Robinson R22 Beta Model Guide

The Robinson R22 Beta is a two-seat, single-engine piston helicopter. Its approved limits give a maximum gross weight of 1370 lb and a never-exceed speed of 102 KIAS up to 3000 ft density altitude. The documents show the Lycoming O-320-B2C engine, and the Beta II uses the O-360-J2A. Accident reports point buyers to the drive belts, clutch and fuel vents.

KEY TAKEAWAYS

- Robinson R22 Beta: 2 seats, 1370 lb max gross weight, 920 lb minimum, 240 lb per seat including baggage.
- VNE is 102 KIAS up to 3000 ft density altitude. Above that, follow the placard table (the Beta II has its own).
- Check the drive belts, clutch and fuel vent lines. Accident reports on R22 Betas involve all three.
- Parts are costly: a balanced main-rotor blade set was listed at 36,000 in a January 2016 price list.

LIMITS AND LOADING

Max gross weight for the Alpha, Beta and Beta II is 1370 lb (622 kg). Minimum is 920 lb (417 kg). Each seat, including its baggage compartment, is limited to 240 lb, and each baggage compartment to 50 lb. With both doors on, a solo pilot plus baggage of 135 lb or more keeps the CG within limits. Fuel burn moves the CG forward, so check loading with empty fuel as well as full fuel.

ENGINE AND ROTOR LIMITS

The Robinson R22 Beta is approved with Lycoming O-320 engines. Accident reports show the O-320-B2C on early aircraft and the O-360-J2A on the Beta II. Maximum continuous engine speed is 104% (2652 RPM). Power-on rotor speed is 101% to 104%. Oil pressure in flight is 55 to 95 psi, minimum oil for takeoff is 4 qt, and the cylinder head limit is 500°F. Aerobatics and low-G cyclic pushovers are prohibited.

WHAT TO INSPECT AND BUDGET FOR

Ask for the weight and balance record and the history of the sprag clutch, drive belts and fuel vent lines. Also ask whether the MS21042L-series locking nuts on the belt upper sheave were checked for cracking. In the January 2016 list, a main rotor gearbox and mast assembly was 21,400 and a balanced blade set 36,000. Prices were subject to change.

SPECIFICATIONS

Max Gross Weight Lbs	1370
Min Gross Weight Lbs	920
Max Per Seat Lbs	240
Max Baggage Per Compartment Lbs	50

PERFORMANCE

Hover Controllability Wind Kt	17
Hover Controllability Max Density Altitude Ft	9800

V-SPEEDS

Vne Up To 3000 Ft Density Altitude Kts	102

WEIGHT & BALANCE

Max Gross Weight Lbs	1370
Min Gross Weight Lbs	920
Solo Pilot Plus Baggage Cg Safe Lbs	135
Main Fuel Arm In	108.6
Aux Fuel Arm In	103.8
Datum Forward Of Rotor Shaft In	100

SAFETY NOTES

- Dynamic rollover: a student's first solo in an R22 Beta rolled over because the CG shifted right and aft. Use a two-step liftoff.
- Loss of drive: a belt failure, a damaged sprag clutch or a lit clutch light means land at once. Engine power loss can cost rotor RPM.
- A kinked fuel vent line starved an R22 Beta engine even though the main tank held fuel. Inspect the vent lines.

AI-aggregated guide for the Robinson R22 Beta · sources: ROBINSON MODEL R22 (#19590) · ROBINSON R22 SERIES SECTION 6 WEIGHT AND BALANCE (#19408) · Performance Data for the Robinson R22 Beta (#19525) · Robinson R22 Series Section 9 FATA Supplement (#102111) · R22 Spare Parts Price List (#19511) · AAIB Bulletin No: 10/99 (#19535) · AAIB Bulletin No: 10/98 (#19538) · AAIB Bulletin: 10/2019 (#19496) · AAIB Bulletin: 4/2018 (#19501) · ATSB Transport Safety Report (#19532) · generated 2026-10-16 · Reference only, not for flight. Check the original documents before relying on this guide.