

<b>VOITH SIEMENS</b> HYDRO POWER GENERATION	<b>INSPECTION AND TEST PLAN</b>	ITP No.: 0179 - 2.43-000050
<b>VSHK – wb</b> Heidenheim/Germany	<b>Mahipar - Project</b>	Page: 1 / 6 Rev: 0

<b>Client :</b>		
<b>Customer:</b>  <input type="checkbox"/> <b>Approved</b>  <input type="checkbox"/> <b>Approved with comments</b>	<b>Nota / Comments:</b>  	<b>Voltage :</b> <b>Speed :</b> <b>power :</b> <b>Type :</b>
<b>Equipment:</b> <i>Synchronous salient pole generator</i>		

## 1 Legend:

Doc. = <i>Documents</i> Q = <i>Quality register to be supplier for customer.</i> R = <i>Internal register to be kept at inspector disposal</i> V = <i>Internal check, without register.</i>	Insp. = <i>Kind of inspection</i> S = <i>Inspection to be realized by sub-supplier.</i> F = <i>Internal/external inspections without client presence, only with supplier witness (VOITH SIEMENS HYDRO).</i> W = <i>Internal/external inspection, with witness of supplier and previous notification for customer</i> <i>(Note: If customer is not presence the work can be continuous).</i> H = <i>Internal/external inspection with obligatory presence of client</i>
<b>Minimum antecedence for inspection notification: 10 days and confirmation with 5 working days</b>	

### IMPORTANT NOTES:

- If some information among the drawings/material specification and the ITP are in conflict, the information or instruction in the drawings/material specification must be prevail.
- This document must be used for the execution of the main quality control applicable for the equipment's of this supply, however in this document is not included all the necessities quality controls. The ITP works with the idea that all the raw material that will be use in the manufacturing process are according to the specification.
- This document must be used to the inspections accompaniment and for the following witness's inspections points by the sub-suppliers.
- Internal manufacture procedures will be disposed to the inspector during the inspection.

Rev.	Page	Description	Date	Executed	Verified
0	-	First emission	10.11.2004	Medina-Ovelar	H.Henning

(\*) NOTE: possibility of using on quality plan by providing in house quality procedure

Author: Medina-Ovelar, Ignacio wb - Quality Engineering – vs/bw- Germany			Provided: 11 / 2004
-----------------------------------------------------------------------------	--	--	---------------------

<b>VOITH SIEMENS</b> HYDRO POWER GENERATION	<b>INSPECTION AND TEST PLAN</b>	ITP No.: 0179 - 2.43-000050
<b>VSHK – wb</b> Heidenheim/Germany	<b>Mahipar - Project</b>	Page: 2 / 6 Rev: 0

2021	<b>Thrust block hub with Thrust blockr (bolts, nuts and locking device)</b>						
2021.01	<b>Thrust block Hub Pos. 1</b>						
item	Raw material tests.		VSPA procedure (*)	<b>Legend</b>			
	Manufacturing step	Manufacturing tests.	Reference Norm	DOC	Insp	sector	Comments
2021.01.01	Chemical composition		Drawing conformance	Q	S	Nürmonmt	
2021.01.02	Physical properties		Drawing conformance	Q	S	Nürmonmt	
2021.01.03	Ultrasonic testing		ASME V, artigo 23 (SA 388) P-CQM 641	Q	S	Nürmonmt	
2021.01.04	Visual examination		ASME V, artigo 9 P-CQM 101/613	Q	S	Nürmonmt	
2021.01.05	Dimensional control		Drawing conformance P-CQM 108	Q	S	Nürmonmt	
2021.01.06	Check heat treatment grafic			Q	S	Nürmonmt	
2021.01.07	After pre-machining and threads cut	Visual examination	ASME V, artigo 9 P-CQM 101/613	R	F	Nürmonmt	
2021.01.08	(Hub insulated fit machined)	Dimensional control	Drawing conformance P-CQM 108	R	F	Nürmonmt	
2021.01.09		Liquid penetrant	ASME V, artigo 23 (SA 388) P-CQM 641	Q	F	Nürmonmt	
2021.01.10		Ultrasonic	ASME V, artigo 23 (SA 388) P-CQM 641	Q	F	Nürmonmt	
2021.01.11	Resin identification (Hub insulated)					Nürmonmt	
2021.01.12	After machine	Visual examination		V	F	Nürmonmt	
2021.01.13	(hub insulation shrink-fit machined)	Dimensional control		Q	F	Nürmonmt	
2021.01.14		Insulation resistance check (high voltage test)		Q	F	Nürmonmt	
2021.01.15	after shrinking Thrust block /Hub	Visual check		V	F	Nürmonmt	
2021.01.16	(Thrust block /Hub shrunk-on)	Insulation resistance check (high voltage test)		W	F	Nürmonmt	Voht Siemens
2021.01.17		Dimensional control		Q	F	Nürmonmt	
2021.01.18	After finish machining	Visual examination	ASME V, artigo 9 P-CQM 101/613	W	F	Nürmonmt	Voht Siemens
2021.01.19		- Dimensional check		W	F	Nürmonmt	Voht Siemens
2021.01.20		- Radial run out		W	F	Nürmonmt	Voht Siemens
2021.01.21		- Axial run out		W	F	Nürmonmt	Voht Siemens
2021.01.22		- Angle check between corresponding parts/planes		W	F	Nürmonmt	Voht Siemens
2021.01.23		- Check surfaces for evennes		W	F	Nürmonmt	Voht Siemens
2021.01.24		- Check for surface quality		W	F	Nürmonmt	Voht Siemens
2021.01.25		Liquid penetrant/magnetic particle	ASME V, artigo 23 (SA 388) P-CQM 641	W	F	Nürmonmt	Voht Siemens
2021.01.26	Surface protection	Check	Drawing conformance	V	F	Nürmonmt	
2021.01.27	Ready for dispatch - Final check	Final inspection (*) Verification of certificates	Part list, drawing, and packing list conformance	R	F	Nürmonmt	
2021.01.28	Packing	Verificação Check transport packing	P-EMB 02-008	R	F	Nürmonmt	

<b>VOITH SIEMENS</b> HYDRO POWER GENERATION	<b>INSPECTION AND TEST PLAN</b>	ITP No.: 0179 - 2.43-000050
<b>VSHK – wb</b> Heidenheim/Germany	<b>Mahipar - Project</b>	Page: 3 / 6 Rev: 0

2021	<b>Thrust block hub withThrust blockr (bolts, nuts and locking device)</b>						
2021.01	<b>Thrust block Pos.2</b>						
item	Raw material tests.		VSPA procedure (*)	<b>Legend</b>			
	Manufacturing step	Manufacturing tests.	Reference Norm	DOC	Insp	sector	Comments
2021.02.01	Chemical composition		Drawing conformance	Q	S	Nürmonmt	
2021.02.02	Physical properties		Drawing conformance	Q	S	Nürmonmt	
2021.02.03	Ultrasonic testing		ASME V, artigo 23 (SA 388) P-CQM 641	Q	S	Nürmonmt	
2021.02.04	Visual examination		ASME V, artigo 9 P-CQM 101/613	Q	S	Nürmonmt	
2021.02.05	Dimensional control		Drawing conformance P-CQM 108	Q	S	Nürmonmt	
2021.02.06	Check heat treatment grafic			Q	S	Nürmonmt	
2021.02.07	Forged (before machined)	material identification		R	S	Nürmonmt	
2021.02.09		heat identification		R	F	Nürmonmt	
2021.02.10		Test piece tensile/impact test		R	F	Nürmonmt	
2021.02.11	After first turned	Visual examination	ASME V, artigo 9 P-CQM 101/613	V	F	Nürmonmt	
2021.02.12		Dimensional control	Drawing conformance P-CQM 108	Q	F	Nürmonmt	
2021.02.13		Liquid penetrant/magnetic particle	ASME V, artigo 23 (SA 388) P-CQM 641	Q	F	Nürmonmt	
2021.02.14		Ultrasonic	ASME V, artigo 23 (SA 388) P-CQM 641	Q	F	Nürmonmt	
2021.02.15	After milled, drilled and threads cut	Visual check	Drawing conformance P-CQM 108/467	V	F	Nürmonmt	
2021.02.16		Dimensional check of oil-ways		Q	F	Nürmonmt	
2021.02.17		threads cut check		Q	F	Nürmonmt	
2021.02.18		Check the position the radial holes		Q	F	Nürmonmt	
2021.02.19	<b>Continued on Thrust Block Hub Pos.1</b>			V	F	Nürmonmt	

2021	<b>Thrust block hub withThrust blockr (bolts, nuts and locking device)</b>						
2021.04	<b>Screw nuts Screw</b>						
item	Raw material tests.		VSPA procedure (*)	<b>Legend</b>			
	Manufacturing step	Manufacturing tests.	Reference Norm	DOC	Insp	sector	Comments
2021.04.01	Physical properties		Drawing conformance	Q	F	Nürmonmt	
2021.04.02	Surface covering		Drawing conformance	Q	F	Nürmonmt	
2021.04.03	Incoming	Visual examination	ASME V, artigo 9 P-CQM 101/613	V	F	Nürmonmt	
2021.04.04		Inspection of threads	Drawing conformance P-CQM 108	R	F	Nürmonmt	
2021.04.05		Dimensional control	Drawing conformance P-CQM 108	R	F	Nürmonmt	
2021.04.06	Before Packing	Verification of certificates	Part list, drawing, and packing list conformance	R	F	Nürmonmt	
2021.04.07	Packing	Check transport packing		R	F	Nürmonmt	

<b>VOITH SIEMENS</b> HYDRO POWER GENERATION	<b>INSPECTION AND TEST PLAN</b>	ITP No.: 0179 - 2.43-000050
<b>VSHK – wb</b> Heidenheim/Germany	<b>Mahipar - Project</b>	Page: 4 / 6 Rev: 0

2021	<b>Thrust block hub with Thrust blockr (bolts, nuts and locking device)</b>						
2021.05	<b>Insulation</b>						
item	Raw material tests.		VSPA procedure (*)	<b>Legend</b>			
	<b>Manufacturing step</b>	<b>Manufacturing tests.</b>	<b>Reference Norm</b>	DOC	Insp	sector	Comments
2021.05.01	Resin identification	Material certid		Q	S	Nürmonmt	

<b>2021</b>	<b>Thrust block hub with Thrust block (bolts, nuts and locking device)</b>						
<b>2021.05</b>	<b>Thrust Ring Pos. 4 and Lock Ring Pos5</b>						
item	Raw material tests.		VSPA procedure (*)	<b>Legend</b>			
	<b>Manufacturing step</b>	<b>Manufacturing tests.</b>	<b>Reference Norm</b>	DOC	Insp	sector	Comments
2021.02.01	Chemical composition		Drawing conformance	Q	S	Nürmonmt	
2021.02.02	Physical properties		Drawing conformance	Q	S	Nürmonmt	
2021.02.03	Ultrasonic testing		ASME V, artigo 23 (SA 388) P-CQM 641	Q	S	Nürmonmt	
2021.02.15	After final machined (turned, drilled and threads cut)	Visual check	Drawing conformance P-CQM 108/467	V	F	Nürmonmt	
2021.02.16		Dimensional check	ASME V, artigo 9 P-CQM 101/613	Q	F	Nürmonmt	
2021.02.17		threads cut check	Drawing conformance P-CQM 108	Q	F	Nürmonmt	
2021.01.26	Surface protection	Check	Drawing conformance	V	F	Nürmonmt	
2021.01.27	Ready for dispatch - Final check	Final inspection (*) Verification of certificates	Part list, drawing, and packing list conformance	R	F	Nürmonmt	
2021.01.28	Packing	Verificação Check transport packing	P-EMB 02-008	R	F	Nürmonmt	

<b>VOITH SIEMENS</b> HYDRO POWER GENERATION	<b>INSPECTION AND TEST PLAN</b>	ITP No.: 0179 - 2.43-000050
<b>VSHK – wb</b> Heidenheim/Germany	<b>Mahipar - Project</b>	Page: 5 / 6 Rev: 0

<b>1270 - 1/1</b> Tragkopf <i>Thrust collar</i>	T.2,3 gedreht / <i>P 2,3 machine lathed</i>  T1 Tragkopf vorgedreht/P1 thrust block pre-machine  Ölkanäle gebohrt und Gewinde geschnitten,einschl. 8 Bohrungen Ø 12 <i>oil-ways drilled and threads cut, incl. 8 holes Ø12</i>	Abt. 05  Abt. 05  Abt. 05	Q-PA 061. 64  Q-PA 061. 64  Q-PA 061. 65 Q-PA 061. 17	D01  D01  D01 + D20 + D21			
<b>1270 - 1/1</b> Tragkopf <i>Thrust collar</i>	T.3 gebohrt, T.1 gebohrt und Gewinde geschnitten <i>P3 drilled, P1 drilled and threads cut</i>  Tragkopf fertiggedreht/ <i>thrust block final machined</i>  T.9 eingesetzt, mit T.8 gesichert / <i>parts 9 fitted and keyed to part 8</i>  fertig bearbeitet/ <i>machined</i>	Abt. 05  Abt.05  Abt. 10  Abt. 05	Q-PA 061. 65 Q-PA 061. 17  Q-PA 061. 64  Q-PA  Q-PA 061.64	D01 + D20 + D21  D01 + D02 + D05  D26  MP01 (c) + MP02 (c) MP03 + MP05+VP01			

