

HEXATECH	<b>Method Statement For Chilled Water Pump (CHWP) Installation</b>	Issue No.: 1	Document Effective Date: 01 Aug 2022	Page 1 of 7
		Revision No.: 0		Document Ref: MS-A004

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## **INSTALLATION OF CHILLED WATER PUMP (CHWP)**

### ***1.0 Scope of Work***

The scope of works for the above are supply, delivery, unloading, installation, testing and commissioning of the entire installation as described in the specifications, drawings and schedules.

The works shall include to fully complete the installation with associated work ensuring the system are operational and functioning as according to specifications as stated in contract and shop drawings and adhere to manufacturer's installation guidelines and recommendations

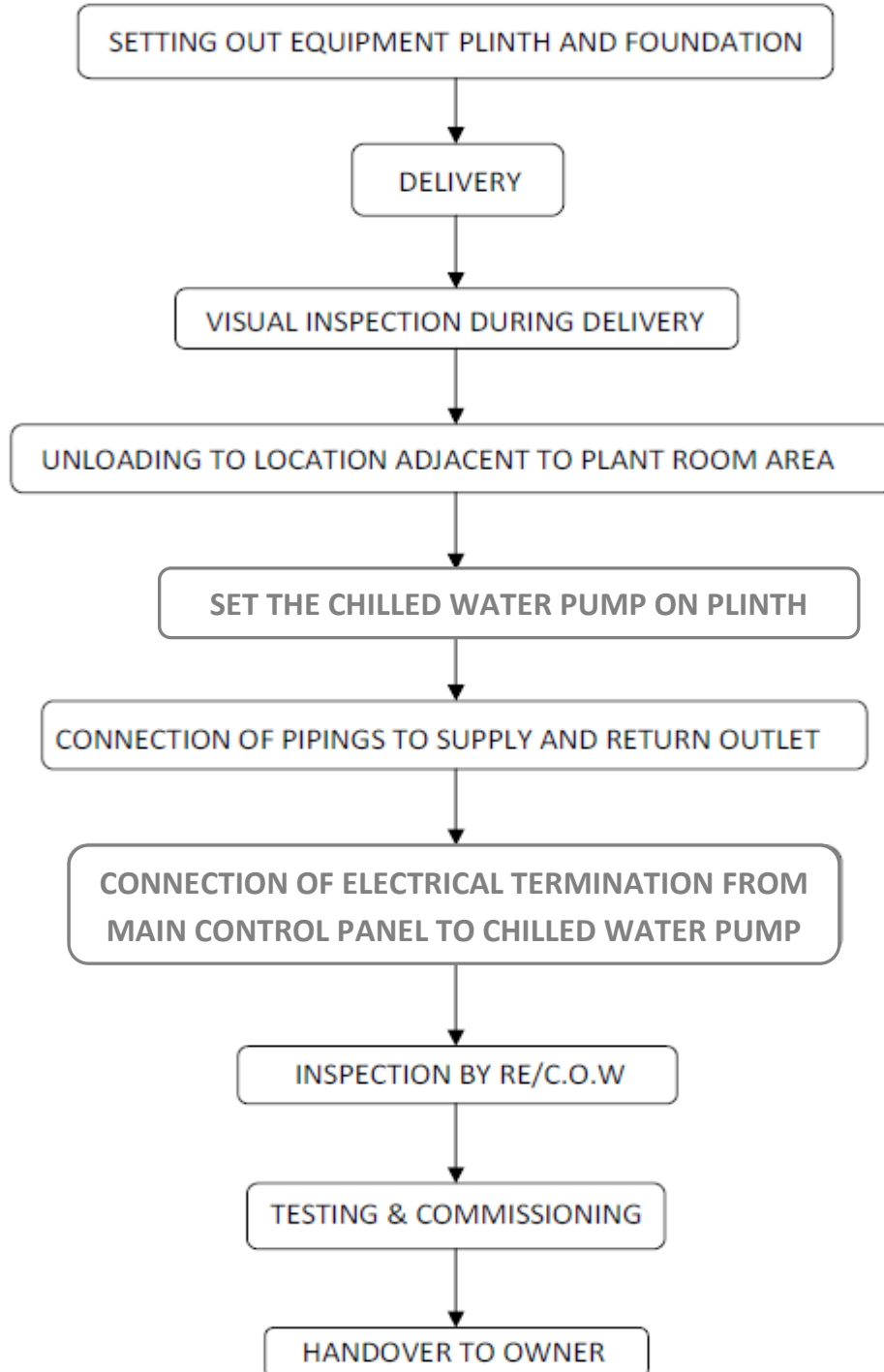
### ***2.0 Resources***

#### Material

- (a) Chilled Water Pump
- (b) Rubber Gaskets
- (c) Inertia Block c/w Spring Vibration Isolator
- (d) Pipe supports (C-channel, angle bar, threaded rod, anchor bolt etc)
- (e) Pipe fittings
- (f) Valves (Butterfly, Strainer, Flexible Joint etc)
- (g) Flanges
- (h) Bolts, Washer and Nuts

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### 3.0 Work Flow



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#### **4.0 Handling and Storage**

When the Pumps arrived at site, it will be immediately hoisted to the chiller plant room by using the lifting crane.

#### **5.0 Methodology**

##### Preliminary checks

The Pumps will not be delivered to site without the completion of the architectural works such as plastering, water-proofing to ensure the area is free from construction debris, scaffolding, form work etc. Installation of lockable door by the main contractor must be completed and functional to prevent any mishap and to secure the chillers.

The proposed location of the plinths for the Pumps must be inspected prior to pumps delivery and will be conducted to measure the plinths at site to ensure the exact dimensions are met and to mitigate any disarray which may have occurred, such as, levelling and suitability for installation of the Pumps.

Upon arrival of the Pumps, the equipment should be checked thoroughly to ensure all items are in good condition and free from any shipping damage. Unit received must be confirmed by comparing the name plate date with the delivery order.

The unit name plate will include but not limited to the following information:

- Model number
- Serial number
- Year of manufacture
- Voltage, frequency, number of phases
- Maximum current drawn
- Maximum power input
- Unit net weight

It is also important to confirm that all accessories ordered for on-site installation have been delivered, and are complete without any damages. The pumps units must not be kept outdoor where they are exposed to extreme weather as this will reduce the lifespan of the pumps.

##### Site Traffic Requirement

All the activities by loading and unloading motorized vehicles must adhere to the following requirements.

- The driver must be competent and legally authorized to operate the vehicle.
- The vehicle must be road worthy and duly inspected for any malfunction.
- To follow the determined access route for loading for unloading of goods.

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- Emergency signal indicator of the vehicle must be switched on whenever it is in motion within the site vicinity.
- The competent driver must follow instruction given by signalman to coordinate traffic at site.
- Head –lights of vehicle must be turned on when necessary.

#### Pumps unloading procedures

- The pumps will be transported to the site via road vehicle.
- The lifting crane will be engaged to unload and hoist the pumps to the designated area.
- Dimensions, clearances, weight distribution and the designated lifting points of the pumps must be observed.
- The pumps must be hoisted using only the lifting points marked on the unit.
- Ensure that the shackles are firmly attached to the lifting points.
- Final Check must be carried out to ensure that all casing panels and any other accessories are securely fixed in place.
- During the lifting, all personnel must maintain a safe distance away from the units, and refrain from interfering with the radio communication between the lifting operator and the signalman.
- Lifting and setting down of the unit has to be done with great care as any tilting and jarring can damage the unit and impair the unit's operation.
- Full time supervision and signalman will be in place at all the time to monitor and manage the process

#### Pumps installation procedures.

- Set the vibration isolator and the inertia block onto the loading point as recommended by manufacturer on the concrete plinth,
- Before lowering the pump. Fasten the vibration isolator to the pump's mounting hole before setting the unit permanently on plinth.

#### When the unit is in place,

- Remove the rigging equipment and check the unit is level both longitudinally and transversely.
- The units should be place parallel next to each other as indicated in shop drawings. Level of the chiller must be same height on four corners, minimum adjustment can be done by adjusting the isolator spring by means of compress or decompress.

#### After the unit is levelled,

- The piping connections process may proceed.
- The piping shall be arranged with offsets for flexibility and adequately supported and braced independently to the unit to avoid strain and vibration transmission,

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- Upon completion of piping, inspection shall be carried out to check on the alignment, work quality and level of pipe installed is in accordance with approved shop drawings. Subsequently welding work will start after approval. After completion of welding work,
- Hydraulic test will be carry out to confirm there is no leakage on all the welding joints.
- The testing pressure shall be in accordance with specification which is 1.5 times of the working pressure.
- Final wiring connections for control and power supply shall be made with the presence of the manufacturers' representative.
- Inspections shall be arranged with the respective parties upon completion of entire work prior to testing and commissioning.

### **6.0 Inspection and Testing**

All service shall be tested / inspected for: -

Material Receiving Inspection

Pipe installation work Inspection

Progressive and final work inspection and testing shall be carried out to ensure the conformance of work.

Testing Procedure:-

The installation shall follow the work methodology.

The site representative will conduct the procedure. RFI shall be forwarded 24 hours before the inspection process by M&E Consultant or their representative.

The request for inspection (RFI) shall include the checklist and relevant drawing.

### **7.0 List of Site Installation and Test**

- a) Doc No. AC-004
- b) Doc No. AC-004A

Please refer the attachment (CL/INST/CHWP) and (CL/TEST/CHWP)

### **8.0 HSE Requirement**

- 1) The objective is to implement the quality control on site, which shall be followed by the construction team so that the Contractor without any costly re-work would finally accept the finished work.
- 2) All workers will be provided with appropriate personnel protection equipment (PPE) and this must be worn during the work .Workers who failed to comply with this requirement will be removed from site.
- 3) Unauthorized personnel are not permitted within construction area.

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- 4) Safety Officer will closely supervise and checked the safety of the construction area.
- 5) To prepare scaffolding and stage work (relevant works).
- 6) To select and provide waste area.
- 7) To provide safe area for the storage of equipment.

## **9.0 List of Tools**

### Tools & Machinery

- Chain Block
- Drilling machine
- Welding Machine
- Lifting Belt / Wire Rope
- Hammer
- Screw Driver
- Spanner
- Measurement tape

### Manpower

- Project Manager
- Site Manager
- Project Engineer
- Safety Officer
- Site Supervisor
- Piping Supervisor
- Piping Installation Workers

End