

INSPECTION AND TEST PLAN

Vendor Document No: LNH3-HEI-ITP-OSK-QC-001




Rev. No. 2

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OWNER : TORISHIMA PUMP MFG. CO.,LTD
PROJECT TITLE : PUMP TEST PLANT IN OSAKA
PO NO : 3100104144 & 3100104805
VENDOR : PT. HANAZONO ENGINEERING INDONESIA
LOCATION : TORISHIMA PUMP MFG. CO.,LTD - OSAKA - JAPAN

FOR APPROVAL

<input type="checkbox"/>	A	Approved
<input type="checkbox"/>	B	Approved with notes
<input type="checkbox"/>	C	Commented
<input type="checkbox"/>	D	Not approved or rejected
Return date :		
Approved by :		
Received date :		

						
2	April 17, 2024	For Approval	BENRIDHO	RUSNANDI	MURASATO	CLIENT
1	March 04, 2024	For Approval	BENRIDHO	RUSNANDI	MURASATO	CLIENT
0	February 12, 2024	For Approval	BENRIDHO	RUSNANDI	MURASATO	CLIENT
REV	DATE ISSUED	ISSUE PURPOSE	PREPARED	CHECKED	APPROVED	AUTHOLIZED

INSPECTION AND TEST PLAN

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Revision History

Revision No.	Date	Description of Revision
0	February 12, 2024	For Approval
1	March 04, 2024	Step No. F2, F3-13 & G : Change Inspection point Torishima Witness to Review, Change of words
2	April 17, 2024	KHK Requirement, Production Test.

Inspection and Test Plan

Project	: PUMP TESTING FACILITY (EQUIPMENT TO OSAKA)	Inspection Item	: PUMP TEST PLANT FACILITY (TEST TANK)
P.O. No.	: 3100104144 00010, & 3100104805	ITP No.	: LNH3-HEI-ITP-OSK-QC-001
Order Item Name	: PUMP TEST PLANT (TEST TANK)	Revision No.	: 2
Client Name	: TORISHIMA PUMP MFG. CO., LTD.	Vendor Name	: PT. HANAZONO ENGINEERING INDONESIA

Step No. (1)	Inspection Activity (2)	Reference Procedure (3)	Acceptance Criteria (4)	Verification Document (5)	Involved Party						KHK REQUIREMENT
					PT HEI	Sign	CLIENT	Sign	THIRD PARTY	Sign	
A	Kick of Meeting	KOM Agenda	Purchase order	KOM/MOM	H		H		H		
1.	Project Specification										
	a. Purchase Order with Material Requisition	Client Specification									
	b. Engineering Drawing and Data Sheet	ASME Standard									
	c. Specification	JIS Standard									
	d Application Code and Standart	ASME Sec. VIII. Div. 1									
2.	Vendor Documents and Approval Procedure										
	a. Assembly and Detail Drawing	PO Spec. Code and Standards									
	b. Fabrication Sequence Diagram	Approval Shop Drawing									
	c. Faabrication and Inspection Procedure	Client Specification									
	d. WPS/PQR, Welder and Welding Operator Qualification	ASME Sec. IX									
	e. Inspection Records	JIS Standard									
3.	After PO Requirements										
	a. Expediting Inspection										
	b. Monthly Progress Report										
	c. Shipping and Packing List										
B	Pre-Inspection Meeting		Purchase order	KOM/MOM	H		H		H		
1.	Preparation installation Drawing/Procedure for assembly/Inspection Test and NDE Test	PO Spec. Code and Standards									
	Notification for Inspection										
2.	a. Ensure that Vendor is aware of all Inspection requirements and agree the notification Process	PO Spec. Code and Standards									
	Schedule										
3.	a. As certain Material Procurement Sttus and assembly Program										
	Design Freeze	Approval Status of Vendor									
4.	a. As certain Documents Approval Status Including Shop Drawing	Drawing/Documents									
	Witness Point	Approval ITP									
5.	a. Establish the Required Inspection Point	ASME Sec. VIII. Div. 1 & KHK									
	Job Specific Requirements	Related Job Specification									
6.	a. Highlight Job Specific Requirements	PO Spec. Code and Standards									

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					PT HEI	Sign	CLIENT	Sign	THIRD PARTY	Sign	
C	DOCUMENT										
1.	Approval of Drawing & Strength calculation	Drawing	Design Data	Drawing	P		R		R		
2.	Inspection Test Plan (ITP)	PO and Specification	Project Specification	Procedure	P		R		R		
3.	Approval / WPS & PQR	WPS & PQR Approval	ASME Section IX	Procedure	P		R		R		
4.	Welding & NDE Map	Drawing Approval and Welding Map	ASME Section VIII Div. 1	Procedure	P		R		R		
5.	Welder List & Certificate	Welder List Approval	ASME Section IX	Procedure	P		R		R		
6.	NDE Procedure & Personnel Certificates	Procedure	ASME Section V (ASNT-TC 1A) & JIS Standard	Procedure	P		R		R		
7.	Surface Preparation & Painting Procedure	Procedure	Specification Protective Coating	Procedure	P		R		R		
8.	Hydrotest Procedure/Pneumatic Test	Procedure	Specification General Equipment Requirements	Procedure	P		R		R		
9.	Others Are As Per Doc, List	-		-	P		R		R		
D	MATERIALS										
1.	Receiving Material Inspection Report	Drawing Approval /Documents Receiving Report	ASME Section II Part A, JIS STANDARD	Mill Test Certificate (MTC)	P		R		R		
2.	Review of Mill Certificate and Conformance to Code			Receiving Report							
E	WELDING CONSUMABLE										
1.	Electrode Storage and Drying	Manufacturer Standard	Specification Equipment Welding Carbon Steel	Certificate	P		R		R		
F	FABRICATION										
F-1	Marking and Cutting										
1.	Check Marking and Cutting ,Shell , Head, Pipe	Drawing Approval	Inspection Procedure	Material Traceability Report	P		R		R		
2.	Check Transfer Heat Number etc.										
F.2	Rolling Shell and Spinning Ellipsiodal Head 2:1										
1.	Visual and Dimensional	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		
2.	Check of Wall Thickness Shell and Ellipsiodal Head 2:1										
F.3	Fit-up Inspection										
F.3-1	Head Cover H Pump										
1.	Check Nozzle orientation and Hole opening and Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		
2.	Fit-up Nozzle, Eye Bolt										
3.	Other accessories										
F.3-2	150/65A Adaptor										
1.	Check Cover orientation and Hole opening, Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Other accessories										

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					PT HEI	Sign	CLIENT	Sign	THIRD PARTY	Sign	
F.3-3	Connection Pipe										
1.	Check orientation and Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		
2.	Check Rib Plate										
F.3-4	Connection Pipe										
1.	Check orientation and Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		
2.	Check Rib Plate										
F.3-5	Pressure Port Pipe										
1.	Check orientation and Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Check Port RC 1/2										
F.3-6	65A Elbow										
1.	Check orientation and Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Check Fit-up Elbow to Flange										
F.3-7	150A Elbow										
1.	Check orientation and Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Check Fit-up Elbow to Flange										
F.3-8	300/150A Adaptor										
1.	Check Cover orientation and Hole opening, Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Other accessories										
F.3-9	65A Adaptor										
1.	Check Cover orientation and Hole opening, Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Other accessories										
F3-10	TEST TANK										
1.	Check Nozzle orientation and Hole opening	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Fit-up Nozzle to Bottom Head										
3.	Fit-up Nozzle to Shell										
4.	Fit-up Body Flange										
5.	Fit-up Shell to Head,										
6.	Fit-up 4Legs										
7.	Other accessories										
F3-11	Column Pipe										
1.	Check Boss orientation and Hole opening	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		
2.	Fit-up Circum Pipe Column										
3.	Fit-up Boss to Pipe Column										
3.	Fit-up Flange to Pipe										

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					PT HEI	Sign	CLIENT	Sign	THIRD PARTY	Sign	
F.3-12	Cover Flange										
1.	Check Nozzle orientation and Hole opening and Drilling Holes	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Fit-up Nozzle, Eye Bolt										
3.	Other accessories										
F3-13	Heat Exchanger										
1.	Check Nozzle orientation and Hole opening	Drawing Approval	Inspection Procedure	Dimensional Check Report	P		R		R		KHK
2.	Fit-up Nozzle to Shell and Bottom Head										
3.	Fit-up Body Flange										
4.	Fit-up Shell to Head,										
5.	Fit-up 3Legs										
6.	Coil										
7.	Other accessories										
G	WELDING INSPECTION										
G-1	Head Cover H Pump										
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inpection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-2	150/65A Adaptor										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inpection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-3	Connection Pipe										
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inpection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-4	Connection Pipe										
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inpection and Visual	Procedure	NDE Map	Welding Record	P		R		R		

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					PT HEI	Sign	CLIENT	Sign	THIRD PARTY	Sign	
G-5	Pressure Port Pipe										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-6	65A Elbow										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-7	150A Elbow										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-8	300/150A Adaptor										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-9	65A Adaptor										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-10	TEST TANK										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-11	Column Pipe										
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		

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					PT HEI	Sign	CLIENT	Sign	THIRD PARTY		Sign
G-12	Cover Flange										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
G-13	Heat Exchanger										KHK
1.	Welder Performance Qualification Test	ASME Sect. IX Part C	Specification Equipment Welding Austenitic Stainless Steel	Welder List & Certificate	P		R		R		
2.	Check Weld. Consumables being used for each process of welding	JIS Standard	Welding Procedure/ITP	Mill Test Certificate (MTC)	P		R		R		
3.	Welding Inspection and Visual	Procedure	NDE Map	Welding Record	P		R		R		
H	NDT										
H-1	Head Cover H Pump										
1.	Dye Penetrant Test : 100% (Butt Joint)	NDE Procedure	NDE Map	Penetrant Test Report	P		R		R		
H-2	Connection Pipe										
1.	Dye Penetrant Test : 100% (Fillet Weld)	NDE Procedure	NDE Map	Penetrant Test Report	P		R		R		
H-3	Connection Pipe										
1.	Dye Penetrant Test : 100% (Fillet Weld)	NDE Procedure	NDE Map	Penetrant Test Report	P		R		R		
H-4	Pressure Port Pipe										KHK
1.	Dye Penetrant Test : 100% (Fillet Weld)	NDE Procedure	NDE Map	Penetrant Test Report	P		R		R		
H-5	65A Elbow										KHK
1.	Radiographic Test (RT) 100% Butt Joint	NDE Procedure	NDE Map	Penetrant Test Report	P		R		R		
2.	Dye Penetrant Test : 100% (Butt Joint)				P		R		R		
H-6	150A Elbow										KHK
1.	Radiographic Test (RT) 100% Butt Joint	NDE Procedure	NDE Map	Radiographic Test Report	P		R		R		
2.	Dye Penetrant Test : 100% (Butt Joint)			Penetrant Test Report	P		R		R		
H-7	TEST TANK										KHK
1.	Radiographic Test (RT) 100% Butt Joint	NDE Procedure	NDE Map	Radiographic Test Report	P		R		R		
2.	Dye Penetrant Test (PT) 100% (Butt Joint, Fillet Weld)			Penetrant Test Report	P		R		R		

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H-8	Column Pipe									
1.	Radiographic Test (RT) 100% Butt Joint	NDE Procedure	NDE Map	Radiographic Test Report	P		R		R	
2.	Dye Penetrant Test (PT) 100% (Butt Joint, Fillet Weld)			Penetrant Test Report	P		R		R	
H-9	Cover Flange									KHK
1.	Dye Penetrant Test : 100% (Fillet Weld)	NDE Procedure	NDE Map	Penetrant Test Report	P		R		R	
H-10	Heat Exchanger									KHK
1.	Radiographic Test (RT) 100% Butt Joint	NDE Procedure	NDE Map	Radiographic Test Report	P		R		R	
2.	Dye Penetrant Test (PT) 100% (Butt Joint, Fillet Weld)			Penetrant Test Report	P		R		R	
I	FINAL INSPECTION									
I-1	Head Cover H Pump									
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W	
2.	Visual Welding Check	Welding Procedure		Visual welding Report						
I-2	150/65A Adaptor									KHK
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W	
I-3	Connection Pipe									
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W	
2.	Visual Welding Check	Welding Procedure		Visual welding Report						
I-4	Connection Pipe									
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W	
2.	Visual Welding Check	Welding Procedure		Visual welding Report						
I-5	Pressure Port Pipe									KHK
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W	
2.	Visual Welding Check	Welding Procedure		Visual welding Report						
I-6	65A Elbow									KHK
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W	
2.	Visual Welding Check	Welding Procedure		Visual welding Report						
I-7	150A Elbow									KHK
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W	
2.	Visual Welding Check	Welding Procedure		Visual welding Report						

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					PT HEI	Sign	CLIENT	Sign	THIRD PARTY	Sign	
I-8	300/150 Adaptor										KHK
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W		
I-9	65 Adaptor										KHK
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W		
I-10	TEST TANK										KHK
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W		
2.	Visual Welding Check	Welding Procedure		Visual welding Report							
I-11	Column Pipe										
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W		
2.	Visual Welding Check	Welding Procedure		Visual welding Report							
I-12	Cover Flange										KHK
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W		
2.	Visual Welding Check	Welding Procedure		Visual welding Report							
I-13	Head Exchanger										
1.	Dimensional assembly Check	Drawing Approval	Inspection Procedure	Dimensional Report	P		W		W		KHK
2.	Visual Welding Check	Welding Procedure		Visual welding Report							
I.14	Hydrotest/Pneumatic test										
1.	TEST TANK	ITP	Hydrostaic Test Procedure	Hydrotest and Leaked Test Report	P		W		W		KHK
2.	Heat Exchanger										
3.	Column Pipe										
4.	Coil										
J	PRODUCTION TEST										
1.	Longitudinal welding Seam	ITP Procedure, ASME Section VIII. Div. 1	ITP Procedure, ASME Section VIII. Div. 1	Tensile test report, Face Bend, Side Bend	P		W		R		KHK
2.	Circumferential Welding Seam			Tensile test report, Side Bend							
K	PAINTING (If any)										
1.	Check Surface Preparation	Panting Procedure	Panting Procedure	Painting Inspection Report (PIR)	P		W		R		
2.	Visual Inspection (RAL colour) / D.F.T Check										
L	COMISIONING AND TESTING										
1.	ITP	Procedure Pre-Comisioning	Procedure Pre-Comisioning	Comisioning Report	P		W		W		
2.	Mechanical Completion Checklist										
3.	Pre-Comisioning Testing										
M	DOCUMENTATION MDR										
1.	Manufacturers Data Index	ITP Procedure		MDR Package	P		R		R		
2.	Manufacturers Data Report (MDR)										

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Legend H : Hold
P : Perform
W : Witness
R : Review
S : Surveillance