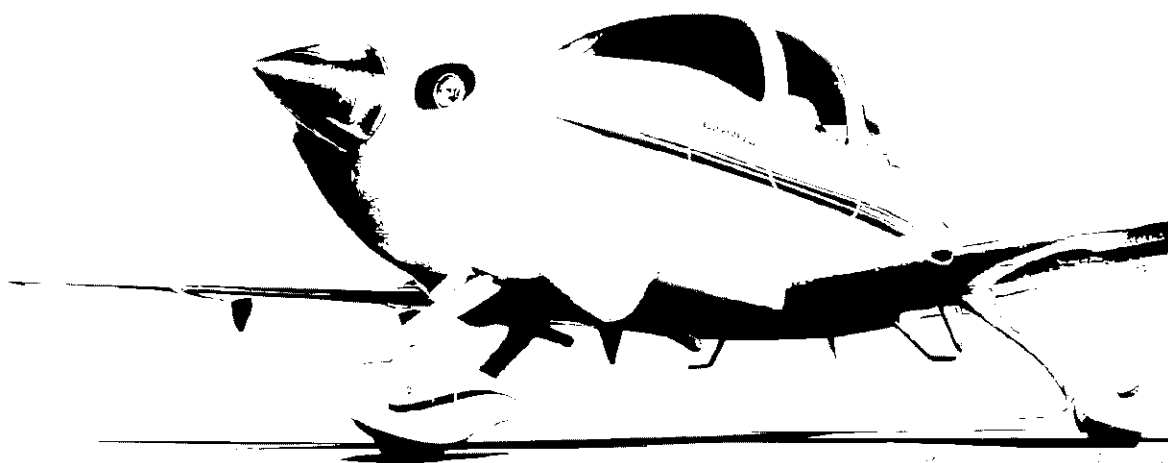




**CIRRUS  
DESIGN**

**SR20**

**Specification and Description**





## **INTRODUCTION**

This document is published for the purpose of describing the base design, performance and equipment configuration of the Cirrus SR20. Should more detailed data be required, it can be obtained by contacting:

**Cirrus Design Corporation**  
**4515 Taylor Circle**  
**Duluth, Minnesota 55811**

**Telephone: 218-727-2737**  
**Facsimile: 218-727-2148**

Also included are the warranties applicable to the Cirrus SR20, as well as the Cirrus SR20 Pilot Training Agreement.

This document supersedes all previous preliminary specification and description documents and describes only the Cirrus SR20, its powerplant and equipment.

In the event of any conflict or discrepancy between this document and the Purchase Agreement to which it may be appended, terms specified in the Purchase Agreement govern.

Cirrus reserves the right to revise the "Specification" whenever occasioned by product improvements, government regulations or other good cause, as long as such revisions do not result in a reduction in performance standards.

## **DESCRIPTION**

The Cirrus SR20 is a four-place, single-engine low-wing airplane with a fixed tricycle landing gear.

Design features include:

- **200-Horsepower, six-cylinder, fuel-injected engine**
- **Constant-speed propeller**
- **Single-handed side control yokes**
- **Fixed tricycle landing gear**
- **Wide cabin with automotive-style finish and comfort**
- **Low-drag design**
- **Moving map display**
- **Airframe recovery parachute**

Certification basis is to U.S. Federal Aviation Regulations (FAR) Part 23. The SR20 is certified and equipped for Day, Night, Visual Flight Rules (VFR) and Instrument Flight Rules (IFR).

**DESIGN WEIGHTS:**

Maximum Gross Weight ..... 2,900 pounds  
Standard Empty Weight ..... 1,950 pounds  
Maximum Useful Load ..... 950 pounds

**CAPACITIES:**

Usable Fuel ..... 56.0 gallons / 336 pounds  
Oil ..... 8 quarts

**POWERPLANT:**

Teledyne Continental IO-360-ES, six-cylinder, normally aspirated, fuel-injected,  
200-Horsepower (hp)

**PROPELLER:**

Hartzell, constant-speed, two blades, 76-inch diameter

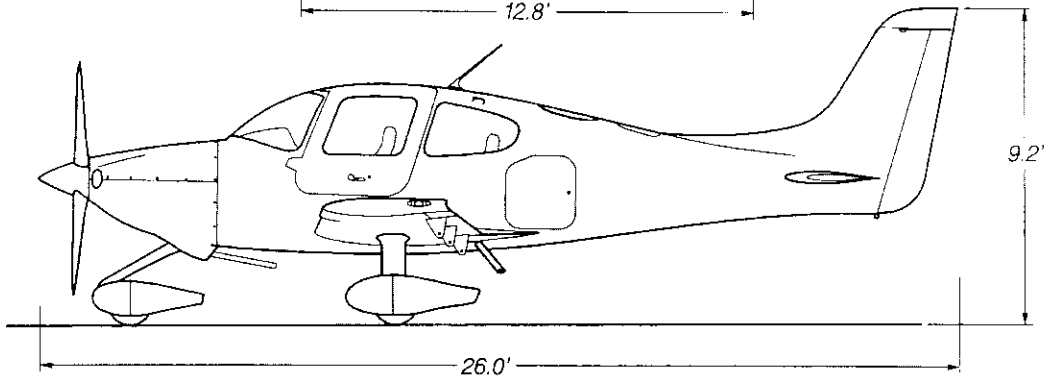
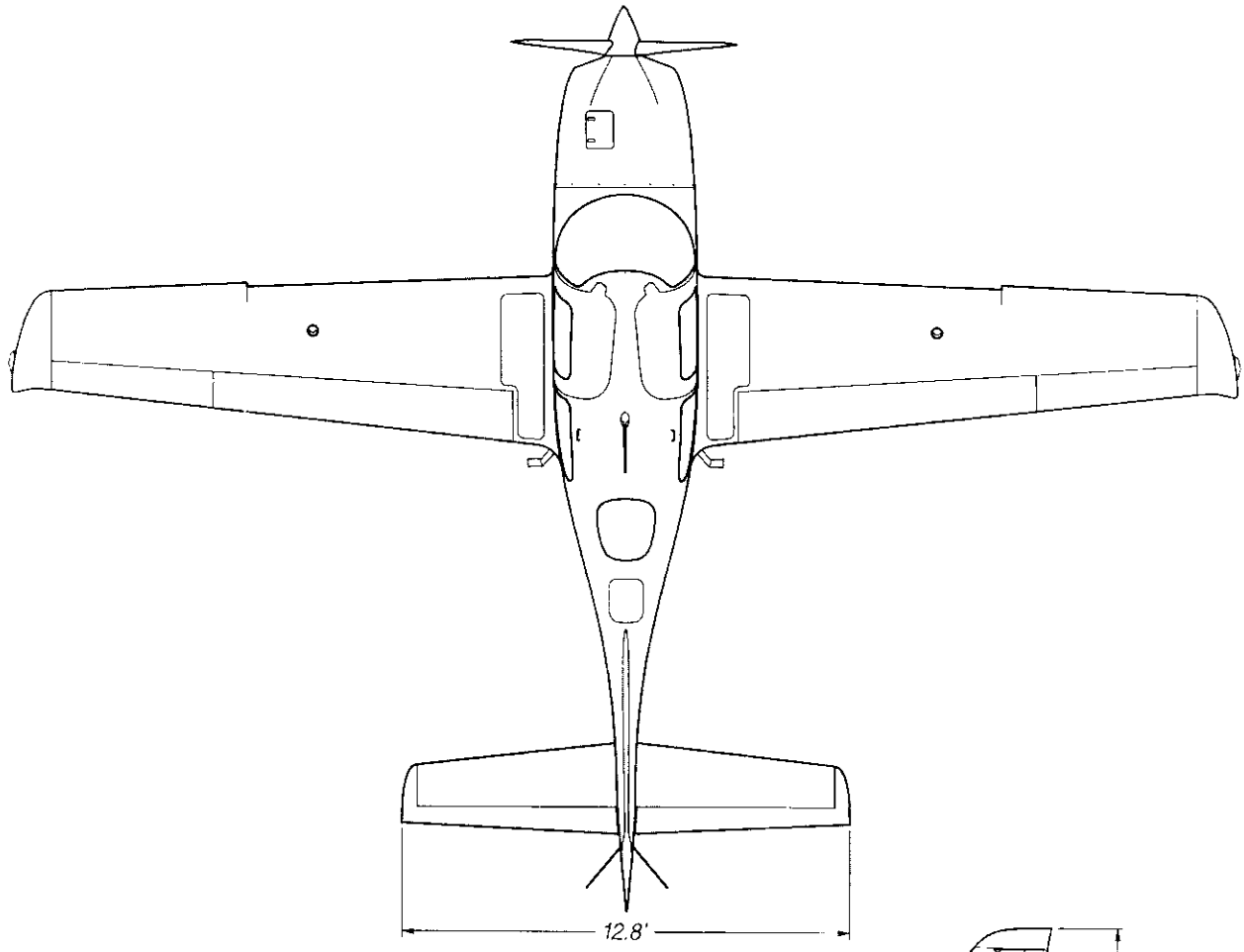
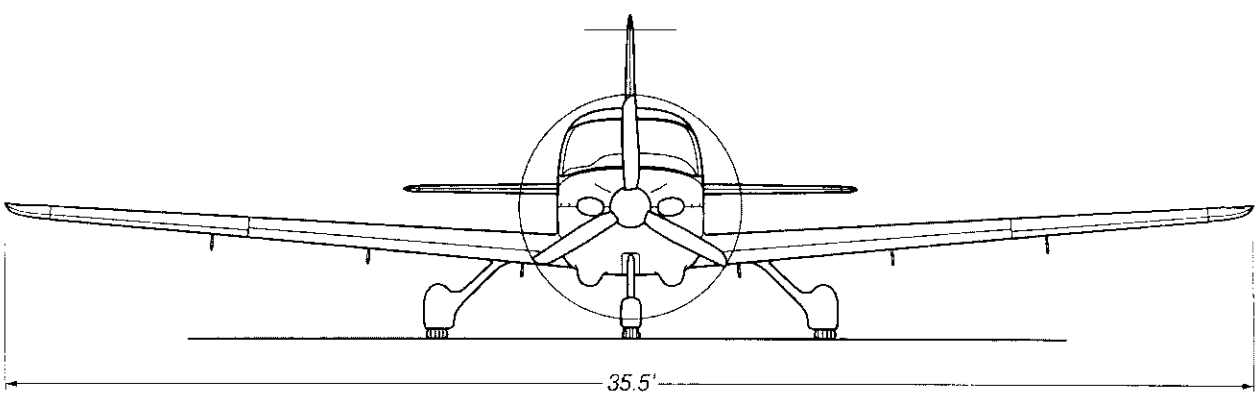
**LOADINGS:**

Wing ..... 21.4 pounds per square foot  
Power ..... 14.5 pounds per hp

**DIMENSIONS**

Wing Span ..... 35.5 feet ..(10.82 m)  
Wing Area ..... 135.2 square feet ..(12.56 m<sup>2</sup>)  
Wing Dihedral ..... 4.5 degrees  
Length ..... 26.0 feet ..(7.92 m)  
Height ..... 9.2 feet ..(2.80 m)  
Horizontal Tail Span ..... 12.9 feet ..(3.93 m)  
Horizontal Tail Area ..... 37.5 square feet ..(3.48 m<sup>2</sup>)  
Landing Gear  
Track ..... 11.1 feet ..(3.38 m)  
Wheel Base ..... 7.5 feet ..(2.29 m)  
Cabin Interior Dimensions  
Length ..... 130 inches ..(3.30 m)  
Width (at front seat windows) ..... 49.25 inches ..(125.1 cm)  
Width (at front seat elbows) ..... 48.75 inches ..(123.8 cm)  
Height ..... 50 inches ..(127.0 cm)  
Doors (Left & Right)  
Height ..... 39 inches ..(99.0 cm)  
Width ..... 32 inches ..(81.3 cm)

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## PERFORMANCE

Performance figures are based on gross weight, standard atmospheric conditions, level, hard-surface runways and no wind. The figures will vary with individual airplanes and with numerous factors that can affect performance.

### CRUISE SPEED

75% Power at 8,000 feet mean sea level . . . . .160 knots true air speed (KTAS)

**MAX RANGE** . . . . .800 nautical miles

**RATE OF CLIMB** . . . . .920 feet per minute at sea level

**MAXIMUM OPERATING ALTITUDE** . . . . .17,500 feet

### TAKEOFF PERFORMANCE

Ground Roll @ sea level . . . . .1,341 feet

Over 50-foot obstacle @ sea level . . . . .1,958 feet

### LANDING PERFORMANCE

Ground Roll @ sea level . . . . .1,014 feet

Over 50-foot obstacle @ sea level . . . . .2,040 feet

### STALL SPEED

Flaps Up (center of cg envelope) . . . . .64 knots indicated air speed (KIAS)

Flaps Down (center of cg envelope) . . . . .54 (KIAS)

## STRUCTURE

Design limit loads are in accordance with Normal Category, FAR 23. Limit load factors at maximum gross weight are:

+3.8 g's

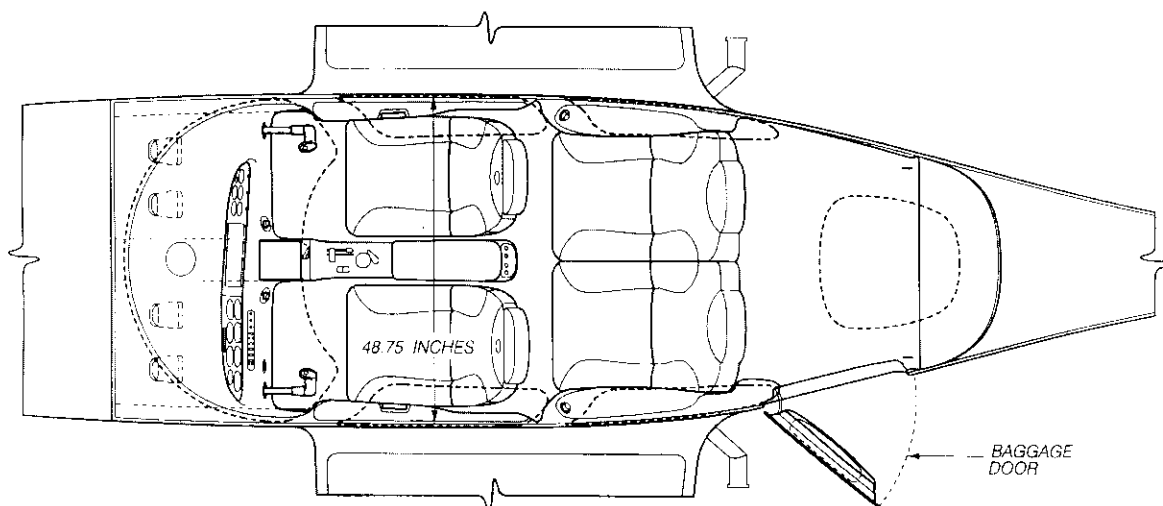
-1.9 g's

### DESIGN SPEEDS:

Vne . . . . .200 knots calibrated air speed (KCAS)

Full Flap Extension Speed . . . . .100 (KIAS)

Maneuvering Speed (Va) . . . . .135 (KIAS)



The monocoque fuselage is constructed primarily of composite materials. The design is optimized to reduce skin friction drag and to prevent flow separation. All flight and static loads are transferred to the fuselage skin structure. The main wing spar carry-through is attached to the fuselage in two locations and sits under the two front seats. The rear spar is attached to the fuselage side-walls, just aft of the rear seats.

The cabin area is bounded on the forward side by the firewall and at the rear by the aft baggage compartment bulkhead. Comfortable seating for four adults is provided.

The front seats are adjustable fore and aft through a wide range. The fore and aft travel path is angled upward for forward travel, so that shorter people will be positioned slightly higher as they adjust the seat forward. The backs of the front seats recline for passenger comfort.

Individual seats are used for the rear passengers. The seat backs may be individually folded forward to provide a semi-flat surface for bulky cargo extending forward from the baggage compartment.

The cabin is protected with energy absorbing structures that reduce crash impact loads under the cabin. Roll protection for the cabin occupants is provided by a composite roll cage within the fuselage structure. Two large doors afford easy entry into the cabin. Each door is protected from wind loads by a gas strut cylinder. Also, the cylinder makes the door almost weightless to the passengers opening or closing it. The cabin door latching system assures a tight fit for the doors, minimizing wind noise and moisture seepage. Both doors can be locked with keys.

The baggage compartment door is on the left side of the fuselage, aft of the wing. Its position eases loading of bags directly from the ground. The baggage door is locked from the outside with a key lock. For simplicity, the baggage door key is the same as the main door key.

The airplane is equipped with an acrylic windshield and windows. All replacements are accomplished by removing the interior panels around the window, removing the retaining clips and then the window itself. The reverse process is used to install a replacement window. This method of replacement shows no marks or other evidence of maintenance.

## WING

The Cirrus SR20 wing is built primarily of composite materials. The design features include:

- Wing skins that are smooth and seamless, contributing to the SR20's exceptional cruise performance
- A blend of several high performance airfoils effective for both high-speed cruise and exceptional stall characteristics
- High aspect ratio to reduce drag
- A higher wing loading to provide a smooth ride in turbulence
- Stall speeds comparable to other airplanes in its class

The wing is built in a conventional two-spar arrangement. When the upper and lower skins are bonded to the spars and ribs, the resulting structure forms a torsion box that carries all of the wing bending and torsion loads. The main spar is manufactured in one piece and is continuous from tip to tip. Both the ailerons and flaps are conventional aluminum construction utilizing flush riveting.

## EMPELLAGE

The empennage consists of a horizontal stabilizer, a two-piece elevator, a vertical fin and a rudder. All of the empennage components are conventional spar, rib and skin construction. The horizontal stabilizer is a single composite structural unit from tip to tip. The vertical stabilizer is integral to the main fuselage shell for smooth transfer of flight loads. Both the two-piece elevator and the rudder are conventional aluminum construction, utilizing flush riveting.

## LANDING GEAR

The main landing gear is attached to the integral composite structure placed between the two wing spars. This configuration provides the SR20 a wide track dimension contributing to its excellent ground handling characteristics. The landing gear struts are constructed of composite material for excellent fatigue resistance. The composite construction is both rugged and maintenance free. The main wheels and wheel pants are bolted to the struts. The main landing gear tires are 15 x 6.00-6.

The nose gear is of steel construction and is attached to the steel engine mount structure. The nose wheel is free casting. This design was chosen for its simplicity, light weight and ease of maintenance. Steering is accomplished by differential application of rudder and individual main gear wheel brakes. The nose wheel tire is 5.00 x 5.

The brakes are hydraulic caliper disc type. Left and right main gear wheel brakes are activated by toe pedals on the rudder pedals located on both sides of the cabin. A parking brake is also provided.

Standard wheel pants are easily removable to provide access to tires and brakes. Separate access is also provided for tire inflation and pressure checking.



## ■ POWERTRAIN

The Cirrus SR20 is powered by a Teledyne Continental IO-360-ES, six-cylinder, normally aspirated, fuel-injected engine, producing 200 hp at 2,700 revolutions per minute (RPM). Teledyne Continental has established a Time Between Overhaul (TBO) of 2,000 hours.

Ignition is provided by dual, conventional magnetos.

Fuel is distributed by an injection system to the individual cylinders. Because of the injection system, no carburetor de-icing is required. The injection system receives fuel from the engine-driven fuel pump. An electric boost pump is included to supplement the mechanical pump in case of partial failure. It is also used to prime during engine start and to suppress vapor lock.

A sponge-type filter mounted on the top of the engine filters induction air. A manually-activated alternate induction air path is included in case of obstruction to the primary air path. The induction system is balanced to provide equal airflow to each of the cylinders.

The engine is attached to the firewall by a four-point steel mount structure. The firewall attach points are structurally reinforced with gusset-type attachments that transfer thrust and bending loads into the fuselage shell.

The engine cowling is a two-piece unit designed for easy removal for maintenance. Tool-less access in the top cowling allows for checking and servicing the oil.

Cooling air enters the cowling through two inlets in front. Aluminum baffles then direct the air to the engine and cooling fins on the cylinders. Air exits the engine compartment through two outlets in the lower aft part of the cowling. Cowl flaps are not required because the cowling effectively cools the engine.

The standard propeller, manufactured by Hartzell, is a two-bladed constant-speed unit, 76-inches in diameter (an optional 74-inch diameter three blade is available.) Propeller pitch is automatically selected by a power control lever in the cockpit. A governor controls RPM. Engine oil pressure changes propeller pitch.

Engine controls on a center console are easily accessible to the pilot. They consist of a single-lever power control and a mixture control. The single-lever power control adjusts throttle setting, in addition to automatically adjusting propeller speed. This simple arrangement reduces pilot workload and increases safety. A key switch starts the engine and allows checking of individual ignition systems.

## **CONTROL SYSTEMS**

The Cirrus SR20 uses conventional flight controls for ailerons, elevator and rudder. The control surfaces are actuated by either of two single-handed side control yokes mounted in the instrument panel. These control yokes are designed for easy, natural use by the pilot, using the left hand on the left side and the right hand on the right side. The control system uses a combination of push rods, cables and metal bellcranks for precise control of the surfaces.

Electric roll and pitch trim are controlled through a four-position switch on the top of each control yoke. Yaw trim is factory set.

The flaps are set selectively to three positions (0%, 50%, 100%) using electrical actuation with mechanical interconnection. The single-slotted flaps provide low-speed lift enhancement and contribute to the SR20's takeoff and landing performance.

## **SYSTEMS**

### **FUEL SYSTEM:**

The Cirrus SR20 uses 100 octane, low lead aviation gas. Useable system capacity is 56.0 gallons. The tanks are rugged, crash resistant and require little maintenance. They are constructed of a composite material, which is naturally fuel resistant. Each tank has a lockable cap in the upper surface of the wing for fuel servicing and access panels in the lower surface for general inspection and maintenance. Flush drains are provided at system low points for pre-flight check.

A left and right tank fuel level gauge is located on the center console next to the fuel selector, in plain view of the pilot. The fuel selector valve also shuts off the fuel, but requires two purposeful actions to prevent inadvertent shutoff. The electric fuel boost pump switch is positioned nearby for easy access. A low fuel annunciator is also provided and is located on the panel, above the flight instruments.

### **ELECTRICAL SYSTEM:**

The SR20 electrical system has 24-volt direct current (VDC) for power generation and power distribution. The system is designed to provide uninterrupted power to the avionics and flight instruments during normal operation and battery backup power in the event of an electrical system failure.

#### **Power Generation:**

Primary power for the SR20 is supplied by a 24-VDC negative ground electrical system. The electrical power generation system consists of a 24-volt, 10-amp hour battery, a 28-volt, 75-amp alternator, a voltage regulator and an over-voltage protection system. The battery is an aviation grade, lead acid type with non-spill vent caps. The battery is used for engine starting and as an emergency power source in the event of alternator failure. The 75-amp alternator provides constant charging current for the battery and primary power to the aircraft electrical system during normal system operation. The voltage regulator provides transient suppression and constant voltage regulation of the unfiltered alternator power. To protect sensitive

instruments, the over-voltage protection system monitors the primary power bus and automatically limits the peak voltage. During sustained over-voltage and under-voltage conditions, the system lights an annunciator on the panel to warn the pilot.

**Power Distribution:**

The power distribution system for the SR20 consists of the main electrical power bus, the essential and non-essential power busses and the associated fuses, circuit breakers and switches. The main power bus receives power from the power generation system through bus fuses. The main power bus provides power to the essential and non-essential power busses through bus circuit breakers.

**Exterior Lights:**

The SR20 is equipped with standard wing tip navigation lights with integral anti-collision strobe lights. The separately controlled landing light is located in the cowl.

**Interior Lights:**

Interior lighting for the SR20 consists of separately controlled panel flood lights, flight instrument and engine instrument lighting. Avionics equipment dim automatically. There is an overhead cabin light for general activity and individual reading lights for each seat. The two front reading lights dim with the panel flood light control.

**FLIGHT INSTRUMENT SYSTEMS:**

The SR20 uses standard General Aviation flight instruments arranged in the 'basic-six' pattern. They include:

- True Airspeed Indicator
- Attitude Gyro
- Altimeter
- Turn Coordinator
- Directional Gyro with Heading Bug
- Vertical Speed Indicator

The SR20 is equipped with engine instruments and gauges to fully monitor the performance of the engine and related systems. They include:

- Tachometer
- Manifold Pressure
- Fuel Flow
- Vacuum Pressure
- Oil Temperature
- Oil Pressure
- Exhaust Gas Temperature
- Cylinder Head Temperature
- Voltmeter
- Ammeter

**Pitot-Static System:**

The pitot-static system consists of a single-heated pitot tube mounted on the left wing and two static ports located on the aft fuselage. The pitot heat is pilot-controlled through a panel-

mounted switch. An internally mounted alternate static pressure source provides backup static pressure in the event that the primary static source is blocked.



The **Cirrus SR20** avionics suite is designed to:

- Take maximum advantage of advances in technology
- Provide the pilot with the most information in a format that is easily interpreted for best situational awareness

The avionics components are mounted in the center console and are easily accessible from either front seat. The pilot can access any navigation or communications unit without the potential danger of becoming disoriented from having to reach for the controls.

The standard avionics in the SR20 is centered around the GARMIN International GNS-430, using Global Positioning System (GPS) as the primary navigation system. The Instrument Flight Rules (IFR) approach-certified GPS receiver provides position, flight plan and other navigation information. Standard VHF communications and navigation also is provided in this unit. The VHF navigation receiver allows VOR navigation and Instrument Landing System (ILS) approaches, including localizer and glideslope tracking.

Either GPS or VHF navigation radio information can be selected and displayed on a GPS/VOR/LOC/GS indicator.

Backup GPS navigation and VHF communications also are supplied in the SR20.

The integrated audio panel and intercom allow the easy selection of radio inputs to each pilot's headset, the selection of transmitting functions, a four-place stereo intercom and a marker beacon receiver.

A Mode C transponder is provided in the standard avionics package.

A digital altitude encoder provides altitude information to transponder and GPS receiver.

A large (10.4 inch) multi-function display (MFD) display. The MFD performs the following functions:

- Generates and displays a moving map based on GPS position data
- Displays SR20 checklists, performance charts and emergency information

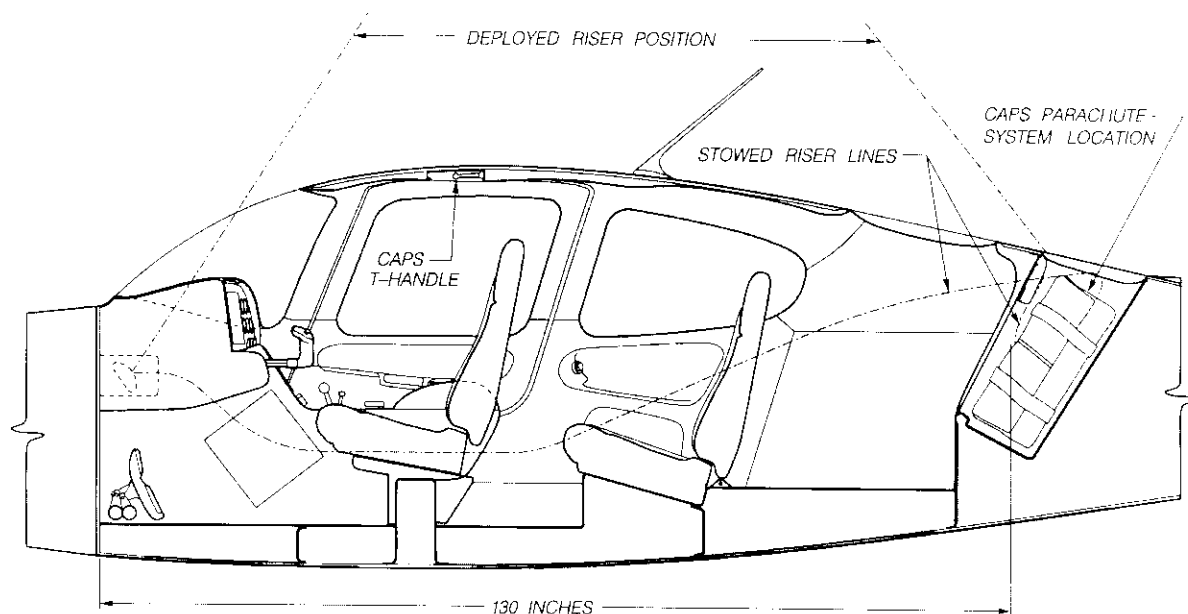
The moving map display can be configured by the pilot for an individual situation. Some of its features are:

- Selectable scales, available in a wide range
- Convenient navigation data, such as ground speed, tracking, airports and special use airspace

The moving map display provides the pilot with a real-time, clear picture of the airplane's position at all times.

The single-axis autopilot provides roll stabilization, turn command, heading hold and tracking of both GPS and VHF navigation receivers.

CIRRUS



The Cirrus Airframe Parachute System (CAPS) is located in a canister within the fuselage directly behind the cabin's aft baggage bulkhead. It is ready to deploy in order to decelerate and lower the entire aircraft, should controlled flight become impossible. The parachute will deploy only after the pilot or a passenger removes a placarded cover and then pulls a T-shaped activation handle located on the ceiling of the cabin. This two-step process prevents accidental activation.

When the T-handle has been pulled to the limit of its travel, a small rocket is ignited. The rocket pulls the parachute canopy from its canister, and the parachute quickly inflates. The forward parachute harness lines are located in covered channels just below the surface of the fuselage skin and connect to the upper engine mount fittings. They are pulled free from the skin by the deploying parachute. The aft parachute harness lines are connected to fittings located in the aft canister. This allows the airplane to establish an approximately level attitude and a stable rate of descent.

STAND

#### **GENERAL FEATURES & SAFETY SYSTEM:**

- Durable, Corrosion Resistant Composite Airframe Construction*
- Energy Absorbing Structural Design & Materials*
- Cirrus Airframe Parachute System*
- Certified Lightning Protection*
- Fixed Landing Gear, spring-type with fiberglass wheel fairings*
- Castering Nose Wheel with Fairing*
- Emergency Locator Transmitter (ELT)*
- Fire Extinguisher*

### **POWERPLANT AND PROPELLER:**

*Engine - Teledyne Continental Motors (TCM) IO-360-ES, 200 hp at 2,700 RPM, direct drive, six-cylinder, dual-ignition with radio shielding*

*Propeller - Hartzell, constant-speed, two blades, 76-inch diameter*

*Dynafocal Engine Mounts*

*Tuned Exhaust System*

*Propeller Spinner*

*Hour Recording (Hobbs hour meter)*

*24-Volt Geared Starter*

*Air Filter, dry type*

*Oil Filter, full flow*

*Oil Cooler*

*Dual Mufflers*

*Fuel Injection, altitude compensating*

*Engine-Driven Vacuum Pump with Automatic Electric Back-up*

### **FLIGHT INSTRUMENTS AND INDICATORS:**

*True Airspeed Indicator*

*Attitude Indicator*

*Altimeter*

*Turn Coordinator*

*Directional Gyro with Heading Bug*

*Vertical Speed Indicator*

*GPS / ILS Indicator*

*Electric Clock with OAT*

*Magnetic Compass*

*Vacuum Gauge*

*Fuel Quantity Gauges*

*Manifold Pressure/Fuel Flow Gauge*

*Oil Temperature/Oil Pressure Gauge*

*EGT/CHT Gauge*

*Volt/Amp Gauge*

### **COCKPIT, FLIGHT AND GROUND CONTROLS:**

*Dual Single-handed Side Control Yokes, elevator and aileron trim, microphone push to talk switch, autopilot disconnect*

*Stainless Steel Control Cables and Corrosion Resistant Control Rods*

*Flight Trim-Controls:*

- *Elevator Trim with indicator*
- *Aileron Trim with indicator*

*Engine Controls - center console with friction lock:*

- *Power (throttle and linked propeller pitch)*
- *Mixture*

*Dual Rudder Pedals and Brakes:*

- *Pilot's toe brakes*
- *Co-pilot's toe brakes*

*Parking brake*

*Electric Wing Flaps - 0, 50%, 100%*

*Stall Warning Device*

*Alternate Static Source*

*Alternate Induction Air*

*Fuel Selector*

*Fuel Boost Pump*

#### **ELECTRICAL SYSTEMS:**

*28-Volt, 75-amp Alternator*

*24-Volt, 10-amp Hour Battery*

*Master Control Unit (voltage regulator/power contactors)*

*Heated Pitot Tube*

*Circuit Breakers*

*Rocker Switches*

*External Power Receptacle*

#### **VACUUM SYSTEM:**

*Engine-Driven Mechanical Pump*

*Automatic Electric Auxiliary Pump*

#### **FUEL SYSTEM:**

*56-Gallon Usable Capacity*

*Engine-Driven Fuel Pump*

*Supplemental Electric Boost Pump*

*Fuel Filter / Water Separator with Quick Drain*

*Fuel Tank Quick Drains, flush type*

*Fuel Sampling Bottle*

*Flush-Mounted Lockable Fuel Caps*

**ENVIRONMENTAL CONTROLS:**

*Heater Muff, provides heat to cabin area, regulated by environmental controls*  
*Heat regulation and distribution*  
*Cabin fresh air regulation and distribution*  
*Windshield defrost*

**LIGHTING SYSTEM:**

*Instrument Panel Lighting*  
*Cabin Dome Light*  
*Individual Reading Lights (4)*  
*Automatic Avionics Dimming*  
*Navigation Lights*  
*Landing/Taxi Light*  
*Strobe Lights*

**EXTERNAL FEATURES:**

*Exterior Paint Design, in a choice of color combinations*  
*12-inch Registration Numbers*  
*Main Wheels, 15 x 6.00-6 with tubes*  
*Nose Wheel, 5.00 x 5 with tube*  
*Tie Down Rings, three removable*  
*Jack Points, removable*  
*Cabin and Baggage Door Locks with key*  
*Towbar*  
*Entrance Step and Handle*

**COCKPIT AND CABIN APPOINTMENTS:**

*Pilot/Co-pilot Adjustable Seats - fabric with individual inertia reel four-point restraint systems, meeting new FAA dynamic requirements, and magazine storage pockets on back of each seat*  
*Floor Carpeting and Headliner*  
*Tinted Windshield and Windows*  
*Dual Cabin Doors*  
*Map Pockets*  
*Two Rear Passenger Seats - fabric, individual inertia reel four-point restraint systems, fold-down*  
*Side Panel Armrests for all seats*  
*Carpeted Luggage Compartment with tie-down straps*  
*Cup Holders (4)*



12-volt Power Port

**STANDARD AVIONICS PACKAGE:**

**GARMIN International Avionics Suite**

*GNS 430 IFR approach-certified GPS/NAV/COM with required indicators*

*Back-up GPS and Communications*

*Audio Panel with Stereo intercom and Marker Beacon Receiver*

*Mode C Transponder (Altitude Encoding)*

*Large Multi-function Display with Moving Map and Aircraft Checklists*

*Single Axis Autopilot with Heading Hold and Navigation Tracking*

*Avionics Master Switch*

*Microphone and Cabin Speaker*

*Microphone/Speaker/Noise-Canceling Power Jacks for each seat*

**PRODUCT SUPPORT AND DOCUMENTS**

*Two-Year Limited Express Warranty*

*Pilot's Operating Handbook*

*Aircraft Log Book*

*Engine Log Book*

*Certificate of Airworthiness*



### **OBLIGATIONS OF CIRRUS**

Cirrus Design Corporation, Duluth, Minnesota, U.S., ("Cirrus") expressly warrants to the original owner that each new model Cirrus SR20 aircraft manufactured by it, and new aircraft equipment, except as noted below, will be free from defects in material and workmanship under normal use and service for a period of twenty-four (24) months or 1,000 flight hours after delivery, whichever comes first. Engine and engine accessories supplied by Teledyne Continental Motors ("Continental"), propeller and avionics supplied by third-party suppliers are specifically excluded from this warranty and are covered by their respective manufacturer's separate warranties.

Cirrus' sole and exclusive obligation under this warranty is limited to repairing or replacing, at its option, any part or parts which it deems defective within the applicable period. A defective part or parts shall be returned by the owner to an authorized Cirrus service center or other location designated by Cirrus. Replacement parts are warranted for the remainder of the applicable warranty period. (The location of Cirrus service centers will be furnished by Cirrus upon request at 1-877-424-7787.)

The repair or replacement of defective parts under this warranty will be made without charge to the owner for parts and labor for removal, installation and/or actual repair of such defective parts, provided the labor is performed by a Cirrus authorized service center. Import duties and sales or use taxes, if any, on replacements are the owner's responsibility.

### **EXCLUSIONS**

The provisions of this warranty do not apply to any warranted aircraft, equipment, accessories or service parts manufactured or sold by Cirrus, which have been subject to misuse, negligence or accident, or which have been repaired or altered outside of the Cirrus factory in any way, which in the judgement of Cirrus affect adversely its performance, stability or reliability. The provisions of this warranty do not apply to normal maintenance services (such as cleaning, control rigging, brake and other mechanical adjustments and maintenance inspections) or to the replacement of service items (such as light bulbs, brake linings, filters, hoses and tires) made in connection with such services, to normal wear and tear or required as maintenance, or to normal deterioration of soft trim and appearance items (such as paint, upholstery and rubber-like items) due to wear and tear and exposure, or to any aircraft equipment, accessories, or service parts sold separately which have been installed by the purchaser. Any commercial use of the aircraft voids this warranty, unless prior written authorization for such use is obtained from Cirrus.

Spare aircraft equipment, accessories and service parts actually sold by Cirrus (exclusive of products supplied by third-party suppliers which are covered by their separate warranties) are warranted for a period of six (6) months after installation or first use under the same terms, conditions and limitations of liability as other items covered by this warranty.

### **LIMITATIONS**

To the extent allowed by applicable law, THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED IN FACT OR BY LAW, INCLUDING ANY IMPLIED WARRANTY OF WORKMANSHIP, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES OF REPAIR OR REPLACEMENT AS ABOVE SET FORTH ARE THE SOLE AND EXCLUSIVE REMEDIES UNDER THIS WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE EXCLUDED. THIS WARRANTY IS IN LIEU OF ANY OTHER OBLIGATION OR LIABILITY OF CIRRUS OF ANY NATURE WHATSOEVER by reason of the manufacture, sale, lease, or use of such aircraft products, and Cirrus neither assumes nor authorizes anyone to assume it for other obligation or liability in connection with such aircraft.

### **SOLE WARRANTY**

The Obligations, Exclusions, Limitations, and Conditions contained herein are the sole warranty provided by Cirrus and its dealers and service centers. Cirrus and owner agree that there are no other obligations whether oral or in writing beyond this Limited Express Warranty.

## PILOT TRAINING

Transition training for one (1) SR20 pilot will be furnished to the initial Purchaser, subject to the following:

- A. All training will be conducted by Cirrus and/or its designated training organization.
- B. Pilot Training will consist of Cirrus' standard two-day transition training program as follows:
  - 1. Aircraft systems training with emphasis on the innovative aspects of the SR20. Examples include combined throttle/propeller control, side yoke and autopilot/trim system.
  - 2. Flight training to proficiency, in accordance with trainer's standards. Normally this aspect of training will result in 4-5 hours of flight time.
  - 3. Avionics systems training with particular emphasis on the use of GPS and the multi-function display.

The Cirrus transition training assumes a current, active general aviation pilot already rated in single-engine airplanes. Extra training will be available at additional cost for non-current pilots and for those who wish to contract for additional training services.

- C. Purchaser will be responsible for:
  - 1. Transportation of Purchaser (or Purchaser's pilot) to and from training site and living expenses during training.
  - 2. Providing an interpreter during the course of training if Purchaser (or Purchaser's pilot) is not conversant in English.
  - 3. Payment to Cirrus for any training requested beyond that described above.
  - 4. All aircraft required for flight training, as well as any landing fees, fuel costs, aircraft maintenance and insurance; including all other direct costs of operation required in connection with the operation of said aircraft during the course of such flight training.
  - 5. Providing Cirrus and/or its training contractor with a certificate of insurance, that specifies Cirrus and/or its training contractor as an additional insured.
- D. Cirrus will schedule all training and will endeavor to schedule training at a convenient time for Purchaser (or Purchaser's pilot).
- E. Neither Cirrus, nor its training contractor, will be responsible for competency of Purchaser (or Purchaser's pilot) during or after training. Cirrus does not warrant that this training will qualify Purchaser (or Purchaser's pilot) for any license, certificate or rating.
- F. Neither Cirrus, nor its training contractor, will be responsible for any delay in providing training due to causes beyond its reasonable control.
- G. All training furnished to Purchaser under the Agreement will be completed within twelve (12) months after delivery of the aircraft.