VIBES = SERIOUS SERVICE™

Is not just our trademark or meaningless words but only the beginning of the commitment to our clients for the last 50 years in business.

We dedicate our experience and resources so you don’t have to worry about machinery vibrations and get back to what really matters.

“PEACE OF MIND AT WORK, MORE TIME WITH YOUR FAMILY, FRIENDS AND NATURE”

Garrett Sandwell, CEO
Certified Vibration Analyst, ASNT 3
Introduction to VIBES Corp™

Formerly: Industrial Balancing Ltd. (Est. 1967 Calgary, AB) & Fan Doctor Canada Inc. (Est. 1982 Calgary, AB).

Why work with us? Serving Canadians for over 50 Years.

VIBES Corp’s reputation was built and established on thousands of promises fulfilled over 50 years in business across Canada. Superior quality service, sales and training courses provided on the intelligent specialist level has been the standard and always will be since our vibration and balancing business was formed in Calgary, AB, in 1982. (Formerly Industrial Balancing Ltd. Est. 1967) In the final real-time analysis VIBES Corp will deliver more value and peace of mind.

What do we do?


What do we sell, supply, install & service?

- WEG Motors, misc. motors & drives
- CoolBlue™ - Inductive Absorbers & Chokes = VFD any motor shaft current bearing damage protection
- EASY LASER - Shaft Alignment Systems
- METALON synthetic grease
- CTM - Cooling Tower Maintenance Parts & Services for all makes & types
- Vibration isolation & control, measurement, recording, alarm & shutdown. We represent: BALMAC, LO-REZ, MEGGITT, MURPHY, SPECTRUM-INSTRUMENTS, WILCOXON, misc.
- Factory replacement fans, blowers, pumps & motors, customized rotors - new or re-manufacture
- SPANCO Gantry Cranes, KITO Chain Hoists and Trolleys
- Drive systems and parts: bearings, sheaves, couplings, belts, misc.
- Please visit www.vibescorp.ca to view more information and purchase products

The machinery under our professional health care programs = VIBES-GUARD PdM Programs™ are treated as if our own. We use proven technologies and methodologies along with our multi-technical and electro-mechanical (VIV, ASD, VPM, CPM, VFD, EIBD, EDM, Shaft Currents, etc.) State of the art instruments & precision tools, training, skills, and experiences for total overall analysis and evaluations. When the total analyzed facts about a machine, motor or engine are known we formulate a true condition report and recommend the best possible solutions. We work with clients to organize necessary actions in order of urgency or budgets. In some cases we employ professional engineering firms to help us solve critical analysis issues such as: Lubrication SEM studies, Ultra Sound or Magnetic Particle, Motor Electrical Analysis, VFD Electrical Discharge Rogowski Coil Test, misc.

Who have we worked with?

VIBES Corp service capabilities have been used and accepted by high-ranking officials in:

- other service companies
- manufacturing & food processing
- engineering firms
- universities
- colleges
- hospitals
- cold storage
- power plants & dams
- sewage & water treatment plants
- government infrastructure facilities
- oil & gas
- biogas energy systems
- transportation & construction
- commercial towers
- agricultural
- mining
- ski hills
- marine terminal cranes, cruise & container ships, tug boats, navy vessels & yachts
- asphalt & cement
- saw mills
- pulp & paper
- research & development
- machining / fabrication
- chemical plants
- restaurants
- skytrain tunnels

We take due diligence to the highest level on all projects regardless of size or budget.
Do we offer training?

VIBES Corp represents and offers training courses in technologies and quality products that we use, are industry-trusted and relate to improved machinery, engine, electric motors health and performance, energy savings and preventative maintenance. Examples:

- Vibration Monitoring & Trending
- Laser Shaft Alignment
- Fan & Motor Maintenance Training
- Update International (Vibration Analyst Certification ASNT Level 1, 2 & 3) On Site & Online Courses
- Bearing Maintenance & Precision Installation
- VIBES-GUARD PdM PROGRAM™
- Dynamic Balancing Agricultural Machinery ON-SITE

Learn more

You can download all catalogues and educational articles from our home page at www.vibescorp.ca. Here are four recent articles:

- Learn About Vibration, Volume 1 & 2: Basics & Advanced Vibration Analysis
- Electrically Induced Bearing Damage, aka Electrical Discharge Machining (EDM), Shaft Currents
- Failure Prevention of Variable Pitch in Motion Axial Fans

The photos below show typical projects that we have resolved. Fig 1. The failure was due to moisture contamination. Fig 2. The stainless steel guard solved the original problem with no issues for the last 13 years. Fig 3. A new fan was installed due to a complete failure of the original. Fig 4. Shows a 200HP motor and fan repair/replacement.
For more information & quote please visit our website www.vibescorp.ca

WEG
- Low Voltage Motors
- Generators
- Large Electric Motors and Machines

CoolBLUE® Inductive Absorbers
Absorb the energy caused by the VFD’s at the source... before getting to the motor.

Easy-Laser
- XT190 Belt Alignment System
- E420 Shaft Alignment System
- XT440 Shaft Alignment System
- XT550 Shaft Alignment System Intrinsically Safe
- XT660 Shaft Alignment System

Balmac Vibration
- Switches, Meters, Monitors and More
- Vibration Balancers
- Vibration Meters
- 230 Pocket Vibration Meter
- 242 Pocket Vibration Meter

Balmac 140
Vibration Transmitter

Balmac 191
Vibration Transmitter

Spectrum Instruments
- WAM-X Battery Operated Wireless Transmitter
- WAM-761 Wireless Data Collector
- WAM-93 High Capacity Data Collector
- WAM Software
- 'IVDT' In-Transit Data Logger System
For more information & quote please visit our website www.vibescorp.ca

Spanco’s Gantry Cranes are portable, lightweight, low-cost lifting solutions with adjustable heights

Murphy Shutdown Vibration Switches and Monitors
Murphy VS 2 Shock and Vibration Control Switch
Murphy VS 94 Shock and Vibration Control Switch
CTM = Cooling Tower Replacement Parts For All Types

MAC200 MachineryMate Handheld Vibration Meter
MAC800 MachineryMate Handheld Vibration Meter
MAC MachineryMate High Performance Sensing
MAC MachineryMate Strobe Attachment
MAC MachineryMate DataMate Software and USB Docking Cradle

VIBES Corp accepts: EFT, VISA, Mastercard, Discovery, Debit & SWIFT
Projects completed at these locations

- **New Westminster, BC.**
  - Dynamic Balancing a Large Fan on site

- **EIBD/Shaft Current Diverters**
  - Protect your rotating machinery assets 24/7

- **2 x 125 HP Kiln-Exhaust Fan**
  - Abbotsford Pet Nutrition
  - 450 HP Hammermill

- **Hospital Lab Hood Fans**

- **150 HP Wood Hog**
  - Waste Water Treatment Plant Squamish, BC.

- **Geo Thermal Pump Station**

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VIBES Corp™
FAN DOCTOR™

Vibration Industrial Balancing & Equipment Services, Corporation

720 - 999 W. Broadway, Vancouver, BC  V5Z 1K5

www.vibescorp.ca  email: info@vibescorp.ca  Phone: 604 - 619 - 9381 (24/7)
Projects completed at these locations
Projects completed at these locations

- 400 HP Motor & Compressor Food Processing Plant, Vancouver
- Complete Fan Assembly Replacement
- 900 HP Drill Rig Compressor
- 100 HP Woods Fan
- 60 HP Joy Fan

For more information & quote please visit our website www.vibescorp.ca
Projects completed at these locations

- Traffic induced vibration analysis on gas transmission pipe under bridge.
- Fluxdrive Magnetic ASD Conversions on 16 Exhibition Hall Fans
- Laser Alignment of Overhead Cranes BC Hydro Burrard Thermal Plant
- 400 HP RS Compressor
- 125 HP Pump
- 350 HP Motors & Gearbox

We supply, install and repair all types of electric motors

CoolBlue application in a Pump Station

Intrinsically Safe
# Common Vibration Sources Identification Guide

<table>
<thead>
<tr>
<th>CAUSE</th>
<th>FREQUENCY</th>
<th>AMPLITUDE</th>
<th>PHASE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unbalance</td>
<td>1 x RPM</td>
<td>Highest in Radial Direction-</td>
<td>Single Mark (Steady)</td>
<td>A common cause of vibration.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proportional to Unbalance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defective Anti-Friction Bearings</td>
<td>Very High-Often From 10 to 100 x RPM</td>
<td>Use Velocity</td>
<td>Unstable</td>
<td>Velocity readings are highest at defective bearing. As failure approaches, the amplitude of the velocity signal will increase and its frequency will decrease. Cage frequency is 40% +/- 4% of RPM.</td>
</tr>
<tr>
<td>Misalignment of Coupling or Bearing</td>
<td>1, 2 or 3 x RPM</td>
<td>High Axial Axial 50% or more of Radial</td>
<td>Often 2, Sometimes 1 or 3</td>
<td>Use phase analysis to determine relative movement of machine or bearings. Use a dial indicator if possible. Often diagnosed as a bent shaft. Can be caused by misalignment of V belts.</td>
</tr>
<tr>
<td>Sleeve Bearing</td>
<td>1 x RPM</td>
<td>Not Large</td>
<td>Single Reference Mark</td>
<td>May appear to be unbalanced. Shaft and bearing amplitude should be taken. If shaft vibration is larger than the bearing, vibration amplitude indicates clearance.</td>
</tr>
<tr>
<td>Misalignment of Coupling or Bearing</td>
<td>1, 2 or 3 x RPM</td>
<td>High Axial Axial 50% or more of Radial</td>
<td>Often 2, Sometimes 1 or 3</td>
<td>Use phase analysis to determine relative movement of machine or bearings. Use a dial indicator if possible. Often diagnosed as a bent shaft. Can be caused by misalignment of V belts.</td>
</tr>
<tr>
<td>Bent Shaft</td>
<td>1 or 2 x RPM</td>
<td>High Axial</td>
<td>1 or 2</td>
<td>Similar to misalignment. Use phase analysis.</td>
</tr>
<tr>
<td>Defective Gears</td>
<td>High No. Gear Teeth x RPM</td>
<td>Radial</td>
<td>Unsteady</td>
<td>Use velocity measurement. Often affected by misalignment. Generally accompanied by side band frequency. Pitting, scuffing and fractures are often caused by torsional vibrations. Frequency sometimes as high as 1 million CPM or more.</td>
</tr>
<tr>
<td>Mechanical Looseness</td>
<td>2 x RPM Sometimes 1 x RPM</td>
<td>Proportional to Looseness</td>
<td>1 or 2</td>
<td>Check movement of mounting bolts in relation to the machine base. Difference between base and machine indicates amount of looseness.</td>
</tr>
</tbody>
</table>
| Defective Drive Belts              | 1 or 2 x Belt Speed| Erratic                            | Use Strobe to Freeze Belt in OSC Mode | Calculate the belt RPM using: Belt RPM = Belt Length = (Pulley Diameter x 3.141) / Belt Length  
Look for cracks, hard spots, soft spots or lumps. Loose belt. Changes with belt tension. |
| Electrical                         | 1 or 2 x Line Frequency (3600 or 7200 CPM for 60Hz Power) May appear at 1 x RPM | Usually Low                      | 1 or 2 Marks Sometimes Slipping | Looks like mechanical unbalance until power is removed. Then drops dramatically. |
| Oil Whip                           | 45 - 55% RPM       | Radial Unsteady                    | Unstable                       | Caused by excessive clearance in sleeve bearings or by underloaded bearings. Will change with viscosity of oil (temperature). |
| Hydraulic-Aerodynamic              | No. Blades or Vanes x RPM | Erratic                            | Unsteady                       | May excite resonance problems.                                           |
| Beat Frequency                     | Near 1 x RPM       | Variable at Beat Rate              | Rotates at Beat Frequency      | Caused by two machines, mounted on same base, running at close to same RPM. |
| Resonance                          | Specific Criticals | High                               | Single Reference Mark          | Phase will shift 180° going through resonance (90° at resonance). Amplitude will peak at resonance. Resonance in frame can be removed by changing rotor operating speed or by changing the stiffness of the structure. |

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NOTE: There are several additional detailed articles that identify more complicated vibration sources at the Vibes Corp website titled:

1) LEARN ABOUT VIBRATION VOLUME 1: BASIC UNDERSTANDING OF MACHINERY VIBRATION
2) LEARN ABOUT VIBRATION VOLUME 2: ADVANCED VIBRATION ANALYSIS
3) LEARN ABOUT ELECTRICALLY INDUCED BEARING DAMAGE & SHAFT CURRENTS