

SKF

SKF Copperhead fault detection



Machinery fault detection

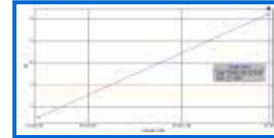
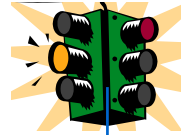
- Crushers
- Conveyors
- Grinding mills
- Vertical grinding mills
- Fans
- Vibrating screens
- Hoists

SKF Copperhead fault detection kits



Periodic Monitoring

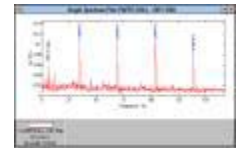
CPHD-1B , CPHD-2B



Marlin PRO



Microlog



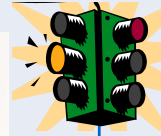
Continuous Monitoring

options

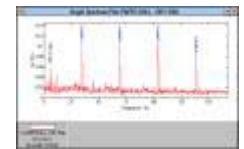
CPHD-3EC,
CPHD-4EC



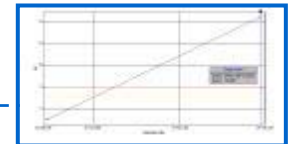
CTU Unit



Microlog



4 to 20 mA vibration
0 to 1.2 V DC temperature



PLC / DCS

Basic fault detection components



CMPT sensors

(vibration and temperature)

- Rugged, low profile design
- High shock resistance
- Permanent mounted in machine



CMPT CTU module

(Enveloping, Acceleration and Velocity)

- Early detection of vibration faults
- 4 to 20 mA proportional signal



CMPT DCL display / alarm module

for vibration & temperature

Each system provides optional

- Stand alone ALARM function
- Visual LED lamp for ALARM
- Internal relay contacts (48 V DC / 1 Amp)

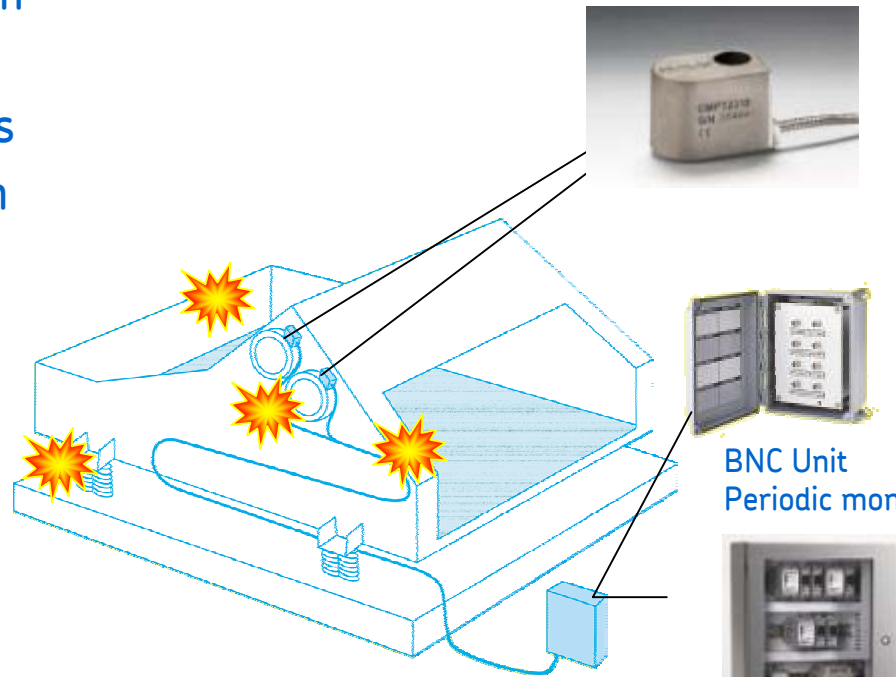
Prevent unplanned downtime, reduce maintenance and repair costs, improve productivity, improve safety

SKF Copperhead for vibrating screens



Monitors the whole machine

- Loose screen mesh
- Bottoming out
- Loose components
- Lack of lubrication
- Bearing faults
- High temperature



CMPT2310T sensor
(vibration and
temperature)
1 x each bearing
2 x each gearbox

BNC Unit
Periodic monitoring

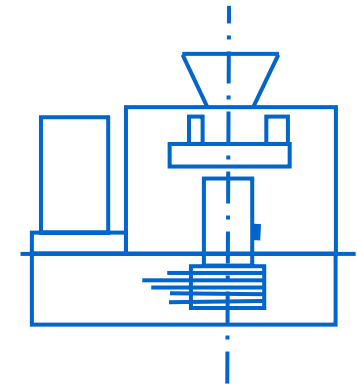
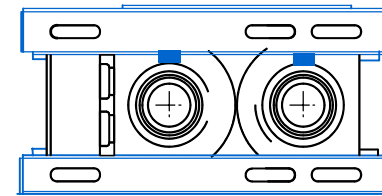
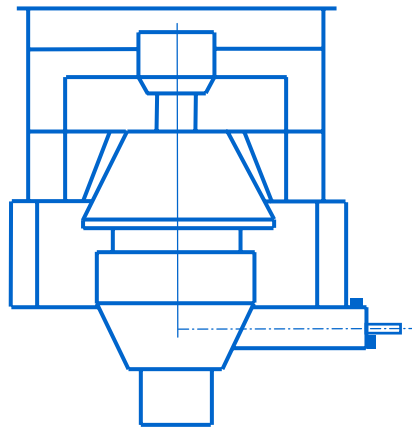
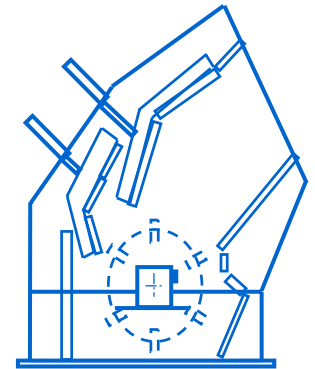
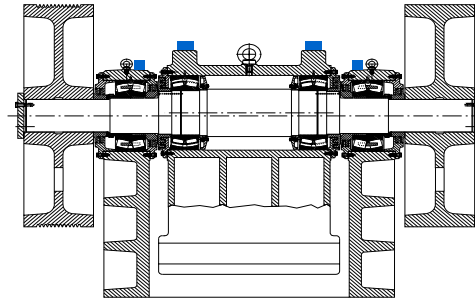
CTU Unit
Continuous monitoring

SKf Copperhead for crushers



Monitor machinery faults to
extend machine performance

- Mechanical looseness
- Rotor unbalance
- Gear faults
- Bearing faults
- High temperature



For all types and styles of crushers
Rolling and journal bearings

SKF Copperhead for grinding mills

Fault detection

- Mechanical looseness
- Gear faults
- Bearing faults
- High temperature

Vibration and temperature monitoring

CMPT2323T (vibration and temperature)

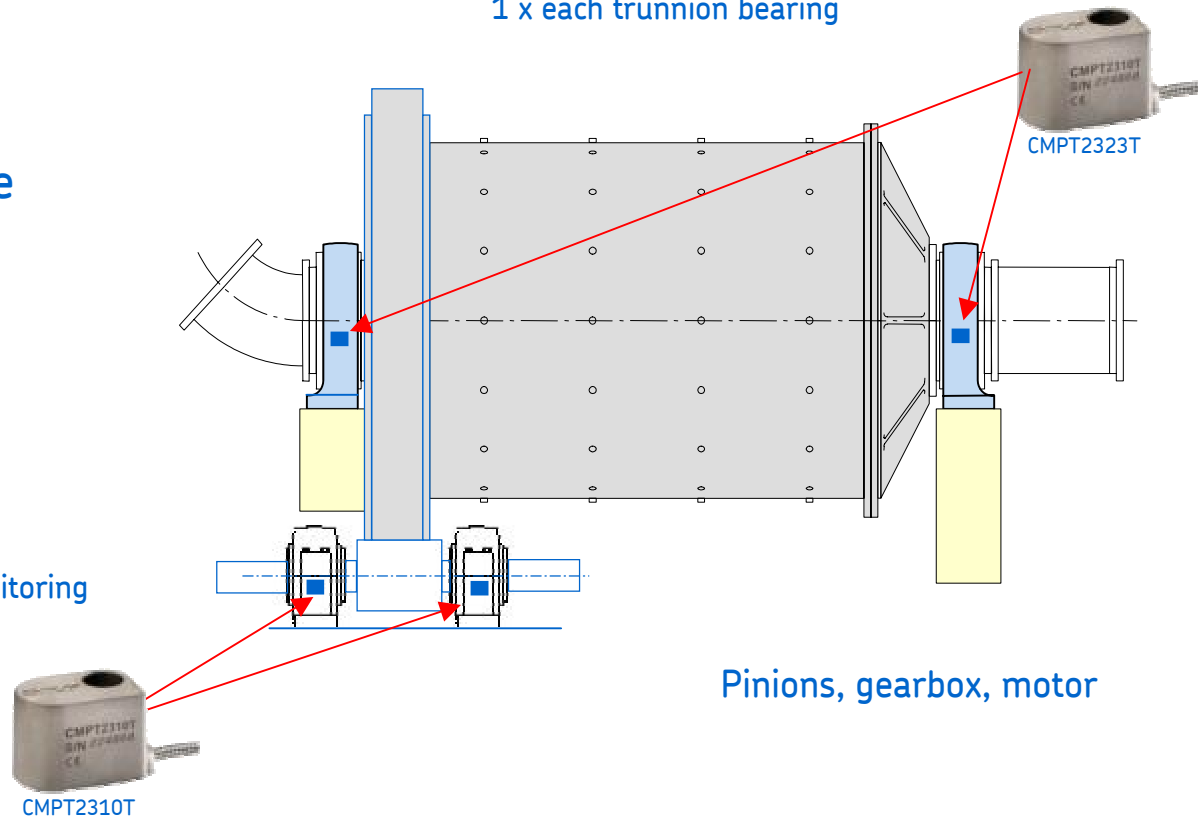
1 x each trunnion bearing

Vibration and temperature monitoring

CMPT2310T

(vibration and temperature)

- 1 x each bearing
- 1 x each gearbox
- 1 x each motor



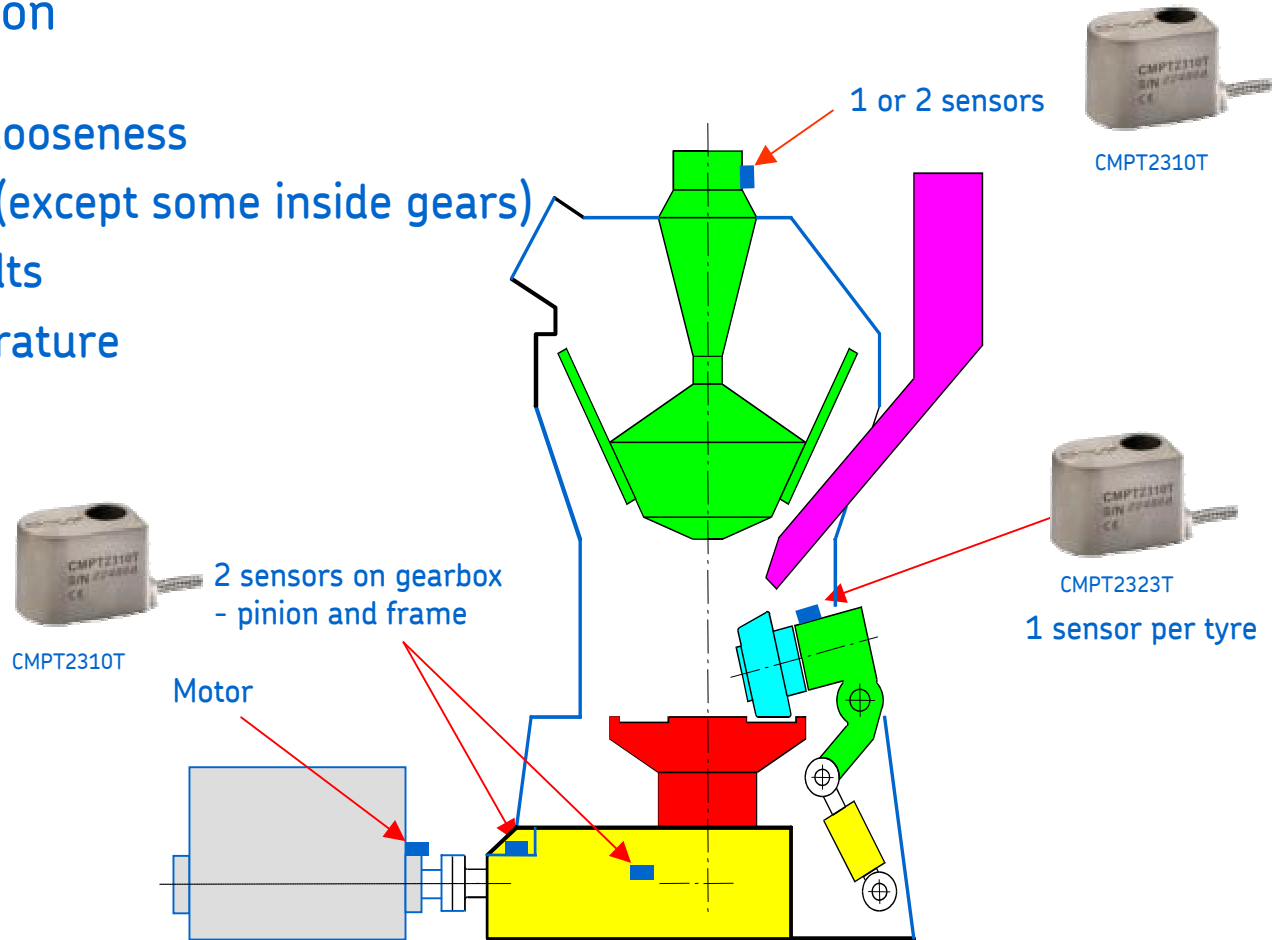
Pinions, gearbox, motor

SKF Copperhead for vertical mills



Fault detection

- Mechanical looseness
- Gear faults (except some inside gears)
- Bearing faults
- High temperature

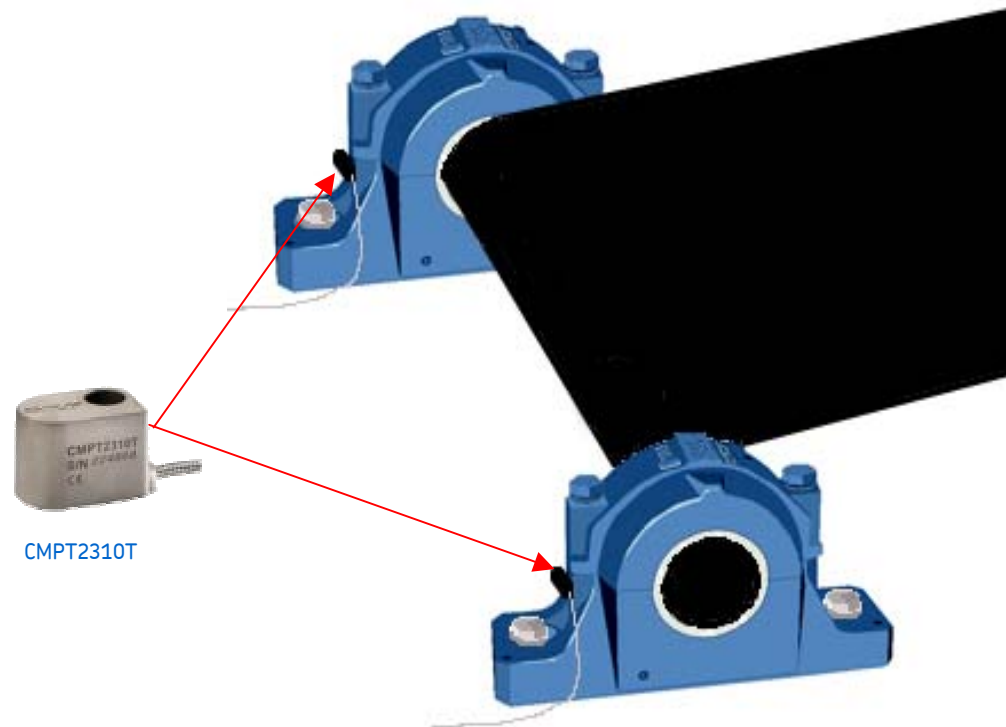


SKF Copperhead for bulk conveyors



Fault detection

- Mechanical looseness
- Bearing faults
- High temperature

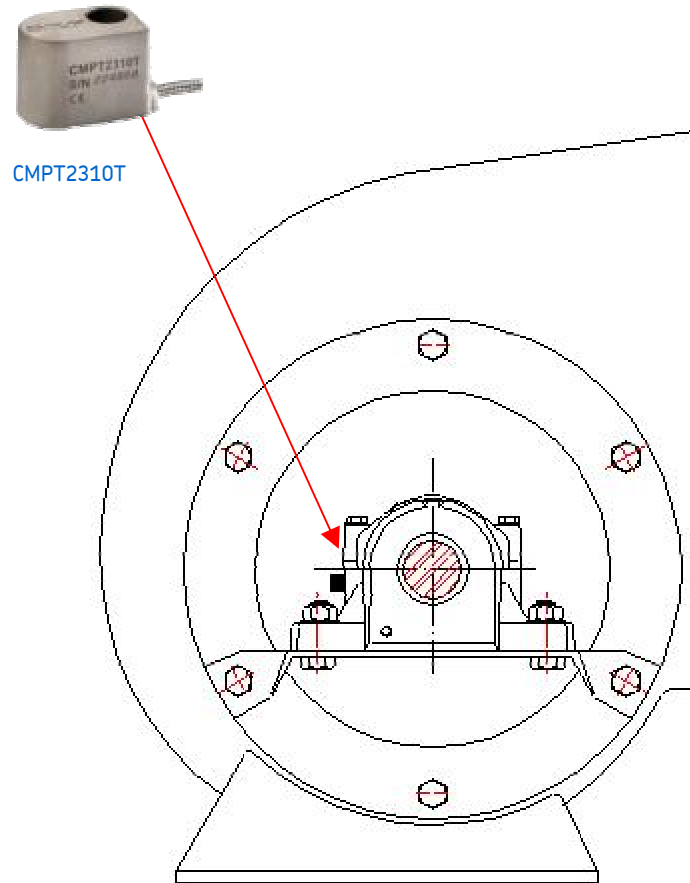


Pulleys, gearboxes & motors

SKF Copperhead for fans

Fault detection

- Unbalance
- Mechanical looseness
- Bearing faults
- High temperature





SKF Copperhead fault detection

Features

- Rugged vibration/ temperature sensor
- Permanent mounted on machine
- Acceleration Enveloping, Acceleration, Velocity analysis
- Easy to use MCM system, PLC capable
- Stand alone system or integrated
- Pre-engineered

Benefits

- Long, reliable service
- Repeatable signals/improved safety
- Early fault detection
- Little training necessary, functional system
- Can meet individual requirements
- Easy to order

SKF Copperhead fault detection



- Rugged, cost effective, simple, easy to use
- Operator based, has warning light, can alarm
- Vibration and temperature
- Tie to PLC, DCS - trending, scalable over time
- Can detect: mechanical looseness, lack of lubrication, contamination, gear damage, bearing damage, unbalance, misalignment, tramp metal, “bottoming out”, not operating



Vibration/ Temp Sensor –
Permanent Mount



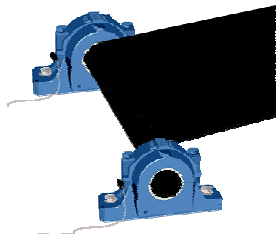
Continuous Monitoring Enclosure –
with multiple CTU



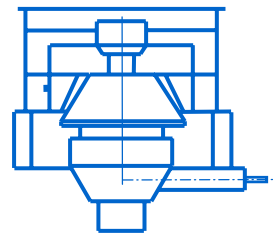
CTU – Processes Signals
unique to machine faults



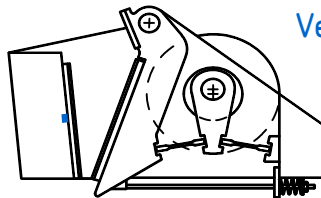
Periodic Monitoring Enclosure –
BNC points for signal pickup



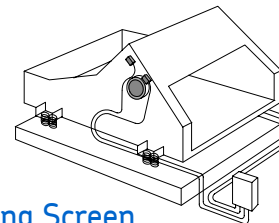
Conveyor



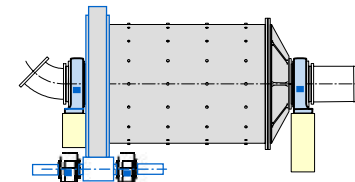
Vertical Grinding



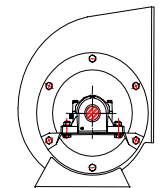
Jaw Crusher



Vibrating Screen



Tumbling Mill



Fan

SKF Copperhead fault detection



- Reduce downtime
- Reduce maintenance and repair costs
- Improve profitability and productivity
- Improve safety

© SKF is a registered trademark of SKF USA Inc.

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless **prior written** permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of use of the information contained herein.

© 2005SKF USA Inc. Version 1/2005 Printed in U.S.A.

SKF