

Diamond DA40

Preflight Inspection Cockpit

Flight Control Lock	Remove
Airplane Documents	On Board
Ignition Key	pulled out
Front canopy / rear door	Check
Electrical Equipment	Off
Prop levers	Full FWD
Mixture and Throttle	Idle Cutoff
Propeller	Full FWD
Circuit Breakers	Check
Master Switch	On
Annunciator Panel Lights	Check
Fuel Quantity	Check
Flaps	Extend to Ldg
Lights	Check
Lights	Off
Master Switch	Off
Fire Extinguisher	charged/secure
Rescue Hammer	On Board

Fuselage and Empenage

Fuel Quantity	min 1/2
Skin	Inspect
Fuel Tank Vent	Inspect
Maintenance Fuel Drains	Inspect
Stabilizer	Inspect
Rudder	Inspect
Static Wicks	3
Antennas	Check Security
Gascolator	Sample

Right wing

Main Gear	Inspect
Slip Skid	Aligned
Break Line	Attached not leaking
Breaks	Serviceable
Entire Wing	Inspect
Static Wicks	2
Fuel Drain	Sample
Flap	Inspect
Aileron Balancing Weights	Inspect
Aileron incl inspection panel	Inspect
Wing Tip	Inspect
Position/Strobe Lights	Inspect
Landing/Taxi Light(s)	Inspect

Nose

Right Step	Inspect
Temp Probe	Check
Propeller and spinner	Inspect
Air intakes	Clear
Nose Gear	Inspect (SLIP SKID)
Oil Quantity	Min 4, Max 6
Cowling	Inspect
Engine Air/ Cabin Heat vents	Inspect
OAT Probe	Inspect

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Left Wing

Main Gear	Inspect
Slip Skid	Aligned
Entire Wing	Inspect
Static Wicks	2
Fuel Drain	Sample
Flap	Inspect
Aileron Balancing Weights	Inspect
Aileron incl inspection panel	Inspect
Main Gear	Inflated/Cond
Brakes	Not Leaking
Wing Tip	Inspect
Position/Strobe Lights	Inspect
Pitot-Static Probe	Inspect
Stall warning	Check Unblocked
Landing/Taxi Light(s)	Inspect
Aileron incl inspection panel	Inspect

Before starting engine

Preflight inspection	Complete
Passenger Briefing	Complete
Seats, belts	Adjust & Lock
Rudder Pedals	adjusted
Front Canopy/rear door	Closed & Latched
	POS 1 or 2

Brakes & Pressure	Set & Test
Circuit breakers	Check In
Electrical Equipment	Off
Avionics Power Switch	Off
Fuel Selector	Fullest tank
Trim	Neutral
Throttle	Free & Idle Position
Throttle friction	Set
Alternate Air	Off
Alternate Static	Closed (pointing FWD)
Essential Bus	Off
Horizon Emergency Switch	Off
Master Switch (Bat only)	On
G1000	Powered and Acknowledged
Fuel quantity	check/updated
Strobes	On
Position Lights (night)	On
Instrument Lights (night)	On

KSPG Frequencies:

ASOS	118.87
Ground	121.80
Tower	127.40
Departure/ Approach	119.65

KSPG Runways:

7 RNAV
25 VISUAL only (no T/Gs)
18 VOR/RNAV
36 RNAV

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Starting Engine

Oil TempLess than 100°F follow Cold Start	
Oil Temp...Greater than 100°F follow Warm Start	
Cold Start	
Battery Master	On
Brakes	HOLD
Strobes	On
Throttle	Open half way
Fuel Pump	On
Mixture	rich 5-10 sec, then idle cutoff
Throttle	Open 1/4 inch
Propeller area	"Clear"
Ignition	Start
Mixture	full rich when engine fires
Throttle	Adjust 1000 rpm
Flaps	Up
Fuel Pump	Off
Oil Pressure	Check green w/in 15 sec
Alt Master	On
Avionics Master Switch	On
Radios	Check On
Transponder	Alt and 1200
Ammeter	Check charge
Flight Instruments	check
ATIS/AWOS/ASOS	Obtain
Altimeter	Set
Clearance/Ground	Contact

Run-Up

Brakes	Set
Elevator Trim	Set for TAKEOFF
Flight Controls	Free and Correct
Fuel Selector Valve	Fullest Tank
Mixture	Rich
Propeller	Full FWD
Throttle	2000RPM
Engine Gauges	Check (Green)
Propeller	Cycle 3 times
Magnetos	max 150rpm drop /50rpm diff
Alternate Air	Off
Throttle	Idle, then 1000rpm
Engine Gauges	Check (Green)
Circuit Breakers	In
Auto Pilot	Test and Off
Electric Trim	Check
PFD/MFD/Avionics	Set

Normal Take-Off

All lights.	On (night / IFR)
Trim	Set
Radios/Avionics	Set
Transponder	'1200' or assigned
Flaps	T/O position
Magnetos	Both
Canopy/ Rear Door	Latched & Closed
Mixture	Rich (or set to DA)
Prop	Full FWD
Fuel Pump	On
Fuel	Fullest Tank
Flight Instruments	Set HDG/ALT bug
Departure Brief	Briefed

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After Takeoff

Oil Temp and Pressure	Green
Flaps (400ft)	Up
Fuel Pump	Off
Lights	As required

Cruise

Fuel	Fullest Tank (max 10gal difference)
Throttle	Set for cruise
Propeller	1800rpm - 2400rpm
Fuel Pump	On at high altitude
Mixture	Lean for best power
Trim	Set

Pre-landing checklist

Fuel selector	Fullest tank
Mixture	Full Rich below 3000'
Fuel Pump	On
Engine Instruments	Green
ATIS/AWOS/ASOS	Checked
Altimeter	Set

Final Approach

Brakes	Check pressure
Flight instruments	Checked & Set
Radios	Set
Fuel Pump	On
GUMPS	Check
Landing light	On (IFR or Night)
Flaps	Set T/O (108) or LDG (91kts)
Airspeed	73 KIAS (1200 kg, 2646 lb)
	71 KIAS (1150 kg, 2535 lb)
	63 KIAS (1000 kg, 2205 lb)
	58 KIAS (850 kg, 1874 lb)

After landing

Flaps	Up
Fuel Pump	Off
Strobe light	Off
Mixture	Lean for taxi
Radio	Taxi Clearance

Shut Down

Avionics	Off
Lights	Off
Throttle	1000 RPM
Magnetos	Ground check
Mixture	Cut-off
Ignition switch	Off
Master switch	Off
Control Lock	Install
Keys	Remove

Short field take-off

All lights.	On (night / IFR)
Radios/Avionics	Set
Transponder	'1200' or assigned
Flaps	T/O position
Magnetos	Both
Canopy/ Rear Door	Latched & Closed
Mixture	Rich (or set to DA)
Prop	Full FWD
Fuel Pump	On
Flight Instruments	Set HDG/ALT bug
Departure Brief	Briefed
Taxi	Max runway
Brakes	Set and hold
Throttle	Full
Brakes	Release
Climb	59 KIAS
Flaps	Retract when clear
Airspeed	67 KIAS

Short field landing

Pre-landing check	Complete
Approach	62 KIAS
Flaps	LDG
Throttle	Maintain glide
Touchdown	Power Off
Flaps	Up
Elevator	Full up
Braking	Heavy as required

Soft field take-off

All lights.	On (night / IFR)
Radios/Avionics	Set
Transponder	'1200' or assigned
Flaps	T/O position
Magnetos	Both
Canopy/ Rear Door	Latched & Closed
Mixture	Rich (or set to DA)
Prop	Full FWD
Fuel Pump	On
Flight Instruments	Set HDG/ALT bug
Departure Brief	Briefed
Throttle	Full
Elevator (stick)	Full aft
Brakes	release (???)
Airspeed	67 KIAS

Soft field landing

Pre-landing check	Complete
Throttle	1500 RPM
Flaps	LDG
Airspeed	60 KIAS
Touchdown	Main first, softly
Landing roll	Nose wheel up
Elevator	Up
Braking	As required

V-Speeds

Rotate	V _r	59 67 (1200kg, 2646lb) 66 (1150 kg, 2535 lb) 60 (1000 kg, 2205 lb) 54 (850 kg, 1874 lb)
Normal Climb Out	V _{climb T/O flaps}	
Max angle (Sea Level)	V _x	60
Climb rate (Sea Level)	V _y	75
Maneuver	V _a	108 above(980kg, 2161lb) 94 above(780 kg, 1720 lb)
Norm. oper. range		52-129
Flaps	V _{fe}	108 T/O 91 LDG
Maneuver max	V _{no}	129
Never exceed	V _{ne}	178
Stall (clean)	V _s	52
Stall (land)	V _{so}	49
Final Approach	Flaps	73 KIAS (1200 kg, 2646 lb) 71 KIAS (1150 kg, 2535 lb) 63 KIAS (1000 kg, 2205 lb) 58 KIAS (850 kg, 1874 lb)
	No flaps	65
S-turns	104	
Point turns	104	
Chandelles	104	
Lazy Eights	104	
Steep Turns	100	
Steep Spirals	80	
Signal	On Ground	In Flight
Steady Green	Takeoff	Land
Flashing Green	Taxi	Return to land
Steady Red	Stop	Give way
Flashing Red	Clear runway	Do not land
Flashing white	Return to ramp	--
Red/Green alternating	WARNING – USE CAUTION	

Engine Failure

ON TAKEOFF

Power	IDLE
Brakes	APPLY
Centerline	MAINTAIN
Mixture	CUT OFF if necessary
Mags	OFF
Ignition	OFF

AFTER TAKEOFF

Stick	push forward
Airspeed	59-74 KIAS (flaps UP) 60-67 KIAS (flaps DN)
Mixture	Idle Cut-off
Ignition	Off
Flaps	As Required
Master switch	Off
Cabin Doors	Unlatch
Land (below 800' AGL)	Straight head

DURING FLIGHT

Airspeed	73 KIAS
LOOK FOR A FIELD within 30 degrees of centerline	
Fuel selector valve	Fullest
Mixture	Rich
Ignition	BOTH (or START)
Alt Air	Open
Fuel Pump	On

If no engine restart possible

Mixture	Idle Cut-off
Fuel selector valve	Off
Fuel Pump	Off
Ignition	Off
Flaps	As Required
Mayday	Transmit 121.5
Mayday	Squawk 7700
Master switch	Off
Touchdown	Tail Low

Emergency Decent

Throttle	IDLE
Bank	30°- 40°
Speed	125

High Manifold

Throttle	reduce
Mixture	Adjust

Engine Roughness

Magnetos	Check
Mixture	Rich
Throttle	Full
Fuel Pump	On

Engine Fire on ground

Fuel Selector	Off
Cabin Heat	Off
Brakes	Apply
Throttle	Full
Master Bat	Off
Ignition	Off
Airplane	Evacuate

Engine Fire during flight

Cabin Heat/Air	Off
Fuel selector valve	Off
Fuel Pump	Off
Master Switch	On
Airspeed	100 KIAS

Electrical failure

Load meter	Verify
Alternator	Off
Reduce load to minimum	
Breaker/alt	Check & Reset
Alternator	On
If still no power:	
Alternator	Off
Reduce load and land	

Electrical overload

Master Switch	Off
All on/off appliances	Off
Master Switch	On
turn on appliances one at a time	
Over-voltage light	Off
or TERMINATE flight ASAP	