Katana DA20-A1

All specifications are subject to change without notice. Illustrations may show optional equipment.

Powerplant

Bombardier Rotax 912F3, 81 hp, four-cylinder, horizontally opposed

Specifications

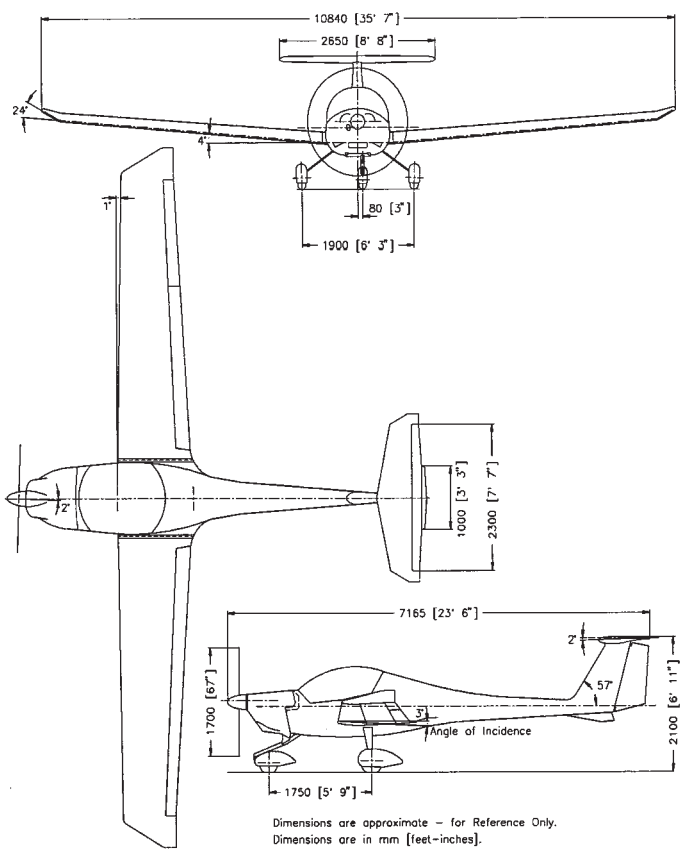
Recommended TBO.....1,200 hr
Length .....23 ft 6 in
Height .....6 ft 11 in
Wingspan .....35 ft 7 in
Wing Area .....125 sq ft
Wing Loading .....12.9 lb/sq ft
Power Loading .....19.7 lb/hp
Seats 2
Empty weight, typical .....1,095 lb
Maximum gross weight ....1,609 lb
Payload w/full fuel .....394 lb
Fuel capacity, std .....20.1 gal (19.5 gal usable)
Oil capacity .....3.2 qt

Performance

Takeoff distance, ground roll ..... 1,120 ft
Takeoff distance over 50-ft obstacle.....1,560 ft
Max demonstrated crosswind component .....15 kt
Rate of climb, sea level ....680 fpm
Cruise speed/fuel consumption 7,500 feet @ 75% power, best economy.....117 kt/4.3 gph
Service ceiling .....14,000 ft
Landing distance over 50 ft obstacle .....1,490 ft
Landing distance, ground roll .....748 ft

Limiting and Recommended Airspeeds

Vx (best angle of climb) .....57 kias
Vy (best rate of climb) .....65 kias
Va (design maneuvering) ..104 kias
Vfe (max flap extended) .....81 kias
Vno (max structural cruising) .....118 kias
Vne (never exceed).....161 kias
Vs (stall, clean) .....41 kias
Vso (stall, in landing configuration) .....37 kias



AFTER SALE & CUSTOMER SUPPORT

Technical & Parts Support

Factory technicians available 7 days a week for technical and A.O.G. parts support.

MaintenanceTraining

A five day course, comprised of four days of engine, propeller and airframe systems/troubleshooting procedures, and one day of composite theory and practical repair workshop.

Field Service Support

Factory technician network available for onsite training, troubleshooting, and repairs.

Warranty

Airframe: *2 year "tip to tail" parts and labor warranty with unlimited hours. 10 year, 12,000 hr warranty on major structural components.*
Engine: *1 year or 200 hrs parts and labor. Parts prorated to TBO.*
Propeller: *1 year or 500 hours parts and labor prorated to TBO.*
Avionics: *Manufacturer's warranty.*

Repair and overhaul

Engine: *overhaul and factory exchange engines available, including "firewall forward" quick engine changes (QEC).*
Propeller: *overhaul and factory exchange propellers available.*

Printed in Canada

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Katana DA20-A1

The DA20-A1 Katana is a two seat aircraft designed and manufactured by Diamond Aircraft Industries of London, Canada. It is principally intended for primary flight training.

The DA20-A1 Katana features advanced composite structure, single engine, conventional configuration with low wing, T-tail, and tricycle landing gear.

The design of DA20-A1 Katana is based on the DV20 Katana, designed and manufactured by Diamond (HOAC) Aircraft of Austria. The DV20 was type certified by Austrian and German Airworthiness Authorities in 1993, and by Canadian and American Airworthiness Authorities in 1994.

The principal differences are detail design improvements and changes to facilitate production with usage of North American standard parts and materials.

Approval

The Katana is currently certified for day/night VFR operations and spinning in Canada and the United States as well as being certified by Airworthiness Authorities in the United Kingdom, Austria, Germany, Switzerland, Holland, Turkey, Portugal, France, Australia, Denmark, Czech Rep., Italy, Russia, and South Africa.

Fuselage

The fuselage is of GRP (Glass Reinforced Plastic) construction with local CRP (Carbon Reinforced Plastic) reinforcement in high stress areas.

The stressed fuselage skin is primarily made of single GRP laminate with local GRP/PVC-foam/GRP sandwich construction to increase stiffness and reduce noise. The two fuselage shells (halves) are bonded together along the joint flange in the vertical plane. Internal structure consists of the firewall, a number of transverse bulkheads, a longitudinal bulkhead in the tail tube (cone), and a main bulkhead (spar bridge) that receives the wing spar stubs. The vertical stabilizer is integrated with the fuselage.

The fixed seat shells are of GRP construction (rudder pedals are adjustable). Aft of the seats a baggage compartment is provided. Baggage is secured with a fabric net. The fuel tank is located beneath the baggage compartment. The one-piece canopy provides excellent visibility and tilts up and back to provide unrestricted cockpit access.

Wings

The wing section is a Wortman FX 63-137/20 HOAC laminar profile. The inner 50% of the wing span features flaps for take-off and landing. Each wing is attached to the fuselage with three bolts: two transverse at the root rib, and one longitudinal through the spar bridge and the wing spar stub.

The wing skins are of GRP/FOAM/GRP sandwich construction. The I-section spar is constructed of CRP poltruded spar caps that are joined with a GRP/FOAM sandwich construction spar web.

Several ribs provide mounting surfaces for guides of control tubes and support for control bellcranks. The flaps are actuated electrically via mechanical linkages that also provide synchronization. The ailerons are actuated via steel control tubes and aluminum bellcranks.

The left wing approximately one foot inboard of the wing tip houses individual quartz halogen landing and taxi lights.

Landing Gear

The conventional tricycle landing gear is non-retractable. The main gear struts are aluminum. The nose gear strut is steel tube sprung via an elastomeric spring pack. Steering is provided by differential braking of the main wheels and the friction damped castoring nose wheel.

Powerplant

The engine is a Rotax 912F3 with a take-off power rating of 81HP (DIN). The 912F3 is a horizontally opposed 4-cylinder, 4-stroke engine. It features liquid cooled cylinder heads, dual ignition, dry sump lubrication, dual carburetors, and a propeller drive reduction gear box (2.2727:1).

The engine features an integral 20A alternator directly driven by the crankshaft and a 40A alternator which is belt driven off the pulley that is mounted to the propeller drive flange. The DA20-A1 Katana uses the 40A alternator to power avionics, instruments and electrical accessories. The integrated 20A alternator is used exclusively to power the dual capacitance discharge, electronic ignition system.

The engine mount is of conventional welded steel tubing construction.

The hydraulically controlled, 2 blade constant speed propeller is the Hoffmann HO-V352F. The prop blades are of wood core construction, with composite skins and aluminum or polycarbonate bonded edge inserts.

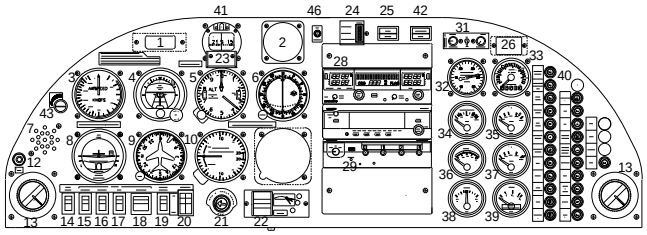
The GRP firewall is clad with insulating Fibrefrax and stainless steel skin. Cowlings are fire protected by fire resistant paint.

Empennage

The rudder halves are of GRP/foam/GRP sandwich construction. The rudder is cable actuated via dual, adjustable pedals. The horizontal stabilizer and elevator are GRP/Foam/GRP sandwich construction with local CRP reinforcement. The anti-servo tab is made of CRP.

The elevator is actuated by steel control tubes. Centering and increased control forces are provided by two compression coil springs mounted concentric to the vertical push-pull tube of the elevator control system. The common spring base can be moved by an electric actuator which provides elevator trimming function.

Instrument Panel



1. Outside Air Temp Ind.
2. Not used
3. Air Speed Ind.
4. Artificial Horizon Ind.
5. Altimeter
6. CDI
7. Stall Warning Horn
8. Turn and Bank Ind.
9. Directional Gyro
10. Vertical Speed Ind.
11. Not used
12. Microphone Jack
13. Air Vent
14. Fuel Pump Switch
15. Strobe Light Switch
16. Landing Light Switch
17. Taxi Light Switch
18. Nav. Light Switch
19. Avionics Master
20. Master Switch
21. Ignition Switch
22. Flap Control
23. Compass Card
24. Trim Indicator
25. Annunciator Lights
26. Hobbs Meter
27. Not used
28. Radio
29. Transponder
30. Not Used
31. Intercom
32. Manifold Pressure
33. Tachometer
34. Oil Pressure Ind.
35. Oil Temp. Ind.
36. Voltmeter
37. Cylinder Head Temp. Indicator
38. Ammeter
39. Fuel Indicator
40. Circuit breakers
41. Compass
42. Canopy Locking Warning Light
43. I-Panel Reostat
46. Trim Ind. Dimmer

Electrical/ Avionics

Electric power (nominal 12 V) is provided by the 20 A/hr battery and the 40A alternator which features internal voltage regulation. The alternator is belt driven off the propeller shaft drive flange pulley. Electric power is supplied to the user systems via the main or avionics bus, as applicable. Circuit protection is provided by resettable panel mounted circuit breakers for each circuit.

Instrumentation and Avionics equipment is tailored to individual customer requirements. A typical equipment suite and layout are depicted in the above diagram.

Documentation

The following documentation is available:

- *Airplane Flight Manual*
- *Airplane Maintenance Manual*
- *Airplane Illustrated Parts Catalogue*
- *Miscellaneous Vendor Technical Documentation (i.e. Engine, Propeller, Avionics etc.)*

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