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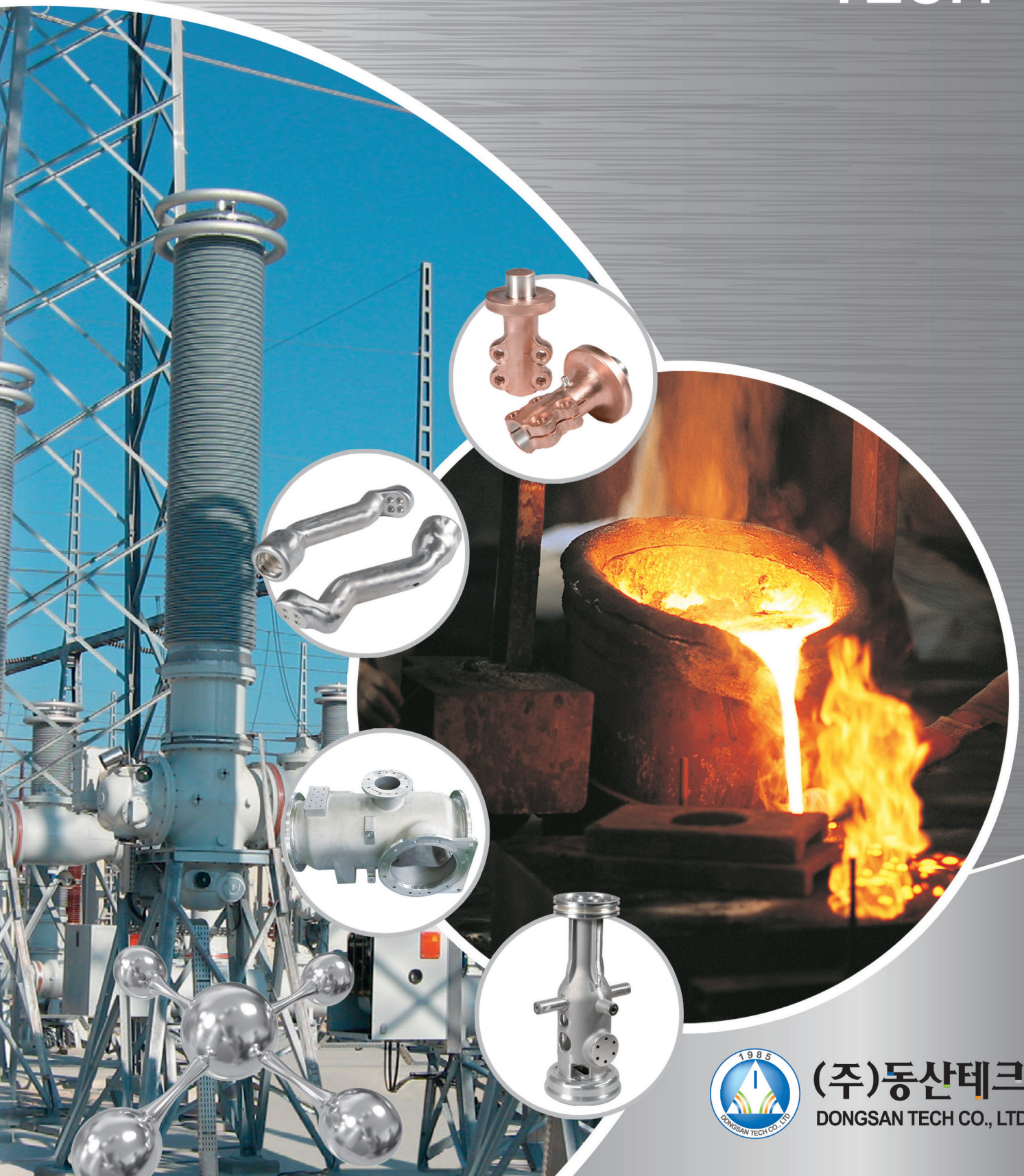
Best Quality of the World

DONGSAN TECH



(주)동산테크

DONGSAN TECH CO., LTD.

고객과 품질을 먼저 생각하는 기업

Company to think customer and high quality first.

인사말

당사는 1985년 설립한 이래 비철금속 주물의 리더로서 축적된 주조 기술과 끊임없는 연구개발로 고객에게 최고의 제품과 최상의 품질을 적기에 공급하고자 노력하고 있습니다.

순동, 동합금, 알루미늄 합금 소재의 중전기기용 주조품과 단조품을 생산하여 정밀가공 후 완성부품으로 공급하고 있습니다.

체계적인 교육 훈련으로 우수한 인력을 양성하여 세계가 인정하는 기업으로 성장하기 위해 동산테크는 지속적인 변화와 효율향상을 추진하고 있습니다.

고객 여러분의 변함없는 관심과 성원을 부탁드리며 귀하의 사업이 번창하시길 기원합니다. 감사합니다.

대표이사 심 현 석

Greetings

Dongsan Tech Co., Ltd. was established in 1985. As a leader of the non-ferrous metal industry, we provide the best products with the best quality in the shortest amount of time to our customers through our accumulated casting technology and our continuous research and development.

We supply precision machined castings and forgings of pure copper, copper alloy, and aluminum.

Through systematic training, Dongsan Tech promotes constant change and efficiency improvement in order to grow as a worldwide renowned company and to foster labor excellency.

We wish you would give us your continued interest and support, and hope that your business succeeds in its endeavors.

Thank you.

President HYUN-SUK SIM

미션과 비전 / Mission & Vision

사 명

우리는 특화된 기술로 안전한 전기공급을 도와 밝은 세상과 삶의 질 향상에 기여한다.

비 전

Vision 2020

최고 품질로 비철계 글로벌 강소기업이 된다.
(매출1천억 / 직원을 최고로 대우하는 일하기 좋은 기업)

Mission	We contribute to a brighter world and better quality of life by supplementing the stable electricity supply with our special technology.	
Vision	Become a globally strong Company everthough it's not too big with the highest quality (KRW 100 billion revenue / Best working environment for employees)	
Core Value	Communication	To develop a happy workplace by respecting and considering each other
	Responsibility	To observe working standards and procedures
	Efficiency	To make an effort for cost-effective high performance
	Change	To do our best in building the trust of our customers

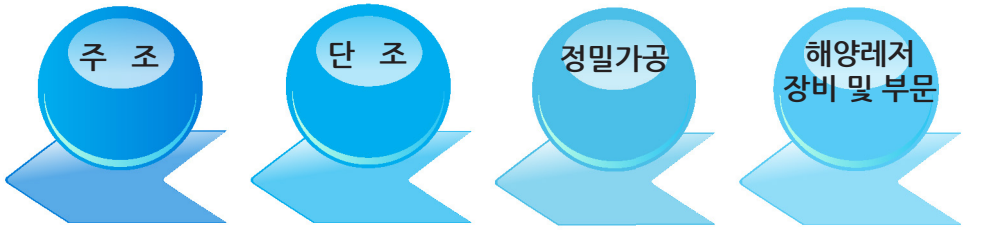
연혁

1985.04	“동산금속” 설립
1986.05	중전기용 362KV급 고압차단기 AL주물 개발
1989.10	일본 HITACHI 수출용 AL주물 개발
1991.05	고압차단기용 (362KV급) 내압, 기밀용 AL주물 개발
1996.11	㈜동산금속 법인전환
1997.12	ISO 9002/KSA9002 인증 획득 (KSA)
1999.02	VENTURE 기업 지정 (중소기업청)
2000.02	㈜동산금속 부설연구소 설립
2000.08	공장 이전 (창원시 팔용동 37-1번지)
2001.01	Single PPM 품질인증 획득
2003.08	고품질 Al및 Mg부품제조를 위한 반고상 성형기술 개발
2004.07	초고압 중전기용 Al 합금제 encloser 제조기술 개발
2004.10	㈜동산 TECH로 사명변경
2005.12	ISO 9001/ISO14001 인증 획득
2006.06	INNO-BIZ 기업 인증 (기술보증기금)
2006.11	Mg 합금에 의한 항공기용 부품 제조기술 개발
2009.01	친환경 용해용 회수장치를 이용한 고효율 공정기술 개발
2011.09	비대칭 대형주물의 원심주조장치 및 기술개발
2011.12	전자기장을 이용한 정량급송 및 in-line 용탕처리에 의한 고품위/저비용 Al주조합금 제조공정 기술개발
2013.03	원심주조공법을 이용한 Hooker& Beater 개발
2013.08	공장 이전 (함안일반산업단지)
2013.11	원심주조공법과 Al-Mg 합금을 이용한 Motor Boat 및 소형선박용 Al Propeller 개발

HISTORY

Apr.1985	Established Dongsan Metal
May.1986	developed Al casting of 362KV high-voltage circuit breaker for heavy electric machines
Oct.1989	Developed Al casting for Hitachi of Japan
May.1991	Developed (362 KV) pressure-resistance sealing Al casting for high-voltage circuit breaker
Nov.1996	Became a corporate body (Dongsan Metal Co., Ltd.)
Dec.1997	Obtained ISO 9002 / KSA 9002 certificates (KSA)
Feb.1999	Designated as a venture business (by SMBA)
Feb.2000	Established an affiliated laboratory
Aug.2000	Relocated the factory (37-1, Paryong-dong, Uichang- gu, Changwon-si)
Jan.2001	Obtained single PPM quality certificate
Aug.2003	Developed semisolid state processing for manufacturing high-quality Al and Mg parts
Jul.2004	Developed an Al-alloy enclosure manufacturing technology for extra high-voltage heavy electric machines
Oct.2004	Changed the name to Dongsan Tech Co., Ltd.
Dec.2005	Obtained ISO 9001 / ISO 14001 certificates
Jun.2006	Certified as an INNO-BIZ business (by KIBO)
Nov.2006	Developed an aircraft parts manufacturing technology using Mg alloy
Jan.2009	Developed high-efficiency process technology using eco-friendly dissolving recuperator
Sep.2011	Developed a centrifugal casting machine and technology for asymmetric large casting
Dec.2011	Developed a high-quality/low-cost Al casting alloy manufacturing process technology through rapid dosing of fixed quantity and in-line molten metal treatment using the electromagnetic field
Mar.2013	Developed hookers and beaters using the centrifugal casting method
Aug.2013	Relocated the factory (to Haman Industrial Complex)
Nov.2013	Developed Al propellers for motorboats and small ships using the centrifugal casting method and Al-Mg alloy

사업영역 / Business Scope



주 조	단 조	정밀가공	해양레저 장비 및 부문
·사형주조 -후란주조 -탄산가스형 ·금형주조 -중력주조 -원심주조	·열간단조 ·용탕단조	·머시닝센터 ·NC선반	·전동선외기 ·알루미늄 프로펠러
·Sand Casting -Furan Precess -CO_2 Precess ·Permanent M.C. -Gravity Mold Casting -Centrifugal Casting	·Hot Forging ·Squeeze Casting	·Machining Center ·CNC Lathe	·Electronic O.B.M. ·Al Propeller

생산능력(년간) / Capacity (year)

- 순동 주물, 동합금 주물 : 400 tons — Copper & Copper Alloy Casting : 400 tons
- 알루미늄합금 주물 : 1,600 tons — Aluminum Alloy Casting : 1,600 tons
- 동 및 알루미늄 합금 단조 : 1,000 tons — Copper & Aluminum Alloy Forging : 1,000 tons

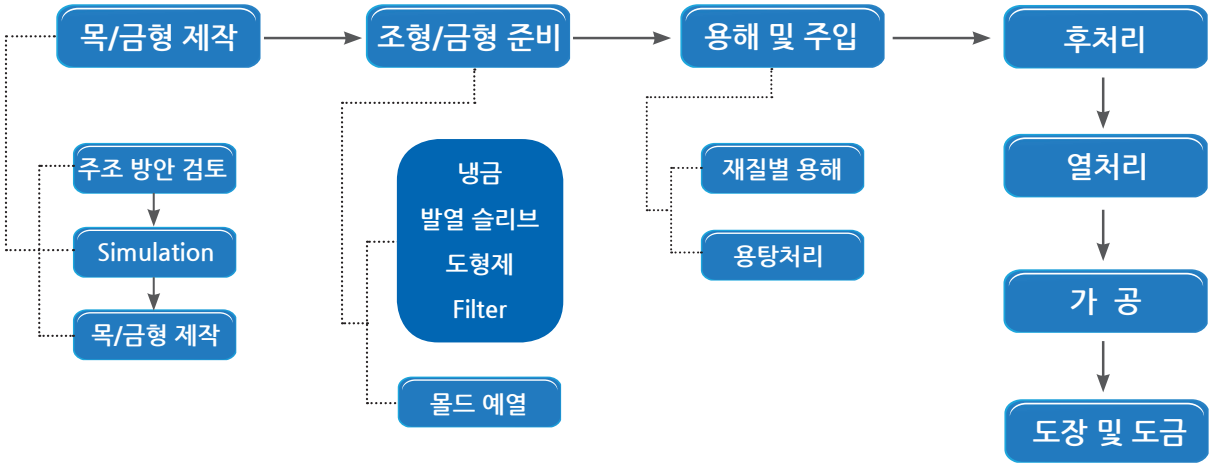
인증서 / Certificate

품질 Quality	ISO9001	ISO14001	CE Mark
기술 Technology	Venture	INNO-BIZ	R&D Center
특허 Patent	제10-1145151호	제10-0911163호	제10-0911164호

고객사 / CUSTOMERS

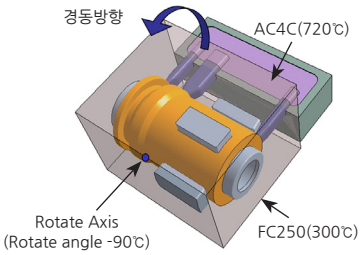
HYOSUNG · HYUNDAI HEAVY INDUSTRIES CO.,LTD. · LS IS · ILJIN
HIGEN S · KERI · KIMS Korea Institute of Materials Science · Fuji Electric

주조 작업공정도 / Casting Process

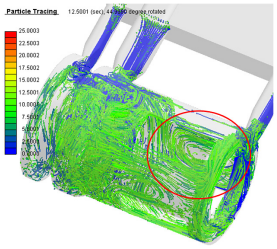


유동,응고 해석 / Simulation

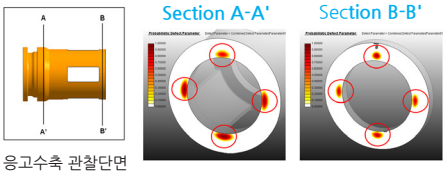
주조조건입력(Casting Condition Input)



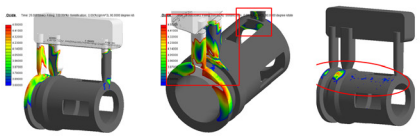
입자궤적(Particle Tracing)



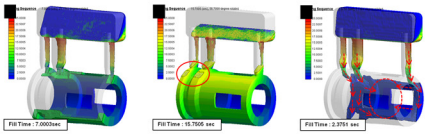
수축결함관찰(Retained Melt Modulus)



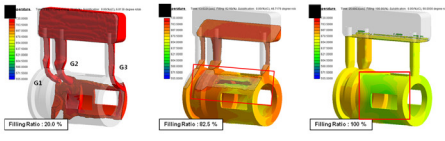
기포고립해석결과 산화물해석결과



충전해석결과(Analysis Result(1)



온도해석결과(Analysis Result(2)



사형주조제품 / Sand casting product

Al alloy product (Tank)

520x640x1090(90kg)

580x750x1240(125kg)

470x530x875(80kg)

Al alloy product (Conductor)

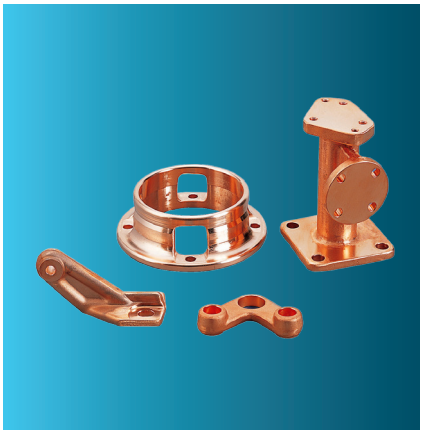
Ø270x430(33kg)

450x723x930(80kg)

Ø200x390(8kg)

Pure Copper product (Conductor)

Ø370x330(45kg)



Ø160x60(4kg)

Ø140x235(10kg)

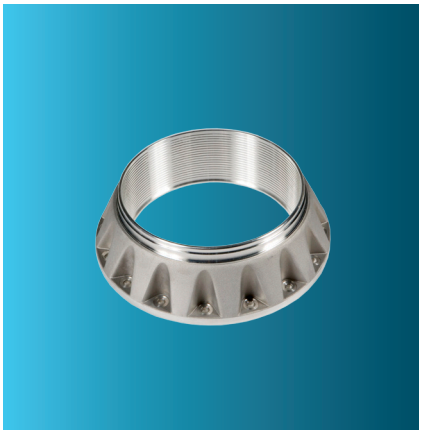
중력주조제품 / Gravity casting product

Al alloy product (Conductor)

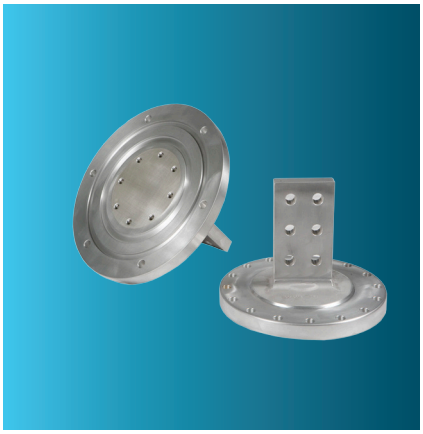
Ø200x600(19kg)

Ø290x470(32kg)

Ø250x622(18kg)



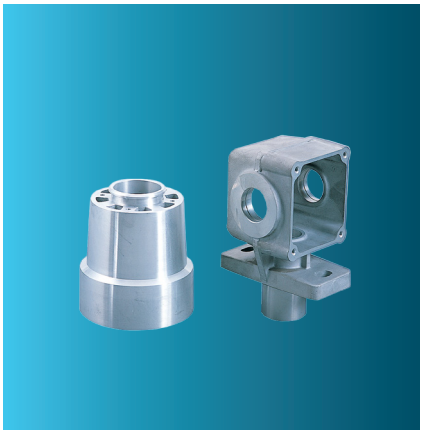
Ø715x145(19kg)



Ø300x202(10kg)

102x262x410(7kg)

106x110x180(1.5kg)



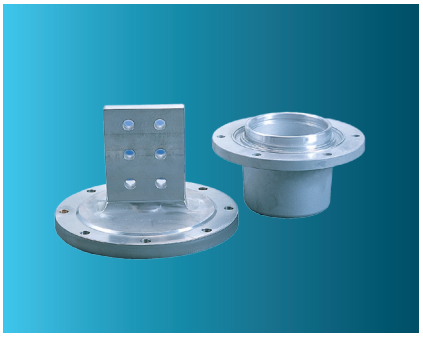
100x190x240(4kg)

180x355x450(11kg)

단조제품 / Forging product

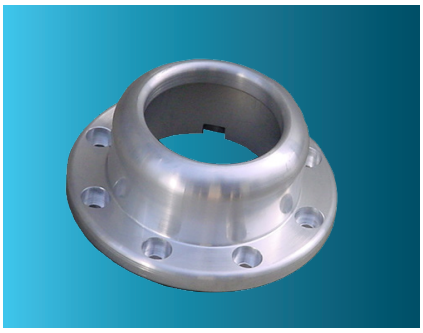
Al alloy product (Conductor)

Ø115x100(2.8kg)

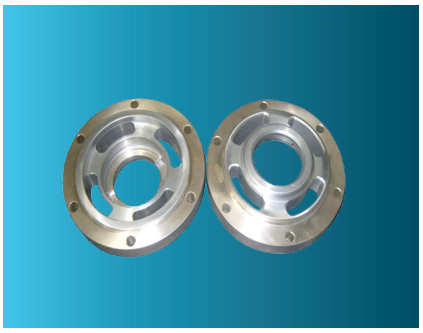


Ø300x202(10kg)

Ø120x110(6kg)



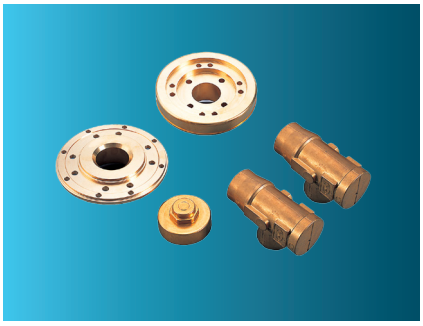
Ø150x72(2.1kg)



Ø155x40(1.5kg)

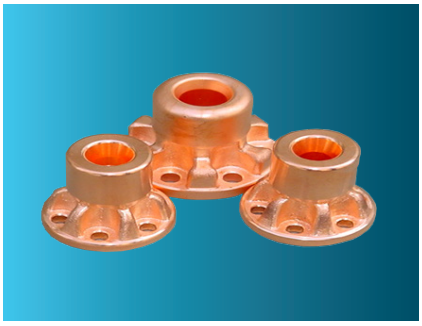
Ø190x133(6.5kg)

Cu alloy product (Conductor)



Ø80x170(15kg)

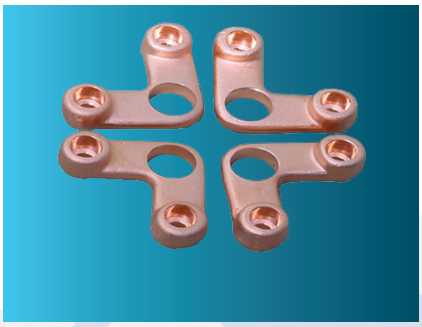
Ø230x85(24kg)



Ø100x90(5kg)

22x70x205(2.8kg)

40x41x190(1.2kg)



22x71x110(1.0kg)

해양레저장비 및 부품 / Marine leisure equipment and parts

Al Propeller (Product)

9 x 10.5

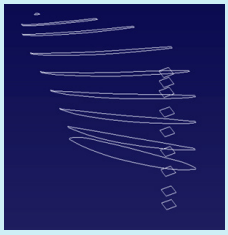
9.25 x 10

9.8 x 10.5

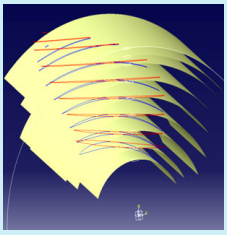
13 x 19

Al Propeller (Design)

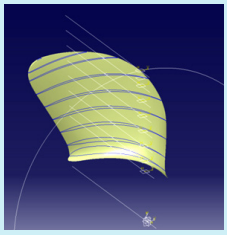
Propeller Design with CFD



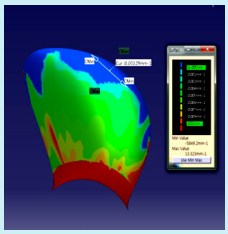
(a)반경에 대한 3차원 Chord 작업
(a) 3-D chord work for the radius



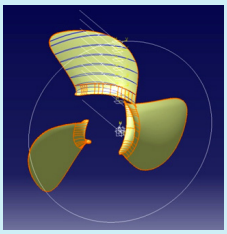
(b)3차원 Surface 작업
(b) 3-D surface work



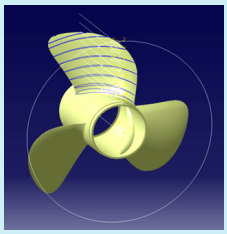
(c)블레이드 3차원 형성 작업
(c) 3-D blade forming work



(d)블레이드 곡률 분석 작업
(d) Curvature analysis for a blade



(e)블레이드 개수 형성 작업
(e) Blade forming work



(f)블레이드 최종 어셈블리 작업
(f) Final blade assembly work

3D Model

원심주조장치
Centrifugal casting machine

설비 / Equipment

사형주조 / Sand casting

사처리설비 / Sand Recycling Equipment

쇼트기 / Shot blasting machine

중력주조 / Gravity casting

중력주조라인 / Gravity casting machine

급속용해로 / Rapid melting furnace for Al alloy

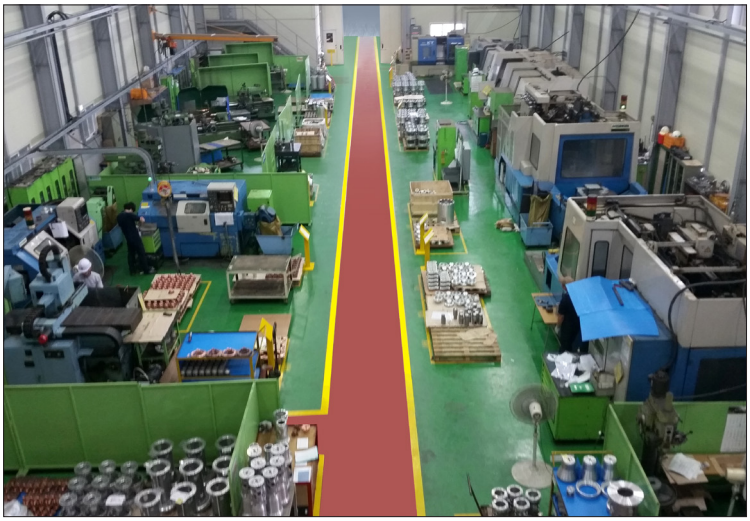
단조설비 / Forging equipment

단조공장 / Forging shop

단조프레스 / Forging press

설비 / Equipment

가공설비 / Machining equipment



가공공장 / Machining shop

머시닝센터 / Machining center

CNC 선반 / CNC lathe

시험장비 / Testing equipment

분광분석기 / Emission spectrometer

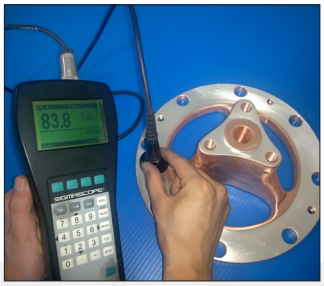
시험분석실 / Analytical laboratory

헬륨 검출장치 / Helium detector

측정장비 / Measuring equipment

석정반 / Surface plate

2차원 측정기 / 2-D measuring instrument



도전율 측정기 / Conductivity-measuring instrument

당사보유 특화기술 / Specialization Technology

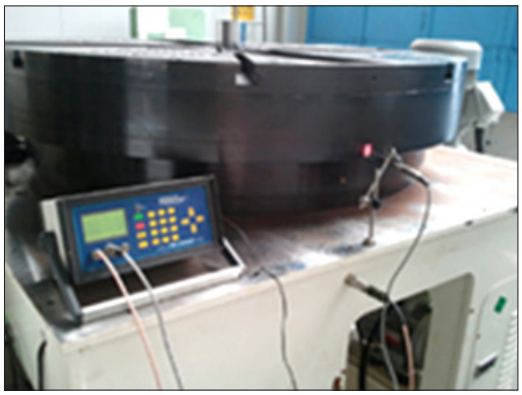
비대칭 원심주조 장치 / Non Axial symmetric Centrifugal Casting

Vertical centrifugal casting machine for non-axially symmetric mold casting-

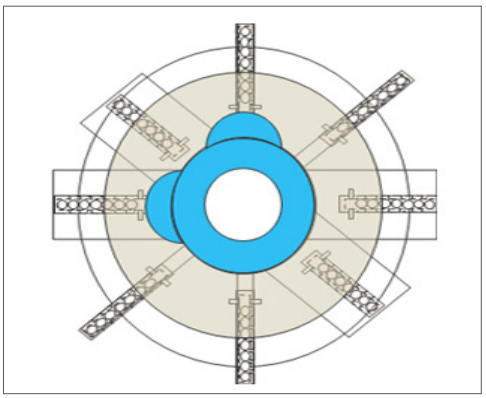
Patent No. 10-1145151 on May 4, 2012

비축대칭 수직형 원심주조장치- 특허등록(10-1145151, 2012. 05. 04)

편심측정 장치 / Eccentricity measuring instrument



편심제어 장치 / Eccentricity control device



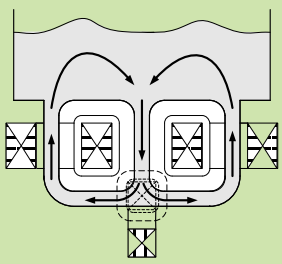
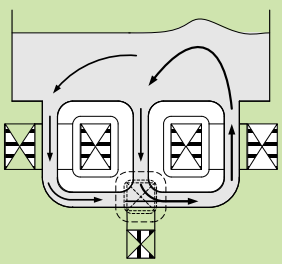
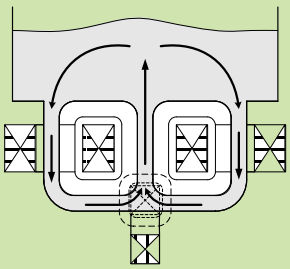
정량 용탕 급송장치 / Molten Metal Fixed Quantity Dosing Device

(The Molten Metal Automatically Fixed Quantity Dose Device Used the Electromagnetic Field)

장치의 특징 / Features

전자기장을 이용하여 자동으로 용탕처리(degassing)하고 정량을 자동/수동으로 급송하는 장치

It provides automatic degassing process using the electromagnetic field and doses fixed quantities in automatic or manual modes

(탈가스 및 개재물 제거) in-taking mode (degassing and inclusion removal)	(탈가스 및 개재물 제거) Holding mode (degassing and inclusion removal)	(용탕급송) Pumping mode (degassed dosing)
		

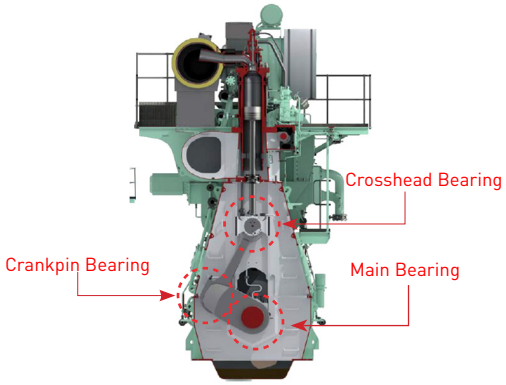
개발 제품 / Developing Products

메탈베어링 / Metal bearing for ship engine

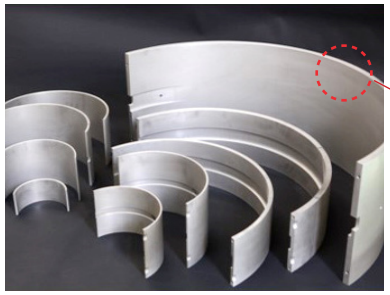
선박용 엔진의 고성능, 고출력화에 따른 고온, 고압 분위기하에서 윤활성과 내피로성이 우수한 소재 요구 표면에 치밀하고 안정적인 피막이 형성되어 내식성, 내마모성이 요구

High lubrication and fatigue resistance is required under high temperature and pressure because of the high-performance ship engine

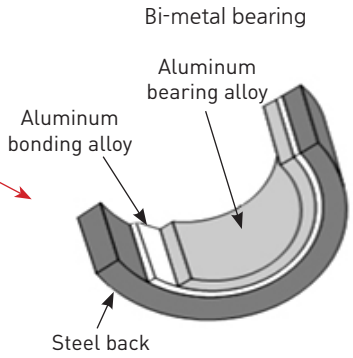
Corrosion and wear resistance is required with the dense and stable film formed



선박용 디젤엔진
Ship diesel engine



Al메탈베아링
Al metal bearing



Al메탈베아링 단면
cross section of Al metal bearing

Al-Sn메탈 베어링의 요구 특성 / Characteristics of Al-Sn Metal Bearing

- High fatigue strenght
- Moderate tribology
- Thermal stability
- Bonding strength
- Thermal conductivity

전동선외기 / Electrical outboard Machine

Motor	BLDC Motor 5Kw 48V(72V) 최대출력 사용시간:120분
Drive 동력전달방식	간접구동방식:5Kw이상 직접구동방식:5Kw이하
Propeller 프로펠러	Al-Mg합금(AC7A) 원심주조공법 적용
Mounting Bracket	Al합금(AC4A) Auto Tilting Mechanism
Streering Handle	통합콘드롤러 내장형
Integrated Controller 통합컨트롤러	Motor,충전회로,GHI통합
Solar Cell holder	박막형 Solar-cell적용 탄소섬유/Sus Pipe

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