CHENG HAN
MECHANICAL

Professional

Mechanic Maintenance
Service of Power Plants and Petrochemical

Cheng Han Machinery Co., Ltd

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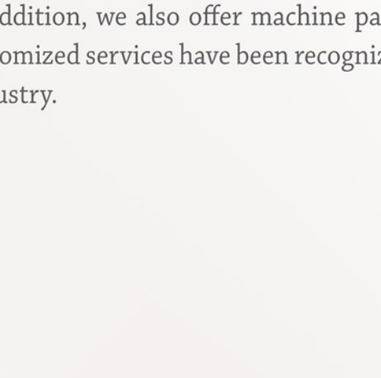
Company Profile

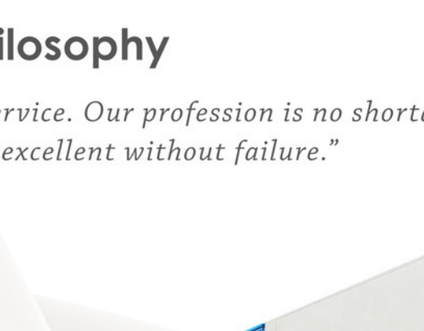
Cheng Han Machinery Co., Ltd. was founded in 2008, specializing in machinery maintenance and regular maintenance services. We offer services to local companies of petrochemical, power plants, steel, papermaking and incinerators. With our professional technique in turbine, pump and compressor maintenance, customers can order regular mechanical performance tests or reserve maintenance services. In addition, we also offer machine parts repairs and assist with new product development. Our customized services have been recognized by enterprises and have earned a good reputation in the industry.



Business Philosophy

"Our product is service. Our profession is no shortage. Our technique is excellent without failure."

E.R. Equipment

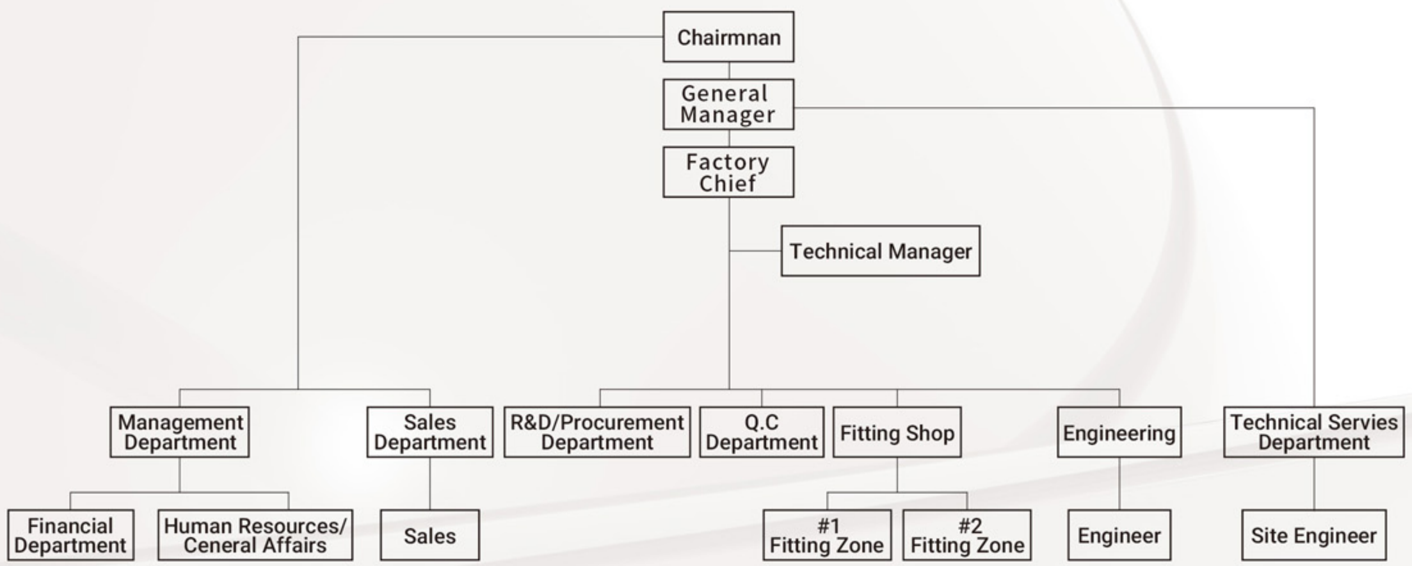


Dynamic Balancing Machine

Sandblasting Machine

Company Organization

Cheng Han Machinery Co., Ltd. believes good service is the most robust fundamental. Detailed division of work letting each employee plays their role well. With systematic organization and good team atmosphere, the complete organizational structure has driven coherent corporate culture, precise and careful execution to provide customers with high-quality mechanical inspection and repair services.



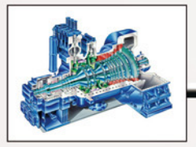
Technical Certification

Cheng Han Machinery Co., Ltd. emphasis on professional maintenance personnel development, conduct regular training sessions, require engineers back to ODM factories for solid training, ensure the highest standard of repairing quality.

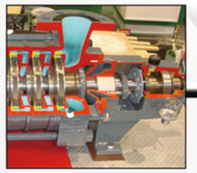
Service Item

Cheng Han Machinery mainly provide our service to various power plants, chemical factories, to maintain and check the mechanic equipments such as fans, pump, compressor and turbines.

Service Species

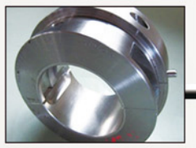


Turbine Overhauling



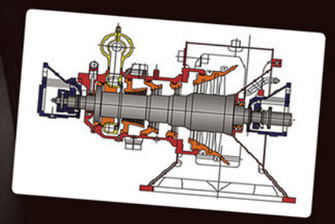
Pump Maintenance

Compressor Maintenance



Accessories of Equipment

Brand :
SIEMENS. KOBELCO. EBARA. MITSUBISHI. TORISHIMA.
SULZER. ABB. INGERSOLL DRESSER PUMP. KSB. FLOWSERVE.



Work Scope

- Steam turbine & generator
- Air compressor:
  Centrifugal compressor,
  Reciprocating compressor,
  Screw compressor... and so on.
- Pump:
  Boiler feeder water pump, Liquid oxygen pump,
  Sea water pump... and so on.
- IDF, Blower
- Gear box, Reduction gears
- Dynamic balance service
- Sandblasting service with aluminum-oxide abrasive.
- Electrical runout inspection and corrected.

Customers

- Formosa Plastics Corporation
- Nan Ya Plastics Corporation
- Formosa Chemicals & Fibre Corporation
- Formosa Petrochemical Corporation
- Mai Liao Power Corporation
- Ho-Ping Power Company
- China Petrochemical Development Corporation
- Cheng Loong Corporation
- Chung Hwa Pulp Corporation
- Hsin Tao Power Corp. (G.E.)
- Chiahui Power Co. Ltd (G.E.)

ENGINEERING PROCESS CHART

Applicable scope:

Steam turbine, centrifugal air compressor, heavy-duty or high-pressure pump, and other rotary equipment.

1. Toolbox preparation operation

1. The needed tools in the whole set shall be placed orderly inside the toolbox according to their type, specification, and quantity, etc. As a complete toolbox for storage management.
2. Daily toolbox check and central management can avoid messing the construction site, which can maintain the environment clean and reduce the accident.

2. Jobsite environment planning

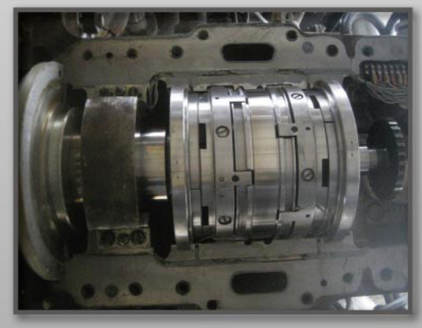
1. According to the position for equipment disassembly, the parts and components associated with the equipment shall be unified their storage area to avoid messing them.
2. Articles, passageways, toolbox, and construction inspection, etc. shall be clearly separated their position to protect the safety of personnel.

3. Dismantlement of piping and system lagging & Coupling

1. Measure relevant data and collect records before disassembling the all connection system.

4. Disassembly of bearing cap and upper half bearing

1. According to the position for equipment disassembly, the parts and components associated with the equipment shall be unified their storage area to avoid confusionor messing them.



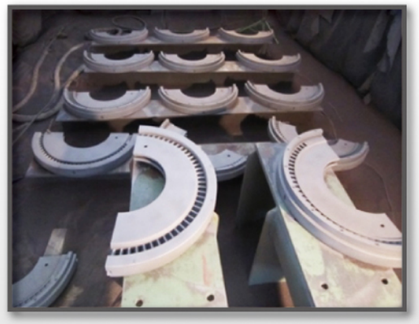
ENGINEERING PROCESS CHART

5. Dismantling of upper hood and MSV & CV

1. Use a specialty hydraulic equipment to remove the bolts in sequence.
2. Verify the removal of fixed parts.
3. Manually operate to separate the upper casing in equal distance. Place them at the planned position
4. (pay attention to the bearable weight capacity of the floor)

5-1. Dismantling of diaphragms, sand-blasting for cleaning, check and finish of jonit face

1. Use aluminum oxide #120 - 150 for sandblasting to remove the rust and protect the joint surface.
2. Use the oil stone to finish the hori-zontal joint surface.



5-2. MT inspection and refit for diaphragms

1. Verify the quality of work piece.
2. Weld to repair the surface for any detected defect.

5-3. MSV & CV disassembly, check and assembly

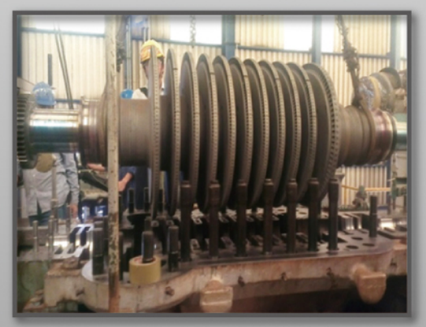
1. Disassemble and replace the parts.
2. Check and trim the contact surface between VALVE & SEAT.
3. Adjust, check and assemble them back in position and contact check.

6. Check and clearance measurement

1. Cooperate with the proprietor to check the condition of parts & com-ponents before maintenance.
2. Cooperate with the supervisor to measure the clearance among rele-vant positions.

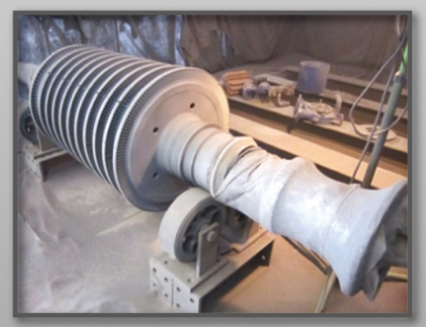
7. Hoisting and placement of rotor

1. Exclusive-use and supporting pro-tection frame for rotor.
2. Surface protection for journal bear-ing and ER gone.
3. Safety measures and insurance for transportation.



7-1. Visual inspection and local aluminum-oxide sandblasting cleaning for rotor shaft

1. Verify and mark the defective area in rotor shaft.
2. Judge and determine the treatment method and on schedule.
3. Apply aluminum-oxide # 180~240 sandblasting to remove rust and protect surface.



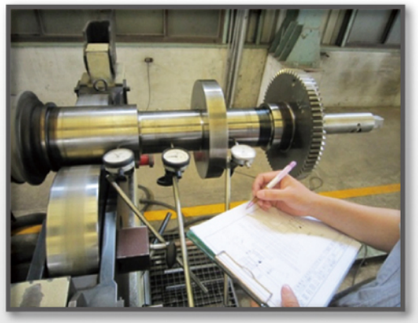
7-2. Rotor's MT check

1. Ensure the quality of rotor.
2. Measure the residual magnetic flux, it shall be less than 5 Gausses.

ENGINEERING PROCESS CHART

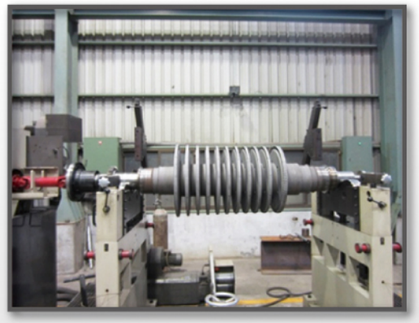
7-3. Check of concentrici and face runout for rotor

1. Check the rotor for concentricity and straightness, and verify the compliance of quality and checked values within the standard requirement .



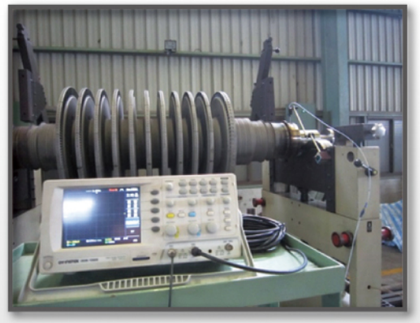
7-4. Dynamic balance check for rotor

1. SCHENCK ROTEC equipment.
2. Set up the balance grades G value.



7-5. Check (ER) and correction for electrical runout of rotor

1. Check and measure ER in vibration detection area, standard value: less then 20μm
2. For ER > 20μm, use manual correction and measurement.



8. DIAPHRAGMS sandblasting cleaning

1. Apply aluminum-oxide #120 for sandblasting to remove rust and protect surface.
2. Use the oil stone to finish the faying surface.

9. Reassembly of diaphragms in bottom housing

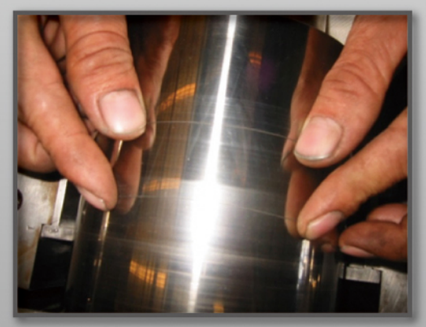
1. Check the fixing position and the level height .

10. Reassembly of rotor and clearance measurement

1. Check and record the amount of axial movement.
2. Measure the clearance between the axial direction with diaphragms and packing rings.

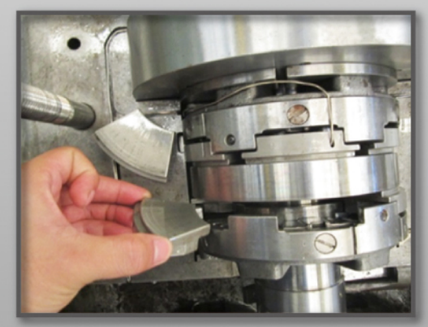
11. Reassembly of journal bearing and clearance measurement

1. Verify that the clearance of journal bearing meets the standard value of radial clearance.



12. Reassembly of thrust bearing pad and clearance measurement

1. Verify that the amount of movement of axial clearance meets the standard value of axial displacement.
2. Check the amount of clearance between the diaphragms and the rotating impeller.

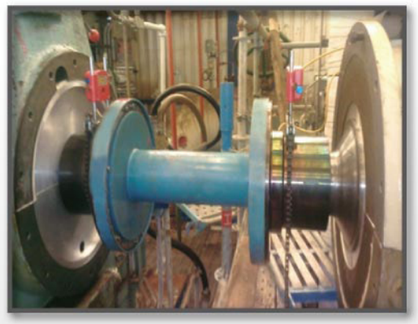


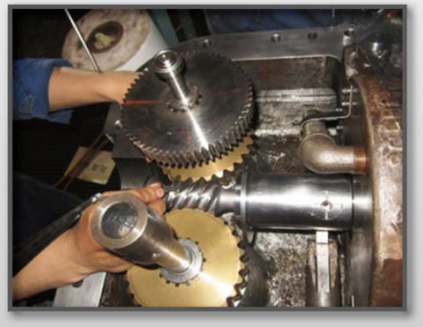
ENGINEERING PROCESS CHART

13. Reassembly of upper casing and MSV & CV connection

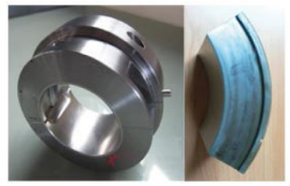
14. System coupling and piping connection Oil flushing and solo running

1. Alignment operation and system check.





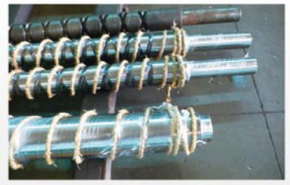
PERIPHERAL PRODUCTS



1. Journal bearing

2. Thrust bearing

3. Aluminum alloy bearing



4. Shaft

5. Carbon graphite ring

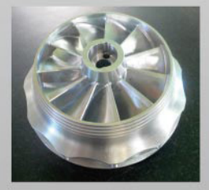
6. Shaft collar

7. Packing Ring

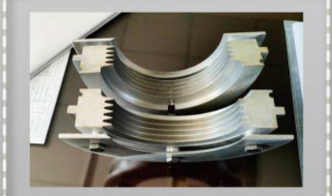
8. Cooler

9. Piston Cylinder

7. Open Impeller



11. Closed Impeller



12. Seal Ring