



유량계 (F/E) 제조 전문업체

 **(주)대한인스트루먼트**
DAE HAN INSTRUMENT CO., LTD.



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01.회사소개



(주)대한인스트루먼트는 1989년 부터 유량계 엘리먼트(Flow Element) 설계 및 생산에 있어서 최고의 기술력과 업계의 평판 및 납품실적을 보유하고 있습니다.

Cone Type Venturi Meter(1993년)를 개발하였고, 측온 저항체 및 Pitot Tube등의 최초 국산화에 성공하면서, 포스코등 우수 대기업에 납품했습니다. 다수의 특허를 확보하며, 기술을 강화해 가고 있으며, 중국을 포함한 동남아에 높은 인지도를 가지고 수출해 왔습니다.

또한 타사와는 다르게 국제적 감각이 있는 명망있는 인재들을 모이고 있어, 영어권 및 중국어권 해외 엔지니어들과의 기술적인 업무 협조와 해결능력에 있어서 독보적이고 주요한 역할을 하고 있습니다.

“흐름(FLOW)에서 기술기반 가치창조”의 Vision을 달성하고자 합니다. 우리의 제품이 고객사의 불편을 해소하고 핵심적인 변화와 가치를 제공할 수 있도록 당사 임직원 및 협력사는 최선을 다하겠습니다.

다. 회사명	(주)대한인스트루먼트	업태	제조업
대표이사	송승준	주요제품	유량계
홈페이지	www.daehan.in	사용처	플랜트 및 선박
주소	경기도 화성시 무하로36번길 18-21	개업연월일	1991.11.01. (법인전환)

02.회사비전

Vision : 기술기반 가치창조

- 서비스 정신
- 창의적 사고
- 개방적 토론
- 인화와 단결

핵심가치

- 고객 Relationship
- 융합형 인재 및 제품
- 국제적인 네트워크

핵심역량

- 젊은 생각
- 열정
- 창의
- 성실

인재상

03. 회사연혁



- July. 1989**
대한엔지니어링 설립
- Nov. 1991**
(주)대한인스트루먼트 법인 전환
- Aug. 1993**
산자부 첨단기술기업
- Jul. 1995**
Cone Type Venturi Meter 개발
- Aug. 1995**
Average Pitot Tube 개발
- Sep. 2000**
ISO9001 인증
- Aug. 2003**
중국정부로부터 CPA 승인
- Apr. 2005**
TMS에 대한 Flow velocity meter 인증
- Aug. 2005**
MOLAB로부터 Clean Company 인증
- Dec. 2006**
SMBA로부터 Anagement Innovation Company 선정
- Feb. 2009**
INNO-BIZ 인증
- Nov. 2009**
제46회 무역의날 3백만불 수출탑 수상
- Apr. 2010**
KOSHA 안전인증
- May. 2012**
American Bureau of Shipping (ABS) 인증
- Aug. 2012**
ISO14001 인증

- Oct. 2012**
기업부설연구소 설립
- Dec. 2012**
수출유망중소기업 인증
- Feb. 2014**
부품소재기업 재인증
- Nov. 2014**
일하기좋은 기업인증(경기도)
- Dec. 2014**
ASME 인증 "U" "S" "PP"
가족친화기업인증(여성가족부)
기술개발사업 선정 및 협약체결(경기도)
- Mar. 2015**
성실 납세자 선정(경기도)
- Dec. 2015**
PED 인증
- Feb. 2018**
스마트 팩토리에 대한 국가 조사 수행
- Nov. 2018**
스마트 팩토리 리서치
- Apr. 2019**
벤처기업인증
- Oct. 2019**
융복합기술개발사업 성공판정
- Jun. 2020**
Daehan(Tianjin) Instrument Co., Ltd 설립
- Dec. 2020**
유망중소기업 인증(경기도)
- Jun. 2021**
직접생산확인증명(유량계)
- Aug. 2021**
ASME 재인증 (PP.S.USTAMP)


04-1.인증서(Plant Registration & ISO)

Form No. 8-2 Also available online: www.factoryreg.go.kr

Plant Registration Certification Form

Reference No.	Date Received	Processing Time	Immediate
Name of Company DAEHAN INSTRUMENT CO.,LTD		Tel. 031-357-8431	
Company Information Name of Chairperson SONG SEUNGJUNE		Date of Birth (Corporate Registration No.) 110111-0806236	
Address of Chairperson (Address of Company) 18-21, 36 Beon-Gil, Muha-ro, Hwasong-si, Gyeonggi-do			
Address of Plant 79-12, 110 Beon-Gil, Muha-ro, Hwasong-si, Gyeonggi-do		Land Category factory site	
Plant Registration Date 2020-06-17		Property Status Owned [<input checked="" type="checkbox"/>] Rented [<input type="checkbox"/>]	
Plant Information Business Line (Classification Code) Manufacture of physical properties testing, measuring and inspection equipment (27213)		No. of Employees Male: 3 Female: 0	
Area of Site 1,469 sqm		Area of Manufacturing Facilities 495 sqm	
Area of Other Facilities 0 sqm			
Registration Conditions			
Changes (Including Dates)			
I hereby apply for a Plant Registration Certificate in accordance with Article 12-3 of the Industrial Cluster Development and Factory Establishment Act.			
2020 Year 07 Month 17 Day			
Applicant DAEHAN INSTRUMENT CO.,LTD (Signature or Stamp)			
			
			
I hereby certify that the above plant is registered in accordance with Article 16-1/16-2/16-3 of the Industrial Cluster Development and Factory Establishment Act.			
2020 Year 07 Month 17 Day			

Plant Registration Certification



Certificate of Registration

This is to certify that:

DAE HAN INSTRUMENT CO., LTD.
18-21, 36Beon-gil, Muha-ro, Hwasong-si, Gyeonggi-do, Korea

Has been assessed by International Certification Registrar Ltd., in respect of their Quality Management Systems and found to comply with

ISO 9001:2015

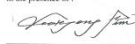
Approval is hereby granted for registration providing the rules and conditions relating to certification are observed at all times.

Certification Scope
Design and Manufacture of Temperature Sensor, Flow Element and Pressure Vessels

Certificate Issue Date : 20th July 2021 Initial Issued Date : 24th August 2012
Expiration Date : 24th August 2024 Certificate No. : Q438612

* This certificate is valid by completion of surveillance audit which is conducted within 12 months from the certification date.

The Seal of ICR Limited was hereto affixed in the presence of:

 President




ICR Co., Ltd. 115, Hwanggok-ro, Daejeon-si, Gyeonggi-do, Korea www.icrreg.com

ISO 9001



Certificate of Registration

This is to certify that:

DAE HAN INSTRUMENT CO., LTD.
18-21, 36Beon-gil, Muha-ro, Hwasong-si, Gyeonggi-do, Korea

Has been assessed by International Certification Registrar Ltd., in respect of their Environmental Management Systems and found to comply with

ISO 14001:2015

Approval is hereby granted for registration providing the rules and conditions relating to certification are observed at all times.

Certification Scope
Design and Manufacture of Temperature Sensor, Flow Element and Pressure Vessels

Certificate Issue Date : 20th July 2021 Initial Issued Date : 24th August 2012
Expiration Date : 24th August 2024 Certificate No. : E242012

* This certificate is valid by completion of surveillance audit which is conducted within 12 months from the certification date.

The Seal of ICR Limited was hereto affixed in the presence of:

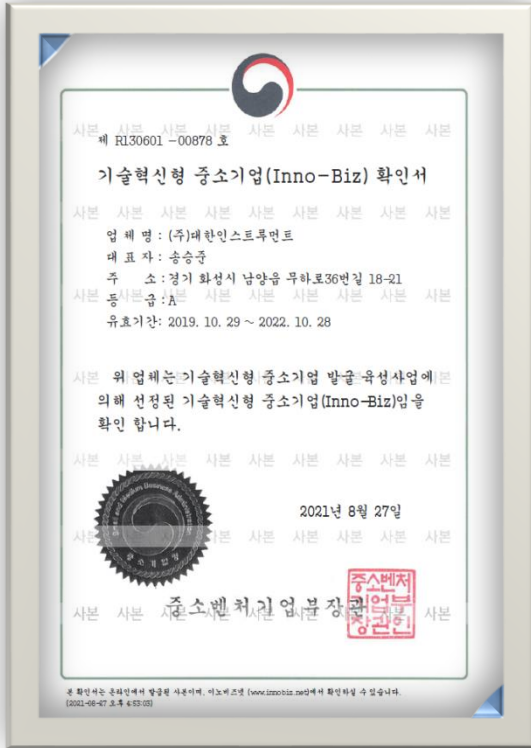
 President



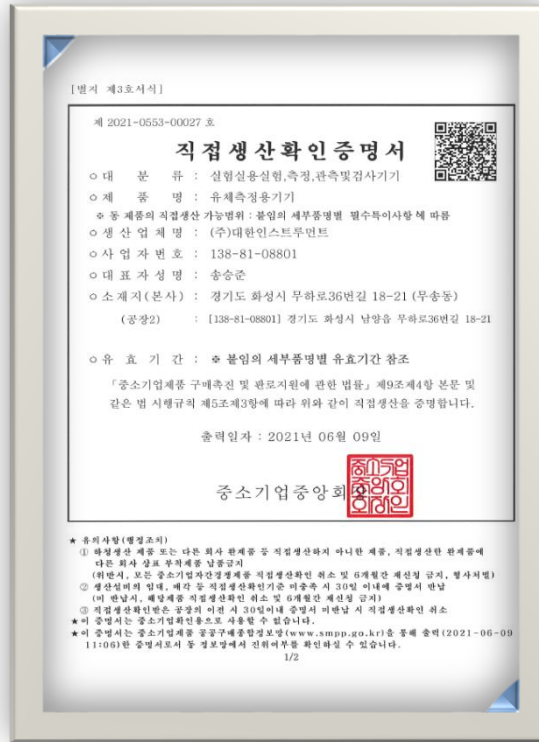

ICR Co., Ltd. 115, Hwanggok-ro, Daejeon-si, Gyeonggi-do, Korea www.icrreg.com

ISO 14001

04-2.인증서



INNO-BIZ

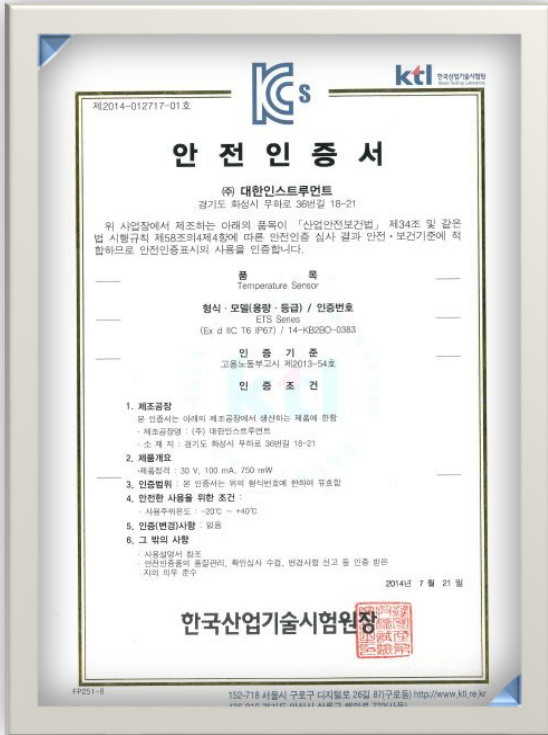


Manufacturer Cert.

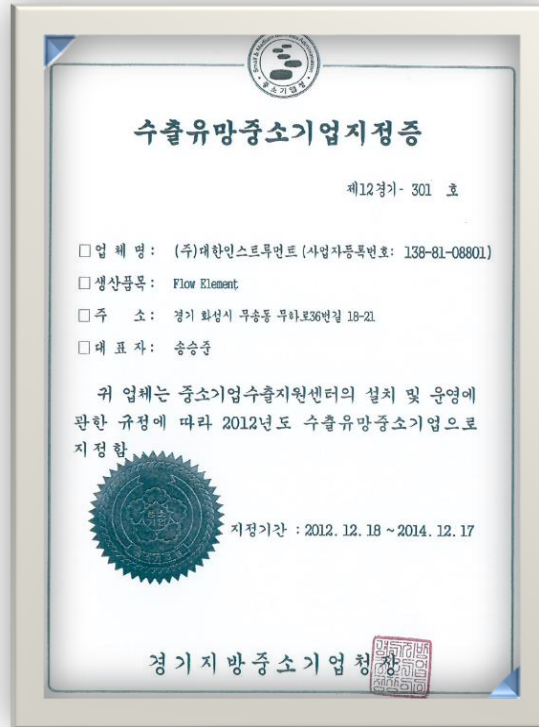


R&D Center

04-3.인증서



Safety Certificate

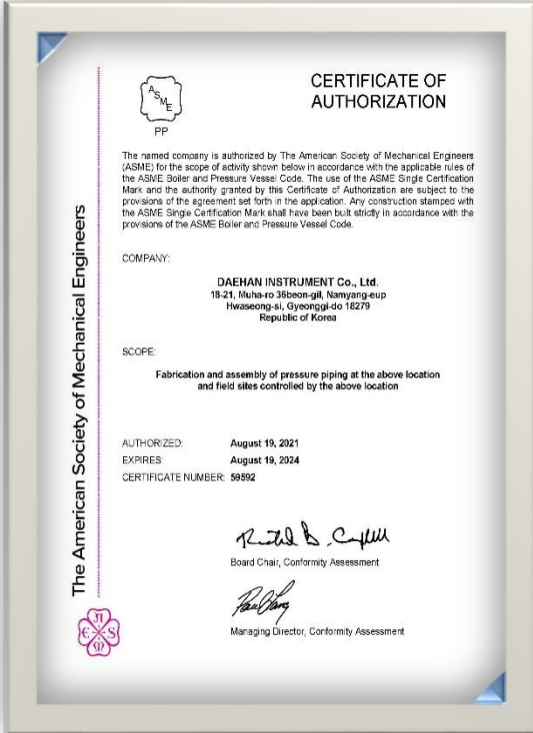


Export promising small and medium enterprises

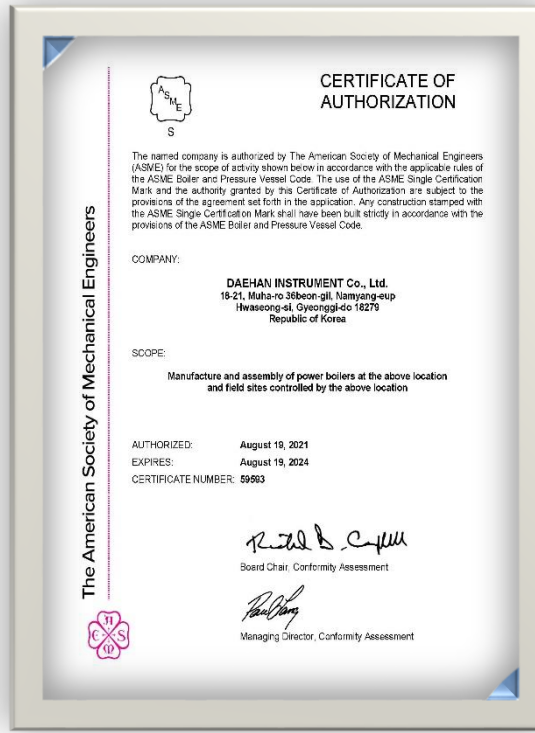


Gyeonggi-do Good Work Place

04-4.인증서(ASME)



ASME PP
(20210819)

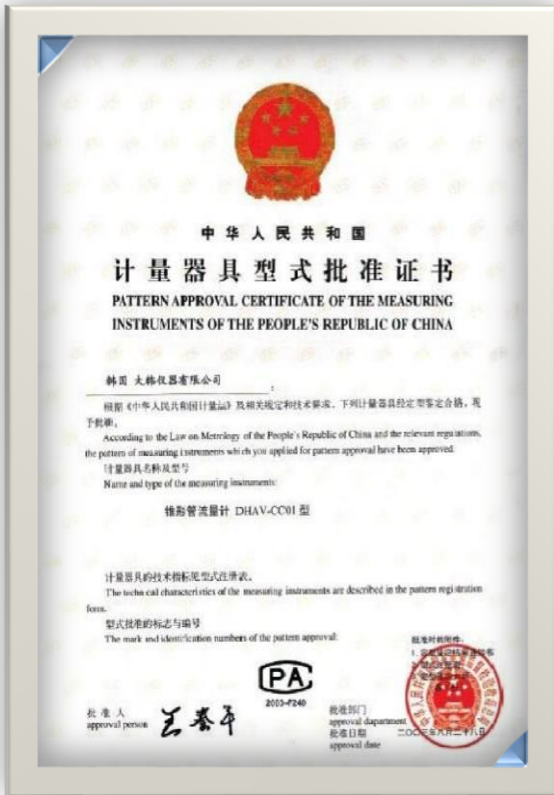


ASME S
(20210819)

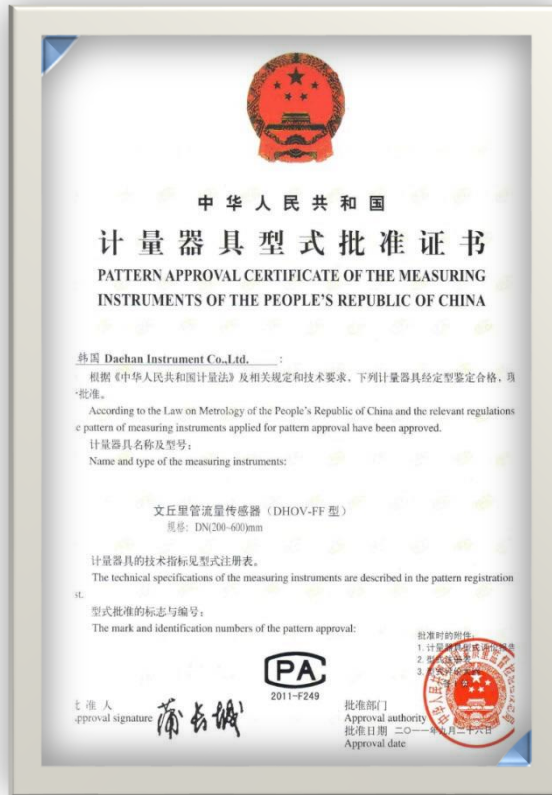


ASME U
(20210819)

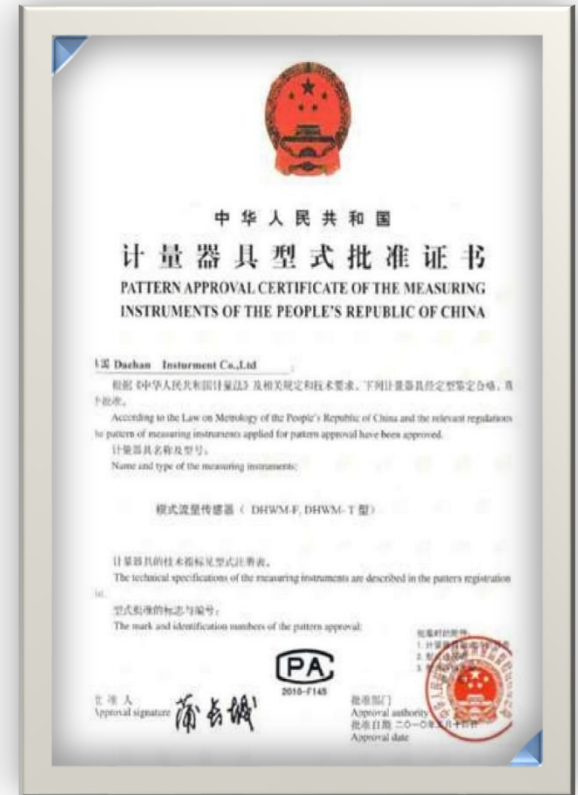
04-5.인증서(CPA)



2003-F240



2011-F249



2010-F145

04-6.용접기술책임자 (Welding Inspect Administrator)

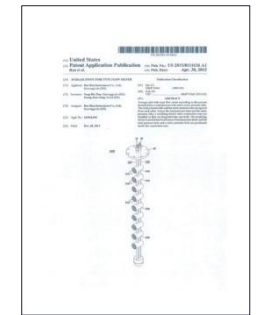




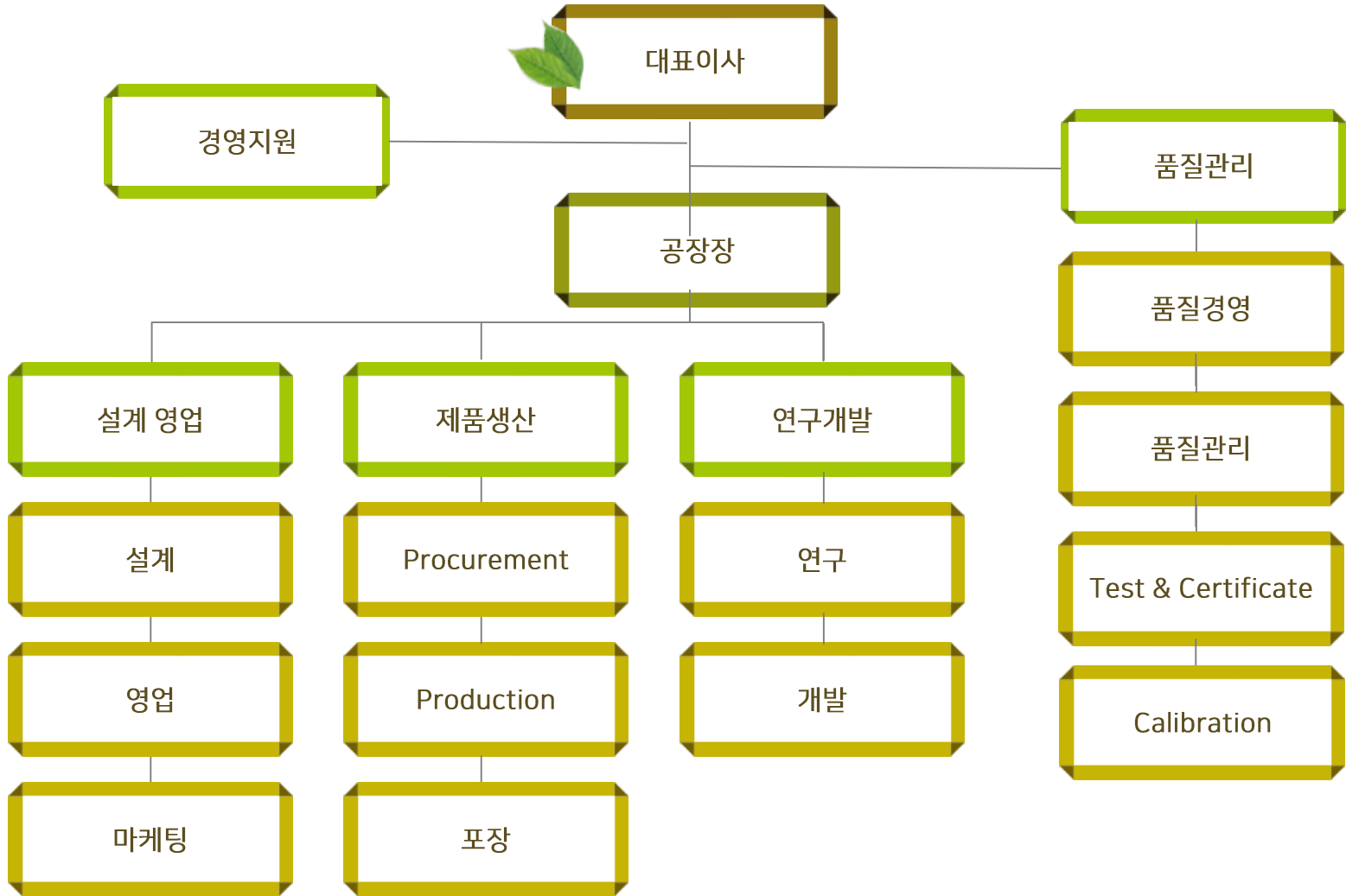
05. 특허(Patents)



Patent Number	Title of the Invention	Patentee
10-0613129	흐름 발전기용 터빈	(주)대한인스트루먼트
10-0662055	파에너지를 이용한 흐름 발전장치	(주)대한인스트루먼트
10-1073933	부품 데이터의 지능형 조립 방식을 이용한 사용자기기의 디자인 시스템 및 방법	(주)대한인스트루먼트
10-1568297	제작과 설치가 간편한 차압식 유량계	(주)대한인스트루먼트
10-1615188	동심체 타입의 유량계	(주)대한인스트루먼트
10-1721200	유량계	(주)대한인스트루먼트
10-1789543	평균피토탄 타입의 유량측정장치	(주)대한인스트루먼트
10-2106056	벤츄리 유량계	(주)대한인스트루먼트
10-2147271	체크 밸브 겸용 유량계	(주)대한인스트루먼트
US-20150114136A1	AveragePitotTubetypeFlowMeter(미국)	(주)대한인스트루먼트



06. 조직 직능 구성



07.경영진및기술자

President

송승준 / CEO

- Total 25 year job career In instruments
- Insight Leader
- HW/SW & Patents expert

Manager / Key persons

임영수 / 상무

Factory Manager
Flow Meter Design

김알리 박사 / 설계

Design Expert
Ph.D in Mechanical
Engineering

디나 (Indian Brach)

Export Sales Manager
Plant Design 15 years

한재원 / 부장

Purchase Manager

사라반안 (품질/인도)

General Manager – Quality
KC Cottrell Co., Ltd.
CWI, Inspector, IMS Lead Auditor

자간 (Indian Brach)

Export Sales
Hyundai Motors /
Supplier Quality Control

최원희 / 부장

Technical sales /
Design Manager

타밀셀반

Supplier Quality Control

하리(Indian Brach)

Design asist.
Sales & Marketing

박일환 / 차장

Technical sales/
Product Manager

08.주요 사업

유량계

- Average Pilot Tube
- Annular Venturi Meter(V-CONE)
- Orifice
- Venturi Tube
- Flow Nozzle
- Wedge Meter

온도센서

- Thermocouple
- Resistance Bulb
- Sheath Thermocouple
- Sheath Resistance Bulb

친환경 선박용 부품



ASME Fabrication

- Pressure Vessels
- Storage Tank / Cone Roof Tank
- Strength calculation
- Thermal calculation
- Detail drawing / Fabrication

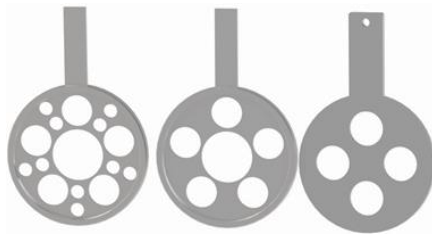


09-1. 제품 (Orifice)

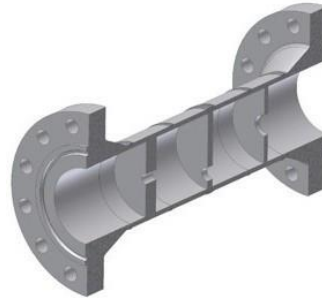
DHOP



DHBOP



DHRO-MS



DHOF-H



DHIO-FM



DHIO-BN



DHOF-RING



09-2. 제품 (Venturi Tube)

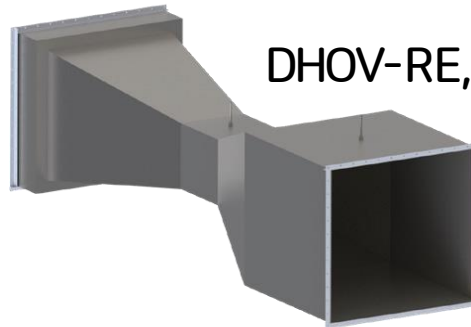
DHOV-FF, DHIF-V4-FF



DHOV-FW, DHIF-V4-FW



DHOV-RE, DHIF-V4-RE



DHOV-MF, DHIF-V4-MF



DHOV-MW, DHIF-V4-MW

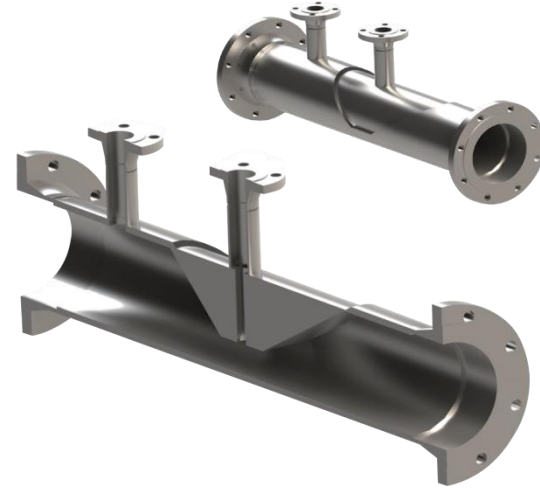


09-3. 제품 (Wedge Meter)

DHWM-F



DHWM-R



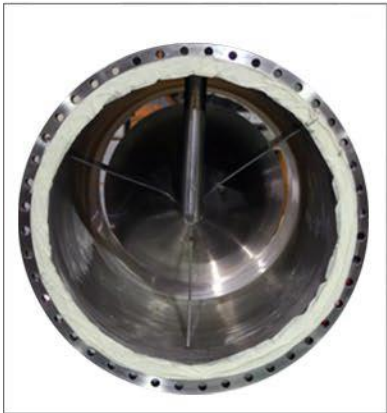
DHWM-T



09-4. 제품 (Annular Venturi Meter)



(Model :DHAV)





09-5. 제품 (Average Pitot Tube)

301 TYPE



303 TYPE



302 TYPE



304 TYPE





09-6. 제품 (Steady Flow meter)



SFM 300



SFM305



09-7.제품 (기 타)



❖ SIGHT GLASS



❖ LEVEL GAUGE



❖ S-TYPE PITOT TUBE & TEMPELEMENT



❖ THERMO COUPLE



❖ TEMPERATURE TRANSMITTER



❖ TEMP' ELEMENT

10-1. 제품조립관리(Fabrication)



10-2. 정밀도 관리(Flow Meter Calibration)



Venturi Tube (KAERI RCPTF)



10-3. 정밀도관리(CEESI Calibration Report)



LABORATORY OFFICE:
54043 County Rd. 37
Nunn, Colo. 80648
Phone: 970-897-2711
FAX: 970-897-2710

**COLORADO ENGINEERING
EXPERIMENT STATION INC.**

...the primary source for flow measurement solutions...



IOWA HIGH FLOW FACILITY
2365 240th St.
Garner, IA 50438
Phone: 641-923-3664
FAX: 641-923-3693

CERTIFICATE OF CALIBRATION
Traceable to the
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Customer: Pantree Enterprises, Inc.	Item Calibrated: Subsonic Venturi
Address: 222 Fashion Lane #212 Tustin, CA 92780	Model: DHOV-FW-36B-CS-250-3
CEESI Data File(s): 11PANE-0003	Serial Number: SN-DH/KA-RCPTF-23/Jul/11-001
Date: 24 August 2011	Job Number: CE13200 Order: DIC 3714

The uncertainty in flowrate indicated by CEESI standards is estimated to be +/- 0.23% of reading to 95% confidence.

The calibration identified by the above CEESI DATA FILE was performed in accordance with the American Gas Association Transmission Committee Report Number 7 using calibration standards that are traceable to the National Institute of Standards and Technology. All natural gas properties were calculated in compliance with American Gas Association Report Number 8.

This Calibration is: As Found As Left


 Measurement Assurance


 On behalf of Colorado Engineering
 Experiment Station, Inc.

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LABORATORY OFFICE:
54043 County Rd. 37
Nunn, Colo. 80648
Phone: 970-897-2711
FAX: 970-897-2710

**COLORADO ENGINEERING
EXPERIMENT STATION INC.**

...the primary source for flow measurement solutions...



IOWA HIGH FLOW FACILITY
2365 240th St.
Garner, IA 50438
Phone: 641-923-3664
FAX: 641-923-3693

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Customer: Pantree Enterprises, Inc.	Item Calibrated: Subsonic Venturi
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This Calibration is: As Found As Left


 Measurement Assurance


 On behalf of Colorado Engineering
 Experiment Station, Inc.

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10-4. 선급품질관리(ABS Qualification)



AMERICAN BUREAU OF SHIPPING MISCELLANEOUS SURVEY REPORT

Customer Name	DAEHAN INSTRUMENT CO., LTD.	Purchase Order No.	N/A
Attending Office	Seoul	Report Number	SE2123424
First Visit Date	20-Mar-2012	Last Visit Date	01-Jun-2012

Welding Procedure Survey

Survey Location : Hwaseong, Korea

This is to Certify that the undersigned surveyor(s) to this Bureau did, at the request of the customer, carry out the following survey and report as follows:

The following details of the welding procedure were verified as deemed necessary and presented as contained in this report:

- Applicable Rules, Codes, Specifications are referenced
- Welding Process Description is available
- Base Metal(s) is/are identified
- Filler metal is specified
- Shielding gas and flux is indicated
- Current is specified
- Thermal data is indicated (preheat/post heat/inter-pass temperatures)
- Joint design is described
- Weld backing is specified as applicable
- Parameter ranges are described
- Test weldment procedure is described
- Test specimen locations are indicated
- Inspection methods are described
- Results of Welding Procedure Test Data are included in facility/shipyard/Plant Procedure Qualification Report (PQR)

This procedure is acceptable for this application and test results are satisfactory.

The following welding procedure qualification tests were carried out in accordance with the requirements of the rules of American Bureau of Shipping, ASME Section IX and approved welding procedure specification, examined, tested as required and considered satisfactory.

1) WPS No.: DAEWPS-SI-023
PQR No.: DAEQR-SI-023
Welding Process : GTAW
Welding Position : 1G
Type of Joint : V Groove (Single)
Filler Metal : AWS A 5.9 - 2008 ER2209 / Dia. 2.4 & 3.2 mm / T-2209, KISWEL LTD.
Base Metal : ASTM SA182 F51 (Thickness 12.5 mm, O.D. 70 mm)

NOTE: This report evidences that the survey reported herein was carried out in compliance with one or more of the Rules, guides, standards or other criteria of the American Bureau of Shipping and is issued solely for the use of the Bureau, its certificatees, its clients or other authorized entities. This Report is a representation only of the Rules, guides, standards or other criteria of American Bureau of Shipping. The validity, applicability and interpretation of this report is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Report or in any notation made in the contemplation of this Report shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.

AB Report Vendor

Page 1

10-5-1. 용접품질관리 (WPS & PQR)

PROCEDURE QUALIFICATION RECORD ASME Page 1 of 2

Company Name: SAEHAN INSTRUMENT CO., LTD. Date: Nov. 28, 14
 WPS No.: 10-5-1-1.001 (1) Date: 10-5-1-1.001
 Welding Process: MIG
 Type: Shielded Metal Arc (MIG)

BASE METALS (QW 400)

SAE 316L SS (A 316)

POSTHEAT TREATMENT (QW 405)

None

WELD METALS (QW 400)

SAE 316L SS (A 316)

POSTHEAT TREATMENT (QW 405)

None

PERFORM TESTS (QW 400)

Visual Inspection: Pass
 Charpy: Pass
 Bend: Pass
 Impact: Pass
 Hardness: Pass
 Tensile: Pass
 Elongation: Pass
 Reduction of Area: Pass
 Metallography: Pass
 Corrosion: Pass
 Fatigue: Pass
 Creep: Pass
 Fracture: Pass
 Other: Pass

TECHNICAL (QW 410)

Travel Speed: 10 mm/min
 Stick up before Heat: 5mm
 Oscillation: None
 Multiple Passes (per Side): Single
 Size of Internal Processes: None
 Closed to and Chartered: None
 Closed to and Reviewed: None
 Other: None

DAEHAN INSTRUMENT CO., LTD.

PQR No.: 10-5-1-1.001(1) ASME Page 2 of 2

Temple Test (QW 410)

Specimen No.	Weld	Thickness (mm)	Area (mm²)	Ultimate Tensile (MPa)	Ultimate Tensile (ksi)	Type of Failure and Location
1	18L1	9.94	100.00	103.494	546	Double at Base Metal
2	18L01	10.00	101.45	104.411	545	Double at Base Metal

Guided Bend Tests (QW 400)

Type and Figure No.: None
 Transverse Face Bend 1: Clean Discontinuity 10 mm Acceptable
 Transverse Face Bend 2: Acceptable
 Transverse Root Bend 1: Acceptable
 Transverse Root Bend 2: Acceptable

Toughness Tests (QW 470)

Specimen No.	Weld	Location	Test Temperature (°C)	Charpy Value (J)	Charpy Value (ft-lb)	Drop Weight Break (J)
1	18L1	2.5.0.01	30°C	107.72 / 78.83.31	-	N/A
2	18L2	2.5.0.02	30°C	107.72 / 78.83.31	-	N/A
3	18M	2.5.0.03	30°C	107.72 / 78.83.31	-	N/A

Other Tests

Visual Inspection: Pass
 Charpy: Pass
 Bend: Pass
 Impact: Pass
 Hardness: Pass
 Tensile: Pass
 Elongation: Pass
 Reduction of Area: Pass
 Metallography: Pass
 Corrosion: Pass
 Fatigue: Pass
 Creep: Pass
 Fracture: Pass
 Other: Pass

DAEHAN INSTRUMENT CO., LTD.

WELDING PROCEDURE SPECIFICATION ASME

Company Name: SAEHAN INSTRUMENT CO., LTD. Date: Nov. 28, 14
 WPS No.: 10-5-1-1.001 (1) Date: 10-5-1-1.001
 Welding Process: MIG
 Type: Shielded Metal Arc (MIG)

WELDING PROCEDURE SPECIFICATION (WPS)

Welding Process: MIG
 Electrode: ER316L
 Shielding Gas: Argon
 Position: 1G
 Thickness Range: 9.94 - 10.00 mm

BASE METALS (QW 400)

SAE 316L SS (A 316)

POSTHEAT TREATMENT (QW 405)

None

PERFORM TESTS (QW 400)

Visual Inspection: Pass
 Charpy: Pass
 Bend: Pass
 Impact: Pass
 Hardness: Pass
 Tensile: Pass
 Elongation: Pass
 Reduction of Area: Pass
 Metallography: Pass
 Corrosion: Pass
 Fatigue: Pass
 Creep: Pass
 Fracture: Pass
 Other: Pass

DAEHAN INSTRUMENT CO., LTD.

POSTHEAT TREATMENT (QW 405) ASME

Postheat Temperature: None
 Postheat Time: None
 Postheat Atmosphere: None

PERFORM TESTS (QW 400)

Visual Inspection: Pass
 Charpy: Pass
 Bend: Pass
 Impact: Pass
 Hardness: Pass
 Tensile: Pass
 Elongation: Pass
 Reduction of Area: Pass
 Metallography: Pass
 Corrosion: Pass
 Fatigue: Pass
 Creep: Pass
 Fracture: Pass
 Other: Pass

DAEHAN INSTRUMENT CO., LTD.

10-5-2. 용접품질관리(WPS & PQR)

TOTAL WELDING PROCEDURE SPECIFICATION LIST

AUG 31 '21, Rev-0

NO.	Process	WPS NO.	Base Metal				Base Metal Type	Base Metal Thickness (mm)	Weld Metal Thickness (mm)				PWHT (°C)	Impact test Temp. (°C)	AWS Class	Preheat Temp (°C)	Interpass Temp (°C)	Brand Name	Remarks
			P No.	Gr. No.	P No.	Gr. No.			GTAW	FCAW	SMAW	SAW							
1	GTAW	DAEWPS-SI-023	10H	1	10H	1	Duplex 31803	5 ~ 25	25	-	-	-	No	-51	ER2209	-	150	T-2209, Kiswel	ABS
2	GTAW	DH-GT-1.1-001	1	1,2	1	1,2	Carbon Steel	1.5 ~ 20	20	-	-	-	No	No	ER70S-6	16	250	ST-50.6, Hyundal	"U"
3	GTAW	DH-GT-10H.10H-001 (1)	10H	1	10H	1	SuperDuplex	8 ~ 16	16	-	-	-	No	-50	ER2594	16	100	25.10.4.L, Sandvik	No "U"
4	GTAW	DH-GT-10H.10H-002	10H	1	10H	1	SuperDuplex	1.5 ~ 16	16	-	-	-	No	-	ER2594	16	100	ANY	No "U"
5	GTAW	DH-GT-8.8-001	8	1	8	1	Stainless Steel	10 ~ 20	20	-	-	-	No	-20	ER308	16	150	ANY	"U"
6	GTAW	DH-GT-8.8-002	8	1	8	1	Stainless Steel	1.5 ~ 20	20	-	-	-	No	No	ER316	16	150	ANY	"U"
7	GTAW	DH-GT-8.8-003	8	1	8	1	Stainless Steel	1.5 ~ 20	20	-	-	-	No	No	ER316L	16	150	ANY	"U"
8	GTAW	DH-GT-1.8-001	1	1,2	8	1,2	CS to SS	1.5 ~ 12	12	-	-	-	No	No	ER309	16	150	ANY	"U"
9	GTAW	DH-GT-1.8-002	1	1,2	8	1,2	CS to SS	5 ~ 36	36	-	-	-	No	No	ER309	16	150	ANY	No "U"
10	GT+FC	DH-GT-FC-1.8-003	1	1,2	8	1,2	CS to SS	5 ~ 44	36	8	-	-	No	No	ER309 + E309LT1-1	16	150	ANY	No "U"
11	GT+FC	DH-GT-FC-1.1-001	1	1,2	1	1,2	Carbon Steel	5 ~ 60	20	40	-	-	YES	No	ER70S-6 + E71T-1C	16	250	ANY	No "U"
12	GTAW	DH-GT-P4-P4-002	4	1	4	1	Low Alloy Steel	1.5 ~ 14.2	14.2	-	-	-	No	No	ER80S-B2	135	165	ANY	"U"
13	GTAW	DH-GT-P4-P8-001	4	1	8	1	CS to LA Steel	1.5 ~ 14.2	14.2	-	-	-	No	No	ER309	16	150	ANY	"U"
14	GTAW	DH-GT-1.8-004	1		8		CS to SS	1.5 ~ 20	20	-	-	-	No	No	ERNiCr-3	10	100	ANY	No "U"
15	GTAW	DH-GT-1.1-002	1	1	1	1	Carbon Steel	5 ~ 22	22	-	-	-	YES	No	ER70S-2	16	250	T-70S2, Kiswel	No "U"
16	GTAW	DH-GT-P4-P4-003	4	1	4	1	Low Alloy Steel	1.5 ~ 14.2	14.2	-	-	-	Yes	No	ER80S-B2	150	165	T-80SB2, Kiswel	No "U"
17	GTAW	DH-GT-P4-P8-002	4	1	8	1	Low Alloy to SS	1.5 ~ 20	20	-	-	-	No	No	ERNiCr-3	150	175	ANY	No "U"

DAEHAN INSTRUMENT CO., LTD.



10-5-3. 용접품질관리(WPS & PQR)

PROCEDURE QUALIFICATION RECORD LIST

Aug 31 '21, Rev-0

SL NO.	PQR NO.	Material	P No. & Gr. No.	P No. & Gr. No.	B M. Thk. (mm)	Process	Welding Position	ACT. WELD METAL THICKNESS				PWHT (°C)	Insp. Temp. °C	TEST					ASME	Remarks	
								GTAW	FCAW	SMAW	SAW			Tensile	Bend	Macro	Hardness	Impact			
1	DAEPQR-SI-023	A 182 F51 (Duplex UNS 31803)	10H Gr 1	10H Gr 1	12.5	GTAW	1G	12.5				NO	-51	YES	YES	YES	YES	NO	NO	Test Report No. TAS-021465 (ABS Stamped)	
2	QDH-GT-1.1-001 (I)	SA516-70	1 Gr 2	1 Gr 2	10	GTAW	1G	10	-	-	-	NO	-20	YES	YES	YES	YES	YES	U	Test Report No. TAS-065773	
3	QDH-GT-10H.10H-001(I)	SA 240 UNS 32750	10H Gr 1	10H Gr 1	8	GTAW	1G	8				NO	-50	YES	YES	YES	YES	NO	NO	Test Report No. TAS-062413	
4	QDH-GT-8.8-001(I)	SA 240 Type 304	8 Gr 1	8 Gr 1	10	GTAW	1G	10				NO	-20	YES	YES	YES	YES	YES	U	Test Report No. TAS-009354	
5	QDH-GT-1.8-001	SA516-70 + SA 240 Type 304	1 Gr 2	8 Gr 1	6	GTAW	1G	6				NO	-	YES	YES	YES	YES	YES	U	Test Report No. TAS-012984	
6	QDH-GT-1.8-002	SA516-70 + SA 240 Type 304	1 Gr 2	8 Gr 1	18	GTAW	1G	18				NO	-	YES	YES	YES	YES	YES	NO	Test Report No. TAK-2018-047735	
7	QDH-GT-FC-1.8-003	A516-70 + A 240 Type 304	1 Gr 2	8 Gr 1	18	GT+FC	1G	18	4			NO	-	YES	YES	YES	YES	YES	NO	Test Report No. TAK-2018-176872	
8	QDH-GT-FC-1.1-001	A516-70	1 Gr 2	1 Gr 2	30	GT+FC	1G	10	20			YES	-	YES	YES	YES	YES	YES	NO	Test Report No. TAK-2019-038494	
9	QDH-GT-P4-P4-002	A335 P11	4 Gr 1	4 Gr 1	7.1	GTAW	1G	7.1	-	-	-	NO	-	YES	YES	YES	YES	YES	NO	Test Report No. TAK-2019-136756	
10	QDH-GT-P4-P8-001	A335 P11 + A 312 Type 316	4 Gr 1	8 Gr 1	7.1	GTAW	1G	7.1				NO	-	YES	YES	YES	YES	YES	NO	Test Report No. TAK-2019-136757	
11	QDH-GT-1.8-004	SA516-70 + SA 240 Type 316 (Butt.)	1 Gr 2	8 Gr 1	10	GTAW	1G	10 & Butt.				NO	-	YES	YES	YES	YES	NO	NO	Test Report No. TAK-2020-163382	
12	QDH-GT-1.1-002	SA 516-70	1 Gr 1	1 Gr 1	11	GTAW	5G	11	-	-	-	YES	NO	YES	YES	YES	YES	NO	NO	Test Report No. TAK-2020-163381	
13	QDH-GT-P4-P4-003	A335 P11	4 Gr 1	4 Gr 1	7.1	GTAW	5G	7.1	-	-	-	YES	-	YES	YES	YES	YES	NO	NO	Test Report No. TAK-2020-163379	
14	QDH-GT-P4-P8-002	A387 Gr. 11 + A 240 Gr.316 (Butt.)	4 Gr 1	8 Gr 1	7.1	GTAW	1G & Butt.	7.1				NO	-	YES	YES	YES	YES	NO	NO	Test Report No. TAK-2020-163380	

10-6. 용접자관리(Welder Quality Control)

WELDER PERFORMANCE QUALIFICATION RECORD		A S M E	
Welder's name _____ Identification no. _____ (ENR)			
Markification of WPS followed _____ Test Description _____		Test coupon	Production Weld
Date/Edition and type/grade or UNS Number of base metal(s) _____ (QT 308)		Thickness	4.7 mm
Welding Variables (ENR 308)		Actual Values	Range/Qualified
Welding process(es) _____		GTAW	GTAW
Type(s) (i.e. manual, semi-automatic) _____		Shielded	Manual
Shielding metal, metal shield, metal electrode, etc. _____		WIP-HOT	WIP-HOT
(-) Pipe _____ (-) Plate _____ (-) Nozzle _____ (-) Tube _____ (-) Pipe _____ (-) Nozzle _____ (-) Tube _____ (-) Plate _____ (-) Nozzle _____ (-) Tube _____ (-) Pipe _____ (-) Nozzle _____ (-) Tube _____		PIPE (ENR 31.308) _____	Plate & Tube (ENR 31.310) _____
Base metal Part 3 Number (or Part 3 Number) _____		PS 10.11	Refer Note (2)
Base metal or electrode classification(s) (ENR 1) (only One) _____		5.10	
Base metal or electrode classification(s) (ENR 1) (only One) _____		ENR 9.8	4
Base metal or electrode classification(s) (ENR 1) (only One) _____		4	NONE
Consumable metal (GTAW or Plate) _____		NONE	NONE
Pipe: Metal Product Form (shell / metal or Non covered / powder) (GTAW or PMA) _____		SQ10	Six (6)
Special techniques for each process _____			
Process 1	GTAW	3 beeps minimum	NO
Process 2	NOT APPLICABLE	3 beeps minimum	NO
Position qualified (ENR, 30, etc.) _____			
Vertical progression (uphill or downhill) _____			
Type of fuel gas (GFM) _____			
Insert gas backing (GTAW, PMA, SMAW) _____			
Transfer mode (spray/shadow or pulsed or non arc-stable) _____			
GTAW current application(s) (AC, DCEN, DCEN) _____			
Note (1) PS 10K, 31, 42, 48 including Unalloyed Metals of similar chemical composition to these metals.			
Note (2) Groove & Flare & Pipe over 630 mm OD : F, X, O : Groove & Flare & Pipe over 630 mm OD : F, X, O : Flare & Pipe & Plate : ALL			
RESULTS			
Visual examination of completed weld (ENR 402.1) _____			
Temperature flow and heat beads (ENR 402.2) _____			
Pipe bend fracture test (ENR 402.3) _____			
Pipe tensile test (ENR 402.4) _____			
Tensile test (ENR 402.5) _____			
Charpy test (ENR 402.6) _____			
Micro examination (ENR 403.1) _____			
Other tests _____			
This or specimens evaluated by _____			
Mechanical test conducted by _____			
Welding supervised by _____			
We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME BOILER AND PRESSURE VESSEL CODE.			
Manufacturer or Contractor _____		DAEHAN INSTRUMENT CO., LTD.	
PREPARED BY _____	CERTIFIED BY _____	REVIEWED BY _____	
DAEHAN INSTRUMENT CO., LTD.			





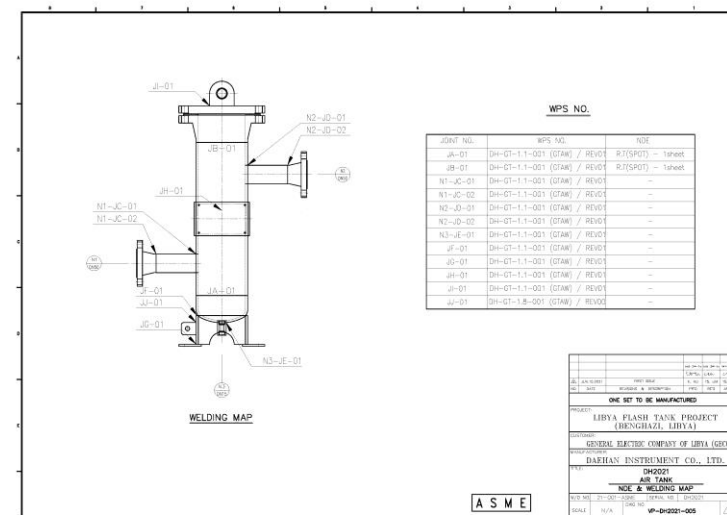
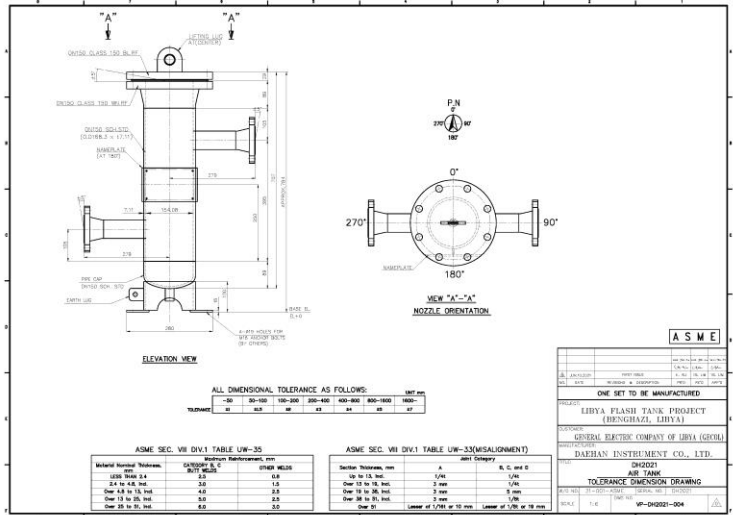
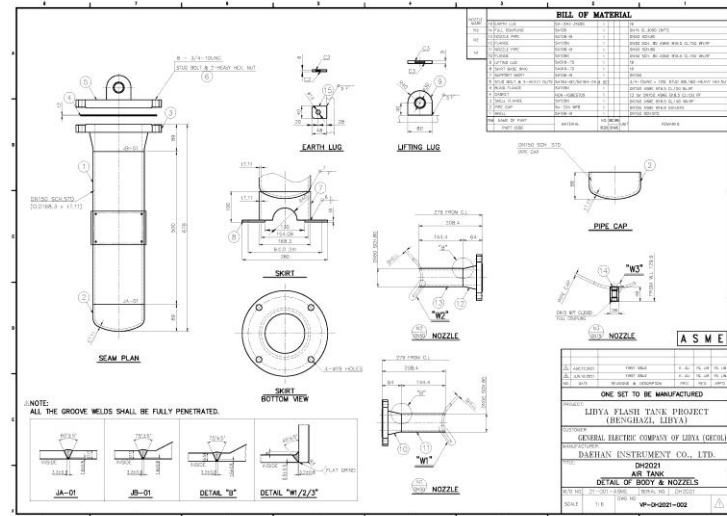
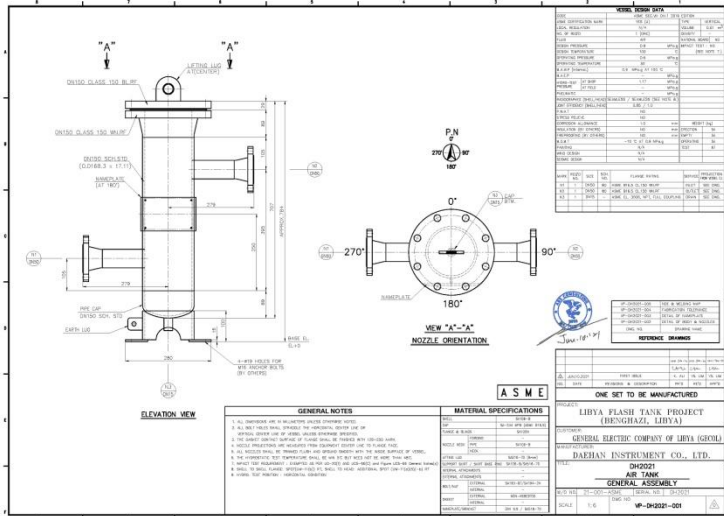
10-7. 비파괴품질관리(NDT Report)

액체침투탐상검사보고서 REPORT OF LIQUID PENETRANT EXAMINATION		Report No. 보고서 번호	
		Page No. 페이지 번호	1 of 3
Owner / Customer 주요주 / 고객	Project No. 공사번호	Project Name 공사명	
Item Name 제품명	Work Order No.	DWG. No. 도면번호	Rev. 개정
Material / 재료	Surface Condition 표면상태	Procedure 절차	Rev. 개정
SA-108, SA-108B	AS WELDED	KMI-NP-PT-02	0
Test Product Temp. 시험대상물 온도	Process of P.T. 침투과정 사용방법	Applied Spec. 적용규격	
10 ~ 11 °C	SOLVENT REMOVABLE	ASME Sec. VIII, Div. 1, App. 8 & ASME Sec. V, Art. 6 (2013 Edition)	
Penetrant 침투액	Brand 상표	Type 형식	Batch No. 제조번호
Remover 세척제	Brand 상표	Type 형식	Batch No. 제조번호
Developer 현상제	Brand 상표	Type 형식	Batch No. 제조번호
Illumination 조도	Min. 1000 Lux	Black Light No. :	NA
Examination Time 검사시간	After Weld	Incandescent Light 220V / 100W	
Identification No. 확인번호	Accept 합격	Reject 불합격	Interpretation 해설
P01 WELDED PART	Y		NO RECORDABLE INDICATION
P02 WELDED PART	Y		NO RECORDABLE INDICATION
P03 WELDED PART	Y		NO RECORDABLE INDICATION
P04 WELDED PART	Y		NO RECORDABLE INDICATION
P05 WELDED PART	Y		NO RECORDABLE INDICATION
P06 WELDED PART	Y		NO RECORDABLE INDICATION
P07 WELDED PART	Y		NO RECORDABLE INDICATION
P08 WELDED PART	Y		NO RECORDABLE INDICATION
P09 WELDED PART	Y		NO RECORDABLE INDICATION
P10 WELDED PART	Y		NO RECORDABLE INDICATION
P11 WELDED PART	Y		NO RECORDABLE INDICATION
P12 WELDED PART	Y		NO RECORDABLE INDICATION
* Lux meter : TES 1300A, SN : 120901742, Due date : 2016.05.04. * Thermometer : TES 1226, SN : 110719584, Due date : 2016.06.09. * Interpretation time : Max 30 min. * Drying time after surface cleaning : 5 min.			
SKETCH ON LINE, IF NECESSARY OR ATTACHED. 필요시 필연하면 스캔/사진/도면 첨부함 Examined By 시행자 Interpreted By 판독자 Approved By 승인자 KMI-QF-037-01 KOREA MATERIAL INSPECTION CO., LTD.			

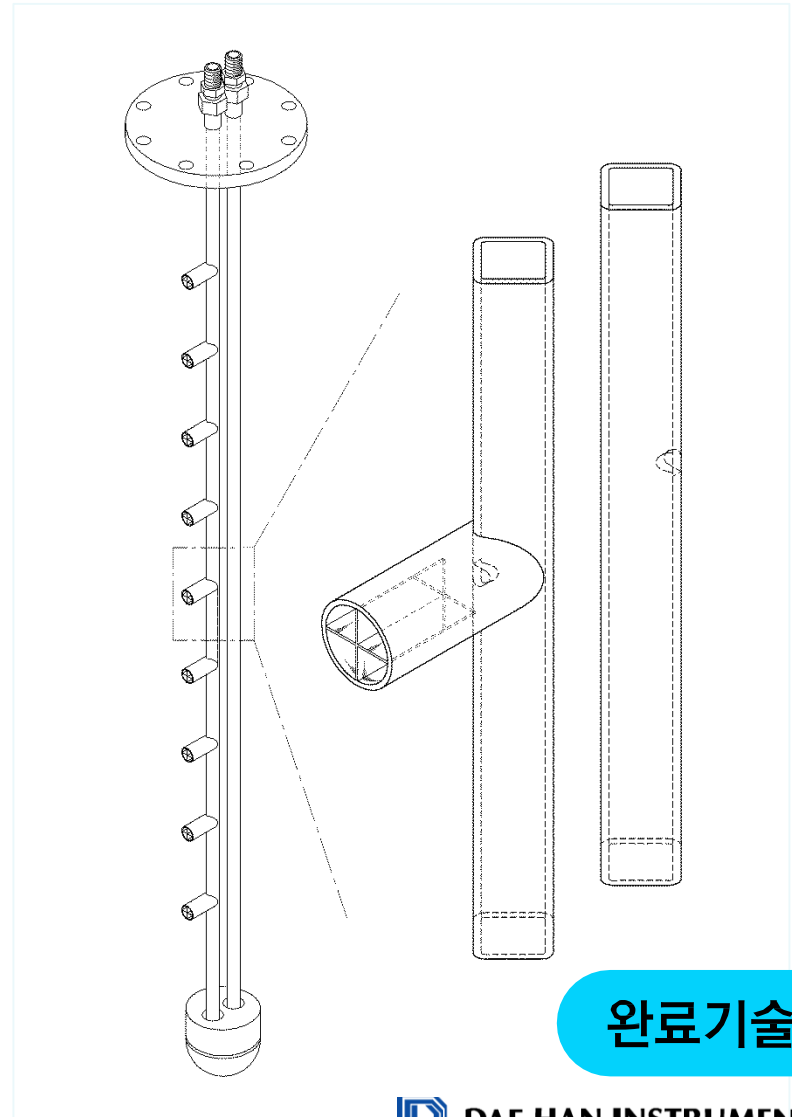
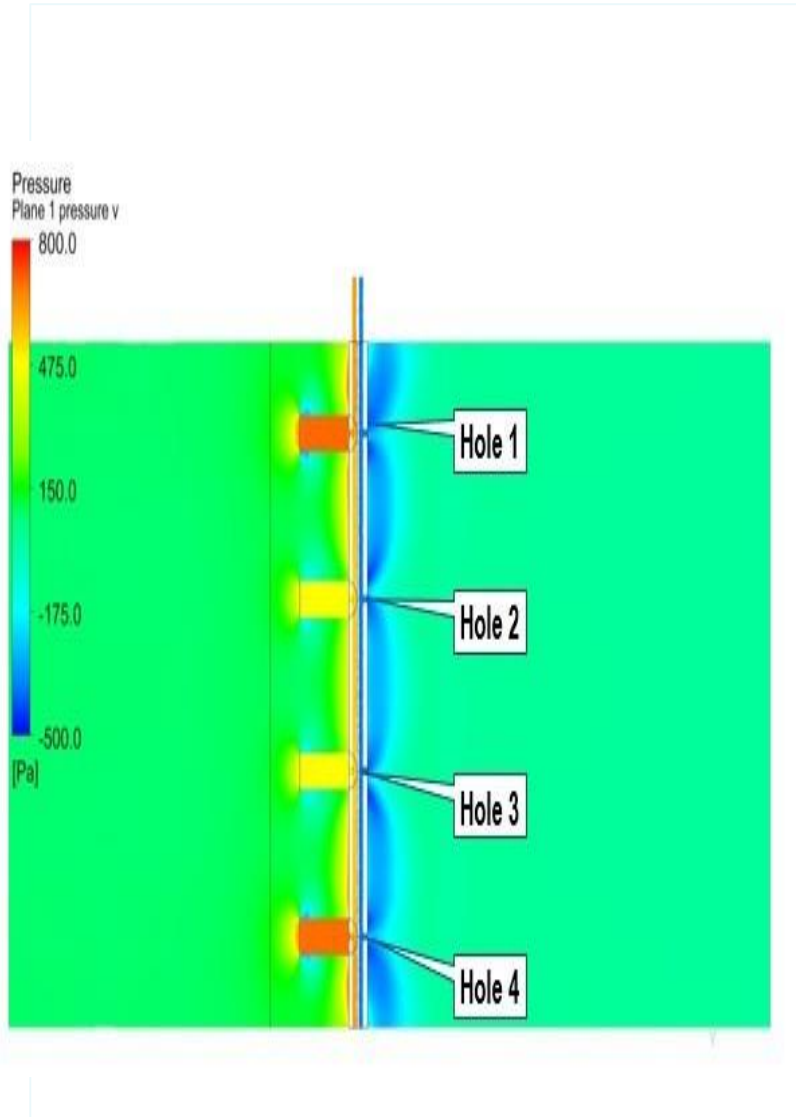
액체침투탐상검사보고서 REPORT OF LIQUID PENETRANT EXAMINATION		Report No. 보고서 번호	
		Page No. 페이지 번호	2 of 3
Owner / Customer 주요주 / 고객	Project No. 공사번호	Project Name 공사명	
Item Name 제품명	Work Order No.	DWG. No. 도면번호	Rev. 개정
		331865	0
Identification No. 확인번호	Accept 합격	Reject 불합격	Interpretation 해설
P10 WELDED PART	Y		NO RECORDABLE INDICATION
P11 WELDED PART	Y		NO RECORDABLE INDICATION
P12 WELDED PART	Y		NO RECORDABLE INDICATION
- B L A N K S -			
* Lux meter : TES 1300A, SN : 120901742, Due date : 2016.05.04. * Thermometer : TES 1226, SN : 110719584, Due date : 2016.06.09. * Interpretation time : Max 30 min. * Drying time after surface cleaning : 5 min.			
SKETCH ON LINE, IF NECESSARY OR ATTACHED. 필요시 필연하면 스캔/사진/도면 첨부함 Examined By 시행자 Interpreted By 판독자 Approved By 승인자 KMI-QF-037-02 KOREA MATERIAL INSPECTION CO., LTD.			

액체침투탐상검사보고서 REPORT OF LIQUID PENETRANT EXAMINATION		Report No. 보고서 번호	
		Page No. 페이지 번호	3 of 3
Owner / Customer 주요주 / 고객	Project No. 공사번호	Project Name 공사명	
Item Name 제품명	Work Order No.	DWG. No. 도면번호	Rev. 개정
		331865	0
PT MAP (2Set)			
* Lux meter : TES 1300A, SN : 120901742, Due date : 2016.05.04. * Thermometer : TES 1226, SN : 110719584, Due date : 2016.06.09. * Interpretation time : Max 30 min. * Drying time after surface cleaning : 5 min.			
SKETCH ON LINE, IF NECESSARY OR ATTACHED. 필요시 필연하면 스캔/사진/도면 첨부함 Examined By 시행자 Interpreted By 판독자 Approved By 승인자 KMI-QF-037-03 KOREA MATERIAL INSPECTION CO., LTD.			

10-8. 품질관리(Dimension Report)




11-1. 연구개발 (Research & Development)



완료기술

11-2. 연구개발 (Software Development)

제 C-2018-004301 호




저작권 등록증


1. 저작물의 제호(명칭)	멀티터치 콘텐츠 세팅
2. 저작물의 종류	컴퓨터프로그램저작물>시스템프로그램>유틸리티 S/W>시스템 지원 S/W
3. 저작자 실명(법인명)	주식회사 대한인스트루먼트 경기도 화성시 무하로36번길
4. 생년월일(법인등록번호)	110111-0806236
5. 창작연월일	2018년01월29일
6. 공표연월일	2018년01월31일
7. 등록연월일	2018년02월13일
8. 등록사항	저작자 : 주식회사 대한인스트루먼트, 창작 : 2018.01.29, 공표 : 2018.01.31

『저작권법』 제53조에 따라 위와 같이 등록되었음을 증명합니다.

2018년 03월 13일

한국저작권위원회 

제 C-2018-004302 호




저작권 등록증


1. 저작물의 제호(명칭)	KOT센터 실시간 데이터를 수집 하는 프로그램
2. 저작물의 종류	컴퓨터프로그램저작물>시스템프로그램>유틸리티 S/W>시스템 지원 S/W
3. 저작자 실명(법인명)	주식회사 대한인스트루먼트 경기도 화성시 무하로36번길
4. 생년월일(법인등록번호)	110111-0806236
5. 창작연월일	2018년01월29일
6. 공표연월일	2018년01월31일
7. 등록연월일	2018년02월13일
8. 등록사항	저작자 : 주식회사 대한인스트루먼트, 창작 : 2018.01.29, 공표 : 2018.01.31

『저작권법』 제53조에 따라 위와 같이 등록되었음을 증명합니다.

2018년 03월 13일

한국저작권위원회 

제 C-2018-004303 호




저작권 등록증

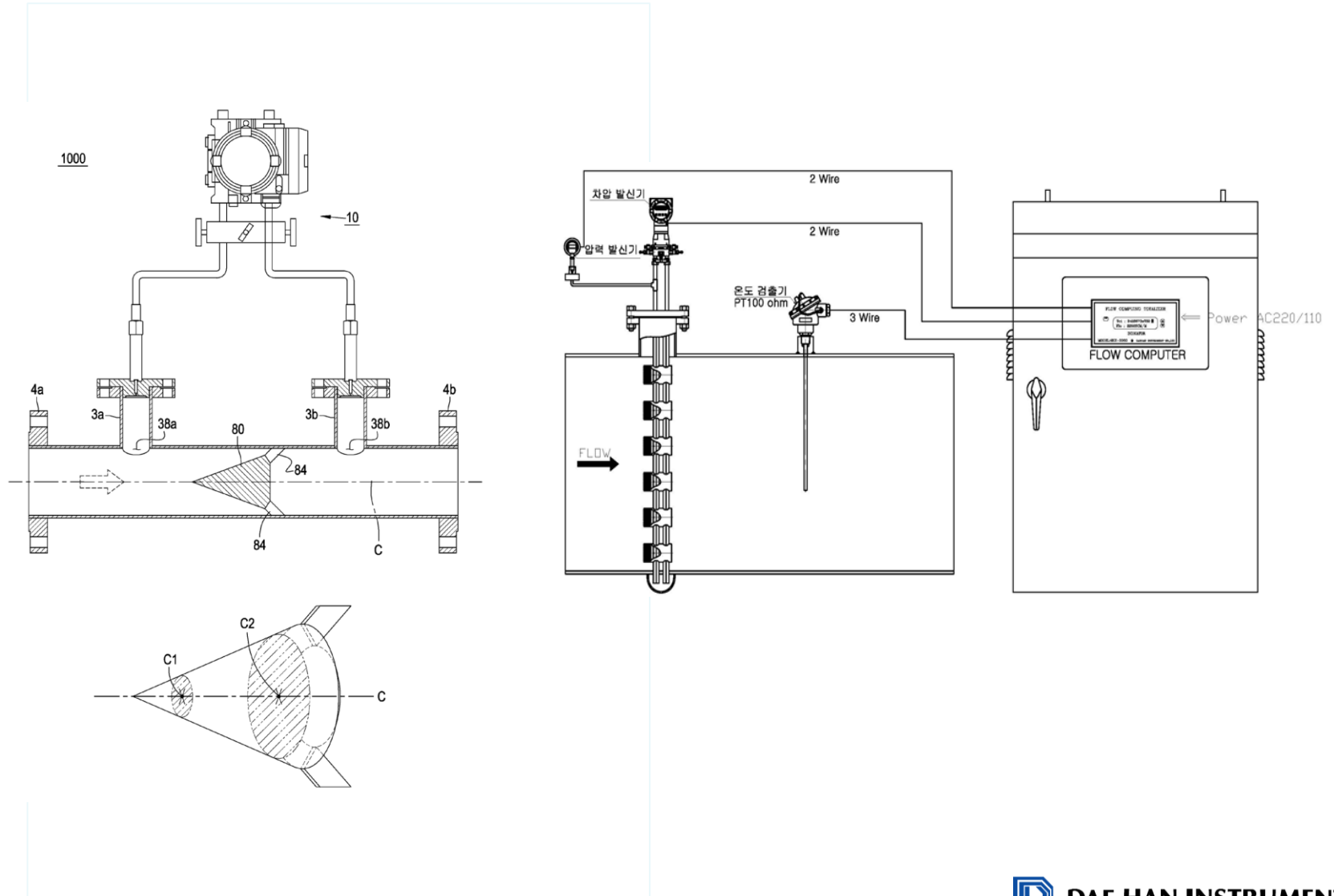
1. 저작물의 제호(명칭)	카메라 및 길러미카를 활용하여 키오스크의 위치 확인 트래커 소프트웨어
2. 저작물의 종류	컴퓨터프로그램저작물>시스템프로그램>유틸리티 S/W>시스템 지원 S/W
3. 저작자 실명(법인명)	주식회사 대한인스트루먼트 경기도 화성시 무하로36번길
4. 생년월일(법인등록번호)	110111-0806236
5. 창작연월일	2018년01월29일
6. 공표연월일	2018년01월31일
7. 등록연월일	2018년02월13일
8. 등록사항	저작자 : 주식회사 대한인스트루먼트, 창작 : 2018.01.29, 공표 : 2018.01.31

『저작권법』 제53조에 따라 위와 같이 등록되었음을 증명합니다.

2018년 03월 13일

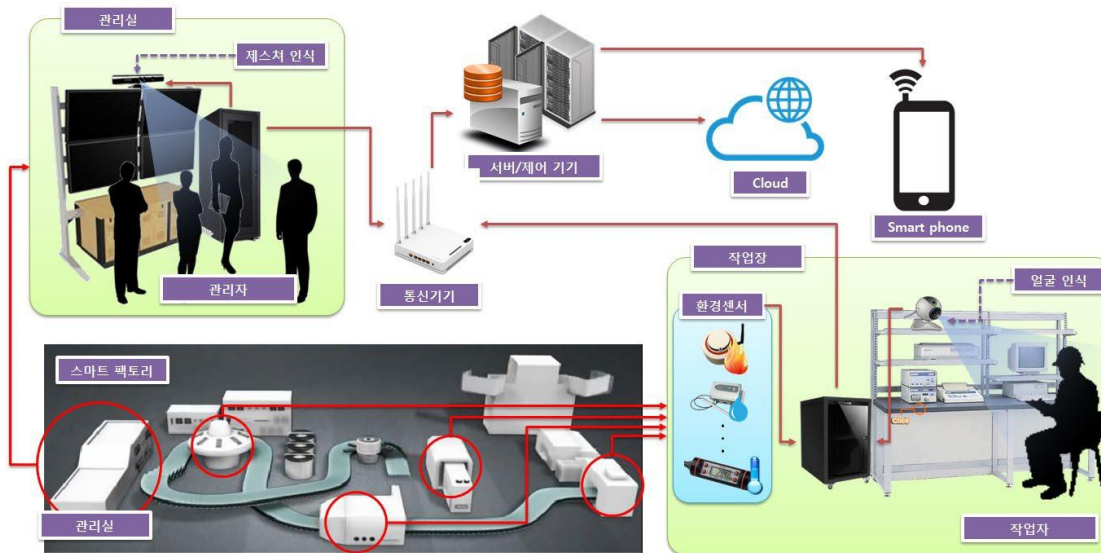
한국저작권위원회 

11-3. 연구개발 (Patent Development)

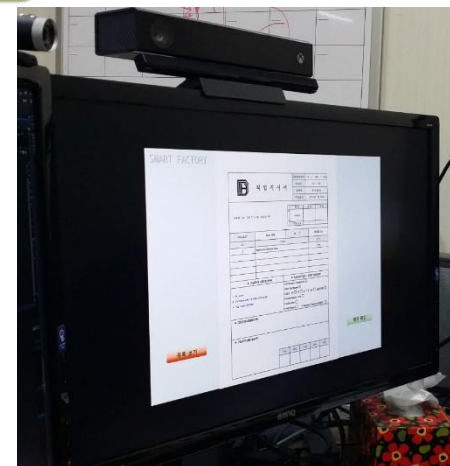




11-4. 연구개발(Smart Factory)

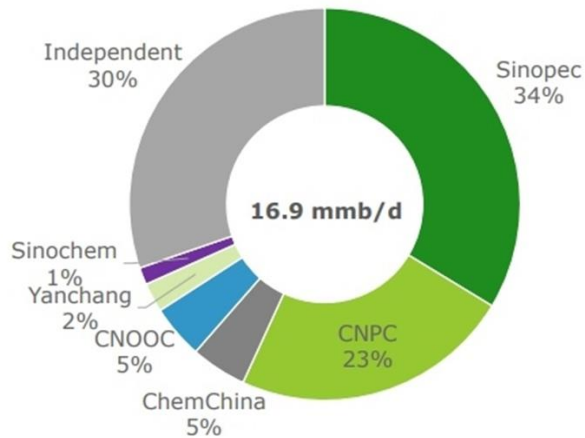


Smart Recognition



Smart Assign

International Sales Network



POSCO

HHI
(HYUNDAI HEAVY INDUSTRIES)

HSHI
(HYUNDAI SAMHO HEAVY INDUSTRIES)

KROHNE

SAMSUNG HEAVY INDUSTRIES

HSD ENGINE



Projects

No	CUSTOMER	PROJECT NAME	Q'TY	DATE					
1	CJ CORP'	REVISION REPAIR WORK	3pcs	1991.11	27	HAEWON INST'	POSCO KWANGYANG	8pcs	2003.06
2	SKI	INDONESIA	14pcs	1992.08	28	HAEWON INST'	POSCO POHANG 3,4 BLAST FUR-NACE TR P	28pcs	2004.01
3	SKI	REPAIR	13pcs	1992.11	29	SAEWHA INST	POSCO KWANGYANG NO 9 POWER PLANT	4pcs	2004.12
4	KUM HO	REPAIR	2pcs	1992.11	30	DAEWOO E&C	KSTAR NUCLEAR FUSION	5pcs	2004.12
5	KO GAS	REPAIR	63pcs	1992.12	31	POSCO	KWANGYANG 3 BLAST FURNACE	20pcs	2005.03
6	JEON JU PAPER	INCREASE	13pcs	1993.02	32	POSCO	POHANG 2 BLAST FUR-NACE	35pcs	2005.07
7	KWANG MYUNG	CHUNG MU WASTEWATER TREATMENT AREA	6pcs	1993.02	33	POSCO	POHANG 3 BLAST FUR-NACE	7pcs	2005.08
8	DONG KUK SYNTHETIC FIBER CO	GUMI FACTORY	33pcs	1994.01	34	SAE HAN INST'	BUSAN GI JANG WASTEWATER TREATMENT AREA	8pcs	2005.11
9	SAMSUNG	GUMI CHEIL INDUSTRIES	27pcs	1995.01	35	DAEMYOUNG INST	POSCO FINEX(O2)	10pcs	2006.02
10	DONG YANG CHEMICAL	GUN SAN FACTORY	5pcs	1995.11	36	SAEWHA INST'	POSCO FINEX	9pcs	2006.05
11	DONG YANG CHEMICAL	ML PROJECT	11pcs	1996.05	37	HEXA MAS(Malaysia)	SEGAMAT & KUANTAN	19pcs	2007.04
12	HITROL	WHA ISLAND WASTEWATER TREATMENT AREA	5pcs	1996.07	38	AIR PRODUCTS	Ann-Joo Steel	14pcs	2008.01
13	SAMSUNG CO	BAN WEL A CLEANING BED	10pcs	1996.09	39	PLANT & OFFSHORE TECHNOLOGY SDN BHD	100000MTPY PLANT BIOFUELS BIODIESEL PLANT	18pcs	2007.12
14	KYUNG WON SYSCON	POSCO REPAIR(TARGE ORIFICE)	5pcs	1996.01	40	SARAWAK SHELL BERHAD	CILIPADI GAS FIELD DEVELOPMENT	20pcs	2008.10
15	POSCO	LIME PLASTICITY FACTORY	5pcs	1997.01	41	PLANT & OFFSHORE TECHNOLOGY SDN BHD	GLOBAL BONANZA BIODIESEL PLANT, KU CHING, SARAWAK	6pcs	2008.11
16	POSCO	KWANG YANG L/F AN INSTALLATION	35pcs	1997.09	42	SEYU IN TECH / CPOC	CPOC BRIDGE PROJECT-C07001-ENG-PR-IN-065	5pcs	2009.08
17	KWANG MYUNG	NAM HAE WASTEWATER TREATMENT AREA	12pcs	1997.06	43	Carigali-PTTEPI Operating Company sdn. Bhd	ENGINEERING, PROCUREMENT, CONSTRUCTION&COMMISSIONING OF MDLQ DECK AND JACKET, MFP AND TRIPOD AND THREE(3) BRIDGES	5pcs	2009.09
18	KWANG MYUNG	KIM CHEN WASTEWATER TREATMENT AREA	16pcs	1997.01	44	PINESYS	POSCO 4 BLAST FURNACE	5pcs	2009.11
19	POSEC	POHANG L/F AN INSTALLATION	37pcs	1998.01	45	JUNGWOO SYSTEM	SK CHEMICAL	6pcs	2009.11
20	KWANG MYUNG	KIM CHEN WASTEWATER TREATMENT AREA	16pcs	1997.01	46	NPOSYS	POSCO	3pcs	2009.11
21	POSEC	POHANG L/F AN INSTALLATION	37pcs	1998.01	47	PINESYS	POSCO 4 BLAST FURNACE	5pcs	2009.11
22	HYUNDAI HEAVY INDUSTRIES / MAERSK OIL	AP MOLLER	4pcs	2001.03	48	JUNGWOO SYSTEM	SK CHEMICAL	6pcs	2009.11
23	POSCO	CASTING A BLAST PCI	18pcs	2001.04	49	NPOSYS	POSCO	3pcs	2009.11
24	HYUNDAI HEAVY INDUSTRIES /EPNL	AMENAM PROJECT	28pcs	2001.12	50	HYUNDAI ROTEM	HYUNDAI STEEL COMPANY BLAST FURNACE 1 ORIFICE FLATE DRAWING	8pcs	2010.01
25	I MARKET KOREA	MOK PO BOK HANG WASTEWATER TREATMENT AREA	8pcs	2003.03	51	KILLWOOSYSTEM	Gwangyang five sintering	2pcs	2010.02
26	HAEWON INST'	POSCO KWANGYANG	10pcs	2003.05	52	KILLWOOSYSTEM	Gwangyang five sintering	6pcs	2010.02



Projects

53	HYUNDAI ROTEM	HYUNDAI STEEL 1 BLAST FURNACE	3pcs	2010.02
54	KOREA PROCESS AUTOMATION		2pcs	2010.02
55	KILLWOOSYSTEM	POSCO	2pcs	2010.02
56	KILLWOOSYSTEM	POSCO	6pcs	2010.02
57	PANASIA	CCP01 PJ(RF MACDONALD)	1pc	2010.05
58	KILLWOOSYSTEM	POSCO	6pcs	2010.05
59	HYUNDAI ROTEM	HYUNDAI STEEL 1 BLAST FURNACE-A/S	1pc	2010.05
60	KILLWOOSYSTEM	POSCO	16pcs	2010.05
61	HEAWON INDUSTRIAL SYSTEM	POHANG- P4BF TRP	4pcs	2010.05
62	Rpcsl TECH		6pcs	2010.06
63	SEHUA INSTRUMENT	NORTHERN FIELD BUNGA ORKID DEVELOPMENT	14pcs	2010.06
64	SNRKOREA	BOARD ASS'Y PROJECT	6pcs	2010.07
65	SAMJIN TECH	POSCO -OGL PJ	10pcs	2010.08
66	KNCE ENERGY	KNCE ENERGY	2pcs	2010.08
67	DONGJINFITTING	MALAYSIA	2pcs	2010.08
68	SEIN TECH	HYUNDAI HEAVY INDUSTRIES-RIYADH	4pcs	2010.12
69	WON ENG	MOORIM P&P	2pcs	2011.04
70	ABB KOREA	DAEWOO SHIPBUILDING	5pcs	2011.09
71	SEHUA INSTRUMENT	KWANGYANG POSCO 1 BLAST FURNACE PCL	20pcs	2012.04
72	GILWOO SYSTEM		4pcs	2012.09
73	HACH		13pcs	2012.09
74	ONE ENGINEERING	PK CHEMICAL	2pcs	2012.09
75	HANYANG Co.,Ltd	HANWHA CHEMICAL	4pcs	2012.09
76	ABB KOREA		5pcs	2012.09
77	DONGWOO ENG		2pcs	2012.10
78	MYUNG SHIN	INDONESIA IRON WORKS	1 LOT	2012.11
79	SEWHA INSTRUMNET	KWANGYANG 1 GORO 2 IMPROVEMENT	1 LOT	2012.10
80	DAEMYUNG METERS	INDONESIA LIME INSTALLATION	1 LOT	2012.12
81	ICHI/SURE TECHNOLOGY GROUP LIMITS	CHANGZHOU Xinri -(ICHI13002)	6pcs	2013.01
82	INTERFLOW	EPCC- South Acis Production Topsides Facilities	30pcs	2013.01
83	TOTAL INSTRUMENT	WON JU Sewage disposal plant	20pcs	2013.02
84	DURE ENGINEERING		1pc	2013.03
85	SINWOO F.A		6pcs	2013.04
86	PATEG ENGINEERING		10pcs	2013.04
87	DONGWOO ENGINEERING		2pcs	2013.05

88	MYUNG SHIN		15pcs	2013.05
89	HOWON INC		2pcs	2013.05
90	DURE ENGINEERING		2pcs	2013.06
91	HOWON INC	UCH II EXPANSION PJT	18pcs	2013.06
92	DAEJIN		2pcs	2013.07
93	HOWON INC		60pcs	2013.07
94	MYUNG SHIN		8pcs	2013.08
95	HOOJI INSTRUMENT		12pcs	2013.08
96	SEHUA INSTRUMENT	POSCO-CCPP	1 LOT	2013.09
97	HOONE INC	HYUNDAI	60pcs	2013.10
98	HYUNDAI PROCESS		2pcs	2013.10
99	PATEK ENG		10pcs	2013.11
100	FUJI INS		1pc	2014.01
101	DS TECHNOLOGY		7pcs	2014.03
102	DONGWOO ENG		4pcs	2014.03
103	MYUNG SHIN	BRAZIL	90pcs	2014.04
104	HANCHANG	YOUNGPUNG REFINERY	2pcs	2014.04
105	TONGYANG		3pcs	2014.05
106	ESP		2pcs	2014.05
107	TK SYSTEM		5pcs	2014.06
108	SANGYUNG		1pc	2014.08
109	DAEMYUNG INSTRUMENT		8pcs	2014.08
110	TK SYSTEM	SINBORYUNG CHEMICAL	27pcs	2014.09
111	SIVA ENG	SIVA-161 (EMT)	16pcs	2014.09
112	MYUNG SHIN		4pcs	2014.10
113	WON ENG	LOTTECHEMICAL	4pcs	2014.11
114	SHINWA TRADE		1pc	2015.02
115	SEWON DYDRO		2pcs	2015.03
116	DONGWOO ENG		1pc	2015.03



Power Sector

Project	Client	Location	Item	Qty
POSCO CCPP UNIT 7 & 8 & 9	POSCO E&C	KOREA	ORIFICE & RO	189
POSCO POWER	POSCO E&C	INDONESIA	SHEATH THERMOCOUPLE	160
POSCO POWER PRODUCT GAS CCPP UNIT 1&2	POSCO E&C	KOREA	ORIFICE	131
BRAZIL CSP POWER PLANT	POSCO E&C	BRAZIL	ORIFICE , NOZZLE, SEAL POT	129
INDONESIA INTEGRATED STEEL MILL POWER PLANT	POSCO E&C(PT KRAKATAU POSCO POWER)	INDONESIA	ORIFICE	27
HYUNDAI GREEN POWER	HYUNDAI ENGINEERING & CONSTRUCTION	KOREA	ORIFICE	12
HYUNDAI GREEN POWER	HYUNDAI ENGINEERING & CONSTRUCTION	KOREA	ANNULAR VENTURI METER	8
INDONESIA INTEGRATED STEEL MILL POWER PLANT	POSCO E&C(PT KRAKATAU POSCO POWER)	INDONESIA	FLOW NOZZLE	4



Chemical Plants

Project	Client	Location	Item	Qty
UGCC(USTYURT GAS CHEMICAL COMPLEX) U&O	ABB	UZBEKISTAN	CONDENSATE POT	60
YUMEN REFINERY	SURE TECHNOLOGY GROUP LIMITED	CHINA	ORIFICE, WEDGE METER	34
HUBEI FERTILIZER FLYCOL PLANTE	CHINA PETROCHEMICAL	CHINA	VENTURI TUBE, POT	13
BENZENE HYDROGENATION	CHANGZHOU XINRI CHEMICAL	CHINA	ORIFICE	11
SECCO BUTADIENE PLANT	SHANGHAI SECCO PETROCHEMICAL CO.,LTD	CHINA	WEDGE METER	10
YULIN DMT0	CHINA COAL GROUP	CHINA	WEDGE METER	9
DMT0 PLANT	QINGHAI SALT LAKE MG TRADE CO.,LTD	CHINA	WEDGE METER	9
LIVESTOCK MANURE TREATMENT	CHANGNYEONG PROVINCE	KOREA	ANNULAR VENTURI METER	2
MAOMING ETHYLENE	CHINA PETROCHEMICAL	CHINA	VENTURI TUBE	1



Petrochemicals

Project	Client	Location	Item	Qty
Quanzhou Petrochemical	SINOPEC International(South China)Co.,Ltd	CHINA	HIGH PRESSURE ORIFICE	31
KEMYA HALOBUTYL	MISUZU SANGYO	JAPAN	INTEGRAL ORIFICE	24
Quanzhou Petrochemical Wax oil hydrogenation	NTS INTERNATIONAL DEVELOPMENT CO.,LTD	CHINA	HIGH PRESSURE ORIFICE	22
TAIZHOU PETROCHEMICAL	ZPEC	CHINA	WEDGE METER	21
TOP / NGLN	THAIOIL PUBLIC CO.,LTD	THAILAND	ORIFICE & RO & VENTURI TUBE	20
ZHENHAI PETROCHEMICAL	SURE TECHNOLOGY GROUP LIMITED	CHINA	WEDGE METER, VENTURI TUBE	20
LIAOYANG PETROCHEMICAL EOEG PLANT	LIAOYANG PETROCHEMICAL COMPANY	CHINA	INTEGRAL ORIFICE	19
TAHE PETROCHEMICAL SULFUR RECOVERY PLANT	SINOPEC International(South China)Co.,Ltd	CHINA	WEDGE METER	12
PETROCHEMICAL PX PLANT	ZHONGJIN PETROCHMICAL CO.,LTD	CHINA	HIGH ACCURACY ORIFICE	12
PETROCHEMICAL FCC PLANT	QILU PETROCHEMICAL CATALYZE	CHINA	STEADY FLOW METER	10
JINXI PETROCHEMICAL HYDROGEN PRODUCTION	CHEN XING INTERNATIONAL LIMITED	CHINA	VENTURI TUBE	9
JINXI PETROCHEMICAL NO.2 FCC OVERHAUL	CHEN XING INTERNATIONAL LIMITED	CHINA	WEDGE METER	8
Hainan Petrochemical PX plant	SINOPEC International(South China)Co.,Ltd	CHINA	HIGH ACCURACY ORIFICE	7
JINXI PETROCHEMICAL HYDROCRACKING PLANT	CHEN XING INTERNATIONAL LIMITED	CHINA	VENTURI TUBE	6
YULIN REFINERY GASOLINE TREATING PLANT	BEIJING PETROCHEMICAL ENGINEERING CO.,LTD	CHINA	WEDGE METER	6
PDH PLANT	ZHEJIANG SATELLITE ENERGY CO.,LTD	CHINA	VENTURI TUBE	6
LUOYANG PETROCHEMICAL	BEIJING PETROCHEMICAL CO.,LTD	CHINA	WEDGE METER	2



Offshore

Project	Client	Location	Item	Qty
INDIA CGL	POSCO	INDIA	ORIFICE	460
SHWE(MYANMAR E&P)	DAEWOO INTERNATIONAL CORPORATION	MYANMAR	ORIFICE	102
SUMANDAK	HEXAMAS	MALAYSIA	ORIFICE	60
AL DUR POWER AND WATER & POW	AL DUR POWER AND WATER COMPANY BSC	BAHRAIN	ORIFICE	53
CLAIR RIDGE FIELD	BP	SHETLAND IN UK	DRIP RING	50
EPCC OF PERMAS PRODUCTION TOPSIDE	THHEFABRICATORS SDN BHD	MALAYSIA	ORIFICE & RO	35
EPCC South Acis Topside Detailed Design	MURPHY SARAWAK OIL CO.,LTD	MALAYSIA	ORIFICE	30
CILIPADI GAS FIELD DEVELOPMENT	SARAWAK SHELL BERHAD	MALAYSIA	ORIFICE	20
SARAWAK GAS DEVELOPMENT	MURPHY SARAWAK OIL. CO.,LTD	MALAYSIA	ORIFICE	20
CLAIR RIDGE FIELD	BP	SHETLAND IN UK	SEAL POT	17
CLAIR RIDGE FIELD	BP	SHETLAND IN UK	SIGHT GLASS	14
SHWE(MYANMAR E&P)	DAEWOO INTERNATIONAL CORPORATION	MYANMAR	INSTRUMENT RING	13
SHWE(MYANMAR E&P)	DAEWOO INTERNATIONAL CORPORATION	MYANMAR	INSTRUMENT RING	12
INDONESIA OFFSHORE	PT. Pratama Contromatic Abadi	INDONESIA	ORIFICE ASSEMBLY	8
JORF LASFAR UNIT 5&6	DAEWOO INTERNATIONAL CORPORATION	MOROCCO	ANNULAR VENTURI METER	6
DELNOX RELIANCE	SAMSUNG HEAVY INDUSTRIES & DOOSAN ENGINE	KOREA	VENTURI PIPE	6
COCKING PLANT	CHINA OFFSHORE BITUMEN CO.,LTD	CHINA	WEDGE METER	4
DSO	CHEVRON	NIGERIA	SIGHT GLASS	3
CLAIR RIDGE FIELD	BP	SHETLAND IN UK	LEAKAGE CALIBRATION POTS	2



Project	Client	Location	Item	Qty	Status
U-3881 PROJECT	MISUZU INDUSTRIAL CORPORATION	JAPAN	GAS TANK(BOOSTER POT)	1	Completed
MOHO	TOTAL	Rep. of CONGO	CONDENSATE POT	2	Completed
MU-7539	MISUZU INDUSTRIAL CORPORATION	JAPAN	BOOSTER POT	1	Completed
SAMSUNG EGINA	SAMSUNG HEAVY INDUSTRY	KOREA	CONDENSATE POT	33	Under Progress



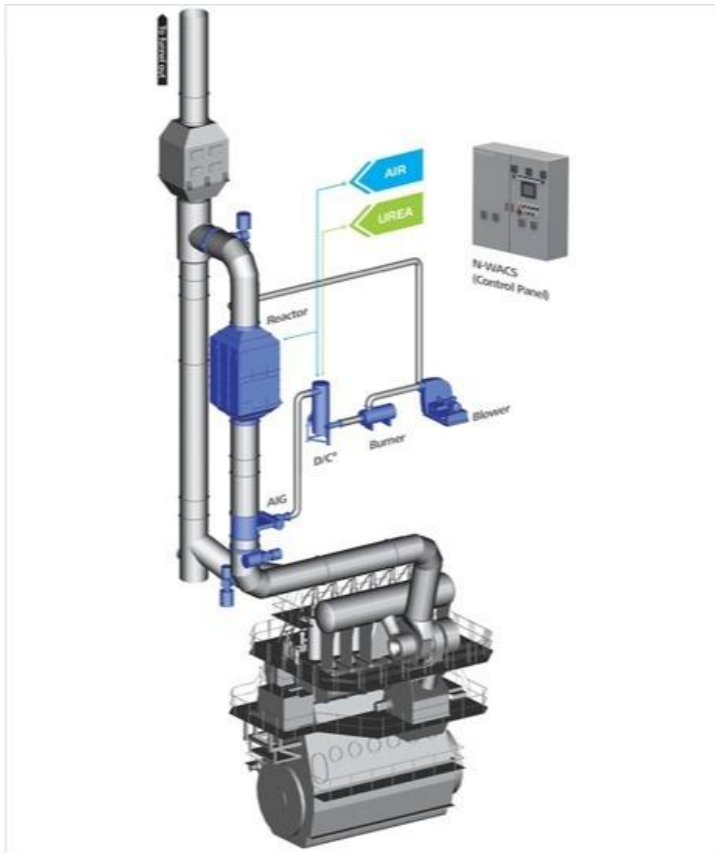
Project	Client	Location	Item	Q'ty	Date
Tongyeong LNG Terminal. 21T/H	KOREA GAS CORPORATION	KOREA	VENTURI TUBE	4	2011
Incheon LNG Terminal. 40T/H	KOREA GAS CORPORATION	KOREA	VENTURI TUBE / ORIFICE	12/28	2014
Gwangyang LNG Terminal NO.5 TANK	POSCO ICT	KOREA	VENTURI TUBE / ORIFICE	4/6	2017
Pyeongtaek LNG Terminal 30T/H	KOREA GAS CORPORATION	KOREA	VENTURI TUBE	4	2018
Jeju LNG Terminal. 5T/H	KOREA GAS CORPORATION	KOREA	VENTURI TUBE	2	2019
Jeju LNG Terminal. 5T/H	KOREA GAS CORPORATION	KOREA	VENTURI TUBE	2	2019



프로젝트공정협력개발

선박내 저온 질소화합물 제거 공정으로
유지비와 공간을 아낄 수 있는 개발에 참여하여 상용화 했음

벤츄리 튜브



- 엔진배기가스용
- 작은 압력손실
- 정밀도 우수

감사합니다



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