



PT BUMI CAHAYA UNGGUL



Certificate No. JKT 0500176

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Specialist in:

Pumps
and
Systems

Highest Availability and Reliability



Competent in Our Field



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Headquarter Pulogadung



Resto "Cahaya"

Cafe "Unggul"



Welcome

BCU was initiated in 1979 to serve the needs of industrial activities for machining and installation, including engineering and system-design.

In 1984 BCU decided to focus on the field of pumps and systems, specializing in engineering technical design for fluid handling and control on the installation and operating-system that is often complicated and could be dangerous, hence it requires high reliability and accuracy.

Now, in 2015, BCU has surpassed the age of 36 years and recognized as the specialist for pump and system with international standard. BCU has the most references throughout Indonesia in the form of toughest pump installations with the most difficult conditions, which require the integrated studies and complex calculations on hydrodynamics, rotor-dynamic, metallurgy, stresses/strength analysis of elements, energy conversion, mechatronic, control & monitoring etc.

Resources of BCU-strength is mainly supported by dozens of engineers and technical experts, who love their work and with high loyalty have developed their mastery of science and technology applied in the field of pumps and systems and combine them with the extraordinary 20-35 years experience of continuous teamwork in the BCU.

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BCU capabilities are sustained also by advanced machineries with high precision, such as: IntegreX 5-axis CNC-Multitasking-machine, large CNC machining-center, heavy-duty vertical CNC-lathe, GTAW/SMAW quality welding, sandblasting-room etc. To ensure the product performance, BCU has the facility for testing of pumps and systems, such as underground water reservoir of 180 m³, standby power-supply 730 kW which can be increased up to 1.3 MW, Coriolis flowmeter (accuracy of 0.05%), DTC-frequency inverters, direct shaft torquemeter, simultaneous 4-points vibration pick-up, modular data processing with scada etc.

Striving to be the icon of professional company, in cooperation with many global reputable partner-enterprises, BCU is moving forward to become the oldest leading specialist in Indonesia to address the needs of all pumps and systems with the most challenging requirements.

To ensure sustainability and continuity of quality improvement, after the ISO 9001 certification since 2003, BCU further ascertain itself to be the leading Indonesian company in the field of pumps and systems with ISO 14001 and OHSAS 18001 certificates. In the role for contributing the economic resilience of Indonesia, BCU continues to raise the level of local content in the products, which are not merely mass produced goods, but also a source of high-value intellectual powers, such as innovation, research and development on the application of high-tech systems.

All members of
PT Bumi Cahaya Unggul



Competent in Our Field

VISION :

Creatively work hard for delivering superior products, which are useful for customers, society, nation and state, as well as improve the life quality of employees.





Competent in Our Field

MISSION :

GOAL :

Providing the best products and services for the customers.

VALUE / CHARACTER:

- a. Honest and open-minded**
- b. Work wholeheartedly and responsibly.**



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STRATEGY/POLICY:

Implementing the Integrated Management System (ISO 9001, ISO 14001 and OHSAS 18001) :

- a. Continuous quality improvement through science, technology, experience and effective/ efficient working system.**
- b. Preserve the environment, safety and health at work.**
- c. Comply with legislation and national/international standards that are related and relevant.**

WORKING CULTURE BCU :

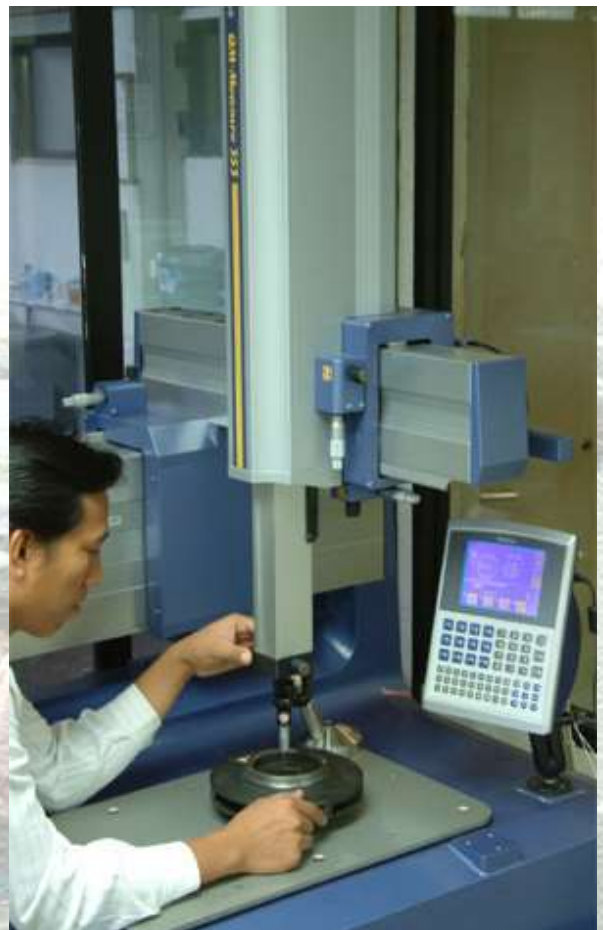
BCU working culture aligns quality, reliability and safety of products as the main target. Learning facilities, training programs and development are BCU's commitment to continue growing with a high standard of competence and skills. BCU engineers continue to extend the mastery of pump technique, combining innovation and experience in order to generate products of Indonesia, which is not less in quality than others.

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$$\frac{1}{\sqrt{\lambda}} = -2 \log_{10} \left(\frac{\varepsilon/d}{3.71535} + \frac{2.51188}{Re \sqrt{\lambda}} \right)$$

$$\Delta p_r = 8 \rho K \frac{Q^2}{\pi^2 d^4}$$

$$\Delta h_r = 8 \lambda L \frac{Q^2}{\pi^2 g d^5}$$





Competent in Our Field

WORKING ATMOSPHERE OF BCU :

BCU working environment combines pleasant condition, ample lighting, tranquillity, with the provision of cutting-edge technology, both hardware and software, so that qualified personnel of BCU produce the best system design that is free of error.

$$K = \frac{K_1}{Re} + K_{\infty} \left(1 + \frac{K_d}{d^{0.3}} \right)$$



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Competent in Our Field

FABRICATION



High-pressure H₂S compressor for Shell-refinery, Port Dickson Malaysia



API 610 Base-frame of pumping-system for Combined-cycle Power Plant Tambak Lorok

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SYSTEM PACKAGING



Boiler Feed Water Pumps with Oil-system 0.9 MW for Combined-cycle Power Plant Tambak Lorok



Boiler Feed Water Pump 1,8 MW for Coal-fired Power Plant Muara Tawar



Centralized Oil-lubrication System for Oil & Gas and Power Plant

For:



Lub-Oil Central Distribution-System for Kaltim Prima Coal Mining in Sangata



Competent in Our Field

SCOPE OF COMPETENCY



- Pumping System Design
- Engineering Design
- Fabrication
- Testing
- Supervision for Installation
- Parameter Setting
- First Start-up
- Training
- Service and Retrofit
- After Sales Service



Competent in Our Field



USERS OF BCU PRODUCTS

Nearly four decades BCU has been working hard and striving to present the best technical achievement work, for the benefit of our customers, since its founding, now
10 and for the next generations.





Competent in Our Field

Standardization and Certification



OHSAS 18001



ISO 9001



ISO 14001

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BSN

HASIL PENILAIAN EVALUASI SNI AWARDE BERDASARKAN KRITERIA SNI AWARDE 2011

PT BUMI CAHAYA UNGGUL

KRITERIA	SCORE
A. KEMERIA ORGANISASI	480
B. KEMERIA TERKUALIFIKASI	500
C. HASIL BANGUN	180
TOTAL SCORE	960



Quality Assurance





Competent in Our Field

5 FACE MACHINING CENTER

Done in One

**Sophisticated Machining Results from
Uninterrupted and Smooth Operation**



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Modern CNC Machines

(BCU operates large machines with high capability and high accuracy to make complex components with precision)





Competent in Our Field

BCU CNC Machines at Pulogadung Workshop



**5-axis Multitasking
Integrex i300S**



**Vertical Lathe
Ø 1600 mm**



**5-faces Machining Center
3000 x 2500 x 1400 mm**



Competent in Our Field

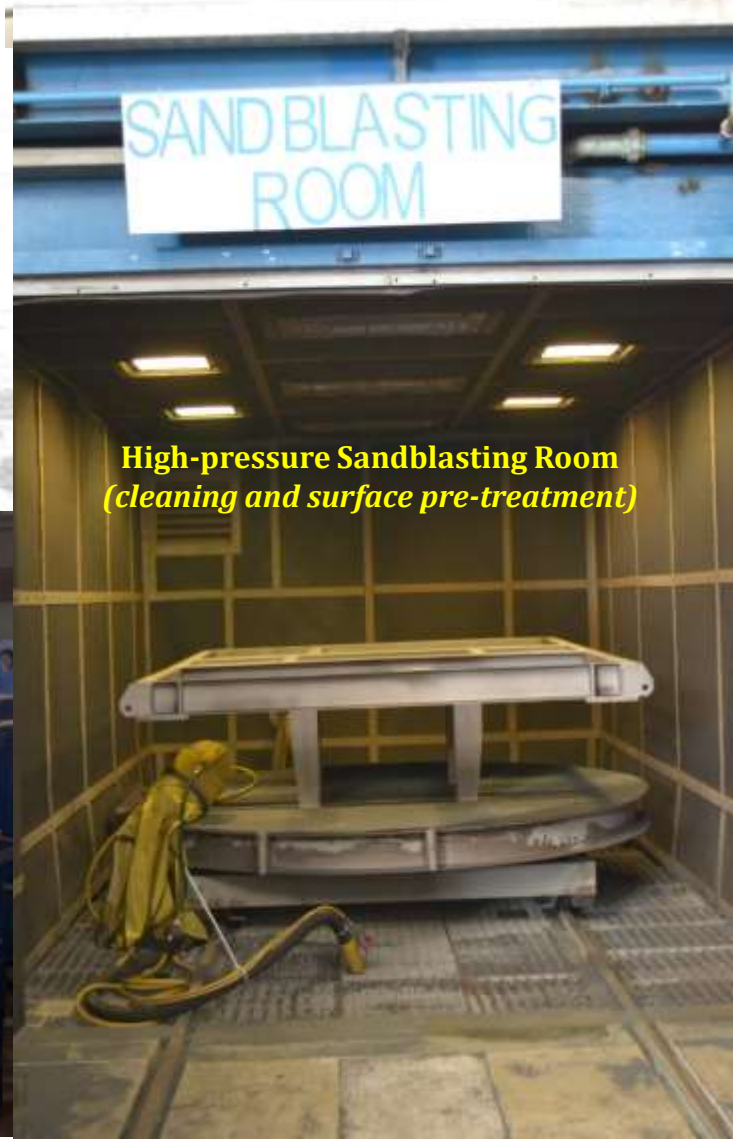
**For
Best
Quality**

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**Painting Room with drying Heater
(for high quality surface protection)**



**High-pressure Sandblasting Room
(cleaning and surface pre-treatment)**



**High-Temperature Heater
(metal hardness control)**





Competent in Our Field

Spare Parts Stockist

**Large
Number
of
Spare parts
Stock
Availability**



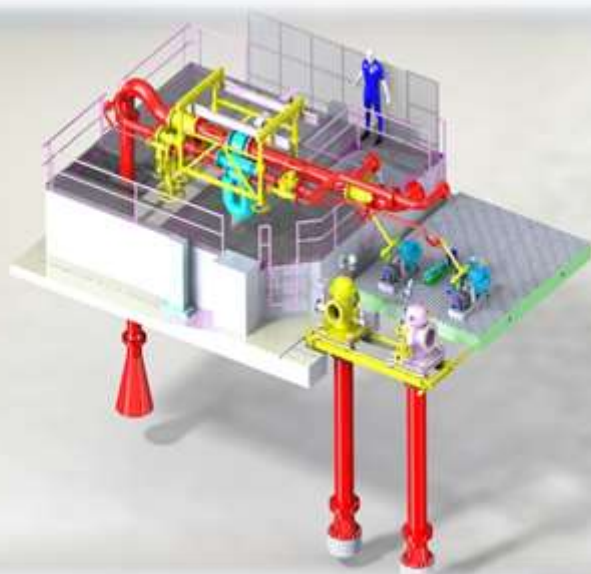
15



Testing Facility for Pumps at BCU



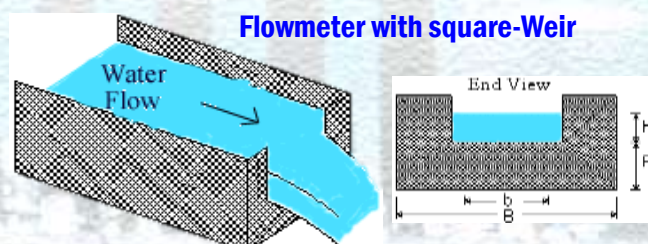
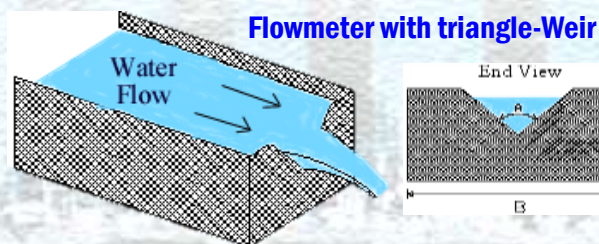
Competent in Our Field



- Hydrostatic Pressure Test
- Performance Test
- NPSHr Test
- Shaft Torque Test
- Shaft Power Test
- Efficiency Test
- Real Absorbed Power Test
- Working Stability Test
- Vibration Measurement
- FFT Spectrum

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Reservoir (3 units): 180 m³
 Flow up to : 3100 m³/jam
 Pressure up to : 200 bar
 Power Supply : 730 kW
 Overhead Crane : 20 ton



SNI 0141 – SNI 7518 – ISO 1438 – ISO 1100 – ISO 4360 – ISO 4373 – ISO 9906 – ASTM D 5242-92 – ASTM D 5640-95





Competent in Our Field

Performance Test



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**Pumping Test Facility
at BCU Pulogadung**



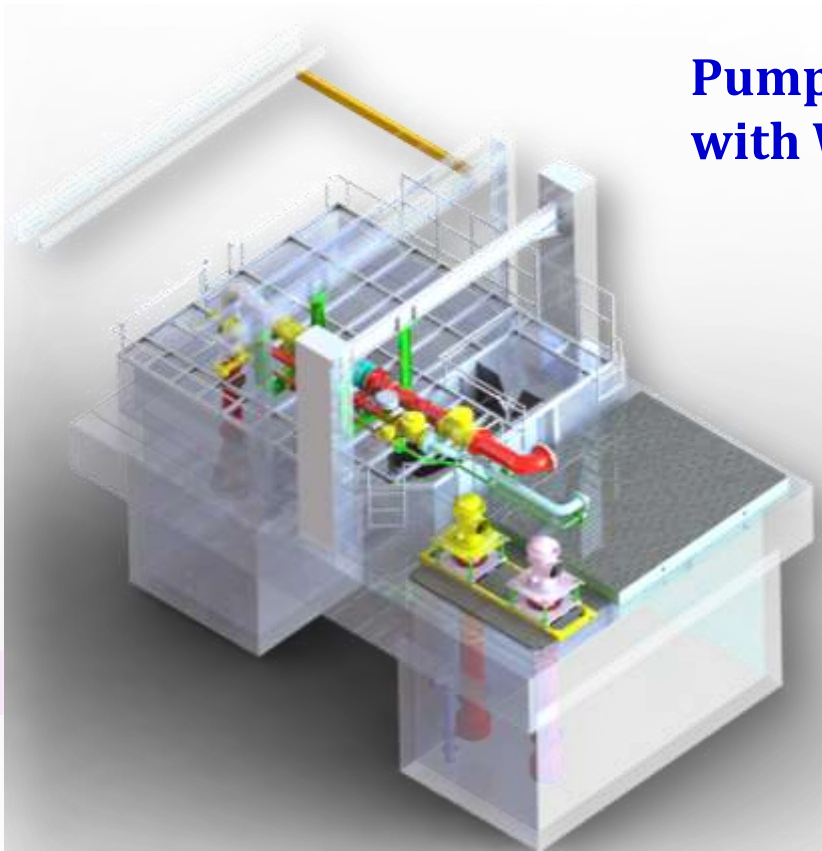
Testing with Water or Oil



Competent in Our Field

Pump Performance Test with Water:

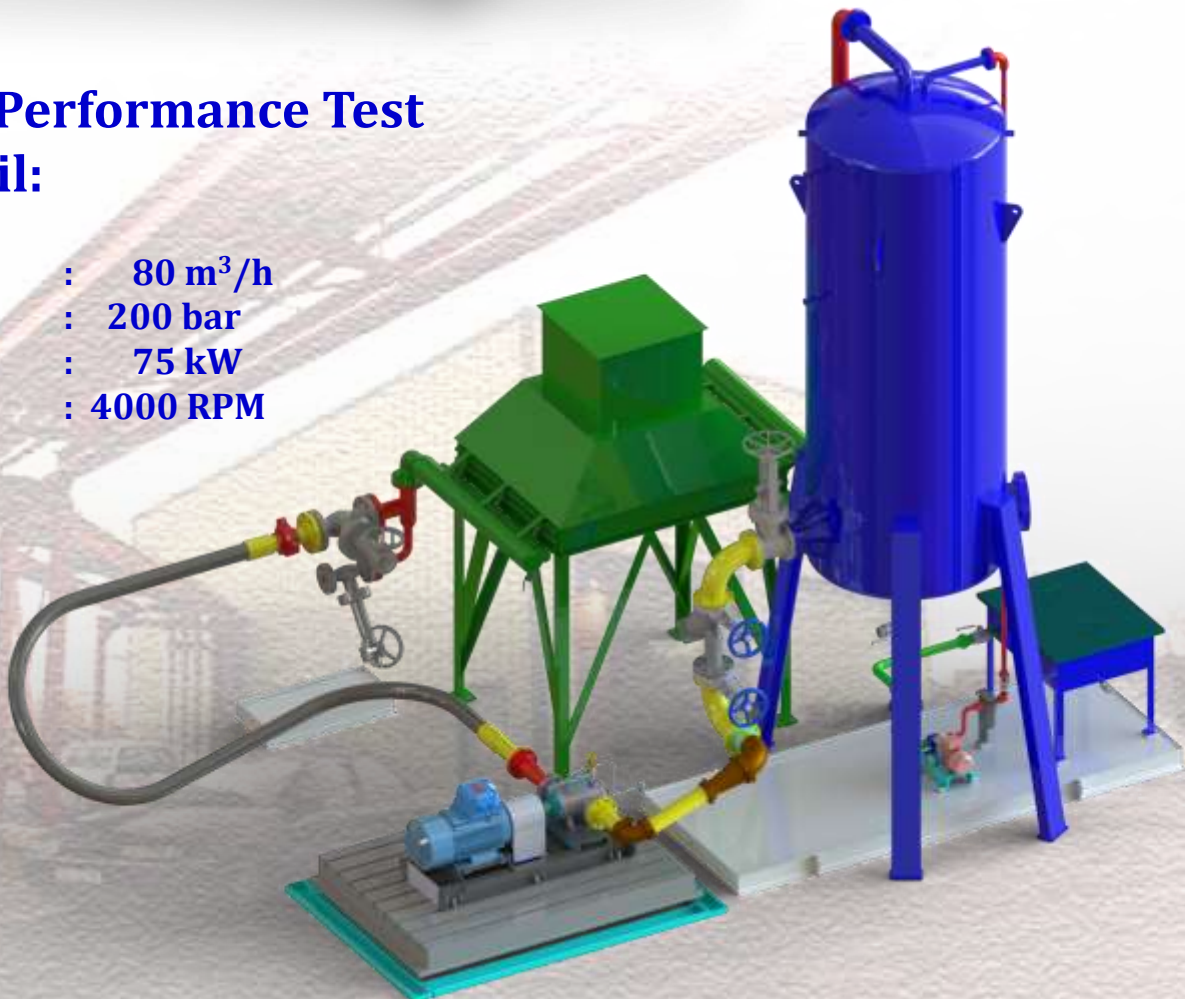
Flow	: 3100 m ³ /h
Pressure	: 200 bar
Power	: 730 kW
Speed	: 6000 RPM



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Pump Performance Test with Oil:

Flow	: 80 m ³ /h
Pressure	: 200 bar
Power	: 75 kW
Speed	: 4000 RPM





Quality Measurement

Competent in Our Field

**Calibrated Instruments
with High Accuracy:**

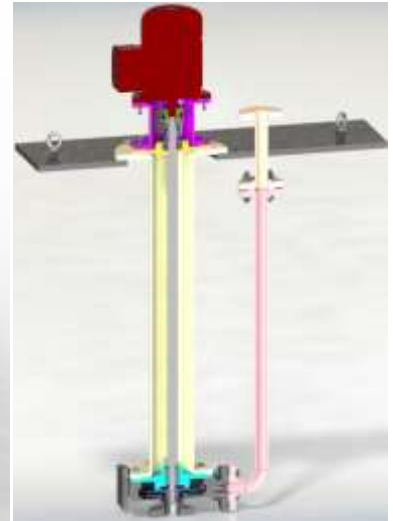
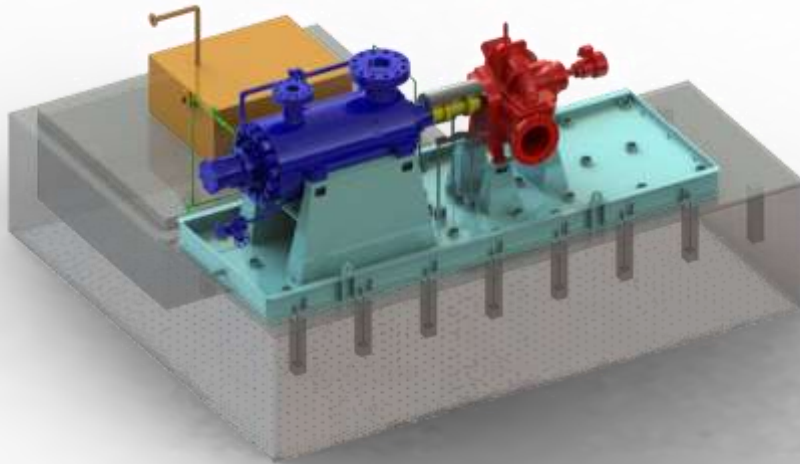


Designing



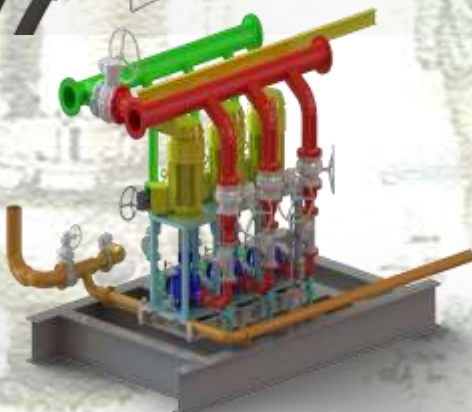
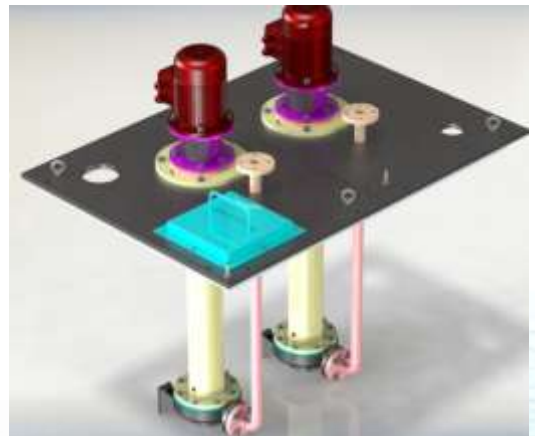
Competent in Our Field

with 3 D



BCU has 9 CAD-3D licenses, which are used to optimize the model design and minimize errors in the design.

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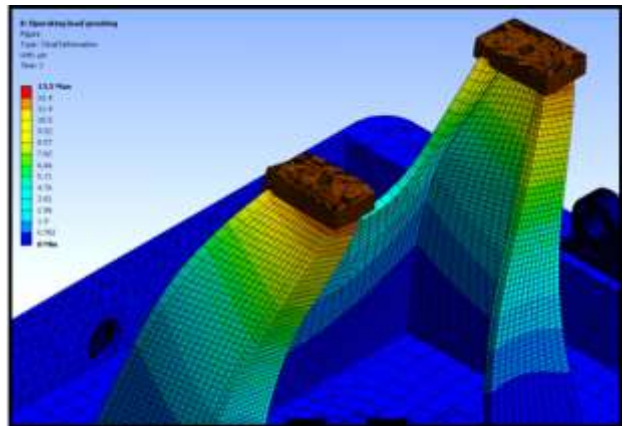
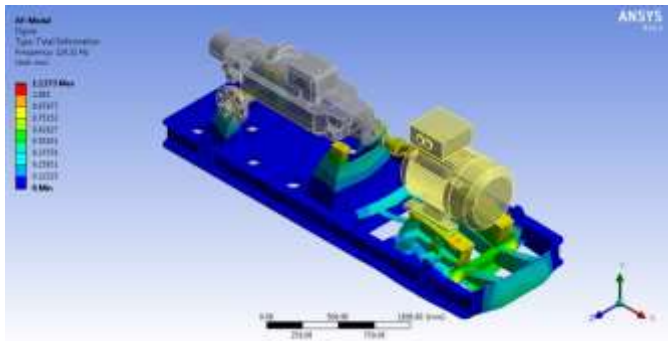




Analysis

Competent in Our Field

with Ansys



Pump pedestal deformed maximum 13.3 μm .
(3130223_Proyek Suban Heating Make Up Pump)

STRENGTH

Products of BCU are designed, calculated and analysed through Ansys simulation software (finite element engineering analysis on the effect of forces/moments), in order to ensure the safety and reliability of the system to survive for any load that may occur and suffered since the transport up to long term operation.

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Mathematical Iteration for Calculation of:

- Rigidity / Strength
- Twisting Stiffness
- Bending Potential
- von Mises Stress
- Natural Frequency
- Critical Point/Area
- Safety Factor
- Centre Point of Weight
- Handling Method
- Structure Optimization

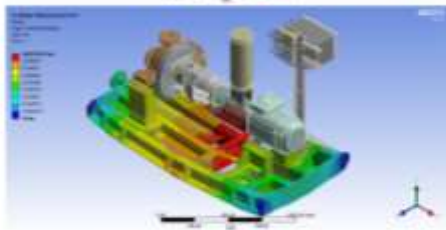
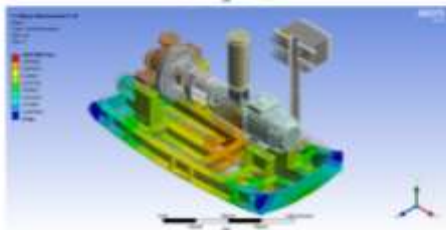
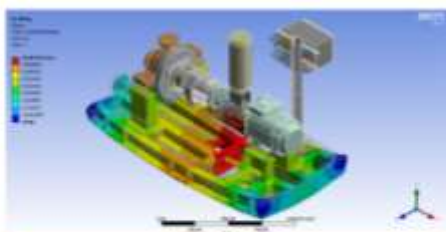
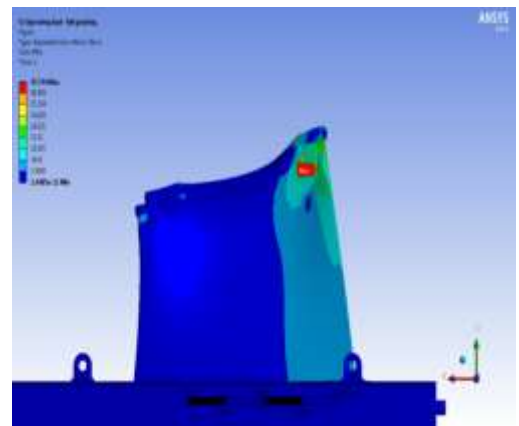


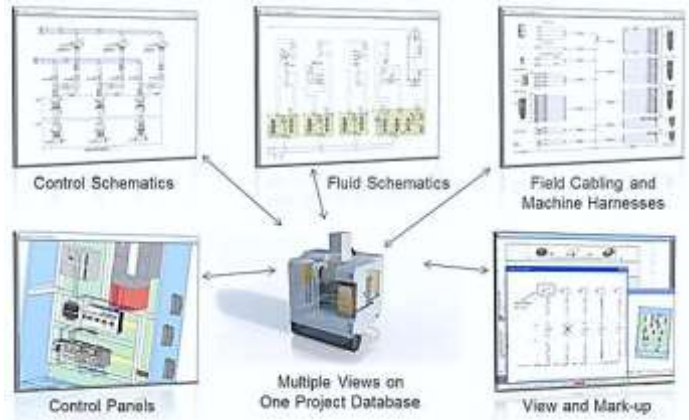
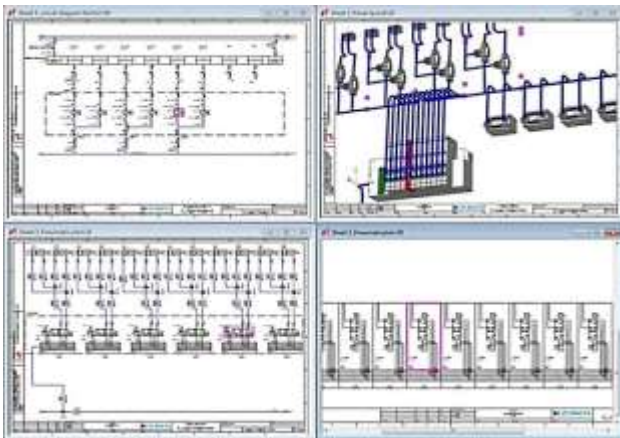
Figure 18: Total deformation, (a) under lifting load, (b) under gravity, (c) under wind pressure load to west, (d) under wind pressure load to east.



Design of Control System

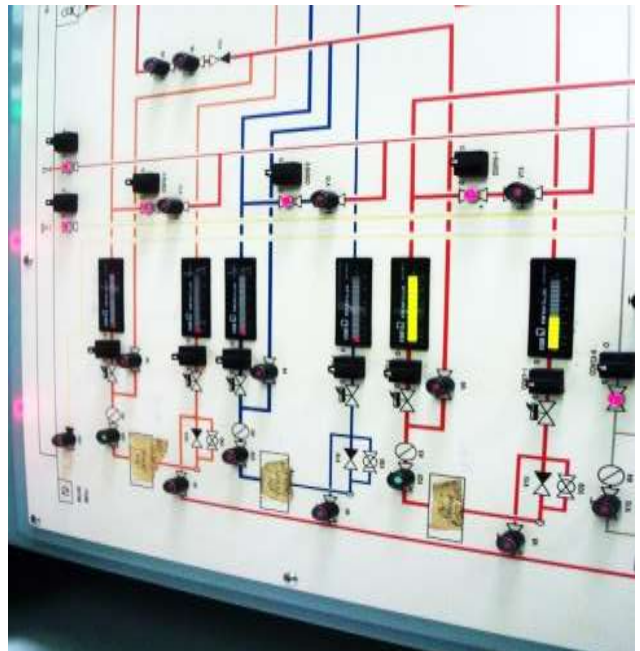


Competent in Our Field



For designing the topology and wiring-diagram of pump controller, BCU uses ZUKEN E3 software that integrates the database of components, sensors and commands in a complex networks accurately, in order to ensure absolute safety and operating steps according to the program.

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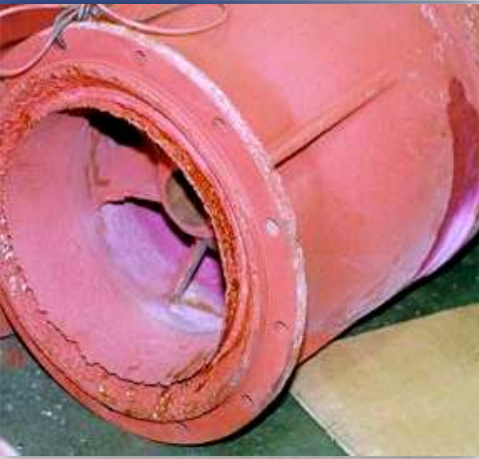




Competent in Our Field

After Sales Service

Long experience in the field of pumps, evidenced by half of the 160 employees have over 10 years remained loyalty in joining BCU to handle pumps. Among them there are many who have more than 20 years, even over 30 years working in the BCU. The real strength and hardly unrivalled assurance.





Competent in Our Field

Sump Pumps



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Developed and fabricated by BCU





Competent in Our Field

Pump System

BCU Products I



Fire Pump Package System
PT MEDCO Koneng Sumatera Selatan



Pump System
PLTU Grati



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Total EP
Hydrocarbon Condensate
Transfer Pumps



12.03.2014 10:49

BCU Products II



Competent in Our Field

Pump System



PLTGU Muara Tawar Jakarta

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**Oil Process Pumping
Pertamina Plaju**



**Oil Process Pumping
Pertamina Balikpapan**

Pump System



Competent in Our Field

BCU Products III



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Performance Test
Hydraulic Power Pack
at the Testing Facility of
BCU-Pulogadung



Performance Test of
Oil Distribution System
at the Testing Facility
at BCU-Pulogadung





Competent in Our Field

Message

Through hard work
with care and love to job
and the spirit to produce the best

Proud to engage in the world of engineering
with self-confidence for achievement,
pursue science and technology
in pump and system.

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Staring glorious ideals,
became icon of nation pride,
continuously strengthen the capability.

With cooperation among partners across the world,
to develop the equality in respect and dignity,
for new humankind with endless peace.

BCU consistently,
move forward with experience,
innovatively creates most reliable product.
Thousands units pump system have been installed
in all locations/corners of the archipelago,
accomplish duties day and night
for Indonesia.



Competent in Our Field

Headquarter

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info@bcupt.id
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BCU

Addresses

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