



HP Valves Oldenzaal BV

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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 : 181 / 000
Quantity : 4 pcs

KKS No :
15LBB50AA124 15LBB50AA126
15LBB50AA125 15LBB50AA127

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



TEST / INSPECTION CERTIFICATE

(EN 10204-3.1)

Client : HP VALVES

KEY VALVE TECHNOLOGIES LTD.

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

Report No. : TIC100614-01-10

Date of Issue : 2010. 06. 14

Item Description : P.S.G. VALVE(MOV, SW ENDS)			CLASS :900		MATERIAL : (S)A182-F91		
Serial No.	SN1000020~23	Size	1"	Q'ty	4	Sets	

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
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MATERIAL SPECIFICATION

Product Name	Material	ASTM	Heat No.	Code Marking	Remarks
Body	Forged Alloy Steel	(S)A182-F91	A03669	JY2	
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.: 20312010/goc588
Our ref.: 2010 0006 Pos: 181/000
Qty.: 4 pcs

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


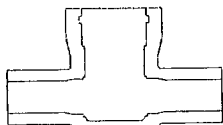

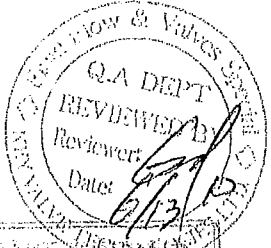
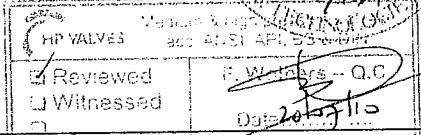
Prepared by

Reviewed by


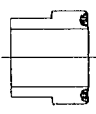
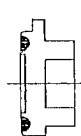
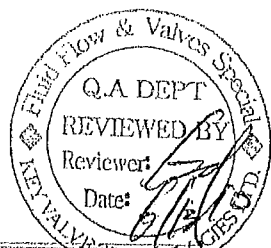
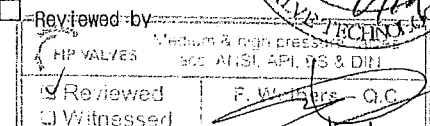
Q.A Manager

HP VALVES Medium & high pressure valves acc. ANSI, API, BS & DIN
☒ Reviewed
☐ Witnessed
Date: 2010.7.10

F. Volbers - Q.A
Date: 2010.7.10

 (주) 지.티.에스 Global Technology Service Co., Ltd.	자분탐상검사보고서 <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 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)		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 장 비 Magnetization Equipment	자화전류 (Magnetizing Current) <input checked="" type="checkbox"/> 교류(AC) <input type="checkbox"/> 직류(DC) Ampere	
	적용방법(Application)		제조사 Maker	NAWOO	
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)	
	형 식 Model	UV-100	육안관찰등 Visible Light	형 식 Model	N/A
	일련번호 Serial No	NW0147	<input type="checkbox"/> 주 변 등 Ambient Light	일련번호 Serial No.	N/A
자 외 선 등 Black Light	강 도 Intensity	1250 $\mu W/cm^2$	<input type="checkbox"/> 보 조 등 Glow Lamp	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				
도 면 Sketch <div style="text-align: center;">  BODY </div> <div style="text-align: center;">  BONNET </div>					
검 사 자 Examined & Interpreted by LEVEL II <u>M. S. YUN</u>			<input type="checkbox"/> Witnessed by <input type="checkbox"/> Reviewed by <div style="text-align: center;">  </div>		
책 임 자 Approved by LEVEL III <u>Y. C. CHIN</u>			<div style="text-align: center;">  </div>		

[illegible]

 (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 I-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
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 종류(Type) : 적응방법(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)		세척제(Remover) 제조사(Maker) : NAWOO 형식(Model) : NPR-1-3 제조번호(Batch No.) : 05NPR06 종류(Type) : 적응방법(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)		현상제(Developer) 제조사(Maker) : NAWOO 형식(Model) : NPD-4 제조번호(Batch No.) : 05NPD06 종류(Type) : 적응방법(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
	일련번호 Serial No	N/A		<input type="checkbox"/> 주변등 Ambient Light
	강도 Intensity	N/A $\mu W/cm^2$		<input checked="" type="checkbox"/> 보조등 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				
<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			<input type="checkbox"/> Witnessed by	
LEVEL II <u>M. S. YUN</u>			<div style="text-align: center;">  </div>	
책 임 자 Approved by			<input type="checkbox"/> Reviewed by	
LEVEL III <u>Y. C. CHIN</u>			<div style="text-align: center;">  </div>	



Report of Liquid Penetrant Exam

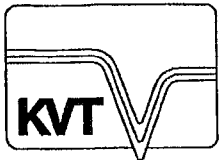
경기도 안산시 상록구 이동 650-8 TEL:031)433-3861~2, FAX:031)433-3863

G10P-KVT-0006-01

2 of 2

2010. 05. 27

2005. 10. OR. OO. A4



INSPECTION REPORT

DOC.NO. : DIR100614-01

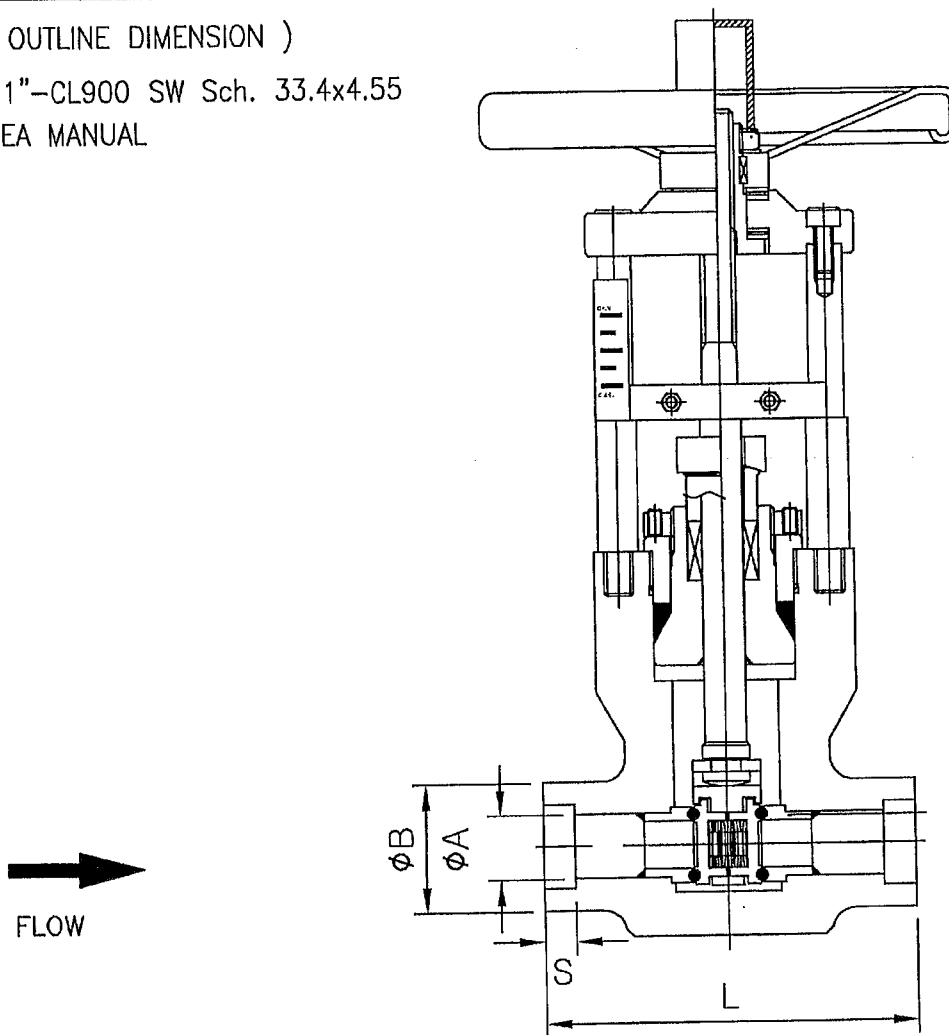
REV. NO. : 0

PAGE 9 OF 11

□ 외 형도 (OUTLINE DIMENSION)

P.S.G. V/V 1"-CL900 SW Sch. 33.4x4.55

(S)A105N 4EA MANUAL



□ 치수검사 (DIMENSION INSPECTION)

UNIT:mm

구 분 (DIVISION)	L ±1.5	ØA ± 0.3	ØB ± 0.3	S							
STANDARD	130	26.3	33.8	12.7							
SN1000020	130.3	26.3	33.8	12.7							
SN1000021	130.1	26.3	33.8	12.7							
SN1000022	130.1	26.5	33.8	12.7							
SN1000023	130.4	26.2	33.8	12.7							

☒ HP VALVES
 Medium to high pressure valves
 acc. API, ASME, BS, DIN
☒ Reviewed
☒ Witnessed

REMARK

1. DIMENSION CHECK

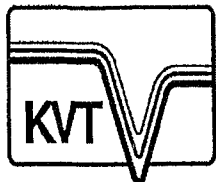
■ SAMPLING CHECK

□ 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 CCPP	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				

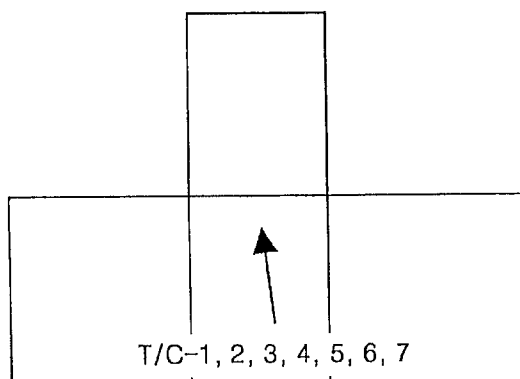
DATE

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:

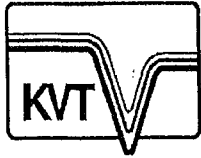
HP VALVES P.S.G.V(SEAT)
(2" X CL900, 2500 X 25mm: 3 Sets, 1"XCL900 X16mm:4 Sets)

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

Pre'd by

Rev'd by

Approved by



P.W.H.T CERTIFICATE








CERT NO: PW - 0006 - 01

DATE : 2010. 05.04

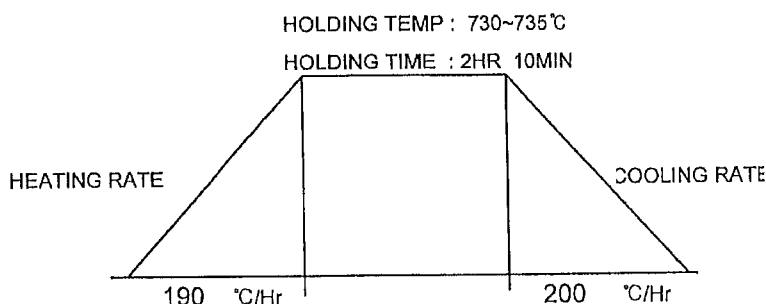
PAGE : 2 OF 3

PROJECT		Yajvinskaya CCPP	CLIENT	HP VALVES	MATERIAL	(S)A182-F91
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 (℃)	-	235	* See preheat treatment certificate Thermocouples location	APPLICATION COLORS							
HEATING RATE (℃/Hr)	Max.222	190		T/C-1				T/C-7			
HOLDING TEMP (℃)	700~760	730~735		T/C-2							
HOLDING TIME (HR)	Min. 1H	2H 10M		T/C-3							
COOLING RATE (℃/Hr)	Max.280	200		T/C-4							
UNLOADING TEMP (℃)	-	230		T/C-5							
HEAT SOURCE	ELECTRIC			T/C-6							
TEMP. MEASURING EQUIPMENT NO.	T95CK048										

SKETCH WITH DIAGRAM



REMARKS:

HP VALVES	Medium & high pressure valves acc. ANSI, API, BS & DIN
<input type="checkbox"/> Reviewed	F. Wolfers - Q.C.
<input type="checkbox"/> Witnessed	D. J. J. J. J.

Pre'd by

Rev'd by

Approved by

T. Y. WONG

