



HP Valves Oldenzaal BV

P.O. Box 151  
7570 AD Oldenzaal  
The Netherlands

Telephone +31 (0)541 519555  
Telefax +31 (0)541 522045  
Internet www.hpvalves.com  
E-mail info@hpvalves.com

## COVERPAGE TO INSPECTION / TEST CERTIFICATE

Customer : CMI (HRSG + Energy Services)  
Project : Yajva SBV  
Customer P/O no : 203/2010/900588  
Shop order no : 2010 0006  
Item no : 169 / 000  
Quantity : 1 pce  
  
KKS No : 15HAD50AA162

Medium & high-pressure valves in  
accordance with ASME, API, BS & DIN

Bank ABN-AMRO SWIFT-address ABNANL2A  
EUR-account 59.55.41.437 IBAN-code NL88ABNA0595541437  
USD-account 57.60.74.780  
Trade register Enschede 060.567.50  
VAT no NL 008671242B01

Member of Indutrade AB



# FUNCTIONAL TEST REPORT

Medium & high-pressure valves in  
accordance with ASME, API, BS & DIN

Customer : CMI (HRSG + Energy Services)			
Project : Yajva SBV			
Cust. P/O no : 203/2010/900588			
HP order reference : 2010 0006			
Item no : 169 / 000			
Qty	Nominal size	Description	
1 pce	1 1/2" / DN 40	Gate Valve, 900lbs, Make: KVT Mat.ASTM SA182 SA105N. Incl. Limitorque actuator Type MX05  KKS No.: 15HAD50AA162  Serial no. Actuator : <b>B0000229</b>	
<b>TEST DESCRIPTION</b>		<b>REMARKS</b>	<b>TESTED</b>
<b>FUNCTIONAL TEST</b>		<b>Closing or opening time</b>	<b>RESULTS</b>
In case of actuating devices, closing and opening will be checked		at 50 Hz	✓ 14 sec
✓ = Test results were acceptable considering the applicable procedures and requirements.			
Signed HP VALVES BV :		Signed THIRD PARTY:	
 OLDENZAAL 26-07-2010			

# TEST / INSPECTION CERTIFICATE

( EN 10204-3.1 )

Client : HP VALVES

KEY VALVE TECHNOLOGIES LTD.

P.O. No. : P10 0043 / 2010 0006

Report No. : TIC100614-01-02

Date of Issue : 2010. 06. 14

Item Description : P.S.G. VALVE(MOV, SW ENDS)		CLASS :900		MATERIAL : (S)A105N	
Serial No.	SN1000005	Size	1.5"	Q'ty	1 Set

## HYDRAULIC / PNEUMATIC TEST

Hydraulic Test	Shell :	233 Barg	Pneumatic Test	Shell :	N/A Barg
	Seat :	171 Barg		Seat :	N/A Barg
Dimension Inspection		GOOD	Visual Inspection		GOOD
			Function Test		GOOD

## MATERIAL SPECIFICATION

Product Name	Material	ASTM	Heat No.	Code Marking	Remarks
Body	Forged Steel	(S)A105N	391981	CM1	
Bonnet	Forged Steel	(S)A105N	S72665		
Seat Ring	13Cr Stainless Steel	A276-410			Stellite #12
Disc	13Cr Stainless Steel	A276-410			Stellite #6
Stem	13Cr Stainless Steel	A276-410			
		-BLANK-			


## CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb
min.	-	0.10	0.600	-	-	-	-	-	-	-	-
Heat No. max.	0.35	0.35	1.050	0.035	0.040	0.40	0.40	0.30	0.12	0.08	0.020
391981	0.210	0.280	0.880	0.020	0.006	0.090	0.050	0.150	0.020	0.003	0.001
S72665	0.221	0.272	0.967	0.015	0.011	0.107	0.036	0.198	0.107	0.001	0.001
					-BLANK-						

## MECHANICAL PROPERTIES

Item	Tensile Strength min(Mpa)	Yield Strength min(Mpa)	Elongation min(%)	Reduction of Area min(%)	Hardness max(HB)	Remarks
S.T.D	485.0	250.0	22.0	30.0	187	
391981	503.3	289.6	29.0	46.8	161	
S72665	512.0	302.2	32.0	53.0	164	
			-BLANK-			

Notes 1. These Standards for inspection conform to ASME B16.34 / API-598  
2. Hydrostatic test : Shell-holding time(15 sec), Seat-Holding time(15sec, leakage

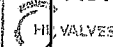
 Medium & high pressure valves acc. ANSI, API, BS & DIN	
Your ref. : 203/2010/000588	Pos: 10/1000
Order ref. : 2010 0006	
Qty. : 1 pc	

We here by certify that the result mentioned above are true correct in every detail.


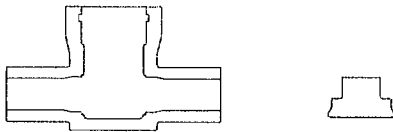
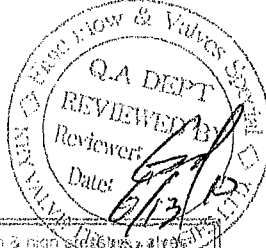
Prepared by

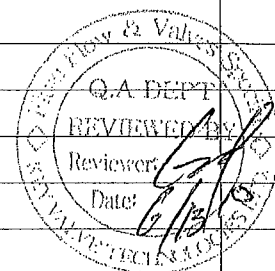
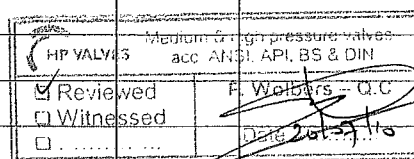
Reviewed by



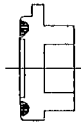

Q.A Manager


 Medium & high pressure valves acc. ANSI, API, BS & DIN	
<input checked="" type="checkbox"/> Reviewed <input type="checkbox"/> Witnessed <input type="checkbox"/> .....	F. Wolberg - C.C. Date: 2010/06/14

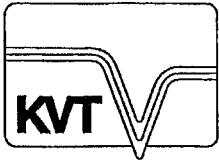
*T.Y. WOOD*

 <b>(주) 지.티.에스</b> Global Technology Service Co., Ltd.	<b>자분탐상검사보고서</b> <i>Report of Magnetic Particle Examination</i>		보고서번호 Report No.	G10M-KVT-0006-01
	650-8 I-dong Sangnok-gu Ansan-si Gyeonggi-do, Korea 경기도 안산시 상록구 이동 650-8 TEL:031)433-3861-2, FAX:031)406-3963		쪽 번호 Page No.	1 of 2
			검사일자 Date of	2010. 05. 27
발 주 처 Customer	HP VALVES		제 작 자 Manufacturer	KVT
제품명 / 번호 Item Name/No.	BODY & BONNET (All Surfaces)		공사명 / 번호 Project Name/No.	Yajvinskaya CAPP
재 질 / 두께 Material/Thickness	See Next Page - <input type="checkbox"/> mm <input type="checkbox"/> in.		Serial No.	See Next Page
전 처 리 Surface Preparation	SOLVENT CLEANING		표 면 상 태 Surface Condition	<input type="checkbox"/> As Welded <input type="checkbox"/> As Mchined <input checked="" type="checkbox"/> As Forged <input type="checkbox"/> As Casted
검 사 방 법 Examination Method	<input checked="" type="checkbox"/> 연속법(Continuous) <input type="checkbox"/> 잔류법(Residual)		시 험 온 도 Surface Temperature	22 <input checked="" type="checkbox"/> °C <input type="checkbox"/> °F
자분종류 / 적용방법 Magnetic Particle / Application	제조사(Maker) : NAWOO 형 식(Model) : 14-AM 제조번호(Batch No.): 05MPB06		자 화 방 법 Magnetization Technique	<input checked="" type="checkbox"/> Yoke <input type="checkbox"/> Prod <input type="checkbox"/> Coil <input type="checkbox"/> Head Shot
	종류 (Type)		자 화 장 비 Magnetization Equipment	극 간 거 리 Pole Spacing:
	<input type="checkbox"/> 염색(Color) <input checked="" type="checkbox"/> 형광(Fluorescent) <input checked="" type="checkbox"/> 습식(Wet) <input type="checkbox"/> 건식(Dry)			3~6 <input type="checkbox"/> mm <input checked="" type="checkbox"/> in.
	적용방법(Application)			자화전류 (Magnetizing Current)
<input checked="" type="checkbox"/> 분사(Spray) <input type="checkbox"/> 흘림(Flowing) <input type="checkbox"/> 침적(Immerse)		<input checked="" type="checkbox"/> 교류(AC) <input type="checkbox"/> 직류(DC) Ampere		
탈 자 Demagnetization	<input type="checkbox"/> 유(Yes) <input checked="" type="checkbox"/> 무(No)		자 화 방 향 Magnetization Direction	<input checked="" type="checkbox"/> 선형(Longitudinal) <input type="checkbox"/> 원형(Circular)
자 외 선 등 Black Light	형 식 Model	UV-100	육안관찰등 Visible Light	형 식 Model
	일련번호 Serial No	NW0147	<input type="checkbox"/> 주 변 등 Ambient Light	일련번호 Serial No.
	강 도 Intensity	1250 $\mu W/cm^2$	<input type="checkbox"/> 보 조 등 Glow Lamp	강 도 Intensity
총 검사수량 Examination Qty	30 SETS		검 사 시 기 Examination Time	<input type="checkbox"/> 열처리 전(Before PWHT) <input checked="" type="checkbox"/> 열처리 후(After PWHT)
적 용 규 격 Code/Standard/Spec.	ASME B16.34 APPENDIX II/ GTS-QP-MA-02 Rev.4			
도 면 Sketch <div style="text-align: center;">             BODY BONNET         </div>				
검 사 자 Examined & Interpreted by LEVEL II M. S. YUN			<input type="checkbox"/> Witnessed by <input type="checkbox"/> Reviewed by <div style="text-align: center;">             F. Walters - Q.C.            Date: 2010.5.10         </div>	
책 임 자 Approved by LEVEL III Y. C. CHIN			<div style="border: 1px solid black; padding: 5px;">             HP VALVES Medium &amp; high pressure acc ANSI, API, BS &amp; JIS  <input checked="" type="checkbox"/> Reviewed <input type="checkbox"/> Witnessed              Date: 2010.5.10           </div>	

[illegible]

 <b>(주) 지.티.에스</b> Global Technology Service Co., Ltd.	<b>침투탐상검사보고서</b> <i>Report of Liquid Penetrant Examination</i>		보고서번호 Report No.	G10P-KVT-0006-01	
			쪽 번호 Page No.	1 of 2	
			검사일자 Date of	2010. 05. 27	
발 주 처 Customer	HP VALVE		제 작 자 Manufacturer	KVT	
제품명 / 번호 Item Name/No.	DISC / SEAT RING		공사명 / 번호 Project Name/No.	Yajvinskaya CAPP	
재 질 / 두께 Material/Thickness	- / - <input type="checkbox"/> mm <input type="checkbox"/> in.		Tag No.	See Next Page	
전 처 리 Surface Preparation	N/A		표 면 상 태 Surface Condition	<input type="checkbox"/> As Welded <input type="checkbox"/> As Formed <input checked="" type="checkbox"/> Hard Facing <input type="checkbox"/> As Casted	
침 투 제 Penetrant Type	<input checked="" type="checkbox"/> 염색(Color) <input type="checkbox"/> 형광(Fluorescent)		시 험 온 도 Surface Temperature	15 <input checked="" type="checkbox"/> °C <input type="checkbox"/> °F	
침투제(Penetrant) 제조사(Maker): NAWOO 형식(Model): NPP-2 제조번호(Batch No.): 05NPP06		세척제(Remover) 제조사(Maker): NAWOO 형식(Model): NPR-1-3 제조번호(Batch No.): 05NPR06		현상제(Developer) 제조사(Maker): NAWOO 형식(Model): NPD-4 제조번호(Batch No.): 05NPD06	
종류 (Type)      적용방법(Application) <input type="checkbox"/> 수세성 (W/W) <input checked="" type="checkbox"/> 분사(Spray) <input type="checkbox"/> 후유화성 (P/E) <input type="checkbox"/> 솔질(Brush) <input checked="" type="checkbox"/> 용제제거성(S/R) <input type="checkbox"/> 침적(Immerse)		종류 (Type)      적용방법(Application) <input checked="" type="checkbox"/> 용제(Solvent) <input checked="" type="checkbox"/> 닦음(Wiping) <input type="checkbox"/> 물 (Water) <input type="checkbox"/> 분사(Water Spray) <input type="checkbox"/> 침적(Water Immerse)		종류 (Type)      적용방법(Application) <input type="checkbox"/> 건식 (Dry) <input checked="" type="checkbox"/> 분사(Spray) <input type="checkbox"/> 습식 (Aqueous) <input type="checkbox"/> 솔질(Brush) <input checked="" type="checkbox"/> 속건식 (Nonaqueous) <input type="checkbox"/> 침적(Immerse)	
침투시간(Dwell Time): 10 분(Min.)		현상시간(Bleed-out Time): 20 분(Min.)			
자 외 선 등 Black Light	형식 Model	N/A	육안관찰등 Visible Light	형식 Model	N/A
	일련번호 Serial No	N/A	<input type="checkbox"/> 주변 등 Ambient Light	일련번호 Serial No.	N/A
	강도 Intensity	N/A $\mu W/cm^2$	<input checked="" type="checkbox"/> 보조 등 Glow Lamp	강도 Intensity	1200 Lux
적용 규격 Code/Standard/Spec.	ASME B16.34 APPENDIX III / GTS-QP-PA-02 Rev.4		검 사 시 기 Examination Time	<input type="checkbox"/> 열처리 전(Before PWHT) <input checked="" type="checkbox"/> 열처리 후(After PWHT)	
총 검사 수량 Examination Q'ty	30 SETS		검사결과 Results	<input checked="" type="checkbox"/> 합격 (Accept) <input type="checkbox"/> 불합격 (Reject)	
도면 Sketch		<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>GATE SEAT RING</span> <span>GATE DISC</span> </div>			
검 사 자 Examined & Interpreted by LEVEL II    M. S. YUN			<input type="checkbox"/> Witnessed by		
책 임 자 Approved by LEVEL III    Y. C. CHIN			<div style="text-align: center;">           Reviewed by: F. Weibers - G.C.          Date: 2010. 05. 27       </div>		

 <b>(주) 지.티.에스</b> Global Technology Service Co., Ltd.	<h2 style="text-align: center;">침투탐상검사보고서</h2> <h3 style="text-align: center;">Report of Liquid Penetrant Examination</h3> <p style="text-align: center;">650-8 1-dong Sangnok-gu Ansan-si Gyeonggi-do, Korea          경기도 안산시 상록구 이동 650-8 TEL: 031) 433-3861~2, FAX: 031) 433-3865</p>				보고서번호 Report No.	G10P-KVT-0006-01
확인 번호 Identification No.		합격 Accept	불합격 Reject	판 정 Interpretation	지시의 크기 Size ( <input type="checkbox"/> mm <input type="checkbox"/> in.)	비 고 Remarks
1.5"-CL1500 P.S.G.V DISC 1	V		No Recordable Indication		SN1000004	
(S)A105 SEATRING 1	V		No Recordable Indication		"	
1.5" -CL900 P.S.G.V DISC 1	V		No Recordable Indication		SN1000005	
(S)A105 SEATRING 1	V		No Recordable Indication		"	
1" -CL1500 P.S.G.V DISC 1	V		No Recordable Indication		SN1000006	
(S)A105 SEATRING 1	V		No Recordable Indication		"	
2" -CL2500 P.S.G.V DISC 1~2	V		No Recordable Indication		SN1000007, 14	
(S)A182-F91 SEATRING 1~2	V		No Recordable Indication		"	
2" -CL900 P.S.G.V DISC 1~5	V		No Recordable Indication		SN1000008~12	
(S)A105 SEATRING 1~5	V		No Recordable Indication		"	
2" -CL900 P.S.G.V DISC 1	V		No Recordable Indication		SN1000013	
(S)A182-F22 SEATRING 1	V		No Recordable Indication		"	
2" -CL900 P.S.G.V DISC 1	V		No Recordable Indication		SN1000015	
(S)A182-F91 SEATRING 1	V		No Recordable Indication		"	
1" -CL900 P.S.G.V DISC 1~4	V		No Recordable Indication		SN1000016~19	
(S)A182-F22 SEATRING 1~4	V		No Recordable Indication		"	
1" -CL900 P.S.G.V DISC 1~4	V		No Recordable Indication		SN1000020~23	
(S)A182-F91 SEATRING 1~4	V		No Recordable Indication		"	
1" -CL2500 P.S.G.V DISC 1~10	V		No Recordable Indication		SN1000024~33	
(S)A182-F91 SEATRING 1~10	V		No Recordable Indication		"	
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# INSPECTION REPORT

DOC.NO. : DIR100614-01

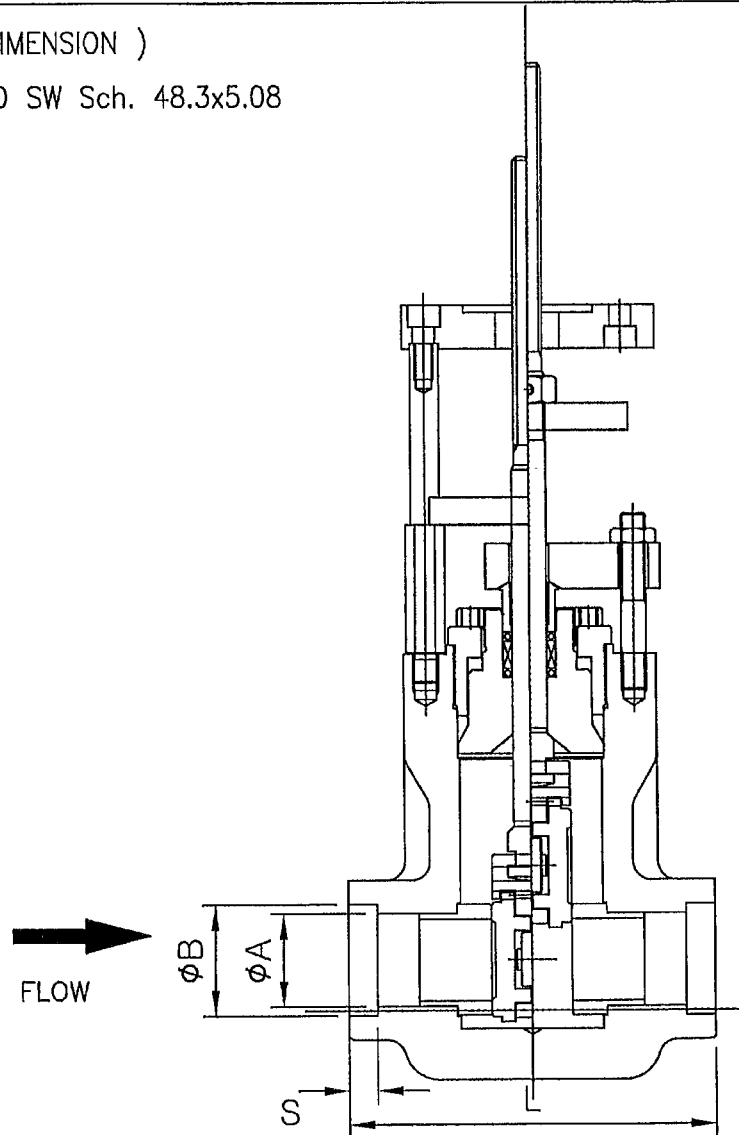
REV. NO. : 0

PAGE 2 OF 11

☐ 외 형도 ( OUTLINE DIMENSION )

P.S.G. V/V 1.5"-CL900 SW Sch. 48.3x5.08

(S)A105N 1EA MOV



☐ 치수검사 (DIMENSION INSPECTION)

UNIT:mm

구 분 (DIVISION)	L ±1.5	ØA ± 0.3	ØB ± 0.3	S										
STANDARD	165	37.3	48.8	12.7										
SN1000005	165.0	37.3	48.7	12.7										

VALVES Medium & high pressure valves acc. ANSI, API, BS & DIN	
<input checked="" type="checkbox"/> Reviewed <input type="checkbox"/> Witnessed <input type="checkbox"/>	F. Wolbe Date: 2015.10.10

REMARK

1. DIMENSION CHECK

☐ SAMPLING CHECK

☒ 100% CHECK

PRE'D BY (QA.ENG'R)

VER'D BY (QA.MANAGER)

KEY VALVE TECHNOLOGIES LTD.