



ECS/Cabin Pressurization Procedures

It is recommended that you familiarize yourself with the cabin pressurization controls prior to attempting to operate the system. Consult your POH under the **Panel** section.

The cabin pressurization subsystem is governed by the pressure regulator control, which provides three modes of operation: differential cabin-to-ambient pressure, dump, and system test. Below 5,000 feet, the cabin is normally un-pressurized. Between 5,000 and 25,000 feet, the cabin altitude can remain at 5,000 feet. Maximum recommended cabin pressure-to- ambient differential is 6.7 ± 0.1 psi.

During flight operations between 5,000 and 24,000 feet, the isobaric valve maintains the cabin altitude between 4,350 and 5,000 feet. The pressure regulator control, using the sensed ambient pressure as a low-pressure source and the sensed cabin pressure as the high-pressure source, modulates the pressure regulator open or closed to maintain cabin pressure at the specific altitude.

Ground Operations

BEFORE TAXI

System Test

Outflow safety valve status lights.....	CHECK - OPEN
Vacuum isobaric pressure/dump valve status lights.....	CHECK - DUMP
Cabin air source/pressure control.....	OUTSIDE
Cabin altitude.....	CHECK CURRENT ALTITUDE
Pressure control switch.....	CHECK - DUMP
Pressure control switch.....	TEST
Outflow safety valve status lights.....	CHECK - CLOSED
Vacuum isobaric pressure/dump valve status lights.....	CHECK - PRESS

Observe a 5 second test period. The indicator lights should read as above, and then return to normal. If different readings are observed the pressurization system is not ready for flight.

Cabin Environment Set

ECS mode selector.....	SET LO OR HIGH
Cabin temperature thermostat.....	SET COMFORT LEVEL
Temperature control.....	SET AUTO
Cabin Fan.....	SET LO OR HIGH
Emergency pressurization mode switch.....	SET AUTO



**Checklist
Procedures
Cheyenne 400 LS**

BEFORE TAKEOFF

- Outflow safety valve status lights..... CHECK - OPEN
- Vacuum isobaric pressure/dump valve status lights..... CHECK - DUMP
- Pressure control switch..... CHECK - DUMP
- ECS system controls..... CHECK SETTINGS
- Cabin temperature (check for ECS proper operation/comfort)... CHECK

AFTER TAKEOFF

- Outflow safety valve status lights..... CHECK - CLOSED
- Vacuum isobaric pressure/dump valve status lights..... CHECK - DUMP
- Cabin altitude..... CHECK RISING
- Cabin altitude selector..... SET *
- Cabin climb rate selector..... SET *
- Cabin air source/pressure control..... PRESS
- Pressure control switch..... CABIN PRESS
- Vacuum isobaric pressure/dump valve status lights..... CHECK - PRESS
- Cabin differential pressure..... CHECK LIMIT
- Cabin temperature (check for ECS proper operation/comfort)... CHECK

Scan the cabin altitude indicator regularly during ascent. As you reach the selected cabin altitude for cruise, you should observe no additional rise in cabin altitude. If cabin altitude rises above the selected level, or if the isobaric dump/pressure valve indicator does not show Press, immediately follow the emergency procedures for loss of cabin pressurization system.

***Setting the proper cabin altitude and climb rate**

The cabin pressure differential is governed by the capability of the air-conditioning system, the strength of the fuselage and the maximum operating altitude of the aircraft. Excessive rate of change of pressure can build up a differential pressure across the eardrums and in excess of 7.0 PSI can cause pain. See the [guidelines below for setting cabin altitude and rate of climb](#)

DURING FLIGHT

- Outflow safety valve status lights..... CHECK - CLOSED
- Vacuum isobaric pressure/dump valve status lights..... CHECK - PRESS
- Cabin altitude..... CHECK LIMIT
- Cabin differential pressure..... CHECK LIMIT
- Pressure control switch..... CABIN PRESS
- Cabin temperature (check for ECS proper operation/comfort)... CHECK

Scan the instruments frequently for proper cabin temperature and altitude/pressure, and that the isobaric dump/pressure valve indicator shows **Press**, immediately follow the [emergency procedures](#) for loss of cabin pressurization system.



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DESCENT

At Light Level

Outflow safety valve status lights.....	CHECK - CLOSED
Vacuum isobaric pressure/dump valve status lights.....	CHECK - PRESS
Cabin altitude.....	CHECK LIMIT
Cabin differential pressure.....	CHECK LIMIT
Cabin air source/pressure control.....	PRESS
Pressure control switch.....	CABIN PRESS
Cabin temperature (check for ECS proper operation/comfort)...	CHECK

Below 10,000 ft.

Cabin air source/pressure control.....	OUTSIDE
Pressure control switch.....	DUMP
Outflow safety valve status lights.....	CHECK - CLOSED
Vacuum isobaric pressure/dump valve status lights.....	CHECK - DUMP
Cabin temperature (check for ECS proper operation/comfort)...	CHECK
Cabin altitude.....	CHECK - FALLING
Cabin differential pressure.....	CHECK - FALLING
Cabin rate of climb indicator.....	CHECK RATE - SAME AS AIRCRAFT VSI

Warning - This pressure vessel is **not rated for landing while pressurized. Damage to the isobaric valve and degradation of the pressure vessel seals may result!**

LANDING

Cabin air source/pressure control.....	OUTSIDE
Pressure control switch.....	DUMP
Outflow safety valve status lights.....	CHECK - CLOSED
Vacuum isobaric pressure/dump valve status lights.....	CHECK - DUMP
Cabin altitude.....	CHECK - SAME AS AIRCRAFT ALTITUDE
Cabin differential pressure.....	CHECK - ZERO
Cabin temperature (check for ECS proper operation/comfort)...	CHECK

AFTER LANDING - SECURE AIRCRAFT

Cabin air source/pressure control.....	OUTSIDE
Pressure control switch.....	DUMP
Outflow safety valve status lights.....	CHECK - OPEN
Vacuum isobaric pressure/dump valve status lights.....	CHECK - DUMP
Cabin altitude.....	CHECK - SAME AS AIRCRAFT ALTITUDE
Cabin differential pressure.....	CHECK - ZERO
ECS mode selector.....	SET OFF
Cabin Fan.....	SET OFF



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EMERGENCY PROCEDURES

Above 10,000 ft

In case of abnormal pressure vessel readings or malfunction of any part of the pressurization system, immediately reduce aircraft altitude to below 10,000 feet and allow air pressure inside and outside the pressure vessel to equalize.

- Cabin air source/pressure control..... OUTSIDE
- Pressure control switch..... DUMP
- Outflow safety valve status lights..... CHECK - CLOSED
- Vacuum isobaric pressure/dump valve status lights..... CHECK - DUMP
- Cabin altitude..... CHECK - FALLING
- Cabin differential pressure..... CHECK - FALLING
- Cabin rate of climb indicator..... CHECK RATE - SAME AS AIRCRAFT VSI

Below 10,000 ft

If abnormal pressure vessel readings are observed, or if any malfunction of the pressurization occurs, do not climb to altitudes above 10,000 feet under any circumstance.

- Cabin air source/pressure control..... OUTSIDE
- Pressure control switch..... DUMP
- Outflow safety valve status lights..... CHECK - CLOSED
- Vacuum isobaric pressure/dump valve status lights..... CHECK - DUMP



Setting Proper Cabin Altitude and Rate Of Climb

CABIN ALTITUDE VS. DIFFERENTIAL PRESSURE

Flight Altitude (Ft)	Cabin Pressure Differential		Cabin Pressure Altitude	
	Min (psi)	Max (psi)	Min (ft)	Max (ft)
0	0	0.25	-500	0
5,000	0	0.70	4,350	5,000
10,000	1.90	2.20	4,350	5,000
15,000	3.50	4.10	4,350	5,000
20,000	5.10	5.50	4,350	5,000
24,300*	6.20	6.60	4,350	5,000
25,000	6.20	6.60	5,000	5,350
30,000	6.20	6.60	7,400	7,870
35,000	6.20	6.60	9,600	10,100
40,000	6.20	6.60	11,250	12,050

***Maximum flight altitude for a 5,000 ft cabin altitude**

CABIN RATE OF CLIMB

The formula for Cabin Climb Rate (CCR) is:

$$CCR = (TCA - RA) / (TA / CR)$$

TCA = Target Cabin Altitude (8000 ft.)

RA = Runway Altitude

TA = Target Altitude

CR = Climb Rate (ft. per minute)

Example:

Takeoff RA = 950 ft. (ASL)

TA = 28000 Ft.

CR = 2100 ft. per minute

CCR = 547

Set the Cabin Climb between 500 and 600.

Alarms and Indicators

MASTER CAUTION

- If cabin differential pressure rises above 6.8 psi

MASTER WARNING

- If cabin altitude rises above 10,500 ft