

## WORKING PROCEDURES

### HYDROSTATIC TEST ON BODY, BONNET, CAP AND NOZZLE

Procedure	IL-10
Date	2024.02.22
Edition	No. 0
Revision	No. 10

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Issued by: **TECHNICAL MANAGER**

Issued by: **QUALITY ASSURANCE MANAGER**

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## 1 SCOPE

Hydrostatic test of safety relief valve bodies, bonnets, caps and nozzles subject to pressure, according to ASME B16.34 Code or Pressure Equipment Directive.

## 2 EQUIPMENT AND AUXILIARY DOCUMENTATION

- Hydrostatic test bench.
- SPT-068 Table for Hydrostatic Test Pressure of Valve Bodies (attached).
- SPT-069 Table for Hydrostatic Test Pressure of Nozzle (attached).
- Hydrostatic Test Report (attached).

The enclosures are only for example, use the last revision SPT Procedures for testing.

## 3 WATER QUALITY


For all components the hydrostatic test fluid shall be demineralized water with anti-rust oil and must not contain chloride (maximum chloride content of 10 mg/l).

All components shall be drained immediately after the test and shall be thoroughly dried immediately after draining.

## 4 TEST METHOD

The operator proceeds as follows:

- a) check the component to be tested for correct identification and marking;
- b) verify that the component to be tested is clean and dry, otherwise wash and dry it;
- c) install the part on the hydrostatic test bench;
- d) close the free opening with the equipped flanges;
- e) pressurize the component for at least 1 minute until the pressure is stable at the values shown on document SPT-068 (attached) for bodies, bonnets and on document SPT-069 for nozzles (see attached);
- f) keep the component under pressure for the duration stated on the applicable SPT;
- g) evaluate the acceptability of the component as per the criteria stated at point 4;
- h) dry the component and for carbon steel components without surface protection (for example phosphatized, galvanized, nickel plated etc.) apply the protective oil.

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## 5 ACCEPTANCE CRITERIA

It will be acceptable only those components that:

- have not shown deformations during the test
- have not shown leakage of any type, even minor.

## 6 MARKING

After having checked the component, the operator stamps "HT-A" if it is complying or stamps "HT-R" if it is not complying.

Every lot of tested material is identified with a progressive number, this identifier is put, where it is possible, near the HT number.

Technical identifies the operator who he did the test through the stamp (where it is possible) on the individual component tested, by a personal stamp, assigned through a specific letter.

## 7 NOT COMPLYING MATERIAL

The Not Complying material shall be segregated in the "MATERIALE NON CONFORME (not complying material)" area and managed according to PG 04 Procedure "CONTROLLO DEI PRODOTTI NON CONFORMI (management of not complying products)".

## 8 INSTRUMENTATION


The hydrostatic test pressure gauges must have a precision class maximum of 1% and are managed according to IT 03 Procedure "VERIFICA DELLA TARATURA DEGLI STRUMENTI DI MISURA IN UTILIZZO (inspection of the measuring tool calibration in use)".

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## 9 ATTACHMENTS

### 9.1 SPT-068 Table for Hydrostatic Test Pressure of Valve Bodies

 <b>technical</b> VIGNATE - MILANO		HYDRAULIC PRESSURE TABLE FOR BODIES, BONNETS AND CAPS SPT - 068-ENG					
		THREADED		FLANGED 150# PN16		FLANGED 300# PN40	
OUTLET DIAMETER		PRESSURE	MINIMUM TEST TIME	PRESSURE	MINIMUM TEST TIME	PRESSURE	MINIMUM TEST TIME
INCHES - DN		bar	minutes	bar	minutes	bar	minutes
<b>METALLIC MATERIAL</b>							
1/4" - 6		30	1	30	1	80	1
3/8" - 10		30	1	30	1	80	1
1/2" - 15		30	1	30	1	80	1
1" - 25		30	1	30	1	80	1
1.1/2" - 40		30	1	30	1	80	1
2" - 50		30	1	30	1	80	1
2.1/2" - 65		-	-	30	2	80	2
3" - 80		-	-	30	2	80	2
4" - 100		-	-	30	2	80	2
6" - 150		-	-	30	2	80	2
8" - 200		-	-	30	2	-	-
10" - 250		-	-	30	3	-	-
12" - 300		-	-	30	3	-	-
<b>PLASTIC MATERIALS</b>							
3/8" - 1/2"		16	1	16	1	16	1
1"		12	1	12	1	12	1
1 1/2" - 2"		8	1	8	1	8	1
DATE: 21/02/2023 REV. 04 Addition of PN16 and PN40 bodies		CONTR. : Santi			APPR. : Delponte		


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
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#### 9.2 SPT-069 Table for hydrostatic test pressure of nozzle.

CONNECTIONS		MATERIALS						
		XM19 S31803 S32750 S32760	AISI 431 AISI 304 AISI 316 AISI 316L AISI 630 F 44	CUPRAL. MONEL INC.825 HASTEL. TITANIUM	BRONZE	PVC PVC-C PVDF PTFE/GLASS POLYPROPYLENE	3/8" 1/2"	1"
THREADED NPT / GAS	Up to 150 bar of setting	230 bar	230 bar	230 bar	80 bar	16 bar	12 bar	8 bar
	Over 150 bar of setting	1.5 x Set pressure			-	-	-	-
FLANGED 150 # / PN 16		30 bar	30 bar	30 bar	30 bar	16 bar	12 bar	8 bar
FLANGED 300 # / PN 40		80 bar	80 bar	80 bar	80 bar	16 bar	12 bar	8 bar
FLANGED 600 # / PN 100		150 bar	150 bar	150 bar	80 bar	16 bar	12 bar	8 bar
FLANGED 900 # / PN 160		230 bar	230 bar	230 bar	-	-	-	-
FLANGED 1500 # / PN 250		380 bar	380 bar	-	-	-	-	-
FLANGED PN 320		480 bar	480 bar	-	-	-	-	-
FLANGED 2500 # / PN 400		630 bar	630 bar	-	-	-	-	-
FLANGED API 10000		1035 bar						
FLANGED API 15000		1553 bar						
NOTE : Test Time		1 minute up tp 2" 2 minutes from 2.1/2" to 8" 3 minutes for 10" and bigger						
DATE: 22/02/2024		CONTR. :			APPR. :			
REV. 05								

 <b>technical</b> ITALIAN VALVES MANUFACTURER SINCE 1973 VIGNATE – MI - ITALY	<b>WORKING PROCEDURES</b>		
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### 9.3 HYDROSTATIC TEST REPORT

 VIGNATE - MI - ITALY		<b>RAPPORTO PROVA IDROSTATICA HYDROSTATIC TEST REPORT</b>		N° <b>HT</b>
<b>SECONDO - AS PER ANSI B16.34 / MSS-SP 61 / UNI EN ISO 4126-1</b>				
<b>PARTICOLARE PART</b>		<b>CODICE CODE</b>		<b>MATERIALE MATERIAL</b>
let connection				
<b>COLATA HEAT No.</b>	<b>QUANTITA' QUANTITY</b>	<b>SIGLA TEST ITEM</b>	<b>TAG NO.</b>	
		HT A 1 ÷		
<b>PROVA IDROSTATICA ESEGUITA AL BANCO HYDROSTATIC TEST ON BENCH</b>				
<b>FLUIDO DI PROVA TEST FLUID</b>		97 % ACQUA WATER 3 % PLURICOOL BIO		
<b>MANOMETRO DI PROVA TEST PRESSURE GAUGE</b>		C26-004-01		
<b>PRESSIONE DI PROVA TEST PRESSURE</b>		BAR		
<b>DURATA DELLA PROVA TEST DURATION</b>		SECONDS		
<b>SPECIFICA N° N° SPECIFICATION</b>		ANSI B16.34 / UNI EN ISO 4126-1		
<b>PUNZONE OPERATORE OPERATOR PUNCH</b>				
<b>PROCEDURA TECHNICAL TECHNICAL PROCEDURE</b>		IL 10		
<b>PROCEDURA CLIENTE CUSTOMER PROCEDURE</b>		//		
<b>ESITO DELLA PROVA TEST RESULT</b>		<input checked="" type="checkbox"/> <b>conforme</b> accepted		<input type="checkbox"/> <b>non conforme</b> not accepted
<b>IL CONTROLLO VISIVO E DIMENSIONALE SECONDO MSS SP-55-2011 È RISULTATO:</b> <i>Visual and Dimensional check according to MSS SP-55-2011:</i>				
<input type="checkbox"/> <b>CONFORME (accepted)</b>		<input type="checkbox"/> <b>NON CONFORME (not accepted)</b>		
<b>NOTE -NOTES :</b>				
<b>Technical Job:</b> <b>Customer:</b> <b>Customer order number:</b>				
<b>ISPETTORE INSPECTOR</b>		<b>DATA DATE</b>		
<b>DATA DATE</b>				

Modulo: QUA 013 06/2022