Diamond DA40 XLS (GFC700, A.C.)

Initial
Check performance:
- Weather and Density Altitude
- Weight and Balance

Flight Plan — File as req.
Papers (AROW, VOR) — Check
Fire Extinguisher — Check
Remove and stow:
- Control lock
- Pitot cover
- Cowl plugs
- Tie-downs
- Chocks

G1000 SD Cards — Check
Master — On
Flaps — Set to T/O, then LDG
Pedals — Adjust
Hobbs & Tach — Check vs. log
Lights — Test int., ext.
Pitot Heat — Test for IFR
Fuel Gauges — Check level
Master — Off

Exterior
Check quantity and quality:
- Fuel — Sump and measure
- Oil — Check (4-8 qt, ideal 6 qt)

Check for damage and debris:
- Intakes/Caps/Drains/Vents
- Propeller and Spinner
- Exhaust
- Canopy
- Stall Orifice
- Surfaces and Controls
- Pitot and Static Ports
- Gear/Tires/Brakes
- Antennas

Final walk around — Complete

Interior
Passengers:
- Briefing — Complete
- Headsets — Connect
- Seatbelts — On

ELT — Set to ARM
Circuit Breakers — Check
Front Canopy — Close
Rear Door — Close
Fuel — Set to fullest tank
Brakes — Check

Pre-Engine Start
Electrical — Check all off
Propeller — Set to high RPM
Mixture — Set to idle cutoff
Master — On
Flaps — Up
Transponder — Select VFR
MFD — Select “Engine” Page
Fuel Totalizer — Set
Prop — Clear

Engine Start
If engine is cold…
Throttle — Open halfway
Fuel Pump — On
Mixture — Set to rich for 3-5s
Throttle — Open slightly

If engine is hot…
Throttle — Open slightly
Fuel Pump — On
Mixture — Set to rich for 3s

Ignition — Turn to start
Mixture — Set to rich
Throttle — Set to 1000 RPM
Oil Pressure — Check
Voltage — Check
Annunciators — Check
Fuel Pump — Off
Mixture — Lean for ground ops

Pre-Taxi / Taxi
Avionics Master — On
Intercom — Test w/ passengers
Radio — Test at un-towered field
Autopilot — Test
Position + Taxi Light — On
ATIS / AWOS — Listen and note
Altimeters — Set and check
Clearance — Request as req.
Transponder — Set code
Radio — Set departure freq.
Radio — Ready to taxi
Mixture — Richen slightly for taxi
Brakes — Test
Check instruments:
- Altimeters — Correct
- HSI and Compass — Correct
- Airspeeds — Zero

Run-up
Brakes — Set
Trim — Set to T/O
Flight Controls — Free & Correct
Alt. Induction Air — Test, Close
Alt. Static Air — Test, Close
Annunciations — None exc. Pitot
Fuel Tank — Switch
Fuel Pump — On
Mixture — Set to best power
Throttle — Set to 2000 RPM
Propeller — Cycle 3 times:
- RPM Decrease
- Manifold Pressure Increase
- Oil Pressure Decrease

Ignition — Test L & R Magnetos
Alternator Load — Check
Fuel/Oil Pressure — Check
Oil Temperature — Check
Throttle — Test Idle
Throttle Friction — Check/Set

Pre-takeoff
VOR Check — Current for IFR
FMS Flight Plan — Activated
CDI Nav Source — Set as req.
Transponder — Check code
Front Canopy — Locked
Rear Door — Locked
Air Conditioning — Off as req.
Radio — Ready for departure

Turn over for in-flight checklists
→ → →

Securing
Transponder — Set to VFR
Throttle — Set to 1000 RPM
Hobbs/Tach & Fuel — Note
Lights — Off
Avionics Master — Off
Ignition — Check ground as req.
Mixture — Lean to cutoff
Ignition — Off
Pilot Pedals — Adjust for lock
Master — Off
Control Lock, Covers — Install
Tie-downs — Install

Diamond DA40 XLS (GFC700, A.C.)

Takeoff
Time — Note
Landing + Strobe Light — On
Flaps — Set to T/O
Fuel Pump — On
Pitot Heat — On
Mixture — Set as req. for alt.
Throttle — Set to full
RPM — Check ≤2700 RPM
Oil Pressure — Check
Brakes — Release
Rotate at 60 KIAS
Initial climb at 67 KIAS
Flaps — Up at safe altitude
Fuel Pump — Off >1,000’ AGL
Continue climb at 67+ KIAS

Climb
Cruise climb at 75-85 KIAS
Landing + Taxi Light — Off
Mixture — Lean as req. for alt.
Oil Temperature — Check
CHT — Check
Fuel Pump — On >10,000’ MSL

Cruise
Propeller — Set to 2450 RPM
Fuel Pump — Off once stable
Mixture — Lean for alt.
Fuel Tank — Switch as req.

Descent
Fuel Tank — Set to fullest tank
Fuel Pump — Off <10,000’ MSL
Mixture — Set richer as req.
ATIS / AWOS — Listen and note
Altimeters — Set for destination
Radio — Call as req.

Constant Airspeed
AS — Maintain ≈130 KIAS
VS — Maintain ≈500 fpm
Propeller — Set to 2200 RPM
Throttle — Set to 15” or as req.

Low Airspeed (Steep)
AS — Maintain ≈80 KIAS
VS — Maintain ≈500 fpm
Propeller — Set to 1800 RPM
Throttle — Set to 10” or as req

High Airspeed (Shallow)
AS — Maintain <178 KIAS
VS — Maintain as req.
Propeller — Set to 2450 RPM
Throttle — Set to full or as req.

Pre-landing
Seatbelts — On
Landing + Taxi Light — On
Fuel Pump — On
Mixture — Set for alt.
Flaps — Set to T/O at 108 KIAS
Flaps — Set to LDG at 91 KIAS
Air Conditioning — Off as req.

Landing
Approach at 73 KIAS
Land at 60-65 KIAS

Go Around
Mixture — Set richer as req.
Propeller — Set to high RPM
Throttle — Set to full
Flaps — Set to T/O
Initial climb at 67 KIAS
Flaps — Up at safe altitude

After Landing
Flaps — Up
Pitot Heat — Off
Fuel Pump — Off
Landing + Strobe Light — Off
Mixture — Lean for ground ops
Trim — Set to T/O
Air Conditioning — On as req.

Ground Speed (kt)

Rate (ft/NM)	65	70	75	80	85	90
200	217	233	250	267	283	300
250	271	292	313	333	354	375
300	325	350	375	400	425	450
350	379	408	438	467	496	525
400	433	467	500	533	567	600
450	488	525	563	600	638	675
500	542	583	625	667	708	750
550	596	642	688	733	779	825
600	650	700	750	800	850	900
650	704	758	813	867	921	975
700	758	817	875	933	992	1050
750	813	875	938	1000	1063	1125
800	867	933	1000	1067	1133	1200

V-Speeds (KIAS)

V_R	59	T/O flaps
V_X/V_Y	67	T/O flaps
V_S	53	no flaps
V_{S0}	52	LDG flaps
V_A	111	
V_{NO}	129	
V_{NE}	178	
V_{FE}	108	T/O flaps
V_{FE}	91	LDG flaps