

# **NEWSLETTER**

April 2015

# Plant Maintenance Service & Consultancy

Safety as well as plant reliability and product quality can be negatively affected by inadequate maintenance service. Quality of such service is mainly driven by effective work processes, adequate tools and training of maintenance people. Raschka Engineering has built up specific expertise via intensive training and experience gained over the last ten years in cGMP and none GMP production plants, a vast amount of our local maintenance staff has been trained overseas and we do offer maintenance service to third party customers which could include full maintenance service, renting of specialists with tools, training or just provide you with some consultancy.

Listed below are some examples of good maintenance practice we would happily share in more detail with our valuable customers:

- Alignment of motor shaft using laser technology (rent team and machinery to check your installation)
- Preventive maintenance (checks on status of your machinery, plan your maintenance activities)
- 3. Lubrication plan, checks and action list
- 4. Instrument calibration
- 5. Checks about condition of mechanical seals



# Alignment of motor shaft using laser technology

In the chemical, pharmaceutical, power generation, petrochemical industry etc, motor alignment is of critical importance in order to maintain plant reliability.

If the motor is not correctly aligned, the stress placed on the motor shaft will cause premature wear and failure of the motor bearings, leading to plant breakdowns, lost production, and potential safety hazard.

Raschka Engineering employs a number of trained technicians who are experts when it comes to motor alignment.

Lonza engineering's service technicians are routinely contracted to perform motor alignment services at customer's production plant.

### Benefit of a precise alignment

- Reduced vibration levels
- Reduced maintenance cost
- Reduced energy consumption

# **Pump and Motor alignment**









# **Proposed actions**

- Check shaft alignment of all production equipment which are considered to be critical preferably on an annual basis
- Monitor vibration as an indication of misalignment. Misalignment might be caused by foundation settling, insufficient bolt tightening or coupling faults
- Recheck newly installed equipment for alignment changes due to foundation settling
- After maintenance or system cleaning,
   recheck the pump or agitator for
   alignment changes due to piping stress

# **Pump vibration measurement**





# Pump temperature measurement





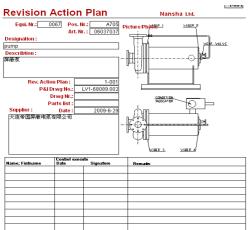
# Preventive maintenance

Vibration measurement and historical tracking of data enables planned actions prior to breakdown of machinery and unwanted disruption of production.

- For critical machines, setting fixed horizontal and vertical measuring points
- Measuring and recording vibration values in regular intervals
- In case vibration value goes above upper standard value, the reason will be analyzed and shutdown plan for this machine will be discussed with operations team

# Vibration and temperature recording







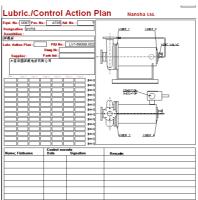


# Lubrication plan, checks and action list

- Machines require a lubrication plan which needs to be based on manufacturer's maintenance manual.
- Lubrication points are clearly marked on machines with tag and indication of the lubricant to be used.
- Required lubrication interval is defined in lubrication plan and activities are logged and signed off after completion.
- Identified actions as part of planned maintenance service are logged in "Revision Action Plan".

# **Regular lubrication**









# Instrument calibration

Reliable and accurate operating instruments are a basic requirement in the chemical and pharmaceutical industry. Product quality and safety is all depending on properly functioning instruments. Clear and traceable procedures combined with well trained instrument technicians are essential for a successful pass of customer audits especially when producing under cGMP standards.



## Standard platinum resistance thermometer calibrator

It includes HTS-300 standard thermostatic oil bath, RTS-30 Refrigeration thermostatic bath, KEITHLEY 2000 digital multi-meter, WPB-2 Standard Platinum Resistance Thermometer etc. used to calibrate various Platinum Resistance Thermometers in range -30ff300 degree C.



## Portable pressure calibrator

Battery-powered instrument with its own work pressure source. It provides fine tuned pressure control, power output and measuring function. It can also provide a 4-20mA output for loop test and data storage and measures/calibrate various pressure transmitters on-line and off-line in the range of 0-2.0 MPa.



# Manometer calibrator

Desktop manometer calibrator equipped with booster unit and a variety of nozzles for manometer. It can calibrate manometers in the range of 0-25.0 MPa.

### **Measurement Certificate**



# Checks about condition of mechanical seals

Mechanical seals are usually a very delicate but also expensive part of equipment and very costly if not properly maintained. A proper design and selection of the best suited sealing type (not necessarily the cheapest one) can make a big cost difference in the long run. Especially mechanical seals require a lubricant which can potentially interfere with the process or in the worst case contaminate the product; such systems therefore require special attention when it comes to maintenance.

Gas monitoring system for gas lubricated mechanical seal, designed and installed by Raschka Engineering





# In this context, Raschka Engineering's service could include:

- Maintenance service
- Troubleshooting
- Maintenance system gap analysis
- Consultancy service for maintenance concept
- Training
- Renting shaft alignment team with tools
- On call service team
- Continuous improvement program

Pls. contact us for a quotation. An extensive service list is available on our website:

http://www.raschka-engineering.com

Pump with pressurised oil tank and integrated heat exchanger for double mechanical seal





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