilator	Up 20° ± 1°	Down 5° ± 1°
	Stabilator tab	Up 5° ± 1°	Down 13° ± 1°
	Rudder (measured perpendicularly to hinge line)	Right 24° ± 1°	Left 24° ± 1°
Serial Numbers Eligible	17701371 through 17701530, except 17701472 (1970) 17700002, 17701531 through 17701633 (1971) 17701634 through 17701773 (1972) 17701774 through 17701973 (1973) 17701974 through 17702123 (1974) 17701472, 17702124 through 17702313 (1975) 17702314 through 17702522 (1976) 17702523 through 17702672 (1977) 17702673 through 17702752 (1978)		
<b><u>Data Pertinent to All Models</u></b>			
Datum	54.0 forward of front face of lower portion of firewall		
Leveling Means	Jig located nut plates and screws at sta. +213.0 and sta. +238.0 on left of tail cone		
Certification Basis	Part 23 of the Federal Aviation Regulations effective February 1, 1965, as amended by 23-1, 23-2 and 23-3. Application for Type Certificate dated June 20, 1966. Type Certificate No. A13CE issued February 16, 1967, obtained by the manufacturer under delegation option procedures.		
	<u>Equivalent Safety Items</u>	17702314 and on	
	Airspeed Indicator	FAR 23.1545 (see Note 4 on use of IAS)	
	Airspeed Limitations	FAR 23.1583(a)(1)	
Production Basis	Production Certificate No. 4. Delegation Option Manufacturer No. CE-1 authorized to issue airworthiness certificates under delegation option procedures of Part 21 of the Federal Aviation Regulations.		

**Data Pertinent to All Models** (cont'd)**Equipment**

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. In addition, the following items of equipment are required:

1. Stall Warning Indicator, Cessna Dwg. 1706014.

## NOTE 1.

Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

Serial No. 17700001 through 17702313

The certificated empty weight and corresponding center of gravity location must include undrainable oil of 0.0 lb. at 44.0 and unusable fuel of 6 lb. at 100.0.

Serial No. 17702314 and on

The certificated empty weight and corresponding center of gravity locations must include oil of 17 lbs. at 45.0 and unusable fuel of 6 lb. at 100.0.

## NOTE 2.

The following placards must be displayed as indicated:

- A. Applicable to Model 177 (S/N 661, 17700001 & 17700003 through 17701164)

1. In full view of the pilot:

"This airplane must be operated in compliance with the operating limitations as stated in the form of placards, markings and manuals.

		<u>MAXIMUMS</u>			
		<u>Normal Category</u>		<u>Utility Category</u>	
		113 mph	(CAS)	113 mph	(CAS)
Maneuvering speed					
Design weight			2350		2200
Load factor	Flaps up	+3.8	-1.52	+4.4	-1.76
	Flaps down	+3.5		+3.5	
Altitude loss in stall recovery			110 ft.		110 ft.
Normal category	No acrobatic maneuvers including spins approved				
Utility category	Baggage compartment and rear seat must not be occupied.				
No acrobatic maneuvers approved except those listed below:					

<u>Maneuver</u>	<u>Maximum Entry Speed</u>	<u>Maneuver</u>	<u>Maximum Entry Speed</u>
Chandelles	113 mph (98 knots)	Spins	Slow deceleration
Lazy Eights	113 mph (98 knots)	Stalls (except	Slow deceleration
Steep turns	113 mph (98 knots)	whip stalls)	

Spin Recovery - Opposite rudder - Neutral elevator - Slow deceleration

Intentional spins with flaps extended prohibited.

Airplane is controllable in 16 knots crosswind. Known icing conditions to be avoided.

This airplane is certificated for the following flight operations as of date of original airworthiness certificate.

(IFR - VFR - DAY - NIGHT)" (as applicable)

2. On control lock: "Control lock - remove before starting engine."
3. On fuel shutoff control (at appropriate location): "Fuel shutoff - pull off."
4. On fuel selector valve (at appropriate locations):
  - a. "Both 48 gal."
  - b. "Left 24 gal."
  - c. "Right 24 gal."
  - d. "Both on for takeoff and landing."
5. On fuel tank cap: "Service this airplane with 80/87 minimum grade aviation gasoline."  
"Total capacity 24.5 gal." "Capacity to white line on indicator, 21.0 gal."

**Data Pertinent to All Models** (cont'd)

## NOTE 2. (cont'd)

- A. 6. In baggage compartment:  
 a. "120 lb. maximum baggage and/or auxiliary seat passenger."  
 b. "For additional loading instructions see weight and balance data."
7. Next to door ventilation windows: "Do not open window above 120 mph."
8. On airspeed indicator (CAS)  
 a. Radial red line 185 mph  
 b. Yellow arc 145-185 mph  
 c. Green arc 64-145 mph  
 d. White arc 53-105 mph
9. On oil temperature gauge  
 a. Red line at 245° F.  
 b. Green arc at 100° to 245° F.
10. On oil temperature gauge  
 a. Red line at 25 psi  
 b. Green arc 60 psi to 90 psi  
 c. Red line at 100 psi
11. Tachometer  
 ( S.L.) 2200 rpm - 2500 rpm (inner green arc)  
 (5000 ft.) 2200 rpm - 2600 rpm (middle green arc)  
 (10000 ft) 2200 rpm - 2700 rpm (outer green arc)  
 (Maximum allowable) - 2700 rpm (red line)
12. On fuel pressure gauge  
 a. Red lines at 2 psi and 8.0 psi.  
 b. Green arc at 2 psi to 8.0 psi.
13. On flap control and indicator  
 a. Up to 1/4 - T.O. (Takeoff range with blue color code and 130 mph callout, also mechanical detent at 1/4)  
 b. 1/4 - 1/2 - 3/4 - Down (indices at these positions with white color code and 105 mph callout)  
 c. "Avoid slips with flaps extended."
- B. Applicable to 177A (S/N 17701165 through 17701370)  
 1. In full view of the pilot:  
 "This airplane must be operated in compliance with the operating limitations as stated in the form of placards, markings and manuals.

		<u>MAXIMUMS</u>			
		<u>Normal Category</u>		<u>Utility Category</u>	
Maneuvering speed		113 mph	(CAS)	113 mph	(CAS)
Design weight			2500		2200
Load factor	Flaps up	+3.8	-1.52	+4.4	-1.76
	Flaps down	+3.5		+3.5	
Altitude loss in stall recovery			180 ft.		110 ft.
Normal category	No acrobatic maneuvers including spins approved				
Utility category	Baggage compartment and rear seat must not be occupied.				
No acrobatic maneuvers approved except those listed below:					

**Data Pertinent to All Models** (cont'd)

NOTE 2. (cont'd)

- | <u>Maneuver</u>                 | <u>Maximum Entry Speed</u> | <u>Maneuver</u>    | <u>Maximum Entry Speed</u> |
|---------------------------------|----------------------------|--------------------|----------------------------|
| Chandelles                      | 117 mph (101 knots)        | Spins              | Slow deceleration          |
| Lazy Eights                     | 117 mph (101 knots)        | Stalls (except     | Slow deceleration          |
| Steep turns                     | 117 mph (101 knots)        | whip stalls)       |                            |
| Spin Recovery - Opposite Rudder |                            | - Neutral Elevator | - Slow deceleration        |
- Intentional spins with flaps extended prohibited.  
 Airplane is controllable in 16 knots crosswind. Known icing conditions to be avoided.  
 This airplane is certificated for the following flight operations as of date of original airworthiness certificate.  
 (IFR - VFR - DAY - NIGHT)" (as applicable)
- B. 1. On control lock: "Control lock - remove before starting engine."
  2. On fuel shutoff control (at appropriate location): "Fuel shutoff - pull off."
  3. On fuel selector valve (at appropriate locations):
    - a. "Both 48 gal."
    - b. "Left 24 gal."
    - c. "Right 24 gal."
    - d. "Both on for takeoff and landing."
  4. On fuel tank cap: "Service this airplane with 100/130 minimum grade aviation gasoline."  
 "Total capacity 24.5 gal." "Capacity to line of holes on indicator, 21.0 gal."
  5. In baggage compartment:
    - a. "120 lb. maximum baggage and/or auxiliary seat passenger."
    - b. "For additional loading instructions see weight and balance data."
  6. Next to door ventilation windows: "Do not open window above 120 mph."
  7. On airspeed indicator (CAS)
    - a. Radial red line 185 mph
    - b. Yellow arc 150-185 mph
    - c. Green arc 66-150 mph
    - d. White arc 56-105 mph
  8. On oil temperature gauge
    - a. Red line at 245° F.
    - b. Green arc 100° to 245° F.
  9. On oil pressure gauge
    - a. Red line at 25 psi.
    - b. Green arc 60 psi, to 90 psi.
    - c. Red line at 100 psi.
  10. Tachometer
 

( S.L.)	2200 rpm - 2500 rpm	(inner green arc)
(5000 ft.)	2200 rpm - 2600 rpm	(middle green arc)
(10000 ft)	2200 rpm - 2700 rpm	(outer green arc)
(Maximum allowable)	- 2700 rpm	(red line)
  11. On fuel pressure gauge
    - a. Red lines at 2 psi, and 8.0 psi.
    - b. Green arc at 2 psi, to 8.0 psi.

**Data Pertinent to All Models** (cont'd)

NOTE 2. (cont'd)

- B. 13. On flap control and indicator
- 0° to 10° - T.O. (Takeoff range with blue color code and 130 mph callout, also mechanical detent at 10°).
  - 10° -20° -30° (Indices at these positions with white color code and 105 mph callout; also, mechanical detent at 20°).

C. Applicable to 177B

- In full view of the pilot:
  - 17701371 through 17702313  
"This airplane must be operated in compliance with the operating limitations as stated in the form of placards, markings, and manuals."

		<u>MAXIMUMS</u>			
		<u>Normal Category</u>		<u>Utility Category</u>	
Maneuvering speed		117 mph	(CAS)	117 mph	(CAS)
Gross weight			2500		2200
Load factor	Flaps up	+3.8	-1.52	+4.4	-1.76
	Flaps down	+3.5		+3.5	
Altitude loss in stall recovery			180 ft.		110 ft.
Normal category	No acrobatic maneuvers including spins approved				
Utility category	Baggage compartment and rear seat must not be occupied.				
No acrobatic maneuvers approved except those listed below:					

<u>Maneuver</u>	<u>Maximum Entry Speed</u>	<u>Maneuver</u>	<u>Maximum Entry Speed</u>
Chandelles	117 mph (101 knots)	Spins	Slow deceleration
Lazy Eights	117 mph (101 knots)	Stalls (except	Slow deceleration
Steep turns	117 mph (101 knots)	whip stalls)	
Spin Recovery -	Full Opposite Rudder -	Stabilator to Neutral Position -	
Ailerons Neutral - Recover from Dive.			

Intentional spins with flaps extended prohibited.

Airplane is controllable in 16 knots crosswind. Known icing conditions to be avoided.

This airplane is certificated for the following flight operations as of date of original airworthiness certificate.

(IFR - VFR - DAY - NIGHT)" (if applicable)

- 17702314 and up  
"This airplane must be operated in compliance with the operating limitations as stated in the form of placards, markings and manuals."

		<u>MAXIMUMS</u>			
		<u>Normal Category</u>		<u>Utility Category</u>	
Maneuvering speed		102 knots		102 knots	
Gross weight			2500 lb.		2200 lb.
Load factor	Flaps up	+3.8	-1.52	+4.4	-1.76
	Flaps down	+3.5		+3.5	
Normal category	No acrobatic maneuvers including spins approved				
Utility category	Baggage compartment and rear seat must not be occupied.				
NO ACROBATIC MANEUVERS APPROVED EXCEPT THOSE LISTED BELOW:					

**Data Pertinent to All Models** (cont'd)

NOTE 2. (cont'd)

- C. 1. b. (cont'd)
- | <u>Maneuver</u> | <u>Recom. Entry Speed</u> | <u>Maneuver</u> | <u>Recom. Entry Speed</u> |
|-----------------|---------------------------|-----------------|---------------------------|
| Chandelles      | 100 knots                 | Spins           | Slow deceleration         |
| Lazy Eights     | 100 knots                 | Stalls (except  | Slow deceleration         |
| Steep turns     | 100 knots                 | whip stalls)    |                           |
- Altitude loss in stall recovery - 180 ft.  
Abrupt use of the controls prohibited above 102 knots  
Spin recovery - opposite rudder - forward stabilizer - neutralize controls.  
Intentional spins with flaps extended are prohibited. Flight into known icing conditions prohibited. This airplane is certified for the following flight operations as of date of original airworthiness certificate.  
DAY - NIGHT - VFR - IFR" (as applicable)
2. On control lock: "Control lock - remove before starting engine."
3. On fuel shutoff control (at appropriate location): "Fuel shutoff - pull off."
4. On fuel selector valve (at appropriate locations)
- "Both 49 gal."
  - "Left 24.5 gal."
  - "Right 24.5 gal."
  - "Both on for takeoff and landing."
5. Aft of fuel tank cap:
- S/N 17701371 through 17702672  
"Service this airplane with 91/96 minimum or 100/130 grade aviation gasoline."  
"Total capacity 25.0 gal." "Capacity to line of holes inside filler neck - 22 gal."
  - S/N 17702673 and on  
"Service this airplane with 100LL or 100 aviation grade gasoline." "Total capacity 25.0 gal." "Capacity to line of holes inside filler neck - 22 gal."
6. In baggage compartment
- Without hat shelf in baggage wall  
(Through S/N 17702123)  
"120 lb. maximum baggage and/or auxiliary seat passenger."  
"For additional loading instructions see weight and balance data."
  - With hat shelf in baggage wall  
(S/N 17702124 through 17702672)  
"120 lb. maximum baggage and/or auxiliary seat passenger including 25 lb. maximum in baggage wall hat shelf."  
"For additional loading instructions see weight and balance data."
  - (S/N 17702673 and on)  
"120 lb. maximum baggage, including 12 lbs. maximum in baggage wall hat shelf."  
"For additional loading instructions see weight and balance data."
7. Next to door ventilation windows:
- 17701371 through 17702313  
"Do not open window above 120 mph or when using alternate static source."
  - 17702314 and up  
"Do not open window above 105 knots or when using alternate static source."

**Data Pertinent to All Models** (cont'd)

## NOTE 2. (cont'd)

- C. 8. On airspeed indicator
- |    |                                 |              |               |
|----|---------------------------------|--------------|---------------|
| a. | 17701371 through 17702313 (CAS) |              |               |
|    | Radial red line                 | 185 mph      |               |
|    | Yellow arc                      |              | 155-185 mph   |
|    | Green arc                       | 66-155 mph   |               |
|    | White arc                       | 56-105 mph   |               |
| b. | 17702314 and up (IAS)           |              |               |
|    | Radial red line                 | 167 knots    |               |
|    | Yellow arc                      |              | 138-167 knots |
|    | Green arc                       | 54-138 knots |               |
|    | White arc                       | 45- 90 knots |               |
9. On oil temperature gauge:
- Red line at 245° F.
  - Green arc 100° to 245° F.
10. On oil pressure gauge:
- Red line at 25 psi
  - Green arc 60 psi to 90 psi
  - Red line at 100 psi
11. Tachometer
- When using 2D34C202/82PA-6 or B2D34C208/82PA-6 propeller:

Normal operating	2100-2500 rpm	(green arc)
Caution	1700-1900 rpm	(yellow arc)
Maximum allowable	2700 rpm	(red line)
  - When using B2D34C206/78TA-0 propeller:

Normal operating	2100-2500 rpm	(green arc)
Caution	1400-1750 rpm	(yellow arc)
Maximum allowable	2700 rpm	(red line)
  - When using B2D34C211/82PCA-6 propeller:

Normal operating	2100-2500 rpm	(inner green arc)
	2100-2700 rpm	(outer green arc)
Caution	1700-1900 rpm	(yellow arc)
Maximum allowable	2700 rpm	(red line)
12. On fuel pressure gauge:
- Red lines at 2 psi and 8.0 psi.
  - Green arc at 2 psi to 8.0 psi.
13. On flap control and indicator
- 17701371 through 17702313

0 to 10°	(Blue color code and 130 mph callout, also, mechanical detent at 10°)
10° - 20° - 30°	(Indices at these positions with white color code and 105 mph callout; also, mechanical detent at 20°).
  - 17702314 and up

0° to 10°	(Blue color code and 115 knots callout; also, mechanical detent at 10°)
10° - 20° - 30°	(Indices at these positions with white color code and 90 knots callout; also, mechanical detent at 20°).
14. On manifold pressure gauge:
- When using 2D34C202/82PA-6, B2D34C208/82PA-6 or B2D34C211/82PCA-6 propeller:  
15 to 24 in. Hg. (green arc)  
\*With less than 10" manifold pressure, avoid continuous operation between 1700-1900 rpm."
  - When using B2D34C206/78TA-0 propeller:  
15 to 24 in. Hg. (green arc)  
"With less than 10" manifold pressure, avoid continuous operation between 1400-1750 rpm."

**Data Pertinent to All Models** (cont'd)

## NOTE 2. (cont'd)

- C. 15. On cylinder head temperature gauge:
  - a. Red line at 500° F.
  - b. Green arc 200° to 500° F.
  
- 16. On instrument panel:
  - a. "Do not turn off alternator in flight except in emergency."  
(1970 and 1971 models only)

NOTE 3. The cylinder head probe location for the Model 177B is No. 3 cylinder.

NOTE 4. The marking of the airspeed indicator with IAS provides an equivalent level of safety to FAR 23.1545 when approved airspeed calibration data presented in Section V of the Pilot's Operating Handbooks listed below is available to the pilot:

177B, Cessna P/N D1058-13 (S/N 17702314 through 17702522)

177B, Cessna P/N D1084-13 (S/N 17702523 through 17702672)

177B, Cessna P/N D1111-13 (S/N 17702673 through 17702752)

NOTE 5. 14-volt electrical system  
(177 series through S/N 17702672)

28-volt electrical system  
(177 series, S/N 17702673 and on)

In addition to the placards specified above, the prescribed operating limitations indicated by an asterisk (\*) under Sections I, II, and III of this data sheet must also be displayed by permanent markings.

...END....

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

E-286  
Revision 19  
Lycoming Engines

**O-360-A1A, -A1AD, -A1C, -A1D, -A1F,**  
-A1F6, -A1F6D, -A1G, -A1G6,  
-A1G6D, -A1H, -A1H6, -A1LD, -A1P,  
-A2A, -A2D, -A2E, -A2F, -A2G, -A2H,  
-A3A, -A3AD, -A3D, -A4A, -A4AD,  
-A4D, -A4G, -A4J, -A4K, -A4M, -A4N,  
-A4P, -A5AD, -B1A, -B1B, -B2A,  
-B2B, -B2C, -C1A, -C1C, -C1E, -C1F,  
-C1G, -C2A, -C2B, -C2C, -C2D, -C2E,  
-C4P, -C4F, -D1A, -D2A, -D2B, -E1AD,  
-E1A6D, -E2AD, -E1BD, -E2BD,  
-F1A6, -G1A6, -J2A  
**LO-360-A1G6D, -A1H6, -E1AD, -E1A6D,**  
-E2AD, -E1BD, -E2BD  
**HO-360-A1A, -B1A, -B1B, -C1A**

December 17, 2003

TYPE CERTIFICATE DATA SHEET NO. E-286

Engines of models described herein conforming with this data sheet (which is a part of Type Certificate No. 286) and other approved data on file with the Federal Aviation Administration meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Civil Air Regulations/Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manual and other approved instructions.

Type Certificate Holder	Lycoming Engines An Operating Division of AVCO Corporation Williamsport, Pennsylvania 17701
Type Certificate Holder Record	Textron Lycoming/Subsidiary of Textron, Inc. transferred TC E-286 to Lycoming Engines, An Operating Division of AVCO Corporation on December 17, 2003

Model	<b>O-360</b>	<b>O-360</b>	<b>O-360-C2D</b>
	-A1A, -A1AD, -A1C, -A1D, -A1F, -A1F6, -A1F6D, -A1G, -A1G6, -A1G6D, -A1H, -A1H6, -A1LD, -A1P, -A2A, -A2D, -A2E, -A2F, -A2G, -A2H, -A3A, -A3AD, -A3D, -A4A, -A4AD, -A4D, -A4G, -A4J, -A4K, -A4M, -A4N, -A4P, -A5AD, -C1A, -C1C, -C1E, -C1F, -C1G, -C2A, -C2B, -C2C, -C2E, -C4P, -C4F, -F1A6, -G1A6, <b>LO-360-A1G6D, -A1H6</b>	-B1A, -B1B, -B2A, -B2B, -B2C, -D1A, -D2A, -D2B	
Type Rating 4HO-A Direct Drive Rated Max. continuous hp., rpm, full throttle at: Sea level press. alt.	#  180-2700	#  168-2700	#  180-2700

Page No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Rev. No.	19	16	17	16	16	16	18	18	16	16	16	16	18

Rated takeoff hp., rpm, full throttle, or in. Hg. at: Sea level press. alt. Rated press alt. (ft.)	180-2700 -	168-2700 -	180-2900-28.0 (5 min.) 180-2900-27.8-1000 (5 min.)
Fuel (Min. grade aviation gasline)	100/100LL*	80/87*	100/100LL*
Carburetion	See Note 9.	#	#
Pump drive	See Note 3.	#	#
Oil, Lubrication (Lubrications should conform to the specifications as listed or to subsequent revisions thereof.)	Lycoming Spec. No. 301 and Service Instruction No. 1014		
Oil sump capacity, qt.	8	#	#
Usable oil, qt.	6	#	#
Ignition			
Dual magnetos	See Note 9.	#	#
Timing, °BTC	25	#	#
Spark plugs	See Note 4.	#	#
Compression			
Bore and stroke, in.	5.125 X 4.375	#	#
Displacement, cu. in.	361	#	#
Compression ratio	See Note 9.	#	#
Weight (dry), lb.	See Note 5.	#	#
C.G. location	See Note 8.	#	#
Propeller shaft, SAE No.	See Note 9.	#	#
Crankshaft dampers	See Note 12.	#	-
NOTES	1 through 12	1 through 12	#

Model	<b>O-360-E1AD, -E1A6D, -E2AD, -E1BD, -E2BD</b> <b>LO-360-E1AD, -E1A6D, -E2AD, -E1BD, -E2BD</b>	<b>O-360-J2A</b>	<b>HO-360-A1A,</b>
Type Rating 4HO-A Direct Drive	#	#	#
Rated Max. continuous hp., rpm, full throttle at: Sea level press. alt.	180-2700	145 - 2400 thru 2700 + 26.5" Hg MP @ 2400 24.6" Hg MP @ 2700	180-2900
Rated takeoff hp., rpm, full throttle, or in. Hg. at: Sea level press. alt. Rated press. alt. (ft.)	180-2700 - -	145 - 2400 thru 2700 + 26.5" Hg MP @ 2400 24.6" Hg MP @ 2700 - -	180-2900 - -
Fuel (Min. grade aviation gasline)	100/100LL*	#	#
Carburetion	See Note 9.	#	#
Pump drive	See Note 3.	#	#
Oil, Lubrication (Lubrications should conform to the specifications as listed or to subsequent revisions thereof.)	Lycoming Spec. No. 301 and Service Instruction No. 1014		
Oil sump capacity, qt.	6	8	#
Usable oil, qt.	4	6	#
Ignition			
Dual magnetos	See Note 9.	#	#
Timing, °BTC	25	#	#
Spark plugs	See Note 4.	#	#
Compression			
Bore and stroke, in.	5.125 X 4.375	#	#
Displacement, cu. in.	361	#	#

Model (cont'd)	<b>O-360-E1AD, -E1A6D, -E2AD, -E1BD, -E2BD LO-360-E1AD, -E1A6D, -E2AD, -E1BD, -E2BD</b>	<b>O-360-J2A</b>	<b>HO-360-A1A,</b>
Compression ratio	See Note 9.	#	#
Weight (dry), lb.	See Note 5.	#	#
C.G. location	See Note 8.	#	#
Propeller shaft, SAE No.	See Note 9.	#	#
Crankshaft dampers	See Note 12.	#	-
NOTES	1 through 12	1 through 11	1 through 11

\* See latest revision of Lycoming Service Instruction No. 1070 for alternate fuel grades.

# Indicates "same as preceding model."

- Indicates "does not apply"

+ This engine is throttle limited

Model	<b>HO-360-B1A, -B1B</b>	<b>HO-360-C1A</b>
Type	4HO-A Direct Drive	#
Rating		#
Rated Max. continuous hp., rpm, full throttle at:		
Sea level press. alt.	180-2900	180-2700
Rated takeoff hp., rpm, full throttle, or in. Hg. at:		
Sea level press. alt.	180-2900	180-2700
Rated press. alt. (ft.)	-	-
Fuel		
(Min. grade aviation gasoline)	100/100LL*	#
Carburetion	See Note 9.	#
Pump drive	See Note 3	#
Oil, Lubrication	Lycoming Spec. No. 301 and Service Instruction No. 1014	
(Lubrications should conform to the specifications as listed or to subsequent revisions thereof.)		
Oil sump capacity, qt.	8	#
Usable oil, qt.	6	#
Ignition		
Dual magnetos	See Note 9.	#
Timing, °BTC	25	#
Spark plugs	See Note 4.	#
Compression		
Bore and stroke, in.	5.125 X 4.375	#
Displacement, cu. in.	361	#
Compression ratio	See Note 9.	#
Weight (dry), lb.	See Note 5.	#
C.G. location	See Note 8.	#
Propeller shaft, SAE No.	See Note 9.	#
Crankshaft dampers	-	-
NOTES	1 through 11	#

\* See latest revision of Lycoming Service Instruction No. 1070 for alternate fuel grades.

# Indicates "same as preceding model."

- Indicates "does not apply"

## Certification basis:

Regulations & Amendments	Model	Date of Application	Date Type Certificate No. 286 Issued/Revised
CAR 13 effective March 5, 1952 as amended by 13-1 and 13-2	O-360-A1A	January 17, 1955	July 20, 1955
	O-360-B1A	July 13, 1955	January 17, 1956
CAR 13 effective June 15, 1956	O-360-A2A	December 31, 1956	February 25, 1957
	O-360-A1B	April 5, 1957	April 22, 1957 (cancelled 4/19/63)
as amended by 13-1	O-360-B2A	April 5, 1957	April 22, 1957
	O-360-C1A	January 31, 1958	February 24, 1958
as amended by 13-1 and 13-2	O-360-C2A	January 31, 1958	February 24, 1958
	O-360-C2B	July 9, 1958	August 13, 1958
as amended by 13-1, 13-2, and 13-3	O-360-D1A	January 19, 1960	February 12, 1960
	O-360-D2A	January 19, 1960	February 12, 1960
as amended by 13-1, 13-2, 13-3, and 13-4	O-360-A1D	March 29, 1960	April 27, 1960
	O-360-A2D	March 29, 1960	April 27, 1960
	O-360-C1C	March 29, 1960	April 27, 1960
	O-360-C2C	March 29, 1960	April 27, 1960
	O-360-A1C	July 14, 1960	August 29, 1960
	O-360-C2D	July 14, 1960	August 29, 1960
	O-360-D2B	October 11, 1960	October 26, 1960
	O-360-A2E	July 20, 1961	August 23, 1961
	O-360-A3A	June 12, 1962	July 3, 1962
	HO-360-B1A	September 27, 1962	October 2, 1962
	HO-360-A1A	October 30, 1962	December 6, 1962
	HO-360-B1B	March 15, 1963	March 20, 1963
	O-360-B1B	June 26, 1963	June 27, 1963
	O-360-B2B	June 26, 1963	June 27, 1963
	O-360-A3D	September 19, 1963	September 26, 1963
	O-360-A4A	March 1, 1966	March 9, 1966
	O-360-A1F	November 4, 1966	January 20, 1967
	O-360-A2F	November 4, 1966	January 20, 1967
	O-360-A1G	September 27, 1967	October 16, 1967
	O-360-A2G	September 27, 1967	October 16, 1967
	O-360-A1H	June 6, 1968	September 18, 1968
	O-360-A2H	June 6, 1968	September 18, 1968
	O-360-A1F6	April 1, 1969	June 23, 1969
	O-360-A4G	July 11, 1969	July 18, 1969
	O-360-A4J	September 18, 1969	October 8, 1969
	O-360-A1G6	July 21, 1970	July 31, 1970
	O-360-A1F6D	January 24, 1972	January 31, 1972
	O-360-A4AD	January 24, 1972	January 31, 1972
O-360-A5AD	April 8, 1972	April 22, 1972	
O-360-A1LD	January 5, 1973	January 11, 1973	
O-360-C2E	February 4, 1974	February 4, 1974	
O-360-A4K	March 8, 1974	March 18, 1974	
O-360-A4M	October 15, 1974	November 8, 1974	
O-360-A3AD	April 23, 1975	April 28, 1975	
O-360-A1AD	September 14, 1976	September 28, 1976	
O-360-A1G6D	December 20, 1976	December 27, 1976	
LO-360-A1G6D	December 20, 1976	December 27, 1976	
O-360-C1E	March 15, 1977	March 22, 1977	
O-360-E1AD	November 19, 1976	Oct 25, 1977 (cancelled 5/24/78)	
O-360-E2AD	November 19, 1976	Oct 25, 1977 (cancelled 5/24/78)	
O-360-E1BD	November 19, 1976	Oct 25, 1977 (cancelled 5/24/78)	
O-360-E2BD	November 19, 1976	Oct 25, 1977 (cancelled 5/24/78)	
LO-360-E1AD	October 26, 1977	Nov 2, 1977 (cancelled 5/24/78)	
LO-360-E2AD	October 26, 1977	Nov 2, 1977 (cancelled 5/24/78)	

Regulations & Amendments (cont'd) as amended by 13-1, 13-2, and 13-3	Model	Date of Application	Date Type Certificate No. 286 Issued/Revised
	LO-360-E1BD	October 26, 1977	Nov 2, 1977 (cancelled 5/24/78)
	LO-360-E2BD	October 26, 1977	Nov 2, 1977 (cancelled 5/24/78)
	O-360-E1A6D	April 24, 1978	May 5, 1978
	LO-360-E1A6D	April 24, 1978	May 5, 1978
	O-360-C1F	June 27, 1978	July 10, 1978
	O-360-F1A6	September 14, 1978	November 20, 1978
	O-360-A4D	May 18, 1981	May 29, 1981
	O-360-A4N	July 14, 1982	July 29, 1982
	O-360-G1A6	March 22, 1985	May 30, 1985
	O-360-C1G	January 16, 1986	February 10, 1986
	O-360-A1H6	November 16, 1988	December 27, 1988
	LO-360-A1H6	November 16, 1988	December 27, 1988
	O-360-B2C	September 30, 1992	October 21, 1992
	O-360-A4P	October 19, 1992	December 16, 1992
	O-360-C4P	October 19, 1992	December 16, 1992
	O-360-A1P	January 19, 1993	February 23, 1993
	O-360-C4F	February 18, 1993	March 10, 1993
	HO-360-C1A	March 10, 1995	April 11, 1995
	O-360-J2A	October 9, 1995	October 16, 1995

Production basis: Production Certificate No. 3

NOTE 1. Temperature limits: (Maximum permissible)  
 Cylinder head (well type thermocouple) 500°F  
 Cylinder base 325°F  
 Oil inlet 245°F

NOTE 2. Pressure limits:  
 Fuel - At inlet to carburetor, above carburetor inlet air pressure.

		<u>Minimum</u>	<u>Maximum</u>	
Bendix PSH-5BD carburetor		9 p.s.i.	18 p.s.i.	
Facet (Marvel Schebler) MA-4, HA-6 series carb.		0.5 p.s.i.	8 p.s.i.	
Oil - (Normal Operation)		55 p.s.i.	95 p.s.i.	
(Idling)		25 p.s.i.	-	
(Starting and Warmup)		-	115 p.s.i.	
		<u>Minimum</u>	<u>Maximum</u>	
<u>O-360-A4N</u>	<u>Rear of Engine</u>	<u>Front of Engine</u>	<u>Rear of Engine</u>	<u>Front of Engine</u>
Oil - (Normal Operation)	55 p.s.i.	50 p.s.i.	95 p.s.i.	90 p.s.i.
(Idling)	25 p.s.i.	20 p.s.i.	-	-
(Starting and warmup)	-	-	115 p.s.i.	115 p.s.i.
		<u>Minimum</u>	<u>Maximum</u>	
<u>O-360-G1A6</u>		<u>Minimum</u>	<u>Maximum</u>	
Oil (Normal Operation)		55 p.s.i.	95 p.s.i.	
(Idling)		25 p.s.i.	-	
(Starting and warmup)		-	115 p.s.i.	

NOTE 3. The following accessory drive provisions are incorporated. See also Note 11.

Model O-360-										
Accessory	A1F6D A1AD A3AD A4AD A5AD	A4G A4J A4K C4F C4P	A Ser.	A1C	C1F A2G A1G A1G6	Rotating Facing Drive Pad	Speed Ratio to Crankshaft	Max. Torque (in.-lb.)		Max. Overhang Moment (in.-lb.)
								Cont.	Static	
Starter	-	-	-	*	-	CC	13.556:1	-	450	150
Starter	*	*	*	**	*	CC	16.556:1	-	450	150
Generator	-	-	**	*	-	C	1.910:1	60	120	175
Generator	-	-	**	**	-	C	2.500:1	60	120	175
Alternator	*	*	*	-	*	C	3.250:1	60	120	175
Vacuum pump	**	**	**	**	**	CC	1.300:1	70	450	25
Hydraulic pump	**	-	-	-	-	C	1.300:1	100	800	40
Hydraulic pump	**	-	-	-	-	C	1.300:1	180	2200	150
Fuel pump	-	-	-	*	-	CC	0.866:1	25	450	25
Fuel pump, plunger	**	**	**	-	**	-	0.500:1	-	-	10
Fuel pump	-	-	***	-	-	CC	1.000:1	25	450	25
Tachometer	*	*	*	*	*	C	0.500:1	7	50	5
Propeller governor	-	-	(**)	*	**	C	0.866:1	125	1200	40
Propeller governor	-	-	-	-	-	C	0.895:1	125	1200	40
Propeller governor	(**)	-	-	-	-	C	0.850:1	125	1200	40
Freon compressor	-	-	-	-	-	C	1.462:1	Limited by belt		

Optional dual drives mounting on vacuum pump drive pad.

Vacuum pump	-	**	**	**	**	CC	1.300:1	70	450	6
Hydraulic pump	-	**	**	**	**	CC	1.300:1	Total	Total	10
or										
Vacuum pump	-	-	(**)	**	**	CC	1.300:1	70	450	6
Propeller governor	-	-	(**)	**	**	CC	1.300:1	Total	Total	10

( ) except A4A, A4AD, A4D, A4M, A4N , A4P are not eligible.

\*\*\* A2E only

Model O-360-										
Accessory	A1G6D	A1LD	A1H6 A1H A2H	B1A B1B	B2A B2B B2C	Rotating Facing Drive Pad	Speed Ratio to Crankshaft	Max. Torque (in.-lb.)		Max. Overhang Moment (in.-lb.)
								Cont.	Static	
Starter	-	-	-	*	*	CC	13.556:1	-	450	150
Starter	*	*	*	**	**	CC	16.556:1	-	450	150
Generator	-	-	-	*	*	C	1.910:1	60	120	175
Generator	-	-	-	**	**	C	2.500:1	60	120	175
Alternator	*	*	*	-	-	C	3.250:1	60	120	175
Vacuum pump	**	**	**	**	**	CC	1.300:1	70	450	25
Hydraulic pump	-	**	-	-	-	C	1.300:1	100	800	40
Hydraulic pump	-	**	-	-	-	C	1.300:1	180	2200	150
Fuel pump	-	-	-	**	**	CC	0.866:1	25	450	25
Fuel pump, plunger	**	**	**	*	*	-	0.500:1	-	-	10
Fuel pump	-	-	-	-	-	CC	1.000:1	25	450	25
Tachometer	*	*	*	*	*	C	0.500:1	7	50	5
Propeller governor	-	-	-	*	-	C	0.866:1	125	1200	40
Propeller governor	-	*	(*)	-	-	C	0.895:1	125	1200	40
Propeller governor	*	-	-	-	-	C	0.850:1	125	1200	40
Freon compressor	-	-	[**]	-	-	C	1.462:1	Limited by belt		

[A1H6

only]

Optional dual drives mounting on vacuum pump drive pad.

Vacuum pump	**	-	-	**	**	CC	1.300:1	70	450	6
Hydraulic pump	**	-	-	**	**	CC	1.300:1	Total	Total	10
or										
Vacuum pump	**	-	-	**	-	CC	1.300:1	70	450	6
Propeller governor	**	-	-	**	-	CC	1.300:1	Total	Total	10

- Indicates "does not apply"

\* Standard

C Clockwise

CC Counter-clockwise

\*\* Optional

( ) Except A2H

Model O-360-										
Accessory	C1A C1C C1E	C2A C2C C2E J2A	C2B	C2D	D1A	Rotating Facing Drive Pad	Speed Ratio to Crankshaft	Max. Torque (in.-lb.)		Max. Overhang Moment (in.-lb.)
								Cont.	Static	
Starter	**	**	*	-	*	CC	13.556:1	-	450	150
Starter	*	*	-	*	-	CC	16.556:1	-	450	150
Generator	**	**	*	*	*	C	1.910:1	60	120	175
Generator	-	-	**	**	**	C	2.500:1	60	120	175
Alternator	*	*	-	-	-	C	3.250:1	60	120	175
Vacuum pump	**	**	**	**	**	CC	1.300:1	70	450	25
Hydraulic pump	-	-	-	-	-	C	1.300:1	100	800	40
Hydraulic pump	-	-	-	-	-	C	1.300:1	180	2200	150
Fuel pump	-	-	-	-	-	CC	0.866:1	25	450	25
Fuel pump, plunger	**	**	-	-	*	-	0.500:1	-	-	10
Fuel pump	-	-	*	*	-	CC	1.000:1	25	450	25
Tachometer	*	*	*	*	*	C	0.500:1	7	50	5
Propeller governor	**	-	-	-	*	C	0.866:1	125	1200	40
Propeller governor	-	-	-	-	-	C	0.895:1	125	1200	40
Propeller governor	-	-	-	-	-	C	0.850:1	125	1200	25
Freon compressor	-	-	-	-	-	C	1.462:1	Limited by belt		

Optional dual drives mounting on vacuum pump drive pad.

Vacuum pump	**	**	**	**	**	CC	1.313:1	70	450	6
Hydraulic pump	**	**	**	**	**	CC	1.313:1	Total	Total	10
or										
Vacuum pump	**	**	-	-	**	CC	1.300:1	70	450	6
Propeller governor	**	**	-	-	**	CC	1.300:1	Total	Total	10

Accessory	Model O-360-			LO-360-			Rotating Facing Drive Pad #	Speed Ratio to Crankshaft	Max. Torque (in.-lb.)		Max. Overhang Moment (in.-lb.)
	D2A D2B	E1A6D E1AD E1BD	E2AD E2BD	E1A6D E1AD E1BD	A1H6 E2AD E2BD	Cont.			Static		
Starter	*	-	-	-	-	CC	13.556:1	-	450	150	
Starter	-	*	*	*	*	CC	16.556:1	-	450	150	
Generator	*	-	-	-	-	C	1.910:1	60	120	175	
Generator	**	-	-	-	-	C	2.500:1	60	120	175	
Alternator	-	*	*	*	*	C	3.250:1	60	120	175	
Vacuum pump	**	-	-	-	-	CC	1.300:1	70	450	25	
Vacuum pump	-	**	**	**	**	C	1.300:1	70	450	25	
Hydraulic pump	-	-	-	-	-	C	1.300:1	100	800	40	
Hydraulic pump	-	-	-	-	-	C	1.300:1	180	2200	150	
Fuel pump	-	-	-	-	-	CC	0.866:1	25	450	25	
Fuel pump, plunger	*	**	**	**	**	-	0.500:1	-	-	10	
Fuel pump	-	-	-	-	-	CC	1.000:1	25	450	25	
Tachometer	*	*	*	*	*	C	0.500:1	7	50	5	
Propeller governor	-	-	-	-	-	C	0.866:1	125	1200	40	
Propeller governor	-	-	-	-	[*]	C	0.895:1	125	1200	40	
Propeller governor	-	-	-	-	-	C	0.850:1	125	1200	25	
Propeller governor	-	**	-	**	-	C	1.000:1	125	1200	40	
Freon compressor					[**]	C	1.462:1	Limited by belt			

[A1H6 only]

Optional dual drives mounting on vacuum pump drive pad.

Vacuum pump	**	-	-	**	**	CC	1.300:1	70	450	6
Hydraulic pump	**	-	-	**	**	CC	1.300:1	Total	Total	10
or										
Vacuum pump	**	-	-	**	-	CC	1.300:1	70	450	6
Propeller governor	**	-	-	**	-		1.300:1	Total	Total	10

- Indicates "does not apply"

\* Standard

C Clockwise

CC Counter-clockwise

\*\* Optional

# LO models have opposite rotations

MODEL O-360								
Accessory	F1A6	G1A6	A1P C1G	Rotating Facing Drive Pad	Speed Ratio to Crankshaft	Max. Torque (in.-lb.)		Max. Overhang Moment (in.-lb.)
						Cont.	Static	
Starter	-	-	-	CC	13.556:1	-	450	150
Starter	*	*	*	CC	16.556:1	-	450	150
Generator	-	-	-	C	1.910:1	60	120	175
Generator	-	-	-	C	2.500:1	60	120	175
Alternator	*	*	*	C	3.250:1	60	120	175
Vacuum pump	**	**	**	CC	1.300:1	70	450	25
Hydraulic pump	**	**	**	C	1.300:1	100	800	40
Hydraulic pump	-	-	-	C	1.300:1	180	2200	150
Fuel pump	-	-	-	CC	0.866:1	25	450	25
Fuel pump, plunger	**	*	**	-	0.500:1	-	-	10
Fuel pump	-	-	-	CC	1.000:1	25	450	25
Tachometer	*	*	*	C	0.500:1	7	50	5
Propeller governor	-	-	-	C	0.866:1	125	1200	40
Propeller governor	**	*	**	C	0.895:1	125	1200	40
Propeller governor	-	-	-	C	0.850:1	125	1200	25
Propeller governor	-	-	-	C	1.000:1	125	1200	40
Freon compressor				C	1.462:1	Limited by belt.		

Optional dual drives mounting on vacuum pump drive pad.

Vacuum pump	-	-	-	CC	1.300:1	70	450	6
Hydraulic pump	**	-	-	CC	1.300:1	Total	Total	10
or								
Vacuum pump	-	-	-	CC	1.300:1	70	450	6
Propeller governor	-	-	-	CC	1.300:1	Total	Total	10

Model HO-360-								
Accessory	A1A	B1B	C1A	Rotating Facing Drive Pad	Speed Ratio to Crankshaft	Max. Torque (in.-lb.)		Max. Overhang Moment (in.-lb.)
						Cont.	Static	
Starter	-	-	-	CC	13.556:1	-	450	150
Starter	*	*	*	CC	16.556:1	-	450	150
Generator	*	*	-	C	1.910:1	60	120	175
Generator	**	**	-	C	2.500:1	60	120	175
Alternator	-	-	*	C	3.250:1	60	120	175
Vacuum pump	*	*	**	CC	1.300:1	70	450	25
Vacuum pump	-	-	-	C	1.300:1	70	450	25
Hydraulic pump	-	-	-	C	1.300:1	100	800	40
Hydraulic pump	-	-	-	C	1.300:1	180	2200	150
Fuel pump	**	-	-	CC	0.866:1	25	450	25
Fuel pump, plunger	**	-	*	-	0.500:1	-	-	10
Fuel pump	-	*	-	CC	1.000:1	25	450	25
Tachometer	*	*	*	C	0.500:1	7	50	5
Propeller governor	-	-	-	C	0.866:1	125	1200	40
Propeller governor	-	-	-	C	0.895:1	125	1200	40
Propeller governor	-	-	-	C	0.850:1	125	1200	25
Propeller governor	-	-	-	C	1.000:1	125	1200	40
Freon compressor				C	1.462:1	Limited by belt		

Optional dual drives mounting on vacuum pump drive pad.

Vacuum pump	**	**	**	CC	1.300:1	70	450	6
Hydraulic pump	**	**	**	CC	1.300:1	Total	Total	10
or								
Vacuum pump	-	-	-	-	-	-	-	-
Propeller governor	-	-	-	-	-	-	-	-

- Indicates "does not apply"  
 \* Standard

.C Clockwise  
 CC Counter-clockwise

\*\*Optional

NOTE 4. Spark plugs: See latest revision of Lycoming Service Instruction No. 1042 for approved equipment.

NOTE 5. The above models incorporate additional characteristics as follows:

<u>Models</u>	<u>Wt. (Dry) Lb.</u>	<u>Characteristics</u>
O-360-A1A	258	Basic Model. Four cylinder, horizontally opposed, air cooled, direct drive engine with provisions for supplying oil through propeller shaft for a single acting controllable pitch propeller.
O-360-A1AD	257	Similar to O-360-A1A except is equipped with Bendix D4LN-2021 magneto instead of incorporating two single magnetos.
O-360-A1C	261	Similar to O-360-A1A except has a rear mounted Bendix carburetor and 200 series magnetos.
O-360-A1D	256	Similar to O-360-A1A except has Bendix 200 series magnetos.
O-360-A1F	258	Similar to O-360-A1A except has Bendix 1200 impulse coupling, high altitude magnetos.
O-360-A1F6	265	Similar to O-360-A1F except has counter-weighted crankshaft.
O-360-A1F6D	264	Identical to O-360-A1F6 except is equipped with one Bendix D4LN-2021 impulse coupling dual magneto instead of incorporating two single magneto
O-360-A1G	262	Similar to O-360-A1F except has horizontal carburetor.
O-360-A1G6	269	Identical to O-360-A1G except has crankshaft equipped with counterweights. See Note 12.
O-360-A1G6D	266	Similar to O-360-A1G6 except is equipped with Bendix D4LN-2021 magneto instead of two single magnetos.
O-360-A1H	263	Similar to O-360-A1G except crankcase has propeller governor drive mounted on left front instead of on engine accessory housing.
O-360-A1H6	298	Similar to O-360-A1H except has crankshaft equipped with 6.3 and 8th order pendulum counterweights. Also, Slick magnetos incorporated.
O-360-A1LD	259	Identical to O-360-A1A except is equipped with one Bendix D4LN-2021 impulse coupling dual magneto instead of incorporating two single magnetos.
O-360-A1P	292	Same as O-360-C1G except has dynafocal engine mounts
O-360-A2A	257	Similar to O-360-A1A except has no provisions for controllable pitch propeller.
O-360-A2D	256	Similar to O-360-A1D except has no provisions for controllable pitch propeller.
O-360-A2E	256	Similar to O-360-A2D but has AN type fuel pump drive.
O-360-A2F	258	Similar to 360-A1F except has no provisions for controllable pitch propeller.
O-360-A2G	262	Similar to O-360-A1G but has no provisions for controllable pitch propeller.
O-360-A2H	263	Similar to O-360-A1H except does not have propeller governor drive installed.
O-360-A3A	257	Similar to O-360-A2A except has 6 special length bushings in propeller flange.
O-360-A3AD	257	Identical to O-360-A3A except is equipped with Bendix D4LN-2021 magneto instead of Bendix S4LN-21 and S4LN-20 magnetos.
O-360-A3D	256	Similar to O-360-A2D except has special long propeller attaching bushings for use with Sensenich fixed pitch propellers.
O-360-A4A	265	Similar to O-360-A3A except has stiffer crankshaft.
O-360-A4AD	265	Identical to O-360-A4A except is equipped with Bendix D4LN-2021 impulse coupling dual magneto instead of incorporating two single magnetos.
O-360-A4D	297	Similar to O-360-A4A except has Bendix S4LN-200 retard breaker and S4LN-204 magnetos.
O-350-A4G	270	Similar to O-360-A2G except incorporates a stiffer crankshaft and solid main bearing journals.
O-360-A4J	269	Same as O-360-A4G except has different magnetos.
O-360-A4K	265	Identical to O-360-A4J except is equipped with Slick 4051 and 4050 magnetos instead of with Bendix S4LN-21 and S4LN-204 magnetos.
O-360-A4M	261	Identical to O-360-A4A except is equipped with Slick 4051 and 4050 magnetos instead of with Bendix S4LN-21 and S4LN-204 magnetos.
O-360-A4N	296	Similar to O-360-A4M except has unmachined propeller governor pad on left front of crankcase.
O-360-A4P	295	Similar to O-360-A4M except has short propeller flange bushings.

(cont'd)	<u>Models</u>	<u>Wt. (Dry) Lb.</u>	<u>Characteristics</u>
	O-360-A5AD	265	Identical to O-360-A4AD except is equipped with six standard length propeller flange bushings instead of six special length bushings.
	O-360-B1A	256	Similar to O-360-A1A except has lower compression ration and power rating.
	O-360-B1B	255	Similar to O-360-B1A except has Bendix 200 series magnetos.
	O-360-B2A	256	Similar to O-360-B1A except has no provisions for controllable pitch propeller.
	O-360-B2B	255	Similar to O-360-B1B except has no provisions for controllable pitch propeller.
	O-360-B2C	288	Similar to O-360-B2A except has heavier IO-360-A crankshaft and rods.
	O-360-C1A	257	Similar to O-360-A1A except has crankcase machined for conical rubber mount bushings in place of dynafocal mountings.
	O-360-C1C	256	Similar to O-360-C1A except has Bendix 200 series magnetos.
	O-360-C1E	254	Identical to O-360-C1A except is equipped with Slick 4051 and 4050 magnetos instead of Bendix S4LN-21 and S4LN-204 magnetos.
	O-360-C1F	288	Similar to O-360-A1G except has Slick 4050 and 4051 magnetos and rear type engine mounting instead of dynafocal type mount.
	O-360-C1G	292	Similar to O-360-C1A except propeller governor drive is located on the left front of the crankcase, location same as O-360-A1H.
	O-360-C2A	257	Similar to O-360-C1A except has no provision for controllable pitch propeller.
	O-360-C2B	261	Similar to 360-C2A except has rear mounted Bendix carburetor.
	O-360-C2C	256	Similar to O-360-C2A except has Bendix 200 series magnetos.
	O-360-C2D	260	Similar to O-360-C2B except has Bendix 200 series magnetos.
	O-360-C2E	254	Identical to O-360-C2A except is equipped with Slick 4051 and 4050 magnetos instead of Bendix S4LN-21 and S4LN-20 magnetos.
	O-360-C4F	275	Similar to O-360-C1F except has a solid crankshaft and no provision for a prop governor
	O-360-C4P	275	Similar to O-360-A4M except has short propeller flange bushings and conical engine mounts
	O-360-D1A	254	Similar to O-360-B1A and -B2A respectively except has crankcase machined for conical rubber mount bushings in place of dynafocal mountings.
	O-360-D2B	253	Similar to O-360-D2A except has Bendix 200 series magnetos.
	O-360-E1AD	262	This model differs from the basic model in that it incorporates a crankcase with an integral accessory section, front mounted fuel pump, external mounted oil pump, automatic valve tappets and rocker arms and dual magneto.
	O-360-E1A6D	269	Identical to O-360-E1AD except is equipped with one 6.3 order and one 8th order counterweight.
	O-360-E2AD	262	Similar to O-360-E1AD except has no provisions for controllable pitch propeller.
	O-360-E1BD	262	Similar to O-360-E1AD except has Bendix D4RN-2200 retard breaker magnetos instead of Bendix D4RN-2021 impulse coupling magneto.
	O-360-E2BD	262	Similar to O-360-E1BD except has no provisions for controllable pitch propeller.
	O-360-F1A6	301	Similar to O-360-A1G6 except has two Slick 4191 magnetos, propeller governor drive on crankcase left front and oil sump designed for retracted nose wheel clearance.
	O-360-G1A6	303	Similar to O-360-F1A6 except has a machined pad on the right front of the crankcase for installation equipment.
	O-360-J2A	289	Similar to the O-360-C1C except has O-320-B2C prop flange bushings, light weight cylinders and lower power rating.
	HO-360-A1A	257	Similar to O-360-A1D except has dynafocal mounts and different series Marvel carburetor.
	HO-360-B1A	260	Similar to O-360-C2D has a different cam shaft.
	HO-360-B1B	260	Similar to HO-360-B1A except has Bendix 200 series retard breaker magnetos.
	HO-360-C1A	288	Similar to O-360-C2D except uses HA-6 carburetor in place of the PSH-5HD carburetor.
	LO-360-A1G6D	266	Similar to O-360-A1G6D except has counter-clockwise (reverse) rotation.
	LO-360-E1AD	262	Similar to O-360-E1AD except has counter-clockwise (reverse) rotation.

(cont'd)	Models	Wt. (Dry) Lb.	Characteristics
	LO-360-E1A6D	269	Similar to O-360-E1A6D has counter-clockwise (reverse) rotation.
	LO-360-E2AD	262	Similar to O-360-E2AD except has counter-clockwise (reverse) rotation.
	LO-360-E1BD	262	Similar to O-360-E1BD except has counter-clockwise (reverse) rotation.
	LO-360-E2BD	262	Similar to O-360-E2BD except has counter-clockwise (reverse) rotation.
	LO-360-A1H6	298	Similar to O-360-A1H except has counter-clockwise (reverse) rotation.

NOTE 6. These engines incorporate provisions for absorbing propeller thrust in both tractor and pusher type installations.

NOTE 7. These engines are approved for horizontal helicopter applications and operation.

NOTE 8. C.G. location (dry and without dual accessory drive).

Model	From Front Face of	
	Prop. Shaft Flange, In.	Off Propeller Shaft C.L., In.
O-360-A series (except those listed below)	13.88	0.87 Below & 0.14 left
O-360-B series	13.88	0.87 Below & 0.14 left
HO-360-A1A	13.88	0.87 Below & 0.14 left
O-360-C series (except -C2B, -C2D, -C1F)	13.88	0.87 Below & 0.14 left
O-360-J2A	13.88	0.87 Below & 0.14 left
O-360-A1G, -A2G, -A1H, -A4G, -A4J, -C1F, -C4F, -A1H6, HO-360-C1A	14.04	0.76 Below & 0.14 left
O-360-A1AD, -A3AD, -A4AD, -A5AD, -A1F6D	13.77	0.82 Below & 0.30 left
O-360-A1C, -C2B, -C2D	14.42	1.27 Below & 0.03 right
HO-360-B1A, -B1B	14.42	1.27 Below & 0.03 right
O, LO-360-A1G6D	13.93	0.71 Below & 0.30 left
O-360-D1A, -D2A, -D2B	14.19	1.27 Below & 0.05 right
O, LO-360-E1AD, -E1BD, -E2BD, -E1A6D	13.90	0.95 Below
O-360-F1A6, -A4N, -G1A6	14.25	0.88 Below & 0.05 left

NOTE 9.

Model	Ignition, Dual +	Propeller Shaft SAE No. AS-127	Compression Ratio	Carburetion
O-360-A1A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A1AD	TCM** D4LN-2021	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A1C	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* PSH-5BD
-A1D	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A1F	TCM** S4LN-1227; S4LN-1209 or S4LN-1227	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A1F6	TCM** S4LN-1227; S4LN-1209 or S4LN-1227	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A1F6D	TCM** D4LN-2021	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A1G	TCM** S4LN-1227; S4LN-1209 or S4LN-1227	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A1G6	TCM** S4LN-1227; S4LN-1209 or S4LN-1227	Flange; Type 2 modified	8.5:1	PAC* HA-6
-A1G6D	TCM** D4LN-2021	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A1H	S4LN-21; S4LN-204 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A1H6	Slick 4230; 4202	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A1LD	TCM** D4LN-2021	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A1P	Slick 4373, 4370	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A2A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A2D	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A2E	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4-5

+ For alternate magnetos see latest revision of Textron Lycoming Service Instruction 1443

\* Precision Airmotive (PAC) formerly Facet Aerproducts Inc. (formerly Marvel Schebler Co.)  
and Bendix on PSH-5BD carburetors

\*\* Teledyne (TCM) formerly Bendix

## NOTE 9. (cont'd)

Model	Ignition, Dual +	Propeller Shaft SAE No. AS-127	Compression Ratio	Carburetion
-A2F	TCM** S4LN-1227; S4LN-1209 or S4LN-1227	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A2G	TCM** S4LN-1227; S4LN-1209 or S4LN-1227	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A2H	TCM** S4LN-21; S4LN-204 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A3A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A3AD	TCM** D4LN-2021	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A3D	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A4A	TCM** S4LN-21; S4LN-204 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A4AD	TCM** D4LN-2021	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A4D	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A4C	TCM** S4LN-1227; S4LN-1209 or S4LN-1227	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A4J	TCM** S4LN-21; S4LN-204 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A4K	Slick 4051; 4050 or 4051	Flange, Type 2 modified	8.5:1	PAC* HA-6
-A5AD	TCM** D4LN-2021	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A4M	Slick 4051; 4050 or 4051	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A4P	Slick 4371; 4070	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-A4N	Slick 4251(2)	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-B1A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	7.2:1	PAC* MA-4-5
-B1B, -B2B	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	7.2:1	PAC* MA-4-5
-B2A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	7.2:1	PAC* MA-4-5
-B2B	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	7.2:1	PAC* MA-4-5
-B2C	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	7.2:1	PAC* MA-4-5
-C1A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-C1C	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-C1E	Slick 4051; 4050 or 4051	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-C1F	Slick 4050; 4051	Flange, Type 2 modified	8.5:1	PAC* HA-6
-C1G	TCM** S4LN-21; S4LN-20	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-C2A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-C2B	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange	8.5:1	PAC* PSH-5BD
-C2C	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-C2D	TCM** S4LN-200; S4LN-204	Flange	8.5:1	PAC* PSH-5BD
-C2E	Slick 4051; 4050 or 4051	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-C4F	Slick 4371; 4370	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-C4P	Slick 4373, 4370	Flange, Type 2 modified	8.5:1	PAC* MA-4-5
-D1A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	7.2:1	PAC* MA-4-5
-D2A	TCM** S4LN-21; S4LN-20 or S4LN-21	Flange, Type 2 modified	7.2:1	PAC* MA-4-5
-D2B	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	7.2:1	PAC* MA-4-5

+ For alternate magnetos see latest revision of Textron Lycoming Service Instructio 1443

\* Precision Airmotive (PAC) formally Facet Aerproducts Inc. (formerly Marvel Schebler Co.)  
and Bendix on PSH-5BD carburetors

\*\* Teledyne (TCM) formally Bendix

## NOTE 9. (cont'd)

Model	Ignition, Dual +	Propeller Shaft SAE No. AS-127	Compression Ratio	Carburetion
-E1AD	TCM** D4RN-2021	Flange, Type 2 modified	9.0:1	PAC* HA-6
-E1A6D	TCM** D4RN-2021	Flange, Type 2 modified	9.0:1	PAC* HA-6
-E1BD	TCM** D4RN-2200	Flange, Type 2 modified	9.0:1	PAC* HA-6
-E2AD	TCM** D4RN-2021	Flange, Type 2 modified	9.0:1	PAC* HA-6
-E2BD	TCM** D4RN-2200	Flange, Type 2 modified	9.0:1	PAC* HA-6
-F1A6	Slick 4191(2)	Flange, Type 2 modified	8.5:1	PAC* HA-6
-G1A6	Slick 4251(2)	Flange, Type 2 modified	8.5:1	PAC* HA-6
-J2A	TCM** S4LN-200;S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4SPA
HO-360-A1A	TCM** S4LN-200; S4LN-204	Flange, Type 2 modified	8.5:1	PAC* MA-4-54A
-B1A	TCM** S4LN-200; S4LN-204	Flange	8.5:1	PAC* PSH-5BD
-B1B	TCM** S4LN-200; S4LN-200	Flange	8.5:1	PAC* PSH-5BD
-C1A	Slick 4347; 4370	Flange, Type 2 modified	8.5:1	PAC* HA-6
LO-360-A1G6D	TCM** D4RN-2021	Flange, Type 2 modified	8.5:1	PAC* HA-6
-E1AD	TCM** D4LN-2021	Flange, Type 2 modified	9.0:1	PAC* HA-6
-E1A6D	TCM** D4LN-2021	Flange, Type 2 modified	9.0:1	PAC* HA-6
-E2AD	TCM** D4LN-2021	Flange, Type 2 modified	9.0:1	PAC* HA-6
-E1BD	TCM** D4LN-2200	Flange, Type 2 modified	9.0:1	PAC* HA-6
-E2BD	TCM** D4LN-2200	Flange, Type 2 modified	9.0:1	PAC* HA-6
-A1H6	Slick 4230; 4202	Flange, Type 2 modified	8.5:1	PAC* HA-6

+ For alternate magnetos see latest revision of Textron Lycoming Service Instruction 1443

\* Precision Airmotive (PAC) formally Facet Aerproducts Inc. (formerly Marvel Schebler Co.)

and Bendix on PSH-5BD carburetors

\*\* Teledyne (TCM) formally Bendix

NOTE 10. The Model O-360-A1B engine was cancelled from Engine Type Certificate No. E-286 on April 19, 1963. Models O-360-E1AD, -E2AD, -E1BD, -E2BD and LO-360-E1AD, -E2AD, -E1BD, and -E2BD were cancelled from Engine Type No. E-286 on May 24, 1978. No production models were manufactured.

NOTE 11. Starters, generators, and alternators approved for use on these engines are listed in the latest revision of Textron Lycoming Service Instruction No. 1154.

NOTE 12. Engines of this series incorporate no crankshaft dampers unless the digit "6" follows the model designation, i.e. -A1F "6". Engines so designated have one 6.3 and one 8th order pendulum type counter-weight.

....END....

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

P7EA
REVISION 11
McCAULEY
<u>2D34C</u>
<u>B2D34C</u>
<u>B2D37C</u>
<u>C2D37C</u>
December 2, 2004

TYPE CERTIFICATE DATA SHEET NO. P7EA

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P7EA) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with the pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder: McCauley Propeller Systems  
7751 E. Pawnee  
Wichita, KS 67207

Type Constant speed; hydraulic (see Note 3)  
 Engine Shaft SAE No. 2 flange modified (6-1/2" Mounting bolts)  
 Hub Material Aluminum Alloy  
 Blade Material Aluminum Alloy  
 No. of Blades Two  
 Hubs Eligible 2D34C8, 2D34C9, 2D34C11, B2D34C16, 2D34C53, B2D34C53,  
 B2D34C202, B2D34C206, B2D34C207, B2D34C208, B2D34C211,  
 B2D34C212, B2D34C213, B2D34C214, 2D34C215, B2D34C217,  
 B2D34C218, B2D34C219, B2D34C220, B2D37C224, B2D37C229,  
 B2D34C235, C2D37C236

Blades Eligible (See NOTE 2)	Maximum <u>Continuous</u> HP RPM	<u>Take-Off</u> HP RPM	Diameter Limits (See NOTE 2)	Approx. Max. Wt. Complete (For Ref. Only) (See NOTE 3)
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THREAD TYPE RETENTION

Hub Models 2D34C53 or B2D34C53

74E-0 to 74E-4	180 2700	180 2700	74" – 70" (-0 to -4)	48 Lbs.
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Blades Eligible (See NOTE 2)	Maximum <u>Continuous</u> HP RPM	<u>Take-Off</u> HP RPM	Diameter Limits (See NOTE 2)	Approx. Max. Wt. Complete (For Ref. Only) (See NOTE 3)
<u>Hub Model 2D34C8</u>				
78FB-0 to 78FB-6	200 2700	200 2700	78" – 72" (-0 to -6)	54 lbs.
<u>Hub Model 2D34C9</u>				
78FBM-0 to 78FBM-6	200 2700	200 2700	78" – 72" (-0 to -6)	55 lbs.
<u>Hub Model 2D34C11 or B2D34C16</u>				
84HF-0 to 84HF-12	260 2700	260 2700	84" – 72" (-0 to -12)	52 lbs.
<u>THREADLESS TYPE RETENTION</u>				
<u>Hub Model B2D34C212</u>				
78CDA-0 to 78CDA-6	200 2700	200 2700	78" – 72" (-0 to -6)	51 lbs.
<u>Hub Model B2D34C206</u>				
78TA-0 to 78PA-6	200 2700	200 2700	78" – 72" (-0 to -6)	51 lbs.
<u>Hub Model B2D34C207</u>				
78TCA-0 to 78TCA-6	200 2700	200 2700	78" – 72" (-0 to -6)	51 lbs.
<u>Hub Model B2D34C220</u>				
80VHA-0 to 80VHA-6	180 2700	180 2700	80" – 74" (-0 to -6)	52 lbs.
<u>Hub Model B2D34C202 or B2D34C208</u>				
82PA-6 to 82PA-10	180 2700	180 2700	76" – 72" (-6 to -10)	48 lbs.

Blades Eligible (See NOTE 2)	Maximum <u>Continuous</u> HP RPM	<u>Take-Off</u> HP RPM	Diameter Limits (See NOTE 2)	Approx. Max. Wt. Complete (For Ref. Only) (See NOTE 3)
<u>Hub Model B2D34C211</u>				
82PCA-6 to 82PCA-10	180 2700	180 2700	76" – 72" (-6 to -10)	48.5 lbs.
<u>Hub Model B2D34C213</u>				
90DHA-12 to 90DHA-18	200 2700	200 2700	78" – 72" (-12 to -18)	49.5 lbs.
<u>Hub Model B2D34C214, B2D34C217, B2D34C218 OR B2D34C219</u>				
90DHB-12 to 90DHB-18	200 2700	200 2700	78" – 72" (-12 to -18)	49.5 lbs.
90DHB-8 to 90DHB-18	235 2400	235 2400	82" – 72" (-8 TO -18)	50.5 lbs.
<u>Hub Model 2D34C215</u>				
90DJA-12 to 90DJA-18	200 2700	200 2700	78" – 72" (-12 to -18)	50.5 lbs.
<u>Hub Model B2D37C224</u>				
90RA-2 to 90RA-12	280 2700	280 2700	88" – 74" (-2 to -16)	52 lbs.
<u>Hub Model B2D37C229</u>				
90RHC-0 to 90RHC-18	300 2700	300 2700	90" – 72" (-0 to -18)	52 lbs.
<u>Hub Model B2D34C235</u>				
90DK[X]-0 to 90DK[X]-18	285 2750	285 2750	90" – 72" (-0 to -18)	50.5 lbs.
<u>Hub Model C2D37C236</u>				
90REA-2 to 90REA-12	280 2700	280 2700	88" – 78" (-2 to -12)	52 lbs.

Certification Basis Model 2D34C53/74E:  
Civil Air Regulations Part 14 effective December 15, 1956.

Models 2D34C8/78FB and 2D34C11/84HF:  
14 CFR Part 35 with Amendment 35-1 thereto.

Model B2D37C224/90RA:  
14 CFR Part 35 with Amendment 35-1 to 35-5 thereto.

Model B2D37C229/90RHC:  
14 CFR Part 35 with Amendment 35-1 to 35-5 thereto.

Model B2D34C235/90DKB:  
14 CFR Part 35 with Amendment 35-1 to 35-6 thereto.

Model C2D37C236/90REA:  
14 CFR Part 35 with Amendments 35-1 to 35-6 thereto.

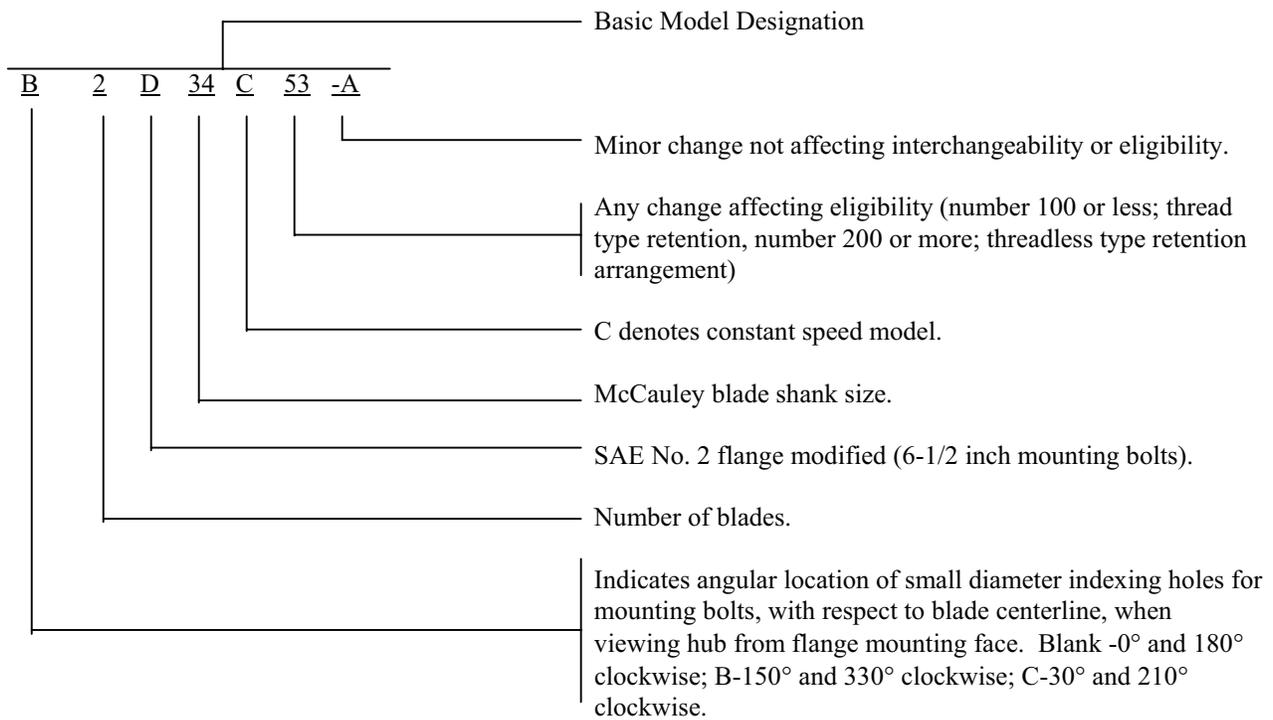
All Other Models:  
14 CFR Part 35 with Amendments 35-1 to 35-2 thereto.

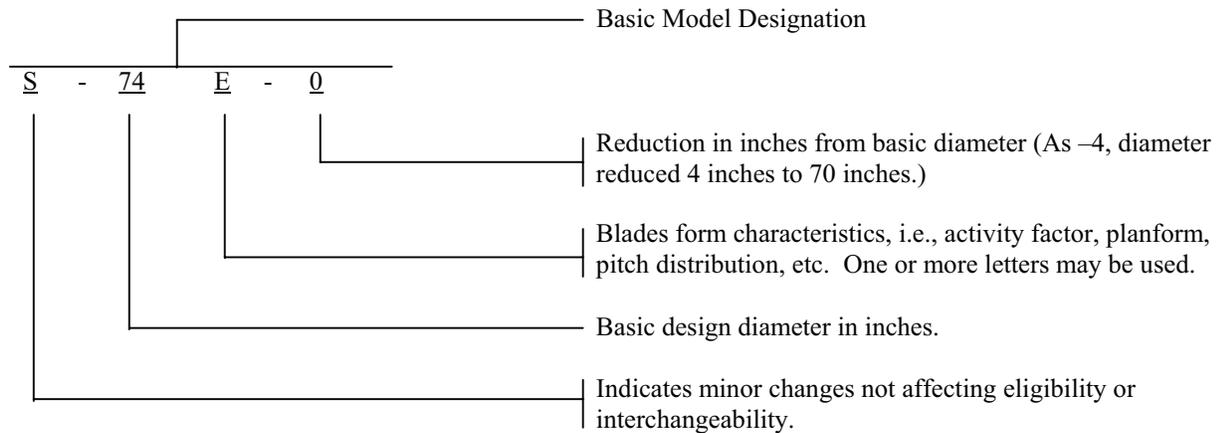
Type Certificate No. P7EA issued September 5, 1962, under the Delegation Option Authorization provisions of Regulations of the Administrator Part 410.

Date of Application for Type Certificate July 11, 1962.

Production Basis Production Certificate No. 3

NOTE 1. Hub Model Designation



NOTE 2. Blade Model DesignationNOTE 3. Pitch Control

With the following governors:

Woodward Model x,210,xxx	Wt. 3.5 lb.
Hoof Model 1,000,007 Series	Wt. 3.5 lb.
McCauley Model C290D1/T[X]	Wt. 2.8 lb.
McCauley Model C290D2/T[X]	Wt. 2.8 lb.
McCauley Model C290D3/T[X]	Wt. 2.8 lb.
McCauley Model C290D4/T[X]	Wt. 2.8 lb.
McCauley Model C290D5/T[X]	Wt. 2.8 lb.
McCauley Model C290D[X]/T[X]	Wt. 2.8 lb.
McCauley Model C290D1/T[X]	Wt. 2.8 lb.
McCauley Model DC[X][X][X]D1/T[X]	Wt. 2.8 lb.

NOTE 4. Not applicable

NOTE 5. Left Hand Models. The left hand version of an approved model propeller is eligible at the same rating and diameter limitations as listed for the right hand model.

NOTE 6. Not applicable

NOTE 7. Accessories

a. Spinners

- (1) 2D34C53, B2D34C53 and 2D34C11 models with McCauley spinners; D-2808 Dome, D-3148 Bulkhead and Fillet Assembly, and D-2809 Installation.
- (2) 2D34C8 and 2D34C9 models with McCauley spinners; D-3395 Dome, D-3686 Bulkhead and Fillet Assembly, and D-3683 Installation.
- (3) B2D34C235 model with McCauley spinner assembly D-7267.
- (4) C2D37C236 model with McCauley spinner assembly D-2137.

NOTE 8. Not applicable

NOTE 9.

Table of Propeller-Engine Combinations  
Approved Vibrationwise for Use on Normal Category Single-Engine Tractor Aircraft

The maximum and minimum propeller diameters that can be used from a vibration standpoint are shown below. No reduction below the minimum diameter listed is permissible, since this figure includes the diameter reduction allowable for repair purposes.

<u>Hub Model</u>	<u>Blade Model</u>	<u>Engine Model</u>	<u>Damper Configuration</u>	<u>Max. Dia. (Inches)</u>	<u>Min. Dia. (Inches)</u>	<u>Placards</u>
2D34C53 or B2D34C53	74E	Lycoming O-360 & IO-360 Series (up to 180 hp. @ 2700 rpm)	None	74	72.5	*Avoid continuous operation while descending between 2250 & 2550 rpm with manifold pressure settings below 15" mercury.
* Ref: Airworthiness Directive No. 70-4-1						
B2D34C212	78CD A	Lycoming IO-360 Series (up to 200 hp. @ 2700 rpm)	One 6.3 and one 8 <sup>th</sup> order	74	73	* Avoid continuous operation between 1600 & 1950 rpm below 15" manifold pressure.
2D34C8 or 2D34C9	78FB 78FB M	Lycoming IO-360 Series (up to 200 hp. @ 2700 rpm)	None	76.5	76.5	Avoid continuous operation between 2000 & 2150 rpm above 20" manifold pressure.
B2D34C206 or B2D34C207	78TA 78TCA	Lycoming O-360 and IO-360 Series (up to 180 hp. @ 2700 rpm)	One 6.3 and one 8 <sup>th</sup> order	78	76	Avoid continuous operation between 1400 & 1700 rpm below 10" manifold pressure.
				76	74	Avoid continuous operation between 1450 & 1750 rpm below 10" manifold pressure.
				74	72	Avoid continuous operation between 1450 & 1800 rpm below 10" manifold pressure.

<u>Hub Model</u>	<u>Blade Model</u>	<u>Engine Model</u>	<u>Damper Configuration</u>	<u>Max. Dia. (Inches)</u>	<u>Min. Dia. (Inches)</u>	<u>Placards</u>
B2D34C206 or B2D34C207	78TA 78TCA	Lycoming IO-360 Series (up to 200 hp. @ 2700 rpm)	One 6.3 and one 8 <sup>th</sup> order	78	76.5	Avoid continuous operation between 1400 & 1750 rpm below 10" manifold pressure.
B2D34C15	78W	Lycoming O-360 Series (up to 180 hp. @ 2700 rpm)	None	74	72.5	Avoid continuous operation between 2000 & 2250 rpm above 18" manifold pressure.
2D34C202, B2D34C208 or B2D34C211	82PA 82PA 82PCA	Lycoming O-360 Series (up to 180 hp. @ 2700 rpm)	One 6.3 and one 8 <sup>th</sup> order	76	75	Avoid continuous operation between 1700 & 1900 rpm below 10" manifold pressure.
				75	74	Avoid continuous operation between 1700 & 2000 rpm below 10" manifold pressure.
2D34C11	84HF	Lycoming O-540 Series (up to 235 hp. @ 2575 rpm)	One 5 <sup>th</sup> and one 6 <sup>th</sup> order	84	80	None
B2D34C16	84HF	Lycoming O-540 Series (up to 260 hp. @ 2700 rpm)	One 5 <sup>th</sup> and one 6 <sup>th</sup> order	84	80	None
B2D34C213 or B2D34C214	90DH A 90DHB	Lycoming IO-360 Series (up to 200 hp. @ 2700 rpm)	One 6.3 and one 8 <sup>th</sup> order	74	73	Avoid continuous operation between 1500 & 1950 rpm below 15" manifold pressure.
B2D34C214	90DHB	Lycoming O-540 Series (up to 235 hp. @ 2400 rpm)	One 4.8 and one 6.3 order	82	78	None
B2D34C213	90DH A	Lycoming IO-360 Series (up to 200 hp. @ 2700 rpm)	One 8 <sup>th</sup> and one 6.3 order	76	75	Avoid continuous operation between 1400 & 1750 rpm below 15" manifold pressure.

<u>Hub Model</u>	<u>Blade Model</u>	<u>Engine Model</u>	<u>Damper Configuration</u>	<u>Max. Dia. (Inches)</u>	<u>Min. Dia. (Inches)</u>	<u>Placards</u>
B2D34C213	90DH A	Lycoming IO-360 Series (up to 200 hp. @ 2700 rpm)	One 8 <sup>th</sup> and one 6.3 order	75	74	Avoid continuous operation between 1450 & 1850 rpm below 15" manifold pressure.

NOTE 10. Special Notes. Aircraft installation must be approved as part of the aircraft certificate upon compliance with the applicable aircraft airworthiness requirements.

...END...