让数据创造生产力

Safety first

Sandvik‘s objective is zero harm to our people,
the environment we work in, our customers and our suppliers.

- Emergency Exit
- Assembly Point
- Emergency Number
- Psychological Safety
- Protective Equipment
- First Aid Kit
- Alarm

Covid-19: Precautions

Follow local guidelines

Stay home when feeling sick

Wash your hands carefully

Observe physical distancing guidelines

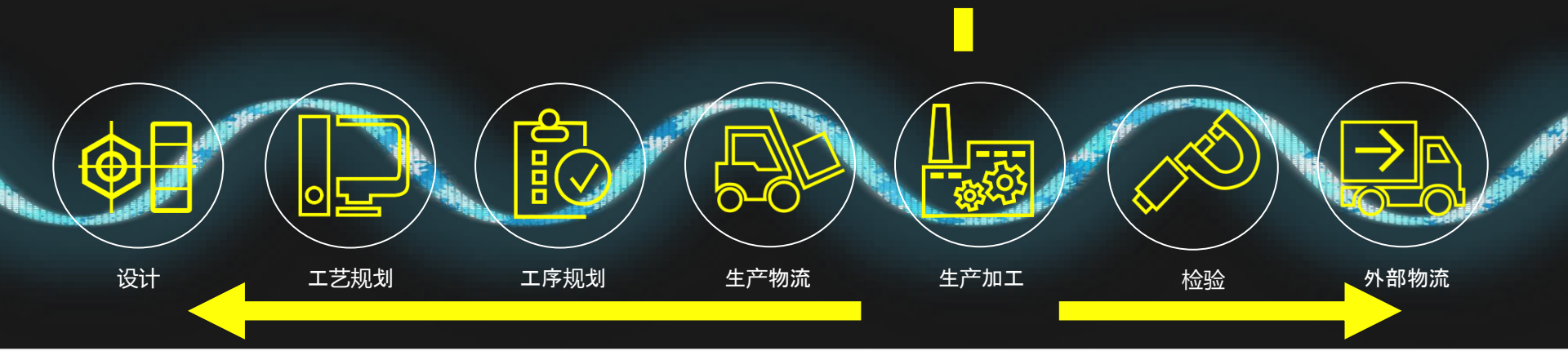
Cough and sneeze correctly

Avoid touching your face

工业4.0

典型价值流

在工业4.0下的制造业中，价值链的各个阶段互联互通。基于从一系列来源收集到的数据和经验，使用先进的分析方法设计和制造要生产的零件。



数据的流向

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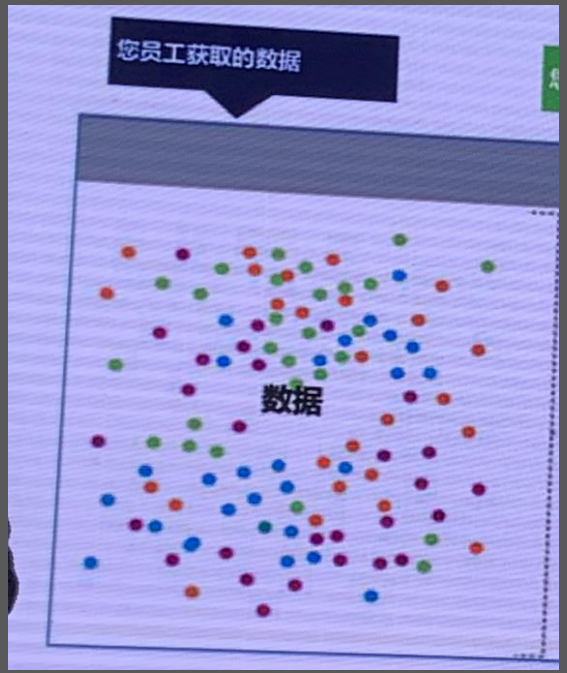
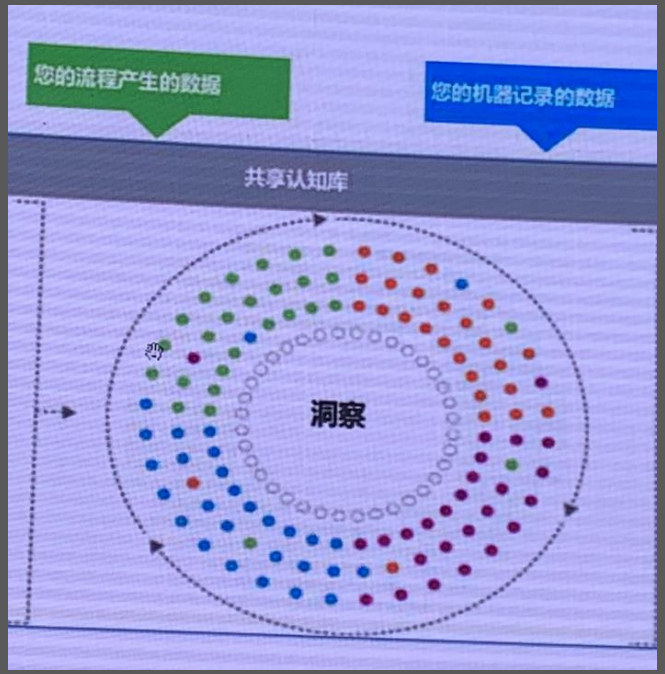
观察采集
Observe



建模分析 & 决定
Orientation & Decision



行动
Action

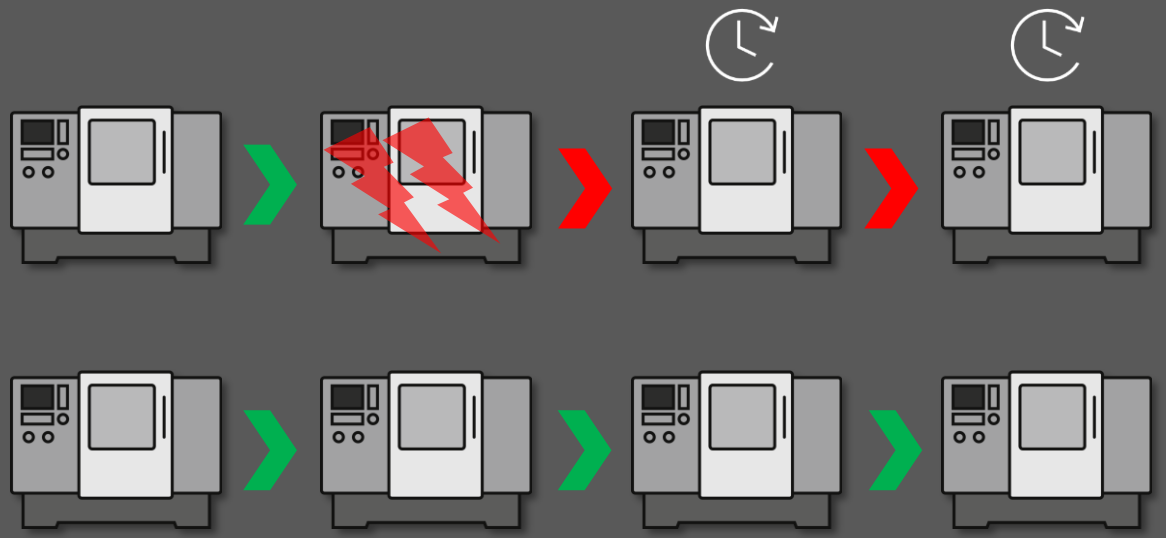
图片来自于SAP研讨会

CoroPlus® ProcessControl

刀具和加工过程监控的利器；

现场车间的数据分析和利用；

助力智能化建设



根据不同场景,智能输出不同信号.

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场景1: 当刀具寿命临近寿命值; → 输出信号1: 机床黄灯亮提醒技术员;

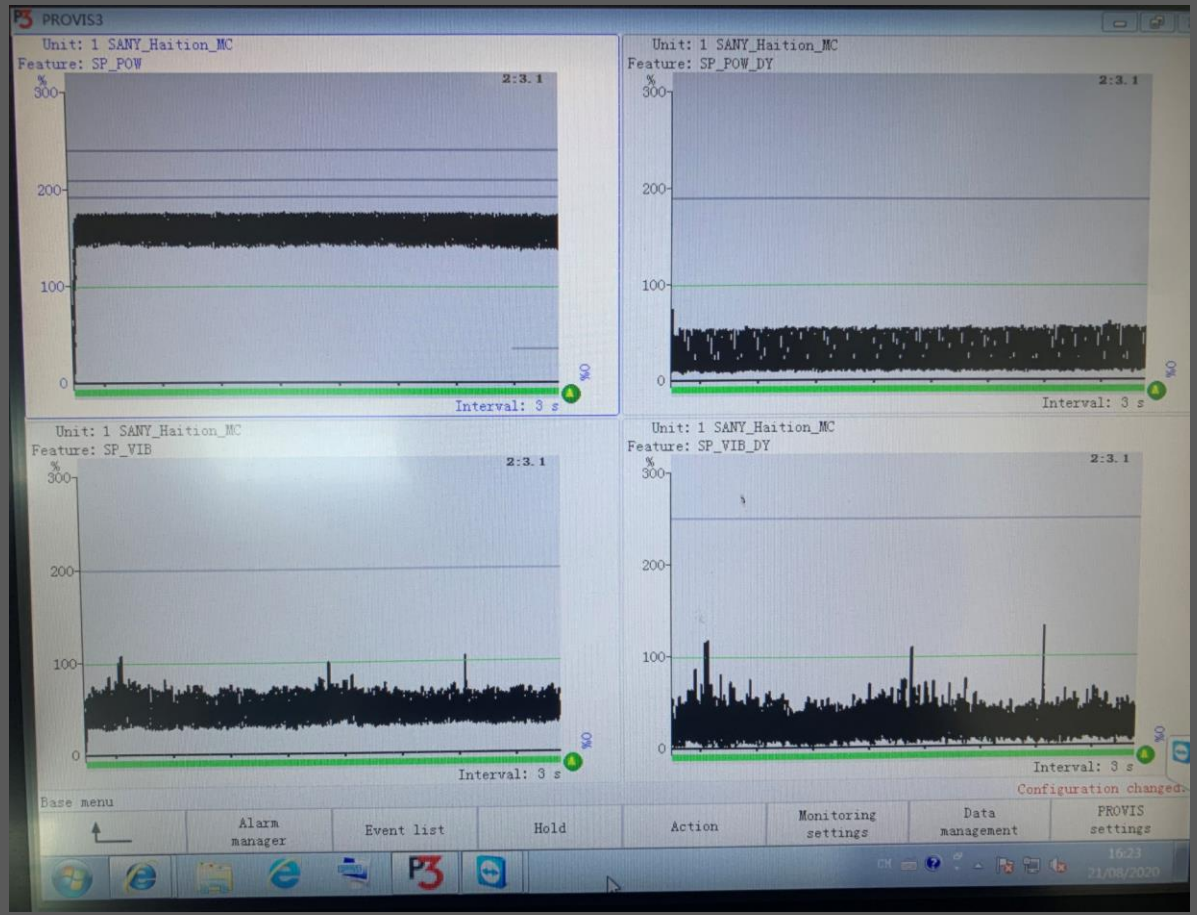
场景2: 刀具磨损到达寿命值; → 输出信号2: 本程序段末停下来;

场景3: 刀具缺失/断了,零件缺失; → 输出信号3: 本程序段末停下来;

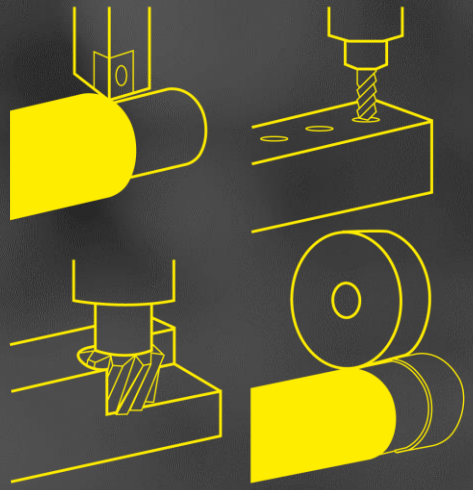
场景4: 刀具突然超负载; → 输出信号4: 机床立即停止进给;

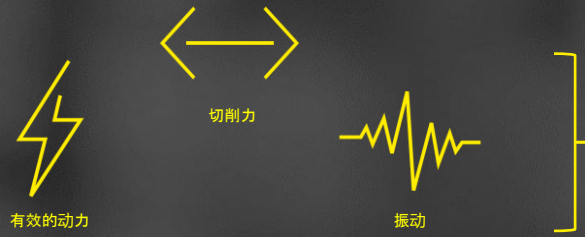
场景5: 机床G00场景下撞机; → 输出信号5: 5ms之内发出信号,通知设备紧急停止.

举例: 镗刀数字信号图


PROVIS3
Unit: 1 SANY_Haition_MC
Feature: SP_POW
Interval: 3 s
Unit: 1 SANY_Haition_MC
Feature: SP_POW_DY
Interval: 3 s
Unit: 1 SANY_Haition_MC
Feature: SP_VIB
Interval: 3 s
Unit: 1 SANY_Haition_MC
Feature: SP_VIB_DY
Interval: 3 s
Configuration changed
Base menu
Alarm manager
Event list
Hold
Action
Monitoring settings
Data management
PROVIS settings

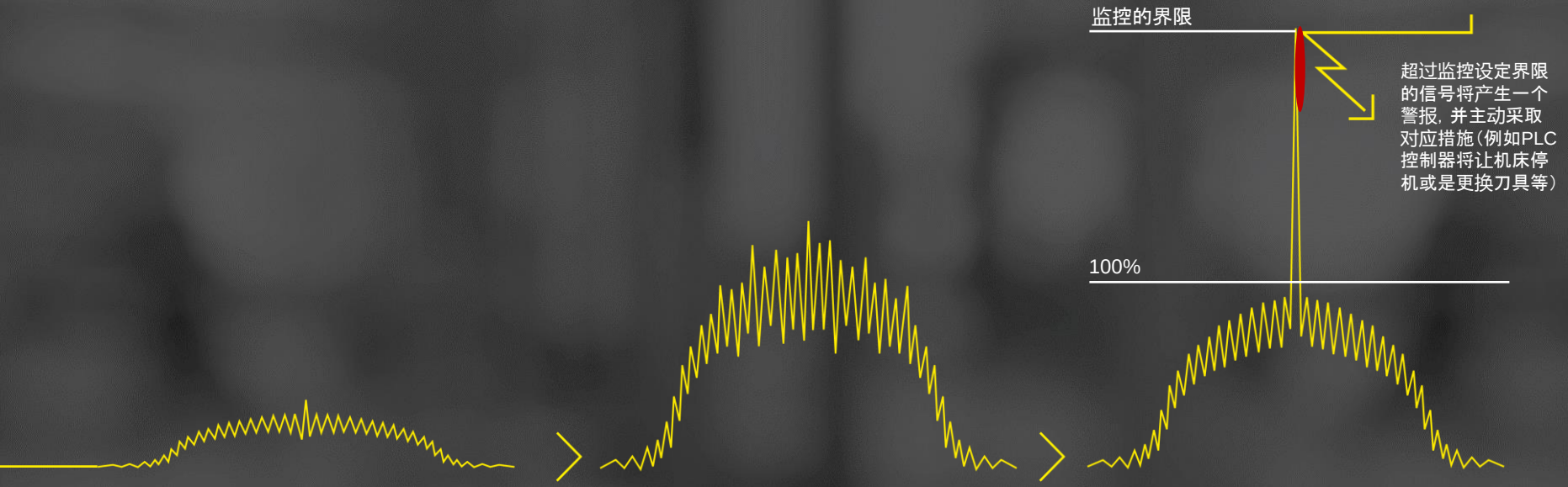
CoroPlus® ProcessControl 如何工作?





- 加工过程产生物理信号

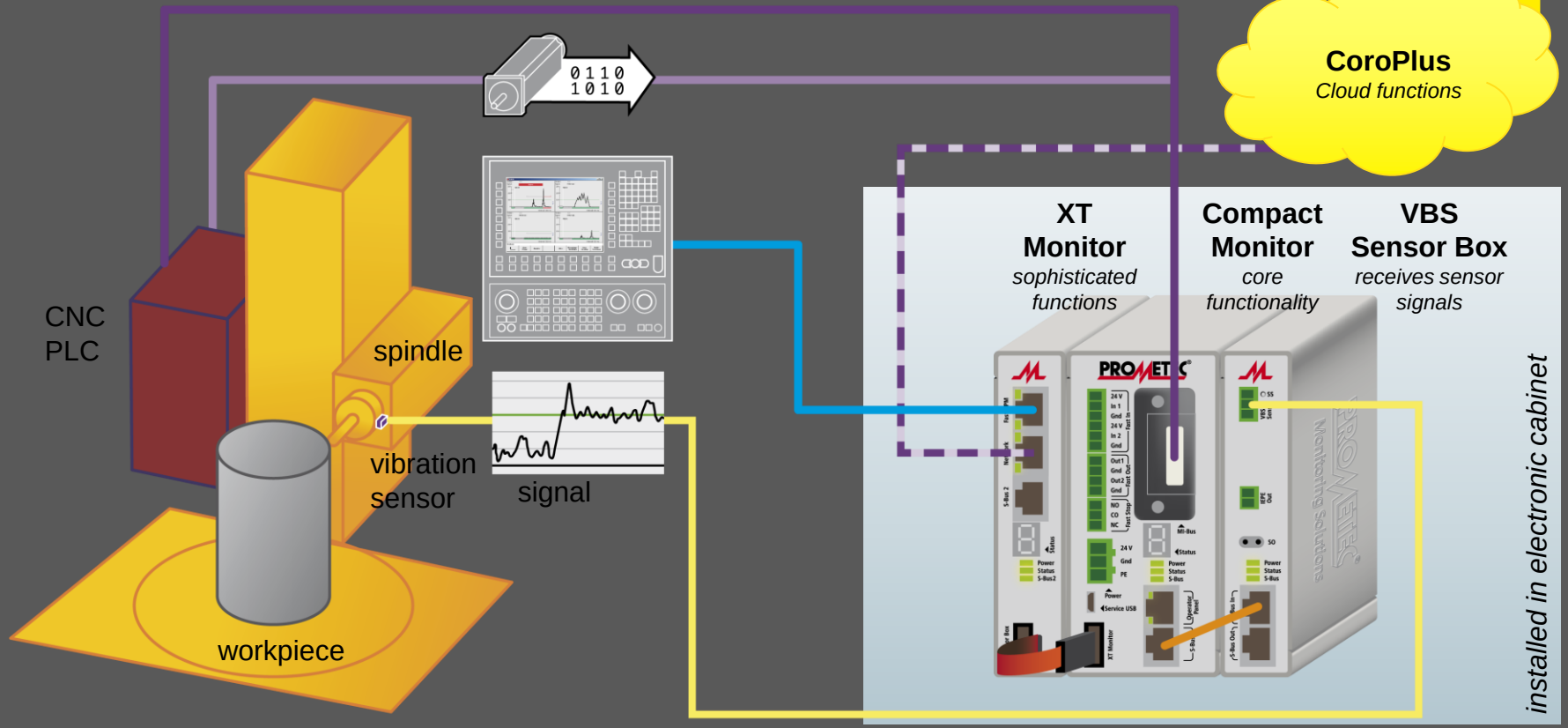
通过感应器收集物理信号
(如有可能的话，也可通过读取驱动信号)



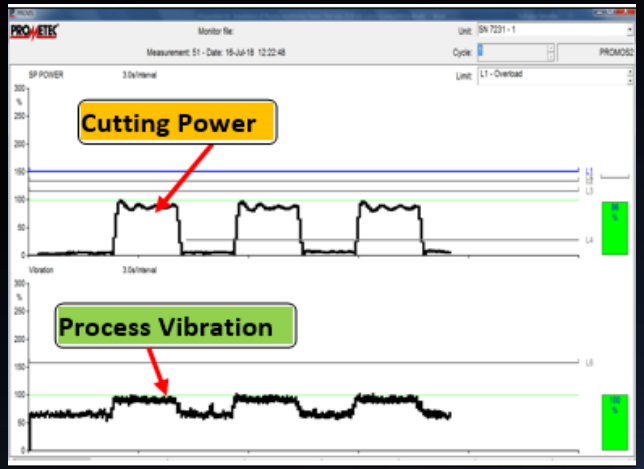
感应器的信号被过滤和放大

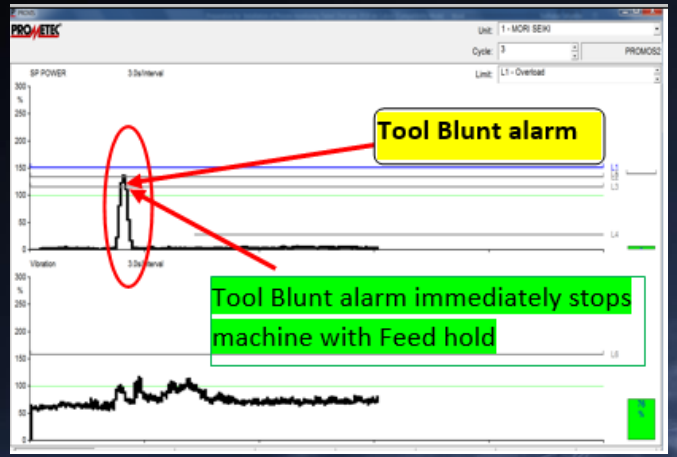
实时的将输出的信号特征与设定的范围进行比对

工作原理图-加工中心


0 1 1 0
1 0 1 0
CoroPlus
Cloud functions
XT
Monitor
sophisticated
functions
Compact
Monitor
core
functionality
VBS
Sensor Box
receives sensor
signals
CNC
PLC
spindle
vibration
sensor
signal
workpiece
installed in electronic cabinet

刀具磨损监控





新刀具

旧刀具

- 临界值(每个工序8个临界值设定)主要是保证质量和刀具，随后保护刀体，主轴和机床单元
- 充分使用刀具而不是依靠刀具寿命管理(数量/刃口)，一直到信号超出临界值。

刀具磨损监控视频

PROMETEC
Monitor file:
CoroPlus Tool Guard + Collision.pmd
Unit:
1 - Station 1
Cycle:
0
PROMOS2
SP POWER
4.0s/Interval
Vibration
4.0s/Interval
F1:Rework
F2:Teach-In
F3:Edit
F4:Hold picture
F5:Options
F6:Alarm list
F7:Exit
F8:Setup

撞机保护: 3.8 ms 感知撞机信号

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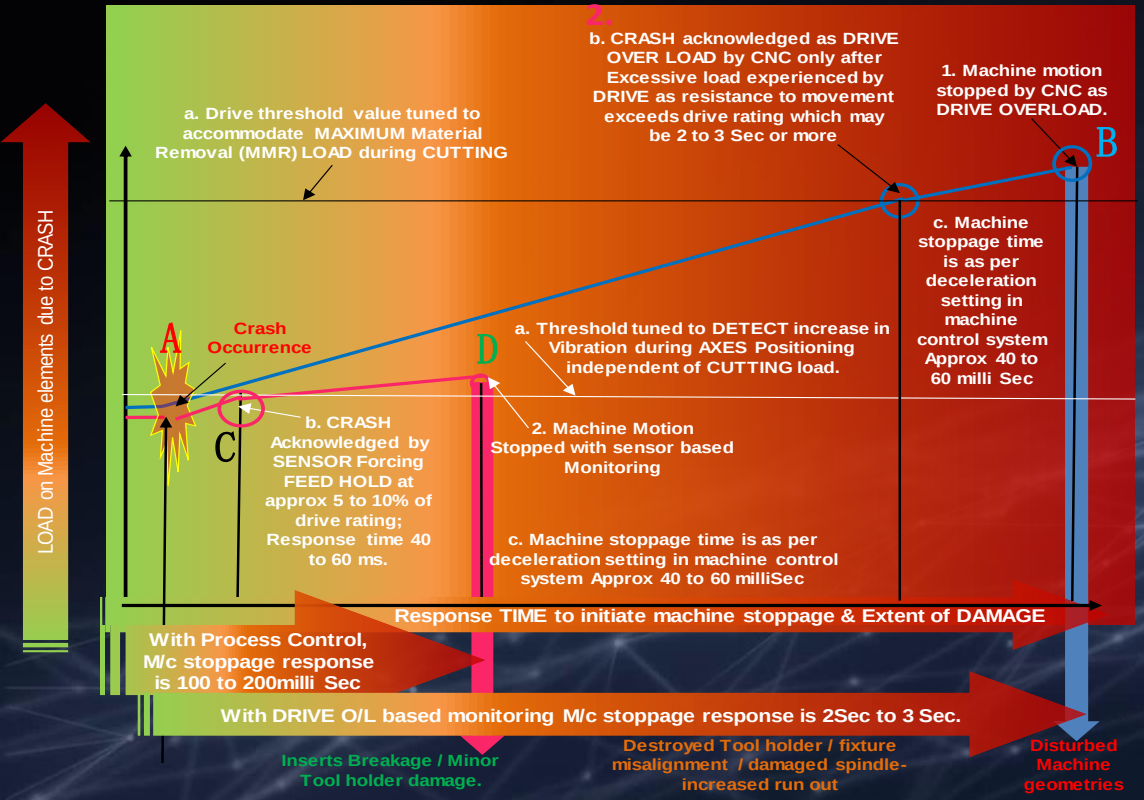
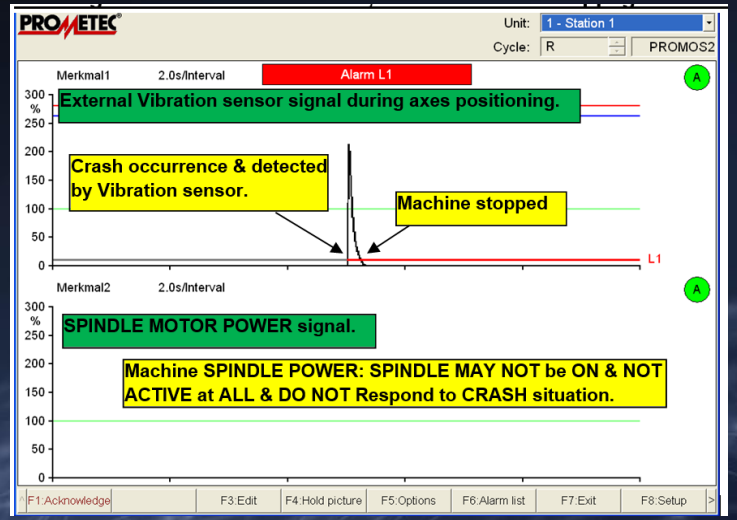
Response of machine to crash / collision.

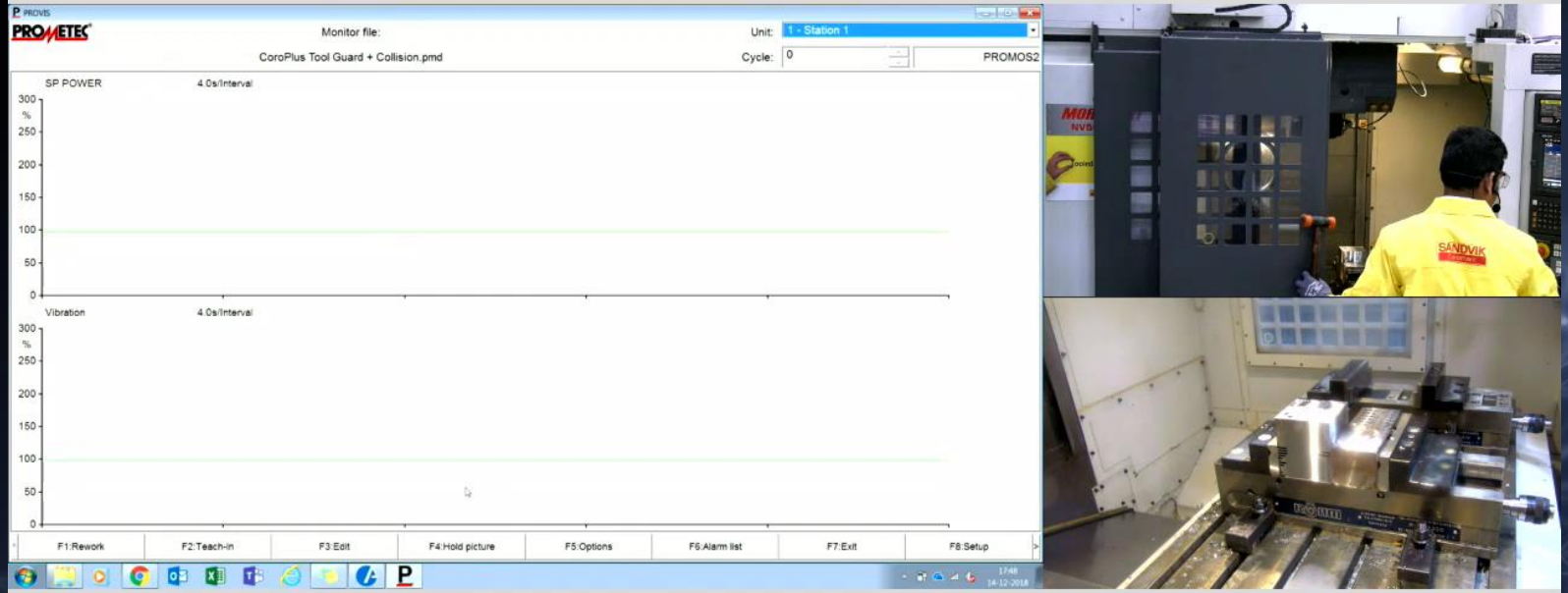
Machine Response for CRASH with sensor based Monitoring.

Machine response for CRASH: Drive overload based Monitoring.





撞机保护视频


PROVIS
PROMETEC
Monitor file:
CoroPlus Tool Guard + Collision.pmd
Unit:
1 - Station 1
Cycle:
0
PROMOS2
SP POWER
4.0s/Interval
Vibration
4.0s/Interval
F1:Rework
F2:Teach-in
F3:Edit
F4:Hold picture
F5:Options
F6:Alarm list
F7:Exit
F8:Setup

CoroPlus® ProcessControl

问题/挑战	基于连接的解决方案	方案包
因碰撞造成机床和零件损坏	碰撞探测器让机床在5毫秒的响应时间内停止工作	碰撞探测器
刀具损坏 未充分利用的刀具 大量的不合格品	探测切削刀具是否过载或是损坏，并通过相应的程序与机床形成交互	刀具卫士

Process Control 助力智能智造;

让刀具更智能;

让机床更聪明;

IIoT 工业物联网.

山特维克可乐满
Silent Tools™ +

智能减振刀具

动力刀座联网技术

Coromant Capto®
DTH Plus

CoroPlus 平台解决方案

SANDVIK Coromant

Design and Planning [Global solutions]

CoroPlus® ToolPath

Launch: March 2019

CoroPlus® ToolGuide ext.

CoroPlus® Tulip

Target launch: Q4 2019, more information to come

CoroPlus® Tool Library

Machining [Selected market introductions]

CoroPlus® Insights

Machining Insights
Launch: 2019

Project Lotus
Target launch: Q4 2019

CoroPlus® Silent Tools

Extensions: Q2 – Q3 2019

CoroPlus® Coromant Capto

Launch: September 2019

CoroPlus® ProcessControl

Launch: Promos 3 during 2019

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