



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 : 171 / 000
Quantity : 1 pce

KKS No : 15HAH10AA123

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

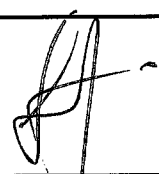


Bank ABN-AMRO SWIFT-address ABNANL2A
EUR-account 59.55.41.437 IBAN-code NL88ABNA0595541437
USD-account 57.60.74.780
Trade register Enschede 060.567.50
VAT no NL 008671242B01

Member of Indutrade AB



FUNCTIONAL TEST REPORT

Customer : CMI (HRSG + Energy Services)			
Project : Yajva SBV			
Cust. P/O no : 203/2010/900588			
HP order reference : 2010 0006			
Item no : 171 / 000			
Qty	Nominal size	Description	
1 pce	2" / DN 50	Gate Valve, 2500lbs, Make: KVT Mat.ASTM SA182 F91. Incl. Limitorque actuator Type MX10 KKS No.: 15HAH10AA123 Serial no. Actuator : B0000231	
TEST DESCRIPTION		REMARKS	TESTED
FUNCTIONAL TEST			RESULTS
In case of actuating devices, closing and opening will be checked		Closing or opening time at 50 Hz	✓ 12 sec
✓ = Test results were acceptable considering the applicable procedures and requirements.			
Signed HP VALVES BV : <div style="border: 1px solid black; padding: 2px; display: inline-block;"> HP VALVES BV QUALITY CONTROL F. WOLBERS </div> OLDENZAAL 26-07-2010		Signed THIRD PARTY: <div style="border: 1px solid black; padding: 2px; display: inline-block;"> Gmi QUALITY 32 </div> 	

TEST / INSPECTION CERTIFICATE

(EN 10204-3.1)

Client : HP VALVES

KEY VALVE TECHNOLOGIES LTD.

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

Report No. : TIC100614-01-04

Date of Issue : 2010. 06. 14

Item Description : P.S.G. VALVE(MOV, SW ENDS)			CLASS :2500		MATERIAL : (S)A182-F91	
Serial No.	SN1000007	Size	2"	Q'ty	1	Set

HYDRAULIC / PNEUMATIC TEST

Hydraulic	Shell :	647 Barg	Pneumatic	Shell :	N/A Barg
Test	Seat :	474 Barg	Test	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 Alloy Steel	(S)A182-F91	A03669	JY5	
Bonnet	Forged Alloy Steel	(S)A182-F91	A12209		
Seat Ring	Forged Alloy Steel	F91+HF			Stellite #12
Disc	Forged Alloy Steel	F91+HF			Stellite #6
Stem	Stainless Steel	A276-431			
		-BLANK-			

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Al	V	Nb	N
Heat No.	min.	0.08	0.20	0.30	-	-	8.00	0.85	-	-	0.180	0.060	0.03
	max.	0.12	0.50	0.60	0.020	0.010	0.40	9.50	1.05	0.04	0.250	0.100	0.07
A03669	0.090	0.306	0.388	0.010	0.001	0.221	8.43	0.96	0.05	0.009	0.192	0.067	0.035
A12209	0.097	0.296	0.389	0.015	0.002	0.162	8.694	0.908	0.117	0.011	0.201	0.099	0.040
						-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	585.0	415.0	20.0	40.0	248.0	
A03669	620.5	489.5	31.0	53.0	223.0	
A12209	751.5	634.3	24.0	66.0	229.0	
			-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

HP VALVES Medium & high pressure valves acc. ANSI, API, BS & DIN
Your ref.: 203/2010/900588
P.O. No.: 2010 0006 Pos: 1/1/000
Qty.: 1pc




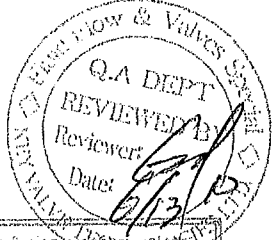
We here by certify that the result mentioned above are true correct in every detail.

Prepared by

Reviewed by

Q.A Manager

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

 (주) 지.티.에스 Global Technology Service Co., Ltd.	<h2 style="text-align: center;">자분탐상검사보고서</h2> <h3 style="text-align: center;">Report of Magnetic Particle Examination</h3> <p style="text-align: center;">650-8 I-dong Sangnok-gu Ansan-si Gyeonggi-do, Korea 경기도 안산시 상록구 이동 650-8 TEL: (031) 433-3861-2, FAX: (031) 406-9363</p>		보고서번호 Report No.	G10M-KVT-0006-01
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 CCPP	
재 질 / 두께 Material/Thickness	See Next Page	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 Head Shot <input type="checkbox"/> Coil	
	종류 (Type)	자 화 장 비 Magnetization Equipment	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)	자 화 방 방 Magnetization Direction	<input checked="" type="checkbox"/> 선형(Longitudinal) <input type="checkbox"/> 원형(Circular)	
	적용방법(Application) <input checked="" type="checkbox"/> 분사(Spray) <input type="checkbox"/> 흘림(Flowing) <input type="checkbox"/> 침적(Immerse)	제조사 Maker	NAWOO	
형식 Model	UV-100	형식 Model	MY-2	
일련번호 Serial No	NW0147	일련번호 Serial No.	NW1089	
강 도 Intensity	1250 $\mu W/cm^2$	강 도 Intensity	N/A Lux	
총 검 사 수 량 Examination Q'ty	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			
<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p>도 면 Sketch</p> <div style="text-align: center;">  BODY </div> <div style="text-align: center;">  BONNET </div> </div> <div style="width: 55%;"> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>검 사 자 Examined & Interpreted by</p> <p>LEVEL II <u>M. S. YUN</u></p> <p>책 임 자 Approved by</p> <p>LEVEL III <u>Y. C. CHIN</u></p> </div> <div style="width: 50%;"> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Witnessed by <input type="checkbox"/> Reviewed by </div> <div>  Date: <u>2010. 5. 27</u> F. Weibers - Q.C. Date: <u>2010. 5. 27</u> </div> </div> </div> </div> </div> </div>				



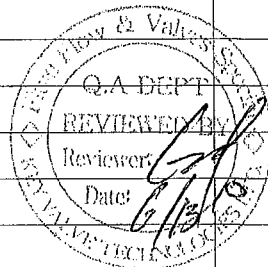
경기도 안산시 상록구 이동 650-8 TEL:031)433-3861~2, FAX:031)433-3865


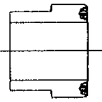
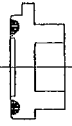
G10M-KVT-0006-01

2 of 2

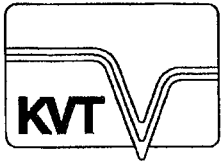
2010. 05. 27

Medium & high pressure valves acc ANSI, API, BS & DIN	
HP VALVES	F. Wollers - Q.C.
<input checked="" type="checkbox"/> Reviewed <input type="checkbox"/> Witnessed <input type="checkbox"/>	Date 2.6.91/10



 (주) 지.티.에스 Global Technology Service Co., Ltd.	침투탐상검사보고서 <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) 433-0005		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 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 형 식(Model): NPP-2 제조번호(Batch No.): 05NPP06		세척제(Remover) 제조사(Maker): NAWOO 형 식(Model): NPR-1-3 제조번호(Batch No.): 05NPR06		현상제(Developer) 제조사(Maker): NAWOO 형 식(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"/> 건 식 (Dry) <input checked="" type="checkbox"/> 분사(Spray) <input type="checkbox"/> 습 식 (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	형 식 Model	N/A		
	일련번호 Serial No	N/A		
	강 도 Intensity	N/A $\mu W/cm^2$		
	육안관찰등 Visible Light	<input type="checkbox"/> 주 변 등 Ambient Light <input checked="" type="checkbox"/> 보 조 등 Glow Lamp		
적 용 규 격 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 검 사 수 량 Examination Q'ty	30 SETS		검 사 결 과 Results	<input checked="" type="checkbox"/> 합 격 (Accept) <input type="checkbox"/> 불 합 격 (Reject)
도 면 Sketch				
  GATE SEAT RING GATE DISC				
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			<input type="checkbox"/> Reviewed by	
			F. Walters - Q.C. Date: 2010. 5. 27	

[illegible]



INSPECTION REPORT

DOC.NO. : DIR100614-01

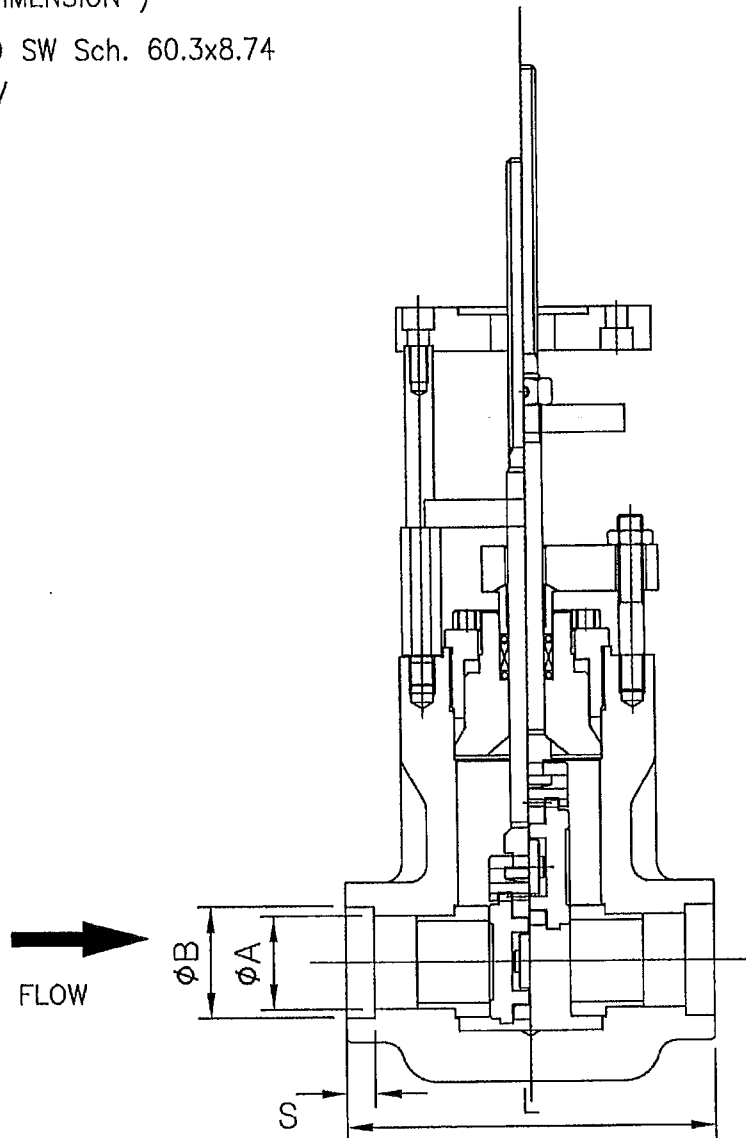
REV. NO. : 0

PAGE 4 OF 11

☐ 외 형 도 (OUTLINE DIMENSION)

P.S.G. V/V 2"-CL2500 SW Sch. 60.3x8.74

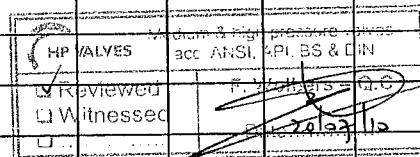
(S)A182-F91 2EA MOV



☐ 치 수 검 사 (DIMENSION INSPECTION)

UNIT:mm

구 분 (DIVISION)	L ±1.5	øA ± 0.3	øB ± 0.3	S								
STANDARD	218	51.3	61.2	16								
SN1000007	218.5	51.2	61.2	16.0								
SN1000014	218.2	51.2	61.3	16.0								



REMARK

1. DIMENSION CHECK

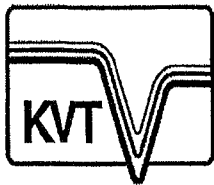
☐ SAMPLING CHECK

☒ 100% CHECK

PRE'D BY (QA.ENG'R)

VER'D BY (QA.MANAGER)

KEY VALVE TECHNOLOGIES LTD.

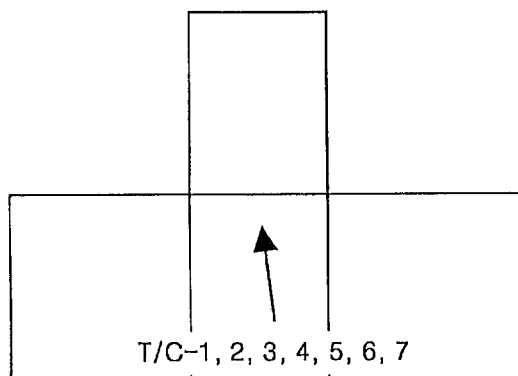


PREHEAT TREATMENT CERTIFICATE

PAGE: 1 OF 3

PROJECT NAME	Yajvinskaya CAPP	CERT NO.	PW - 0006 - 01
CLIENT	HP VALVES	MATERIAL	(S)A182-F91
HEATING RATE	SPEC: N/A °C/HR ACTUAL: N/A °C/HR	COOLING RATE	SPEC: N/A °C/HR ACTUAL: N/A °C/HR
HOLDING TEMP	SPEC: Min. 205°C ACTUAL: 230~235 °C	HOLDING TIME	SPEC: N/A HR ACTUAL: 1 H 10 M
HEAT SOURCE	<input type="checkbox"/> HEATING TORCH <input checked="" type="checkbox"/> ELECTRIC ELEMENT		
DATE	2010. 05. 04	START TIME :	AM 10 : 30

THERMOCOUPLE (T/C) LOCATION



SN1000007, 14, 15, 20~23 (7ea)
2"-CL2500,CL900,1"- CL900
Heat No.: A03669

THERMOCOUPLES NO

APPLICATION COLORS

T/C-1	●	T/C-7	●
T/C-2	●		
T/C-3	●		
T/C-4	●		
T/C-5	●		
T/C-6	●		

REMARK:

HP VALVES P.S.G.V(SEAT)
(2" X CL900, 2500 X 25mm: 3 Sets, 1"XCL900 X16mm:4 Sets)

HP VALVES	Medium & high pressure valves acc. ANSI, API, BS & DIN
<input checked="" type="checkbox"/> Reviewed	F. Wolbers - Q.C.
<input type="checkbox"/> Witnessed	Dr. [Signature]

Pre'd by

Rev'd by

Approved by



P.W.H.T CERTIFICATE

CERT NO: PW - 0006 - 01









DATE : 2010. 05.04

PAGE : 2 OF 3

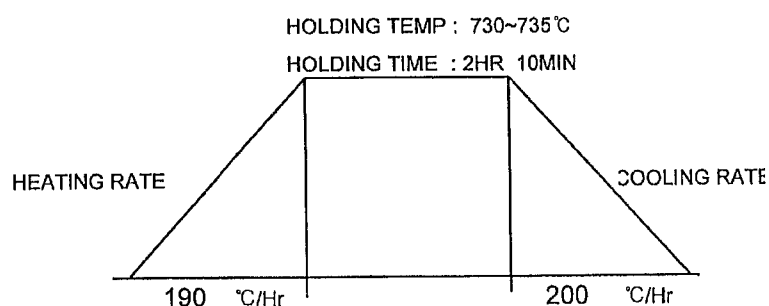
PROJECT	Yajvinskaya CAPP	CLIENT	HP VALVES	MATERIAL	(S)A182-F91
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NO	DESCRIPTION	THERMOCOUPLES NO.	SIZE x THK
1	Parallel Slide Gate Valve	T/C - 1	2" x25mm
2	Parallel Slide Gate Valve	T/C - 2	2" x25mm
3	Parallel Slide Gate Valve	T/C - 3	2" x25mm
4	Parallel Slide Gate Valve	T/C - 4	1" x16mm
5	Parallel Slide Gate Valve	T/C - 5	1" x16mm
6	Parallel Slide Gate Valve	T/C - 6	1" x16mm
7	Parallel Slide Gate Valve	T/C - 7	1" x16mm

HEAT TREATMENT CONDITION

CONDITION	SPEC	ACTUAL	SOAKING SKETCH AND LOCATION OF THERMOCOUPLES	THERMOCOUPLES NO					
LOADING TEMP (°C)	-	235	* See preheat treatment certificate Thermocouples location	APPLICATION COLORS					
HEATING RATE (°C/Hr)	Max.222	190		T/C-1			T/C-7		
HOLDING TEMP (°C)	700~760	730~735		T/C-2					
HOLDING TIME (HR)	Min. 1H	2H 10M		T/C-3					
COOLING RATE (°C/Hr)	Max.280	200		T/C-4					
UNLOADING TEMP (°C)	-	230		T/C-5					
HEAT SOURCE	ELECTRIC			T/C-6					
TEMP. MEASURING EQUIPMENT NO.	T95CK048								

SKETCH WITH DIAGRAM



REMARKS:

Medium & high pressure valves acc. ANSI, API, BS & DIN	
<input checked="" type="checkbox"/> Reviewed <input type="checkbox"/> Witnessed <input type="checkbox"/>	F. Wolters - Q.C. Date: 2010. 5. 11

Pre'd by

[Signature]

Rev'd by

Approved by

T. YWON

PW-0006-0

3 of 3

CHART NO. ET201

