

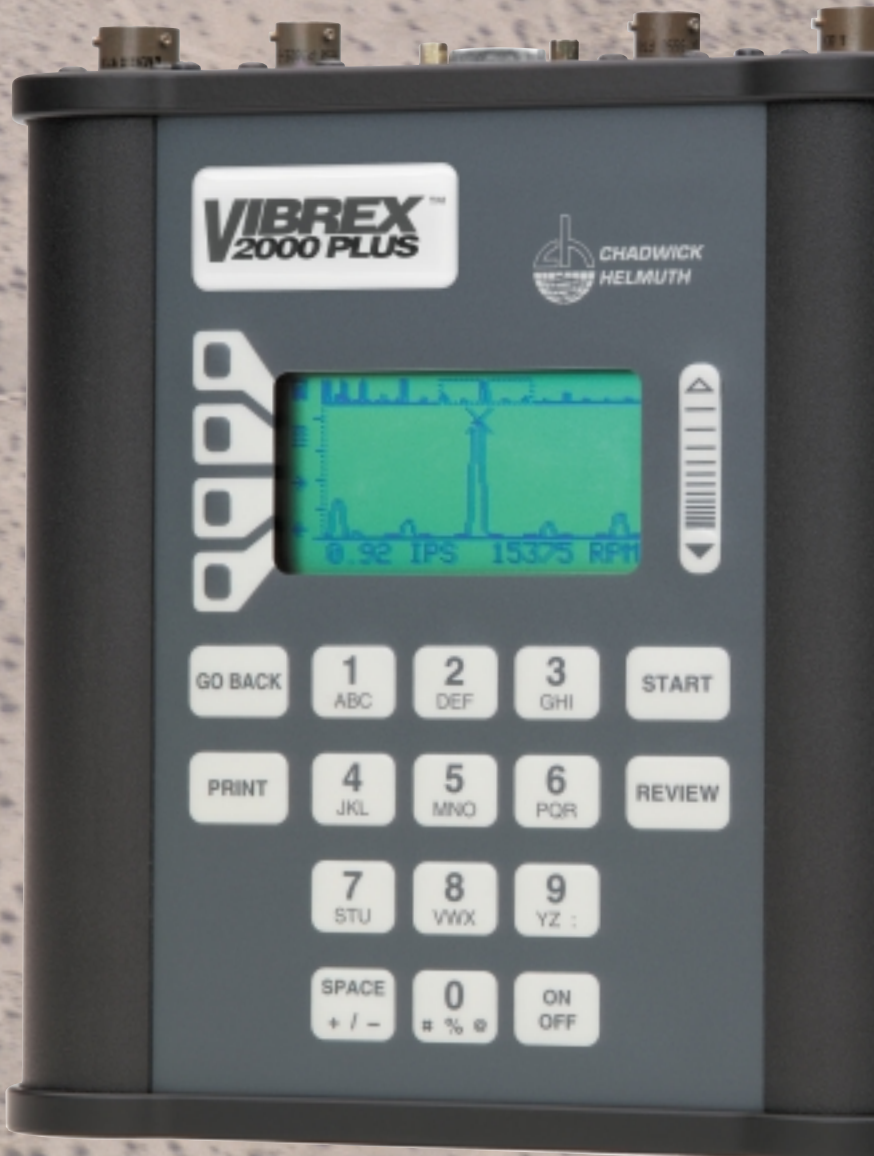
Vibrex 2000, Vibrex 2000 Plus



**CHADWICK
HELMUTH**
Balancing The World Since 1954

**The cost-effective balancer/analyzers
with superior performance.**

- **Propeller balance.**
- **Helicopter track & balance**
- **Vibration analysis**
- **Multiple channel input for multiple balance jobs**
- **Automatic weight sensitivity correction**
- **RS232 interface for connection to printer and/or personal computer**
- **Uses common rechargeable or disposable D-cell batteries**



The balancer/analyzer for fixed-wing or rotorcraft.



Whether you have a fixed-wing aircraft, helicopter, turbine engine or reciprocating engine, there's a Vibrex 2000 to meet your needs.

The Vibrex 2000 is a vibration analysis and balancing tool that rapidly and accurately acquires and analyzes aircraft and engine vibration data. It uses that data to calculate balance solutions and to analyze aircraft vibration levels across a broad frequency range.

This balancer/analyzer acquires accurate propeller and helicopter vibration readings. The Vibrex 2000 will balance propellers without the need of a chart or use one of the 150 available Chadwick paper charts, or manufactures charts, to balance your helicopter. Also capable of balancing shafts and blowers, the Vibrex 2000 is a complete balancing tool.

As a spectrum analyzer, it provides the operator with an overview of rotor and drivetrain vibration.

2 models to fit your needs

Vibrex 2000 - The basic Vibrex 2000 is applicable to aircraft and engines with component frequencies of

Four easy steps to FAA-approved prop balance.

Easy to understand menus allow the user to initiate and complete up to 4 different balancing jobs at one time. The instrument will automatically correct for the propeller response to weight changes and this correction can be saved for future balancing exercises.

A "first round hit" solution means less vibration, even on the first adjustment. Two channels allow the user to measure the propeller and rear of the engine during balancing.

All measurements, sensitivities, solutions, and annotations are stored in memory and can be reviewed on the instrument, printed on the optional portable thermal printer, or downloaded to a personal computer.

Use the Vibrex 2000 along with Chadwick's FAA-approved "The Smooth Propeller" publication to lower vibration and improve ride quality.

```
RUN 1 PROP MEAS
ACQUIRING FROM ch1A
AIRCRAFT ID [N42156-1]
480 RPM
0.93 IPS @ 6:01

to abort GO BACK
```

1 Acquire data

```
RUN 1 PROP MEAS
17 JAN 00 14:37:28 #1A
▶ [ANNOTATE ]
480 RPM
0.93 IPS @ 6:01
ID:N42156-1
▶ REDO MEAS
solution Push START
```

2 Show results

```
PROP BALANCE QUALITY
BETTER |====X| WORSE
0.93 --> unaccePtable
▶ DONE

▶ INSTALL PERMANENTLY
to solve, Push START
```

3 Show balance quality

```
▶ VIEW PROP MEAS
RUN 1 ADJUSTMENT
▶ ADD [ 32.7 ] GMS

▶ AT [12:01] <sPlit>
ID:N42156-1
▶ FOLLOW INSTRUCTIONS
next run, Push START
```

4 Display adjustments to achieve a balanced propeller

20,000 rpm or less and balance speeds below 10,000 rpm. For recip powered aircraft the Vibrex 2000 basic model is a sure fit.

Vibrex 2000 Plus – For applications where there is a need to perform higher frequency spectrum analysis, such as a turbine engine, the Vibrex 2000 Plus measures to 600,000 rpm.

The Vibrex 2000 Plus model also adds a spectrum viewer for on-screen graphical display of spectral data.

Both models, no matter the application, provide easy-to-use features that assist the maintainer in decreasing maintenance time, lowering maintenance

costs and increasing aircraft availability.

Customized Kits Available

The Vibrex 2000 product line comes as a complete kit, with all the software, accessories, and instructions for your particular application in a rugged, portable carrying case.

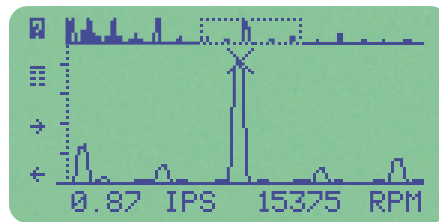
With over 45 years of experience on more than 300 different applications Chadwick products are proven and reliable.

As new aircraft come into the market Chadwick is always there developing new applications for your customized needs.



Pinpoint problem components.

Spectrum Analysis – Use the Vibrex 2000 spectrum feature to pinpoint problem components with ease. The "List Peaks" spectrum printout identifies the highest peaks quickly. Use the harmonic and order features to identify misalignment, mechanical looseness, or imbalance to guide your maintenance action.



An added feature of the Vibrex 2000 Plus model is a simple yet sophisticated spectrum viewer.

```

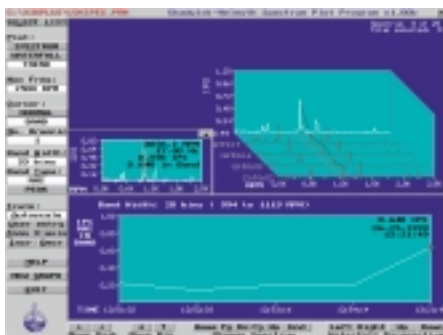
===== Vibrex 2000 v2.31+ =====
===== Printed on: 17Jan00 14:39:22 =====
SPECTRUM PRINT
LIST: 1 N42156
VIB CH: 1 AZ CH: A RPM: 480
MAX FREQ: 30000 RPM, 74.99 RPM/BIN
TIME: 17Jan00 14:39:22

      Ampl (IPS)   Freq (RPM)
      =====
0.97           3824
0.95           1950
0.93           7649
0.87           15372
0.86            450
0.52           1425
0.40           11548
0.31            5774
0.29           23021
0.19            9598

===== (c) 2000 Chadwick Helmut =====
  
```

Better than a crystal ball.

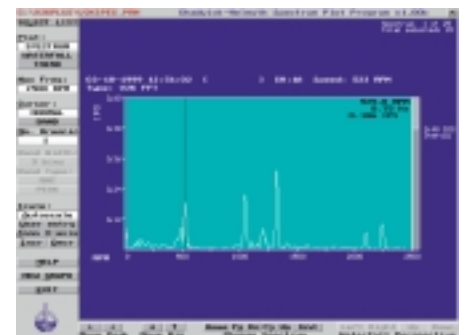
Data can be viewed and saved using Chadwick's ground-based software packages.



Use the "Waterfall Plot" to Trend & Predict component failures.



Use the Polar Plot to manually or automatically plot balance points.



Spectral Plot lets you integrate and differentiate into any units... mils, IPS, g's, etc.

Choose the Vibrex 2000 that meets your needs.

Physical

Dimensions	7.38"H x 7.25"W x 1.81"D 18.75 cm x 18.42 cm x 4.6 cm
Weight	3.5 lbs. (without batteries) nominal
Power requirement	3-6.4 VDC 250mA

Interfaces

Vibration sensor	2 ea. Velocimeter (19 mV/IPS sensitivity)
Mag pickup / tach.	2 ea. Pulse input, magnetic pickup or logic type.
Accessory power	4 ea. D-Cell batteries. Reverse polarity circuit protected and fused.
Portable Computer or Printer	1 Serial, RS-232, 9600baud

Balance Measurements

Phase accuracy	± 5 Minutes or $\pm 2.5^\circ$
Balance frequency range	240 to 10,000 RPM (Bsc. & Fr.) 120 to 30,000 RPM (Plus)
Phase resolution	2 minutes or 1 degree

Spectrum Analysis (F_{max} , RPM)

Vibrex 2000	1250-20,000
Vibrex 2000 (French)	3000-24,000
Vibrex 2000 Plus	1200-600,000
FFT resolution	400 Lines

Performance

Memory	256K (Basic & French) 1 MB (Plus model)
Accuracy (Basic & French)	$\pm 5\%$ from 5 Hz to 333 Hz
Accuracy (Plus)	$\pm .5$ dB from 2 Hz to 500 Hz ± 1 dB from 501 Hz to 10 KHz
Spurious free dyn. range	>60 dB
Velocimeter input ranges (Vibrex 2000 Plus)	0 to 304mV peak (16 ips) 0 to 380mV peak (20 ips)
Velocimeter input sensitivity	19mV/IPS peak
Mag p/u, input freq. range	100 – 50,000 RPM
Mag p/u, RPM accuracy	0.1%
Mag p/u, input voltage range	0.5 to 12 Volts peak nominal, 120 Volts peak maximum.

Environmental

Temperature	0°C to 50°C, or 32°F to 120°F
EMI susceptibility and radiated emissions standards	
Industrial Electronic Control Equipment Class	CE certified to: Standard EN50081-2 Standard EN50082-2

Ground Software

Vibrex 2000 Download	included with all models
Vibrex 2000 Plot	included with 2000 Plus optional with the Basic and French models

► EQUILIBRAGE HELICE
► SILLAGE & BALOURD
► ANALYSE SPECTRALE
► ETAT
aide=>appuyer sur 1

Version
Francaise

Maintenant, Chadwick-Helmuth offre une version Francaise du Vibrex 2000, avec tous les menus, textes d'aide et presentation des resultats en Francais.

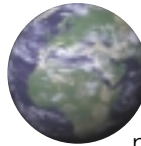
Extended Warranty Options

Every piece of equipment comes with a 1-year limited warranty from the date of purchase.

For an additional fee, you may extend the warranty to 5 years. This warranty includes – but is not limited to – annual calibration and any necessary firmware or software updates.

Please contact Chadwick-Helmuth's main office at **+1-626-575-6161** for terms and conditions of the warranty.

Please note that the terms and conditions of these warranties are subject to change without notice.



Customer Support

Chadwick is dedicated to supporting customer's needs. The legendary worldwide customer service is available via phone, fax, or e-mail. We can help your organization improve skills in rotor/propeller smoothing and vibration related troubleshooting.

Of course, service includes equipment repairs and calibration, for which we also have expert in-house teams. Never worry about where you are in the world there's a Chadwick International Representative supporting over 180 countries. No other company comes close to Chadwick service.

Your Chadwick-Helmuth representative: