

NORMAL PROCEDURES

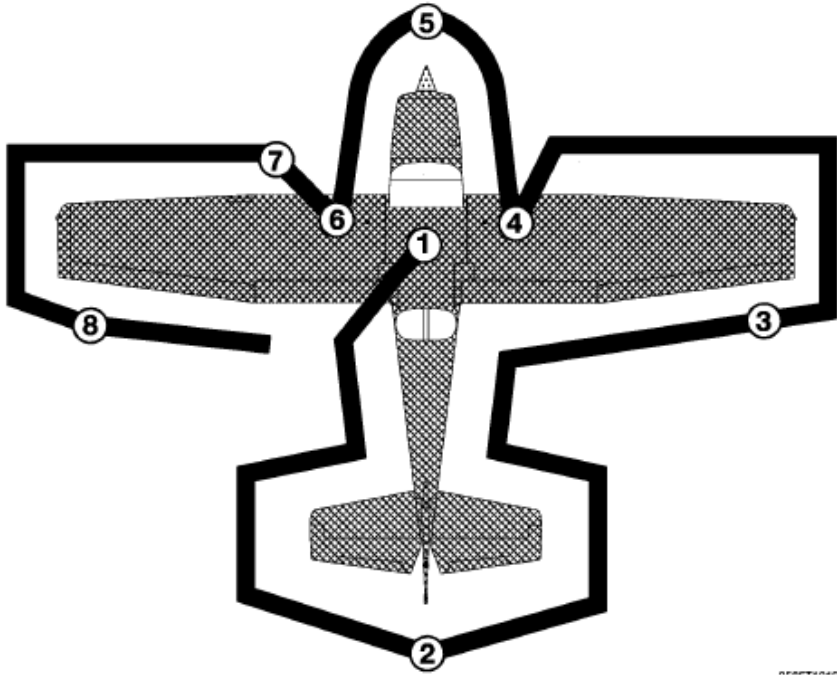
CESSNA-172S



REGISTRATION MARKING:

LY-BAK

PREFLIGHT INSPECTION



NOTE

Visually check airplane for general condition during walk around inspection. Airplane should be parked in a normal ground attitude to make sure that fuel drain valves allow for accurate sampling. Use of the refueling steps and assist handles will simplify access to the upper wing surfaces for visual checks and refueling operations. In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces. Also, make sure that control surfaces contain no internal accumulations of ice or debris. Prior to flight, check that pitot heater is warm to touch within 30 seconds with battery and pitot heat switches on. If a night flight is planned, check operation of all lights, and make sure a flashlight is available.

PREFLIGHT INSPECTION

1 CABIN

1. Pitot Tube Cover - **REMOVE** (check for pitot blockage)
2. Aircraft's documents - **CHECKED**
3. Garmin G1000 Cockpit Reference Guide - **ACCESSIBLE TO PILOT**
4. Airplane Weight and Balance - **CHECKED**
5. Parking Brake - **SET**
6. Control Wheel Lock – **REMOVE**
7. MAGNETOS Switch - **OFF**
8. AVIONICS Switch (BUS 1 and BUS 2) - **OFF**
9. MASTER Switch (ALT and BAT) - **ON**
10. Primary Flight Display (PFD) - **CHECK** (verify PFD is ON)
11. FUEL QTY (L and R) - **CHECK**
12. LOW FUEL L and LOW FUEL R Annunciators - **CHECK** (verify annunciators are not shown on PFD)
13. OIL PRESSURE Annunciator - **CHECK** (verify annunciator is shown)
14. LOW VACUUM Annunciator - **CHECK** (verify annunciator is shown)
15. AVIONICS Switch (BUS 1) - **ON**
16. Forward Avionics Fan - **CHECK** (verify fan is heard)
17. AVIONICS Switch (BUS 1) - **OFF**
18. AVIONICS Switch (BUS 2) - **ON**
19. Aft Avionics Fan - **CHECK** (verify fan is heard)
20. AVIONICS Switch (BUS 2) - **OFF**
21. PITOT HEAT Switch - **ON** (carefully check that pitot tube is warm to the touch within 30 seconds)
22. PITOT HEAT Switch - **OFF**
23. LOW VOLTS Annunciator - **CHECK** (verify annunciator is shown)
24. BEACON, NAV, STROB, LANDING and TAXI LIGHTS – **ON** and check
25. BEACON, NAV, STROB, LANDING and TAXI LIGHTS - **OFF**
26. Flaps – **set FULL**
27. MASTER Switch (ALT and BAT) - **OFF**
28. Elevator Trim Control - **TAKEOFF** position
29. FUEL SELECTOR Valve - **BOTH**
30. ALT STATIC AIR Valve - **OFF** (push full in)
30. Fire Extinguisher - **CHECK** (verify gage pointer in green arc)



PREFLIGHT INSPECTION

2. EMPENNAGE

1. Baggage Compartment Door - **CHECK** (lock with key)
2. Rudder Gust Lock (if installed) - **REMOVE**
3. Tail Tiedown - **DISCONNECT**
4. Control Surfaces - **CHECK** (freedom of movement and security)
5. Elevator Trim Tab - **CHECK** (security)
6. Antennas - **CHECK** (security of attachment and general condition)

3. RIGHT WING Trailing Edge

1. Flap - **CHECK** (security and condition)
2. Aileron - **CHECK** (freedom of movement and security)

4. RIGHT WING

1. Wing Tiedown - **DISCONNECT**
2. Main Wheel Tire - **CHECK** (proper inflation and general condition)
3. Fuel Tank Sump Quick Drain Valves – **DRAIN**
4. Fuel Quantity - **CHECK VISUALLY** (for desired level)
5. Fuel Filler Cap - **SECURE** and **VENT CLEAR**

5. NOSE

1. Fuel Strainer Quick Drain Valve (located on bottom of fuselage) - **DRAIN**
2. Engine Oil Dipstick/Filler Cap:
 - a. Oil level – **CHECK** (min. **5** quarts. **8** quarts for extended flight.)
 - b. Dipstick/filler cap – **SECURE**
3. Engine Cooling Air Inlets - **CHECK** (clear of obstructions)
4. Propeller and Spinner - **CHECK** (for nicks and security)
5. Air Filter - **CHECK** (for restrictions by dust or other foreign matter)
6. Nosewheel Strut and Tire - **CHECK** (proper inflation of strut and general condition of tire)
7. Static Source Opening (left side of fuselage) - **CHECK** (verify opening is clear)



PREFLIGHT INSPECTION

6. LEFT WING Leading Edge

1. Fuel Tank Vent Opening - **CHECK** (blockage)
2. Stall Warning Opening - **CHECK** (blockage)
3. Landing/Taxi Light(s) - **CHECK** (condition and cleanliness of cover)

7. LEFT WING

1. Wing Tiedown - **DISCONNECT**
2. Fuel Quantity - **CHECK VISUALLY** (for desired level)
3. Fuel Filler Cap - **SECURE** and **VENT CLEAR**
4. Fuel Tank Sump Quick Drain Valves – **DRAIN**
5. Main Wheel Tire - **CHECK** (proper inflation and general condition)

8. LEFT WING Trailing Edge

1. Aileron - **CHECK** (freedom of movement and security)
2. Flap - **CHECK** (security and condition)



BEFORE STARTING ENGINE

1. **Preflight Inspection** - COMPLETE
2. **Passenger Briefing** - COMPLETE
3. **Seats and Seat Belts** - ADJUST and LOCK (verify inertia reel locking)
4. **Brakes** - TEST and SET
5. **Circuit Breakers** - CHECK IN
6. **Electrical Equipment** - OFF
7. **AVIONICS** Switch (BUS 1 and BUS 2) – OFF
CAUTION: THE AVIONICS SWITCH (BUS 1 AND BUS 2) MUST BE OFF DURING ENGINE START TO PREVENT POSSIBLE DAMAGE TO AVIONICS.
8. **FUEL SELECTOR** Valve - BOTH
9. **FUEL SHUTOFF** Valve - ON (push full in)

STARTING ENGINE (With Battery)

1. **Throttle** Control - **OPEN 1/4 INCH**
2. **Mixture** Control - **IDLE CUTOFF** (pull full out)
3. **STBY BATT** Switch:
 - a. **TEST** - (hold for **20 sec.**, verify that green TEST lamp does not go off)
 - b. **ARM** - (verify that PFD comes on)
 - c. **NAV DATA** validity – (verify that NAV DATA is valid)
4. **Engine Indicating System** - **CHECK PARAMETERS**
(Verify **no red X's** through ENGINE page indicators)
5. **BUS E** Volts - **CHECK** (verify **24 VOLTS** minimum shown)
6. **M BUS** Volts - **CHECK** (verify **1.5 VOLTS** or less shown)
7. **BATT S** Amps - **CHECK** (verify **discharge** shown (negative))
8. **STBY BATT** Annunciator - **CHECK** (verify annunciator is shown)
9. **Propeller Area** - **CLEAR**
10. **MASTER** Switch (**ALT** and **BAT**) - **ON**
11. **BEACON** Light Switch – **ON**

NOTE: If engine is warm, omit priming procedure steps 12 thru 14 below.

12. **FUEL PUMP** Switch - **ON**
 13. **Mixture** Control - **SET** to **FULL RICH** (full forward) until stable fuel flow is indicated (approximately **3** to **5** seconds), then set to **IDLE CUTOFF**.
 14. **FUEL PUMP** Switch - **OFF**
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15. **MAGNETOS** Switch - **START** (release when engine starts)
16. **Mixture** Control - **ADVANCE SMOOTHLY TO RICH** (when engine starts)
17. **Oil Pressure** - **CHECK** (into the **GREEN BAND** range in **30** to **60** sec.)
18. **AMPS (M BATT** and **BATT S)** - **CHECK** (verify charge shown (positive))
19. **LOW VOLTS** Annunciator - **CHECK** (verify annunciator is not shown)
20. **NAV** Light Switch - **ON** as required
21. **AVIONICS** Switch (**BUS 1** and **BUS 2**) – **ON**

STARTING ENGINE (External Power)

1. **Throttle** Control - **OPEN 1/4 INCH**
2. **Mixture** Control - **IDLE CUTOFF** (pull full out)
3. **STBY BATT** Switch:
 - a. **TEST** - (hold for **20 sec.**, verify that green TEST lamp does not go off)
 - b. **ARM** - (verify that PFD comes on)
4. **Engine Indicating System** - **CHECK PARAMETERS**
(Verify **no red X's** through ENGINE page indicators)
5. **BUS E** Volts - **CHECK** (verify **24 VOLTS** minimum shown)
6. **M BUS** Volts - **CHECK** (verify **1.5 VOLTS** or less shown)
7. **BATT S** Amps - **CHECK** (verify **discharge** shown (negative))
8. **STBY BATT** Annunciator - **CHECK** (verify annunciator is shown)
9. **Propeller Area** – **CLEAR**
10. **MASTER** Switch (**ALT** and **BAT**) - **OFF**
11. **Propeller Area** - **CLEAR**
12. **External Power** - **CONNECT** (to ground power receptacle)
13. **MASTER** Switch (**ALT** and **BAT**) - **ON**
14. **BEACON** Light Switch - **ON**
15. **M BUS** VOLTS - **CHECK** (verify that approximately 28 VOLTS is shown)

NOTE: If engine is warm, omit priming procedure steps 16 thru 18 below.

16. **FUEL PUMP** Switch - **ON**
 17. **Mixture** Control - **SET** to **FULL RICH** (full forward) until stable fuel flow is indicated (approximately **3** to **5** seconds), then set to **IDLE CUTOFF**.
 18. **FUEL PUMP** Switch - **OFF**
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19. **MAGNETOS** Switch - **START** (release when engine starts)
20. **Mixture** Control - **ADVANCE SMOOTHLY TO RICH** (when engine starts)
21. **Oil Pressure** - **CHECK** (into the **GREEN BAND** range in **30** to **60** sec.)
22. **Power** - **REDUCE TO IDLE**
23. **External Power** - **DISCONNECT FROM GROUND POWER**
24. **Power** - **INCREASE** (to **1500** RPM for several minutes to charge battery)
25. **AMPS (M BATT** and **BATT S)** - **CHECK** (verify charge shown (positive))
26. **LOW VOLTS** Annunciator - **CHECK** (verify annunciator is not shown)

27. **Internal Power – CHECK:**

- a. **MASTER** Switch (**ALT**) - **OFF**
- b. **TAXI** and **LAND Light** Switches - **ON**
- c. **Throttle** Control - **REDUCE TO IDLE**
- d. **MASTER** Switch (**ALT** and **BAT**) - **ON**
- e. **Throttle Control** - **INCREASE** (to approximately 1500 RPM)
- f. **M BATT** Ammeter - **CHECK** (verify battery charging, amps positive)
- g. **LOW VOLTS** Annunciator - **CHECK** (verify annunciator is not shown)

28. **NAV Light** Switch - **ON** (as required)

29. **AVIONICS** Switch (**BUS 1** and **BUS 2**) – **ON**

WARNING: IF M BATT AMMETER DOES NOT SHOW POSITIVE CHARGE (+ AMPS), OR LOW VOLTS ANNUNCIATOR DOES NOT GO OFF, REMOVE THE BATTERY FROM THE AIRPLANE AND SERVICE OR REPLACE THE BATTERY BEFORE FLIGHT.

AFTER ENGINEER START UP

1. **Parking Brake - SET**
2. **Pilot and Passenger Seat Backs - MOST UPRIGHT POSITION**
3. **Seats and Seat Belts - CHECK SECURE**
4. **Cabin Doors - CLOSED and LOCKED**
5. **Flight Controls - FREE and CORRECT**
6. **Flight Instruments (PFD) - CHECK (no red X's)**
7. **Altimeters:**
 - a. **PFD (BARO) - SET**
 - b. **Standby Altimeter – SET**
 - c. **Autopilot (BARO) - SET**
8. **ALT SEL - SET**
9. **Standby Flight Instruments - CHECK**
10. **Fuel Quantity - CHECK** (verify level is correct)
11. **Mixture Control - RICH**
12. **FUEL SELECTOR Valve - SET BOTH**
13. **Autopilot - ENGAGE**
14. **Flight Controls - CHECK** (verify autopilot can be overpowered in both pitch and roll axes)
15. **A/P TRIM DISC Button - PRESS** (verify autopilot disengages and aural alert is heard)
16. **Flaps - Set 0°**
17. **Elevator Trim Control - SET FOR TAKEOFF**
18. **COM Frequency(s) - SET**
19. **NAV Frequency(s) - SET**
20. **FMS/GPS Flight Plan - AS DESIRED**
21. **XPDR – SET**
22. **CDI Softkey - SELECT NAV SOURCE**

ENGINE RUN UP

1. **Engine Instruments** – CHECK within limits
2. **Throttle Control** - 1800 RPM
 - a. **MAGNETOS Switch** - CHECK (RPM drop should not exceed 175 RPM on either magneto or 50 RPM differential between magnetos)
 - b. **VAC Indicator** - CHECK
 - c. **Engine Indicators** - CHECK
 - d. **Ammeters and Voltmeters** - CHECK
3. **Annunciators** - CHECK (verify no annunciators are shown)
4. **Throttle Control** - CHECK IDLE, 1000 RPM or LESS
5. **Throttle Control** - 1100 RPM
6. **Throttle Control Friction Lock** - ADJUST

TAXIING

1. **Taxi lights** – ON
2. **Parking Brake** – OFF
3. **Flight Time Chronometer** - SET
4. **Brakes** – TEST
5. **Flight Instruments** – CHECK
6. **Departure Briefing** – COMPLETED

BEFORE TAKEOFF

- 1.
2. **CABIN PWR 12V Switch** - OFF
3. **Wing Flaps** - UP - 10° (10° preferred)
4. **Taxi light** - OFF
5. **STROBE Light Switch** - ON
6. **Landing Light** - ON
7. **Cabin Windows** - CLOSED and LOCKED
8. **Traffic on final approach and wind** - CHECK
9. **Brakes** – RELEASE



NORMAL TAKE OFF

1. **PITOT heat** – as required
Wing Flaps - **UP - 10°** (10° preferred)
2. **Throttle Control** - **FULL** (push full in)
3. **Mixture Control** - **RICH**
4. **Elevator Control** - **LIFT NOSEWHEEL AT 55 KIAS**
5. **Climb Airspeed** - **70 - 80 KIAS**

AFTER TAKE OFF

At 300 ft AGL:

1. **Wing Flaps** - **UP**
2. **Landing Light** - **OFF**

SHORT FIELD TAKE OFF

1. **Wing Flaps** - **10°**
2. **Brakes** - **APPLY**
3. **Throttle Control** - **FULL** (push full in)
4. **Mixture Control** - **RICH**
5. **Brakes** - **RELEASE**
6. **Elevator Control** - **SLIGHTLY TAIL LOW**
7. **Climb Airspeed** - **56 KIAS** (until all obstacles are cleared)
8. **Wing Flaps** - **RETRACT SLOWLY** (when airspeed is more than **60 KIAS**)

ENROUTE CLIMB

1. **Airspeed** - **70 - 85 KIAS**
2. **Throttle Control** - **FULL** (push full in)
3. **Mixture Control** - **RICH** (above 3000 feet pressure altitude, lean for maximum RPM)

CRUISE

1. **Power** - **2100 - 2700** RPM (no more than 75% power recommended)
2. **Elevator Trim** Control - **ADJUST**
3. **Mixture** Control - **LEAN** (for desired performance or economy)
4. **FMS/GPS** - **REVIEW** and **BRIEF** (OBS/SUSP softkey operation for holding pattern procedure (IFR))

DESCENT

1. **Power** - **AS DESIRED**
2. **Mixture** – **RICH / ADJUST** (if necessary to make engine run smoothly)
3. **Altimeters**:
 - a. **PFD (BARO)** - **SET**
 - b. **Standby Altimeter** - **SET**
4. **ALT SEL** - **SET**
5. **CDI** Softkey - **SELECT NAV SOURCE**
6. **FMS/GPS** - **REVIEW** and **BRIEF** (OBS/SUSP softkey operation for holding pattern procedure (IFR))

APPROACH FOR LANDING (On downwind leg, abeam)

- | |
|---|
| <ol style="list-style-type: none">1. Pilot and Passenger Seat Backs - MOST UPRIGHT POSITION2. Seats and Seat Belts - SECURED and LOCKED3. FUEL SELECTOR Valve - BOTH4. Mixture Control - RICH5. LAND Light Switch - ON6. Autopilot - OFF7. CABIN PWR 12V Switch – OFF8. Approach briefing - Completed |
|---|

APPROACH FOR LANDING (On base leg)

1. **Airspeed** - **75 - 85** KIAS (recommended)
2. **Wing Flaps** - **10° (UP - 10°** below **110** KIAS)

ON FINAL for NORMAL LANDING

1. **Airspeed** - **65 - 75** KIAS (flaps **UP**)
Airspeed - **60 - 70** KIAS (Flaps **FULL, 10° - FULL** below **85** KIAS)
2. **Elevator Trim** Control - **ADJUST**
3. **Parking brake** – **OFF**
4. **Touchdown** - **MAIN WHEELS FIRST**
5. **Landing Roll** - **LOWER NOSEWHEEL GENTLY**
6. **Braking** - **MINIMUM REQUIRED**

SHORT FIELD LANDING

1. **Airspeed** - **65 - 75** KIAS (Flaps **UP**)
2. **Wing Flaps** - **FULL**
3. **Airspeed** - **61** KIAS (until flare)
4. **Elevator Trim** Control - **ADJUST**
5. **Power** - **REDUCE TO IDLE** (as obstacle is cleared)
6. **Touchdown** - **MAIN WHEELS FIRST**
7. **Brakes** - **APPLY HEAVILY**
8. **Wing Flaps** - **UP**

BALKED LANDING

1. **Throttle Control - FULL** (push full in)
2. **Wing Flaps - RETRACT to 20°**
3. **Climb Speed - 60 KIAS**
4. **Wing Flaps - 10°** (as obstacle is cleared), then UP (after reaching a safe altitude and **65 KIAS**)

AFTER LANDING

1. **Vacate runway** – as soon as possible
2. **Wing Flaps – UP**
3. **Strobe lights – OFF**
4. **Landing light – OFF**
5. **Taxi light – ON**
6. **PITOT heat - OFF**

SECURING AIRPLANE

1. **Parking Brake - SET**
2. **Throttle Control - IDLE** (pull full out)
3. **Electrical Equipment - OFF**
4. **Taxi light – OFF**
5. **NAV Light Switch - OFF**
6. **AVIONICS Switch (BUS 1 and BUS 2) - OFF**
7. **Mixture Control - IDLE CUTOFF** (pull full out)
8. **MAGNETOS Switch - OFF**
9. **BEACON Light Switch – OFF**
10. **MASTER Switch (ALT and BAT) - OFF**
11. **STBY BATT Switch - OFF**
12. **Control Lock - INSTALL**
13. **FUEL SELECTOR Valve - LEFT or RIGHT** (to prevent crossfeeding between tanks)