SUPERNOVA

DV-40 DIGITAL VACUUM GAUGE
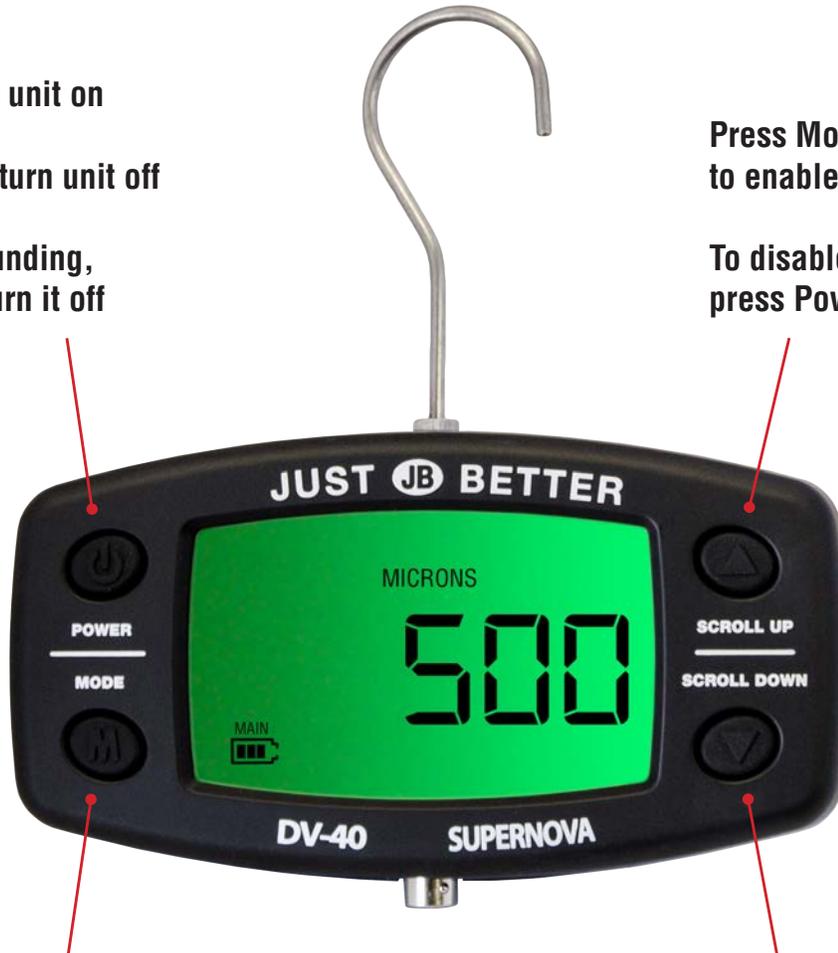
OPERATING MANUAL

Press Once to turn unit on

Press and Hold to turn unit off

When alarm is sounding, press any key to turn it off

Press Mode and Scroll Up Buttons to enable High Limit Alarm

To disable alarm, press Power Once

JUST **JB** BETTER

POWER

MODE

MICRONS

500

MAIN

SCROLL UP

SCROLL DOWN

DV-40   SUPERNOVA

To enter the user settings menu, Press Mode and hold for three seconds.

Press Mode and Scroll Down Buttons to enable Low Limit Alarm

To disable alarm, press Power Once

JB INDUSTRIES

JB

JUST BETTER ™

GENERAL OPERATION

KEY OPERATION OVERVIEW:

- To turn power on, press the POWER key once.
- To turn power off, press the POWER key and hold for three seconds.
- To enable the HIGH Limit Alarm, hold the MODE key and press UP.
- To enable the LOW Limit Alarm, hold the MODE key and press DOWN.
- To disable the Alarm, press POWER key once.
- When alarm is sounding, press any key to turn it off (automatically disabled).
- To enter the user settings menu, press the MODE key and hold it for four seconds.

BASIC USER SETUPS AVAILABLE

Each time the DV-40 powers up, previously stored user settings are retrieved. Settings include the following items:

- International Standard Units selection, factory default value is "MICRONS".
- High Limit Alarm setting "Hi—AL" , factory default value is "2000" Microns.
- Low Limit Alarm setting "Lo—AL" , factory default value it "500" Microns.
- Key-press feedback (beep POWER) , factory default is "ON".
- Display resolution (ON/OFF), factory default is "OFF".
- Auto-shutdown setting, factory default is "30" minutes.
- Backlight persistence, factory default is "10".

IMPORTANT
CLEANING VACUUM SENSOR

Fill brass sensor fitting with a few drops of rubbing alcohol (Isopropyl). Cover the opening with your finger and gently shake the fitting allowing the alcohol to rinse the sensor. Pour the alcohol out and allow the vacuum sensor to dry for roughly 20 minutes before using the gauge.

WHEN POWER UP

- When the DV-40 powers up, the screen shows greeting message: "JB, "JUST", "BETTER"
- The center bars move to indicate the unit is in initial warm up state. It will take up to 30 seconds for the unit to get into normal operation mode.
- If "SENSOR" message is displayed on the screen, this means the sensor wire is broken or sensor is disconnected.

BATTERY INDICATOR

When the startup sequence is complete, the battery status indicator (in the lower left corner) is updated to show current battery status. While the unit is on, this status is updated once every second. Battery level indication is as follows:

Not Visible	The DV-40 is connected to an external power source. (AC Adapter)
Three bars	Battery voltage is 3.5 or above.
Two bars	Battery voltage is between 3.0 and 3.5 Volts.
One bar	Battery voltage is between 2.7 and 3.0 Volts.
No bars, battery outline visible	Battery voltage is between 2.4 and 2.7 Volts.
No bars, battery outline flashing	Battery voltage is between 2.1 and 2.4 Volts.

Once the battery voltage drops below 2.4 volts and the battery outline starts flashing, the unit will beep once per minute to call attention to the low battery condition. When battery voltage falls below 2.1 volts, a shutdown timer is activated. If voltage stays below 2.1 volts for thirty seconds, the DV-40 will beep once and shut itself off. If power is restored during this time, shutdown is cancelled.

ALARM FUNCTION

LOW LIMIT ALARM

- **MODE** + **DOWN** keys will enable the Low limit alarm.
- Low Alarm can be enabled in all cases including when the pressure is in OVERRANGE except for when the sensor is not connected.
- Enable Low Alarm will display the **"LOW"**, **"ALARM"** icon, and will disable the High Alarm.
- When Low Limit alarm is enabled and the pressure is less or equal to the preset Low Alarm limit value, Alarm will go off: Beeper will sound every second, and the **"ALARM"**, **"LOW"** icon will flash.
- The beeping and flashing will continue even when the pressure rises above the Low Alarm limit. Press any key to stop the beeping/flashing and disable the alarm.

HIGH LIMIT ALARM

- **MODE**+ **UP** keys will enable the High limit alarm ONLY IF the pressure is bellow the preset High Alarm Limit. If the pressure is higher than the preset High Alarm Limit, user can not enable the High limit alarm. If Low Alarm was enabled, trying to set the High Limit Alarm will disable the Low Limit Alarm even if the High Limit Alarm fails due to pressure reading above the High limit.
- Enable High Alarm will display the **"HIGH"**, **"ALARM"** icon, and will disable the Low Alarm.

- When High Limit alarm is enabled and the pressure is greater than or equal to the preset High Alarm limit value, Alarm will go off: Beeper will sound every second, and the **"ALARM"**, **"HIGH"** icon will flash.
- The Beeping and flashing will continue even if the pressure goes drops below the High Alarm limit. Press any key to stop the beeping/flashing and disable the alarm.

USER SETTINGS MENU

This menu uses a standard set of key assignments: UP and DN keys scroll the selection. At the top layer of the menu UP and DN scroll the item to be set. In the sub menus, UP and DN scroll the setting selection. The MODE key always acts as the select key. At the top layer of the menu, MODE key selects a sub menu to access. In the sub menus, the MODE key causes the current selection to be stored. The POWER key is always the cancel/exit key. Pressing POWER will cancel the current operation and return you to the previous level.

UNITS SELECTION   UNIT-

When the alarm menu is active, a constant pressure value equivalent to 1000 microns is displayed using the currently selected units (EG: 133.31 for Pascals). The current selection is shown at the top of the screen.

Available Unit selections are Microns, Pascals, Bar, InHg, mBar,m Torr, Torr.

To scroll the selection, use the UP and DOWN keys.
To cancel, press the POWER key.
To select the units shown (and store it as your new setting), press the MODE key.

When a setting is stored, you will be returned to menu selections. If you're done, press POWER again to return to normal operation.

HIGH ALARM SETTING   HI--AL

The (HIGH) alarm selection sets the pressure level where an alert will be sounded. Selecting a specific alarm level does NOT make the alarm active; it simply specifies the pressure level ABOVE which the alarm will sound when the user enables the High Limit Alarm (MODE + UP).

Available alarm settings are 50, 100, 250, 500, 1000, 1250, 1500, 2000 microns. The factory default value is "2000" Microns. The values shown here are listed in microns, but as you scroll through the settings, you will see the values displayed in the current units (see units menu above). For example, if your current units setting is Pascals, you would see: 7, 14, 33, 66, 133, 166, 200, and 266 (The Pascal equivalents of the 50 – 2000 micron values).

The "ALARM", "HIGH" icon will be displayed to indicate you are setting up the High Limit Alarm.

To scroll the selection, use the UP and DOWN keys.
To cancel, press the POWER key.
To select (and store) the displayed setting, press the MODE key.

When a setting is stored, you will be returned to menu selections. If you're done, press POWER again to return to normal operation.

LOW ALARM SETTING   LO--AL

The (LOW) alarm selection sets the pressure level where an alert will be sounded. Selecting a specific alarm level does NOT make the alarm active; it simply specifies the pressure level BELOW which the alarm will sound when the user enables the Low Limit Alarm (MODE + DN).

Available alarm settings are 50, 100, 250, 500, 1000, 1250, 1500, 2000 microns. The factory default value is "500" Microns. The values shown here are listed in microns, but as you scroll through the settings, you will see the values displayed in the current units (see units menu above). For example, if your current units setting is Pascals, you would see: 7, 14, 33, 66, 133, 166, 200, and 266 (The Pascal equivalents of the 50 – 2000 micron values).

The "ALARM", "LOW" icon will be displayed to indicate you are setting up the Low Limit Alarm.

To scroll the selection, use the UP and DOWN keys.
To cancel, press the POWER key.
To select (and store) the displayed setting, press the MODE key.

When a setting is stored, you will be returned to menu selections. If you're done, press POWER again to return to normal operation.

BACKLIGHT PERSISTENCE   B-LITE

Backlight 'persistence' sets the number of seconds that the backlight will stay on after the last key activity. Available settings are: OFF, 10, 15, 30, 45, 60, and 90 seconds. OFF simply means that the backlight will always remain off.
To scroll the selection, use the UP and DOWN keys.
To cancel, press the POWER key.

To select (and store) the displayed setting, press the MODE key.
When a setting is stored, you will be returned to menu selections.
If you're done, Press ON/OFF again to return to normal operation.

Note: While you're in the menu system, the backlight will stay on all of the time unless it has been disabled by selecting "OFF".

KEY-PRESS FEEDBACK   BEEP

The key-press feedback menu has only ON and OFF options. When 'beep' is on, the DV-40 will make a sound each time a key is pressed (audible feedback).

To change the selection, use the UP or DOWN key.
To cancel, press the POWER key.
To select (and store) the setting shown, press the MODE key.

When a setting is stored, you will be returned to menu selections. If you're done, press POWER again to return to normal operation.

DISPLAY RESOLUTION   HI RES

High resolution display means that pressure is shown as-is, in 1 unit increments. The display resolution menu allows you to select whether pressure will be shown at high resolution. When the setting is OFF, readings are rounded off according to the pressure being displayed. Options are simply ON and OFF.

To change the selection, use the UP or DOWN key.
To cancel, press the POWER key.
To select (and store) the setting shown, press the MODE key.

When a setting is stored, you will be returned to menu selections.
If you're done, press POWER again to return to normal operation.

Note: Even when high resolution is ON, pressure values above 1000 microns are always rounded off according to the display pressure.

AUTO-SHUTDOWN SETTING   AU-0FF

In order to conserve battery life, the DV-40 will shut itself off after a period of inactivity (no key-press). The number of minutes before auto-shutdown occurs can be set by the user as follows: OFF, 10, 15, 30, 45, 60, or 90 minutes. When auto-shutdown is set to 'OFF', the DV-40 will not shut itself off . This is useful in test environments where an AC power adapter is available.

To change the selection, use the UP or DOWN key.
To cancel, press the POWER key.
To select (and store) the setting shown, press the MENU key.

When a setting is stored, you will be returned to menu selections.
If you're done, press POWER again to return to normal operation.

Note: Even when auto-shutdown has been deactivated, a low battery condition (less than 2.1 VDC) will still cause the DV-40 to turn itself off.

VERSION ID INFORMATION   USER ID

This menu selection is simply provided for information purposes. Firmware release versions for the primary CPU and the sensor CPU are both available. The Main CPU firmware release (EG: "Fr-1.77") is displayed initially and whenever the UP key is pressed. Pressing DN will display the Sensor CPU Firmware release (EG: "Sr-6.42"). Press either the POWER key or the MODE key to return to returned to menu selection.

Note: When ordering parts or getting technical assistance, the person that you talk to may ask for this information.

CALIBRATION MENU

Calibration menu should only be accessed in the factory, no field calibration is recommended.
The sensor and the main unit serial number have to match each other in order to have the correct measurement.