



# **Normal Checklist**

## **Diamond DA 20-C1**

## Airspeeds for normal operation

Unless stated otherwise, following are the applicable airspeeds for maximum take-off and landing weight. The airspeeds may also be used for lower flight weights. (All speeds at sea level)

<b>Takeoff</b>	KIAS
Climb over 50 ft obstacle.....	58
Best Rate-of-Climb ( $V_Y$ ); Flaps: T/O.....	68
Best Rate-of-Climb ( $V_Y$ ); Flaps: Cruise.....	75
Best Angle-of-Climb ( $V_X$ ); Flaps: T/O.....	57
Best Angle-of-Climb ( $V_X$ ); Flaps: Cruise.....	60
 <b>Landing</b>	
Recommended Approach; Flaps: LDG.....	55
Balked Landing Climb Speed; Flaps: LDG.....	57
 Max demonstrated X-wind speed, T/O & LDG.....	20
 <b>Cruise</b>	
Maximum rough-air speed ( $V_{NO}$ ).....	118
Maximum full control-surface deflection ( $V_A$ ).....	106
Max LDG Flaps Extended Speed ( $V_{FE}$ LDG).....	78
Max T/O Flaps Extended Speed ( $V_{FE}$ TO).....	100

## Preparation

Navigation.....Planned  
Performance & Range.....Computed & Safe  
Weight & Balance.....Within Limits  
Weather.....Suitable  
Airplane Documents.....Airworthy & Onboard  
Baggage.....Weighed & Stowed  
Charts & Nav. Equipment.....Onboard

## Preflight Inspection

### Cabin Checks

Windshield..... Clean  
Flight Control Lock.....Remove  
Ignition Switch.....Off  
Mixture.....Idle Cutoff  
Master Switch.....On  
Warning Lights.....On  
Fuel Quantity.....Check  
Circuit Breakers.....Check  
Flaps.....Extend to LDG  
Lights.....Check  
Lights.....Off  
Master Switch.....Off  
Fire Extinguisher.....Charged & Secure  
First Aid Kit.....On Board  
ELT.....Check Plugged In

## Left Wing

Main Gear.....Inspect  
Entire Wing.....Inspect  
Stall Warning.....Inspect  
Pitot-Static Probe.....Inspect  
Taxi & Landing Lights.....Inspect  
Wing Tip.....Inspect  
Position Lights & Strobe.....Inspect  
Aileron Balancing Weight.....Inspect  
Aileron including inspection panel.....Inspect  
Wing Flap.....Inspect  
Main Gear.....Inspect from aft

## Fuselage & Empennage

Fuel Quantity.....Dip tank min. ½  
Skin.....Inspect  
Fuel Tank Vent.....Inspect  
Fuel Drain.....Drain  
Maintenance Fuel Drains.....Inspect  
Antennae.....Inspect  
Stabilizer.....Inspect  
Rudder.....Inspect

## Right Wing

Main Gear.....Inspect from aft  
Wing Flap.....Inspect  
Aileron, including inspection panel.....Inspect  
Aileron Balancing Weight.....Inspect  
Position Lights & Strobe.....Inspect  
Wing Tip.....Inspect  
Main Gear.....Inspect  
Entire Wing.....Inspect

## Nose

Right Step.....Inspect  
Temperature Probe.....Check  
Air Intake (right).....Clear  
Oil Quantity.....Check  
(Min. 4qt; Max 6qt)  
Cowling.....Inspect  
Nose Gear.....Inspect  
Propeller & Spinner.....Inspect  
Engine Cowling Air Inlets.....Clear  
Engine Air/Cabin Heat Vents.....Inspect  
Air Intake (left).....Clear  
Left Step .....Inspect

## Before Starting Engine

Preflight inspection.....Complete  
Aircraft Documents.....On board  
Baggage.....Stowed & Secured  
Hobbs Time.....Record  
Passenger briefing.....Complete

\*Canopy \*Emergency Exit \*Seatbelt \*Emergency Procedure  
\*Fire Extinguisher \*First Aid Kit \*ELT \*Flight Controls  
\* Radio \*Traffic

Flight Controls.....Free & Correct (Visual Check)  
Canopy.....Closed & Secure  
Rudder Pedals.....Adjusted & Locked  
Seatbelts.....Fastened & Adjusted  
Circuit Breakers.....Check  
Parking Brake.....Set  
Brake Pressure .....Check  
Fuel Shutoff Valve.....On (Push In & Lock)  
Throttle.....Free & Idle Position  
Throttle Friction.....Check  
Alternate Air.....Off  
Avionics Master Switch & Electrics.....Off  
Cockpit Check.....Key In Ignition  
Master Switch (Battery side ONLY).....On  
Generator Warning Light.....On  
Canopy Warning Light .....Off (press to check)  
Trim Indicator.....Neutral  
Position Lights (night).....On  
Instrument Lighting (night).....As required

Oil temp below 100°F.....Cold Start

Oil temp at or above 100°F.....Warm Start

Oil temp above 170°F within 10 minutes from the last engine shut down.....Hot Start

## Starting Engine

### Cold Start

Brakes.....Hold  
Propeller Area.....Clear (call "Clear")  
Mixture.....Full Rich  
Fuel Pump.....On  
Fuel Prime.....On  
Throttle.....Fully Open for 5 to 10 sec → Idle

### Caution

**Do not leave the ignition switch on "Start" position once the engine makes a "starting sound"**

Ignition Switch.....Start (Max.10sec)  
  
Throttle.....1000 RPM  
Starter Warning Light.....Extinguished  
Oil Pressure.....Check (Green 30-60psi)  
Fuel Prime.....OFF  
Fuel Pump.....OFF  
Generator side.....On (Check Charging)

## Warm Start

Oil temperature at or above 100°F

Brakes .....Hold  
Propeller Area.....Clear (call "Clear")  
Mixture.....Full Rich  
Fuel Pump.....ON  
Fuel Prime.....ON  
Throttle .....Fully open for 1 to 3 sec → 1/2 - 1" open

### Caution

**Do not leave the ignition switch on "Start" position once the engine makes a "starting sound"**

Ignition Switch..... Start (Max.10sec)  
Throttle.....1000 RPM  
Starter Warning Light.....Extinguished  
Oil Pressure.....Check(Green 30-60psi)  
Fuel Prime.....Off  
Fuel Pump.....Off  
Generator side.....On (Check Charging)



## Hot Engine Start

Oil temperature above 170°F within 10 minutes from the last engine shut down

Mixture.....Full Rich  
Brakes.....Hold  
Fuel Pump.....OFF  
Fuel Prime.....OFF  
Throttle.....Half-open  
(and be ready to advance slowly as you engage ignition)  
Propeller Area.....Clear (call "Clear")

### Caution

**Do not leave the ignition switch on "Start" position once the engine makes a "starting sound"**

\*Next two items at the same time\*

\*Ignition Switch.....Start  
\*Throttle.....Advance towards full position slowly  
until engine starts and **be ready to reduce immediately**

Starter Warning Light.....Extinguished  
Oil Pressure.....Check (Green 30-60psi)  
Fuel Prime.....OFF  
Fuel Pump.....OFF  
Mixture..... Full Rich  
Generator side.....On (Check Charging)

## To clear a flooded engine

This procedure is not to start the engine but be ready for the possible engine start. If the engine start mixture should be full rich.

Fuel Pump.....Off  
Fuel Prime.....Off  
Mixture .....Cut off  
Propeller Area.....Call "Clear" (for possible engine start)  
Throttle..... Open 1/2 - 1 inch  
Ignition Switch.....Start

- The engine should start for a short period and then stop. Excess fuel has now been cleared and follow the engine start procedures cold start or warm start accordingly.
- If still not successful to start the engine, wait for 15-30 minutes with the throttle in the fully open position. This will help to evaporate the excess fuel and also to give a break to the starter and battery before the next attempt.

## EPU Start

Master Switch .....Off (before EPU attached)  
Avionics Master Switch.....Off  
EPU Light.....On  
EPU Switch.....On  
Voltmeter.....Check 12 to 14 volts  
Master Switch.....On

Starting Procedure.....Follow one of the starting procedures

After starting

EPU Switch.....Off  
Signal ground crew EPU out.....EPU Light Off  
Master Switch (GEN).....Off  
Battery Voltage .....Check approx. 12V  
Master Switch (GEN).....On, check approx. 14V  
GEN warning light.....Check off  
Generator side.....On (Check Charging)

## Pre-Taxi

Cabin Heat and Defrost.....As Required  
Flaps.....Check and Retract in Stages  
Dead Mag Check.....Both - Left - Right – Both  
Avionics Master Switch.....On  
Transponder.....Standby  
ATIS.....Copy  
Radios/Nav/GPS.....Set  
Taxi Clearance.....Obtain  
Warning Lights.....Push to test  
Flight Instruments.....AI Set / HI Set  
Fuel Prime.....Check Off  
Fuel Pump.....Check Off  
Fuel Pressure.....Check(>3.5psi)  
Engine Gauges.....Check  
Parking Brakes.....Off  
Flight Instruments & Brake.....Check while rolling

**Use Rudder First and Brakes Sparingly For Turning**

## Run-up

Aircraft .....Into Wind (nose wheel straight)  
Area Behind A/C.....Clear  
Parking Brake.....On  
Brakes .....Hold  
Fuel Shutoff Valve.....On (Push In)  
Throttle.....1700 RPM  
Magnetos Check.....( Both - Left - Both - Right - Both)

**(Max drop: 150 RPM; Max difference: 50 RPM)**

Mixture .....Check lean function for max power, then full rich  
Generator Load (Ammeter).....Check  
Vacuum Gauge.....Check Green  
Alternate Air.....On **(No change in RPM)** Off  
Throttle.....Idle, then 1000 RPM

## Pre-Takeoff

Safety Belts.....Fastened  
Canopy.....Verify Latched  
Canopy Warning Light.....Off (Push to Check)  
Master Switch.....On (Both Sides)  
Ignition Switch.....Both  
Flaps ..... T/O  
Flight Instruments.....Set & Check  
Fuel Quantity.....Check sufficient  
Oil Temp.....75°F minimum  
Oil Pressure.....Normal (30-60psi)  
Voltmeter.....Green  
Circuit Breakers..... IN  
Warning Lights.....Push to Test  
Trim..... Neutral  
Controls.....Free  
**Crew .....Take Off Safety Briefing**  
Mixture.....Rich/Set  
Avionics.....Check & Set as Required  
Fuel Pump.....On  
Parking Brake.....Off

## Crew Take Off Briefing

**This will be a Normal/Soft Field/Short Field Take Off**

- If the **Engine Fails On the runway** I will **close the Throttle** and **Stop Right Ahead**
- If the **Engine Fails After Take Off** with **Sufficient runway remaining** I will **close the Throttle** and **Land Straight Ahead**
- If the **Engine Fails After Take Off** with **Insufficient runway remaining** I will **Lower the Nose (60KIAS)** pick a **Landing place within 45° either side of the nose**

**If altitude permits I will attempt to rectify the problem**

- **My Go / No Go point will be abeam \_\_\_\_\_**  
**If I am not airborne** by this point, I will **close the Throttle** and **Stop Right Ahead**
- **In the event of an Emergency \_\_\_\_\_ will have control.**

## Hold Short/Runway Checks

T/O Time.....Record  
T/O Clearance.....Obtain  
Lights.....As required  
Mixture.....Rich/Set  
Heading Indicator.....Agrees with Rwy Heading  
Tachometer .....Min. 2000RPM on Full Throttle  
Engine Gauges.....Green & Normal  
Airspeed.....Alive



## After Takeoff /Climb Checks

Power.....Normal  
Oil Temp & Pressure.....Normal  
Flaps (400ft).....Up (cruise config)  
Fuel Pump.....Off  
Transponder.....check ALT

## En-route Check

Fuel.....Sufficient  
Oil Temp.....Within limit  
Oil Pressure.....Green  
Mixture.....Lean for best power  
Radio.....Set  
Engine Power.....Set for cruise  
Heading Indicator.....Set  
Altimeter.....Set  
Time .....Set

## Pre Landing Checks

Parking Brakes.....Off  
Brakes.....Check pressure  
Mixture.....Rich  
Fuel Pump.....On  
Master Switch.....On (Both On)  
Magnetos.....Both  
Engine Gauges.....Check  
Fuel Quantity.....Check  
Circuit Breakers.....Check in  
Flight Instruments.....Set ( HDG & ALT)  
Seatbelts.....Fastened  
Baggage .....Secure  
Passenger Safety Review.....Complete

***Crew Briefing on Airport Elevation, Runway, Circuit Ht,  
Approach Landing & Go Around Procedures***

***Warm up Engine Every 500 ft on a Power Off  
Descent by bringing the Power to 1500-1700RPM***

## Approach

Airspeed.....60 KIAS (T/O Flaps)  
Airspeed.....55 KIAS( LDG Flaps)

## Go Around

Power.....Full  
Mixture.....Full Rich  
Flaps.....T/O  
Airspeed....Best Angle( $V_x$ ).....58KIAS (T/O Flaps)  
                  Best Rate( $V_y$ ).....68KIAS (T/O Flaps)  
Positive Climb.....Check VLT&VSI  
Flaps.....Cruise  
Airspeed...Best Rate( $V_y$ ) .....75KIAS (Cruise Flaps)

## After Landing

Throttle .....As required  
Mixture.....Keep Full Rich  
Fuel Pump.....Off  
Taxi Clearance.....Obtain  
Transponder.....Standby  
Flaps.....Up (Cruise)  
Landing/Taxi Lights.....As required  
Strobe Lights.....Off  
Landing Time.....Record

## Shut Down

Throttle.....1200 RPM  
Radio.....Check ELT(121.50)  
Avionics Master Switch.....Off  
Electrics & Fuel Pump.....Off

### Caution

#### Do not engage starter during Live Magneto Check

Live Magneto Check .....Both-Off-Both  
Throttle.....Idle  
Mixture.....Idle Cutoff  
Ignition Switch.....Off  
Master Switch.....Off  
Hobbs Time.....Record  
Flight Control Lock.....Install  
Aircraft .....Chocked & Secure  
Flight Plan.....Clos

