

General:

This Field Bulletin describes how to set up the 258 to use IRD 544 or 546DP velocity sensors instead of the standard 100mv/g accelerometers. These sensors are typically installed and used on IRD balancing machines. The sensitivity of these velocity sensors is nominally 1080mv/in/s (43mv/mm/s).

Requirements:

- Familiarity with the operation of the 258 Field Balancing Instrument.
- Standard 25 foot long sensor cable supplied with 258, E48617/S/025.
- Standard 544 to accelerometer crossover adapter supplied with 258, E47182.
- Optional IRD 544 velocity vibration sensor, E04526.
- Optional IRD 546DP velocity vibration sensor, E02785 or E11194.

Procedure for Analysis Measurements:

1. Attach the 544 or 546 velocity sensor to the 258 using the 544 adapter, E47182, and the 25 foot long sensor cable. See Figure 1 for general layout.



Figure 1 - 544/546DP Connections to Model 258

How to Set Up the 258 to Work with 544/546 Sensors

2. Turn on the 258 and select the ANALYSIS Icon. Press one of the white Store/Enter keys to display the options available for the Analyzer function. Select the Setup Icon and press the white Store/Enter key again to display the Analyzer Setup screen.
3. For **Imperial** measurements in mils peak to peak (1/1000 inch), set the parameters in **bold** type as listed below. The other parameters may be set as desired by the user. See Figure 2 for a screen display of a typical Imperial setup.
 - a. Sensor Type: **Vel IPS**
 - b. Sens. (mv/ips): **1080**
 - c. Y-axis units: **Disp mil**
 - d. X-axis units: *CPM or Hz as desired*
 - e. Detection: **Pk-Pk**
 - f. Filter: *2Hz or other setting as desired*
 - g. Freq Range: *Set numeric value as desired*
 - h. Lines: *400 or other setting as desired*
 - i. View Signal: *Spectrum or Spectrum & Phase as desired*
 - j. Display Y-axis: *Linear or Log as desired*

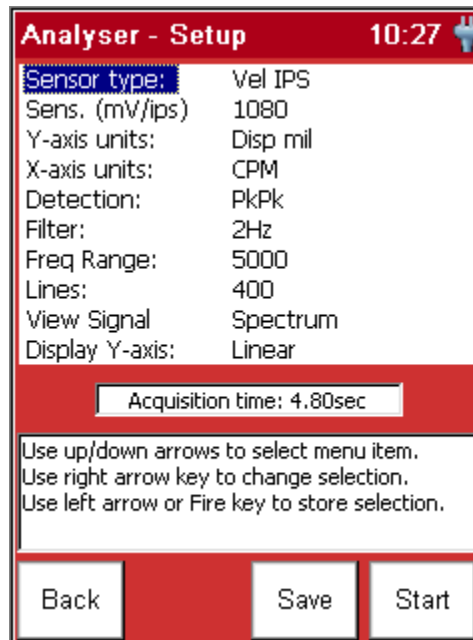


Figure 2 – Imperial Displacement (Mils) 258 Setup for 544/546

4. For **Metric** measurements in micrometers peak to peak, set the parameters in **bold** type as listed below. The other parameters may be set as desired by the user. See Figure 3 for a screen display of a typical Metric setup. This differs from the Imperial setup by the sensitivity parameter, 43 mv/EU (1080/25.4).
- a. Sensor Type: **Vel mm/s**
 - b. Sens. (mv/ips): **43**
 - c. Y-axis units: **Disp um**
 - d. X-axis units: *CPM or Hz as desired*
 - e. Detection: **Pk-Pk**
 - f. Filter: *2Hz or other setting as desired*
 - g. Freq Range: *Set numeric value as desired*
 - h. Lines: *400 or other setting as desired*
 - i. View Signal: *Spectrum or Spectrum & Phase as desired*
 - j. Display Y-axis: *Linear or Log as desired*

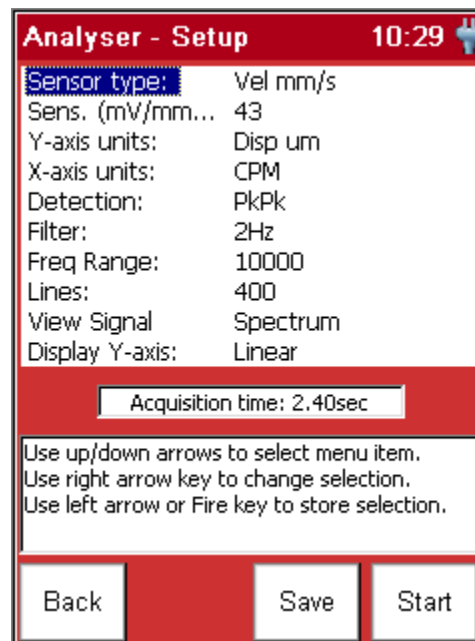


Figure 3 - Metric Displacement (micrometers) 258 setup for 544/546

5. It is a good idea to save the Analyzer setup so that you do not have to reenter all of the settings. Before proceeding to take the first measurement, simply press the Save key under the setup display and enter a meaningful description for the Analyzer setup.

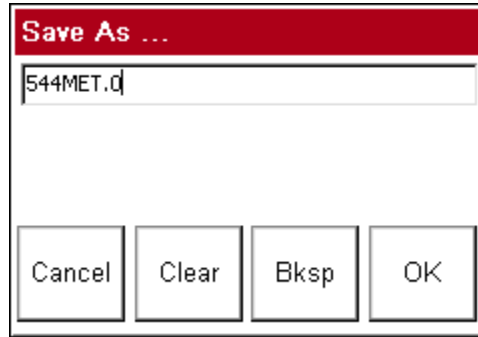


Figure 4 - Save Analyzer Setup

6. To take the measurement press the Store/Enter key or the Start key under the display and the instrument will display the overall and spectral information. If the ICP selection in the Control Panel is not set to “Automatic”, you may get the following warning message. Press Yes to continue.

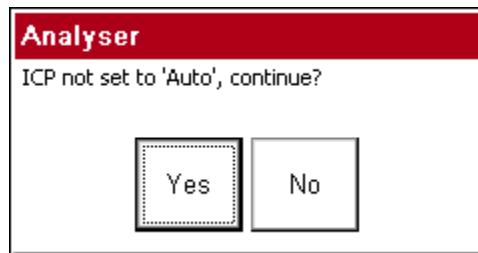


Figure 5 - ICP Warning

7. Spectral data screen using 544/546 velocity sensor as an input.

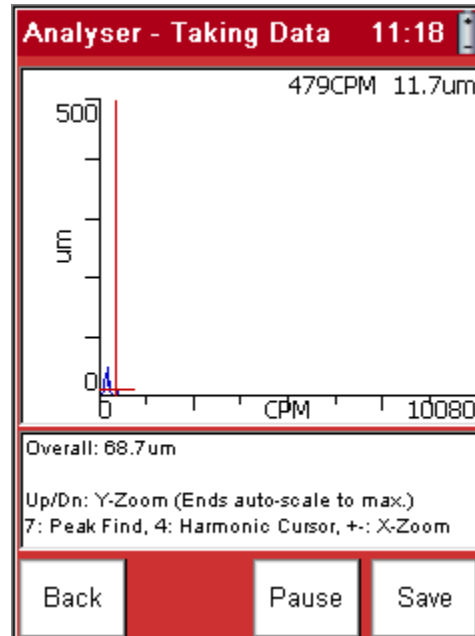


Figure 6 - Spectral Display with 544 Sensor

Procedure for Balancing Measurements:

1. The Balancing Setup is different than the Analysis setup, so there are some different steps involved for balancing.
2. For balancing in Imperial displacement units, the Vib Measm't Type in the initial Balance Setup screen must be set as shown below. All others are set as desired.
 - a. Vib Measm't Type: **V->D (mil)**
Note: The term **V->D** represents a Velocity Input sensor (544/546) that has one stage of integration so that the output is in Imperial displacement units.

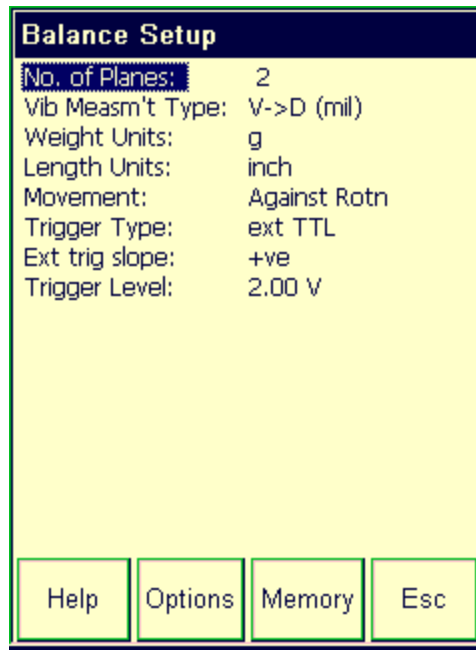


Figure 7 - Balance Setup - Imperial Units

3. The Options menu must also be opened and the following changes made. All others are set as desired.
- a. Detection: **Pk-Pk**
 - b. Pl 1 Coupling: **AC**
 - c. Pl 1 Sensitivity: **1080 mv/EU**
 - d. Pl 2 Coupling: **AC**
 - e. Pl 2 Sensitivity: **1080 mv/EU**

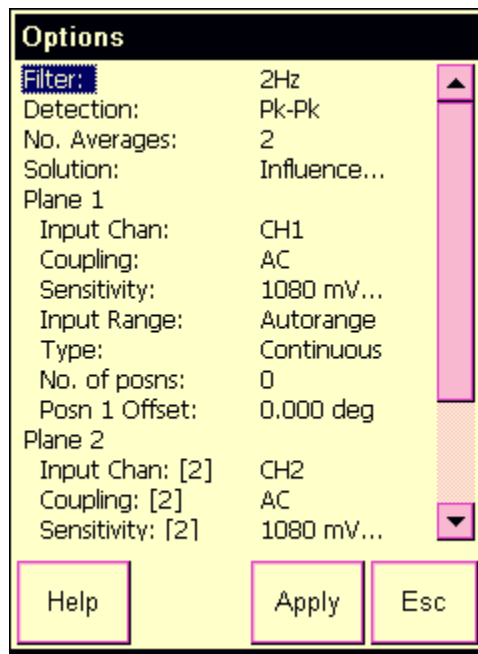


Figure 8 - Balance Options Setup - Imperial Units

4. For balancing in Metric displacement units, the Vib Measm't Type in the initial Balance Setup screen must be set as shown below. All others are set as desired.
 - a. Vib Measm't Type: **V->D (um)**
Note: The term **V->D** represents a Velocity Input sensor (544/546) that has one stage of integration so that the output is in metric displacement units.

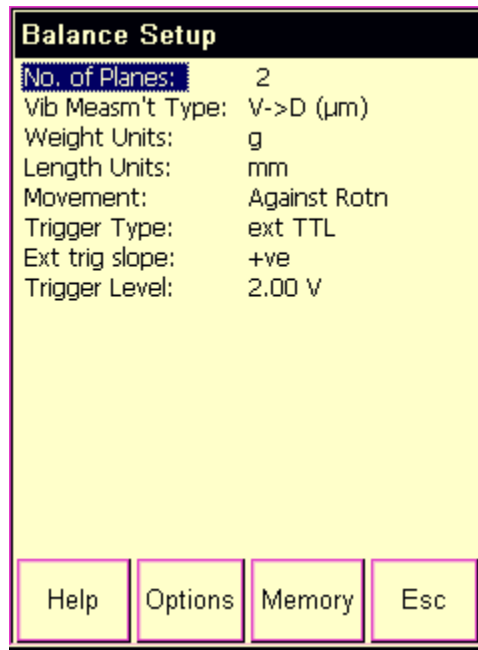


Figure 9 - Balance Setup - Metric Units

5. The Options menu must also be opened and the following changes made. All others are set as desired.
- a. Detection: **Pk-Pk**
 - b. Pl 1 Coupling: **AC**
 - c. Pl 1 Sensitivity: **43 mv/EU**
 - d. Pl 2 Coupling: **AC**
 - e. Pl 2 Sensitivity: **43 mv/EU**

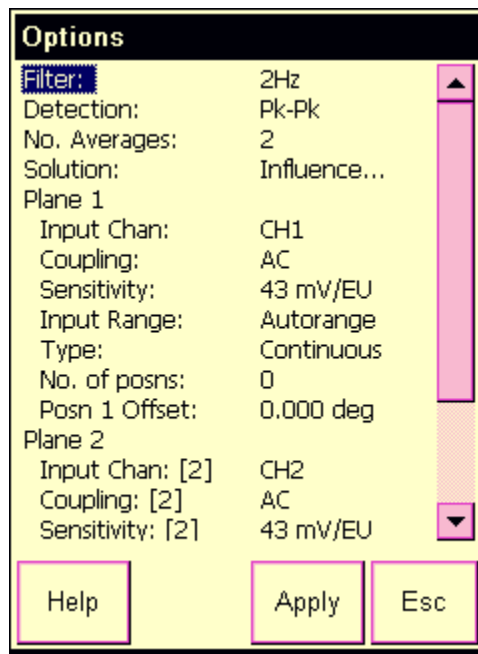


Figure 10 - Balance Options Setup - Metric Units

6. Once the setup changes have been made for using the 544/546 velocity sensors, you can proceed to balance in the normal manner by following the balance procedure outlined in the 258 operation manual.