

129475/2020/HEP-MHX35200



QUALITY ASSURANCE- HYDRO (QWT)

ITEM:	GUIDE VANE SERVOMOTOR
REFERENCE DOCUMENT:	SPECIFICATION: HT 00259 R-03 (PROVIDED BY H.T.E.)
ENQUIRY / INDENT NO.	240294283
QAP NO, REVISION & DATE	QA/HT/INDENT/007 R-00 DATED-07.03.2020

1. Vendor to submit QAP based on reference document(s) as per their internal manufacturing process for approval from BHEL QA division.
2. QAP shall be as per enclosed format. Editable copy of the format shall be provided by MHX to the vendor. Minor modifications in the format for adding rows & pages are allowed, however, basic format shall remain intact.


 07/03/2020
 आशीष शर्मा / ASHISH SHARMA
 वरिष्ठ अभियंता (क्यू डब्ल्यू टी) / Sr. Engineer (QWT)
 गुणता नियंत्रण-जल टरबाइन / Quality Control-WTM
 बी.एच.ई.एल. भोपाल / BHEL, BHOPAL

129475/2020/HEP-MHX35200

SL. NO		COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REF. DOC.	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY		REMARKS
						M	B				M	B	
1.		2.	3.	4.	5.	6.		7.	8.	9.	D*	** 10.	11.
1.		Raw Material Inspection											
2.		In process Inspection											
3.		Final inspection											
				LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: MANUFACTURER/SUB-SUPPLIER B: BHEL/ BHEL APPOINTED INSPECTION AGENCY P: PERFORM W: WITNESS AND V: VERIFICATION IR- INSPECTION REPORT QCR-QC REPORT TC- TEST CERTIFICATE RR – REVIEW OF RECORD COC: CERTIFICATE OF COMPLIANCE									
QA-HYDRO										ACCEPTED BY (VENDOR'S QC REPRESENTATIVE)			


 MANUFACTURER'S NAME AND
ADDRESS:

STANDARD MANUFACTURING QUALITY PLAN

 ENQUIRY / INDENT NO.:
240294283

ITEM : GUIDE VANE SERVOMOTOR

 QAP NO: QA/HT/INDENT/007 R-00
DATED-07.03.2020

 REFERENCE DOCUMENT(S):
SPECIFICATION: HT 00259 R-03

 MANUFACTURING QUALITY ASSURANCE TEST REQUIREMENT			
Project Name: ARUN III HEP (4X225 MW)		DOC. No.:QAI/A/M/EM/SM/01	REV. No. 02
ITEM DESCRIPTION: SERVO MOTOR		Issue Date: 30.05.17	PAGES :02
SR. NO.	COMPONENT, OPERATION & CHARACTERISTICS	APPLICABLE STANDARD	REMARKS
1	2	3	4
1	Incoming Material		
1.1	Embedment		
1.1.1	Chemical composition	DRG. / Rel. STD. / TS	V
1.1.2	Mechanical Properties	DRG. / Rel. STD. / TS	V
1.1.3	NDT as per TS / DRG and dimensions	DRG. / Rel. STD. / TS	V
1.1.4	Heat treatment (as applicable)	DRG. / Rel. STD. / TS	V
1.2	Upper & Lower Cylinder Head		
1.2.1	Chemical Analysis & Mechanical Properties	TS/ DRG/Rel Std.	V
1.2.2	Dimensional Check	TS/ DRG/Rel Std.	V
1.2.3	NDT	TS/ DRG/Rel Std.	V
1.2.4	Material Identification and transfer stamping	TS/Manufacturer standard practice	V
1.3	Cylinder		
1.3.1	Chemical Analysis & Mechanical Properties	DRG. /ASTM A516 Gr.-60/70 or BIS 2002 Gr.II/ Rel. STD./ TS	V
1.3.2	NDT	TS/ DRG/Rel Std.	V
1.3.3	SR	SR Chart	V
1.3.4	Dimensional Check	DRG	V
1.3.5	Hydrostatic Test (1.5 times of design pressure)	TS/ DRG/Rel Std.	V
1.3.6	Surface Finish	TS/DRG	V
1.3.7	Material Traceability Control and transfer stamping	TS/Manufacturer standard practice	V
1.4	Piston Stem/Rod		
1.4.1	Chemical Analysis, Mechanical Strength & Buckling Strength	TS/ DRG/Rel Std.	V
1.4.2	NDT, SR and Dimensional Check	TS/ DRG/Rel Std.	V
1.4.3	Material Traceability Control and transfer stamping	TS/Manufacturer standard practice	V
1.5	Piston		
1.5.1	Chemical Analysis & Mechanical Properties	TS/ DRG/Rel Std.	V
1.5.2	Dimensional Check	DRG	V
1.5.3	Material Traceability Control and transfer stamping	TS/Manufacturer standard	V
1.6	Piston Rings		
1.6.1	Chemical Analysis & Mechanical Properties	TS/ DRG/Rel Std.	V
1.6.2	NDT, SR and Dimensional Check	TS/ DRG/Rel Std.	V
1.7	Mild Steel Studs and Bolts		
1.7.1	Chemical Analysis & Mechanical Strength	TS/ DRG/Rel Std.	V
1.7.2	NDT & Dimensional Check	TS/ DRG/Rel Std.	V
1.8	Clevis Bushing & Pin		
1.8.1	Chemical Analysis & Mechanical Properties	TS/ DRG/Rel Std.	V
1.8.2	Shear, Bending & Bearing Stresses	TS/ DRG/Rel Std.	V
1.9	Gland, Seals, Gaskets, Scraper, Wiper Ring & Guide bushing		
1.9.1	Chemical Analysis and Mechanical Properties	TS/ DRG/Rel Std.	V
1.10.	Bearing for Cylinder Mounting & Bush Bearing		
1.10.1	Chemical Analysis and Mechanical Properties	TS/ DRG/Rel Std.	V
1.10.2	Dimensional Check	TS/ DRG/Rel Std.	V
1.11	Proximity Switches		
1.11.1	Operational and Functional Checks	TS/DRG/Rel. Std.	V
1.12	Position Transducers (LVDT)		
1.12.1	Dielectric Test	TS/ DRG/Rel Std.	V
1.12.2	Functional & Accuracy Check	TS/ DRG/Rel Std.	V
2.0.	Final Inspection		
2.1	Hydraulic Cylinder Assembly		
2.1.1	Surface Finish	TS/ DRG/Rel Std.	W
2.1.2	Dimensional Check	TS/ DRG/Rel Std.	W
2.1.3	Soundness of hydraulic cylinder assy. (Both Side)	TS/ DRG/Rel Std.	W
2.1.4	Stroke/Over Stroke Both Lowering & raising	TS/ DRG/Rel Std.	W
2.1.5	Leakage Across Piston	TS/ DRG/Rel Std.	W
2.1.6	Pressure Test/Hydrostatic Test	TS/ DRG/Rel Std.	W



1400