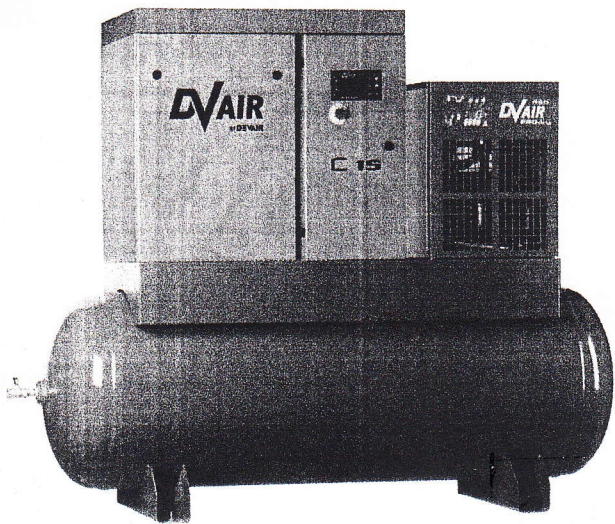


...
C7.5T (TD)
C10T (TD)
C15T (TD)
Tank Mounted
Rotary Screw
Air Compressor
Units
 ...
Installation
Maintenance
and Service
Data
 ...

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Please read this manual before installing or using your Air Compressor Unit. It contains valuable information that will help in the receiving, installation, use, and maintenance of the Unit. Please refer to the accompanying booklet for Dryer information.

All of the Policies and Procedures in this reference manual apply exclusively to Devair Inc., here-in after referred to as Devair.

If you require assistance, contact your local Devair Distributor or Authorized Service Centre. If you wish to contact Devair directly or need to locate your closest Distributor, please reach us at:

Start-Up Procedures

NOTE

Do not attempt to operate the Unit without first checking whether there is Oil in the Oil Reservoir. Add Oil as required. Serious damage may result from use, however limited, without Oil.

Initial Start-Up

- 1) Open the Cabinet Front Access Panel, and ensure that there is Oil in the Oil Reservoir. Refer to the "Lubrication" section (page 9) in this manual for proper type and level of Oil.
- 2) Do a visual inspection of the Unit, and ensure that all Bolt heads are sufficiently tightened. This must be done, as some fasteners may become loose in transit.
- 4) Place the Fused Disconnect in the 'On' Position. Turn the Compressor 'On' momentarily by pressing the 'Start' Button on the Units Exterior Control Pad. Ensure that the Air End and Motor are turning in the correct direction. See "Motor Rotation" (Page 10)

NOTE

If the rotation of the Unit is incorrect, adjust the wiring at the supply side in the Electrical Control Panel.

- 5) When operating the Unit, keep the Access Panels closed at all times. As well, do not place any obstructions in the way of the Intake Cooling Fan and the Top Exhaust Port.

CAUTION

Do not place any materials in close proximity to the Compressor Unit. Placing materials there will limit the cooling of the Compressor, and could lead to premature failure.

- 6) Allow the Unit to operate for approximately 15 minutes. During this time, measure the amp draw and voltage of the Unit at full load, and ensure that these do not exceed the figures as noted on the Unit.
- 7) Stop the Compressor by pressing the 'Stop' Button on the Units Exterior Control Pad.

WARNING

Shut off all power to the Air Compressor Unit before attempting any repair or maintenance.

- 8) With the Unit off, check for any oil leaks on the Unit, or air leaks in the Unit or shop air system. Correct as required.
- 9) Do not adjust the Unit pressure settings. Consult your Devair Distributor if required.

NOTE

During the first few days of operation, check the Unit periodically to ensure it is running smoothly and the controls are operating properly. Should you notice any areas of concern, contact your Devair Distributor or Authorized Service Centre.



Preventative Maintenance Schedule

CT715
May '08

WARNING

When servicing the Air Compressor, shut off all power to the Unit, and drain it of air pressure.

NOTE

It is the responsibility of the compressor owner to ensure that a regular Maintenance Schedule is followed.

Noted below are general Maintenance guidelines based on average working conditions. Should the Unit be worked under extreme conditions, please contact your Devair Distributor for further input. As well, all maintenance/service work must be carried out by a qualified Technician.

If the operating temperature of the Unit is too low (less than 70°C), condensation will build up in the system and mix with the oil, causing internal component problems in the Unit. Change the ambient conditions to increase the operating temperature.

If the operating temperature of the Unit is too high (above 85°C), the oil will oxidize and lose it's properties, this causing internal damage to components as well. To combat this, the oil must be changed more often than noted below.

Order (1) 'MK-C7-15' Maintenance Kit containing (2) Gallons 'DEV-3000' Oil, (2) 'DSC-603' Oil Filters, (1) 'DSC-302' Air/Oil Separator Filter, and (2) 'DSC-604' Air Filters.

Note: For Compressor Units used in an environment where the ambient temperature is above 90°F (32°C), the components marked with a '✓' must be changed more frequently, and not as noted below.

Maintenance Item:	Maintenance Interval (thousands of hours)														
	Daily	2	4	6	8	10	12	14	16	18	20	22	24	26	28
Compressor Room															
Temperature	Inspect	Ambient temperature should be between 10°C and 40 °C (50°F and 104°F)													
Cleanliness	Inspect	Clean as required													
Air Compressor Unit															
Oil Level	Inspect														
Oil ✓		Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change
Oil Filter ✓		Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change
Air / Oil Separator ✓		Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change
Air Intake Filter ✓		Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change	Change
Belt Tension / Replacement		Check	Replace	Check	Replace	Check	Replace	Check	Replace	Check	Replace	Check	Replace	Check	Replace
Nylon Tube-Oil Level Gauge ✓			Change		Change		Change		Change		Change		Change		Change
Tank Relief Valve				Change		Change		Change		Change		Change		Change	
Solenoids				Change		Change		Change		Change		Change		Change	
Rebuild Intake Valve ①				Change		Change		Change		Change		Change		Change	
Thermo Valve Service Kit ②			Rebuild		Rebuild		Rebuild		Rebuild		Rebuild		Rebuild		Rebuild
Min. Press. Valve Service Kit ③			Rebuild		Rebuild		Rebuild		Rebuild		Rebuild		Rebuild		Rebuild
Scavenge Assembly			Change		Change		Change		Change		Change		Change		Change
Motor Bearing Lubrication		Refer to Motor Manufacturer's Recommendation													

Note: If a component, during a regular inspection, has proven to be defective or unfit for regular operation, it must be repaired or replaced.

- Repair Kits are as follows:
- ① Intake Valve Repair Kit: DSC-331
 - ② Thermo Valve Repair Kit: DSC-111-1
 - ③ Min. Press. Valve Repair Kit: DSC-410

Note: The items as noted above must be completed as part of your regular Compressor maintenance to comply with the manufacturers Compressor Warranty.

Maintenance Procedures

Regular Maintenance Items

Devair offers a variety of Kits for the various Rotary Screw Compressors based on the Units horsepower, namely:

MK-C7-15 7-1/2 HP to 15 HP 'C Series' Units

Each Kit consists of the following items, these suitable for approximately 4000 hours of operation.

- | | | |
|-----|-------------|---------------------------------------|
| (2) | DEV-3000-K1 | 1 Gallon Pail of Devair Synthetic Oil |
| (2) | DSC-603 | Oil Filter |
| (1) | DSC-302 | Air/Oil Separator Filter |
| (2) | DSC-604 | Air Filter |

Filter Elements for the Unit-mounted Separator Filter are as follows:

- | | |
|---------|----------|
| C7.5TD: | SAF-S-35 |
| C10TD: | SAF-S-35 |
| C15TD: | SAF-S-64 |

Changing the Air Intake Filter.

1. Lift the Unit Top Panel and Front Panel as required. Remove the Wing Nut holding the Element Top in place, and then remove the Top.
2. Remove the Air Filter Element from the Unit. Clean the Cannister of any dust or build-up.
3. Install a new Air Filter (Devair Part Number 'DSC-604'), place the Top on the Filter, and fasten down with the Wing Nut

Note:

Depending on the quality of the air in the compressor room, it may be necessary to check and/or change the Air Filter more often than indicated on the 'Maintenance Schedule'.

Cleaning the Heat Exchanger.

The circulation of air through the Heat Exchanger is critical to the correct operation of the Unit. Clean the Heat Exchanger on a regular basis.

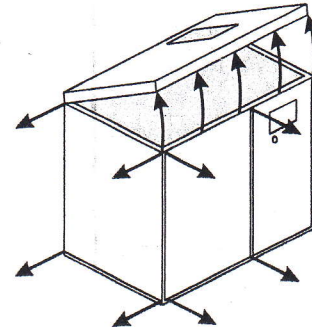
1. Lift the Top Panel and remove the Front Panel as shown.
2. Blow compressed air through the Heat Exchanger in the direction as shown by the arrow.

Note:

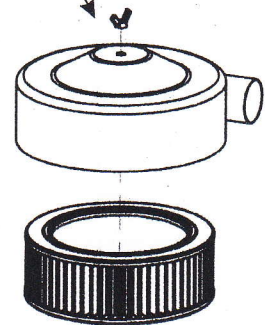
When cleaning the Heat Exchanger, do not use sharp objects or a wire brush. These items could damage the cooling coils.

Internal Access for Maintenance

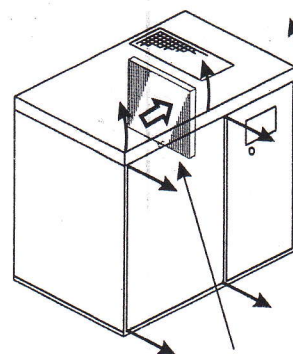
The internal components of the Unit are accessible by means of a) lifting the Top Panel, b) removing the Front Panel, and c) removing the Side Panel as required.



Element Top c/w Wing Nut



Air Filter Element



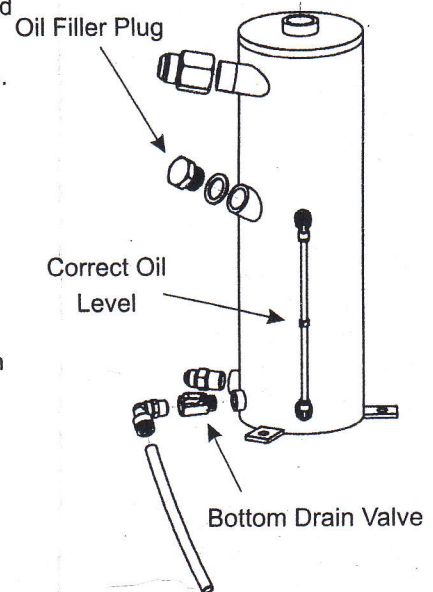
Heat Exchanger

Changing the Oil.

1. Allow the Compressor Oil to cool down before draining the Oil.
2. To remove the Oil, open the Bottom Drain Valve on the Oil Reservoir, and drain the existing Oil into an appropriate container.
3. Once all the existing Oil has been drained, close the Bottom Drain Valve.
4. Open the Oil Filler Plug, and fill with 10 (to 12) litres of new Devair Synthetic Lubricant, part number 'DEV-3000'. The Oil should not fill the Oil/Air Receiver more than half full.

Notes:

- A) The Oil level will drop when the Unit starts, and will fluctuate when the Unit is in operation, loading and unloading.
- B) It may be required that you add Oil on a regular basis, this depending on the usage of the Unit.

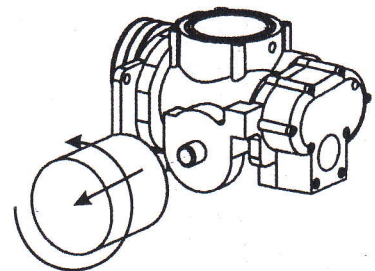


Changing the Oil Filter.

1. Ensure that you have a bucket and strap wrench available.
2. Holding the bucket under the Oil Filter to capture any spillage, use the strap wrench to turn the Oil Filter clockwise. The Filter will be full of oil, so care must be taken.
3. On the replacement Oil Filter, lubricate the Filter Gasket with Compressor Oil before installing. This will prevent the Gasket from sticking to the Housing.
4. Hand tighten the Oil Filter snug.

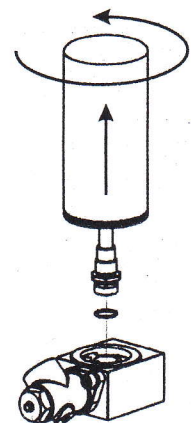
Notes:

- A) As noted in '2' above, as the Oil Filter will be full of Oil, care must be taken when loosening and removing it.



Changing the Oil Separator.

1. Use the strap wrench to turn the Oil Separator counter-clockwise.
2. On the replacement Oil Separator, lubricate the Separator Gasket with Compressor Oil before installing.
3. Hand tighten the Oil Separator snug.

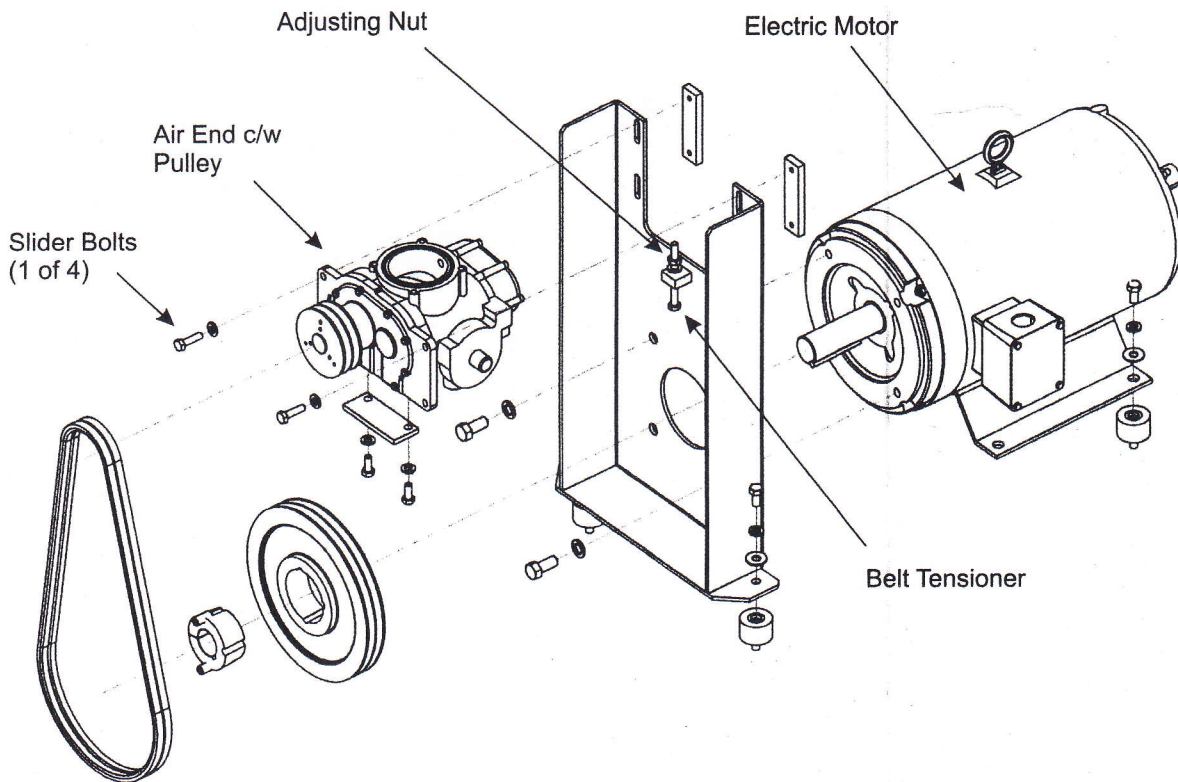


Tensioning the Drive Belts.

The tightening and loosening of the Belts is done by way of moving the Air End vertically either towards or away from the Motor.

1. To tighten the Belts, simply:
 - A) loosen the (4) Slider Bolts and then
 - B) tighten (turning clockwise) the Adjusting Nut on the top of the Belt Tensioner Screw.
 - Note:** The Belts should deflect 7/16" to 1/2" if applying a force of 11 pounds to each Belt.
 - C) re-torque the (4) Slider Bolts to 150 ft lbs.

2. To loosen the Belts, carry out the above procedure but turn the Adjusting Nut on top of the Belt Tensioner Screw counter-clockwise.



Devair 'CSC200' Controller

Description:

The 'CSC200' Controller is the 'brains' of the 'G' Series of Rotary Screw Compressor Units. It monitors, enables, and indicates the various functions of the Units.

The Controller is comprised of various levels of access, segregated into:

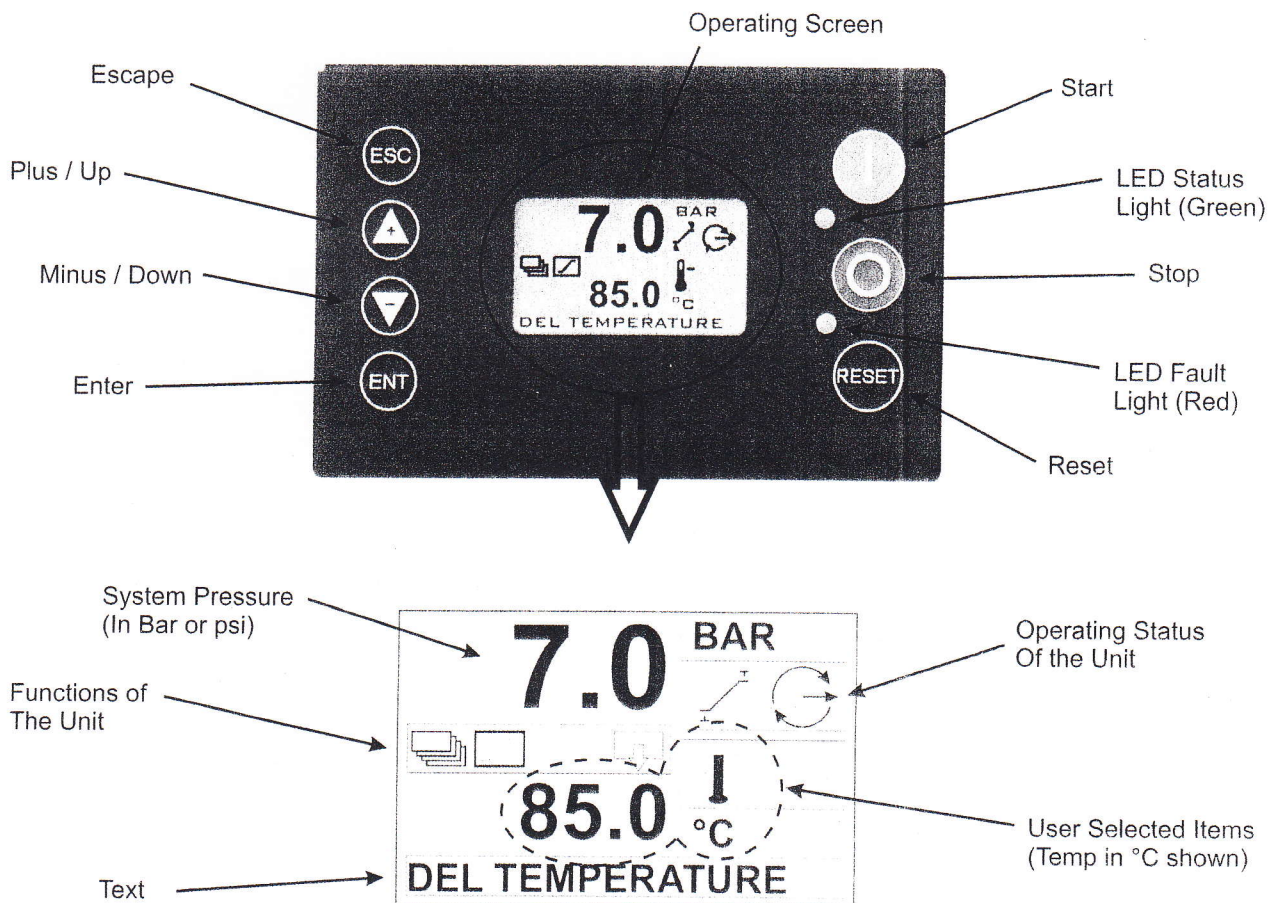
- Customer
- Service Technician
- those requiring a high level of access

Access codes are required to access the various levels, this to ensure that the Unit variables are not altered in error.

The 'CSC200' Controller also has optional sequencer capabilities, allowing two or more Units to operate together.

Controller Operator Interface:

The Operator Interface as mounted on the Compressor Unit is shown below.





Devair 'CSC200' Controller

Unit Operating Parameters:

The chart below indicates the standard operating parameters as programmed into the 'CSC200' Controller. The chart indicates:

HP: Horsepower of the Compressor Unit

Load Pressure: The pressure (measured in psi) at which the Unit will begin to load, ie compress air.

Unload Pressure: The pressure (measured in psi) at which the Unit will begin to unload, ie stop compressing air.

Pressure Shutdown: The maximum pressure (in psi) at which the Unit will shut off.

Motor Start Type: The method by which power is utilized to start the Unit. 'Full Volt.' suggests a 'full voltage start', 'Y Delta' suggests a 'two stage' start.

Idle Shutdown: The amount of time (in minutes) that the Unit idles (runs but does not compress air) before it is shut down.

Motor Startup/Hour: The maximum number of times the Motor is allowed to start in one hour, this dictated by standard electrical practices.

Service Hours: The maximum allowable time (in hours) between service/maintenance of the Unit.

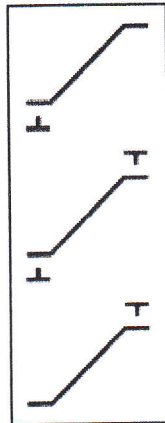
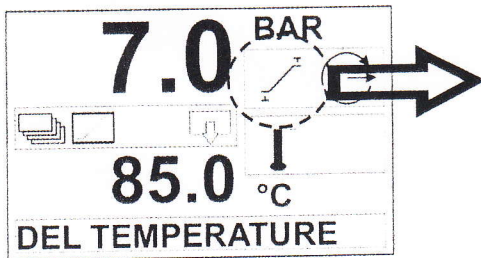
HP	Load Pressure (psi)	Unload Pressure (psi)	Pressure Shutdown (Psi)	Motor Start Type	Idle Shutdown (Minutes)	Motor Start-up /Hour	Service Hours
7.5	125	145	155	Full Volt.	5	10	2000
10	125	145	155	Full Volt.	6	8	2000
15	125	145	155	Full Volt.	6	8	2000
20	100	120	130	Y Delta	8	6	4000
25	100	120	130	Y Delta	10	5	4000
30	100	120	130	Y Delta	10	5	4000
40	100	120	130	Y Delta	16	3	4000
50	100	120	130	Y delta	16	3	4000

Devair 'CSC200' Controller

Operating Status of the Unit:

As noted on Page 17 of this manual, the Operator Interface allows the Customer or Service Technician to visually see exactly at what stage the Unit is operating. The standard symbols used are as follows:

Control Pressure Status

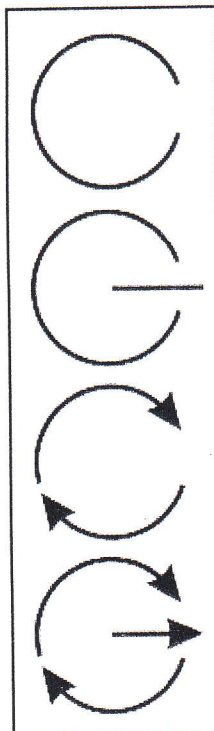
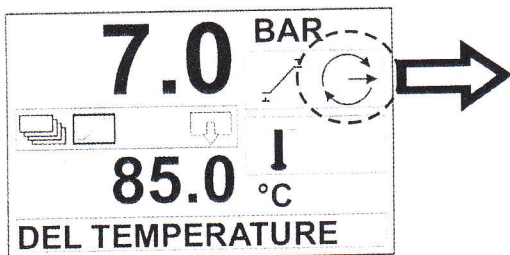


The Control Pressure is below the Unload Pressure set point value.

The Control Pressure is between the Unload and Load Pressure set point value.

The Control Pressure is above the Load Pressure set point value.

Compressor Status



The Compressor is stopped.

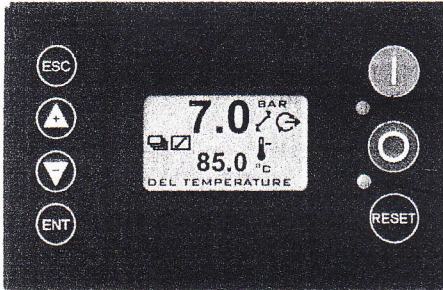
The Compressor is in Standby. It is not running, but in Active status.

The Compressor is running but not loaded.

The Compressor is running and loading.

LED Lights:

As noted on Page 17, the Operator Interface has two LED Lights. The lights have various flash settings that are indicative of various Compressor states or faults.



LED Status Light (Green)

LED Fault Light (Red)

LED Indicators:

- ON: Lit continuously
- FF: Fast Flash (on/off 4 times/sec)
- SF: Slow Flash (on/off every second)
- IF: Intermittent Flash (on/off every 4 seconds)
- OFF: Unlit continuously

Machine State Number	Machine State	Status (Green LED) ●	Fault (Red LED) ●
1.	Shutdown Error	OFF	FF
2.	Startup Initialized	OFF	OFF **
3.	Start Inhibit Check	OFF	OFF **
	Start Inhibit Condition		SF
4.	Ready to Start	OFF	OFF **
5.	Blowdown	If (load request) FF Else IF	OFF **
6.	Standby	IF	OFF **
7.	Start Motor in Y/Delta	If (load request) FF Else IF	OFF **
8.	Load Delay	If (load request) FF Else IF	OFF **
9.	Load	ON	OFF **
10.	Load Delay	If (load request) FF Else IF	OFF **
11.	Standby Run on Time	IF	OFF **
12.	Stop Run on Time	SF	OFF **

** SF for Alarm Condition

Access Codes:

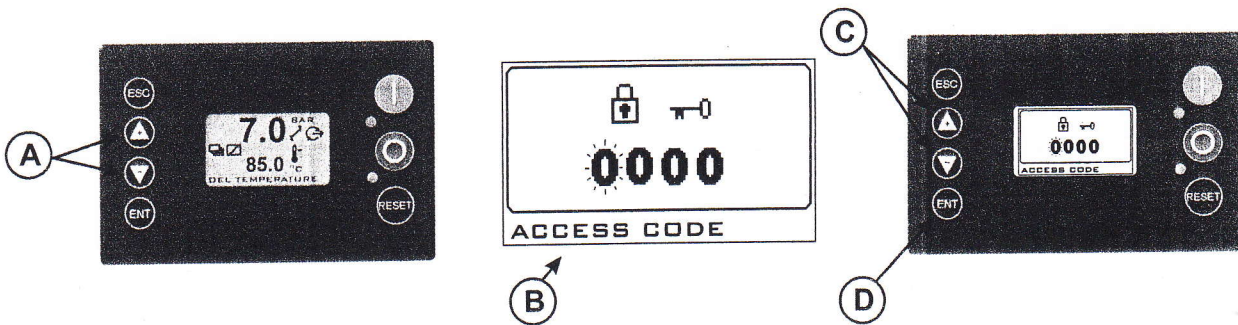
Access to the standard operating parameters, fault and alarm settings, etc are somewhat guarded in the Controller. There are three levels of access or security as follows:

		User Access: Code: 0009
<p>Areas Available are:</p> <p>Page 00 General Operating Info</p> <p>Page 01 Load/Unload Pressures Standby Run-on Time Stop Run-on Time Blowdown Time Press. And Temp. Units Language</p> <p>Page 02 Fault Log</p>	<p>P00: User</p> <p>01: Status / RYC 02: Information Screen 03: Delivery Temperature 04: Delivery Pressure 05: Internal Pressure 06: Differential Pressure 07: Run Hours 08: Loaded Hours 09: Service Hours 10: Motor Speed rpm 11: Motor Speed %</p>	<p>P01: User Settings</p> <p>01: Pu Unload Pressure 02: PL Load Pressure 03: do Drain Open Time 04: dt drain interval time 05: Rt Standby Run-on Time 06: St: Stop Run-on Time 07: Bt Blow-down Time 08: P> Pressure Units 09: T> Temperature Units 10: L> Language</p> <p>P02: Fault Log</p> <p>01: Logged Error #1 to 15: Logged Error #15</p>

NOTE Adjusting the settings of the Controller could adversely affect the performance of the Unit. Only those individuals with knowledge of the Unit should make any adjustments.

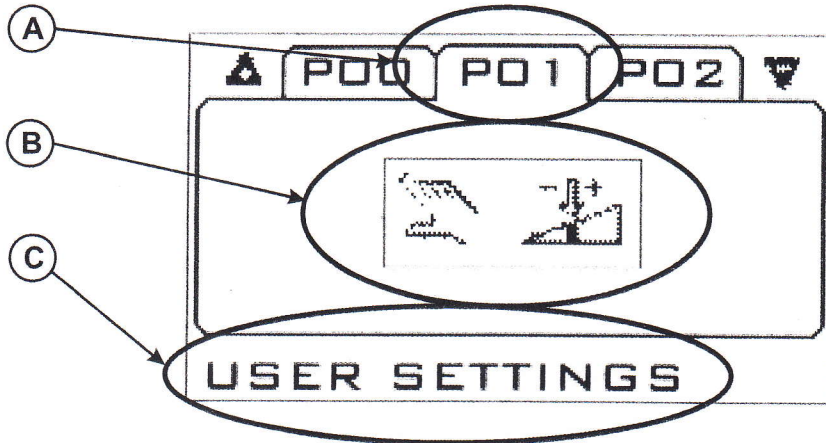
Access Code Input:

To input the Access Code, press the 'Up' and 'Down' Arrows for several seconds ('A'), after which the screen shown ('B') will appear. Use the 'Plus' and 'Minus' keys ('C') to adjust the value, then press 'Enter' ('D').



Menu Modes:




Once the proper access code has been entered (as indicated on Page 21), the following will be visible on the screen. Each 'Menu Page' ('A') contains both symbols ('B') and text ('C').






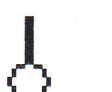






Symbols Used:

The following symbols (as indicated at 'B' above) are used on the Menus..

Access Levels:

	User
	Service
	High

General Menu

	User		Inhibit
	Shutdown		Sensor
	Variable Speed Control		Alarm Settings
	Log, Fault History		Diagnostics
	Operation Settings		Pressure Settings