

Inspection and Test Plan for Gas Circuit Breaker

No.	Inspection and Test Plan	Reference Document	Acceptance Criteria	Verifying Document	Activity By			Remark
					Manuf.	TPI	Client	
1	Pre-Inspection Meeting	Spec.	Spec.	MOM	H	H	H	-
Before Manufacturing								
2	DWG, Design, Calculation Document	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	DWG, Calculation book	H	R	A	-
3	WPS&PQR	ASME IX	ASME IX	Welding Book	H	R	A	-
4	Welder Qualification Certificates	ASME IX	ASME IX	Certificates	H	R	-	-
5	NDT procedures	ASME V	ASME V	Procedures	H	R	A	-
6	NDE Personnel Certificates	ASME IX	ASME IX	Certificates	H	R	-	-
7	Pressure Test Procedure	ASME VIII	ASME VIII	Procedure	H	R	A	
8	Leakage Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
9	Stored Energy System Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
10	Main Circuit Power Frequency Voltage Dry Tension Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
11	Voltage on Control and Auxiliary Circuit Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	

12	Main Circuit Resistance Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
13	Mechanical Operation Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
14	Timing Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
15	Compressor Operation Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
16	Painting Procedure	SSPC	SSPC	Procedure	H	R	A	-
Materials								
17	Raw Material Inspection	ASTM	ASTM	Original Material Certificates	H	H	-	-
18	Review of Certificates	ASTM	ASTM	Certificates	H	H	-	-
19	Material Identification	ASTM	ASTM	Report	H	H	-	
During Fabrication								
20	Assembly Inspection	DWG	DWG	Report	H	SW	-	
21	Welding Inspection for Required Welding Components	WPS	WPS	Report	H	SW	-	

22	Checking of Outline Dimensions, Interface Dimensions, Bus Bar Dimensions and Clearances and other Specified Dimensions	DWG	DWG	Report	H	SW	-	
23	Tightness/Torque of Terminals and Degree of Protection	DWG/Spec	DWG/Spec	Report	H	SW	-	
24	Checking that all Instruments, Control Switches, Interlocks and etc. are Correctly Rated and are Correctly Located, with Specified Labeling.	DWG/Spec	DWG/Spec	Report	H	SW	-	
25	Pressure Test	Procedure	Procedure	Report	H	H	-	
26	Leakage Test	Procedure	Procedure	Report	H	H	-	
27	Stored Energy System Test	Procedure	Procedure	Report	H	H	-	
28	Main Circuit Power Frequency Voltage Dry Tension Test	Procedure	Procedure	Report	H	H	-	
29	Voltage on Control and Auxiliary Circuit Test	Procedure	Procedure	Report	H	H	-	

30	Main Circuit Resistance Test	Procedure	Procedure	Report	H	H	-	
31	Mechanical Operation Test	Procedure	Procedure	Report	H	H	-	
32	Timing Test Procedure	Procedure	Procedure	Report	H	H	-	
33	Compressor Operation Test	Procedure	Procedure	Report	H	H	-	
Final Inspection								
34	Final Visual & Dimensional Check	DWG	DWG	Report	H	H	-	-
35	Surface Preparation and Painting	Procedure	Procedure	Report	H	W	-	-
36	Check of Final Book	Spec.	Spec.	DWG/ P.O	H	R	-	
Documentation								
37	Inspection Reports	Spec./DWG	Spec./DWG	Report	H	R	-	-
38	NCR	Spec./DWG	Spec./DWG	Report	H	R	-	-
39	Review Final Data Report	Spec./DWG	Spec./DWG	Report	H	R	-	-
Pre-shipment Inspection								
40	Preservation and Packing	Spec.	Spec.	Report	H	H	-	-
41	Marking	Spec.	Spec.	Report	H	H	-	-
42	Loading Inspection	Spec.	Spec.	Report	H	H	-	-

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43	Shipping Document Control	Procedure	Spec.	Packing List	H	H	-	-
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Abbreviations:

H: Hold Point = Hold on the production till TPI Inspector performs inspection and supervise the required test

W: Witness Point = Manufacture shall notify client and TPI Inspector but there is no hold on the production; Client can waive this inspection based on his discretion and informs TPI Inspector accordingly.

R: Document Review = Review means Review document, which includes of material test certificates, WPS, PQR, NDT Procedures and etc.

A: Approval

SW: Spot Witness = for items with spot witness manufacture shall notify TPI inspector as fulfilling the monitoring; For example one random visit for whole UT tests or one or two visits for whole surface preparation works for painting.

MOM: Minute of Meeting

P.O: Purchase Order

for more information review following articles:

<http://www.inspection-for-industry.com/third-party-inspection-for-gas-circuit-breaker.html>

<http://www.inspection-for-industry.com/inspection-and-test-plan-for-gas-circuit-breaker.html>