



Public Notice

Purchasing Spectro minilab 53 Kit for Oil analysis

1. Scope of Supply

Purchasing of Coal Slurry Pump for Coal Run Off Pond

2. Bidding Type

- Domestic open bidding to select the lowest priced suppliers and evaluated by total price
- The quotation shall be submitted in one sealed envelope containing both the priced and unpriced proposals, addressed to Procurement Team, F&A Division PT. KPJB

3. Requirement for Qualification of Bidder

It is mentioned in document of INVITATION TO BID, Bidding Schedule of The Purchasing of Coal Slurry Pump for Coal Run Off Pond, Attachment 5.

4. Aanwijzing will be held on 10.00 WIB, 31 Agustus 2026 (via Zoom Application)

Topic: RFQ K19631 for The Purchasing of Coal Slurry Pump for Coal Run Off Pond

Time: Aug 31, 2026 10:00 AM Jakarta

Join Zoom Meeting

<https://us06web.zoom.us/j/82905377264?pwd=6agr9RBYi6qqxE8ikpiQhgAICFXSCo.1>

Meeting chat link

<https://us06web.zoom.us/jc/82905377264>

Meeting ID: 829 0537 7264

Passcode: 997324

5. Bid Closing date and Time on 11.00 WIB, _____ .

6. Invitation to Bid (ITB) and Additional Information

- Invitation to Bid (ITB) document copy or soft file is available in website PT. KPJB (www.kpjb.co.id); or
- Email : procurement34@kpjb.co.id

7. Bid submission

To : Procurement Team

Finance & Administration Division (K19631)

PT. Komipo Pembangkitan Jawa Bali (KPJB)

PLTU Tanjung Jati B Unit 3 & 4,

Desa Tubanan, Kecamatan Kembang,

Kabupaten Jepara, Jawa Tengah, Indonesia 59453

Tel : 0291-4270493, Fax : 0291-4270601

8. Procedure for Submission Bid Document

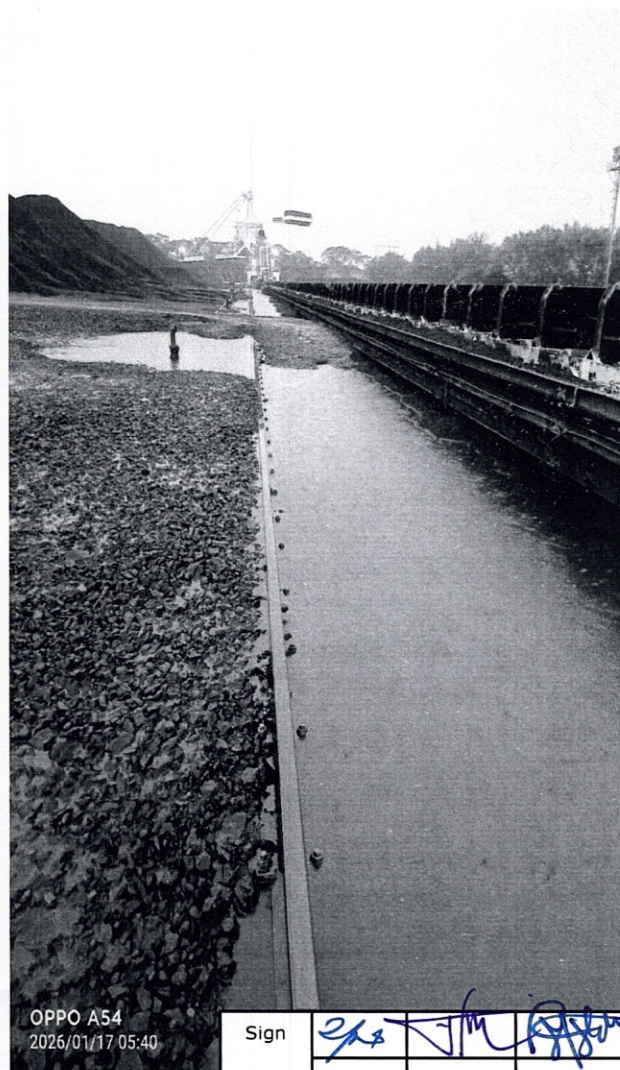
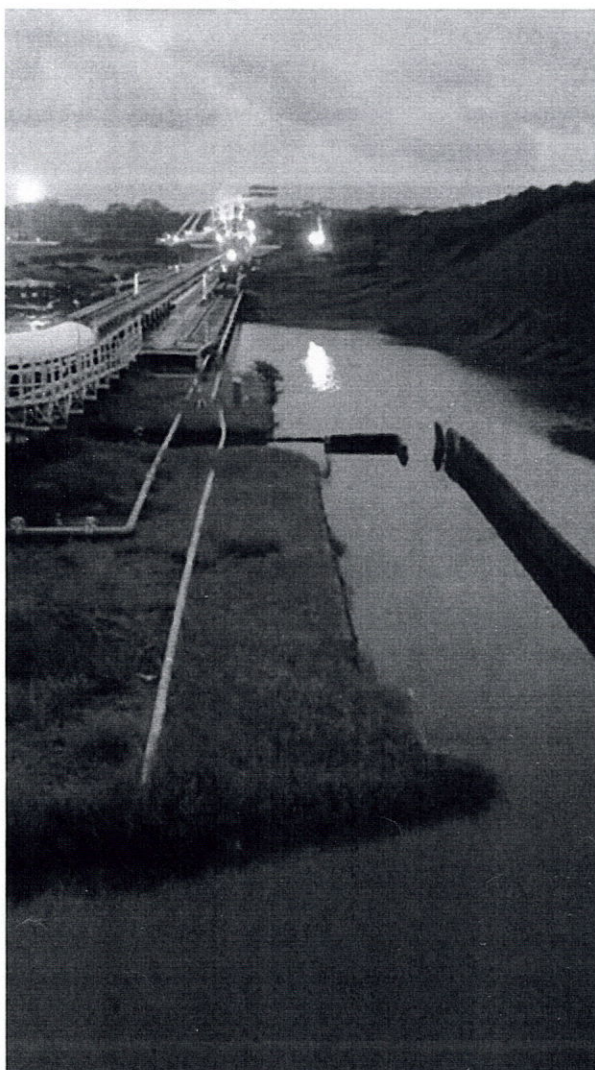
- The bidding document shall be submitted in a sealed envelope by registered mail or direct submission after KPJB security's check not later than the bid closing date and time.
- Document title shall be marked in the envelope as "The Purchasing of Coal Slurry Pump for Coal Run Off Pond"

	PT. KOMIPO PEMBANGKITAN JAWA BALI PLTU TANJUNG JATI B UNIT 3&4	Doc. Ref	: KPJB-0951-02
		Form No.	: KPJB-0951-02-ZZ-FM-16
	TERM OF REFERENCE	Design Div.	: Finance and Administration
		Revision No.	: 00

1. Background

The coal handling system at the power plant is highly dependent on the availability and reliability of the coal yard area, especially during adverse weather conditions. The coal yard is an open area that is directly exposed to rainfall. During periods of heavy and prolonged rain, surface water mixed with coal fines (coal run-off) frequently accumulates in low-lying areas, drainage channels, and sumps within the coal handling area, resulting in localized flooding.

Under these conditions, the existing drainage system is often unable to discharge water effectively, causing water levels to rise rapidly. This situation is exacerbated by the current condition of the existing submersible pumps, which are reconditioned units. Due to long-term operation, wear, and repeated repairs, the performance of these pumps has significantly degraded. Reduced pumping capacity, frequent failures, and unreliable operation have made them unable to handle peak inflow during heavy rainfall events. Flooding in the coal handling area poses a serious risk to the continuity of power plant operations. Accumulated water can inundate conveyor structures, transfer towers, coal feeders, electrical panels, motors, and instrumentation. If flooding occurs, coal conveying activities may need to be slowed down or stopped entirely to prevent further damage and ensure personnel safety. In severe cases, coal supply to the boiler can be disrupted, which may lead to load reduction or even unit derating and forced outages of the power plant.



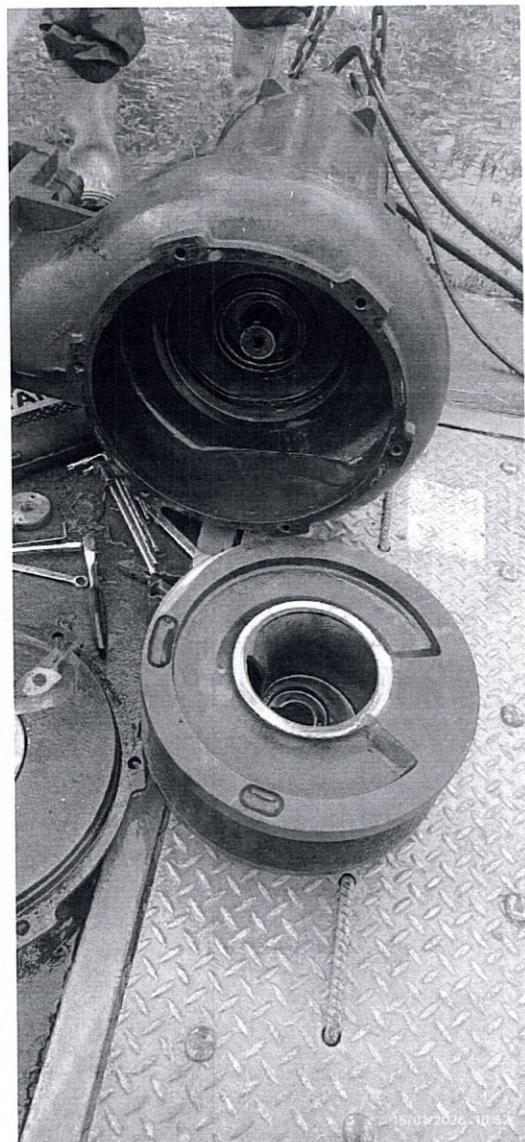
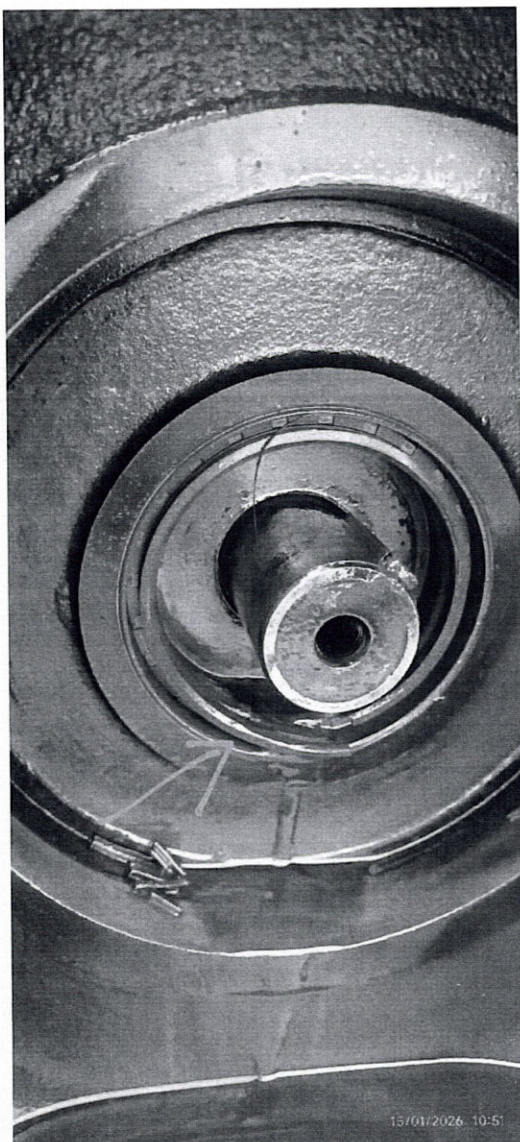
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2026/01/17 05:40

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In addition to operational disruptions, flooding can cause significant equipment damage. Coal mixed with water forms abrasive slurry that accelerates corrosion and erosion of steel structures, chutes, and mechanical components. Electrical equipment exposed to water is at high risk of insulation failure, short circuits, and permanent damage. Bearings, gearboxes, and rotating equipment may also suffer contamination, leading to premature failure and increased maintenance costs. Furthermore, prolonged standing water can weaken foundations and supports, increasing the risk of structural degradation over time.

Considering the high operational risk and potential financial losses associated with flooding in the coal handling area, it is necessary to procure new, reliable submersible pumps specifically designed for coal run-off and slurry applications. The new pumps are expected to provide sufficient capacity, durability, and reliability to ensure effective drainage during heavy rainfall, minimize flooding risks, protect critical equipment, and maintain stable and continuous power plant operation.



The spare parts will be provided to equipment as follow:

Name : COAL SLURRY PUMP FOR COAL RUN OFF POND
Brand : TSURUMI PUMP

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2. Spare Part Data

- 2.1. System : COAL HANDLING
Equipment : PUMP COAL RUN OFF BASIN
- 2.2. Spare Part Group :
☐ Overhaul
☒ PM & PdM
☐ Corrective Maintenance
☐ Strategic Parts
☐ Strategic Equipment
- 2.3. Usage Plan : PARTS WILL BE INSTALLED AFTER DELIVERY & GOOD RECEIPT
IN KPJB WAREHOUSE
- 2.4. Description : PROCUREMENT COAL SLURRY PUMP FOR COAL RUN OFF POND

3. Scope of Work

- 3.1 Procurement Of Coal Slurry Pump for Coal Run Off Pond as Spare Parts of Coal Handling Facility in PLTU Tanjung Jati B Unit 3&4 As Follows:

No.	Maximo Item ID	Maximo Description	Quantity (PC)
1.	207268	PUMPING UNIT, TOS150B422-55, SUBMERSIBLE PUMP FOR CY-2, TSURUMI, 3PHASE 380V, 22 KW, 27M, 2.5M3/MIN, INSULATION CLASS: F	2

3.2 Scope Overview

This scope of work covers the procurement of new submersible pumps intended for coal run-off and flood water handling in the coal handling and coal yard area of the power plant. The pumps shall replace existing reconditioned units whose performance is no longer reliable during heavy and prolonged rainfall.

3.3 Technical Requirements

The supplier shall provide submersible pumps with the following minimum criteria:

- Suitable for coal run-off, dirty water, and slurry containing coal fines.
- Designed for continuous operation under wet, abrasive, and corrosive conditions.
- Adequate flow rate and head to handle peak inflow during heavy rainfall.
- Wear-resistant construction for impeller and casing.
- Submersible electric motor with minimum protection class IP68.
- Compatible with existing electrical power supply at site.
- Equipped with appropriate discharge connection and lifting arrangement.

3.4 Scope of Supply

The supplier's scope shall include:

- New submersible pump complete with motor.
- Power cable suitable for submersible and outdoor application.
- Lifting chain or lifting eye.
- Pump discharge flange or adapter.
- Standard accessories required for normal operation.
- All equipment shall be brand new, unused, and compliant with applicable international standards.

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3.5 Quality and Compliance

- The submersible pump shall comply with relevant IEC/ISO standards.
- Manufacturer test certificates and factory test results shall be provided.
- Materials and workmanship shall be suitable for coal handling environment.

3.6 Inspection and Testing

- Factory Acceptance Test (FAT) shall be conducted prior to delivery.
- FAT shall include mechanical inspection, motor electrical test, and functional test.
- FAT reports shall be submitted as part of delivery documents.

3.7 Documentation

The supplier shall provide:

- Technical datasheets and pump performance curves.
- Operation and Maintenance (O&M) manual.
- Installation guideline.
- Recommended spare parts list.

3.8 Warranty and Support

- Minimum warranty period as specified in the procurement document.
- Availability of after-sales service and spare parts support.

3.9 Included Scope

- Unless otherwise stated, the following are excluded:
- Civil works and sump modification.
- Electrical panel modification.
- Piping modification and installation works.
- On-site installation and commissioning supervision.

4. Bidder Qualification

- Copy of valid Business License (SIUP)
- Copy of valid Certificate of Company Registration (TDP)
- Professional, competent, resourceful and experienced Agent/Company/Distributor which is able to provide/supply low voltage motor (proven with supporting letter from manufacturer or from authorized distributor in Indonesia).
- Domestic Professional company which participates in this bidding shall submit a copy of contract/purchase order confirming that the company has an experience in supplying with the evidence document.
- Any business entity on the PLN Black List is not allowed to participate in this Bidding.
- Third party should provide detail drawing and specification for approval by PT KPJB

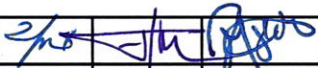
5. Delivery of material and/or services

- Required date is maximum **120 calendar days after PO effective date**
- Delivery point is KPJB's Warehouse, PLTU Tanjung Jati B Unit 3&4, Jepara, Central Java.

6. Requirement of Documents

Within delivery the materials, supplier should submit documents as follow:

- Warranty letter for 1 year from Supplier.
- Supplier must include original COM from manufacturer.
- Supplier must include original test report from manufacturer.

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7. Technical Specification

- 7.1. All of technical specification should be comply with determined specification, cannot be changed, no crack, should be new 100%, genuine, no defect, and can be used properly.
- 7.2. In the case PT KPJB decline the delivered material, supplier should replace the material. If supplier can't replace it, they will be penalized in accordance to General Term & Condition (GTC) of the PO.
- 7.3. General specification of Submersible Pump :
- Model : TOS150B422 -55 / 150B422 -55
 - H max : 35.1 M
 - H min : 15.4 M
 - Q max : 4.5 m³/min
 - DN : 150 mm
 - Voltage : 415 VAC, 3P, 50 Hz
 - Current : 42 A
 - Power : 22 kW
 - Insulation class : F
 - Protection Index : IP68 @25 M

8. Acceptance Criteria

- 8.1 All delivered materials are accordance to PO requirement, specification and condition of the TOR.
- 8.2 All of required document are fulfilled.
- 8.3 Suppliers must be able to prove the authenticity of the spare parts supplied by showing documentary evidence from the Manufacturer (COM)
- 8.4 General & Documentation

No	Item	Acceptance Criteria
1	Manufacturer	Original Tsurumi Pump (Japan) or authorized OEM
2	Model	TOS150B422-55 sesuai PO
3	Condition	Brand new, not reconditioned
4	Datasheet	Official datasheet & performance curve provided
5	Nameplate	Lengkap & sesuai spesifikasi (motor, voltage, power, current)
6	Manual	O&M Manual & Installation Guide tersedia
7	Warranty	Minimum 12 months after commissioning

8.5 Mechanical Specification

No	Parameter	Acceptance Criteria
1	Outlet Diameter	150 mm (6 inch)
2	Pump Type	Submersible, heavy-duty dewatering
3	Impeller	Semi-open / abrasion resistant
4	Casing Material	Cast Iron / abrasion resistant
5	Shaft	Stainless steel
6	Mechanical Seal	Double mechanical seal, oil chamber
7	Bearing	Heavy duty ball bearing
8	Protection	IP68
9	Solid Handling	Suitable for coal fines & muddy water

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8.6 Hydraulic Performance

No	Parameter	Acceptance Criteria
1	Rated Flow	As per datasheet ($\pm 5\%$)
2	Rated Head	As per datasheet ($\pm 5\%$)
3	Shut-off Head	$\geq$ datasheet value
4	Pump Curve	Provided & verified during FAT
5	Operation	Stable, no cavitation or abnormal noise

8.7 Electrical & Motor Specification

No	Parameter	Acceptance Criteria
1	Motor Power	~ 5.5 kW (or as datasheet)
2	Voltage	3-Phase 380–415 V, 50 Hz
3	Insulation Class	Class F or higher
4	Current	Within $\pm 10\%$ of nameplate
5	Rotation	Correct rotation verified
6	Thermal Protection	Built-in motor protection

8.8 Cable & Accessories

No	Item	Acceptance Criteria
1	Power Cable	Heavy duty submersible cable, factory-sealed
2	Cable Length	Minimum as specified in PO
3	Cable Entry	Water-tight, no leakage
4	Lifting Device	Lifting eye / chain provided
5	Optional	Guide rail / auto coupling (if specified)

8.9 FAT (Factory Acceptance Test)

No	Test Item	Acceptance Criteria
1	Visual Inspection	No damage, corrosion, or defect
2	Insulation Test	$\geq 5 \text{ M}\Omega$ @ 500 VDC
3	No-Load Test	Smooth operation, no abnormal noise
4	Vibration	$\leq 4.5 \text{ mm/s RMS}$
5	Current	$\leq 110\%$ rated current
6	Seal Leakage	No oil or water leakage

8.10 SAT (Site Acceptance Test)

No	Test Item	Acceptance Criteria
1	Installation	Correct mounting & alignment
2	Operation	Continuous run ≥ 2 hours
3	Discharge	Flow & head meet requirement
4	Vibration	$\leq 4.5 \text{ mm/s RMS}$
5	Motor Temperature	$\leq 80^\circ\text{C}$ (or per datasheet)
6	Current	Stable & within limit
7	Leakage	No oil / water leakage
8	Sump Drainage	Area flooding eliminated

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8.11 Operational Acceptance

No	Parameter	Acceptance Criteria
1	Coal Yard Drainage	No flooding during heavy rain
2	Reliability	Continuous operation without trip
3	Maintenance	Easy access & serviceable
4	Integration	Compatible with existing power & MCC

8.12 Safety and Compliance Requirements

- The motor must comply with IEC 60204-1 for electrical safety in machinery.
- Terminal box must be IP55-rated or higher and allow for easy wiring access.
- Motor protection devices (thermal protection, overload relay) must comply with IEC 60947-4-1.
- The supplier must provide certifications for compliance with CE, UL, or other applicable regulatory bodies.

8.13 Delivery and Warranty

- The pump must be delivered with proper packaging to prevent damage during transportation.
- Warranty period should be at least 12 months from the date of delivery.
- Supplier must provide after-sales support, spare parts availability, and technical assistance.

8.14 The pump must be plug and play with existing motor and all modification related with the new model of motor should be responsible by the winner.

8.15 The winning bidder must conduct a site survey before providing approval drawing and carrying out production.

8.16 Conclusion

The new pump must meet the above acceptance criteria to ensure reliability, efficiency, and safety in industrial applications. Compliance with international standards guarantees long-term operational performance and minimizes downtime due to failures.

9. Standard of Quality

Quality of the material and/or services should comply with standard, code, manufacturer specification and user's requirement.

10. Warranty

Generally, if there isn't mentioned at other clause, supplier should warrant the material for 1 year after material being receiving by PT. KPJB.

11. Material Technical Data Sheet

11.1 See Attachment

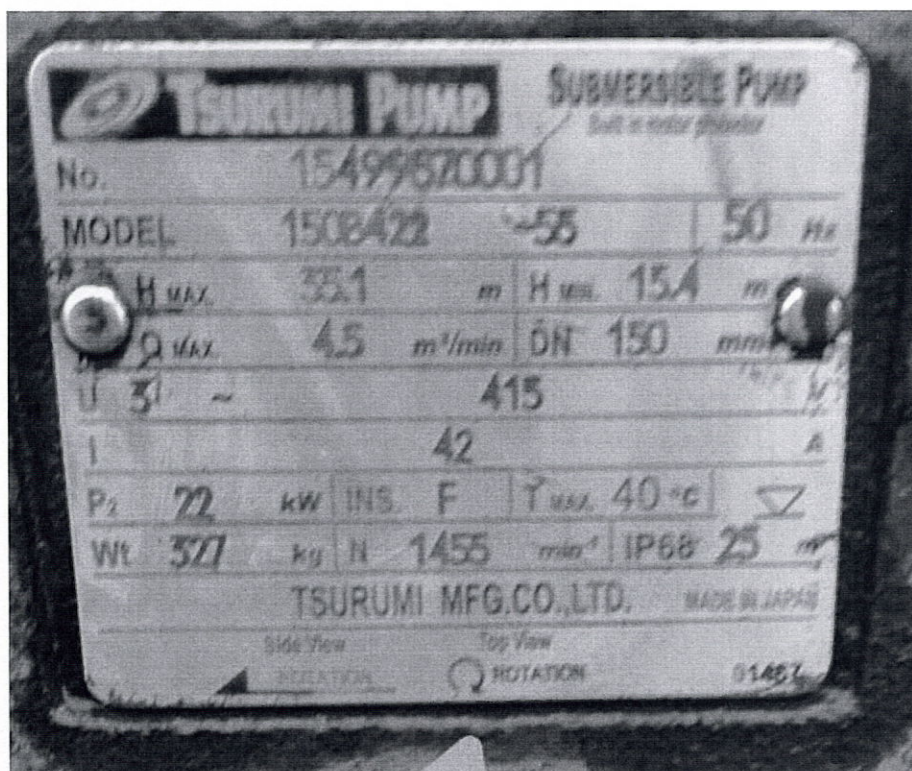
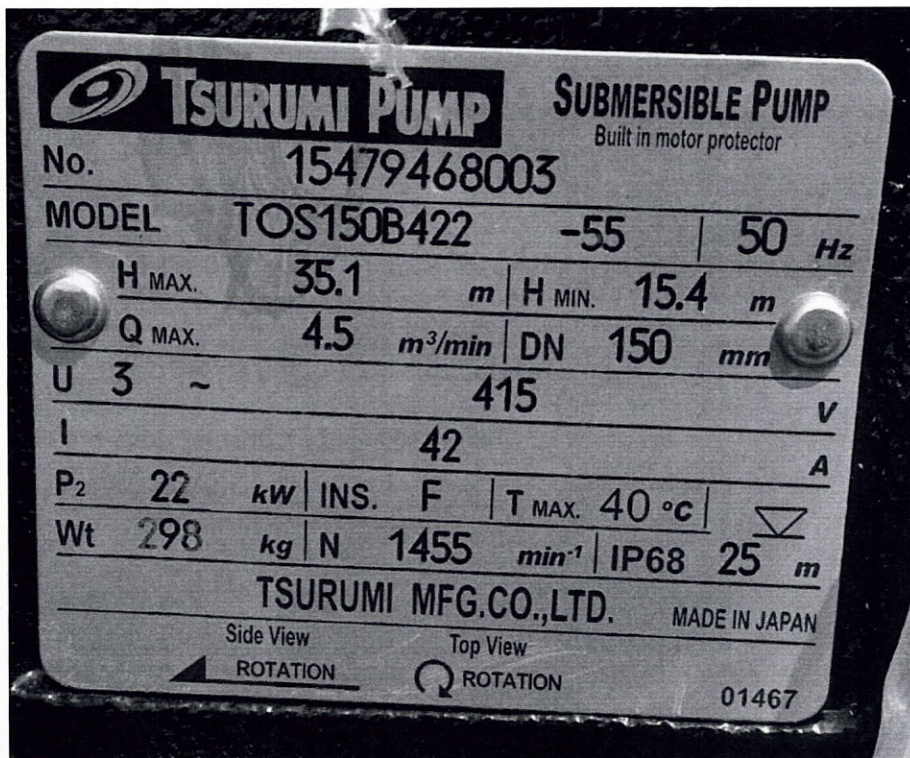
12. CSMS Risk Level

- ☒ 1. Low
- ☐ 2. Moderate
- ☐ 3. High
- ☐ 4. Very High
- ☐ 5. Extreme

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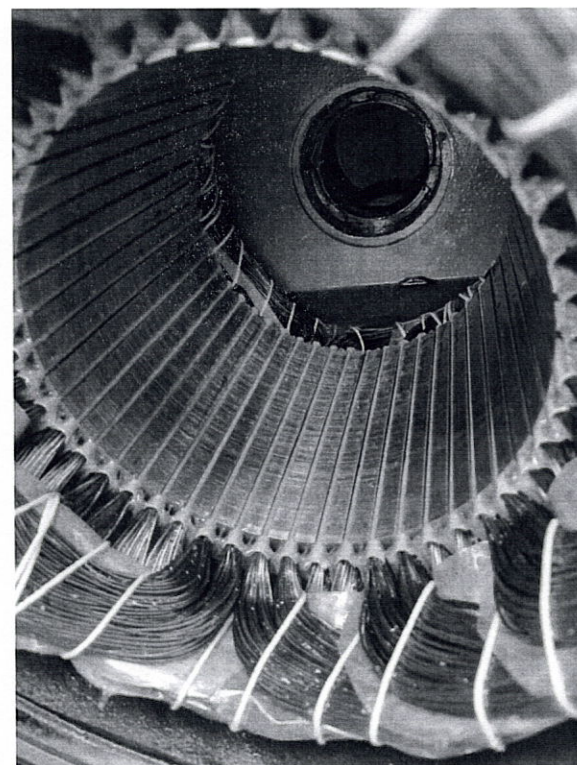
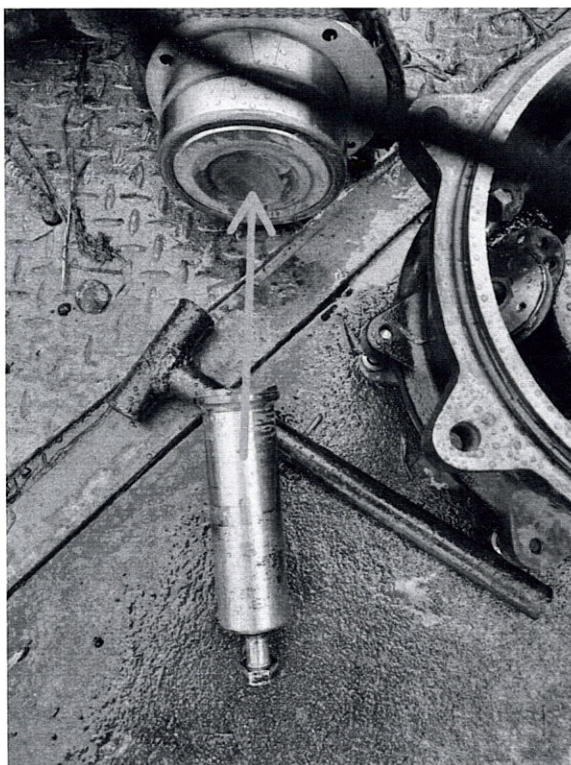
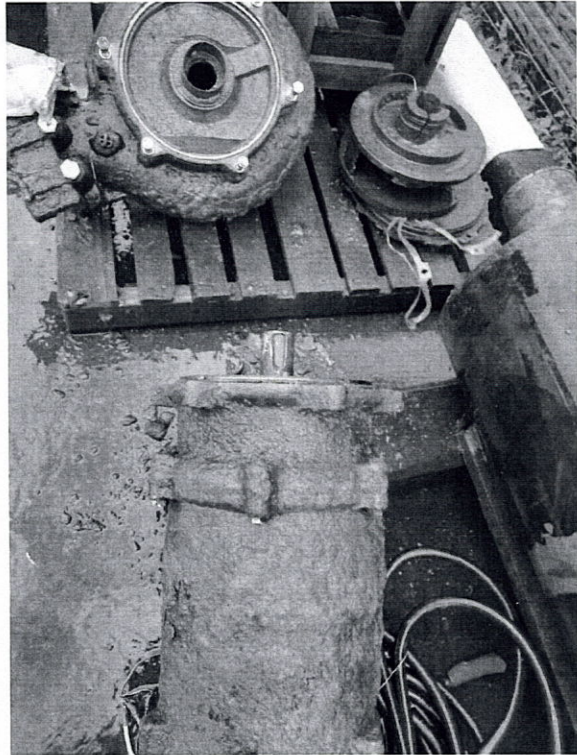
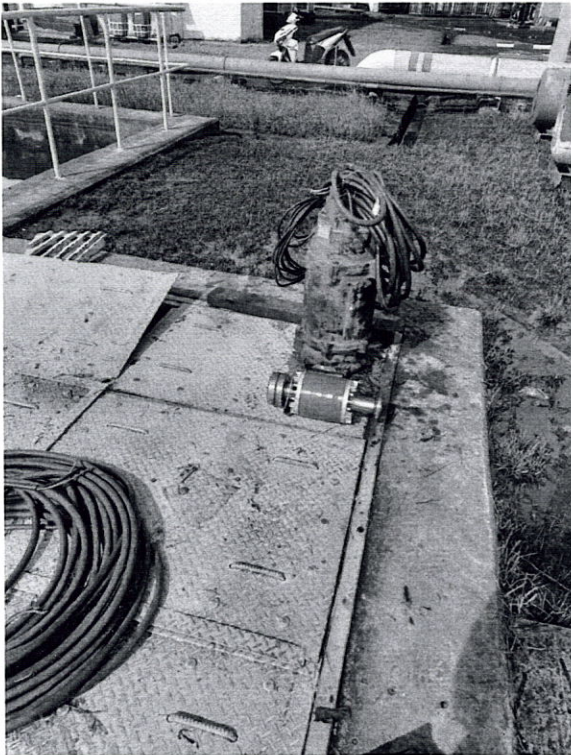
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13. Picture of Existing Motor



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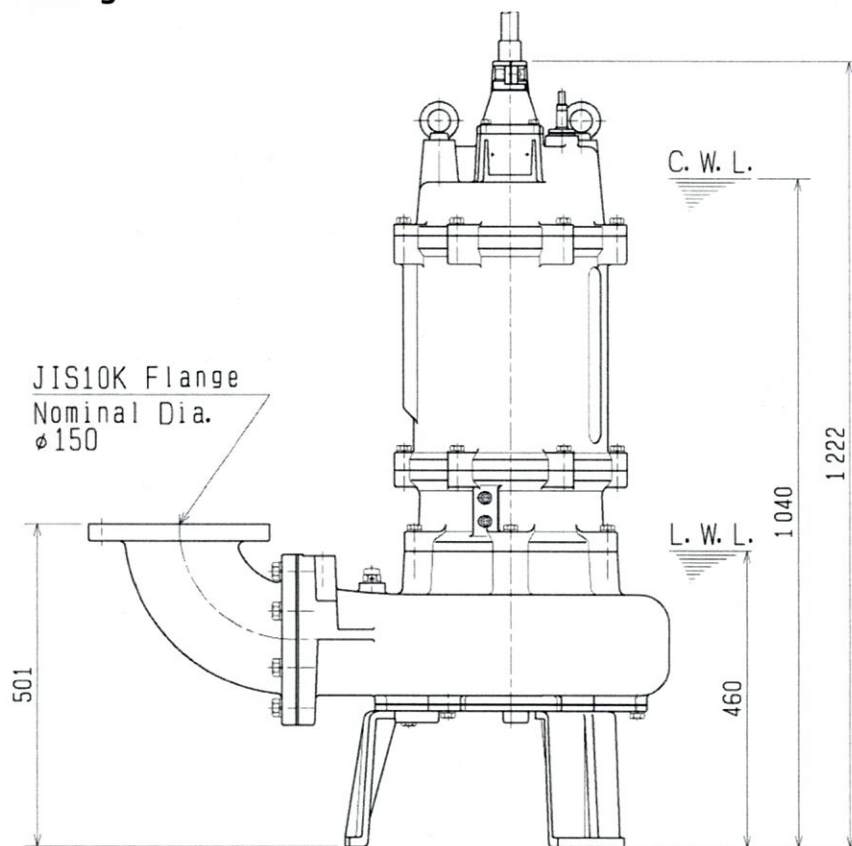


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14. Drawing

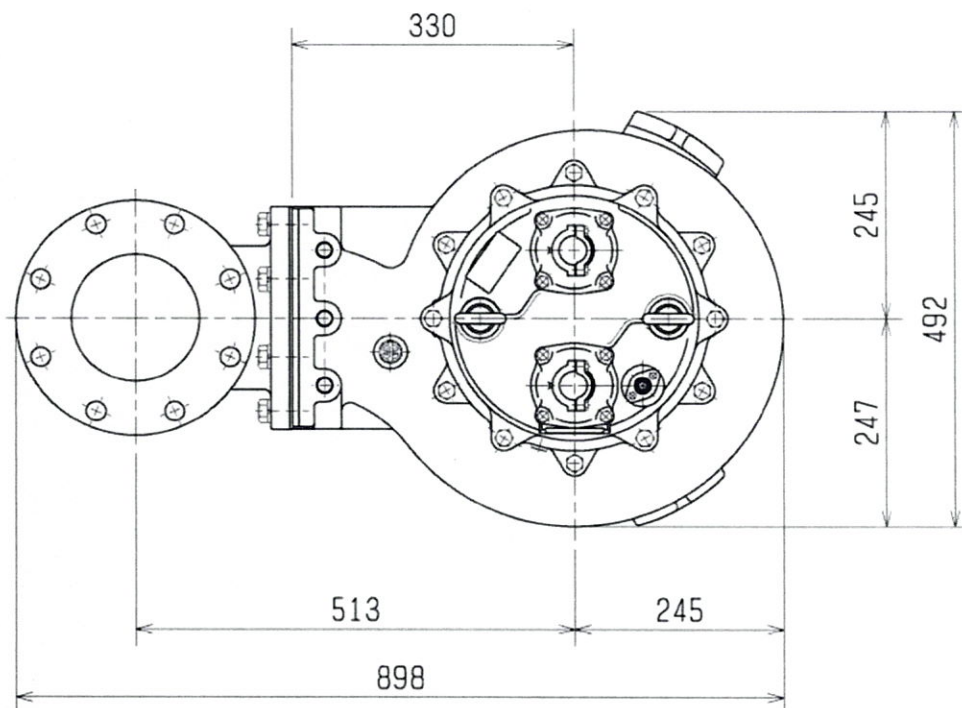


C. W. L. :Continuous Running Water Level
L. W. L. :Lowest Running Water Level

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Approximate Weight (※)
327kg
※excluding cable



15. Others

15.1 Aanwijzing process is needed.

Prepared by	Checked by	Approved by
		
<u>Yoga Priya Andika</u> Staff	<u>I Wayan Eka Ariawan</u> Leader	<u>Dodi Budiana</u> Manager
Date :	Date :	Date :

SPECIFICATIONS	Model	150B422	B-series
			22kW, 3-phase
Type of Pump Submersible cast iron pump suitable for pumping sewage, wastewater, storm water, etc.			Impeller Shrouded two-channel impeller for solid-handling design, dynamically balanced
Type of Fluid Sewage, wastewater, and water carrying solid matters			Solids Passage 50Hz – ϕ 75mm 60Hz – ϕ 75mm
Temperature: 0 to 40°C (High temperature model available on special request)			Cable Entry with Anti-Wicking Block Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.
Discharge Bore 150mm			Bearings Permanently lubricated, deep-groove, double-shielded C3 ball bearings
Motor Output 22kW			Shaft 420 stainless steel
Power Supply Three-phase			Shaft Seal (Mechanical Seal) Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.
Starting Method Star-Delta			Upper Seal Faces: SiC + SiC Lower Seal Faces: SiC + SiC
Motor Continuous-duty rated, dry-type induction motor			Oil Seal (Lip Seal) Used as a "Dust Seal", it protects the mechanical seal from abrasive particles.
Insulation Class: F Degree of Protection: IP68			Pressure Relief Port Protects the mechanical seal from over rated limits, and also protects the seal faces from abrasive particles by drawing particles away.
No. of Poles & Speed (Synchronous Speed) 4-pole, 1500/1800min ⁻¹ (50/60Hz)			OIL LIFTER (Patented) Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.
Power Supply Voltages & Rated Currents			Type of Lubricating Oil & Volume Turbine Oil (ISO VG32), 4600ml
50Hz 60Hz			Motor Protection Device A miniature thermal protector is embedded in each winding of the motor. Should excessive heat builds up, the bimetal strip opens to cause the control panel to shut the power supply.
380V – 43.5A 220V – 75.0A			
400V – 42.5A 380V – 43.4A			
415V – 42.0A 440V – 37.5A			
Power Cable Sheath: Chloroprene rubber Standard Length: 10m 200 to 600V supply: 1 × 4 × 14mm ² , O.D. 21.7mm 1 × 3 × 14mm ² , O.D. 19.7mm 1 × 2 × 1.25mm ² , O.D. 9.6mm			
Dry Weight (excluding cable) Free Standing Type: 327kg Guide Rail Fitting Type: 298kg			
Optional Accessories			
Bend Set (Free Standing Type) • Discharge Bend • JIS 10kg/cm ² Screwed Flange		TOS Set (Guide Rail Fitting Type) • Duckfoot Bend • Guide Support • Guide Hook • Lifting Chain 5m (with Shackles) • JIS 10kg/cm ² Screwed Flange	
Stand Set (Free Standing Type) • Stand			External Leakage Sensor
TSURUMI MANUFACTURING CO., LTD.			

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	PLTU TANJUNG JATI B #UNIT 3&4	Form No.	: KPJB-0951-02-ZZ-FM-03
	REQUEST FOR QUOTATION	Design Div.	: Finance and Administration
		Revision No.	: 00

Date	RFQ No:	PRF No:
August 20, 2026	K19631	K19631
SUBJECT : The Purchasing of Coal Slurry Pump for Coal Run Off Pond		
RFQ Effective Date:		

KPJB on behalf of PT. PLN hereby request your quotation for material/services below :

No	Item Code	Description	No		Item Code
			Qty	Unit	
As per the attachment					
- The quotation shall be submitted in one sealed envelope containing both the priced and unpriced proposals, addressed to Procurement Team, F&A Division PT. KPJB. The original documents should be received by KPJB not later than 11.00 WIB date <u>10 SEP 2026</u> by registered mail or direct submission after PLTU Tanjung Jati B security check and registration. - Aanwijzing will be held in KPJB on <u>31 AGS 2026</u>. - Validity of Quotation price should be minimum 3 months. - Prices and detailed information should be specified about the materials and services in the quotation by strictly following the quotation form attached hereto. - Payment will be made by Telegraphic Transfer (T/T) within forty five (45) days after invoice received, attached with delivery or work completion report (Invoice, Good receive form, MOV, BAPP, etc.) issued by PT. KPJB. - Performance Bond is applicable for PO $\geq$ IDR 500.000.000: minimum 5% from PO price including VAT. Validity of Bank Guarantee is covering delivery period + 130 calendar days. - Warranty period is 12 months (365 calendar days). Delivery time: not later than 120 calendar days after PO effective date. Delivery should be completed to PT. KPJB's warehouse, PLTU Tanjung Jati B Unit #3&4. Certificate should be submitted at the delivery time: Original Certificate of Manufacture (issued by manufacture) and Original Test Report issued from Manufacture are required at the delivery time. - Warranty letter that state "The material is genuine, no defect, new and can be used properly" should be submitted at the time of delivery. - All documents and communications shall be in English. - All terms and conditions of this contract must be subject to and governed by PT. KPJB's Terms and Conditions for Contract attached hereto. - In case of hazardous material, Material Safety Data Sheets (MSDS) and other related document for hazardous material shall be submitted at the time of delivery. - For hand powered tools / powered tools: must be attached with tools certificate from manufacturer. - For chemicals: All material delivery must be completed with symbol & label as required on regulation in every containers/other packaging. - For service: All personnel must have appropriate certification as required on local HSE Regulation.					
Sincerely Yours,  Hendang Suroso F&A Manager					
Date					

Attachment :

1. Material list
2. Quotation format
3. Unprice document required
4. KPJB Contractor Safety Rules
5. PT. KPJB's General Terms and Conditions for Contract
6. Pakta Integritas Form
7. DPJT list and Bid Bond format
8. Term of Reference

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Attachment 1: RFQ No. K19631

MATERIAL LIST

Item No	Item Code	Description	Quantity	
			Order	Unit
1	207268/	PUMPING UNIT, TOS150B422-55, SUBMERSIBLE PUMP FOR CY-2, TSURUMI, 3PHASE 380V, 22 KW, 27M, 2.5M3/MIN, INSULATION CLASS: F	2,00	PC

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Quotation format

A. Price Quotation

<COMPANY LOGO>

Quotation

No:

Item No	Item Code	Description	Quantity		Price (IDR)	
			Order	Unit	Unit Price	Total
1	207268/	PUMPING UNIT, TOS150B422-55, SUBMERSIBLE PUMP FOR CY-2, TSURUMI, 3PHASE 380V, 22 KW, 27M, 2.5M3/MIN, INSULATION CLASS: F	2,00	PC		
		TOTAL				
		VAT 11%				
		GRAND TOTAL				

..... rupiah (Please mention the price in words)

Term and Conditions:

1. The above price are included delivery cost to warehouse of PT. KPJB
2. Please mention Certificate is required at the delivery time
3. Payment will be made by Telegraphic Transfer (T/T) within forty five (45) days after invoice received, attached with delivery or work completion report issued by PT.KPJB.
4. Please mention Bank Account that will be use for payment (including Bank Name, Bank Address)
5. Please mention Name of Director

Place, [Month] [Date] [Year]

SIGN & COMPANY STAMP

DUTY STAMP / MATERAI (10000)

Name

(Title)

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B. Unpriced Quotation

<COMPANY LOGO>

Quotation

No:

Item No	Item Code	Description	Quantity		Delivery Time
			Order	Unit	
1	207268/	PUMPING UNIT, TOS150B422-55, SUBMERSIBLE PUMP FOR CY-2, TSURUMI, 3PHASE 380V, 22 KW, 27M, 2.5M3/MIN, INSULATION CLASS: F	2,00	PC	not later than 120 calendar days after PO effective date

Term and Conditions:

1. The above price are included delivery cost to warehouse of PT. KPJB
2. Please mention Certificate is required at the delivery time
3. Payment will be made by Telegraphic Transfer (T/T) within forty five (45) days after invoice received, attached with delivery or work completion report issued by PT.KPJB.
4. Please mention Bank Account that will be use for payment (including Bank Name, Bank Address)
5. Please mention Name of Director

Place, [Month] [Date] [Year]
SIGN & COMPANY STAMP

Name
(Title)

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(KOP PERUSAHAAN/BADAN/LEMBAGA)

PAKTA INTEGRITAS

Saya yang bertanda tangan di bawah ini, dalam rangka Pengadaan (*diisi Nama Pengadaan*) dengan nomor (*diisi nomor RFQ/PR*), pada satuan kerja PT KPJB yang dalam hal ini mewakili PT PLN (Persero) Unit Induk Pembangkitan Tanjung Jati B Jepara dengan ini menyatakan bahwa saya:

1. Akan mentaati peraturan tentang Pedoman Pengadaaan Barang/Jasa di Lingkungan PT KPJB dan PT PLN (Persero), dan peraturan perundang-undangan yang terkait dengan pengadaan;
2. Tidak akan melakukan persengkokolan/pengaturan/kerjasama diantara para Peserta Pengadaan/Jasa lain dan/atau Pengguna Barang/Jasa dan/atau Pelaksana Pengadaan yang dapat mengakibatkan terjadinya persaingan usaha tidak sehat;
3. Mendukung prinsip **4 NO's** yang dijunjung tinggi oleh PT KPJB dan PT PLN (Persero) yaitu:
 - a. **No Bribery** (tidak boleh ada suap menyuap dan pemerasan)
 - b. **No Kickback** (tidak boleh ada komisi, tanda terimakasih baik dalam bentuk uang dan dalam bentuk lainnya);
 - c. **No Gift** (tidak boleh ada hadiah atau gratifikasi yang bertentangan dengan peraturan
 - d. **No Luxirious Hospitality** (tidak boleh ada penyambutan dan jamuan yang berlebihan).
4. Tidak akan melakukan komunikasi yang mengarah dan/atau melakukan praktek Korupsi, Kolusi dan Nepotisme (KKN)
5. Akan melakukan proses pengadaan secara bersih dan transparan agar menghasilkan pekerjaan sesuai ketentuan peraturan perundang-undangan yang berlaku.

Apabila saya melanggar hal-hal yangtelah saya nyatakan dalam Pakta Integritas ini, saya bersedia dikenakan sanksi sesuai dengan ketentuan peraturan perundang-undangan yang berlaku.

_____ [Tempat], _____ [Tanggal]

[Tanda Tangan & Cap Perusahaan & Materai 10.000]

_____ [Nama Jelas]

_____ [Jabatan]

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(KOP PERUSAHAAN/BADAN/LEMBAGA)

SURAT PERNYATAAN KEASLIAN DOKUMEN

Yang bertanda tangan di bawah ini :

ama :

Jabatan :

Alamat :

Sehubungan dengan pekerjaan :

Judul Pekerjaan :

RFQ No. :

menyatakan dengan sesungguhnya bahwa segala dokumen yang kami sampaikan adalah benar dan apabila dikemudian hari ditemukan bahwa dokumen – dokumen yang telah kami sampaikan tidak benar dan ada pemalsuan, maka kami bersedia dikenakan sanksi sesuai peraturan perundang – undangan yang berlaku.

_____ [Tempat], _____ [Tanggal]

[Tanda Tangan & Cap Perusahaan & Materai 10.000]

_____ [Nama Jelas]

_____ [Jabatan]

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Unprice Document Required

No.	Syarat Administrasi (Administration Requirement)
A.	
1	Asli Surat Penawaran (Original Unprice quotation) yang:
	1. Description sesuai permintaan
	2. Bertanggal (dated)
	3. Bertanda tangan dan Cap Perusahaan (Company stamped)
	4. Menyebutkan waktu pengiriman sampai gudang sesuai permintaan (Time Delivery)
2	Pengalaman Pekerjaan dengan total harga kontrak senilai minimal IDR 50.000.000 – menyerahkan copy kontrak atau PO (Work Experience for contract amount minimum IDR 50.000.000 – submitting the copy of the contract or PO)
3	Copy pembayaran pajak SSP (PPN) 3 bulan terakhir periode: January, February, March 2026 (Copy of 3 month payment tax period of: January, February, March 2026)
4	Original Pakta Integritas
5	Original Bid bond 1% up to 3% from price quotation (including VAT) with the validity until _____ - Bid bond should be issued by Bank based on DPJT list and format issued by PLN - Beneficiary of Bid bond to: PT. Perusahaan Listrik Negara (Persero) UIK Tanjung Jati B Desa Tubanan, Kecamatan Kembang, Jepara Jaminan Penawaran asli 1% sampai dengan 3% dari Penawaran Harga (termasuk PPn) dengan validitas sampai dengan _____ <i>10 DES 2026</i>
6	Surat Pernyataan Keaslian Dokumen
7	Vendor participants must have registered CSMS Certificate (minimum: Low Risk Level) issued by PT. PLN (Persero) - submitting the copy of the document
B.	
1	Copy Surat Ijin Usaha Perusahaan – SIUP / BKPM (PMA) (copy of Business License)
2	Copy Surat Ijin Tempat Usaha – SITU / DOMISILI / HO (Copy of Domicile Certificate)
3	Copy Nomor Pokok Wajib Pajak - NPWP (Copy Tax ID number of company)
4	Copy Surat Pengukuhan Perusahaan Kena Pajak - SPPKP (Copy of Taxable Company Certificate)
5	Copy Tanda Daftar Perusahaan – TDP / NIB (Copy of Certificate Company Registration)
6	Copy Akte pendirian perusahaan/perubahan *jika ada (Deed of Incorporation)

Note: Administration Requirement point B 1-6 is not required to be submitted if your company already registered in our SAP and the Company data submitted still valid until closing time. If any document not submitted by the suppliers or the submitted document do not meet the requirement, we will regard that the supplier fails and we will not open the price quotation document (price evaluation)

Catatan: Syarat Administrasi no. B 1-6 tidak perlu di kirimkan jika perusahaan anda sudah terdaftar di SAP kami dan data yang dahulu di kirimkan masih berlaku sampai dengan waktu penutupan bidding. Jika ada dokumen yang tidak diserahkan atau dokumen yang diserahkan tidak sesuai dengan persyaratan, kami akan menganggap bahwa supplier gagal dan kami tidak akan membuka dokumen penawaran harga (evaluasi harga).

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TERMS AND CONDITION

Lampiran

PO NO :

Description :

SYARAT - SYARAT DAN KONDISI

KETENTUAN UMUM

Singkatan dan istilah umum :

"Purchase Order/PO" adalah Surat Pesanan Pembelian (*Purchase Order* atau PO).

"ASET OPERATOR" adalah PT Komipo Pembangkitan Jawa Bali (PT. KPJB)

"PLN TJB" adalah PT PLN (Persero) Unit Induk Pembangkitan Tanjung Jati B.

"PPN" adalah Pajak Pertambahan Nilai.

1. SURAT MENYURAT

Setiap surat menyurat harus menggunakan Kop Surat Perusahaan yang mencantumkan Nomor *Purchase Order/PO* , Nomor Surat Penawaran, Tanggal dan ditandatangani di atas meterai oleh Penyedia Barang/Jasa (oleh Direktur atau yang dikuasakan berdasarkan Anggaran Dasar Perusahaan), dan dialamatkan kepada: **ASET OPERATOR**, Procurement, Jepara.

Korespondensi antara **ASET OPERATOR** dan Penyedia Barang/Jasa dapat dilaksanakan melalui surat, faksimili, atau *e-mail* dan ditujukan kepada alamat masing-masing Pihak sebagaimana yang tercantum dalam *Purchase Order/PO*.

Salah satu Pihak dapat mengganti alamat, nomor telepon, faksimili dan/atau *E-mail* dengan memberikan pemberitahuan terlebih dahulu kepada Pihak lainnya.

2. PROSES PENGADAAN

Proses Pengadaan diadakan dengan sistem yang diputuskan oleh **ASET OPERATOR Procurement** dan **PLN TJB**, dimana prosedur yang berlaku yaitu sebagai berikut:

- 2.1 Penyedia Barang / Jasa yang diundang untuk Pengadaan adalah yang telah terdaftar di daftar Penyedia Barang/Jasa **ASET OPERATOR** dan telah disetujui oleh **PLN TJB** dengan diterbitkan "SAP CODE" oleh **PLN TJB**.
- 2.2 Menyerahkan Jaminan Penawaran untuk Surat Penawaran di atas Rp.500,000,000,- (Lima Ratus Juta Rupiah) dan/atau dipersyaratkan pada Undangan Pengadaan Barang / Jasa dengan nilai jaminan minimal 1% (satu persen) dan maksimal 3% (tiga persen) dari Harga Penawaran dari Penyedia Barang/Jasa termasuk PPN sesuai peraturan yang berlaku, kepada **ASET OPERATOR** dengan masa berlaku adalah 90 (Sembilan Puluh) hari kalender terhitung dari tanggal yang tertera di Surat Penawaran Harga. Jaminan Penawaran Harus diterbitkan oleh Bank sesuai dengan Daftar Penyedia Jaminan Terseleksi (DPJT) PLN yang telah disetujui oleh **ASET OPERATOR** dan/atau **PLN TJB**.
- 2.3 Penyedia Barang/Jasa wajib memenuhi persyaratan yang diminta oleh **ASET OPERATOR Procurement** dan tercantum dalam Surat Penawaran Harga, yaitu sebagai berikut:
 - 2.3.1 Jadwal Pengiriman/pekerjaan yang diajukan dalam Surat Penawaran Harga adalah dalam hitungan "HARI KALENDER atau TANGGAL yang disepakati".
 - 2.3.2 Sertifikat dan/atau dokumen lainnya yang dipersyaratkan dalam permintaan barang/jasa yang akan diserahkan, maka harus tercantum dalam Surat Penawaran Harga dan itu adalah "SERTIFIKAT/DOKUMEN ASLI", kecuali ada ketentuan dan persetujuan lain yang disepakati Para Pihak (Penyedia Barang/Jasa dan **ASET OPERATOR Procurement**).
 - 2.3.3 Harga Yang ditawarkan adalah dalam "RUPIAH" sesuai dengan peraturan yang berlaku, kecuali ada ketentuan dan persetujuan lain yang disepakati Para Pihak (Penyedia Barang/Jasa dan **ASET OPERATOR Procurement**).
 - 2.3.4 Surat Penawaran Harga yang diserahkan ke **ASET OPERATOR Procurement** harus menggunakan kop surat resmi perusahaan, bertanggal, bermeterai dan ditandatangani oleh Penyedia Barang/Jasa (oleh Direktur atau yang dikuasakan berdasarkan Anggaran Dasar Perusahaan).
 - 2.3.5 Masa berlaku Surat Penawaran Harga adalah 90 (Sembilan Puluh) Hari Kalender sejak tanggal Surat Penawaran Harga dibuat.
 - 2.3.6 Syarat dan Kondisi penyerahan barang/jasa adalah "DDP Tanjung Jati B" (*incoterms* 2000), kecuali ada ketentuan dan persetujuan lain yang disepakati Para Pihak (Penyedia Barang/Jasa dan **ASET OPERATOR Procurement**).
 - 2.3.7 Syarat dan Kondisi Pembayaran adalah 45 (empat puluh lima) Hari Kalender sejak barang/atau bukti penyelesaian pekerjaan dan dokumen lainnya yang dipersyaratkan dalam *Purchase Order/PO* lengkap diterima oleh **ASET OPERATOR** dan **PLN TJB**.
 - 2.3.8 Penyedia Barang/Jasa dipersyaratkan mencantumkan kesanggupan untuk menerbitkan "Surat Pernyataan Jaminan/Warranty Letter", yang menyatakan bahwa barang yang dikirimkan adalah Asli, Baru dan Tidak ada cacat. *Purchase Order/PO* lengkap diterima oleh **ASET OPERATOR** dan dapat digunakan, dan ditandatangani di atas meterai oleh Penyedia Barang/Jasa (oleh Direktur atau yang dikuasakan berdasarkan Anggaran Dasar Perusahaan). Jika dipersyaratkan dalam PO
- 2.4 Surat Penawaran Harga dan Dokumen pengadaan lainnya yang telah diterima oleh **ASET OPERATOR Procurement** adalah mutlak milik **ASET OPERATOR Procurement** dan keputusan yang dibuat oleh **ASET OPERATOR Procurement Komite** adalah mutlak dan tidak dapat diganggu gugat.
- 2.5 Adapun Syarat dan Ketentuan lainnya yang ditetapkan terpisah adalah satu kesatuan dari Syarat –Syarat dan Kondisi pada lampiran 2.

3. PERSETUJUAN PURCHASE ORDER/PO

Sebagai konfirmasi persetujuan Pesanan atau syarat-syarat *Purchase Order/PO*, Nomor Referensi Rekanan wajib menandatangani Surat *Purchase Order/PO* di atas meterai yang cukup pada kolom yang tersedia dan mengembalikan kepada Procurement **ASET OPERATOR**.

3.1 PROSES PURCHASE ORDER/PO

Proses *Purchase Order/PO* diberlakukan dalam tahap sebagai berikut:

- 3.1.1 *Purchase Order/PO* atas nama **PLN TJB** lebih besar dari Rp.500,000,000,- (Lima Ratus Juta Rupiah), maka Penyedia Barang/Jasa diwajibkan menyerahkan Jaminan Pelaksanaan ditujukan ke **PLN TJB**, bernilai minimal 5% (lima persen) dari total harga barang/ jasa yang tercantum dalam *Purchase Order/PO* termasuk PPN sesuai dengan peraturan yang berlaku.
- 3.1.2 *Purchase Order/PO* Asli yang telah lengkap ditandatangani oleh **ASET OPERATOR** atas sepengetahuan dan persetujuan **PLN TJB** terlebih dahulu, dan wajib ditandatangani di atas meterai oleh Penyedia Barang/Jasa (oleh Direktur atau yang dikuasakan berdasarkan Anggaran Dasar Perusahaan) dan dikembalikan kepada Procurement **ASET OPERATOR**.
- 3.1.3 Aktivasi Surat *Purchase Order/PO* adalah 7 (tujuh) Hari Kalender sejak *Purchase Order/PO* dikirimkan melalui surat tertulis dan/atau surat elektronik (*surel/email*) oleh Procurement **ASET OPERATOR**.

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- 3.1.4 Jangka Waktu berlakunya *Purchase Order/PO* ditetapkan dalam *Purchase Order/PO*, pada kolom "**Start Date**" dan "**End Date**".
- 3.1.5 Pada ketentuan Pasal 3.1.1 dimana **ASET OPERATOR** akan mengirimkan surat "*Appointment of awarded Supplier*" melalui surat tertulis dan/atau Surat Elektronik (surel/email) kepada Penyedia Barang/Jasa, dan selambat-lambatnya dalam waktu 14 (empat belas) Hari Kalender setelah tanggal dikirimkan surat "*Appointment of awarded Supplier*", maka Jaminan Pelaksanaan harus diterima oleh Procurement **ASET OPERATOR**, apabila telah melewati jangka waktu yang telah ditetapkan dan pihak Penyedia Barang/Jasa belum memberikan Jaminan Pelaksanaan, maka **ASET OPERATOR** mempunyai hak membatalkan perikatan hukum (*Purchase Order/PO*) dengan Penyedia Barang/Jasa. Penyedia Barang/Jasa dianggap mengundurkan diri dan Jaminan Penawaran dicairkan tanpa syarat. Penyedia Barang/Jasa dianggap telah melakukan Wanprestasi dan akan dikenakan sanksi sesuai dengan peraturan yang berlaku di **ASET OPERATOR** dan PLN TJB.

- 3.2 **ASET OPERATOR** dan Penyedia Barang/Jasa sepakat dalam hal **ASET OPERATOR** membatalkan *Purchase Order/PO* maka **ASET OPERATOR** dan PLN TJB tanpa terkecuali dibebaskan dari segala bentuk gugatan dan laporan hukum, sanksi, ganti rugi, penggantian biaya-biaya maupun ongkos-ongkos apapun sehingga Penyedia Barang/Jasa tidak memiliki hak dan wewenang untuk menuntut pertanggungjawaban apapun lagi dari **ASET OPERATOR** dan PLN TJB.

- 3.3 *Purchase Order/PO* dan Ketentuan lainnya yang ditetapkan terpisah adalah satu kesatuan dari Syarat –Syarat dan Kondisi lampiran 2.

4. JANGKA WAKTU PELAKSANAAN

Jangka Waktu Pelaksanaan adalah Jangka Waktu yang tertera dalam *Purchase Order/PO* sesuai pada ketentuan Pasal 3.1.4, kecuali adanya pengakhiran atau perpanjangan berdasarkan kesepakatan Para Pihak.

5. PERPANJANGAN WAKTU PELAKSANAAN

Setiap perpanjangan waktu pelaksanaan akan diterbitkan Amendemen *Purchase Order/PO* dengan Jangka Waktu yang disepakati Para Pihak.

6. PERUBAHAN *PURCHASE ORDER/PO* (AMENDMENT *PO*)

Setiap perubahan atas *Purchase Order/PO* mengenai Masa berlaku *Purchase Order/PO*, sebagaimana ketentuan pada Pasal 3.1.4 dan syarat-syarat dan kondisi lain hanya akan mengikat apabila disetujui secara tertulis dari **ASET OPERATOR** atas nama PLN TJB dengan diterbitkannya *Amendment PO* yang diterbitkan 2 (dua) rangkap yang masing - masing rangkap ditandatangani diatas meterai oleh **ASET OPERATOR** dan Penyedia Barang/Jasa.

7. BARANG-BARANG

7.1 Semua barang yang pasok/disuplai harus sesuai dengan perincian yang tercantum dalam *Purchase Order/PO*.

7.2 Penyimpangan dari ketentuan-ketentuan di atas tidak diperkenankan tanpa persetujuan tertulis/tanpa *Amendment PO* dari **ASET OPERATOR**.

8. KEMASAN

Kemasan harus dibuat kuat (dalam wujud kayu atau karton) dan layak laut atau udara sesuai dengan standar yang berlaku bagi kemasan. Semua harga bahan kemasan telah termasuk dalam harga yang telah disetujui. Pada setiap kemasan harus dicantumkan nama barang.

9. PEMERIKSAAN

9.1 Pemeriksaan sebelum pengapalan: apabila pemeriksaan sebelum pengapalan diperlukan, maka **ASET OPERATOR** dan/atau PLN TJB akan melakukan pemeriksaan barang di tempat Penyedia Barang/Jasa atau tempat lain yang disetujui Para Pihak.

9.2 Barang akan diperiksa pada waktu penyerahan dilaksanakan setelah lengkap dengan dokumen yang dipersyaratkan pada *Purchase Order/PO*. Barang yang tidak memenuhi syarat-syarat yang ditentukan dalam *Purchase Order/PO* akan dikembalikan kepada Penyedia Barang/Jasa, dan semua biaya dan kerugian akan ditimbulkan menjadi risiko dan tanggung jawab Penyedia Barang/Jasa.

10. SERTIFIKASI

Sertifikat untuk barang (-barang) tertentu yang ditetapkan oleh **ASET OPERATOR** dan PLN TJB adalah sebagai berikut:

- Sertifikat Asal Usul Barang (*Certificate of Origin/COO*);
 - Sertifikat dari Pabrikasi (*Certificate of Manufacture/COM*);
 - Surat Keaslian Barang;
 - Sertifikat Hasil Uji Pabrik (*Factory Acceptance Test Certificate*);
 - Salinan Dokumen Impor Barang (*Copy Bill of Lading*);
 - Sertifikat Analisa (*Certificate of Analysis/COA*);
- ataupun dokumen-dokumen pendukung lainnya (sebagaimana dipersyaratkan khusus di *Purchase Order/PO*).

11. PENYERAHAN

11.1 Penyedia Barang/Jasa harus menyerahkan barang (-barang) dalam jangka waktu dan tempat sesuai dengan syarat-syarat yang telah ditentukan dalam *Purchase Order/PO*.

11.2 Dalam jangka waktu paling lambat 7 (tujuh) Hari Kalender sebelum pengiriman barang (-barang), Penyedia Barang/Jasa harus memberitahukan **ASET OPERATOR** mengenai jadwal pengiriman.

11.3 Waktu Penyerahan barang(-barang) dihitung efektif sejak 7 (tujuh) Hari Kalender sejak *Purchase Order/PO* dikirimkan melalui surat tertulis dan/atau Surat Elektronik (surel/ email) oleh Procurement **ASET OPERATOR** ditambah jangka waktu pengiriman yang tercantum pada *Purchase Order/PO* sebagaimana ketentuan pada Pasal 3.1.5 dan lengkap disertai dengan penyerahan dokumen pendukung yang dipersyaratkan dalam *Purchase Order/PO*.

12. DENDA SANKSI

12.1 Sanksi atas pencairan Jaminan Penawaran tanpa syarat apabila Penyedia Barang/Jasa membatalkan *Purchase Order/PO* secara sepihak, tanpa persetujuan **ASET OPERATOR** dan PLN TJB, sebagaimana ketentuan pada Pasal 2.2 dan Pasal 3.1.6. Penyedia Barang/Jasa dianggap telah melakukan Wanprestasi dan mendapatkan sanksi *blacklist* di lingkungan **ASET OPERATOR** dan PLN TJB minimal 2 (dua) tahun.

12.2 Denda atas keterlambatan menyelesaikan pekerjaan atau memasok Barang adalah setiap hari keterlambatan dikenakan 1/1000 (satu per seribu) dengan maksimal denda keterlambatan adalah 5% (lima persen) dari total nilai *Purchase Order/PO* belum termasuk PPN sesuai dengan peraturan yang berlaku dan/atau sama dengan maksimal keterlambatan pengiriman maksimal adalah 50 (lima puluh) Hari Kalender, kecuali ada kesepakatan lain antara Para Pihak. Serta melakukan pemotongan pembayaran kepada Penyedia Barang/Jasa dengan menggunakan nilai denda yang sudah ditetapkan **ASET OPERATOR** tersebut sebagai dasar pemotongan.

12.3 Batas maksimal Penyedia Barang/Jasa dalam keterlambatan adalah 3 (tiga) *Purchase Order/PO* dan Penyedia Barang/Jasa akan di tangguhkan ("*suspend*") atau tidak dapat turut serta dalam proses pengadaan berikutnya. Pemberian Penangguhan ("*suspend*") kepada Penyedia Barang/Jasa adalah hak mutlak **ASET OPERATOR** atas persetujuan PLN TJB, dan tanpa pemberitahuan resmi kepada Penyedia Barang/Jasa.

12.4 Penyedia Barang/Jasa tidak dapat membatalkan *Purchase Order/PO* sepihak kepada **ASET OPERATOR** dan/atau PLN TJB. Bila Penyedia Barang/Jasa tidak sanggup menyerahkan atau menyelesaikan pekerjaannya dalam waktu yang telah ditentukan, **ASET OPERATOR** dan/atau PLN TJB sebagaimana ketentuan pada Pasal 11.3, maka **ASET OPERATOR** memiliki hak dan wewenang penuh untuk:



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- 12.4.1 Mengenakan denda maksimal sebesar 5% (lima persen) dari Total Nilai pada *Purchase Order/PO* atau mencairkan Jaminan Pelaksanaan tanpa syarat;
- 12.4.2 Dan/ Atau memesan barang/ jasa tersebut kepada sumber lain dan bila ada kelebihan harga yang dibayarkan **ASET OPERATOR** maka Penyedia Barang/Jasa wajib menanggung kelebihan harga tersebut;
- 12.4.3 Penyedia Barang/Jasa dianggap telah melakukan Wanprestasi dan mendapatkan sanksi *black list* di lingkungan **ASET OPERATOR** dan **PLN TJB** minimal 2 (dua) tahun disertai dengan membatalkan atau mengakhiri *PO* beserta pengakhiran ikatan Kerjasama dengan Penyedia Barang/Jasa.
- 12.5 Denda atau Sanksi dapat diabaikan dan/atau dihilangkan apabila keterlambatan atas suatu Pengadaan Barang atau Jasa yang dianggap oleh **ASET OPERATOR** dan/ atau **PLN TJB** adalah dikategorikan sebagai suatu "*Force Majeure*" sebagaimana ketentuan pada Pasal 16.

13. TAHAPAN SURAT PEMBERITAHUAN, PERINGATAN, DAN PEMUTUSAN *PURCHASE ORDER/PO* KARENA WANPRESTASI

- 13.1 Peristiwa-peristiwa yang digolongkan sebagai Wanprestasi adalah:
- a. Peristiwa Wanprestasi yang mengakibatkan *Purchase Order/PO* berakhir tanpa melalui surat peringatan dari **ASET OPERATOR** terhadap Penyedia Barang/Jasa adalah sebagai berikut:
- Penyedia Barang/Jasa terbukti melakukan tindak pidana antara lain adanya pemalsuan surat/dokumen, praktek korupsi, penyuapan, pemberian gratifikasi, persekongkolan, kecurangan dan pemalsuan yang berkaitan dengan proses pengadaan, *Purchase Order/PO* dan/atau pelaksanaan Pekerjaan.
 - Penyedia Barang/Jasa terbukti melakukan pelanggaran atas peraturan internal **ASET OPERATOR** dan/atau **PLN TJB** terkait *fraud*.
 - Berdasarkan putusan Pengadilan yang telah mempunyai kekuatan hukum tetap, Penyedia Barang/Jasa dinyatakan dalam keadaan pailit, pembubaran, likuidasi atau diberikan penundaan pembayaran hutang yang menyebabkan Penyedia Barang/Jasa tidak dapat melakukan kewajibannya berdasarkan *Purchase Order/PO*.
 - Penyedia Barang/Jasa terbukti dikenakan Sanksi Daftar Hitam (*blacklist*) sebelum penandatanganan *Purchase Order/PO*.
 - Apabila Jaminan Penawaran dan/atau Jaminan Pelaksanaan yang diserahkan oleh Penyedia Barang/Jasa kepada **ASET OPERATOR** dan/atau **PLN TJB** selama jangka waktu *Purchase Order/PO* terbukti palsu/tidak benar.
 - Setiap pernyataan yang dibuat oleh Penyedia Barang/Jasa di dalam *Purchase Order/PO* yang berkaitan dengan proses pengadaan *Purchase Order/PO* dan/atau pelaksanaan Pekerjaan terbukti tidak sah dan/atau tidak dilaksanakan oleh Penyedia Barang/Jasa.
- b. Peristiwa Wanprestasi yang mengakibatkan *Purchase Order/PO* berakhir melalui surat peringatan dari **ASET OPERATOR** terhadap Penyedia Barang/Jasa adalah sebagai berikut:
- Penyedia Barang/Jasa mengalihkan Pekerjaan baik sebagian atau seluruhnya atau hak atau kewajiban yang diatur dalam *Purchase Order/PO* tanpa persetujuan tertulis dari **ASET OPERATOR**;
 - Apabila denda yang diatur dalam *Purchase Order/PO* tidak dibayar oleh Penyedia Barang/Jasa kepada **ASET OPERATOR**.
 - Apabila Penyedia Barang/Jasa tidak melakukan perpanjangan Jaminan Pelaksanaan sebagaimana diatur dalam *Purchase Order/PO*.
 - Penyedia Barang/Jasa tidak memenuhi baik sebagian atau seluruh kewajiban sesuai ketentuan yang diatur dalam *Purchase Order/PO*.
- 13.2 Dalam hal terjadi Peristiwa Wanprestasi oleh Penyedia Barang/Jasa sebagaimana dimaksud Pasal 13 ayat 13.1 butir b Syarat Umum *Purchase Order/PO*, **ASET OPERATOR** berhak mengakhiri *Purchase Order/PO* dengan memberikan surat peringatan, dengan ketentuan sebagai berikut:
- a. Surat Pemberitahuan (*Notification Letter*): dikirimkan secara tertulis dan/atau melalui *Email* ke Penyedia Barang/Jasa maksimal 14 (empat belas) Hari Kalender sebelum jangka waktu pengiriman jatuh tempo yang tertera pada *Purchase Order/PO*.
- b. Surat Peringatan Resmi (*Official Warning Letter*): dikirimkan secara tertulis dan/atau melalui *Email* ke Penyedia Barang/Jasa yang mengalami keterlambatan pengiriman dengan ketentuan sebagai berikut:
- Surat Peringatan Pertama (*Warning Letter 1*): 1- 10 hari setelah masa berlakunya *Purchase Order/PO* berakhir (*end date*), dan Penyedia Barang/Jasa wajib merespon dalam waktu 10 hari setelah Surat Peringatan Pertama (*Warning Letter 1*) diterima.
 - Surat Peringatan Kedua (*Warning Letter 2*): 21- 30 hari setelah masa berlakunya *Purchase Order/PO* berakhir (*end date*), dan Penyedia Barang/Jasa wajib merespon dalam waktu 10 hari setelah Surat Peringatan Kedua (*Warning Letter 2*) diterima.
 - Warning Letter 3* ((Surat Pengakhiran/Pemutusan (*Termination Letter*)): 51 hari setelah masa berlakunya *Purchase Order/PO* berakhir (*end date*).
- c. Surat Pengakhiran/Pemutusan (*Termination Letter*): dikirimkan secara tertulis dan/atau melalui *Email* ke Penyedia Barang/Jasa setelah 2 (dua) surat pada Pasal 13.2.a dan 13.2.b di atas dikirimkan dan tidak tercapainya kesepakatan antara Para Pihak dalam penyelesaian permasalahan yang dimaksud dalam jangka waktu masa berlakunya *Purchase Order/PO*, maka secara sepihak yaitu **ASET OPERATOR** atas persetujuan **PLN TJB**, akan membatalkan *Purchase Order/PO* dengan mengirimkan Surat Pemutusan (*Termination Letter*) kepada Penyedia Barang/Jasa.
- d. Apabila Penyedia Barang/Jasa tidak menyelesaikan pekerjaan serta tidak tercapainya kesepakatan antara Para Pihak dalam penyelesaian pekerjaan yang dimaksud dalam jangka waktu masa berlakunya *Purchase Order/PO* dalam waktu sebagaimana disebutkan pada Pasal 13 ayat 13.2 butir c, maka **ASET OPERATOR** berhak mencairkan Jaminan Pelaksanaan Penyedia Barang/Jasa pada periode berjalan, dan mengakhiri *Purchase Order/PO* secara sepihak.
- 13.3 Dalam hal Penyedia Barang/Jasa telah melakukan pemulihan atau perbaikan sebagaimana dimaksud pada bab ini, dan pemulihan atau perbaikan tersebut disetujui oleh **ASET OPERATOR** maka peringatan tertulis yang telah diterbitkan tersebut tidak akan diperhitungkan sebagai pemberian peringatan yang berkelanjutan atau tidak berlaku kumulatif pada pemberian peringatan berikutnya.
- 13.4 Atas setiap pengakhiran dari *Purchase Order/PO*, seluruh kewajiban-kewajiban masing-masing Pihak berdasarkan *Purchase Order/PO* wajib berhenti, kecuali:
- Sehubungan dengan kewajiban-kewajiban pembayaran yang ditimbulkan dari tindakan-tindakan yang diambil sebelum pengakhiran tersebut (termasuk namun tidak terbatas pada hak normatif Pekerja Penyedia Barang/Jasa);
 - Sebagaimana ditentukan lain dalam *Purchase Order/PO*;
 - Bahwa ketentuan terkait Jaminan Pelaksanaan akan tetap berlaku walaupun *Purchase Order/PO* telah diakhiri; dan/atau
 - Pengakhiran tersebut tidak akan mengurangi setiap hak atas ganti rugi atau setiap perbaikan lainnya yang mungkin dimiliki oleh masing-masing pihak berdasarkan *Purchase Order/PO*.
- 13.5 Dalam hal terjadi Peristiwa Wanprestasi Penyedia Barang/Jasa, maka Penyedia Barang/Jasa akan dikenakan hukuman/denda sesuai ketentuan pada *Purchase Order/PO*.
- 13.6 **ASET OPERATOR** akan memberlakukan hukuman daftar hitam (*blacklist*) bagi setiap pengakhiran *Purchase Order/PO* yang disebabkan karena wanprestasi Penyedia Barang/Jasa sebagaimana diatur lebih lanjut dalam ketentuan yang berlaku pada **ASET OPERATOR**.
- 13.7 Terhadap pengakhiran *Purchase Order/PO*, Para Pihak sepakat untuk tidak memberlakukan ketentuan Pasal 1266 Kitab Undang-Undang Hukum Perdata.
- 13.8 Akibat-akibat Pemutusan *Purchase Order/PO*:
- ASET OPERATOR** dan/atau **PLN TJB** dibebaskan dari segala tuntutan hutang-hutang Penyedia Barang/Jasa kepada pihak ketiga yang harus ditanggung oleh Penyedia Barang/Jasa;
 - ASET OPERATOR** dan Penyedia Barang/Jasa segera mengadakan pemeriksaan bersama yang dituangkan dalam Berita Acara Pemeriksaan Pekerjaan dan/atau *Good Receipt* (GR) dan/atau *Join Inspection* (JI) yang meliputi beberapa prestasi yang telah selesai dikerjakan oleh Penyedia Barang/Jasa. Apabila Penyedia Barang/Jasa tidak bersedia mengadakan pemeriksaan bersama, maka **ASET OPERATOR** akan mengadakan

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pemeriksaan terakhir dan hasilnya dianggap sebagai hasil pemeriksaan bersama;

- c. Penyedia Barang/Jasa hanya berhak mendapatkan pembayaran sesuai kemajuan pekerjaan yang telah dilaksanakan dan disetujui **ASET OPERATOR**. Peralatan dan bahan-bahan yang belum dipergunakan tidak termasuk dalam penilaian kemajuan pekerjaan;
- d. **ASET OPERATOR** akan mengambil alih pekerjaan untuk diselesaikan dengan *Purchase Order/PO* lain atau dengan cara lain;

14. HARGA

- 14.1 Harga yang tercantum dalam *Purchase Order/PO* ini adalah tetap, tidak berubah dan mengikat.
- 14.2 Bagi Pengusaha Kena Pajak ("PKP") harga yang tercantum dalam *Purchase Order/PO* tidak termasuk PPN sesuai dengan peraturan yang berlaku. PPN harus dinyatakan terpisah dari harga barang(-barang) yang dipesan.

15. JAMINAN PENAWARAN DAN JAMINAN PELAKSANAAN

Jaminan dipersyaratkan untuk Pengadaan sebagai berikut :

- 15.1 Jaminan Penawaran adalah bernilai minimal 1% (satu persen) maksimal 3% (Tiga persen) dari Total Nilai Perkiraan Sendiri (HPS) atau Surat Penawaran Harga dari Penyedia Barang/Jasa termasuk PPN sesuai dengan peraturan yang berlaku, untuk nilai Penawaran lebih besar dari Rp.500,000,000,- (lima ratus juta rupiah), sebagaimana ketentuan pada Pasal 2.2.
- 15.2 Jaminan Pelaksanaan adalah bernilai minimal 5% (lima persen) dari Total Nilai pada *Purchase Order/PO* termasuk PPN sesuai dengan peraturan yang berlaku untuk nilai Pembelian lebih besar dari Rp.500,000,000,- (lima ratus juta rupiah), sebagaimana ketentuan pada Pasal 3.1.1 di atas. Dengan ketentuan masa berlaku Jaminan Pelaksanaan adalah sebagaimana ketentuan pada Pasal 3.1.4 ditambah sekurang-kurangnya 50 (Lima Puluh Hari) Hari Kalender.
- 15.3 Jaminan yang disertakan harus mengikuti persyaratan yang diminta oleh **ASET OPERATOR** dan/atau **PLN TJB** dengan ketentuan sebagai berikut :
 - 15.3.1 Mengikuti format yang sudah dibakukan oleh **ASET OPERATOR** dan/ atau **PLN TJB**.
 - 15.3.2 Menggunakan mata uang dalam "Rupiah", kecuali ada ketentuan dan persetujuan lain yang disepakati Para Pihak (Penyedia Barang/ Jasa dan **ASET OPERATOR** Procurement).
 - 15.3.3 Harus diterbitkan oleh Bank sesuai dengan Daftar Penyedia Jaminan Terseleksi (DPJT) PLN yang telah disetujui oleh **ASET OPERATOR** dan/atau **PLN TJB**.
- 15.4 Jaminan Pelaksanaan diserahkan kepada **ASET OPERATOR** maksimal 14 (empat belas) Hari Kalender setelah "Surat Penunjukan Pemenang / *Appointment of Awarded Supplier*" dikirimkan melalui surat tertulis dan/atau Surat Elektronik (Surel/ *Email*) oleh **ASET OPERATOR** kepada Penyedia Barang/Jasa, sebagaimana ketentuan pada Pasal 3.1.5.
- 15.5 Asli dari Jaminan akan dikembalikan ke Penyedia Barang/Jasa apabila semua kewajiban dari Penyedia Barang/Jasa telah dinyatakan selesai oleh **ASET OPERATOR** atas persetujuan **PLN TJB**.
- 15.6 Jaminan dapat dimungkinkan untuk diperpanjang masa berlakunya atas permintaan dari **ASET OPERATOR** dan/atau **PLN TJB** kepada Penyedia Barang/Jasa.

16. FORCE MAJEURE

- 16.1 Peristiwa, kejadian atau keadaan berikut ini adalah *Force Majeure*: Kehendak Tuhan (*Act of God*) meliputi namun tidak terbatas pada gempa bumi, dari banjir, epidemi, kebakaran, perang, huru-hara, pemogokan dan/atau pemberlakuan peraturan pemerintah yang mengatur atau berhubungan dengan pelaksanaan/ pengiriman di dalam *Purchase Order/PO*.
- 16.2 Dalam hal terjadi suatu peristiwa, kejadian atau keadaan *Force Majeure*, Penyedia Barang/Jasa wajib memberitahukan secara tertulis dan/atau *email* dengan melampirkan bukti-bukti dari instansi yang berwenang kepada **ASET OPERATOR** selambat-lambatnya 3 (tiga) hari sejak terjadinya suatu peristiwa, kejadian atau keadaan *Force Majeure*.
- 16.3 Dalam hal pemberitahuan sebagaimana ketentuan Pasal 16.2 di atas terlampaui atau tidak dilaksanakan maka Para Pihak sepakat bahwa kejadian tersebut bukan merupakan keadaan *Force Majeure*.
- 16.4 Baik Penyedia Barang/Jasa maupun **ASET OPERATOR** dan **PLN TJB** dibebaskan dari setiap dan semua tanggung jawab yang timbul sebagai akibat terjadinya suatu peristiwa, kejadian atau keadaan *Force Majeure*.

17. TUNTUTAN DARI PIHAK KETIGA

Penyedia Barang/Jasa harus membebaskan dan melindungi **ASET OPERATOR** dan **PLN TJB** dari segala tuntutan dari pihak ketiga yang timbul atau akan timbul sehubungan dengan *Purchase Order/PO*.

18. GARANSI (Apabila Dipersyaratkan di dalam *Purchase Order/PO*)

Penyedia Barang/Jasa menjamin ke **ASET OPERATOR** dan/ atau **PLN TJB**, bahwa barang-barang yang dikirim sesuai dengan spesifikasi yang disepakati sebagaimana ketentuan pada Pasal 2.3.8. Barang tidak cacat atau rusak material atau teknis, baru (bukan barang bekas pakai) dan digaransi oleh Pabrik dan/atau Penyedia Barang/Jasa. Garansi harus berlaku selama jangka waktu 18 (delapan belas) bulan sejak tanggal pengiriman barang atau 12 (dua belas) bulan sejak tanggal pemasangan atau operasi awal atas barang ("Masa Garansi"). Apapun yang terjadi terlebih dahulu dalam Masa Garansi, ditemukan kerusakan atau kecacatan barang, **ASET OPERATOR** berkewajiban untuk memberitahukan secara tertulis dan/atau melalui *email* atas hal tersebut kepada Penyedia Barang/Jasa. Dan dalam waktu 3 x 24 jam setelah diterimanya pemberitahuan tersebut, Penyedia Barang/Jasa wajib memperbaiki barang yang cacat atau rusak tersebut, dan apabila barang tidak bisa diperbaiki dalam jangka waktu paling lambat 30 (tiga puluh) Hari Kalender, maka Penyedia Barang/Jasa harus mengganti barang yang rusak tersebut dengan barang baru dengan kualitas dan spesifikasi yang sama tanpa ada penambahan biaya apapun dari **ASET OPERATOR**.

19. TAGIHAN

Untuk melakukan penagihan, Penyedia Barang/Jasa harus memenuhi syarat-syarat penagihan dengan melengkapi dokumen-dokumen antara lain sebagai berikut:

- 19.1 Surat Permohonan Pembayaran: 1 (satu) rangkap Asli
- 19.2 Kwitansi : 3 (tiga) rangkap, 1 (satu) rangkap bermeterai cukup dan 2 (dua) rangkap lainnya tanpa meterai .
- 19.3 Invoice : 3 (tiga) rangkap, 1 (satu) rangkap bermeterai cukup dan 2 (dua) rangkap lainnya tanpa meterai.
- 19.4 Faktur Pajak : 2 (dua) rangkap.
- 19.5 Berita Acara Penyelesaian Pekerjaan (BAPK) dan/atau *Goods Receipt* dan/atau *Joint Inspection* : 1 (satu) rangkap Asli.
- 19.6 Berita Acara Serah Terima (BAST) barang/jasa/pekerjaan dan/atau *Minutes Of Verification* (MOV): 1 (satu) rangkap Asli.
- 19.7 NPWP dan SPKP : 1 (satu) rangkap Copy.
- 19.8 Sertifikat Asal Barang dan/atau Sertifikat Manufaktur: 1 (satu) asli dan/atau 1 (satu) *Copy* (Apabila dipersyaratkan pada *Purchase Order/PO*).
- 19.9 Surat Jaminan/Garansi yang menyatakan masa garansi barang adalah 18 (delapan belas) bulan sejak pengiriman atau 12 (dua belas) bulan sejak instalasi : 1 (satu) asli dan 2 (dua) *Copy* (Apabila dipersyaratkan pada *Purchase Order/PO*).
- 19.10 Jaminan Pelaksanaan dan Surat Konfirmasi keabsahan Jaminan Pelaksanaan : 1 (satu) rangkap *Copy* (Apabila dipersyaratkan pada *Purchase Order/PO*).
- 19.11 SIUP/NIB dan SIUJK : 1 (satu) rangkap *Copy* (Apabila ada atau apabila dipersyaratkan pada *Purchase Order/PO*)



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19.12 Syarat-syarat lain yang belum tercantum sebagaimana poin-poin diatas namun dipersyaratkan khusus pada *Purchase Order /PO* wajib dipenuhi oleh Penyedia Barang/Jasa.

(Persyaratan penagihan terlampir di lampiran " Tata Cara Penagihan")

20. PEMBAYARAN

Kecuali ditentukan lain dalam *Purchase Order/PO* :

- 20.1 Pembayaran akan dilakukan pada 45 (empat puluh lima) Hari Kalender setelah barang/ Jasa dinyatakan diterima dengan Bukti Asli *Goods Receipt/ Completion Work*, dan dokumen-dokumen penagihan telah diterima dengan baik, lengkap dan benar.
- 20.2 Pembayaran akan dilakukan melalui bank transfer.

21. LAIN - LAIN

- 21.1 Syarat-syarat umum ini berlaku sah dan mengikat, kecuali ada ketentuan lain yang tertera pada *Purchase Order/PO*.
- 21.2 Bilamana **ASET OPERATOR** serta Penyedia Barang/Jasa menandatangani kesepakatan tambahan sebagai satu kesatuan dari *Purchase Order/PO* dan ternyata menimbulkan pertentangan dengan klausul-klausul di dalam *Purchase Order/PO* maka **ASET OPERATOR** dan Penyedia Barang/Jasa sepakat akan selalu menafsirkan dengan cara memilih, mematuhi dan menerapkan klausul yang lebih menguntungkan **ASET OPERATOR** semata.
- 21.3 **ASET OPERATOR** dan/atau **PLN TJB**, setiap saat memiliki hak eksklusif untuk melakukan evaluasi berkaitan dengan kinerja, kepatuhan atau hasil pelaksanaan kewajiban oleh Penyedia Barang/Jasa, dimana hasil evaluasi tersebut akan disampaikan kepada Penyedia Barang/Jasa dalam bentuk pernyataan tertulis.
- 21.4 Evaluasi tersebut dilakukan dalam rangka menjamin keberlangsungan PLTU Tanjung Jati B Jepara sehingga hasil evaluasi sebagaimana dimaksud menjadi dasar bagi **ASET OPERATOR** dan/atau **PLN TJB** untuk mengkaji ulang status serta jangka waktu *Purchase Order/PO* dan/atau penentuan status Penyedia Barang/Jasa dalam Daftar Hitam Penyedia Barang/Jasa **ASET OPERATOR** dan/atau **PLN TJB**.
- 21.5 *Purchase Order/PO* dibuat, diatur dan ditafsirkan sesuai dengan hukum Negara Republik Indonesia.
- 21.6 Jika terjadi perselisihan yang tidak mendapatkan solusi maka **ASET OPERATOR** dan Penyedia Barang/Jasa sepakat untuk dapat melakukan pengakhiran *Purchase Order/PO* dan tidak memberlakukan ketentuan Pasal 1266 Kitab Undang-undang Hukum Perdata.
- 21.7 Syarat-syarat dan kondisi ini dibuat dalam Bahasa Indonesia dan Bahasa Inggris. Dalam hal adanya inkonsistensi atau penafsiran yang berbeda antara versi Bahasa Indonesia dan versi Bahasa Inggris, versi Bahasa Indonesia dari Syarat-syarat dan kondisi ini akan berlaku dan versi Bahasa Inggris harus dianggap secara otomatis diubah (perubahan mana berlaku sejak tanggal ditandatanganinya versi bilingual ini) untuk menjadikan bagian yang relevan dari versi Bahasa Inggris sesuai dengan bagian yang relevan dari versi Bahasa Indonesia.
- 21.8 **ASET OPERATOR** berhak melakukan Audit di Waktu tertentu kepada rekanan Penyedia Barang/Jasa, Proses pengaudit dilakukan oleh **ASET OPERATOR** didampingi tim Auditor yang ditunjuk **ASET OPERATOR**.

KETENTUAN MENYANGKUT LINGKUNGAN, KESEHATAN, DAN KESELAMATAN KERJA

1. STANDART KESELAMATAN UNTUK BAHAN BAHAN YANG BERACUN

- 1.1 Penyedia Barang/Jasa harus memberikan daftar data keselamatan material - material (MSDS) untuk seluruh *chemical*, pelumas, lem, cairan, pembersih dan bahan bahan lainnya yang berpotensi beracun yang rekanan akan gunakan dalam pelaksanaan pekerjaan.
- 1.2 Penyedia Barang/Jasa harus mengikuti syarat - syarat untuk penyimpanan, penanganan dan pembuangan material termasuk syarat - syarat untuk Peralatan Perlindungan Personal dan peralatan Pernafasan (RPE) yang ditentukan oleh **ASET OPERATOR**.
- 1.3 Setiap Material yang mengandung zat - zat yang berpotensi beracun yang ada di *Site* yang tidak sesuai dengan persyaratan MSDS dan belum disetujui oleh **ASET OPERATOR**, harus segera dihilangkan atau dipindahkan dari *site* oleh Penyedia Barang/Jasa sampai persetujuan tersebut diperoleh.

2. PURCHASE REQUISITION JASA/SERVICE

- 2.1 Dokumen Analisa Kerja Aman (*Job Safety Analysis / JSA*) atau dokumen identifikasi bahaya lainnya yang terkait dengan Jasa.
- 2.2 Prosedur kerja aman / instruksi kerja dan/atau dokumen EHS lainnya yang terkait dengan Jasa.
- 2.3 Surat keterangan sehat dari dokter untuk personel yang terkait dengan jasa.
- 2.4 Foto *copy* Sertifikat kompetensi untuk personel yang terkait dengan jasa.
- 2.5 Foto *copy* Sertifikat Kelayakan atas Peralatan Angkat dan Angkut yang masih "**VALID**" yang terkait dengan Jasa.
- 2.6 Foto *copy* Surat Keterangan Catatan Kepolisian (SKCK) dan kartu identitas (Kartu Tanda Penduduk/KTP atau Paspor) masih berlaku untuk lampiran Formulir *Request ID Card*.
- 2.7 Foto *copy* Surat Ijin Mengemudi (SIM) yang masih berlaku untuk pengendara mobil perusahaan untuk lampiran formulir "*Vehicle Gate Pass Request*".
- 2.8 Foto *copy* surat KIR yang masih berlaku untuk kendaraan operasional kategori tertentu untuk lampiran formulir "*Vehicle Gate Pass Request*".
- 2.9 Surat pernyataan dari Manajemen perusahaan bahwa akan mematuhi peraturan perundangan terkait dengan Lingkungan dan
- 2.10 Keselamatan, Kesehatan Kerja (LK3), salah satunya seperti berikut :
- 2.10.1 Menyediakan Alat Pelindung Diri (APD) untuk seluruh karyawan yang standard dan sesuai
- 2.10.2 Bertanggung jawab atas limbah/sampah yang dihasilkan oleh pekerjaan jasa tersebut serta selalu menjaga kerapian dan kebersihan area kerja.
- 2.10.3 Membuat "Surat Pernyataan" bahwa perusahaan tidak mencemari lingkungan
- 2.10.4 Melampirkan Sertifikat ISO 14001 dan Sertifikat PROPER yang dimiliki (apabila dipersyaratkan dalam RFQ & *Purchase Order/PO*)

3. PURCHASE REQUISITION BARANG

Menyediakan dokumen yang terkait dengan persyaratan Lingkungan, Keselamatan dan Kesehatan Kerja (LK3), seperti:

- 3.1 Lembar Data Keselamatan Bahan / LDKB (*Material Safety Data Sheet/MSDS*) untuk Bahan Beracun dan Berbahaya (B3), seperti: bahan kimia/resin/oli/grease/dll.
- 3.2 Petunjuk Pengoperasian secara aman (*Safety Operating Manual*) untuk peralatan/mesin/alat kerja/ dll.
- 3.3 Persyaratan penyimpanan serta penanganan secara manual.
- 3.4 Atau dokumen lainnya yang terkait dengan persyaratan dan perundangan Lingkungan, Keselamatan & Kesehatan Kerja (LK3).

4. KETENTUAN MENYANGKUT KETENAGA KERJA

Berikut persyaratan dari HRD yaitu sebagai berikut :

- 4.1 *Copy* sertifikat kepesertaan perusahaan di BPJS Ketenagakerjaan.
- 4.2 *Copy* kartu kepesertaan BPJS Ketenagakerjaan dari setiap karyawan yang dipekerjakan.
- 4.3 Ijin Operasional dari Disnaker Propinsi Jawa Tengah Cq. Disnaker Jepara Untuk pekerjaan yang di alih-daya kan (*Outsource*).
- 4.4 Surat Pemberitahuan ke Disnaker Jepara untuk pekerjaan jasa pemborongan.
- 4.5 *Copy* Perjanjian kerja antara perusahaan dengan masing-masing karyawan.

NO. A-17790-1

PUMP PERFORMANCE CURVES

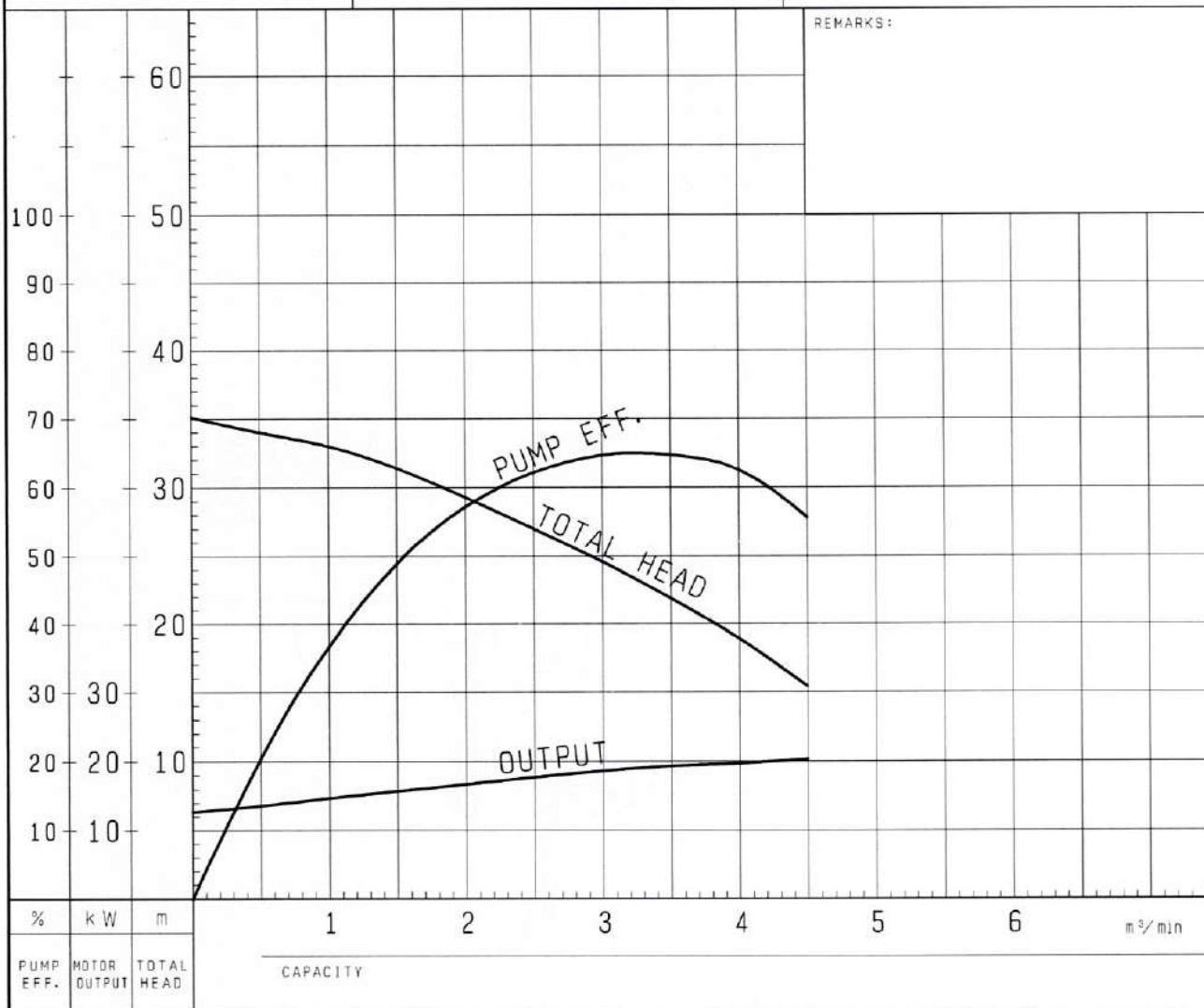
TYPE Sewage Submersible
Channel Impeller PumpMODEL 150B422 -55
TOS150B422 -55FREQUENCY
50 Hz

CUSTOMER'S NAME

EQUIPMENT TITLE

NO.

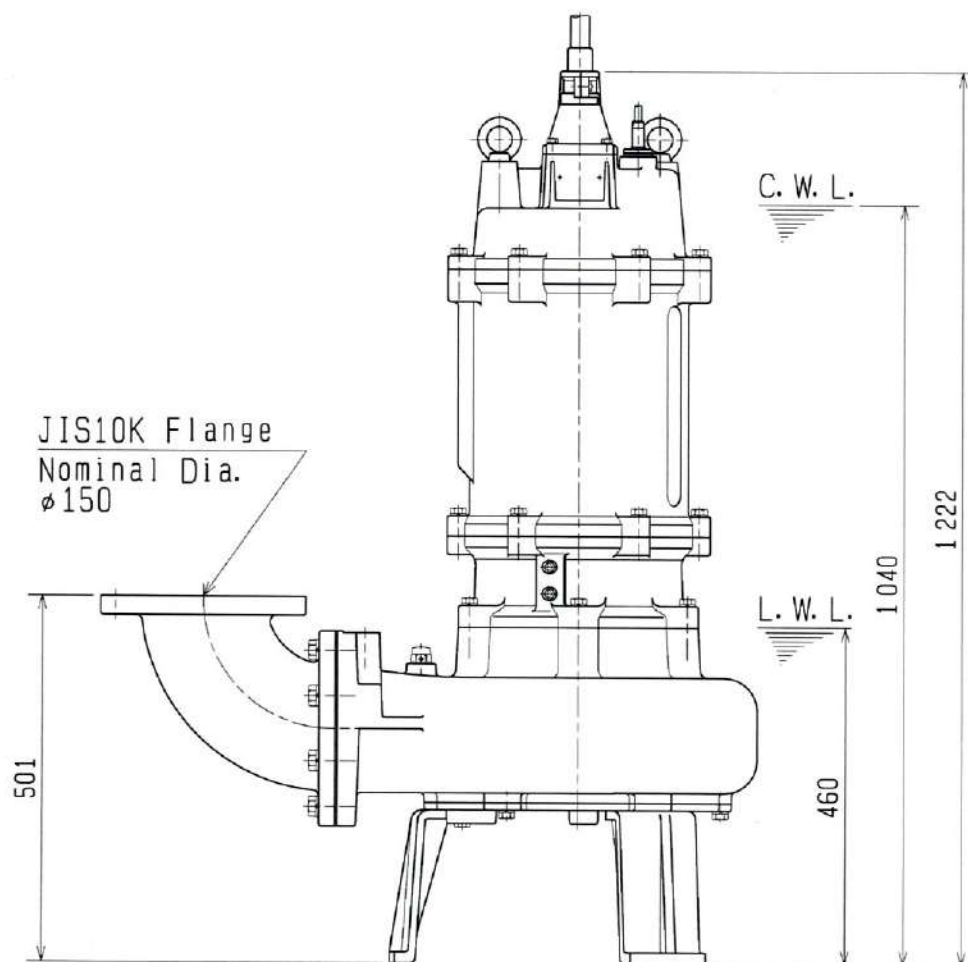
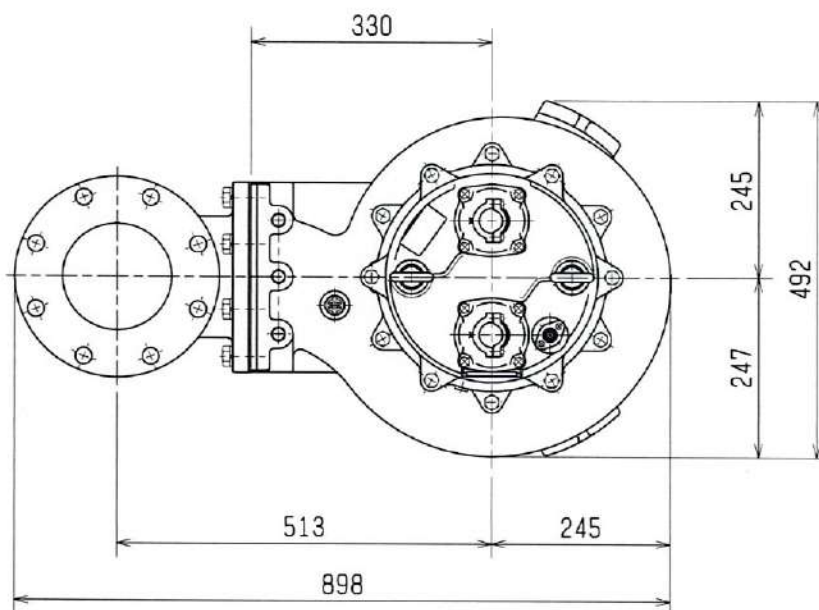
	STANDARD SPECIFICATIONS	REQUIRED SPECIFICATIONS
DISCHARGE BORE	150 mm	mm
TOTAL HEAD	27 m	m
CAPACITY	2.5 m ³ /min	m ³ /min
MOTOR OUTPUT	22 kW	kW
PHASE × VOLTAGE	3 φ × V	φ × V
CURRENT	A	A
POLES / REVOLUTION	4 P / s. s. 1500 min ⁻¹	P / min ⁻¹
STARTING METHOD	STAR-DELTA	
INSULATION CLASS	F	



TSURUMI MFG. CO., LTD.

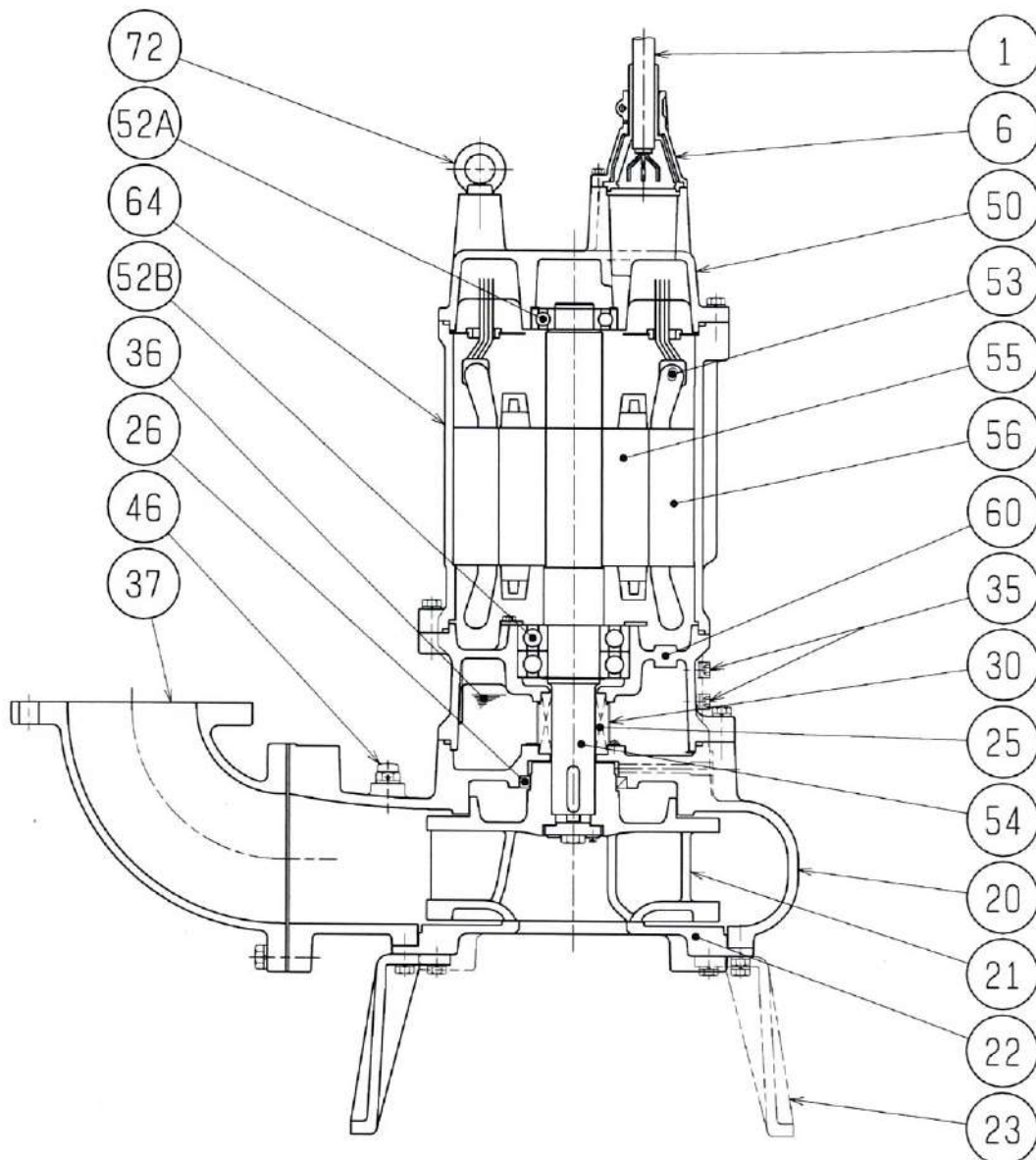
DIMENSION DRAWING			No.	No.
TYPE	Sewage Submersible Channel Impeller Pump	MODEL	150B422 -55/65	

Approximate Weight (※)
327kg
※excluding cable



C. W. L. :Continuous Running Water Level
L. W. L. :Lowest Running Water Level

SECTIONAL DRAWING			No.	No. A-17799-1
TYPE	Sewage Submersible Channel Impeller Pump		MODEL	150B422 -55/65



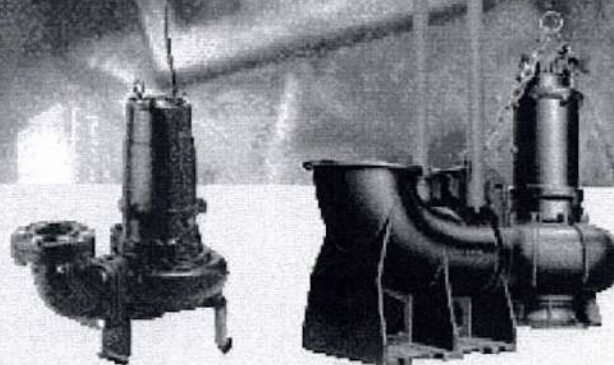
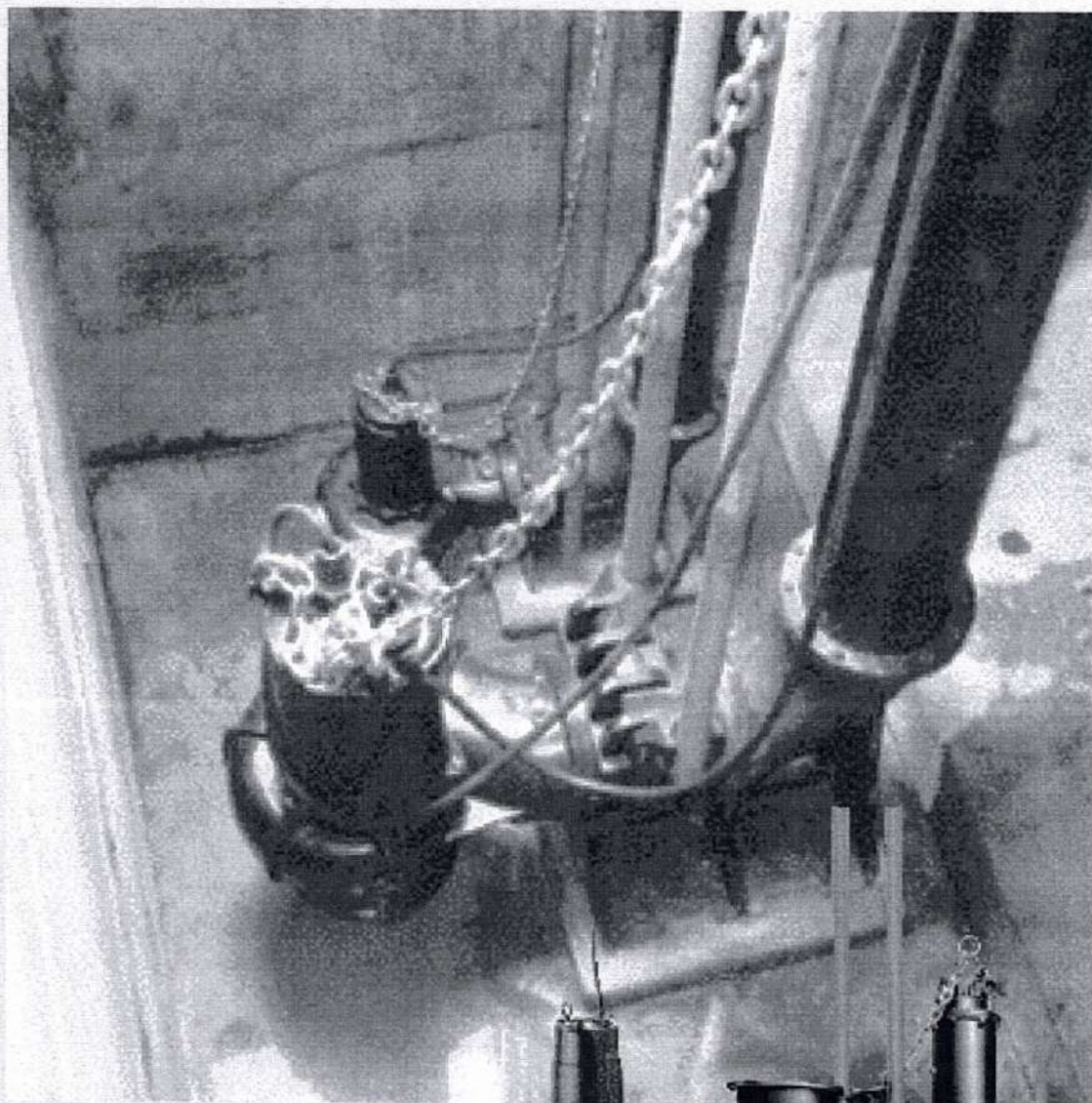
REQ. SPECIFICATION

No.	DESCRIPTION	Q'TY	MATERIAL / NOTE	No.	DESCRIPTION	Q'TY	MATERIAL / NOTE
1	Cable	2	Chloroprene Sheath (For the Power)	46	Air Release Valve	1	Nylon
		1	PVC Sheath (For the Control)	50	Motor Blacket	1	Gray Iron Casting
6	Stuffing Box	2	Gray Iron Casting	52A	Upper Bearing	1	6309ZZC3
20	Pump Casing	1	Gray Iron Casting	52B	Lower Bearing	1	6312ZZD2C3
21	Impeller	1	Gray Iron Casting	53	Motor Protector	3	
22	Suction Cover	1	Gray Iron Casting	54	Shaft	1	Stainless Steel 420J2
23	Stand	3	Ductile Iron Casting	55	Rotor	1	
25	Mechanical Seal	1	H-50T	56	Stator	1	
26	Oil Seal	1	TC10012513	60	Bearing Housing	1	Gray Iron Casting
30	Oil Lifter	1	Steel Sheet	64	Motor Frame	1	Gray Iron Casting
35	Oil Plug	2	Stainless Steel 304	72	Eye Bolt	2	Stainless Steel
36	Lubricant		Turbine Oil (ISO VG32)				
37	Discharge Bend	1	Gray Iron Casting				

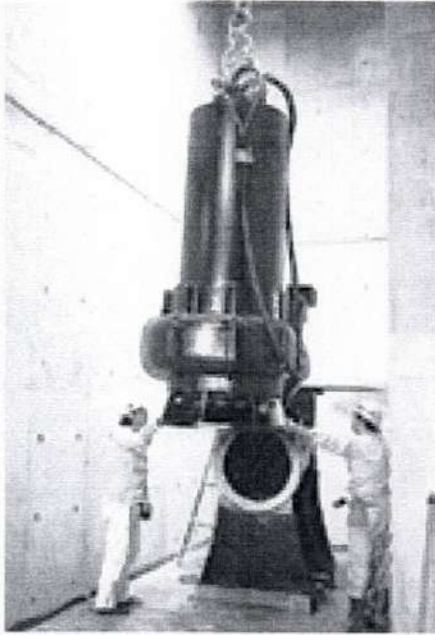


Submersible Sewage Pumps
Channel Impeller

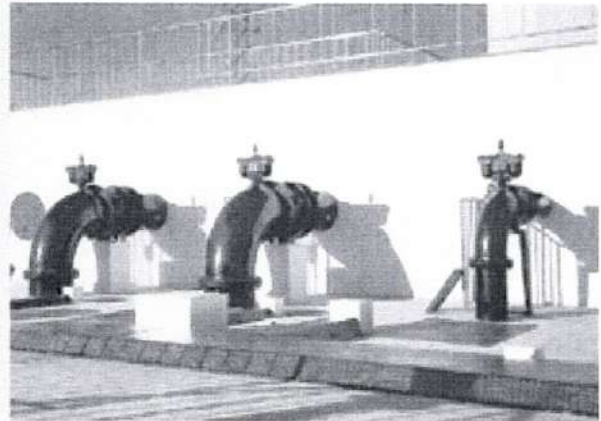
B



B-series is the Basic of Submersible Sewage Pumps using for all the society fundamentals. Durable and High Quality Products can be used for various kinds of field.



B-series pumps are working in many sewage treatment plants throughout Japan because of their excellent reputations. As durable motor is tough enough against frequent ON/OFF, automatic unattended operation by central control is available.



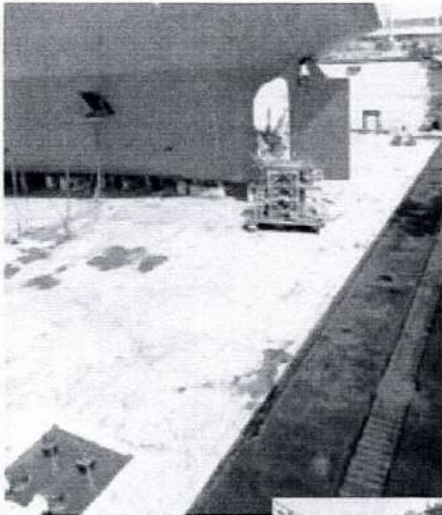
As it is silent during operation owing to it's underwater operation, B-series pumps are often used at the basement of buildings in the city area.

Even if the condition is very severe, sewage pumps are required to have high and steady performance. Tsurumi B-series pumps can give a solution for this problem.

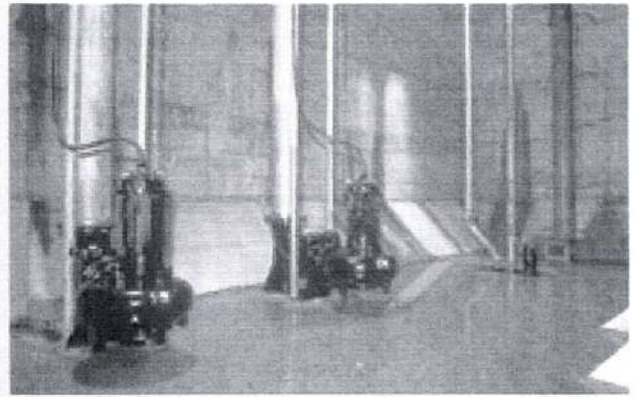


While in overseas, Tsurumi has a lot of sales records with B-series pumps, too.

Several inventions adopted by the idea seeking better handling produces ease of maintenance and repair for users comparing to other manufacturers. Because of this, Tsurumi pumps have good reputation as the most intimate pump in the world.



In the shipyard, B-series pumps, which are operated by fully-automatic control, work for level control and dry up. For sea water, sacrificial anodes are applied.



Enough absorption can not be expected in the city center where the ground is covered by concrete. Occasional flood occurs often when a local heavy rain comes. In such case, large capacity B series pumps play an active role.



B-series pumps being used for a temporary installation during rainy season.

It is used to pump up water of branch river to the main stream when the water level of main stream becomes higher than that of the branch river.

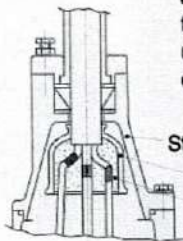


Because of its robust construction, B-series pumps are sometimes used for dewatering in construction site. Compact shape allows high portability comparing against the horizontal pump which requires a firm installation foundation work. In such case, some pump parts are changed its material into harder materials.

Tsurumi B-series, the basic sewage pumps with channel foreign matter-related trouble. Years of know-how are built

Cable Entry

Every cable has an anti-wicking block at the cable entry section of the pump. This mechanism is such that a part of each conductor is stripped back and the part is sealed by molded rubber or epoxy potting which has flowed in between each strand of the conductor. This unique feature prevents wicking under the strands of the conductor itself.



Stuffing Box
Mold Cover
Potting Epoxy Resin

Motor

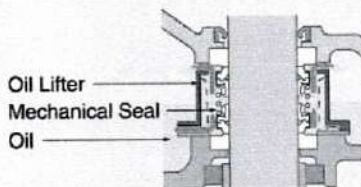
The motor is dry type, squirrel cage induction motor, housed in a watertight housing. The insulation class is B, E or F. In each of these insulation class, all the standard pumps can be used under the ambient temperature of 40°C.

Mechanical Seal

All pumps are provided with a Silicon Carbide dual inside mechanical seal that is located completely out of the pumpage, running in an oil-filled chamber. The advantages of this seal are two-fold, it eliminates spring failure caused by corrosion, abrasion or fouling which prevents the seal faces from closing properly, and prevents loss of cooling to the bottom seal faces during run-dry conditions which causes the bottom seal to fail.

Oil Lifter (Patent Pending)

The OIL LIFTER is a lubrication equipment for the mechanical seal, designed to stabilize the function of the seal. Utilizing the rotational energy of the shaft seal, it supplies lubricant to the top seal faces even if the lubricant reduces below the rated volume. The OIL LIFTER turns the wasted energy into added protection and doubles the life expectancy of the mechanical seal and also the maintenance term.



Oil Lifter
Mechanical Seal
Oil

Motor Protector

Each pump up to 7.5kW as standard has a built in auto-cut, self-resetting Circle Thermal Protector (CTP). Integrated in the motor housing, the CTP directly cuts the motor circuit if excessive heat builds up or an overcurrent caused by an electrical or mechanical failure occurs.



(Circle thermal protector)

Miniature Thermal Protectors (MTPs) are imbedded in the winding of the pumps of star delta starting. These MTPs are connected in series, and their wires are led out of the motor. Should the winding temperature rise to the actuating temperature, the bimetal strip opens to cause the control panel to shut the power supply.



(Miniature thermal protector)

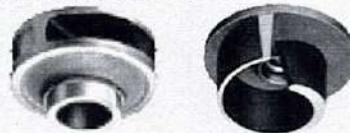
Shaft

A high tensile stainless steel is used for all pumps. It is designed to have an adequate strength for the transmission of the full load.

The shaft is supported by C3 type, high quality deep groove ball bearings.

Impeller

An impeller having a wide channel extending from inlet to exit, which prevents internal clogging by solids sucked in via the inlet.



Leakage Sensor

A stainless-steel probe type leak sensor is standardized for large pumps (22kW and over).



COMPOSITION OF THE MODEL NAME

100 B A 6 3.7 S H

Discharge Bore in mm

Name of the Model

Operation Sub Code

None : None Automatic Operation

A : Automatic Operation

W : Auto-Alternation Operation

Poles of Motor

Sub Code for Pumping Head

H : High head

M : Medium head

L : Low head

Phase of Motor

S : Single phase

none : Three phase

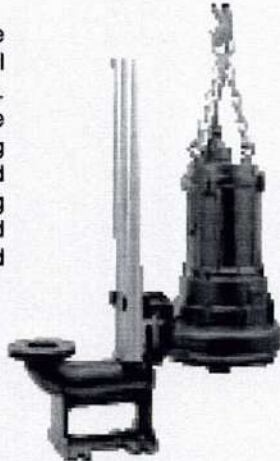
Motor Output in kW

impeller that minimize clogging, winding, and other into very part of the pumps for highly reliable operation.

GUIDE RAIL TYPE

TOS

We recommend using the Tsurumi "TOS" guide rail fitting system with pumps. This system connects the pump to and from the piping easily just by lowering and hoisting the pump, allowing easy maintenance and inspection without the need to enter the sump.



TS

This compact guide rail fitting system is ideal for installing on prefabricated lift stations. Its discharge flange is compatible with major flange standards including ANSI 150lb, BS PN10, and DIN PN10. Four models are available and can be used on Tsurumi cast-iron pumps in the 50 mm through 100 mm discharge bore range.



DRY PIT TYPE

The advantage of dry pit type pump is that it will not be damaged by a flooding of water, as it is constructed by a submersible pump.

Tsurumi can provide the dry pit type pumps as option for the whole range of B series pumps.

Durable motor with effective water cooling jacket assures the pump continuous running without overheating.



AUTOMATIC TYPE

The Tsurumi automatic type pump has an integral control circuit and two float switches operated at a low voltage. As the pump has a Circle Thermal Protector (CTP) integrated into the motor to protect the motor from overload or overheating, it is not required to provide an extra motor protection circuit in the starter panel.

This type can be identified by the suffix "A". Refer to the specification table for availability and model numbers.



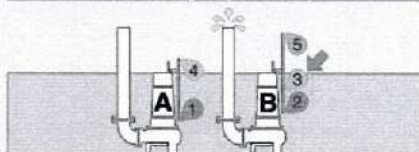
AUTO-ALTERNATION TYPE

Tsurumi offers auto-alternation type pumps as well as the standard automatic pumps. The automatic alternation operation can be achieved by the combination of a parent pump (3 floats) and a standard automatic pump (2 floats), and this enables each pump to operate alternately without control panel.

How the Auto-alternation Type Works

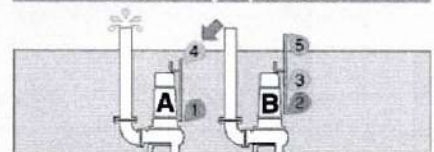
● Operation is enabled by merely connecting the power supply.

Primary Operation

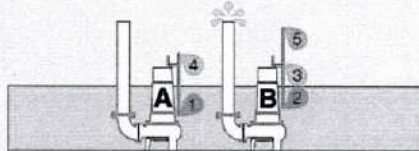


1 Float 3 operates, and pump B starts to discharge water.

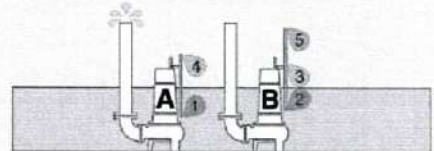
Secondary Operation



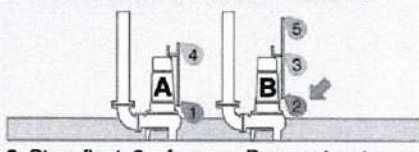
1 Start float 4 of pump A operates to start water discharge. The pump ends primary operation, and stops operating.



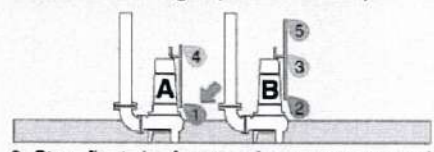
2 Water is discharged (water level falls).



2 Water is discharged (water level falls).



3 Stop float 2 of pump B operates to end water discharge. At this time, alternation start float 3 of pump B rests for one discharge operation.



3 Stop float 1 of pump A operates to end water discharge. At the same time, start float 3 of pump B becomes ready for operation.

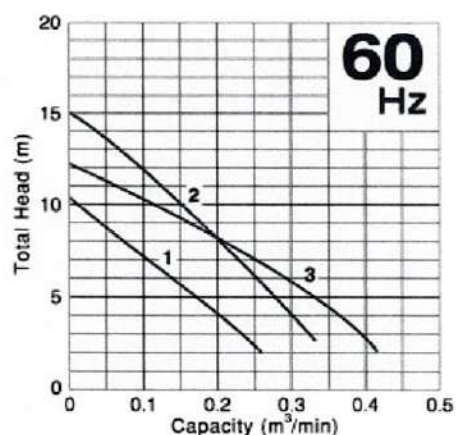
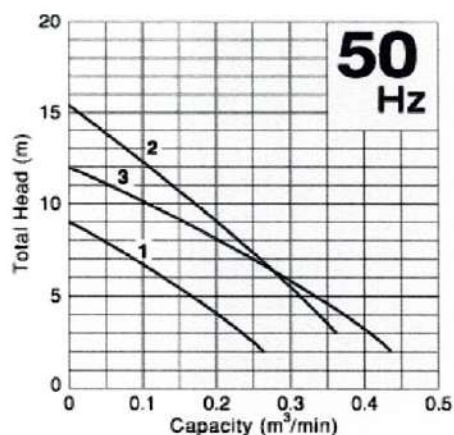
※ Primary operation and secondary operation are repeated alternately.

※ Both primary and secondary operations are performed simultaneously when water has risen to an abnormal level.

The parent pump can be identified by the designation "W". It is available in the same output range of the standard automatic pumps.

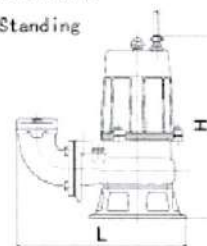
Discharge Bore
50mm

■ Performance Curves

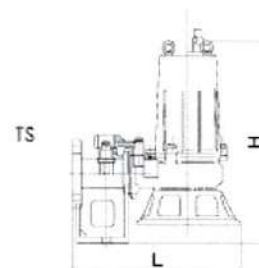
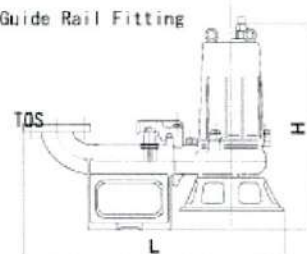


■ Dimensions

Free Standing



Guide Rail Fitting



■ Specifications 50mm

Curve No.	Discharge Bore mm	Standard Model			Automatic Model			Auto-Alternation Model		
		Free Standing	Guide Rail Fitting		Free Standing	Guide Rail Fitting		Free Standing	Guide Rail Fitting	
			TOS	TS		TOS	TS		TOS	TS
1	50	50B2.4	TOS50B2.4	TS50B2.4	—	—	—	—	—	—
2	50	50B2.75S	TOS50B2.75S	TS50B2.75S	50BA2.75S	TOS50BA2.75S	TS50BA2.75S	—	—	—
2	50	50B2.75H	TOS50B2.75H	TS50B2.75H	—	—	—	—	—	—
3	50	50B2.75	TOS50B2.75	TS50B2.75	—	—	—	—	—	—

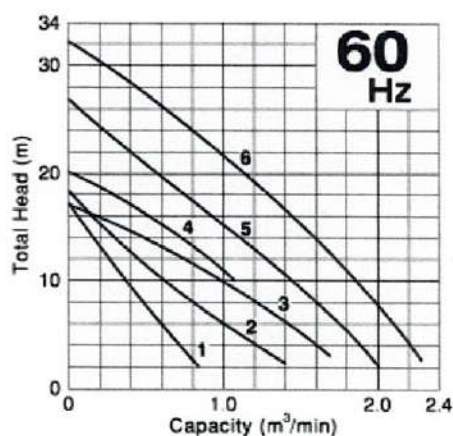
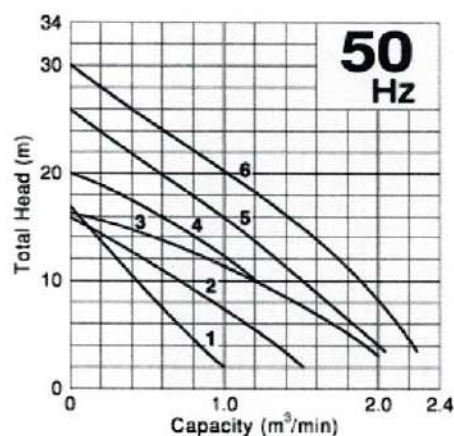
■ Specifications 80 - 100mm

Curve No.	Discharge Bore mm	Standard Model			Automatic Model			Auto-Alternation Model		
		Free Standing	Guide Rail Fitting		Free Standing	Guide Rail Fitting		Free Standing	Guide Rail Fitting	
			TOS	TS		TOS	TS		TOS	TS
1	80	80B21.5	TOS80B21.5	TS80B21.5	80BA21.5	TOS80BA21.5	TS80BA21.5	80BW21.5	TOS80BW21.5	TS80BW21.5
2	100	100B42.2	TOS100B42.2	TS100B42.2	100BA42.2	TOS100BA42.2	TS100BA42.2	100BW42.2	TOS100BW42.2	TS100BW42.2
3	100	100B43.7	TOS100B43.7	TS100B43.7	100BA43.7	TOS100BA43.7	TS100BA43.7	100BW43.7	TOS100BW43.7	TS100BW43.7
4	100	100B43.7H	TOS100B43.7H	TS100B43.7H	—	—	—	—	—	—
5	100	100B45.5	TOS100B45.5	TS100B45.5	—	—	—	—	—	—
6	100	100B47.5	TOS100B47.5	TS100B47.5	—	—	—	—	—	—

Discharge Bore

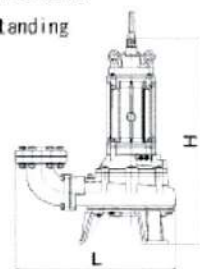
80 • 100mm

■ Performance Curves

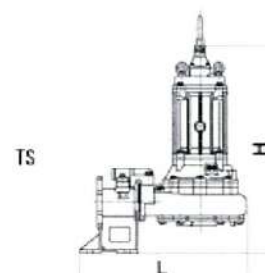
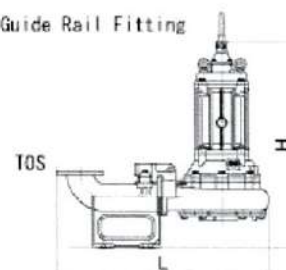


■ Dimensions

Free Standing



Guide Rail Fitting



Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H mm						Dry Weight kgs			
							Standard Model			Automatic & Auto-Alternation Model			Standard Model		Automatic & Auto-Alternation Model	
							Free Standing	Guide Rail Fitting TOS	Guide Rail Fitting TS	Free Standing	Guide Rail Fitting TOS	Guide Rail Fitting TS	Free Standing	Guide Rail Fitting ※	Free Standing	Guide Rail Fitting ※
0.4	Three	3000/3600	D.O.L.	35×22/ 35×18	6	A	347×443	563×478	333×477	—	—	—	25	24	—	—
0.75	Single	3000/3600	Capacitor	45×20/ 51×23	5	a	405×523	621×567	398×566	405×581	621×625	398×623	32	30	34	32
0.75	Three	3000/3600	D.O.L.	21×25	6	A	405×412	621×456	398×456	—	—	—	24	23	—	—
0.75	Three	3000/3600	D.O.L.	45×20/ 51×23	6	A	405×436	621×476	398×477	—	—	—	25	24	—	—

※ Weights without duckfoot

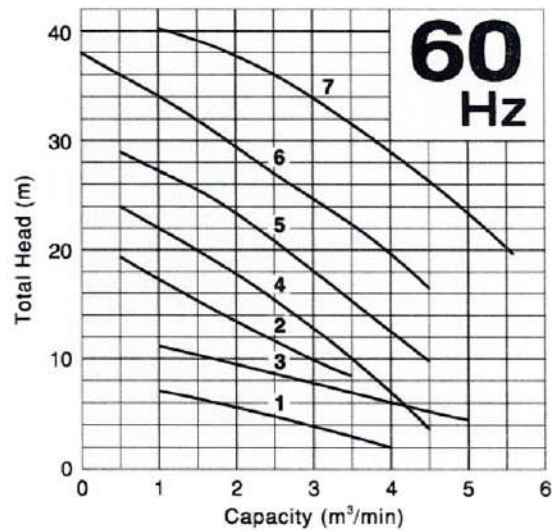
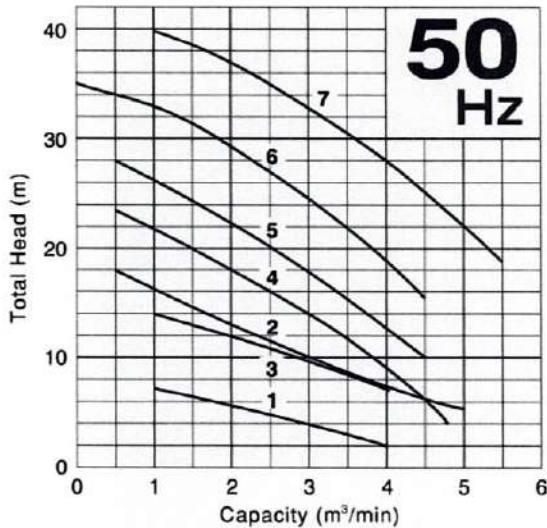
Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H mm						Dry Weight kgs			
							Standard Model			Automatic & Auto-Alternation Model			Standard Model		Automatic & Auto-Alternation Model	
							Free Standing	Guide Rail Fitting TOS	Guide Rail Fitting TS	Free Standing	Guide Rail Fitting TOS	Guide Rail Fitting TS	Free Standing	Guide Rail Fitting ※	Free Standing	Guide Rail Fitting ※
1.5	Three	3000/3600	D.O.L.	49×41/ 49×35	6	A	446×536	668×586	515×586	457×630	679×660	526×680	36	34	40	38
2.2	Three	1500/1800	D.O.L.	47×53/ 47×46	6	B	596×616	754×631	599×631	596×733	754×748	599×748	68	64	78	74
3.7	Three	1500/1800	D.O.L.	81×53/ 81×47	6	B	602×690	760×700	605×700	602×863	760×873	605×874	84	80	94	90
3.7	Three	1500/1800	D.O.L.	35×62/ 35×55	6	B	596×666	754×681	599×681	—	—	—	81	77	—	—
5.5	Three	1500/1800	D.O.L.	40×51/ 40×43	8	D	687×908	905×906	709×906	—	—	—	149	142	—	—
7.5	Three	1500/1800	D.O.L.	40×61/ 40×54	8	E	687×929	905×927	709×927	—	—	—	162	155	—	—

※ Weights without duckfoot

Discharge Bore

150mm

■ Performance Curves



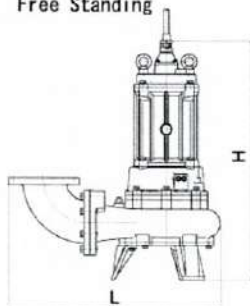
■ Specifications

Curve No.	Discharge Bore mm	Model		Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H mm		Dry Weight kgs	
		Free Standing	Guide Rail Fitting								Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting ※
1	150	150B63.7	TOS150B63.7	3.7	Three	1000/1200	D.O.L.	74×41/ 80×32	6	C	838×903	1024×1285	280	250
2	150	150B47.5H	TOS150B47.5H	7.5	Three	1500/1800	D.O.L.	60×58/ 60×47	8	E	834×952	1028×983	210	180
3	150	150B47.5L	TOS150B47.5L	7.5	Three	1500/1800	D.O.L.	77×48/ 66×38	8	E	871×1085	1065×1343	196	171
4	150	150B411	TOS150B411	11	Three	1500/1800	Star-Delta	72×66/ 63×69	8	F	895×1098	1089×1052	250	220
5	150	150B415	TOS150B415	15	Three	1500/1800	Star-Delta	78×54/ 66×62	8	G	895×1168	1089×1122	270	240
6	150	150B422	TOS150B422	22	Three	1500/1800	Star-Delta	79×68/ 78×68	10	H	988×1354	1174×1282	460	390
7	150	150B437	TO150B437	37	Three	1500/1800	Star-Delta	40×72/ 40×50	10	H	1085×1565	1306×1397	680	580

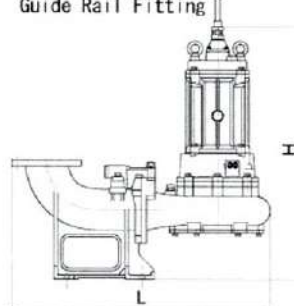
※ Weights without duckfoot

■ Dimensions

Free Standing



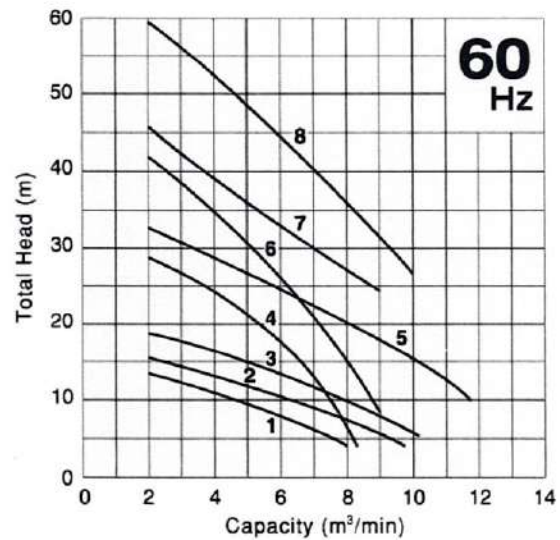
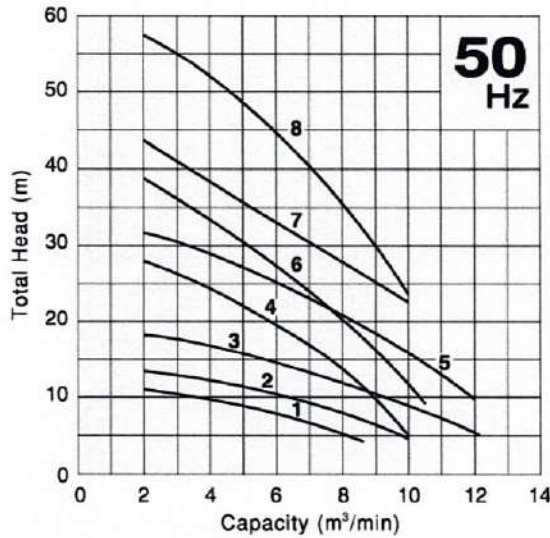
Guide Rail Fitting



Discharge Bore

250mm

■ Performance Curves

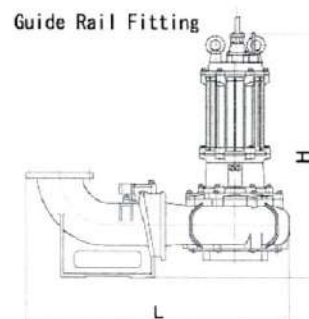
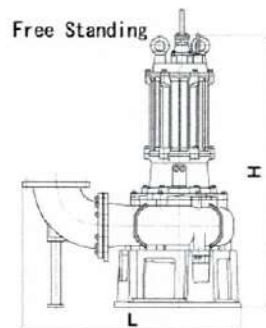


■ Specifications

Curve No.	Discharge Bore mm	Model		Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H mm		Dry Weight kgs	
		Free Standing	Guide Rail Fitting								Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting ※
1	250	250B611	TO250B611	11	Three	1000/1200	Star-Delta	80×68/ 80×58	8	L	1203×1211	1513×1166	430	390
2	250	250B415	TO250B415	15	Three	1500/1800	Star-Delta	79×46/ 85×36	8	G	1146×1228	1451×1194	420	380
3	250	250B622	TO250B622	22	Three	1000/1200	Star-Delta	90×90/ 96×76	10	H	1313×1617	1586×1556	735	630
4	250	250B430	TO250B430	30	Three	1500/1800	Star-Delta	75×80/ 76×76	10	H	1295×1564	1566×1497	730	610
5	250	250B437	TO250B437	37	Three	1500/1800	Star-Delta	63×80/ 65×76	10	H	1295×1592	1566×1525	765	640
6	250	250B445	TO250B445	45	Three	1500/1800	Star-Delta	45×70/ 45×68	10	H	1313×1664	1578×1605	780	680
7	250	250B455	TO250B455	55	Three	1500/1800	Star-Delta	45×70/ 45×68	10	J	1383×1700	1586×1635	1100	1040
8	250	250B475	TO250B475	75	Three	1500/1800	Star-Delta	35×75/ 35×78	10	J	1293×1700	1586×1635	1150	1090

※ Weights without duckfoot

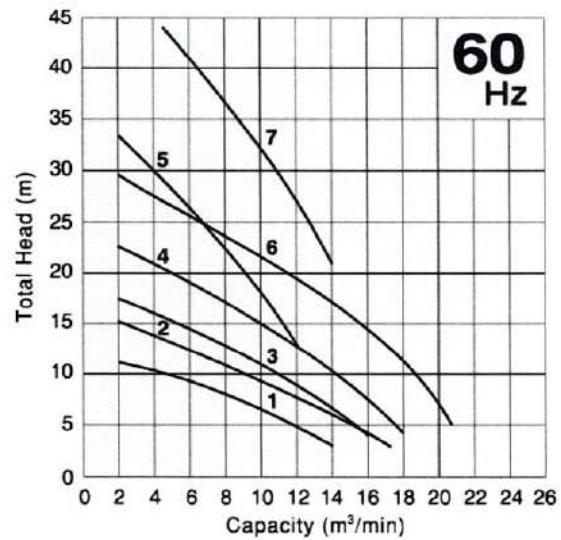
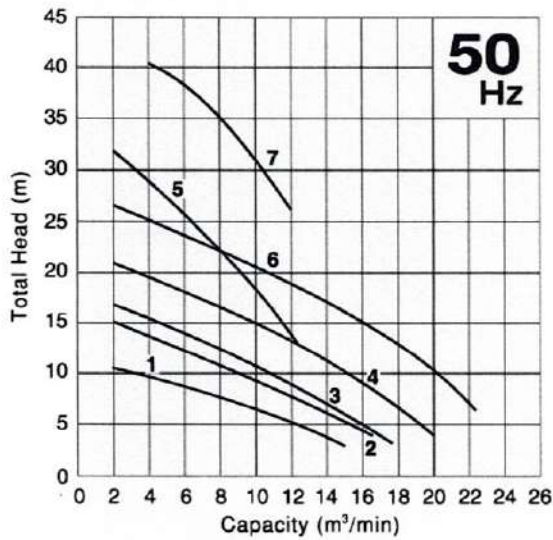
■ Dimensions



Discharge Bore

300mm

■ Performance Curves



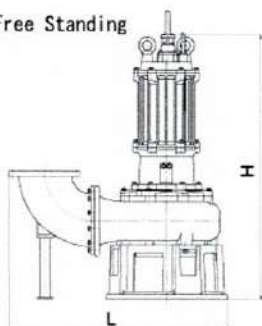
■ Specifications

Curve No.	Discharge Bore mm	Model		Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H mm		Dry Weight kgs	
		Free Standing	Guide Rail Fitting								Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting ※
1	300	300B615	TO300B615	15	Three	1000/1200	Star-Delta	140×90/ 140×60	8	M	1302×1314	1666×1274	550	520
2	300	300B622	TO300B622	22	Three	1000/1200	Star-Delta	140×76/ 127×76	10	H	1366×1626	1685×1629	790	685
3	300	300B630	TO300B630	30	Three	1000/1200	Star-Delta	130×115/ 140×76	10	H	1366×1654	1685×1657	815	685
4	300	300B637	TO300B637	37	Three	1000/1200	Star-Delta	140×100/ 140×65	10	H	1366×1716	1685×1719	850	725
5	300	300B445	TO300B445	45	Three	1500/1800	Star-Delta	60×90/ 70×76	10	H	1348×1713	1667×1694	870	740
6	300	300B655	TO300B655	55	Three	1000/1200	Star-Delta	105×90/ 110×90	10	J	1413×1833	1780×1766	1550	1500
7	300	300B475	TO300B475	75	Three	1500/1800	Star-Delta	60×80/ 65×90	10	J	1433×1700	1780×1666	1150	1100

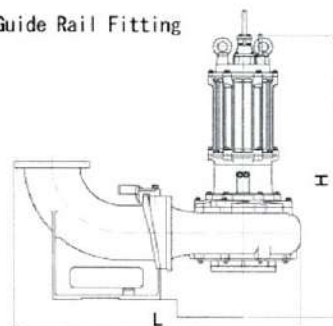
※ Weights without duckfoot

■ Dimensions

Free Standing



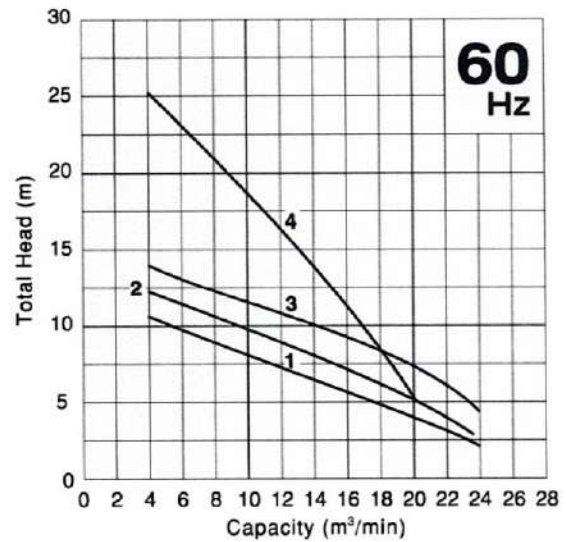
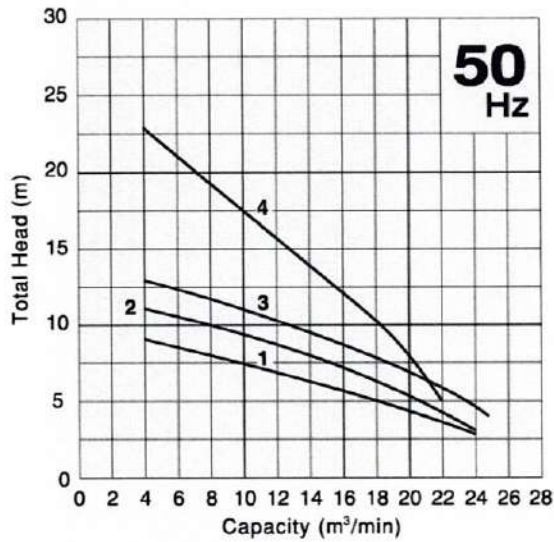
Guide Rail Fitting



Discharge Bore

350mm

■ Performance Curves

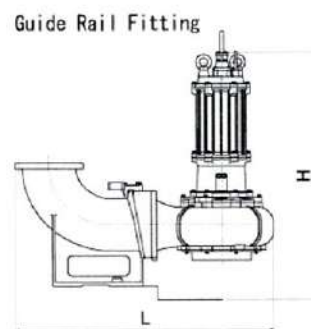
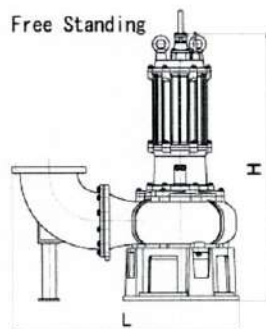


■ Specifications

Curve No.	Discharge Bore mm	Model		Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H mm		Dry Weight kgs	
		Free Standing	Guide Rail Fitting								Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting ※
1	350	350B822	TO350B822	22	Three	750/900	Star-Delta	156×100/160×90	10	H	1488×1713	1845×1728	965	815
2	350	350B630	TO350B630	30	Three	1000/1200	Star-Delta	190×95/200×70	10	H	1488×1694	1845×1709	920	770
3	350	350B637	TO350B637	37	Three	1000/1200	Star-Delta	190×130/200×100	10	H	1488×1756	1845×1771	970	815
4	350	350B645	TO350B645	45	Three	1000/1200	Star-Delta	130×90/140×78	10	H	1508×2026	1845×2049	1550	1395

※ Weights without duckfoot

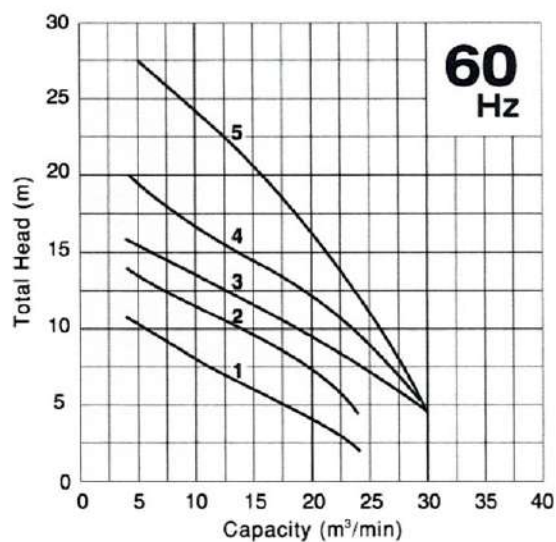
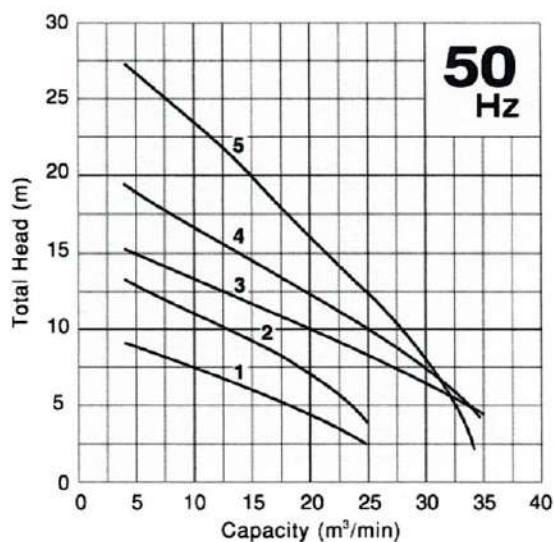
■ Dimensions



Discharge Bore

400mm

■ Performance Curves



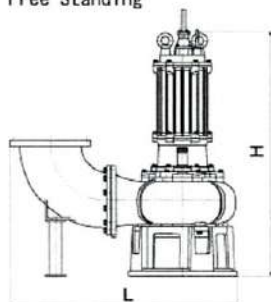
■ Specifications

Curve No.	Discharge Bore mm	Model		Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H mm		Dry Weight kgs	
		Free Standing	Guide Rail Fitting								Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting ※
1	400	400B822	TO400B822	22	Three	750/900	Star-Delta	156×109/ 160×90	10	H	1583×1713	2122×1788	985	920
2	400	400B637	TO400B637	37	Three	1000/1200	Star-Delta	190×130/ 200×100	10	H	1583×1756	2122×1831	990	955
3	400	400B645	TO400B645	45	Three	1000/1200	Star-Delta	175×128/ 175×100	10	H	1633×2030	2130×2158	1650	1580
4	400	400B655	TO400B655	55	Three	1000/1200	Star-Delta	145×110/ 175×100	10	J	1620×1878	2137×1970	1750	1700
5	400	400B675	TO400B675	75	Three	1000/1200	Star-Delta	130×100/ 140×90	10	J	1620×1878	2137×1970	1850	1800

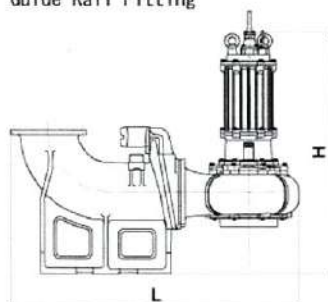
※ Weights without duckfoot

■ Dimensions

Free Standing

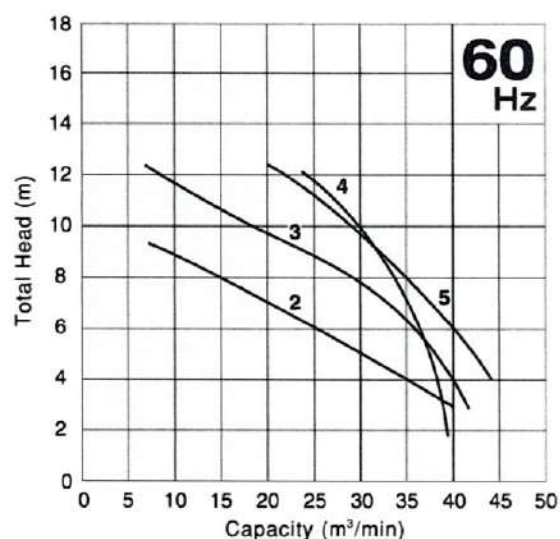
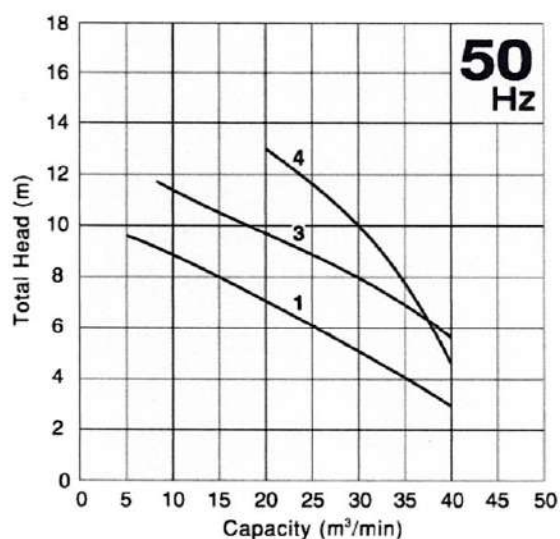


Guide Rail Fitting



Discharge Bore 500mm

■ Performance Curves



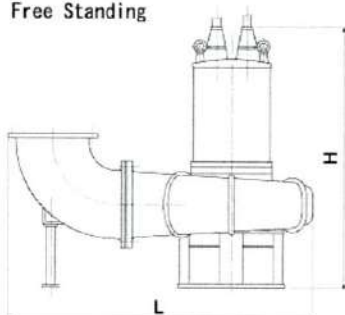
■ Specifications

Curve No.	Discharge Bore mm	Model		Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage 50Hz/60Hz mm	Standard Cable Length m	Cable Code	Dimensions L×H mm		Dry Weight kgs		Frequency
		Free Standing	Guide Rail Fitting								Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting ※	
1	500	500B1037	TO500B1037	37	Three	600	Star-Delta	225×100	10	J	2071×2080	2617×2182	2050	1950	50Hz only
2	500	500B1237	TO500B1237	37	Three	600	Star-Delta	225×100	10	J	2071×2080	2617×2182	2050	1950	60Hz only
3	500	500B855	TO500B855	55	Three	750/900	Star-Delta	175×140/ 175×80	10	J	2110×2080	2657×2225	2150	2050	50Hz/60Hz
4	500	500B675	TO500B675	75	Three	1000/1200	Star-Delta	130×120/ 130×100	10	J	2260×1990	2812×2160	2150	2050	50Hz/60Hz
5	500	500B875	TO500B875	75	Three	900	Star-Delta	190×80	10	J	2150×2694	2617×2334	2550	2450	60Hz only

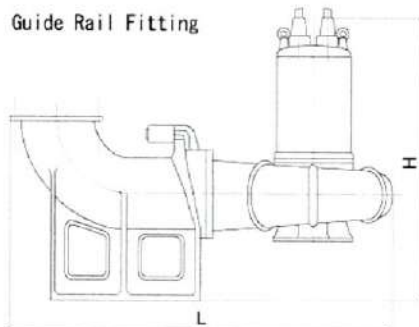
※ Weights without duckfoot

■ Dimensions

Free Standing



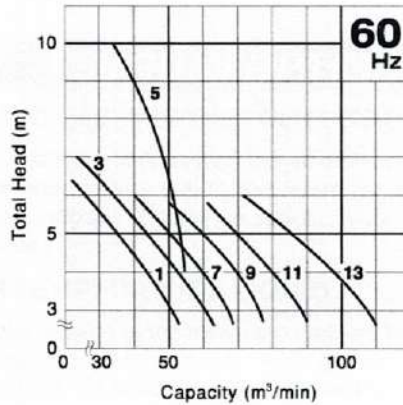
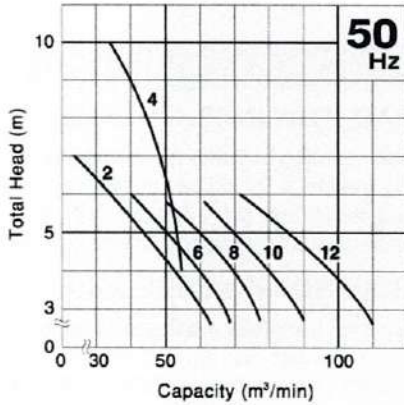
Guide Rail Fitting



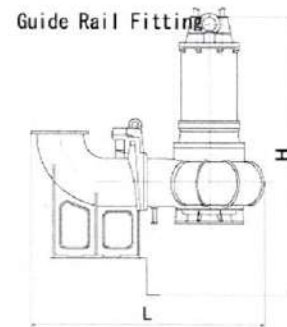
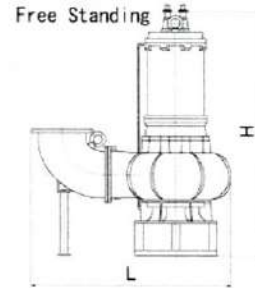
Discharge Bore

600·700·800_{mm}

■ Performance Curves



■ Dimensions



■ Specifications

Curve No.	Discharge Bore mm	Model		Motor Output kW	Phase	Revolution 50Hz/60Hz min ⁻¹	Starting Method	Impeller Passage mm	Standard Cable Length m	Cable Code	Dimensions L×H mm		Dry Weight kgs		Frequency
		Free Standing	Guide Rail Fitting								Free Standing	Guide Rail Fitting	Free Standing	Guide Rail Fitting ※	
1	600	600B1845	TO600B1845	45	Three	400	Star-Delta	280×90	10	J	2522×3100	3062×3100	5000	5200	60Hz only
2	600	600B1255	TO600B1255	55	Three	500	Star-Delta	220×100	10	J	2522×3100	3062×3100	3150	3350	50Hz only
3	600	600B1455	TO600B1455	55	Three	514	Star-Delta	220×100	10	J	2522×3100	3062×3100	3150	3350	60Hz only
4	600	600B1085	TO600B1085	85	Three	600	Star-Delta	210×85	10	J	2468×3100	3008×3100	3100	3300	50Hz only
5	600	600B1285	TO600B1285	85	Three	600	Star-Delta	210×85	10	J	2468×3100	3008×3100	3100	3300	60Hz only
6	700	700B1265	TO700B1265	65	Three	500	Star-Delta	300×85	10	J	2840×3560	3440×3660	4000	4400	50Hz only
7	700	700B1465	TO700B1465	65	Three	514	Star-Delta	300×85	10	J	2840×3560	3440×3660	4000	4400	60Hz only
8	700	700B1275	TO700B1275	75	Three	500	Star-Delta	300×85	10	J	2840×3560	3440×3660	4200	4600	50Hz only
9	700	700B1475	TO700B1475	75	Three	514	Star-Delta	300×85	10	J	2840×3560	3440×3660	4200	4600	60Hz only
10	800	800B1290	TO800B1290	90	Three	500	Star-Delta	300×90	10	K	3053×3790	3623×3790	5600	5800	50Hz only
11	800	800B1490	TO800B1490	90	Three	514	Star-Delta	300×90	10	K	3053×3790	3623×3790	5600	5800	60Hz only
12	800	800B14110	TO800B14110	110	Three	428	Star-Delta	310×90	10	K	3053×3790	3623×3790	5800	6000	50Hz only
13	800	800B16110	TO800B16110	110	Three	450	Star-Delta	310×90	10	K	3053×3790	3623×3790	5800	6000	60Hz only

※ Weights without duckfoot

CABTYRE CABLE CODE REFERENCE

Single-Phase

Code	No. of Cables/ Pump Set	No. of Core & Area (mm ²)	Outer Dia. (mm)	Material of Jacket
a	1	3×1.25	10.1	PVC

Three-Phase

Code	No. of Cables/ Pump Set	No. of Core & Area (mm ²)	Outer Dia. (mm)	Material of Jacket
A	1	4×1.25	11.1	PVC
B	1	4×2.0	11.8	PVC
C	1	4×3.5	15.8	Chloroprene Rubber
D	1	4×3.5	14.1	Chloroprene Rubber
E	1	4×5.5	16.8	Chloroprene Rubber
F	3	4×3.5	14.1	Chloroprene Rubber
		3×3.5	12.9	
		2×2.0	10.6	
G	3	4×5.5	16.8	Chloroprene Rubber
		3×5.5	15.2	
		2×2.0	10.6	

*The cable designated in the specifications is that for 380 volts and higher use. A thicker cable may be used for 220 volts use

Three-Phase

Code	No. of Cables/ Pump Set	No. of Core & Area (mm ²)	Outer Dia. (mm)	Material of Jacket
H	3	4×14	21.7	Chloroprene Rubber
		3×14	19.7	
		3×2	12.2	
J	2	3×38		Chloroprene Rubber
		1×22	35.8	
		3×2	35.9	
K	2	3×60		Chloroprene Rubber
		1×22	45.7	
		3×2	45.7	
L	1	7×5.5 2×2.0	24.4	Chloroprene Rubber
M	1	7×8.0 2×2.0	24.4	Chloroprene Rubber

TSURUMI OPTIONS

SPECIAL VERSION WITH GALVANIC CORROSION PROTECTION

In sea water, the effect of galvanic corrosion is more serious than that of ordinary corrosion. When two kinds of metals are dipped into an electrolytic liquid, a battery phenomenon occurs due to the difference in the electric potential of the two metals. In this case, the metal having the higher potential corrodes first. As an option, Tsurumi can supply pumps with parts made of higher electric potential metal as the sacrificial anode.

SPECIAL VERSION FOR HIGHER TEMPERATURE LIQUID

Standard pumps are designed for continuous running at the maximum ambient temperature of 40°C. In addition to these, Tsurumi can provide pumps for operation at higher liquid temperatures upon request. Refitting for operation at higher temperatures involves modification of not only the insulation of motor windings but also several components.

Two high-temperature operating models are available - the Rank 60 for operation in liquids up to 60°C and the Rank 90 for operation in liquids up to 90°C. Consult your dealer for more details. (These special versions are not available for some pump models.)

SPECIAL VERSION WITH NON-STANDARD MATERIALS

Tsurumi can also provide you with pumps with essential components such as the impeller, pump casing, and the suction cover made of non-standard materials. Select from stainless-steel, chromium iron and bronze to suit your specific requirements. Consult your dealer for more details.

SPECIAL ACCESSORIES

FLOAT SWITCHES

Tsurumi offers two types of float switches (liquid level sensors). A micro-switch is incorporated in both types.

Model MC-2 is a heavy-duty type float switch with a shock absorber. Having equipped with a high grade micro switch, the MC-2 assures trouble-free operation in the liquid containing much suspended solids and floating scum. Either of the two contacts, normally-open or normally-close, can be selected as required.

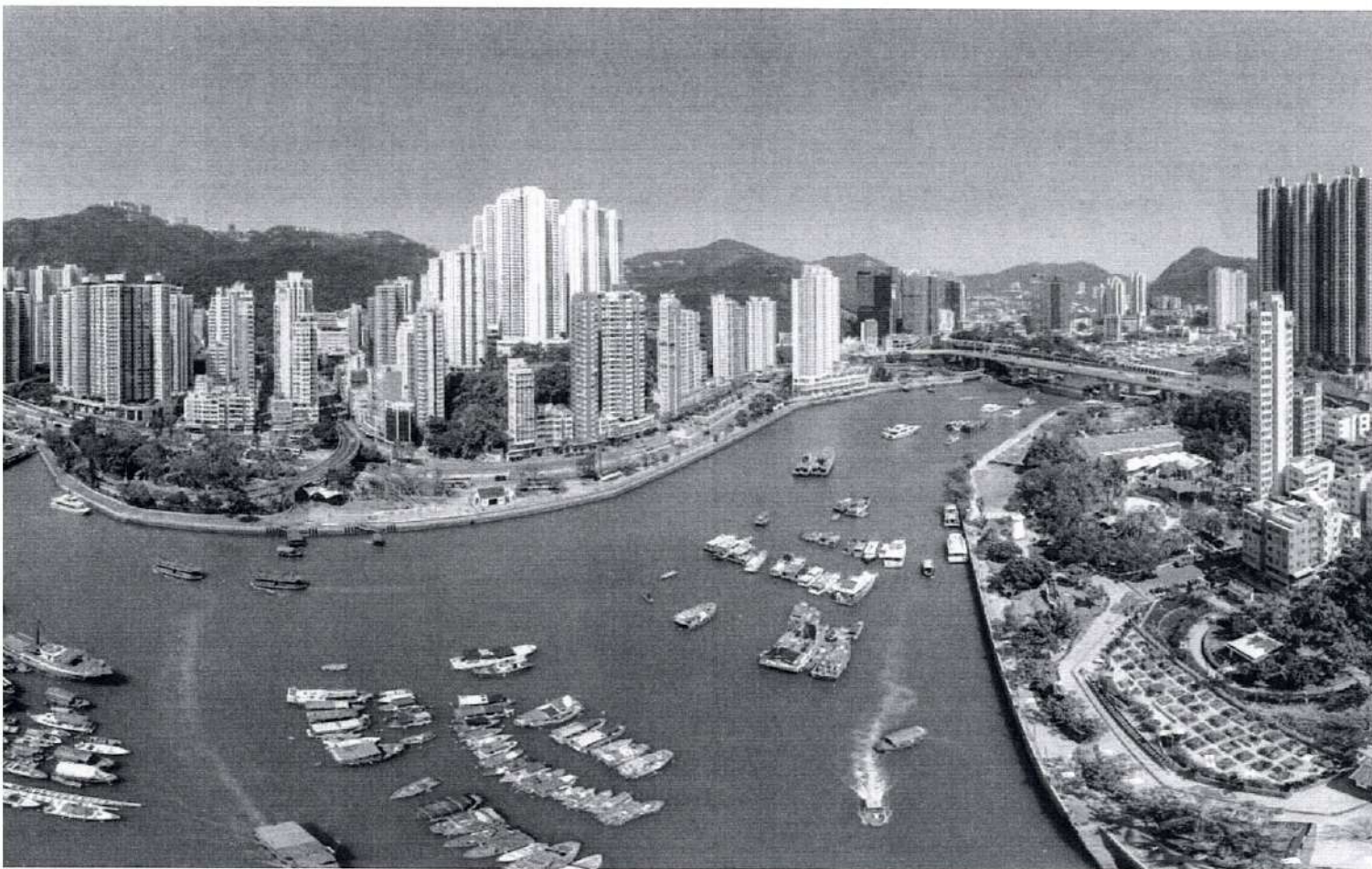


Model RF-5 is an economy type float which can detect upper/lower-limit water levels with single float. The snap on-off action ensures stable operation in clean or waste water containing suspended solids or oil and fat.



We reserve the right to change the specifications and designs for improvement without prior notice.

TSURUMI
MANUFACTURING CO.,LTD.



SUBMERSIBLE SEAWATER-RESISTANT SEWAGE PUMPS



Submersible Seawater-Resistant Sewage Pumps

Handling seawater with submersible pumps for a long term period is not an easy task. When pumps are not equipped with adequate specifications for use in seawater, corrosion in metal sections may cause the pumps to become worse in terms of performance, or in the worst case scenario, suffer a breakdown.

Supported by demonstrative experiments using seawater over a long time, Tsurumi has continued unremitting research into submersible seawater-resistant pumps, combining both corrosion resistance and durability. As a result, by giving the maximum possible consideration to economy, reliability and dependability, Tsurumi has successfully developed its original submersible seawater-resistant sewage pumps, which have achieved the upgrading of pumps to a level that allows them to withstand even the seawater.

Tsurumi offers a product lineup comprising two series: B-series pumps equipped with channel impeller and C-series pumps equipped with cutter impeller, with the motor output varying from 0.75 up to 15 kW depending on the model. As part of the seawater-resistant specifications, these pumps are provided with a **Duplex stainless steel shaft**, a **frame and a casing made of FC250 cast iron**, **3-layered Epoxy resin paint coating**, and a **Galvanic anode (optional)**, with a choice of either 316 stainless steel (DS version) or FC250 (DF version) as the impeller material. In addition, these pumps are equipped with an anti-wicking cable, motor protector, dual inside mechanical seals with silicon carbide faces, Oil Lifter and the like, as in the case with standard Tsurumi products.

Submersible seawater-resistant sewage pumps have a wide range of uses including sewage drainage mixed with seawater, transfer of sewage/wastewater from water treatment facilities in plants and commercial buildings, water intake/discharge at pumping stations and shipyards in coastal areas, desalination plants and the like.

Provided with outstanding reliability, excellent durability and stable quality, Tsurumi's pumps are designed to ensure continuous duty under harsh service conditions over a long period, thereby contributing to stable operation of facilities and allowing substantially reduced maintenance costs at water treatment facilities.

Selection Table

		DS version Example Model 100B43.7-DS	DF version Example Model 100B43.7-DF
Applicable Series		B-series (Channel Impeller) C-series (Cutter Impeller)	
Discharge Bore	mm	50 - 150	
Motor Output	kW	0.75 - 15	
Materials	Shaft	Duplex Stainless Steel (JIS Grade SUS329J4L)	
	Cast Iron Grade	FC250	
	Suction Cover	FC250 Cast Iron (B-series) High-chromium Cast Iron (C-series)	
	Impeller	316 Stainless Steel Casting	FC250 Cast Iron
Surface Painting		Epoxy Resin Paint	
Galvanic Anode		Option	

B-series

Channel Impeller

The B-series is a submersible channel impeller pump designed for handling raw sewage, wastewater and heavy-duty industrial applications, where the pump is subject to complete submersion and requires maximum reliability.



C-series

Cutter Impeller

The C-series is a submersible cutter pump for sewage and wastewater, which is made of casting and equipped with cutting mechanism. Featuring a combination of impeller vane with brazed sintered tungsten carbide alloy edge and a suction cover of serrated shape, the C-series pumps enable smooth pumping, while cutting solid and fibrous matter during suction.



Mechanism of Metal Corrosion

If seawater-resistant measures are not taken in seawater applications, metal parts corrode, which causes performance drop that can result in pump failure. One suspected cause of corrosion in metallic parts by seawater is the "metal corrosion potential."

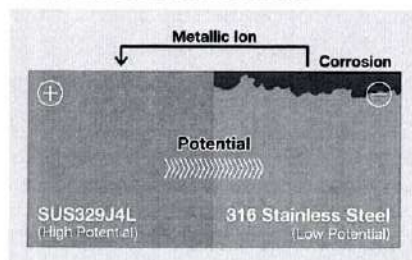
In seawater, a metal's resistance to corrosion can be seen clearly. As shown in the illustration of **<Bimetallic Corrosion in Seawater>**, when metals of different potential contact one another, only the metal of lower potential will corrode while the metal of higher potential is protected from corrosion.

The table of **<Potentials of Various Metals in Seawater>** shows the corrosion strength/weakness of various metals.

When the metal of higher electrode potential, **duplex stainless steel, SUS329J4L** is in contact with a metal of lower electrode potential, 316 stainless steel or cast iron, duplex stainless steel is protected from corrosion. Weaker metal, common stainless steel or cast iron, corrodes away.

Therefore, when shaft material is SUS329J4L and the impeller is made of 316 stainless steel or cast iron, shaft is eventually protected from corrosion and the impeller acts as a galvanic anode. The impeller needs to be replaced every few years depending on operating conditions. However, replacement of the impeller costs far less and is easier than that of the shaft. Hence the material combination brings notable benefits to reduce repairing cost and enhance maintainability for pump usage in a long time.

<Bimetallic Corrosion in Seawater>



<Potentials of Various Metals in Seawater>

Metal	Potential
Titanium	High (Corrosion-Resistant)
SUS329J4L (Duplex Stainless Steel)	
316 Stainless Steel	
304 Stainless Steel	
420 Stainless Steel	
Cast Iron	Low (Corrosive)
Aluminium Alloy	
Aluminium	
Zinc	
Magnesium	

FC250

Cast Iron Material

Cast iron components are made of FC250 grade gray cast iron. FC250 cast iron has higher resistance under tension and is also harder than FC200 cast iron material.



Epoxy Resin Paint

Surface Painting

3 layers of epoxy resin provide extra protection to the metallic components of the pump from direct exposure to corrosive medium.

180µm of minimum thickness has been maintained throughout the painted components. Epoxy layer preventing direct exposure of metallic components to corrosive medium acts as an electrical resistance between metal and the medium, and hence improves corrosion resistance.



Galvanic Anode (Option)

Cathodic Protection

The galvanic anode is an electrolytic protective measure used with metals of differing corrosive potentials. Metals of a potential lower (aluminium and zinc) than the pump body (cast iron and steel) are brought into contact with the body via the galvanic anodes and allowed to corrode in order to protect the body. However, the full effect cannot be obtained unless the anodes are installed in the proper positions.

Tsurumi mainly utilizes aluminium because of its superior anticorrosive performance per unit weight, while utilizing zinc for only the strainer stand that is liable to be worn by water current. Since the galvanic anodes are worn by corrosion, they need to be replaced every two years. They can be replaced easily and used immediately after replacement.

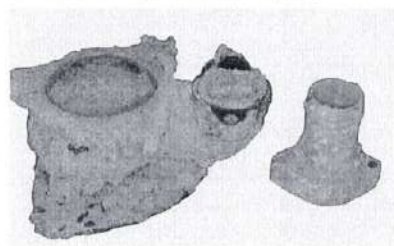


Aluminium

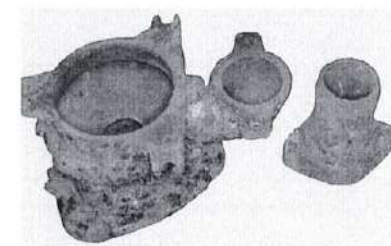


Zinc

Corrosion Test (in seawater / 1 year)



without galvanic anode



with galvanic anode installed

Duplex Stainless Steel - JIS Grade SUS329J4L (EN 1.4481) - Shaft Material

Duplex stainless steel SUS329J4L is a 25% chromium duplex ferritic-austenitic stainless steel designed to provide a superior combination of high strength and excellent corrosion resistance for a wide variety of applications, especially in corrosive seawater usage.

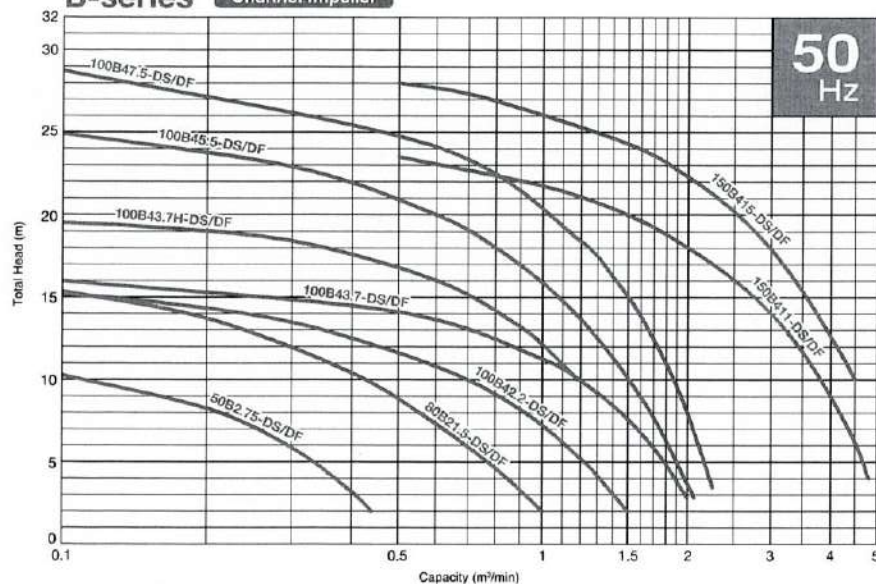
This alloy consists a microstructure of a balanced mixture of austenite and ferrite. The combination of these phases develops the unique combination of strength and resistance for chloride stress-corrosion cracking of this alloy.



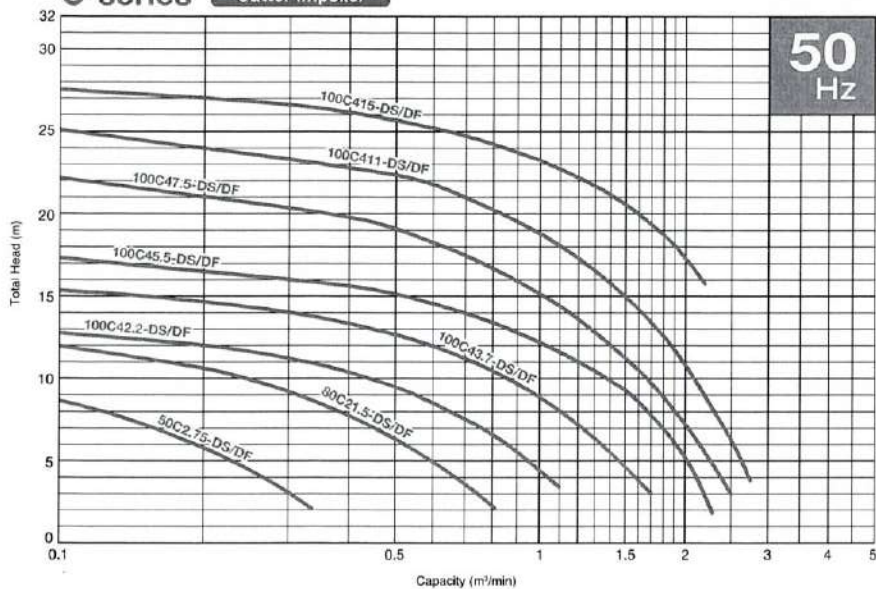
Performance Curves

• For 60 Hz models, please contact your dealer.

B-series Channel Impeller



C-series Cutter Impeller



Model Selection

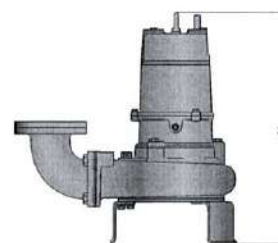
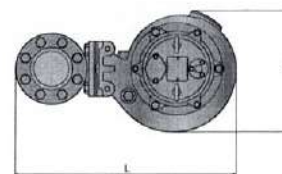
	Model		Discharge Bore	Motor Output	Phase	Pole	Starting Method	Dimensions	Dry Weight	Cable Length
	DS version (S16 Stainless Steel)	DF version (FC250 Cast Iron)	mm	kW				L x W x H mm	kg	m
B -Channel Impeller-	50B2.75-DS	50B2.75-DF	50	0.75	Three	2	D.O.L.	405 x 250 x 439	25	6
	80B21.5-DS	80B21.5-DF	80	1.5		2	D.O.L.	446 x 250 x 536	36	6
	100B42.2-DS	100B42.2-DF	100	2.2		4	D.O.L.	596 x 324 x 616	68	6
	100B43.7-DS	100B43.7-DF	100	3.7		4	D.O.L.	601 x 333 x 690	84	6
	100B43.7H-DS	100B43.7H-DF	100	3.7		4	D.O.L.	603 x 344 x 666	82	6
	100B45.5-DS	100B45.5-DF	100	5.5		4	D.O.L.*	686 x 410 x 908	140	8
	100B47.5-DS	100B47.5-DF	100	7.5		4	D.O.L.*	686 x 410 x 929	154	8
	150B411-DS	150B411-DF	150	11		4	Star-Delta	895 x 490 x 1097	245	8
	150B415-DS	150B415-DF	150	15		4	Star-Delta	895 x 490 x 1167	266	8
	50C2.75-DS	50C2.75-DF	50	0.75		2	D.O.L.	405 x 250 x 415	24	6
C -Cutter Impeller-	80C21.5-DS	80C21.5-DF	80	1.5		2	D.O.L.	446 x 250 x 536	36	6
	100C42.2-DS	100C42.2-DF	100	2.2		4	D.O.L.	596 x 324 x 616	68	6
	100C43.7-DS	100C43.7-DF	100	3.7		4	D.O.L.	601 x 333 x 690	84	6
	100C45.5-DS	100C45.5-DF	100	5.5		4	D.O.L.*	686 x 410 x 908	133	8
	100C47.5-DS	100C47.5-DF	100	7.5		4	D.O.L.*	686 x 410 x 929	144	8
	100C411-DS	100C411-DF	100	11		4	Star-Delta	709 x 436 x 1000	179	8
	100C415-DS	100C415-DF	100	15		4	Star-Delta	707 x 436 x 1080	221	8

* Star-Delta available upon request

• Duckfoot bend sets for guide rail fitting system in FC250 + epoxy resin paint are available

• Weights excluding cable

Dimensions



Seawater Pumps

TM-series

Tsurumi also offers submersible seawater pumps, the TM-series.

All the wetted parts of this pump are made of titanium and resin, which provides the highest corrosion resistance to seawater. The TM-series is available in 0.25 to 3.7kW motor output, and both single-phase and three-phase models. For details, refer to the VANCS-series catalog [A114].





We reserve the right to change the specifications and designs without prior notice. The OO series and model OO are indicated with our series/model codes in this catalog.

**TSURUMI
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