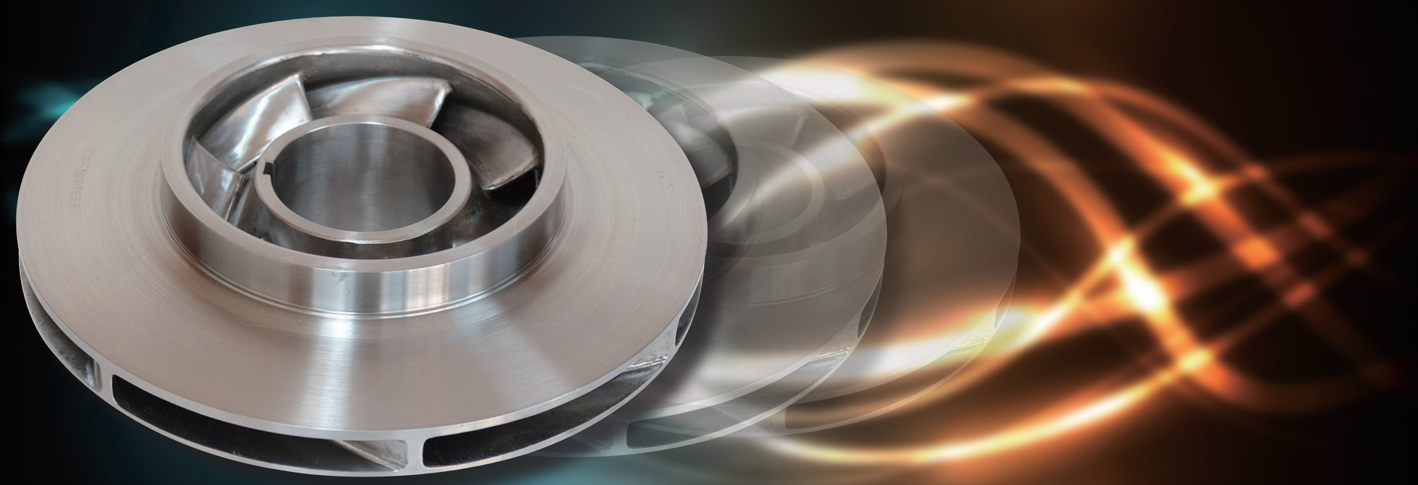


TAECHANG PRECISION

Technical Innovation

태창정공주식회사
TAECHANG PRECISION CO., LTD.

::CONTENTS / 목차

::VISION / 비젼

정밀주조법을 이용한 기초 소재 산업을 바탕으로 **신기술**과
제품개발로 **경쟁력**을 갖춘 **우수한 기업**으로 성장

As a basic meterial industry using the investment casting methods (Lost Wax Process), TaeChang Precision Co., Ltd. has grown into a good company which has a new technology, products development, and high international competition.

■ 제품 (PRODUCTS)

- 밸브부품(VALVE PARTS)
- 산업 펌프부품(PUMP PATRS)
- 산업 보일러 부품(BOILER PATRS)
- 산업 기계부품(MACHINE PATRS)
- 자동차 부품(AUTO PATRS)
- 산업 가스부품(GAS PARTS)
- 터빈 부품(TURBINE PATRS)

■ 거래업체 (PARTNER SHIP)

- YOUNG POONG PRECISION
- PK VALVE
- MS ENG
- DOOSAN HEAVY INDUSTRY
- HYUNDAI HEAVY INDUSTRY
- SAMSUNG VALEO
- S & S VALVE
- HALLA VISTEON AUTOPAL SERVICES S.R.O(CZECH)
- VELAN (USA, CANADA, PORTUGAL)
- USD(GERMANY)
- GOODWIN(ENGLAND)
- MOTOYAMA(JAPAN)
- HITACHI(JAPAN) / IHI(JAPAN)
- ZOOK(CANADA) / TOSHIBA(JAPAN)

::GREETING / 인사말

대표이사 하 준 평

Representative director
Ha Joon Pyeong

태창정공 주식회사는 정밀주조법(LOST WAX PROCESS)을 이용한 기초 소재 산업을 바탕으로 한 신기술과 제품개발로 국제 경쟁력을 가진 우수한 기업으로 성장하였습니다.
태창정공 주식회사는 철 및 비철 금속 소재 산업의 밸브류, 발전소 보일러 및 펌프, 자동차 부품 등 다양한 부품 소재를 생산하며 또한 재질은 수요자가 요구하는 특성, 기능에 만족 할 수 있는 선택이 가능함은 물론 앞으로 기초 산업 분야에 일익을 담당 할 수 있는 기업이 되고자 최선을 다할 것임을 다짐합니다.
감사합니다.

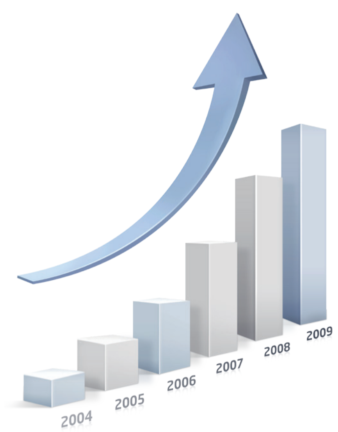
대표이사 **하 준 평**

As a basic meterial industry using the investment casting methods (Lost Wax Process), TaeChang Precision Co., Ltd. has grown into a good company which has a new technology, products development, and high international competition.
TaeChang produces various component materials such as a valve type, a power plant, a boiler and a pump, and car components of steel and nonferrous metals material industry.
Also, the quality of materials can be chosen to satisfy according to characters and functions of each consumer.
Furthermore, we guarantee that we will do our best to be the company which can charge a part of a basic industrial part.
Thanks.

Representative director Ha Joon Pyeong

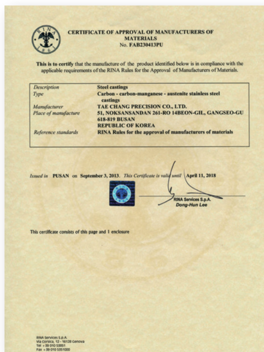
::HISTORY / 연혁

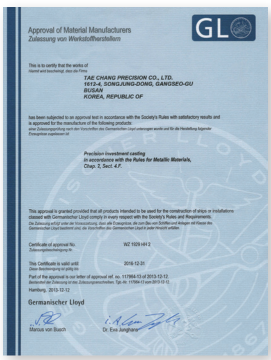
1992. 12	태창정공 회사 설립 (부산시 사하구 구평동) – Company Foundation
1999. 03	ISO9002:1994 / KSA9002:1998 인증 – ISO9002:1994 / KSA9002:1998 Approval
2000. 04	울진, 영광원자력 주급수 기동급수 임펠라 개발 – Uljin, Youngkuang atomic power plant IMPELLER component development
2001. 06	유망 중소기업 선정 – Promising medium and small sized enterprises selection
2003. 05	CLEAN 사업장 선정 – CLEAN FACTORY selection
2003. 09	Lloyd'S 선급 인증 – Lloyd'S (MD00/3000/0001/2) Approval
2004. 09	QS9000:1998 인증 – QS9000:1998 Approval
2005. 08	ISO9001 / TS16949 인증 – ISO9001 / TS16949 Approval
2005. 10	RINA 선급인증 – RINA FACTORY Approval
2006. 06	KR 선급인증 – KR FACTORY Approval
2006. 09	DNV 선급인증 – DNV FACTORY Approval
2006. 09	BV 선급인증 – BV FACTORY Approval
2006. 10	ABS 선급인증 – ABS FACTORY Approval
2007. 12	CE(PED) 유럽제품인증 – CE(PED) FACTORY Approval
2008. 12	GL 선급인증 – GL FACTORY Approval
2009. 01	기업부설연구소 설립 – Established TaeChang investment casting R&D Lap
2009. 02	INNO–BIZ (기술혁신형중소기업) 인증 – INNO–BIZ Approval (Type small and medium–sized enterprises, innovation)
2009. 06	한국가스안전공사 외주품질관리등록 (KGS) – Korea Gas Safety Corp. outsourced registration quality control (KGS)
2009. 10	ISO14001 획득 (SPK) – ISO14001 Approval (SPK)
2012. 05	벤처기업 인증 – Venture Business Approval
2013. 06	1, 2공장 통합 확장 이전 (부산 강서구 송정동) – Relocation of expanded factory integrated the 1st & 2nd factory. (Songjeong–dong, Gangseo–gu, Busan, Korea)
2013. 08	NK 선급인증 – NK FACTORY Approval

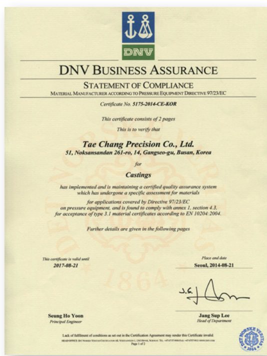


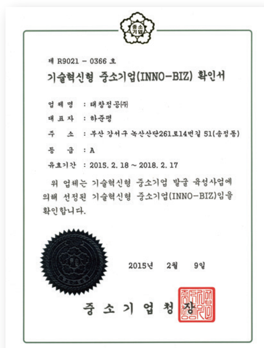
::QUALITY CERTIFICATIONS / 인증현황

태창정공(주)는 ISO9001 / TS16949 인증을 획득하여 고객에게 보다 나은 품질과 제품을 제공할수 있습니다.
TAECHANG PRECISION CO., LTD. is able to Provide much highquality manufactures by getting ISO 9001 / TS16949 approval





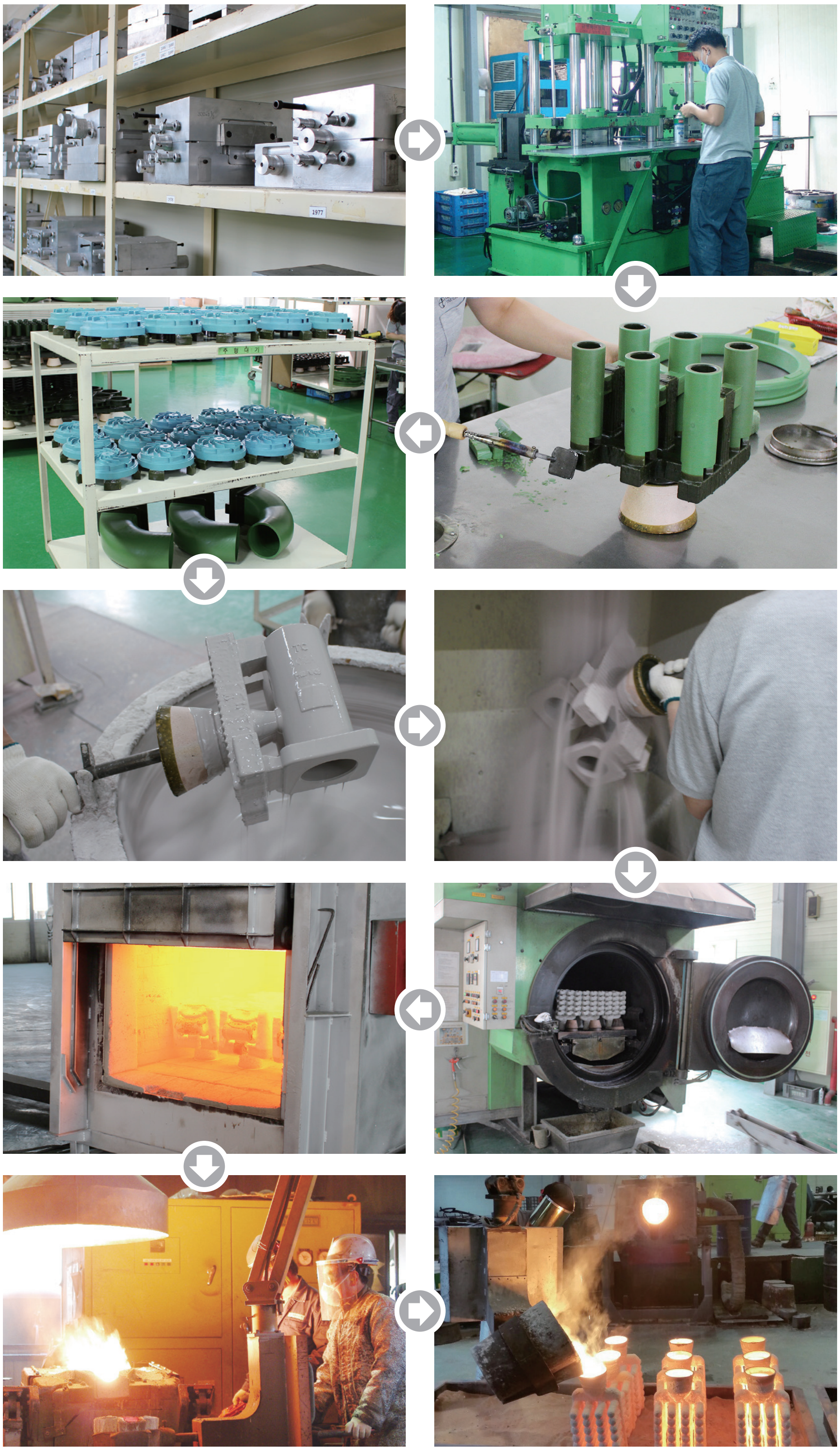


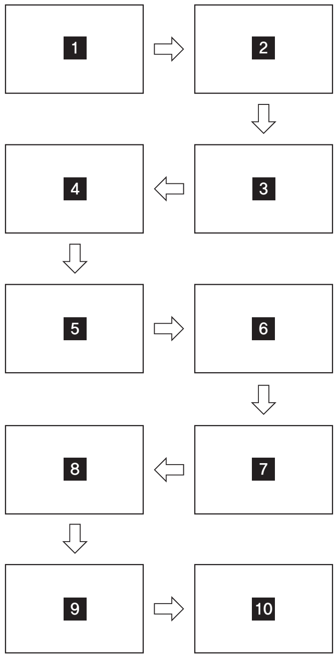


::ORGANIZATION / 조직도

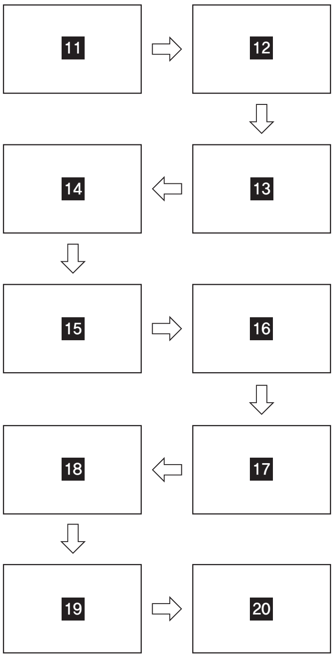
- 대표이사 President
  - 품질보증부 Q.A
  - 기술연구소 Technological institute
  - 영업부 Sales
  - 생산부 Production
    - 모형팀 Wax injection
    - 주형팀 Coating
    - 용해팀 Casting
    - 후처리팀 Finishing
    - 가공팀 Machining
  - 지원부 Administration
  - 진공주조사업부 Vacuum Castings

::MANUFACTURING PROCESS / 생산공정





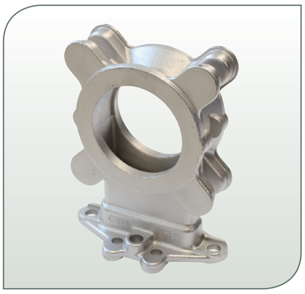
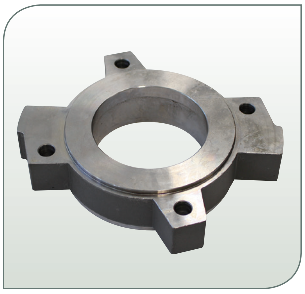
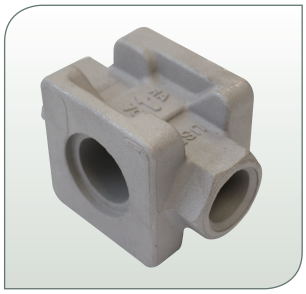
- **1** TOOLING
- **2** WAX PATTERN INJECTION
- **3** WAX PATTERN ASSEMBLY
- **4** WAX PATTERN ASSEMBLY–1
- **5** COATING
- **6** COATING–1
- **7** DEWAXING
- **8** BURN–OUT
- **9** MELTING
- **10** CASTING / POURING

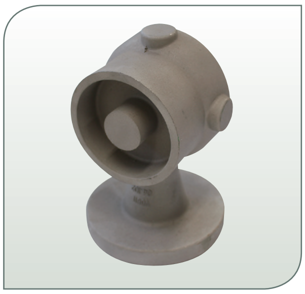


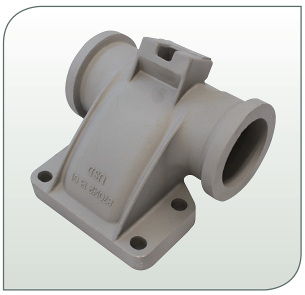
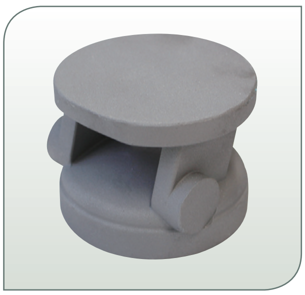
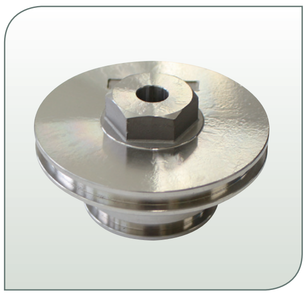
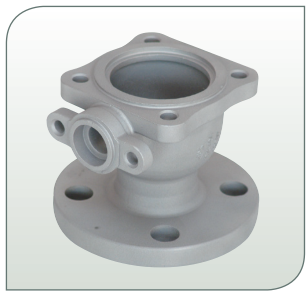
11 KNOCK–OUT
12 SHOT BLAST(APRON/HANGER)
13 CUTTING
14 GRINDING
15 HEAT TREATMENT
16 STRAIGHTENING
17 SAND BLAST
18 MACHINING
19 INSPECTION
20 SHIPMENT

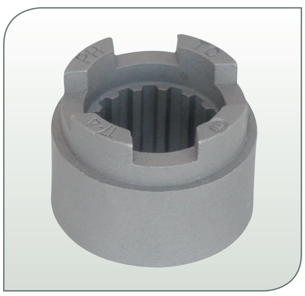
::PRODUCTS / 생산품

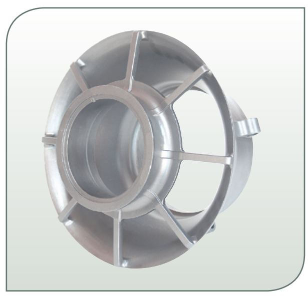
VALVE / 밸브 〉〉〉

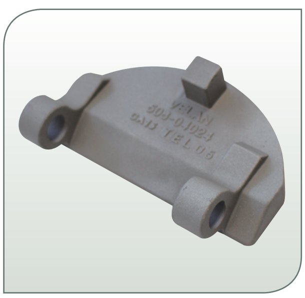
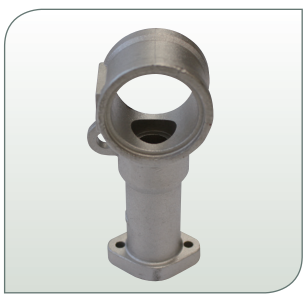
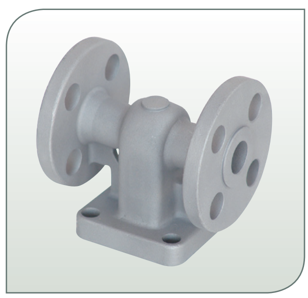






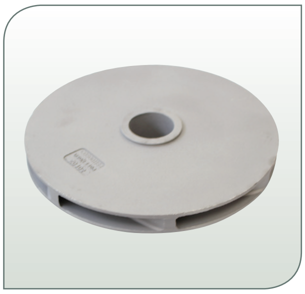
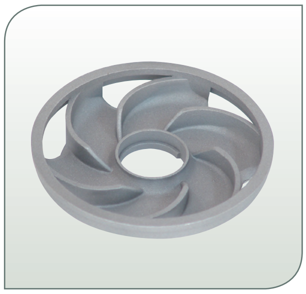
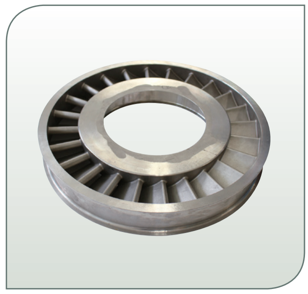
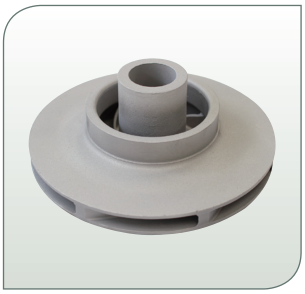
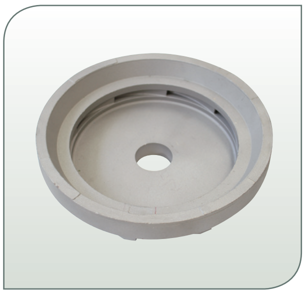


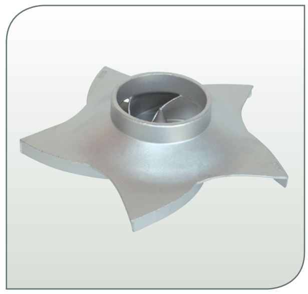
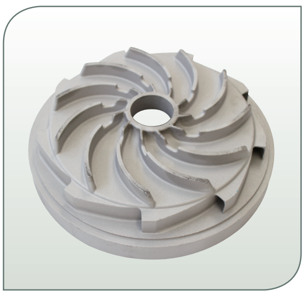
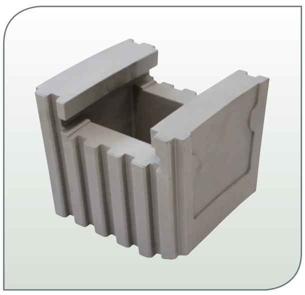
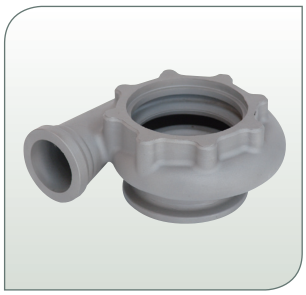
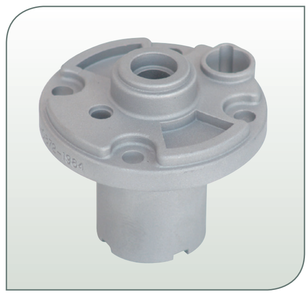
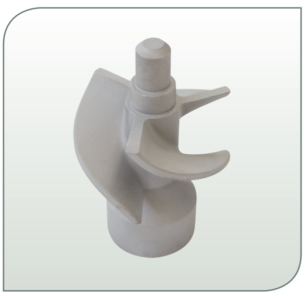
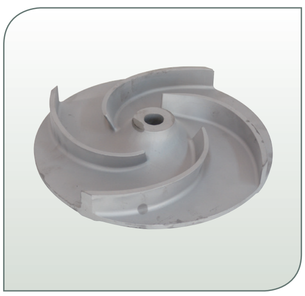
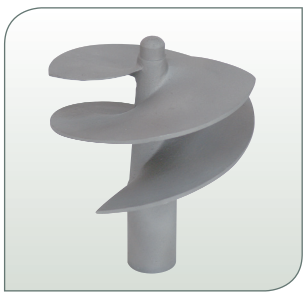
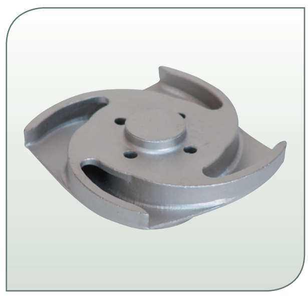


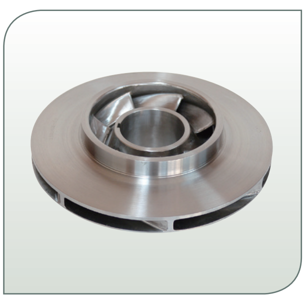
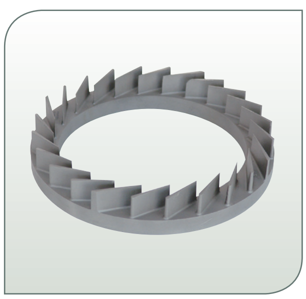
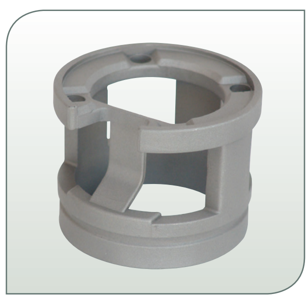




::PRODUCTS / 생산품

TURBINE, PUMP / 터빈, 펌프 〉〉〉

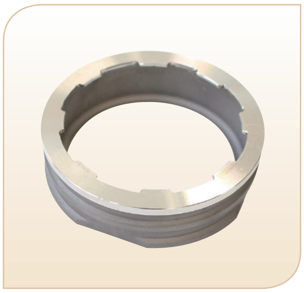







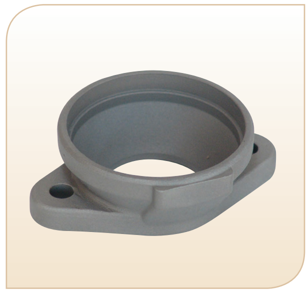
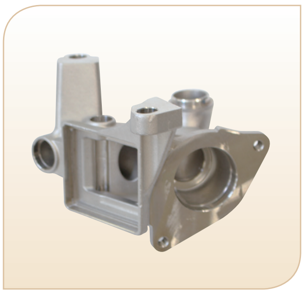










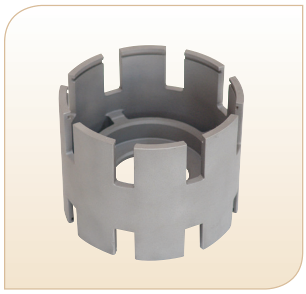




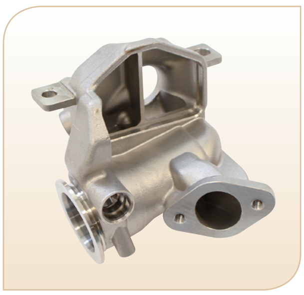
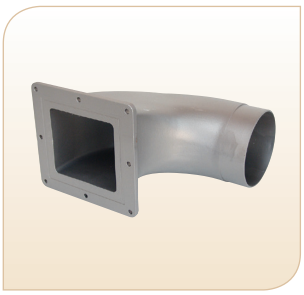
::PRODUCTS / 생산품

AUTO-MOBILE / 자동차 〉〉〉

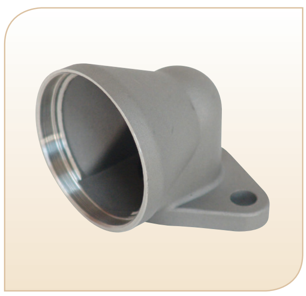
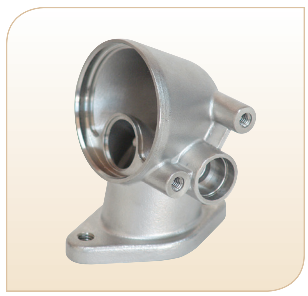


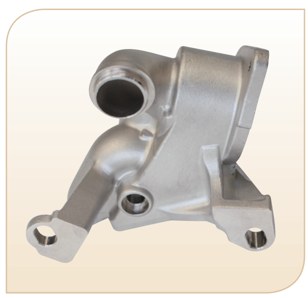




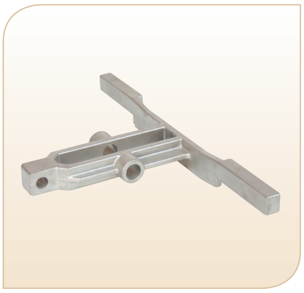




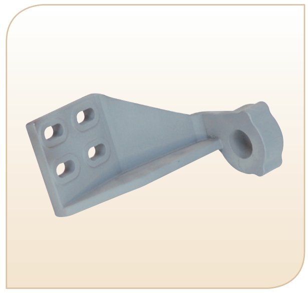


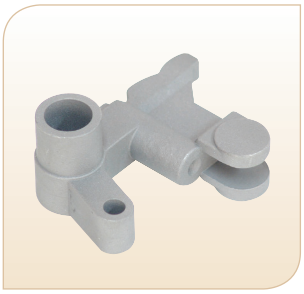
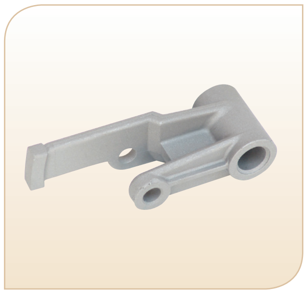
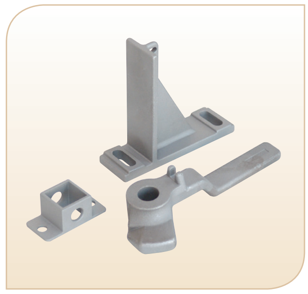
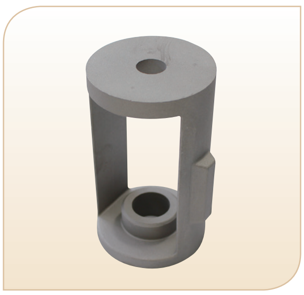
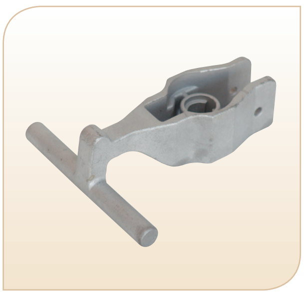
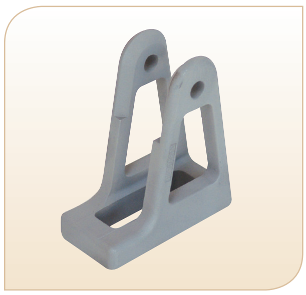
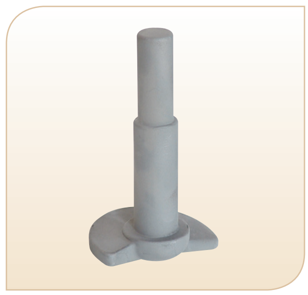


::PRODUCTS / 생산품

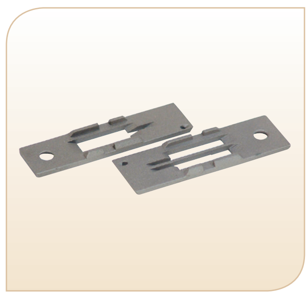
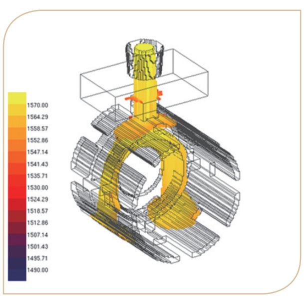
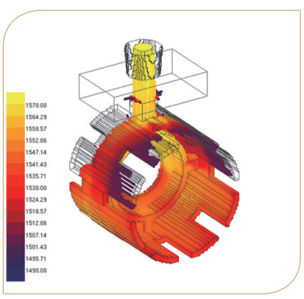
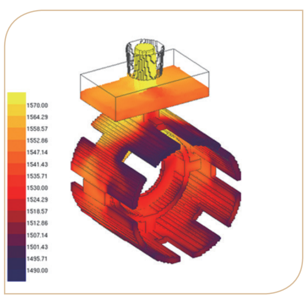
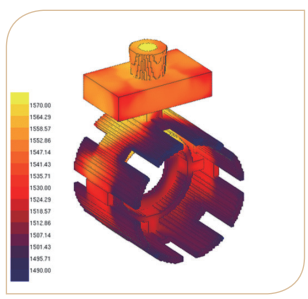
MACHINE / 기계 〉〉〉



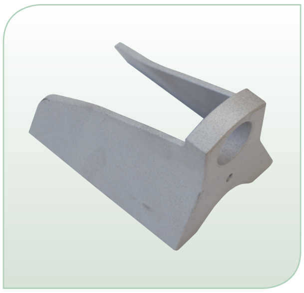
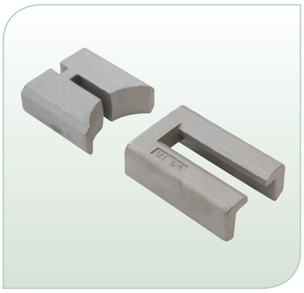
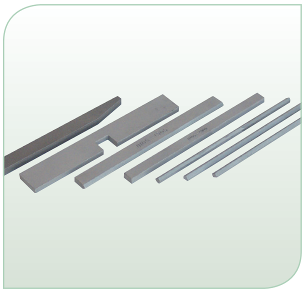
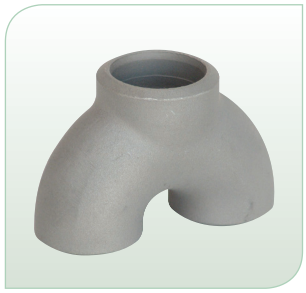
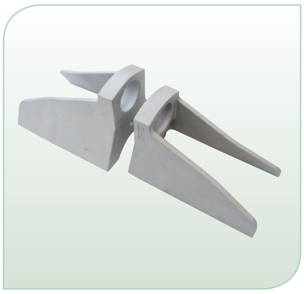
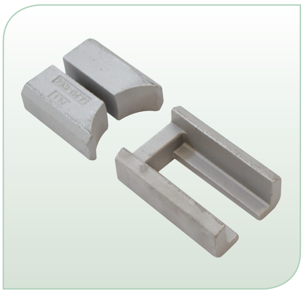
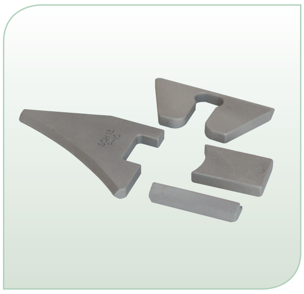
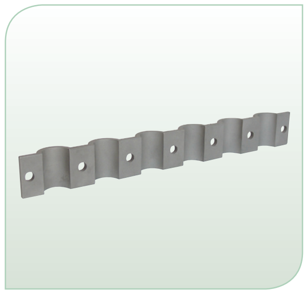








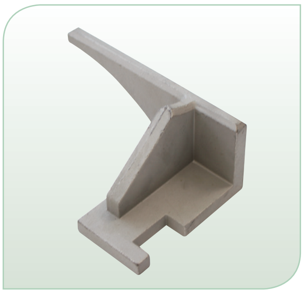
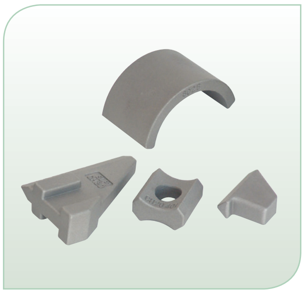
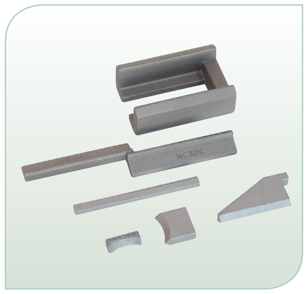
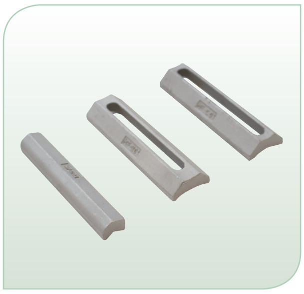
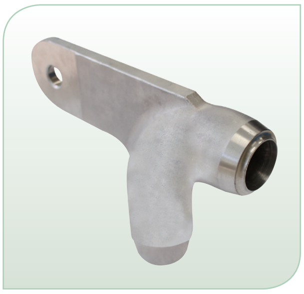
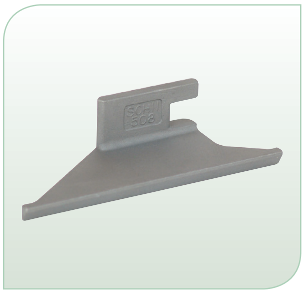


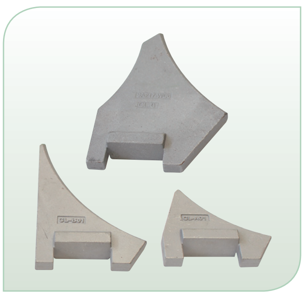
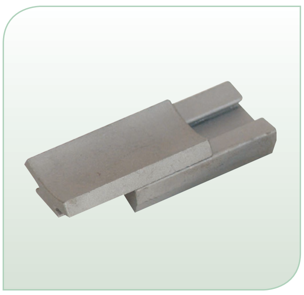






::PRODUCTS / 생산품

BOILER / 보일러 〉〉〉

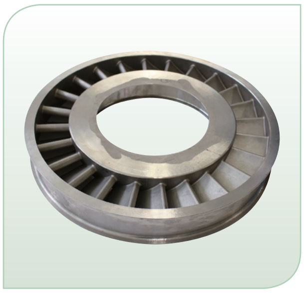
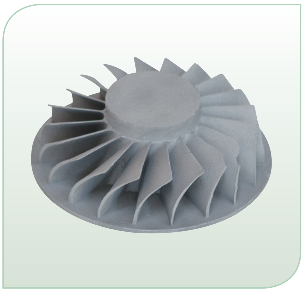
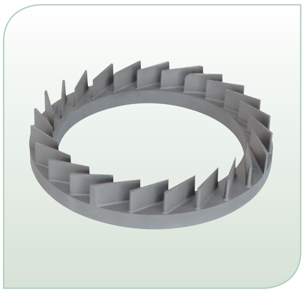









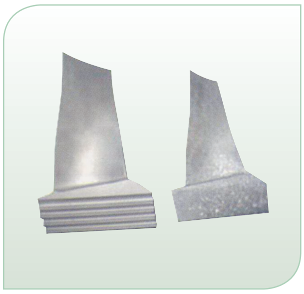
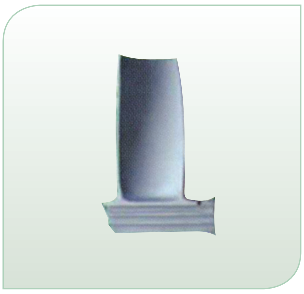
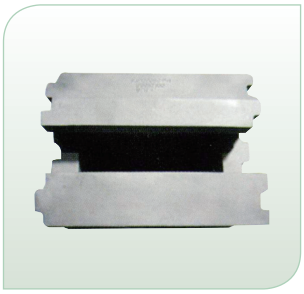



::PRODUCTS / 생산품

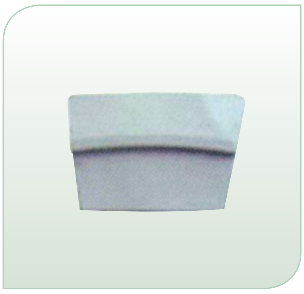
VACUUM INVESTMENT CASTING / 진공주조 〉〉〉

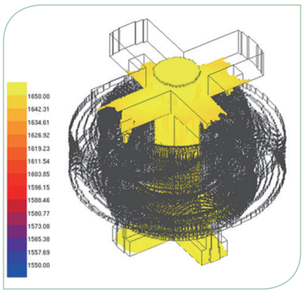


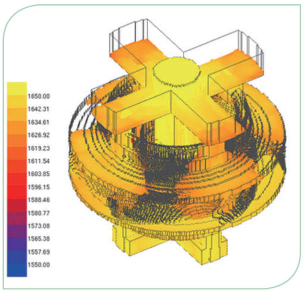




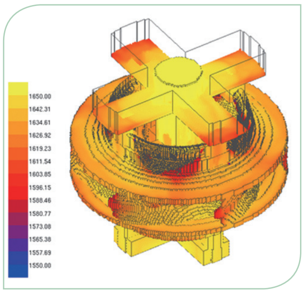


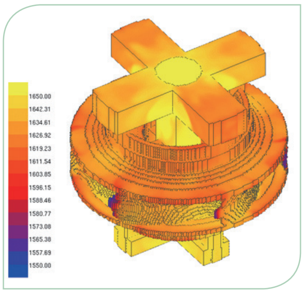








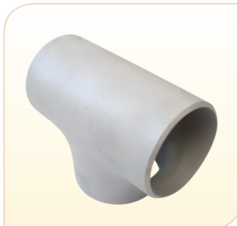
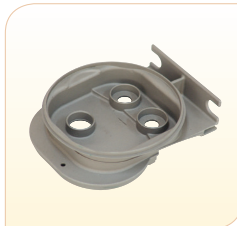




::PRODUCTS 생산품

OTHER / 기타 ›››







PRODUCTION EQUIPMENT LIST / 생산설비장비 ›››

PROCESS	DESCRIPTION	Q' TY
INJECTION	WAX INJECTION M/C	5
	AUTO WAX INJECTION M/C	2
	DIPPING TANK	1
	CHILLER	2
COATING	SLURRY MIXER	4
	FLUIDIZED BED	3
	RAIN STUCCO	1
	AUTO CLAVE	2
CASTING	VACUUM MELTING FURNACE	1
	MELTING FURNACE	5
	SINTERING FURNACE	4
	AUTO POURING M/C	1
FINISHING	KNOCK OUT M/C	1
	PLASMA CUTTING M/C	2
	APRON BLAST	4
	HANGER SHOT M/C	1
	SAND BLAST M/C	2
	TURN BLAST M/C	1
	PRESS	2
	VACUUM HEAT TREATMENT FURNACE	1
	HEAT TREATMENT FURNACE	1
MACHINING	MILLING MACHINING	5
	LATHE (CNC)	4

INSPECTION EQUIPMENT LIST / 품질검사장비 ›››

PROCESS	DESCRIPTION	Q' TY
QUALITY	DIAL HEIGHT GAUGE	2
	VERNIER CALIPER	4
	DIGITAL VERNIER CALIPER	3
	DIAL VERNIER CALIPER	1
	DIAL CALIPER GAUGE	3
	PROTRACTOR	1
	OUT DIA MICROMETER	2
	IN DIA MICROMETER	1
	CYLINDER GAUGE	2
	TESTER INDIGATE	1
	MICROMETER	1
	COORDINATE MEASURING M/C	1
	SURFACE ROUGHNESS TESTER	1
	HEIGHT PRESETTER	1
	OPTICAL SPECTROMETER	2
	UNIVERSAL TESTING M/C	1
	CHARPY IMPACT TESTING M/C	1
	MICRO SCOPE	1
	ROCKWELL HARDNESS TESTER	1
	RING GAUGE	1
	PLUG GAUGE	2
	MAGNETIC PARTICLE TESTER	1

::MATERIAL COMPOSITION SPEC / 제품성분도

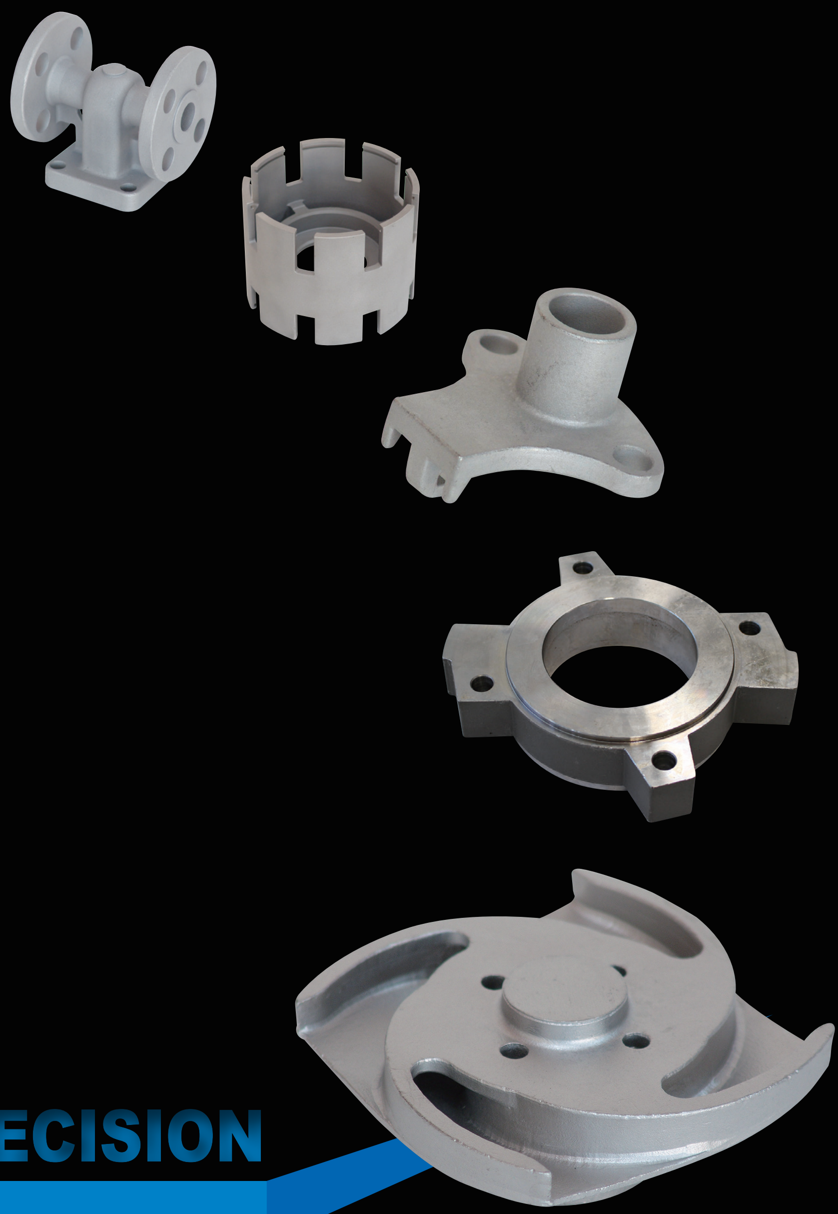
NO	MATERIAL	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Nb	V	W	REMARK
							LOW ALLOY STEEL							
1	JIS G4105 SCM415	0.13-0.18	0.15-0.35	0.60-0.85	〈0.03	〈0.03	〈0.25	0.90-1.20	0.15-0.30	〈0.30				
2	JIS G4105 SCM435	0.33-0.38	0.15-0.35	0.60-0.85	〈0.03	〈0.03	〈0.25	0.90-1.20	0.15-0.30	〈0.30				
3	JIS G4105 SCM440	0.38-0.43	0.15-0.35	0.60-0.90	〈0.03	〈0.03	〈0.25	0.90-1.20	0.15-0.30	〈0.30				
4	ASTM A217 WC6	0.05-0.20	〈0.60	0.5-0.8	〈0.035	〈0.035	〈0.5	1.0-1.5	0.45-0.65	〈0.5	Ni+Cu+W<1.0		〈0.1	
5	ASTM A217 WC9	0.05-0.18	〈0.60	0.4-0.7	〈0.035	〈0.035	〈0.5	2.0-2.75	0.9-1.20	〈0.5	Ni+Cu+W<1.0		〈0.1	
6	GS-42CrMo4 1.7225	0.38-0.45	〈0.60	0.6-1.0	〈0.020	〈0.015		0.8-1.2	0.2-0.3					
7	30CrNiMo8 1.6580	0.26-0.34	〈0.40	0.3-0.6	〈0.035	〈0.035	1.8-2.2	1.8-2.2	0.3-0.5					
8	JIS G4053 SNCM420	0.17-0.23	0.15-0.35	0.40-0.70	〈0.030	〈0.030	1.60-2.00	0.40-0.60	0.15-0.30					
9	16MnCr5	0.14-0.19	〈0.4	1.0-1.3	〈0.035	〈0.035		0.8-1.1						
10	GX24CrMoV55 1.7733	0.20-0.28	0.15-0.35	0.3-0.6	〈0.035	〈0.035		1.20-1.50	0.5-0.6			0.15-0.25		
11	MIL-S-22141A IC 4130	0.25-0.35	0.2-0.8	0.4-0.7	〈0.04	〈0.04		0.8-1.10	0.15-0.25					
12	MIL-S-22141A IC 4140	0.35-0.45	0.2-0.8	0.7-1.05	〈0.04	〈0.04		0.8-1.10	0.15-0.25					
13	MIL-S-22141A IC 8620	0.15-0.25	0.2-0.8	0.65-0.95	〈0.04	〈0.04	0.4-0.7	0.4-0.6	0.15-0.25					
14	JIS G5151 SCPH21	〈0.20	〈0.6	0.5-0.8	〈0.04	〈0.04	〈0.5	1.0-1.50	0.45-0.65	〈0.5			〈0.1	계〈1.0
							AUSTENITIC STAINLESS STEEL							
1	DIN EN 10088 1.4305	〈0.12	〈1.0	〈2.0	〈0.06	0.15-0.35	8.0-10.0	17.0-19.0						
2	DIN EN 10088 1.4301	〈0.07	〈1.0	〈2.0	〈0.045	〈0.03	8.5-10.5	17.0-19.0						
3	DIN 17445 1.4408	〈0.07	〈1.5	〈1.5	〈0.045	〈0.03	10.0-12.0	18.0-20.0	2.0-3.0					
4	DIN 17445 1.4308	〈0.07	〈1.5	〈1.5	〈0.045	〈0.03	8.0-11.0	18.0-20.0						
5	DIN 17445 1.4581	〈0.06	〈1.5	〈1.5	〈0.045	〈0.03	10.5-12.5	18.0-20.0	2.0-2.5		C%×8≤Nb			
6	DIN 17445 1.4552	〈0.07	〈1.5	〈1.5	〈0.040	〈0.03	10.5-12.5	18.0-20.0	2.0-2.5		C%×8≤Nb			
7	DIN 17445 1.4571	〈0.08	〈2.0	〈1.0	〈0.045	〈0.03	9.0-12.0	18.0-20.2			C%×8≤Nb+Ta≤1.0			
8	X15CrNiSi2012 1.4828	〈0.2	1.5-2.5	〈2.0	〈0.045	〈0.03	11.0-13.0	19.0-21.0						
9	X25CrNiSi20-14 1.4832	0.15-0.30	1.00-2.50	〈1.50			13.0-15.0	19.0-21.0						
10	GX10CrNi118 8 1.4312	〈0.12	〈2.0	〈1.5	〈0.045	〈0.03	8.0-10.0	17.0-19.5						
11	ASTM A240 304	〈0.08	〈0.75	〈2.0	〈0.045	〈0.03	8.0-10.50	18.0-20.0						
12	ASTM A240 316	〈0.08	〈0.75	〈2.0	〈0.045	〈0.03	10.0-14.0	16.0-18.0	2.0-3.0					
13	ASTM A351 CF3	〈0.03	〈2.0	〈1.50	기타	〈0.04	8.0-12.0	17.0-21.0	〈0.50					
14	ASTM A351 CF8	〈0.08	〈2.0	〈1.5	〈0.04	〈0.04	8.0-11.0	18.0-21.0	〈0.50					
15	ASTM A351 CF3M	〈0.03	〈1.5	〈1.5	〈0.04	〈0.04	9.0-13.0	17.0-21.0	2.0-3.0					
16	ASTM A351 CF8M	〈0.08	〈1.5	〈1.5	〈0.04	〈0.04	9.0-12.0	18.0-21.0	2.0-3.0					
17	ASTM A351 CF8C	〈0.08	〈2.0	〈1.5	〈0.04	〈0.04	9.0-12.0	18.0-21.0	〈0.5		C%×8≤Nb≤1.0			
18	ASTM A351 CG3M	〈0.03	〈1.5	〈1.5	〈0.04	〈0.04	9.0-13.0	18.0-21.0	3.0-4.0					
19	ASTM A351 CG8M	〈0.08	〈1.5	〈1.5	〈0.04	〈0.04	9.0-13.0	18.0-21.0	3.0-4.0					
20	ASTM A351 CN3MN	〈0.03	〈1.0	〈2.0	〈0.04	〈0.01	23.5-25.5	20.0-22.0	6.0-7.0	〈0.75		N 0.18-0.26		
21	ASTM A351 CN7M	〈0.07	〈1.50	〈1.50	〈0.04	〈0.04	27.5-30.5	19.0-22.0	2.0-3.0	3.0-4.0				
22	ASTM A744 CN3MCu	〈0.03	〈1.00	〈1.50	〈0.030	〈0.015	27.5-30.5	19.0-22.0	2.0-3.0	3.0-3.5				
23	JIS G4305 SUS310S	〈0.08	〈1.50	〈2.0	〈0.045	〈0.03	19.0-22.0	24.0-26.0						
24	JIS G5121 SCS13	〈0.08	〈2.0	〈2.0	〈0.04	〈0.04	8.0-11.0	18.0-21.0						
25	JIS G5121 SCS14	〈0.08	〈2.0	〈2.0	〈0.04	〈0.040	10.0-14.0	17.0-20.0	2.0-3.0					저온사용시 Cr <23.0
26	JIS G5121 SCS16	〈0.03	〈1.5	〈2.0	〈0.04	〈0.040	12.0-16.0	17.0-20.0	2.0-3.0					
27	JIS G5121 SCS22	〈0.08	〈2.0	〈2.0	〈0.04	〈0.04	10.0-14.0	17.0-20.0	2.0-3.0		〈1.35			
28	JIS G5121 SCS13A	〈0.08	〈2.0	〈1.5	〈0.04	〈0.040	8.0-11.0	18.0-21.0						
29	JIS G5121 SCS14A	〈0.08	〈1.5	〈1.5	〈0.04	〈0.040	9.0-12.0	18.0-21.0	2.0-3.0					
30	JIS G5121 SCS16A	〈0.03	〈1.5	〈1.5	〈0.04	〈0.040	9.0-13.0	17.0-21.0	2.0-3.0					
31	JIS G4303 SUS302	〈0.15	〈1.0	〈2.0	〈0.045	〈0.03	8.0-10.0	17.0-19.0						
32	JIS G4303 SUS304	〈0.08	〈1.0	〈2.0	〈0.045	〈0.03	8.0-10.5	18.0-20.0						
33	JIS G4303 SUS304L	〈0.03	〈1.0	〈2.0	〈0.045	〈0.03	9.0-13.0	18.0-20.0						
34	JIS G4303 SUS316	〈0.08	〈1.0	〈2.0	〈0.045	〈0.03	10.0-14.0	16.0-18.0	2.0-3.0					
35	JIS G4303 SUS316L	〈0.03	〈1.0	〈2.0	〈0.045	〈0.03	12.0-15.0	16.0-18.0	2.0-3.0					
36	KS D4103 SSC13A	〈0.08	〈2.0	〈1.50	〈0.04	〈0.04	8.0-11.0	18.0-21.0						

::MATERIAL COMPOSITION SPEC / 제품성분도

NO	MATERIAL	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Nb	V	W	REMARK
							DUPLEX STAINLESS STELL							
1	ASTM A995 CD4MCuN	〈0.04	〈1.0	〈1.0	〈0.04	〈0.04	4.7-6.0	24.5-26.5	1.7-2.3	2.7-3.3	N 0.1-0.25			
2	ASTM A890 CD4MCu	〈0.04	〈1.0	〈1.0	〈0.04	〈0.04	4.75-6.0	24.5-26.5	1.75-2.25	2.75-3.25				
3	ASTM A890 CD3MN	〈0.03	〈1.0	〈1.5	〈0.04	〈0.02	4.5-6.5	21.0-23.5	2.5-3.5	〈1.0	N 0.1-0.3			
4	ASTM A890 CE3MN	〈0.04	〈1.0	〈1.5	〈0.04	〈0.04	6.0-8.0	24.0-26.0	4.0-5.0		N 0.1-0.25			
5	ASTM A890 CD6MN	〈0.06	〈1.0	〈1.0	〈0.04	〈0.04	4.0-6.0	24.0-27.0	1.75-2.5		N 0.15-0.25			
6	ASTM A890 CD3MWCuN	〈0.03	〈1.0	〈1.0	〈0.03	〈0.025	6.5-8.5	24.0-26.0	3.0-4.0	0.5-1.0	N 0.2-0.30		0.5-1.0	
7	GX2CrNiMoN22-5-3 1.4470	〈0.03	〈1.0	〈2.0	〈0.035	〈0.025	4.5-6.5	21.0-23.0	2.5-3.5		N 0.12-0.2			
8	GX2CrNiMoN26-7-4 1.4469	〈0.03	〈1.0	〈1.0	〈0.035	〈0.025	6.0-8.0	25.0-27.0	3.0-5.0	〈1.3	N 0.12-0.22			
9	GX2CrNiMoCuN25-6-3-3 1.4517	〈0.03	〈1.0	〈1.5	〈0.035	〈0.025	5.0-7.0	24.5-26.5	2.5-3.5	2.75-3.5	N 0.12-0.22			
							OTHER STAINLESS STEEL							
1	AMS 5355C 17-4PH	〈0.06	0.50-1.00	〈0.7	〈0.04	〈0.03	3.6-4.6	15.5-16.7		2.8-3.50	0.15-0.40			
2	ASTM A217 CA15	〈0.15	〈1.50	〈1.0	〈0.04	〈0.04	〈1.0	11.5-14.0	〈0.50					
3	ASTM A743 CA40	0.2-0.40	〈1.5	〈1.0	〈0.04	〈0.04	〈1.0	11.5-14.0	〈0.50					
4	ASTM A743 CA6NM	〈0.06	〈1.0	〈1.0	〈0.04	〈0.03	3.5-4.5	11.5-14.0	0.4-1.0					
5	09CH17N3SL	0.05-0.12	0.8-1.5	0.3-0.8	〈0.035	〈0.03	2.8-3.8	15.0-18.0						
6	JIS G4303 SUS410	〈0.15	〈1.0	〈1.0	〈0.04	〈0.03	〈0.6	11.5-13.5						
7	ASTM A217 C5	〈0.20	〈0.75	0.4-0.7	〈0.04	〈0.045	〈0.5	4.0-6.5	0.45-0.65	〈0.5	Ni+Cu+W<1.0		〈0.1	
8	ASTM A217 C12	〈0.20	〈1.0	0.35-0.65	〈0.04	〈0.045	〈0.5	8.0-10.0	0.9-1.2	〈0.5	Ni+Cu+W<1.0		〈0.1	
9	ASTM A217 C12A	0.08-0.12	0.20-0.50	0.30-0.60	〈0.030	〈0.010	〈0.4	8.0-9.5	0.85-1.05	N 0.03-0.07	0.06-0.10	0.18-0.25	Al 〈0.04	
10	ASTM A747 CB7Cu-1	〈0.07	〈1.0	〈0.7	〈0.035	〈0.03	3.6-4.6	15.5-17.7		2.5-3.2	0.15-0.35	N 〈0.05		
11	JIS G4303 SUS410J1	0.06-0.18	〈0.6	〈1.0	〈0.04	〈0.03	〈0.6	11.5-14.0	0.3-0.6					
12	JIS G5121 SCS2	0.16-0.24	〈1.50	〈1.0	〈0.04	〈0.04		11.5-14.0						
13	DIN 17240 1.4923	0.18-0.24	0.10-0.50	0.30-0.80	〈0.035	〈0.035	0.3-0.8	11.0-12.5	0.8-1.2			0.25-0.35		
14	GX170CrMo	1.65-1.75	0.6-0.9	0.8-1.0	〈0.03	〈0.02		25.5-27.5	2.0-2.5					
15	X96CrMoV12 1.2376	0.92-1.00	0.20-0.40	0.20-0.40	〈0.030	〈0.030		11.0-12.0	0.80-1.00			0.80-1.00		
16	X20Cr13 1.4021	0.17-0.25	〈1.0	〈1.0	〈0.045	〈0.030	〈1.00	12.0-14.0	〈0.60					
17	X3CrNiMo13-4 1.4313	〈0.05	〈0.70	〈1.50	〈0.040	〈0.015	3.5-4.5	12.0-14.0	0.3-0.7			N 〈0.020		
18	GX7CrNiMo12-1 1.4008	〈0.10	〈1.0	〈1.0	〈0.035	〈0.025	1.0-2.0	12.0-13.5	0.2-0.5					
19	X5CrNiMo16-5 1.4405 S	〈0.06	〈1.0	〈1.0			5.0-6.0	15.0-16.5	1.7-2.5			N 〈0.01		
							CARBON STEEL							
1	JIS G3461 STB340	〈0.18	〈0.35	0.3-0.6	〈0.035	〈0.035								
2	JIS G4051 S45C	0.42-0.48	0.15-0.35	0.60-0.90	〈0.03	〈0.035								
3	JIS G4051 S55C	0.52-0.58	0.15-0.35	0.60-0.90	〈0.03	〈0.035								
4	ASTM A216 WCA	〈0.25	〈0.60	〈0.70	〈0.04	〈0.045	〈0.50	〈0.50	〈0.20	〈0.30		〈0.03		계〈1.0
5	ASTM A216 WCB	〈0.30	〈0.60	〈1.0	〈0.04	〈0.045	〈0.50	〈0.50	〈0.20	〈0.30		〈0.03		계〈1.0
6	ASTM A352 LCA	〈0.25	〈0.6	〈0.7	〈0.04	〈0.045	〈0.5	〈0.5	〈0.20	〈0.3		〈0.03	Ni+Cr+Mo+V<1.0	
7	ASTM A352 LCB	〈0.30	〈0.6	〈1.0	〈0.04	〈0.045	〈0.5	〈0.5	〈0.20	〈0.3		〈0.03	Ni+Cr+Mo+V<1.0	
8	ASTM A352 LCC	〈0.25	〈0.6	〈1.2	〈0.04	〈0.045	〈0.5	〈0.5	〈0.20	〈0.3		〈0.03	Ni+Cr+Mo+V<1.0	
9	JIS G5151 SCPH2	〈0.30	〈0.6	〈1.0	〈0.04	〈0.04	〈0.5	〈0.25	〈0.25	〈0.5				계〈1.0
10	JIS G3101 SS41	〈0.30	〈0.6	〈0.6	〈0.05	〈0.05								
11	KS D3752 SM10C	0.08-0.13	0.15-0.35	0.60-0.60	〈0.030	〈0.035								
12	KS D4103 HSC3A	0.30-0.40	0.3-0.6	0.5-0.8	〈0.040	〈0.040								
13	KS D4103 HSC3B	0.30-0.40	0.3-0.6	0.5-0.8	〈0.040	〈0.040								
14	EN10213 GP280GH	0.18-0.25	〈0.6	0.80-1.20	〈0.030	〈0.020								
15	DIN 17245 GS-C25	0.18-0.23	0.3-0.6	0.5-0.8	〈0.020	〈0.015		〈0.3						
16	DIN17204 1.1191	0.42-0.50	〈0.4	0.5-0.8	〈0.035	〈0.030								
17	DIN1681 GS-38	〈0.25	0.20-0.60	0.20-0.50	〈0.040	〈0.040								
18	국방 연1종 65-35	〈0.30	〈0.8	〈0.7	〈0.05	〈0.06	〈0.5	〈0.35	〈0.2	〈0.3				
19	국방 연6종 90-60				〈0.05	〈0.06								
20	국방 연7종 105-85				〈0.05	〈0.06								
21	국방 연8종 120-95				〈0.05	〈0.06								
22	국방 연9종 150-125				〈0.05	〈0.06								
23	MIL-S-22141A IC-1020	0.15-0.25	0.20-1.0	0.3-0.6	〈0.04	〈0.04								
24	MIL-S-22141A IC-1030	0.25-0.35	0.20-1.0	0.70-1.0	〈0.04	〈0.04								
25	MIL-S-22141A IC-1040	0.35-0.45	0.20-1.0	0.70-1.0	〈0.04	〈0.04								

::MATERIAL COMPOSITION SPEC / 제품성분도

NO	MATERIAL	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Nb	V	W	REMARK
THE OTHERS														
1	ASTM A439 D2C	〈2.90	1.0–3.0	1.80–2.40	〈0.08		21.0–24.0	〈0.5						
2	ASTM A439 D2	〈3.00	1.5–3.00	0.70–1.25	〈0.08		18.0–22.0	1.75–2.75						
3	ASTM A439 D5S	〈2.30	4.9–5.5	〈1.0	〈0.08		34.0–37.0	1.75–2.25						
4	SKD11	1.4–1.6	〈0.40	〈0.60	〈0.03	〈0.03	〈0.50	11.0–13.0	0.8–1.2			0.2–0.5		
5	ASTM A681 A8	0.5–0.6	0.75–1.10	0.2–0.5	〈0.03	〈0.03		4.75–5.50	1.15–1.65				1.0–1.5	
6	AMS 5387A ST6	0.9–1.4	〈1.50	〈1.0	〈0.04	〈0.04	〈3.0	27.0–31.0	〈1.50		Co BAL	Fe 〈3.0	3.5–5.5	
7	STELLITE 12	1.10–1.70	〈1.0	〈1.0			〈3.0	28.0–32.0			Co BAL	Fe 〈3.0	7.0–9.50	
8	AMS 5385G ST21	0.2–0.3	〈1.0	〈1.0	〈0.04	〈0.04	1.75–3.75	25.0–29.0	5.0–6.0		Co BAL	Fe 〈3.0	B 〈0.007	
9	COMBALLOY HC	2.8–3.6	〈1.0	〈1.50	〈0.10	〈0.10	〈2.75	14.0–18.0	0.2–3.5	〈1.50				
10	K63	〈0.08	〈1.0	〈1.0	〈0.04	〈0.04	24.0–26.0	28.0–32.0		Co 1.5–2.5				
11	NI-HARD	3.1–3.5	0.4–0.7	0.6–0.9	〈0.03		3.1–4.1	1.10–1.50	〈0.03			0.5–0.7		
12	ASTM A494 M35–1	〈0.35	〈1.25	〈1.5	〈0.03	〈0.03	BALANCE			26.0–33.0	〈0.5	Fe 〈3.5		
13	QQN 288 S–MONEL	〈0.25	3.5–4.5	〈1.50			BAL			27.0–31.0		Fe 〈2.50	Al 〈0.5	
14	INCONEL ALLOY X750	〈0.08	〈0.50	〈1.0	〈0.03	〈0.01	〈70.0	14.0–17.0	Co 〈1.0	〈0.50	Nb+Ta 0.7–1.2	Ti 2.25–2.75	Al 0.4–1.0	Fe 5.0–9.0
15	ASTM A560 50Cr50Ni	〈0.10	〈1.0	〈0.3	〈0.02	〈0.02	BALANCE	48.0–52.0	Cr+Ni+Cb >97.5		Ti<0.5	Al<0.25	N<0.3	
16	JIS G5122 SCH11	〈0.40	〈2.0	〈1.0	〈0.04	〈0.04	4.0–6.0	24.0–28.0						
17	JIS G5122 SCH13	0.20–0.50	〈2.0	〈2.0	〈0.04	〈0.04	11.0–14.0	24.0–28.0						
18	KSD 4105 1974 HRSC13	0.20–0.40	〈2.0	〈2.0	〈0.04	〈0.04	11.0–14.0	24.0–28.0						
19	ASME SA351 CH20	0.04–0.20	〈2.0	〈1.50	〈0.04	〈0.04	12.0–15.0	22.0–26.0	〈0.5					
20	ASME SA351 HK30	0.25–0.35	〈1.75	〈1.50	〈0.04	〈0.04	19.0–22.0	23.0–27.0	〈0.5					
21	ASTM A351 HK40	0.35–0.45	〈1.75	〈1.50	〈0.04	〈0.04	19.0–22.0	23.0–27.0	〈0.5					
22	ASTM A351 CK20	0.04–0.20	〈1.75	〈1.50	〈0.04	〈0.04	19.0–22.0	23.0–27.0	〈0.5					
23	ASTM A297 HH	0.20–0.50	〈2.00	〈2.00	〈0.04	〈0.04	11.0–14.0	24.0–28.0	〈0.5					
24	ASTM A297 HK	0.20–0.60	〈2.00	〈2.00	〈0.04	〈0.04	18.0–22.0	24.0–28.0	〈0.5					
25	ASTM A297 HN	0.20–0.60	〈2.00	〈2.00	〈0.04	〈0.04	23.0–27.0	19.0–23.0	〈0.5					
26	JIS G5122 SCH24	0.35–0.75	〈2.0	〈2.0	〈0.04	〈0.04	33.0–37.0	24.0–28.0	〈0.5					
27	ASTM B625 N08904(904L)	〈0.02	〈1.0	〈2.0	〈0.045	〈0.035	23.0–28.0	19.0–23.0	4.0–5.0	1.0–2.0				
28	DIN 17740 2.4610	〈0.15	〈0.08	〈1.0	〈0.025	〈0.015	BAL	14.0–18.0	14.0–17.0	〈0.5	Fe 〈3.00	Co 〈2.00	Ti 〈0.70	
29	G–X12CrCoNi2120 1.4971	0.08–0.16	〈1.0	〈1.0	〈0.045	〈0.03	19.0–21.0	20.0–22.5	2.50–3.50	Co 18.5–21.0	0.75–1.25		2.0–3.0	
30	ASTM A494 CU5MCuC	〈0.05	〈1.0	〈1.0	〈0.03	〈0.03	38.–44.0	19.5–23.5	2.5–3.5	1.5–3.5	0.6–1.2			
31	ASTM A494 CW12MW	〈0.12	〈1.0	〈1.0	〈0.04	〈0.03	BAL	15.5–17.5	16.0–18.0		Fe 4.5–7.5	0.2–0.4	3.75–5.25	
32	ASTM A494 CW6MC	〈0.06	〈1.0	〈1.0	〈0.015	〈0.015	BAL	20.0–23.0	0.8–10.0	Fe 〈0.5	3.15–4.5			
33	ASTM A494 CW2M	〈0.2	〈0.8	〈1.0	〈0.03	〈0.03	BAL	15.0–17.5	15.0–17.5	Fe 〈2.0				
34	ASTM A494 CW6M	〈0.07	〈1.0	〈1.0	〈0.04	〈0.03	BAL	17.0–20.0	17.0–20.0	Fe 〈3.0				
35	ASTM A743 CK3MCuN	〈0.025	〈1.0	〈1.2	〈0.045	〈0.01	17.5–19.5	19.5–20.5	6.0–7.0	0.5–1.0	N 0.18–0.24			
36	ASTM A494 CX2MW	〈0.02	〈0.8	〈1.0	〈0.025	〈0.025	BAL	20.0–22.5	12.5–14.5			〈0.35	2.5–3.5	
37	ASTM A532 i –D	2.5–3.6	〈2.0	〈2.0	〈0.1	〈0.15	4.5–7.0	7.0–11.5	〈1.5					
38	ASTM A532 ii –B	2.0–3.3	〈1.5	〈2.0	〈0.1	〈0.06	〈2.5	14.0–18.0	〈3.0	〈1.2				
39	ASTM A743 CF10SMnN	〈0.10	3.50–4.50	7.00–9.00	〈0.060	〈0.030	8.0–9.0	16.0–18.0					N 0.08–0.18	
40	ASTM A743 CG6MMN	〈0.06	〈1.0	4.00–6.00	〈0.04	〈0.03	11.5–13.5	20.5–23.5	1.50–3.00		0.10–0.30	0.10–0.30	N 0.20–0.40	
41	국방 356–T6	Al BAL	6.5–7.5	〈0.35	Fe 〈0.6	Zn 〈0.3	Mg 0.2–0.4	Ti 〈0.25		〈0.2				
42	ASTM B148 C95800	Al 8.5–9.5	〈0.1	0.8–1.5	Fe 4.0–4.5	Pb 〈0.03	4.0–5.0	〈0.05	Bi 〈0.01	79.0–83.0	Mg 〈0.05	Sn 〈0.1	Zn 〈0.50	



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Technical Innovation

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