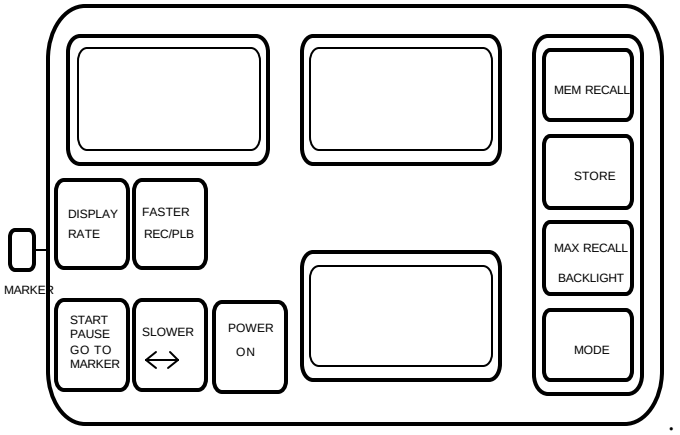
OPERATING INSTRUCTIONS MODEL DT-32K5

KEYBOARD CONFIGURATION



Use the buttons on the left side of the DT-32K5 to turn the instrument on and off.

The White Buttons, **DISPLAY RATE & MODE**, are shift keys. **DISPLAY RATE** is used with the buttons on the left side of the instrument and **MODE** is used with the buttons on the right. Press the shift key first, and hold it down, while pressing another button to execute the function that is printed in white letters.

OVERVIEW OF DT-32K5

The DT-32K5 is a combination of Digatron's DT-41 and the DT-32K4.

The DT-41 portion of this instrument is located on the left. This is the data logger side; it records tach and/or speedometer. This information is then played back on the right side of the instrument. The data logger displays elapsed record time and lap times.

The right side of the instrument is the monitoring system. It monitors and displays CHT, RPM, EGT and MPH. The maximum reading for each function is automatically stored by the monitoring system. Three sets of sensor readings can be manually stored. The stored readings can be recalled any time before the instrument is turned off.

POWER ON

When installed, the DT-32K5 will turn itself on and begin recording data as soon as the engine is started.

If you do not want to begin recording data when the engine starts, turn the instrument on by pressing the data logger **POWER ON** *button before the engine is started.* Recording will not start until you press either the remote **MARKER** switch or the **START/PAUSE** button on the data logger side of the instrument.
The **POWER ON** button on the right side of the instrument does not function as a **POWER** button in this combination.

SETUP

Both the monitoring system and the data logger need input from you before the instrument can be used. The monitoring system needs limits set for each sensor. These limits allow the instrument to give you a visual warning if any of the inputs exceed their limit. The monitoring system also needs calibration numbers so the instrument can read the correct RPM and SPEED. The data logger needs the record rate and recording channels to be selected. These affect the precision and time available for recording.

SETUP MONITORING SYSTEM

Before using your DT-32K5, be sure to set the operating limits. *Limits should be set at levels that allow you to react to the visual warning before engine damage occurs.*

To set the monitoring limits turn the instrument on by using the **POWER ON** button on the left side of the display. Then press and hold the **MAX RECALL** and **MEM RECALL** buttons simultaneously. This will put the right side of the instrument into the Set Limits mode of operation, which is indicated by a flashing display. The display not flashing shows a currently set limit. To increase the limit press the **MAX RECALL** button; to decrease the limit press the **MEM RECALL** button. When finished setting the first limit, press the **MODE** button to set the next limit. To save the current limits and to exit the Set Limits mode, press the **STORE** button (see picture).

The first limit to be set is EGT, then CHT, TACH and MPH. The tach limits require the setting of two separate parameters. The first is the maximum RPM for safe engine operation. The second setting is the tach calibration number required to display the correct engine RPM. MPH is set by entering your tire circumference in .1 inch increments.

When setting the TACH, set the RPM limit first and then press the **MODE** button to set the tach calibration number. In order to display the correct RPM for different ignitions and engine types, the instrument divides the tach input signal by the number in the tach display. This number can be between .5 and 31. Select this number so that it will provide the correct display for your application using the **MAX RECALL** and **MEM RECALL** buttons.

The most frequently used numbers are:

- .5 - for some single cylinder 4 cycle motors
- 1 - for single cylinder 2 cycle and some 4 cycle motors
- 2 - for 2 cylinder 2 cycle and 4 cylinder 4 cycle motors

If you are unsure of the exact tach calibration number for your engine, experiment. If your calibration number is currently set at 2 and the RPM reading is double what it should be, set the calibration number to 4. Alternately, if the RPM reading is half

of the correct value, decrease the calibration number by half of the current setting.

To save the current limits and exit the Set Limits mode, press the **STORE** button (power on button on the right side).

SETUP DATA LOGGER

To enter the Setup mode for the data logger part of the instrument, turn the DT-32K5 on, then press and hold the **FASTER** button and press the **START/PAUSE** button. The display will show a S , a 7 ¯ , or a 7 ¯ S. Press the **FASTER** button to select the desired operating mode.

Your OPTIONS are:

S Record SPEEDOMETER only

7 ¯ Record TACH only

7 ¯ S Record both TACH and SPEEDOMETER

While still in the Setup mode, press the **DISPLAY RATE** button to change the display from input setup to record rate setup. The current record rate will be displayed.

Press the **FASTER** button to change your record rate. Your record rate affects how often data is updated, how precise your markers are, and how long the instrument will record data.

Refer to the chart below to determine the length of time that you can record data based on your record rate and input options.

Recording Options

		Time Available (Min: Sec)	
Sample Rate	Records	One Channel	Two Channels
0:00.1	0.1 Sec	6:49	3:24
0:00.5	0.5 Sec	34:00	17:00
0:01.0	1.0 Sec	68:00	34:00
0:02.0	2.0 Sec	136:00	68:00

Press the **START/PAUSE** button to exit the Setup mode. *The display should show 0:00.0 with the colon and decimal blinking. This indicates that the instrument is ready to record.*

RECORDING AND STORING DATA

The data logger records time, tach and/or speedometer information, depending on the record options you chose. While recording, markers can be set that allow the instrument to be used as a lap timer.

The monitoring system allows you to store three sets of readings into memory. These are different from the markers set in the data logger because they store readings for all four functions. The time at which they were set is not saved. The monitoring system automatically stores the maximum reading for each sensor.

RECORDING DATA (datalogger)

To *AUTOMATICALLY* begin recording data, start the engine before the DT-32K5 is turned on. To *MANUALLY* start recording data, turn the instrument on *before* the engine is started. Then press the remote **MARKER** switch or the **START/PAUSE** button to begin recording data.

During the data recording session press the remote **MARKER** switch to mark points in the recording stream that you want to look at later (e.g. entering or leaving a corner). There are no restrictions on the number of markers that you can place while recording data. When a marker is placed, the unit displays the time between markers. This function allows the data logger to be used as a lap timer. To return to displaying elapsed record time, press the **DISPLAY RATE** button.

Use the **START/PAUSE** button to start and stop recording data. When the maximum record time has been reached the DT-32K5 will automatically stop recording.

During the recording of data, the upper left display will show the time that the unit has been recording. The + sign in the display toggles on/off every 20 minutes. These numbers can be used to keep track of how long the race or session has been in progress.

If the **START/PAUSE** button is used *during* the data recording session, the time displayed will equal *TOTAL RECORDING TIME* only. The displayed time will not relate to the actual time of the session.

To reset the record time to 0:00.0, push and hold the **SLOWER** button and then press the **START/PAUSE** button.

WARNING: **All previously recorded data is lost when you enter Record mode and start recording.** There are two ways to lose your data. If your engine starts while the instrument is off, all old data is lost. Data can also be lost by pressing the **START/PAUSE** button directly after turning the instrument on. Either method will start the Record mode and erase all old data.

LAP TIMER

When markers are set while recording, the data logger displays the time between markers. This allows you to use the data logger as a lap timer, if you press the **MARKER** at the same point on the track each time around. For the most precise lap times use the 1/10 second record rate. The data logger will continue to show the lap time until you press the **DISPLAY RATE** button, which returns the display to elapsed record time.

RESETTING the RECORD MODE

To reset the time to zero while recording, first pause the instrument. Then press and hold the **START/PAUSE** button and then press the **SLOWER** button. When you begin recording again it will write over all previous data.

STORING DATA (right side of instrument)

The **STORE** button (power on button on the right side) can be pressed up to three different times to store the current reading of each sensor into memory. The monitoring system's displays and the optional *WARNING INDICATOR LIGHT* will flash to indicate a successful store of information. After three sets of readings are stored, additional attempts to store information will be ignored.

In addition to the three user stored readings, the instrument automatically stores a maximum reading for each sensor during the current recording period.

PLAYBACK AND RECALL OF DATA

After recording data, you can play back the tach and/or speedometer data recorded by the data logger. This information is shown in the appropriate display of the monitoring system, while the data logger displays time. The three sets of manually stored data and the maximum data for all four functions can also be recalled from the monitoring system.

SELECTING RECORD / PLAYBACK MODES

To enter the playback mode, first press and hold the **DISPLAY RATE** button and then press the **REC/PLBK** button. *When you are in the playback mode an ARROW will appear in the upper left corner of the display window.* Press the same buttons to reenter the record mode and the *ARROW* in the display will disappear.

PLAYBACK OF RECORDED DATA

When in playback mode, press the **START/PAUSE** button to view the recorded tach and/or speedometer data saved during the last session. *The recorded data will be displayed in the appropriate window on the right side of the instrument and the time is displayed in the data logger window*.

At any time during playback you can freeze the display of data by pushing the **START/PAUSE** button. This will stop the playback until you push the **START/PAUSE** button again.

The *ARROW* in the upper left corner will blink when the playback time reaches a location where a marker was placed during record. If you wish to go to the next stored marker, press and hold the **DISPLAY RATE** button and then press the **GO TO MARKER** button. The data logger will display the time between markers as long as you hold these buttons down. When you release the buttons the time of the marker placement will be displayed.

RESETTING the PLAYBACK of DATA

To reset the time to zero and view the information from the beginning, press and hold the **START/PAUSE** button and then press the **SLOWER** button.

PLAYBACK DIRECTION

You can choose to view the recorded information either forward or backward. Initially the data will be displayed with time going forward. To change playback direction, press and hold the **DISPLAY RATE** button and then press the **«** button.

PLAYBACK SPEED

While in Playback mode, press and hold the **DISPLAY RATE** button to show the current playback speed of the unit. Press the **FASTER** button to increase the playback speed of the instrument. Press the **SLOWER** button to decrease the playback speed.

The playback speeds are **1/8x, 1/4x, 1/2x, 1x, 2x, 4x, 8x, 16x, 32x, and 64x** the recorded speed of the data.

NOTE: It is possible for data playback to occur so fast that your instrument may not properly display the stored information. If this occurs, choose a slower playback speed.

RECALLING STORED DATA

The **MEM RECALL** button is used to recall the readings stored in memory with the **STORE** button or switch. To recall the first set of stored readings, press and release the **MEM RECALL** button. The contents of the first set of readings will be displayed and the left decimal point in the lower display will flash. Press **MEM RECALL** again to display the second set of information. The middle decimal point will flash in the lower window. A third press of **MEM RECALL** will bring up the last set of information and cause the right decimal point to flash. To view the secondary functions in both windows, press the **MODE** button at any time. Press **MEM RECALL** once more to return to normal display mode.

RECALL of MAXIMUM STORED DATA

The **MAX RECALL** button is used to display the maximum reading recorded for each input. Storage of these readings takes place automatically and requires no input from the user. To display these readings, hold down the **MAX RECALL** button. The maximum readings will be displayed in each window until the button is released. The percentage of remaining battery life will alternate with the maximum reading in the lower display. Press the **MODE** button to display the secondary functions for each window. Then press the **MAX RECALL** button to display the maximum readings for these functions.

TACHOMETER READINGS

Tach readings are displayed in thousands of RPM. For example, if your display shows 9.50, your tach reading is 9500 RPM.

DISPLAY OF OVERLIMIT/OVERRANGE

When conditions exceed the set limits, the display where the overlimit condition occurs will flash. The instrument automatically switches to this function if it is not being displayed.

When conditions exceed the range of the instrument, the display will show three lines at the top of the display where the overrange condition occurs. This condition can also be caused by a bad or disconnected sensor.

BATTERY LIFE

An instrument not using a backlight will run for about 150 hours on a fresh set of AA alkaline batteries. With the backlight on, the battery life will be approximately 50 hours. Heavy duty batteries last about half as long as alkaline batteries. The percentage of battery life remaining will alternate in the lower window by holding down the **MAX RECALL** button. The instrument will also display “lo b” in the lower window and the data logger window to warn you of a low battery condition. At this time the temperature functions will become inaccurate, but the tach and the data logger will display accurate information for approximately one hour.

ELECTRICAL INTERFERENCE

If the instrument encounters excessive electrical interference it will display three vertical decimal points in the tach display. This indicates that the stored data could be invalid. It can also indicate an incorrect instrument or sensor installation.

Severe electrical interference can cause the limits and calibration to reprogram themselves. If your instrument is doing strange things, put it in the set limits mode and check to see that the limits and calibration are still where you set them.

OPTIONS

The DT-32K5 has two optional features that can be added to your instrument. The first is a *WARNING INDICATOR LIGHT* that emphasizes when limits have been surpassed. The backlight is the second option, it lights the displays for night races. To have either of these options added to your instrument, send it to the address at the end of these instructions.

WARNING INDICATOR LIGHT

The optional *WARNING INDICATOR LIGHT* flashes constantly when any of the set limits are exceeded. It will stop flashing when the conditions fall below the set limits. The *WARNING INDICATOR LIGHT* will also flash once when the **STORE** button or switch is pressed. Memory is full if the switch is pressed and the *WARNING INDICATOR LIGHT* does not flash.

BACKLIGHT

To turn the backlight on or off, press and hold the **MODE** and **MAX RECALL** buttons simultaneously. The backlight is an optional feature; it will only work if installed.

POWER OFF

To turn the instrument off, the data logger must be paused. Press and hold the **FASTER** and **SLOWER** buttons on the data logger side of the instrument. The unit cannot be turned off with the off buttons on the right side of the instrument. The unit will turn itself off automatically after 10 minutes if no tach input, mph input or data logger button presses are detected.

All the setup data will be retained when the DT-32K5 is turned off. All of the information held in the data logger will be saved, but any stored data in the monitoring system will be lost when the DT-32K5 is turned off.

NOTE: If the unit is connected to an engine, the unit *will not turn off* while the engine is running.

REPAIRS

If you have any questions about the operation of your instrument, please call. One of our technicians will be happy to help you.

Your instrument is warranted to be free from factory defects and electronic failure for one year from the date of purchase. Physical damage during normal usage is not covered under the warranty. Be sure to fill out and return your warranty card for our records. If we do not have a card on file for your instrument, you will be charged for repairs unless you can provide us with proof of purchase date.
When returning an instrument for repair, enclose a note indicating your return address, phone number and a detailed description of the problem. Send your instrument and sensors so that we can check the complete system.

Send repairs to:

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Spokane, WA 99217
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