



HP Valves Oldenzaal BV

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## COVERPAGE TO INSPECTION / TEST CERTIFICATE

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

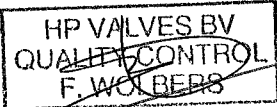
Customer : CMI (HRSG + Energy Services)  
Project : Yajva SBV  
Customer P/O no : 203/2010/900588  
Shop order no : 2010 0006  
Item no : 168 / 000  
Quantity : 1 pce  
  
KKS No : 15HAD10AA164

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

Customer : CMI (HRSG + Energy Services)			
Project : Yajva SBV			
Cust. P/O no : 203/2010/900588			
HP order reference : 2010 0006			
Item no : 168 / 000			
Qty	Nominal size	Description	
1 pce	1 1/2" / DN 40	Gate Valve, 1500lbs, Make: KVT Mat.ASTM SA182 SA105N. Incl. Limitorque actuator Type MX10  KKS No.: 15HAD10AA164  Serial no. Actuator : <b>B0000228</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	✓ 13 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. : TIC100614-01-01

Date of Issue : 2010. 06. 14

Item Description : P.S.G. VALVE(MOV, SW ENDS)			CLASS :1500		MATERIAL : (S)A105N		
Serial No.	SN1000004	Size	1.5"	Q'ty	1	Set	

## HYDRAULIC / PNEUMATIC TEST

Hydraulic Test	Shell :	388 Barg	Pneumatic Test	Shell :	N/A Barg
	Seat :	285 Barg		Seat :	N/A Barg

Dimension Inspection	GOOD	Visual Inspection	GOOD	Function Test	GOOD
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## 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	
Heat No.	min.	-	0.10	0.600	-	-	-	-	-	-	-	
	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 rate) 2010 0006 Pos: 168/006

HP VALVES	Medium & high pressure valves acc. ANSI, API, BS & DIN
Your ref.: 203/20101900588	
Date: 2010.06.14	
Qty. : 1 pce	


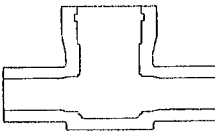


We here by certify that the result mentioned above are true correct in every detail.

Prepared by




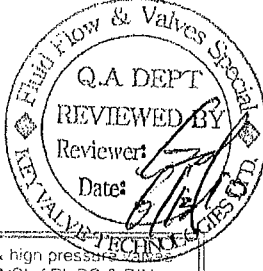
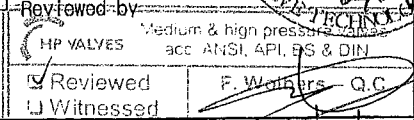
Reviewed by

Q.A Manager

HP VALVES	Medium & high pressure valves acc. ANSI, API, BS & DIN
<input checked="" type="checkbox"/> Reviewed	F. Wolberts - Q.C
<input type="checkbox"/> Witnessed	
<input type="checkbox"/> Date: 2010.06.14	

 <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 1-dong Sangnok-gu Ansan-si Gyeonggi-do, Korea 경기도 안산시 상록구 이동 650-8 TEL: (031) 433-3861~2, FAX: (031) 433-3863		쪽 번호 Page No.	1 of 2
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 형식(Model) : 14-AM 제조번호(Batch No.): 05MPB06	자 화 방 법 Magnetization Technique	<input checked="" type="checkbox"/> Yoke <input type="checkbox"/> Prod Head Shot <input type="checkbox"/> Coil	
	종류 (Type)		극 간 거 리 Pole Spacing: 3~6 <input type="checkbox"/> mm <input checked="" type="checkbox"/> in.	
	<input type="checkbox"/> 염색(Color) <input checked="" type="checkbox"/> 형광(Fluorescent) <input checked="" type="checkbox"/> 습식(Wet) <input type="checkbox"/> 건식(Dry)		자화전류 (Magnetizing Current) <input checked="" type="checkbox"/> 교류(AC) <input type="checkbox"/> 직류(DC) Ampere	
	적용방법(Application)		제조사 Maker : NAWOO 형식 Model : MY-2 일련번호 Serial No. : NW1089	
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	형식 Model : UV-100 일련번호 Serial No : NW0147 강도 Intensity : 1250 $\mu$ W/cm <sup>2</sup>	육안관찰등 Visible Light <input type="checkbox"/> 주변등 Ambient Light <input type="checkbox"/> 보조등 Glow Lamp	형식 Model : N/A 일련번호 Serial No. : N/A 강도 Intensity : N/A Lux	
	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;">   </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>BODY</span> <span>BONNET</span> </div>				
검 사 자 Examined & Interpreted by : LEVEL II M. S. YUN		<div style="text-align: center;"> <input type="checkbox"/> Witnessed by  <input type="checkbox"/> Reviewed by       </div> <div style="text-align: center;">           Date: 2010.05.11       </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 standards  <input checked="" type="checkbox"/> Reviewed <input type="checkbox"/> Witnessed          F. Workers - Q.C.          Date: 2010.05.11       </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
	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		쪽 번호 Page No.	1 of 2
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 CCPP
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		
	일련번호 Serial No	N/A		
	강도 Intensity	N/A $\mu W/cm^2$		
	육안관찰등 Visible Light	<input type="checkbox"/> 주변등 Ambient Light		
	<input checked="" type="checkbox"/> 보조등 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 검사수량 Examination Q'ty	30 SETS		검사결과 Results	<input checked="" type="checkbox"/> 합격 (Accept) <input type="checkbox"/> 불합격 (Reject)
도 면 Sketch				
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">               GATE SEAT RING           </div> <div style="text-align: center;">               GATE DISC           </div> </div>				
검 사 자 Examined & Interpreted by		LEVEL II    M. S. YUN		
책 임 자 Approved by		LEVEL III    Y. C. CHIN		
		<div style="display: flex; align-items: center;"> <input type="checkbox"/> Witnessed by           <div style="margin-left: 20px;">  </div> </div>		
		<div style="display: flex; align-items: center;"> <input type="checkbox"/> Reviewed by           <div style="margin-left: 20px;">  </div> </div>		



경기도 안산시 상록구 이동 650-8 TEL:031)433-3861~2, FAX:031)433-3863

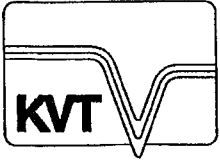
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G10P-KVT-0006-01

2 of 2

2010.05.27

Fluid Flow & Valves Spec  
Q.A DEPT  
REVIEWED BY  
Reviewer: *[Signature]*  
Date: *6/12/12*  
KEY VALVE TECHNOLOGIES



# INSPECTION REPORT

DOC.NO. : DIR100614-01

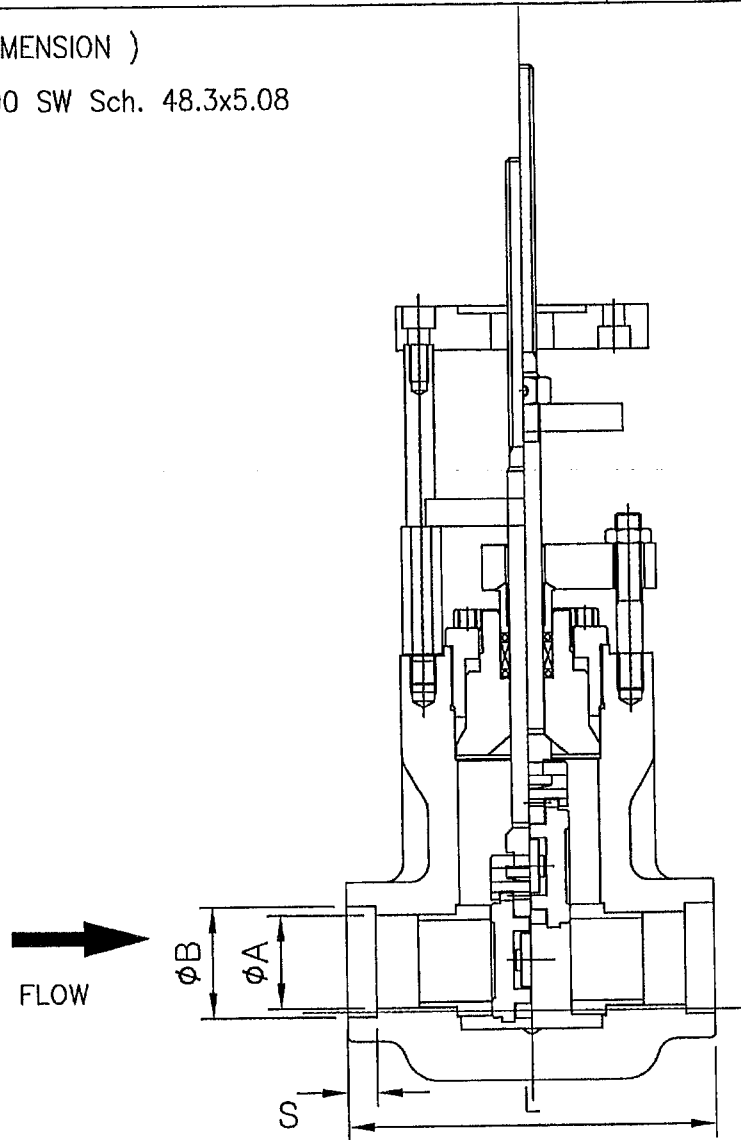
REV. NO. : 0

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☐ 외형도 ( OUTLINE DIMENSION )

P.S.G. V/V 1.5"-CL1500 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									
SN1000004	165.1	37.5	48.8	12.7									

<input checked="" type="checkbox"/> HP VALVES		Medium & high pressure valves acc. ANSI, API, BS & DIN
<input checked="" type="checkbox"/> Reviewed	P. Wolter - Q.C.	
<input checked="" type="checkbox"/> Witnessed	Date: 2014.07.15	

## REMARK

1. DIMENSION CHECK

☐ SAMPLING CHECK

☒ 100% CHECK

PRE'D BY (QA.ENG'R)

VER'D BY (QA.MANAGER)

KEY VALVE TECHNOLOGIES LTD.