

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

H10WE
REVISION 17
ROBINSON

R22
R22 ALPHA
R22 BETA
R22 MARINER

October 30, 2020

TYPE CERTIFICATE DATA SHEET NO. H10WE

This data sheet, which is a part of Type Certificate No. H10WE, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of Title 14 of the Code of Federal Regulations.

Type Certificate Holder: Robinson Helicopter Company
2901 Airport Drive
Torrance, California 90505

I. Model R22 Helicopter (Normal Category), Approved March 16, 1979

Engine	Lycoming O-320-A2B or O-320-A2C or O-320-B2C (See NOTES 5 & 6)						
Fuel	See Rotorcraft Flight Manual (RFM)						
Engine Limits for all operations	124 hp at 2652 rpm (104%) See RFM for manifold pressure limit corresponding to 124 hp and ambient conditions.						
Rotor Limits	<table border="1"><thead><tr><th>Power Off (Rotor Tach)</th><th>Power On (Rotor Tach)</th></tr></thead><tbody><tr><td>Maximum (110%) 561 rpm</td><td>(104%) 530 rpm</td></tr><tr><td>Minimum (90%) 459 rpm</td><td>(97%) 495 rpm</td></tr></tbody></table>	Power Off (Rotor Tach)	Power On (Rotor Tach)	Maximum (110%) 561 rpm	(104%) 530 rpm	Minimum (90%) 459 rpm	(97%) 495 rpm
Power Off (Rotor Tach)	Power On (Rotor Tach)						
Maximum (110%) 561 rpm	(104%) 530 rpm						
Minimum (90%) 459 rpm	(97%) 495 rpm						
Airspeed Limits (CAS)	98 KCAS Power On and Off V_{NE} (never exceed) at sea level. See RFM for reduction of V_{NE} with altitude and temperature.						
Altitude Limits	Density Altitude Limit - 14,000 feet						
CG Range	See RFM						
Maximum Gross Weight	1300 lbs.						
No. Seats	2 (See NOTE 1)						
Minimum Weight	920 lbs.						
Maximum Baggage	50 pounds of baggage and installed equipment in either baggage compartment, except combined seat load plus baggage and equipment not to exceed 240 pounds.						

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I. Model R22 Helicopter (Normal Category), Approved March 16, 1979, (cont'd)

Fuel Capacity	Tank	Tanks Without Bladders		Tanks With Bladders		Location (STA)
		Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	
	Main	19.8	19.2	18.3	16.9	108.6
	Auxiliary	N/A	N/A	9.7	9.4	103.8
Oil Capacity	Engine Oil, 6 qt. at STA 104.8; Transmission oil, 1.2 qt. at STA 100.					
Rotor Blade and Control Movements	For rigging information refer to R22 Maintenance Manual					
Serial Nos. Eligible	0002 thru 0300 0302 thru 0349 0352 thru 0356					

II. Model R22 ALPHA Helicopter (Normal Category), Approved October 12, 1983

Engine	Lycoming O-320-B2C																						
Fuel	See RFM																						
Engine Limits for all operations	124 hp at 2652 rpm (104%) See RFM for manifold pressure limit corresponding to 124 hp and ambient conditions.																						
Rotor Limits	<table><tr><td>Power Off (Rotor Tach)</td><td>Power On (Rotor Tach)</td></tr><tr><td>Maximum (110%) 561 rpm</td><td>(104%) 530 rpm</td></tr><tr><td>Minimum (90%) 459 rpm</td><td>(97%) 495 rpm</td></tr></table>	Power Off (Rotor Tach)	Power On (Rotor Tach)	Maximum (110%) 561 rpm	(104%) 530 rpm	Minimum (90%) 459 rpm	(97%) 495 rpm																
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Maximum (110%) 561 rpm	(104%) 530 rpm																						
Minimum (90%) 459 rpm	(97%) 495 rpm																						
Airspeed Limits	98 KCAS Power On and Off V _{NE} (never exceed) at sea level. See RFM for reduction of V _{NE} with altitude and temperature.																						
Altitude Limits	Density Altitude Limit - 14,000 feet																						
CG Range	See RFM																						
Maximum Gross Weight	1370 lbs.																						
No. Seats	2 (Pilot Location STA 78.0)																						
Minimum Weight	920 lbs.																						
Maximum Baggage	50 pounds of baggage and installed equipment in either baggage compartment, except combined seat load plus baggage and equipment not to exceed 240 pounds.																						
Fuel Capacity	<table><tr><th rowspan="2">Tank</th><th colspan="2">Tanks Without Bladders</th><th colspan="2">Tanks With Bladders</th><th rowspan="2">Location (STA)</th></tr><tr><th>Capacity (gal.)</th><th>Usable (gal.)</th><th>Capacity (gal.)</th><th>Usable (gal.)</th></tr><tr><td>Main</td><td>19.8</td><td>19.2</td><td>18.3</td><td>16.9</td><td>108.6</td></tr><tr><td>Auxiliary</td><td>10.9</td><td>10.5</td><td>9.7</td><td>9.4</td><td>103.8</td></tr></table>	Tank	Tanks Without Bladders		Tanks With Bladders		Location (STA)	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	Main	19.8	19.2	18.3	16.9	108.6	Auxiliary	10.9	10.5	9.7	9.4	103.8
Tank	Tanks Without Bladders		Tanks With Bladders		Location (STA)																		
	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)																			
Main	19.8	19.2	18.3	16.9	108.6																		
Auxiliary	10.9	10.5	9.7	9.4	103.8																		
Oil Capacity	Engine oil, 6 qt. at STA 104.8; Transmission oil, 1.2 qt. at STA 100.																						
Rotor Blade and Control Movements	For rigging information refer to R22 Maintenance Manual.																						
Serial Nos. Eligible	0301, 0350, 0351, 0357 thru 0500, excluding 0364																						

III. Model R22 BETA Helicopter (Normal Category), Approved August 12, 1985

The R22 BETA Helicopter includes a 131 hp. takeoff rating. A larger oil cooler and associated installation changes were made to permit the 131 hp. takeoff rating with the O-320 engine.

Engine Lycoming O-320-B2C or O-360-J2A (See NOTE 11)

Fuel See RFM

Engine Limits for all operations Maximum continuous: 124 hp at 2652 rpm (104%)
 Takeoff (5 minutes): 131 hp at 2652 rpm (104%)
 See RFM for manifold pressure limit corresponding to hp. rating and ambient conditions.

Rotor Limits	Power Off (Rotor Tach) for O-320-B2C and O-360-J2A	Power On (Rotor Tach) for O-320-B2C	Power On (Rotor Tach) for O-360-J2A
	Maximum (110%) 561 rpm	(104%) 530 rpm	(104%) 530 rpm
	Minimum (90%) 459 rpm	(97%) 495 rpm	(101%) 515 rpm

Airspeed Limits (CAS) 98 KCAS Power On and Off V_{NE} (never exceed) at sea level.
 See RFM for reduction of V_{NE} with altitude and temperature.

Altitude Limits Density Altitude Limit - 14,000 feet

CG Range See RFM

Maximum Gross Weight 1370 lbs.

No. Seats 2 (Pilot Location STA 78.0)

Minimum Weight 920 lbs.

Maximum Baggage 50 pounds of baggage and installed equipment in either baggage compartment, except combined seat load plus baggage and equipment not to exceed 240 pounds.

Fuel Capacity	Tanks Without Bladders		Tanks With Bladders		Location (STA)
	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	
Main	19.8	19.2	18.3	16.9	108.6
Auxiliary	10.9	10.5	9.7	9.4	103.8

Oil Capacity Engine oil, 6 qt. at STA 104.8;
 Transmission oil, 1.2 qt. at STA 100.

Rotor Blade and Control Movements For rigging information refer to R22 Maintenance Manual.

Serial Nos. Eligible 0501 and subsequent

IV. Model R22 MARINER Helicopter (Normal Category), Approved September 12, 1985

The R22 MARINER helicopter includes two inflatable floats, additional corrosion protection, 131 hp. takeoff rating, tailcone with nose-up horizontal stabilizer mounting angle and float stabilizer in place of the tail skid. The helicopter can be used with or without floats. (See NOTE 9)

Engine Lycoming O-320-B2C or O-360-J2A (See NOTE 11)

Fuel See RFM

Engine Limits for all operations Maximum continuous: 124 hp at 2652 rpm (104%)
Takeoff (5 minutes): 131 hp at 2652 rpm (104%)
See RFM for manifold pressure limit corresponding to hp. rating and ambient conditions.

Rotor Limits	Power Off (Rotor Tach) for O-320-B2C and O-360-J2A	Power On (Rotor Tach) for O-320-B2C	Power On (Rotor Tach) for O-360-J2A
	Maximum (110%) 561 rpm	(104%) 530 rpm	(104%) 530 rpm
	Minimum (90%) 459 rpm	(97%) 495 rpm	(101%) 515 rpm

Airspeed Limits (CAS) With Floats Installed
91 KCAS Power On V_{NE} (never exceed) at sea level.
77 KCAS Power Off V_{NE} (never exceed) at sea level.
See RFM for reduction of V_{NE} with altitude and temperature.

Without Floats Installed
98 KCAS Power On and Off V_{NE} (never exceed) at sea level.
See RFM for reduction of V_{NE} with altitude and temperature.

Altitude Limits Density Altitude Limit - 14,000 feet

CG Range See RFM
Maximum Gross Weight 1370 pounds

No. Seats 2 (Pilot Location STA 78.0)

Minimum Weight 920 pounds

Maximum Baggage 50 pounds of baggage and installed equipment in either baggage compartment, except combined seat load, plus baggage and equipment not to exceed 240 pounds.

Fuel Capacity	Tanks Without Bladders		Tanks With Bladders		Location (STA)
	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	
Main	19.8	19.2	18.3	16.9	108.6
Auxiliary	10.9	10.5	9.7	9.4	103.8

Oil Capacity Engine oil, 6 qt. at STA 104.8;
Transmission oil, 1.2 qt. at STA 100.

Rotor Blade and Control Movements For rigging information refer to R22 Maintenance Manual.

Serial No. Eligible 0364, 0501 and subsequent (Suffix "M" added to all MARINERs.)

DATA PERTINENT TO ALL MODELS

Datum	100 inches forward of main rotor centerline.
Leveling Means	Refer to the Weight and Balance Section of the R22 Rotorcraft Flight Manual.
Certification Basis	<p>14 CFR Part 27 dated February 1, 1965, including Amendments 27-1 through 27-10. § 27.1559 of Amendment 27-21 is an option for all S/Ns.</p> <p>For S/N 4815 and subsequent: 14 CFR §§ 27.952(a), 27.952(c), 27.952(f), 27.952(g), 27.963(g) (except with a minimum puncture force of 250 pounds), and 27.975(b) as amended by Amendment 27-30 (see Note 13)</p> <p>National Environmental Act of 1969</p> <p>Noise Control Act of 1972</p> <p><u>Equivalent Safety Findings:</u> Number TD10352LA-R/S-1 14 CFR Part 27.1401(d), Anticollision Light System</p> <p>For S/N 4815 and subsequent: Number AT17316LA-R/P-1 14 CFR Part 27.952(c)(1)(i), Breakaway coupling separation load (see Note 13)</p>
Production Basis	Production Certificate No. 424WE, dated March 6, 1981
Equipment	<p>The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the helicopter for certification. In addition, the following FAA-approved Rotorcraft Flight Manual is required:</p> <p><u>R22</u> R22 Rotorcraft Flight Manual dated March 16, 1979, or later revision.</p> <p><u>R22 ALPHA</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through October 12, 1983 or later (see NOTE 8).</p> <p><u>R22 BETA with O-320-B2C</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through August 7, 1985 or later (see NOTE 8).</p> <p><u>R22 BETA with O-360-J2A</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through August 7, 1985 or later. For R22 Rotorcraft Flight Manual with revisions prior to October 13, 2000, Flight Manual Supplement 7 dated January 31, 1996, or later revision, is required (see NOTE 8).</p> <p><u>R22 MARINER with O-320-B2C</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through August 7, 1985 or later, and Flight Manual Supplement 4 dated September 9, 1985, or later revision.</p> <p><u>R22 MARINER with O-360-J2A</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through August 7, 1985 or later, and Flight Manual Supplement 4 dated September 9, 1985, with revisions through October 13, 2000 or later. For R22 Rotorcraft Flight Manual with revisions prior to October 13, 2000, Flight Manual Supplement 8 dated January 31, 1996, or later revision, is required in place of Flight Manual Supplement 4.</p>

ALL MODELS

If fuel tanks with bladders are installed: R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through February 15, 2013 or later. R22 Mariners also require Flight Manual Supplement 4 as noted above. Also see Note 8.

GENERAL NOTES

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 helicopter at the time of original certification and at all times thereafter (except in the case of operators having an approved weight control system).

Pilot Location STA 79.0 for helicopter S/Ns 0002 thru 0255 and STA 78.0 for helicopter S/Ns 0256 and subsequent and helicopters in which Robinson P/N seats A466-1 and A467-1 have been replaced by Robinson P/N seats A932-1 and A928-1.

NOTE 2. One of the following placards must be installed in clear view of the pilot:
"THE MARKINGS AND PLACARDS INSTALLED ON THIS HELICOPTER CONTAIN
OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS
ROTORCRAFT. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN
OPERATING THIS ROTORCRAFT ARE CONTAINED IN THE ROTORCRAFT FLIGHT MANUAL."

Or: "THIS ROTORCRAFT APPROVED FOR DAY AND NIGHT VFR OPERATIONS"

For the R22 MARINER:

"THIS ROTORCRAFT APPROVED FOR DAY AND NIGHT VFR OPERATIONS WITHOUT
FLOATS INSTALLED OR DAY VFR OPERATIONS ONLY WITH FLOATS INSTALLED."

For additional placards, see R22 Rotorcraft Flight Manual.

NOTE 3. Information essential to the proper maintenance of the helicopter, including retirement time of critical components, is contained in the Robinson R22 Maintenance Manual and Instructions For Continued Airworthiness (RTR 060). Retirement times are listed in the "AIRWORTHINESS LIMITATIONS" section.

NOTE 4. Deleted as of April 11, 1988.

NOTE 5. Lycoming O-320-A2C, with Retard Magneto Starting System, eligible on S/Ns 0002 thru 0300, 0302 thru 0349, and 0352 thru 0356 helicopters.

NOTE 6. Lycoming O-320-B2C installed on S/Ns 0175 and 0200 thru 2570 in production. It may be installed in prior S/N helicopters if the following parts are changed; Robinson P/Ns B193-2 (Window Plate - Instrument Cluster), A145-3 (Engine), A600-2 (Manifold Pressure Gauge), and A654-40 & -41 (Decals).

NOTE 7. Deleted as of April 25, 2001.

NOTE 8. The R22 "Police Helicopter" configuration requires Flight Manual Supplement 3, dated March 27, 1984 or later.

NOTE 9. The R22 MARINER with floats installed is limited to daylight VFR operation only.

NOTE 10. R22 ALPHA S/N 0364 was converted to an R22 MARINER by the manufacturer. The original R22 ALPHA dataplate was removed and replaced with an R22 MARINER data plate S/N 0364M.

NOTE 11. Lycoming O-360-J2A installed on S/N 2571 and subsequent in production. Retrofit installation of the O-360-J2A engines may only be accomplished at the Robinson Helicopter Company.

NOTE 12. Deleted as of May 24, 2018.

NOTE 13. To operate in U.S. airspace, the following helicopter serial numbers meet the crash resistant fuel system certification basis requirements per section 44737 of Title 49 U.S.C.: Model R22 BETA, S/N 4815 and subsequent.

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