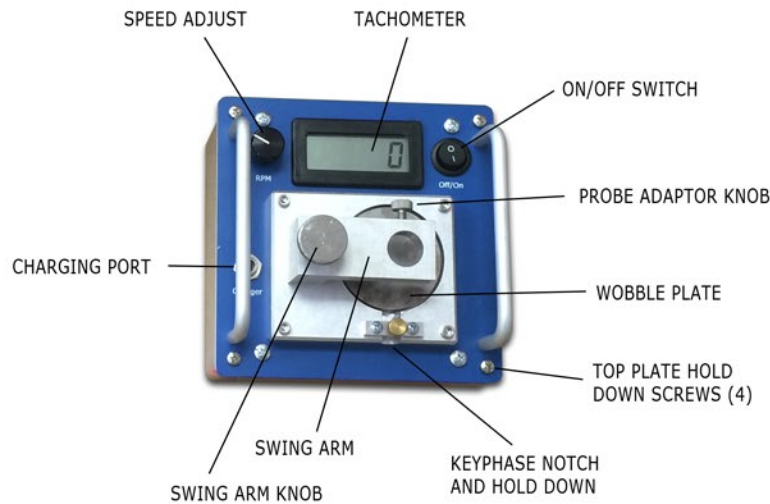


OPERATION MANUAL

CMCP-TKPro

Vibration Test Kit





The CMCP-TKPro uses a variable speed DC motor to drive a Wobble Plate. The Wobble Plate is machined with a slant across the top surface. A proximity probe sees this as sinusoidal mechanical vibration (1X RPM). Fully adjustable vibration levels between 0 and 0.015" (0 to 381 um) can be obtained by positioning the Swing Arm to a location with higher or lower displacement. The center of the Wobble Plate has essentially 0 displacement. Once the Swing Arm is positioned using the supplied Dial Indicator the Dial Indicator is replaced with a Proximity Probe using the appropriate Probe Adapter. Probe Adapter are used to insure the Proximity Probe is at the same location as the Dial Indicator.

When the TKPro is at rest or 0 RPM only DC Gap is available from the Proximity Probe. Rotation of the Wobble Plate creates the dynamic vibration or AC signal used to verify monitor operation. The supplied plastic feeler gauges can be used to quickly gap the proximity probe for test or gap electrically using a DVM.

Operation:

Operation of the TKPro is relatively simple by following these steps:

1. Install Dial Indicator into Swing Arm using 0.375" Probe Adapter (Collet). Adjust Dial Indicator Shank depth so there is adequate Dial Indicator swing for the range desired then tighten Probe Adapter hold screw.
2. Then adjust TKPro Swing Arm to the desired mechanical displacement by carefully rotating Wobble Plate by hand and measuring displacement on Dial Indicator. Be sure to rotate at least 360 degrees.
3. Rotating Dial Indicator Face can help with making mechanical measurement by setting "0" to one end of needle travel.
4. By adjusting the radius of the Swing Arm mechanical motion may be adjusted from 0 to 0.015" (0 to 381 um).
5. When desired mechanical motion is obtained, tighten Swing Arm hold down knob. Verify reading after tightening.
6. Tip: It is not as important to adjust mechanical motion to an even number as it is to record the actual motion and then compare. Example 3.0 mils as compared to 3.15 mils.
7. Remove Dial Indicator and install proximity probe using the appropriate probe adapter using a DVM to set DC gap or Plastic Feeler Gauge for "Quick Gap". Be sure Proximity Probe is set in the middle of its linear range or signal may be "clipped".
8. Turn on TKPro and adjust to desired speed. Be sure speed is with frequency response of monitoring system to be checked.
9. You may now compare readings

As the TKPro produces a sinusoidal output by using a sloped rotating mass or wobble plate. As the signal is sinusoidal a DVM in AC mode attached to the Proximeter output will approximate the Peak to Peak signal by multiplying the RMS signal shown on the DVM by 1.414 to obtain Peak and then x 2 to obtain Peak to Peak AC Voltage. Example: 323 mV on DVM x 1.414 = 457 mV then 457 mV x 2 = 914 mV. If proximity system is 200 mv/mil then 914 mV = 4.57 mils or 116 um.

Charging Battery:

******* Do Not Use any Other Charger Other than that Supplied with TKPro*******

The TKPro comes standard with a 25.9 VDC, 1.2 Ah “Smart Charger” designed for the Li-Ion Battery. The Universal Charger operates on 110 to 240 VAC and 50 to 60 Hz. It is equipped with two LEDs. Simply connect charger and wait for Green LED to illuminate. Red LED indicates Battery is charging. The Charger is Over Voltage, Reverse Polarity and Short Circuit Protected. Charging time will be <2 hours depending on state of battery. Charger will cut off automatically when battery is fully charged.

- **Red LED** = charging
- **Green LED** = fully charged

Fuses:

It is unlikely to have a blown fuse. If Motor does not operate and battery is charged then there may be a blown fuse. Fuses are located on the Motor Control Board between battery and motor. Remove the 4 screws holding Top Plate to Case. Then remove nuts holding Bottom Plate to Top Plate. There are 4 Fuses on Control Board. One (1) 7 Amp for Battery Input Voltage and Three (3) 30 Amp for Motor Windings.

Maintenance:

1. No regular maintenance is required other than to charge battery and protect Wobble Plate from rust.
2. The Wobble Plate is made of 4140 steel and will rust. Coating it occasionally with a light application of automobile paste wax or a light film of oil will prevent rust.
3. To tighten or remove the Wobble Plate it is held to the motor shaft with a 1/16” Hex setscrew and accessible by lining up the Keyphasor notch and hole on side of mass. Use a 4” long 1/16” Hex Ball Tip Allen Wrench.
4. A spare charged battery can be quickly inserted by removing the 4 hold down screws located at each corner of top plate. The battery has 2 connectors one to Charger Port and one to Control Board. Do not connect backwards!