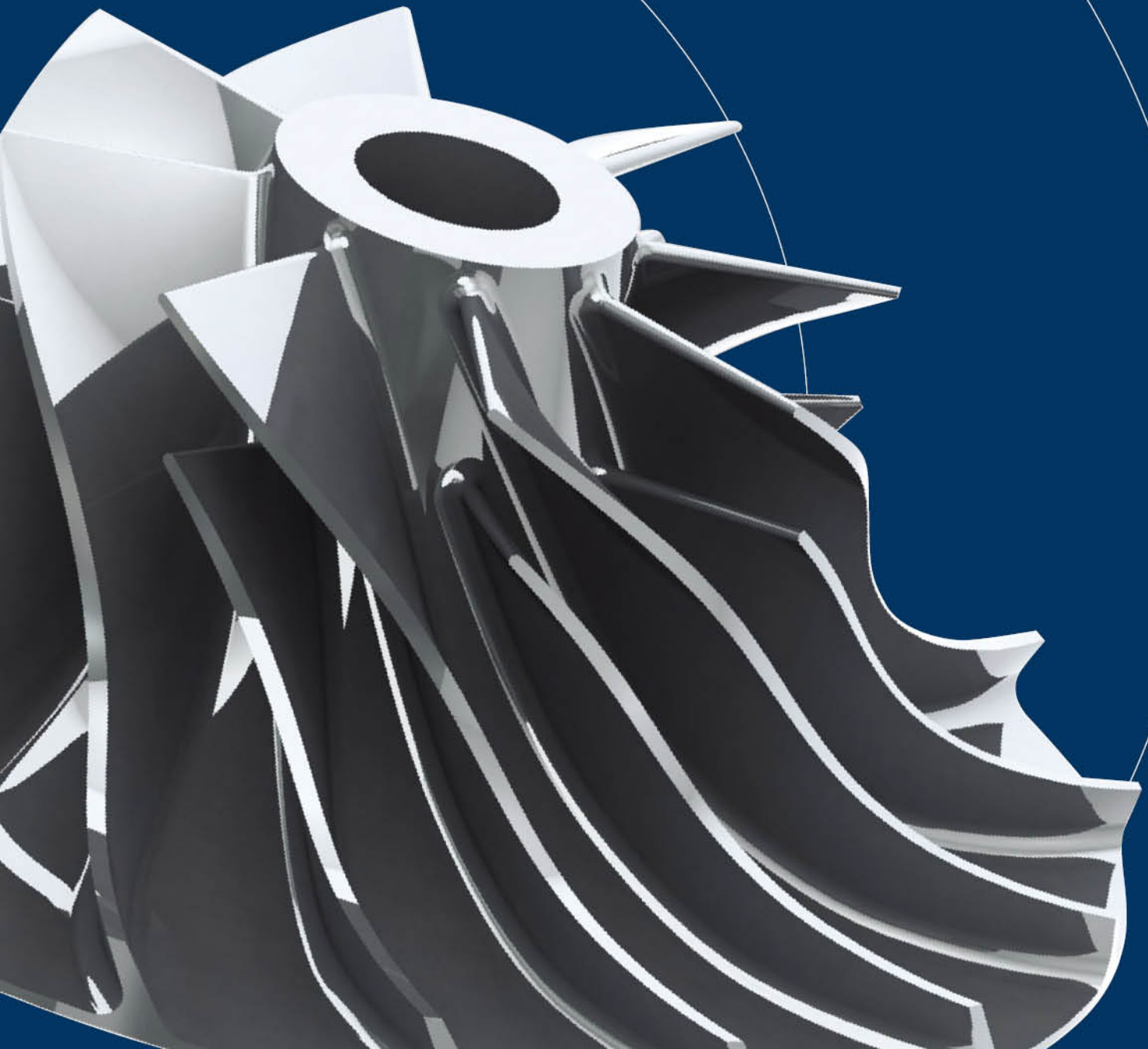
The Exclusive Sales Partner of K Turbo



TurboMann 滿

TC-Series

The High Efficiency Oil-less Turbo Air Compressor

TurboMann Inc.

터보만㈜는 혁신을 추구합니다
터보만㈜는 첨단 고효율 에너지기계의 설계 · 제작 및 시스템 판매를 전문으로 하는 회사입니다.
고효율 오일리스 터보 에어 컴프레서!! TC 시리즈!
순수한 압축공기와 낮은 유지비용을 통한 뛰어난 에너지 절감 !
터보만㈜의 TC 시리즈는 이제 이익 창출의 시작입니다 !

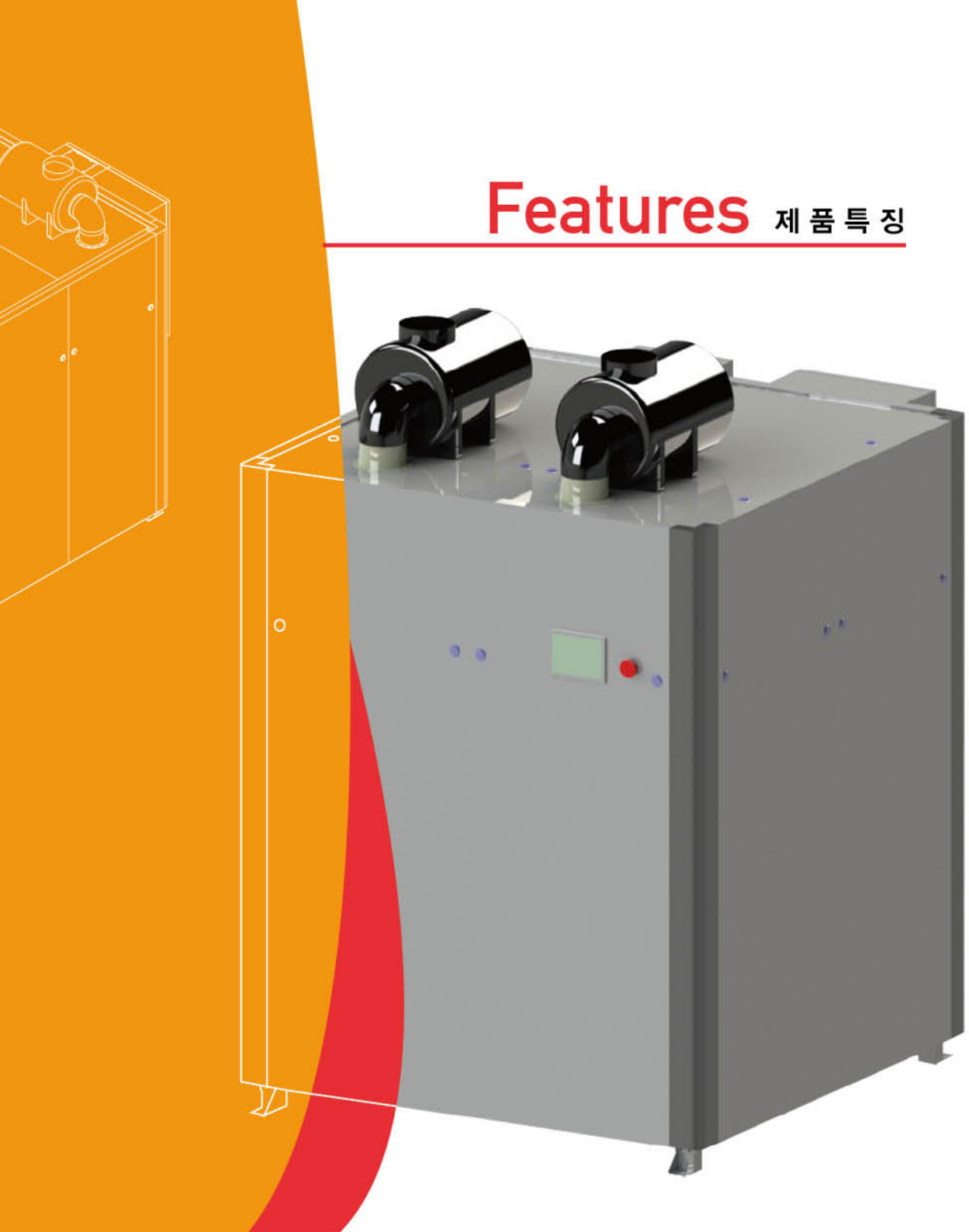
TurboMannInc, pursues an innovation.
TurboMannInc,specializes in design and manufacturing high efficient energy machineries and sales system.
The High Efficient Oil-less Turbo Air Compressor!
TC Series!
Excellent Energy saving throughout the pure compressed air and low maintenance cost!
Now, TC Series is the beginning of profit-making.

- 100% 순수 압축공기 (100% Pure Air)
- Oil-less System
- 저소음 &무진동 (Low Noise & No Vibration)
- 작은 설치 공간 (Small installation Space)

Applications 적 용 분 야

- 식품, 제약 (발효공정) Food, Medicine (Fermentation)
- 전자, 반도체부분 Electronics, Semi-conductor Industry
- 의료 장비 Medical equipment and instruments
- 유리 제조/가공분야 Glass Manufacturing & Processing
- 섬유 산업 Textile Industry
- 나노 신소재 처리 Nano-new-material processing
- 해운 및 조선 Shipping & Ship building
- 우주 항공 Aerospace
- 원재료 가압분야 Raw-material pressurization
- 시멘트/분체/가스 운송 분야 Cement/Powder/Gas transportation
- 곡물 운송 및 건조 Grain transportation & dry
- 도장 라인 Painting
- 화력 발전 Thermal power plant
- 석유 화학 분야 Petrochemistry
- 금속 가공 분야 Metal processing
- 소각로 Incinerator
- 산소(질소)발생기 Oxygen (Nitrogen) Generator

Features 제품특징



에어포일 베어링 적용 (Air Foil Bearing)
- 비접촉& 무오일 (오일리스) 방식
- 완전 기계식이므로 오류 가능성이 없음

직결 구동 영구자석 모터 적용 (PM-Motor)
- 영구자석을 적용함으로써 전 영역에 걸쳐 높은 효율 유지
- 직결 구동을 통한 동력 전달 손실이 없음

정밀 주조 스테인리스 스틸 임펠러 적용 (STS630)
- 자체 생산 정밀 임펠러를 적용함으로써 고효율 달성

인버터 기본 적용
- 부분 부하 시에도 고효율(97%)을 유지

손쉬운 유지보수
- 제어부품 모듈화로 손쉽게 교체 가능
- 주요부품 자체디자인 및 생산을 통한 유지보수비 최소화

편의성
- 다양한 통신방식 적용 가능
- Modbus TCP/RTU, Profibus, EtherNet IP, Device Net

에너지 합리화 자금 이용이 가능한 고효율 장비
- 조명 및 동력설비 (라-47항) 인버터 제어형 압축기

Air Foil Bearing
- Contactless Type & Oil-less (Pure Air)
- No Control Part (High Reliability)

Permanent Magnet Motor
- Full spectrum high efficiency (Permanent Magnet)
- Direct-Drive (Low loss of power transferring)

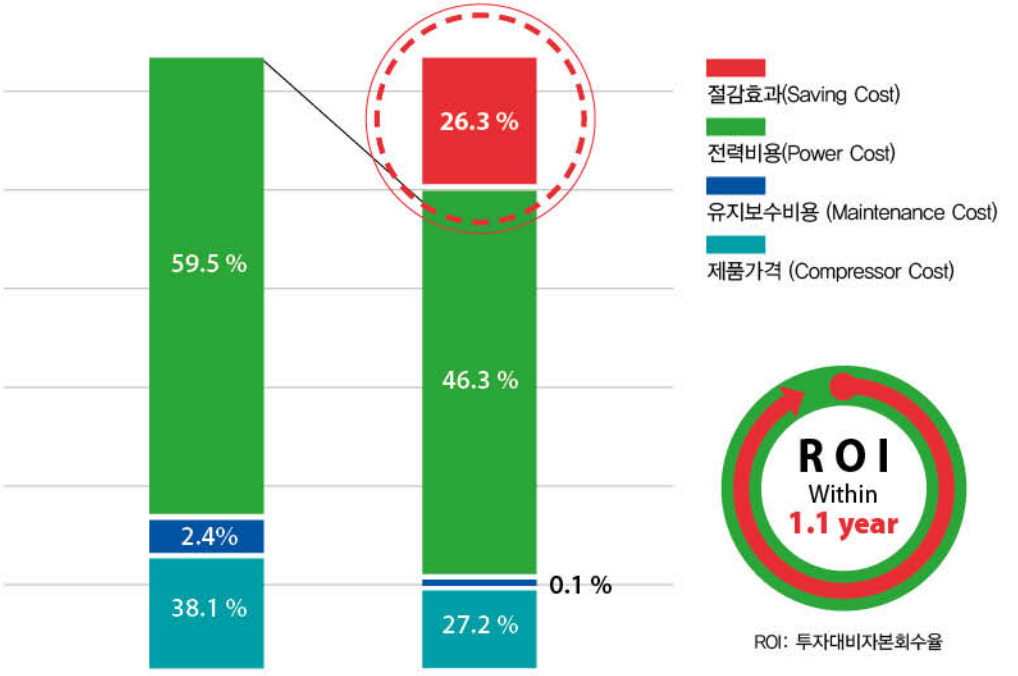
Casted Stainless Steel Impeller (STS630)
- High Efficiency & Low Production Cost

Inverter
- High efficiency on the part load

Easy & Comfortable Maintenance
- Modularized control parts
- Internal designing & manufacturing of main parts
- Minimized maintenance cost

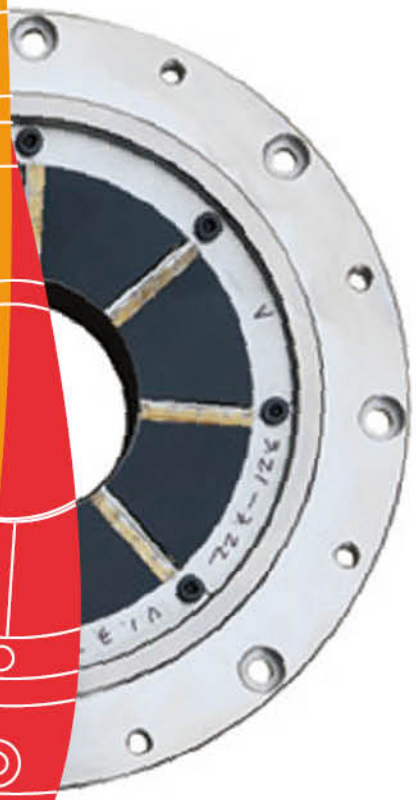
Communication
- Modbus TCP/RTU, Profibus, EtherNet IP, DeviceNet

Total Cost Comparison
(오일프리 스크류 컴프레서 대비)



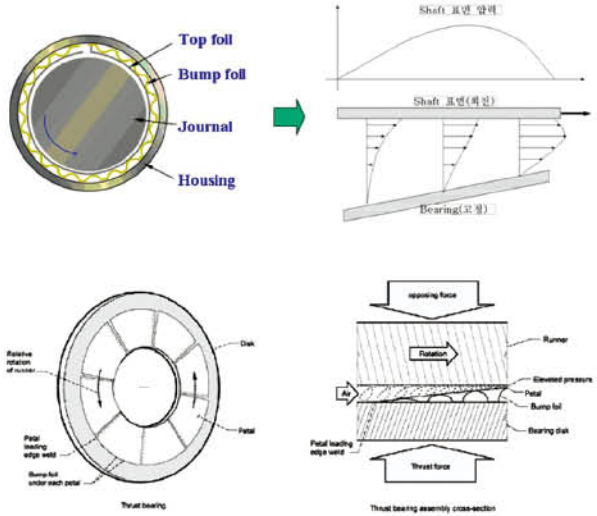
신규장비 설치 시 초기 년도 운영비 비율

Core Technologies 핵심기술



에어포일 베어링 (Air Foil Bearing)

기계적인 마찰이 없으며 윤활유가 필요 없는 에어베어링은 반영구적 무급유 윤활시스템입니다. 축이 회전할 때 발생하는 베어링과 축 사이의 공기유동을 압력으로 변환시켜 회전축을 부양하고 윤활기능도 수행합니다. 이 핵심기술은 전기동력이 기계적 마찰 없이 축에 전달되므로 소음이 없고 높은 시스템 효율은 물론 반영구적인 내구수명을 제공합니다. 따라서 에어포일 베어링은 고속 및 고온의 극한 환경 속에서 운용을 필요로 하는 모든 산업용 고속 모터에 가장 적합한 솔루션이라 할 수 있습니다.

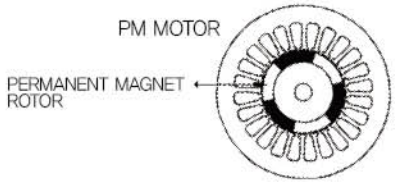


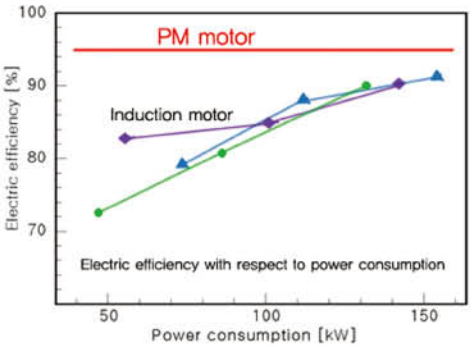
The air bearing is operated without mechanical friction and lubricant is semi-permanent and non-oil feeding lubricating system of the world. The rotation shaft is floated by the pressure which is converted from the air flow, generated during the rotation of shaft, between bearing and shaft, and it also performs the function of lubrication as well. In the case of this core technology, electric power is transmitted the shaft without mechanical friction, therefore, the high system efficiency without noise is provided as well as semi-permanent life of durability.

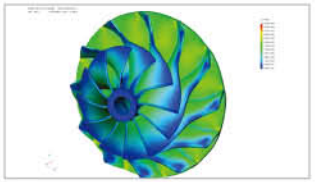
정밀 주조 임펠러 (Casted Stainless Steel Impeller) (STS630)

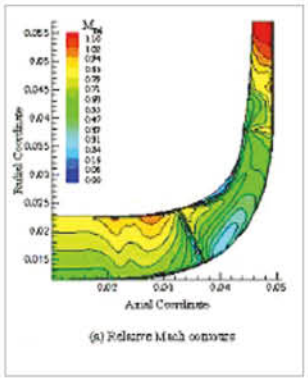
TC 시리즈에 적용된 임펠러는 항공공학의 가장 진보된 공기역학 시스템 기술과 동일합니다. Rubber Mold 제조기술을 이용하여 Metal 금형으로는 불가능한 형상을 제작할 수 있습니다. 또한 Lost Wax 공법을 이용하여 박막형태를 주조할 수 있으며 표면 조도가 우수합니다. 기존 알루미늄 임펠러에 비해 수명이 반영구적이고 높은 강도로 더 높은 압력을 제공하며 효율이 높습니다.

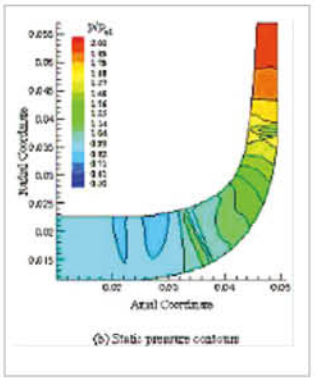
The impeller which applied in TC Series is identical with the leading technology of aeronautical engineering. We using the rubber mold manufacturing technology, it can produce the shape that cannot be produced by metal mold. Also, using the method of Lost-wax can make a thin film and good surface profile. Compared the Aluminum Impeller, it has semi-permanent, heavier intensity, higher pressure and high efficiency.







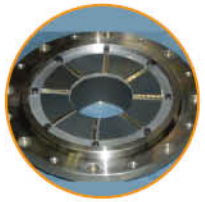




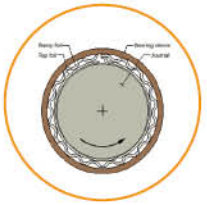
고효율 PM모터/인버터 (High Efficient Permanent Magnet Motor / Inverter)

TC Series에 적용된 PM Motor는 25마력부터 600마력까지 95%의 고효율을 제공합니다. 정격전류의 5% 수준의 전류로 기동할 수 있어 별도의 기동반이 필요 없습니다. 또한 센서리스 드라이브 기술을 적용하여 고온의 모터 가동 환경에서도 정확한 제어가 가능합니다.

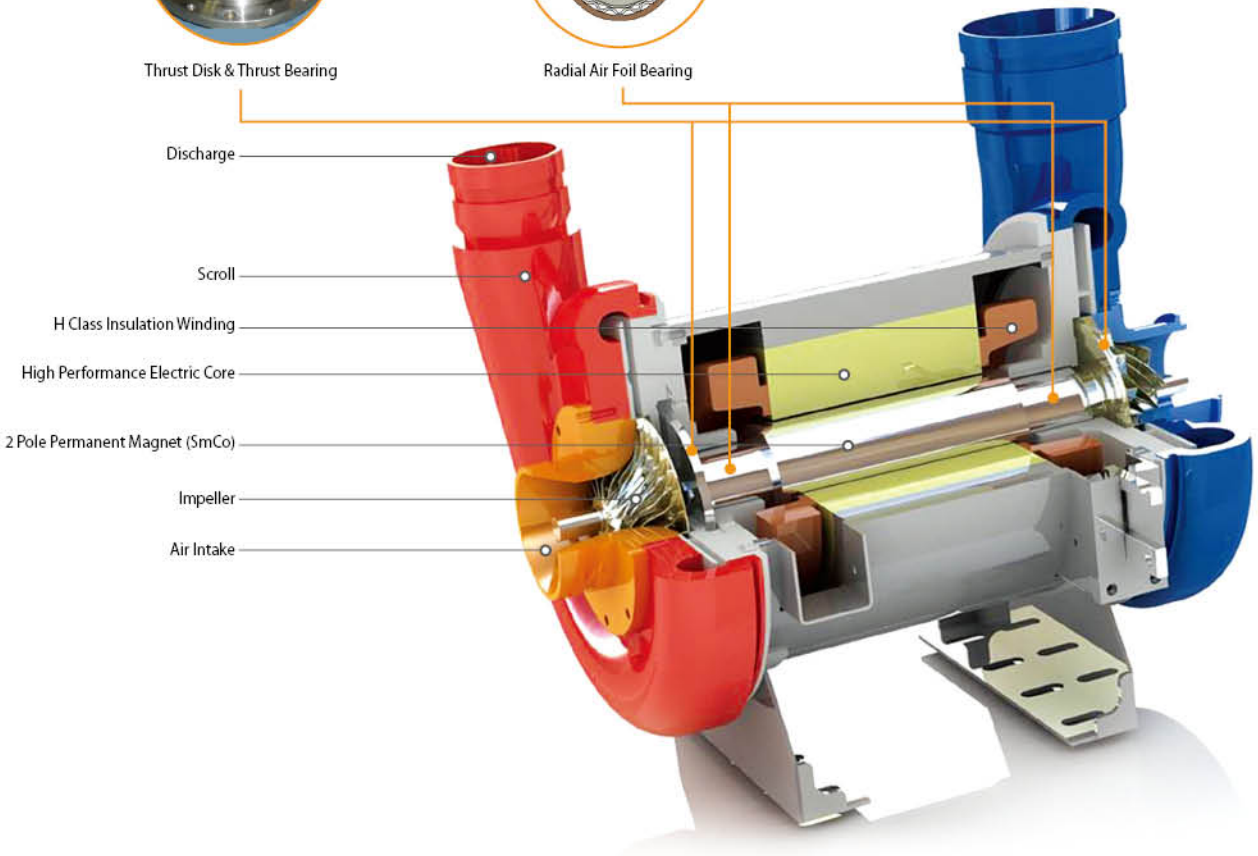
The PM-Motor which applied in TC Series, provided 95% of high efficiency from 25HP up to 600HP. Separate starting board is not required as it can be started with the current of 5% level of the rated current. In addition, the accurate control can be accomplished under the environment of the motor with a high temperature by applying the sensor-less drive technology.



Thrust Disk & Thrust Bearing

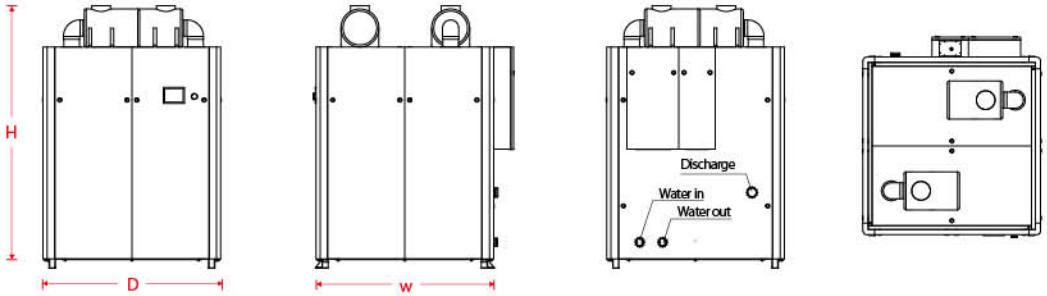


Radial Air Foil Bearing

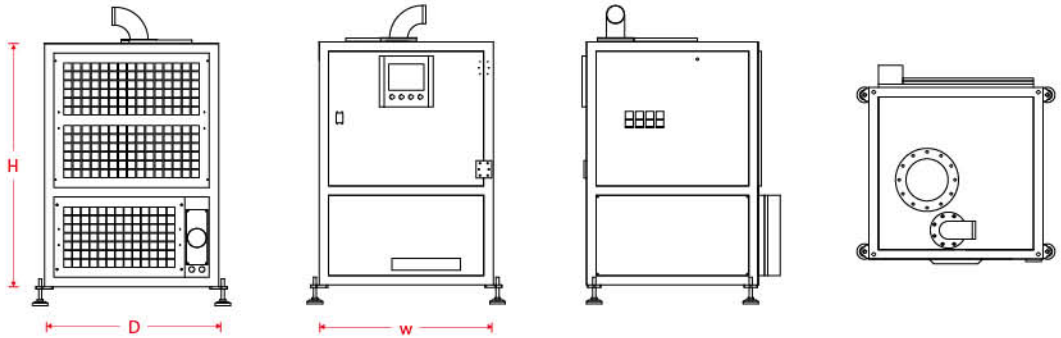


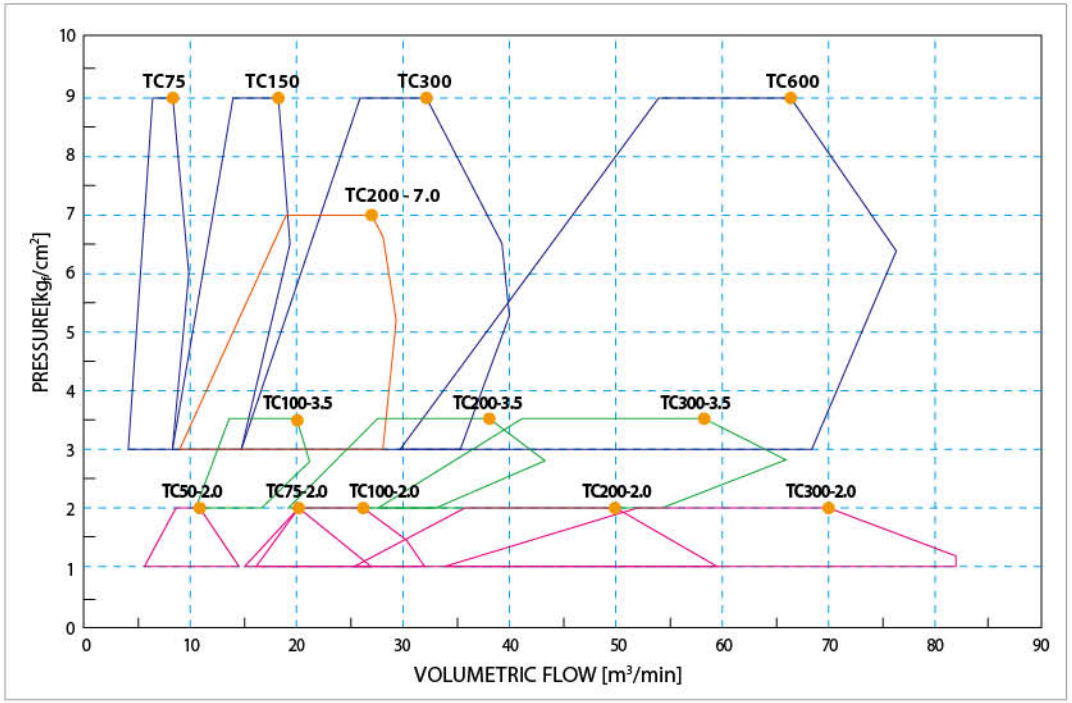
Layout Drawings 외 형

TC Series



TC Series (2.0bar)





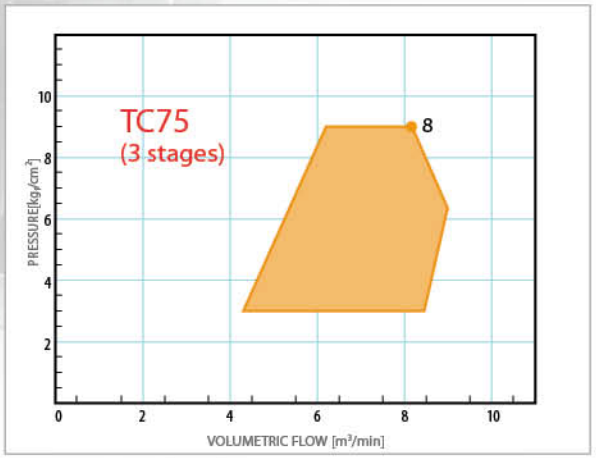
Specification 제원 및 사양

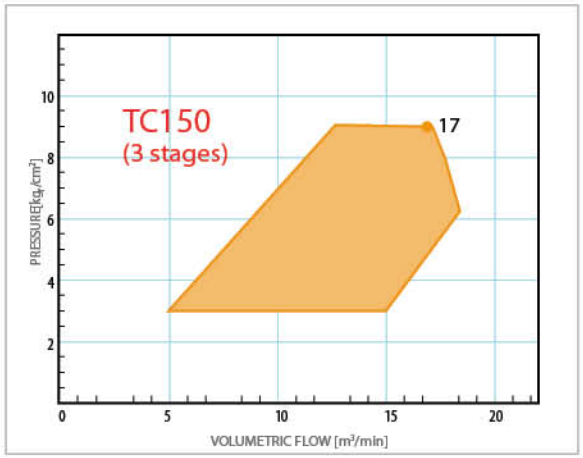
TC - TCL SERIES	PRODUCT OVERVIEW
HP	50 - 600 HP
PRESSURE	2.0 - 9.0 bar
FLOW RATE	8 ~ 70 m^3/min
Motor / Inverter (VFD)	PM Motor / Sensor-less Driver
RPM	0 ~ 120,000 RPM
Noise	Under 70dB (Water Cooled Type Machines)

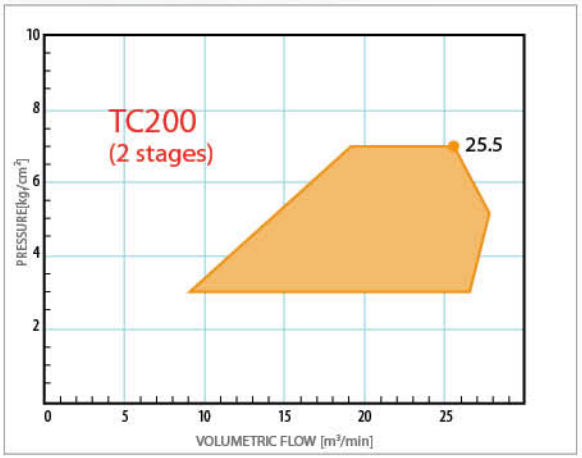
MODEL	STAGE	Kw	PRESSURE (bar)	FLOW RATE (m^3/min)	Cooling Type	Discharge Pipe Size (A)	Coolant Pipe Size (A)	Coolant Volume (ton/h)	Dimension(mm) / (L*W*H)
TC75	3	55	9.0	8.0	Water	50	32	6.0	906 * 1106 * 1695
TC150	3	112	9.0	17.0		65	40	12.0	1256 * 1256 * 1895
TC300	3	225	9.0	33.0		80	65	24.0	1706 * 1706 * 2126
TC600	3	450	9.0	66.0		125	80	48.0	1706 * 1706 * 2126
TC200-7.0	2	150	7.0	25.5		65	50	16.0	1256 * 1256 * 1895
TC100-3.5	2	75	3.5	20.0		100	50	8.0	1150 * 1150 * 1892
TC200-3.5	2	150	3.5	37.0		150	50	16.0	1150 * 1150 * 1892
TC300-3.5	2	225	3.5	58.0		200	80	24.0	1600 * 1600 * 1980
TC50 -2.0	2	37	2.0	12.0	Air	125	-	-	910 * 950 * 1610
TC75 -2.0	2	55	2.0	20.0		150	-	-	910 * 950 * 1610
TC100-2.0	2	75	2.0	26.0		150	-	-	910 * 950 * 1610
TC200-2.0	2	150	2.0	50.0		250	-	-	1150 * 1150 * 1892
TC300-2.0	2	225	2.0	70.0		250	-	-	1485 * 1270 * 1848

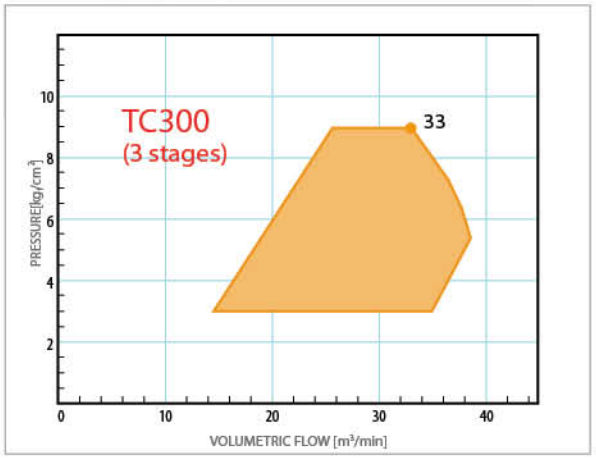
※ 본 제품의 제원 및 사양은 제품의 성능 향상을 위하여 예고없이 변경될수 있습니다.

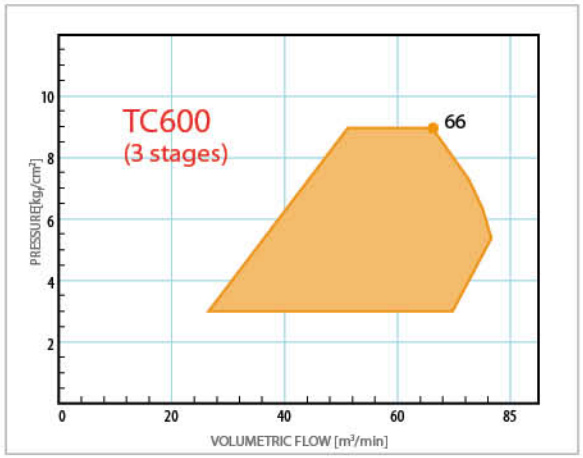
Detail Performance Map 개별 성능곡선도

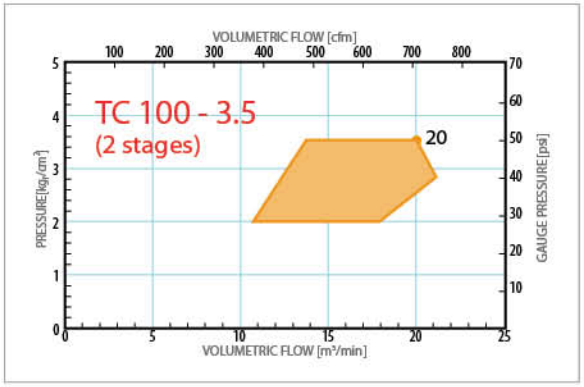


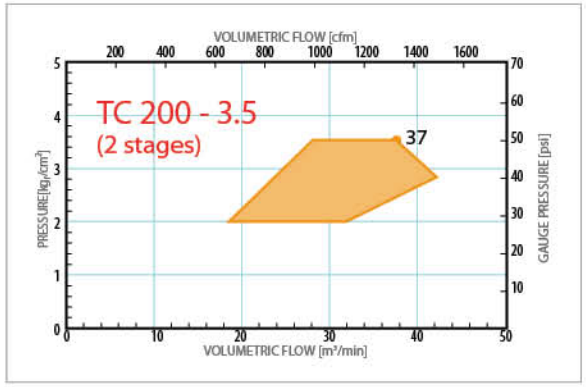


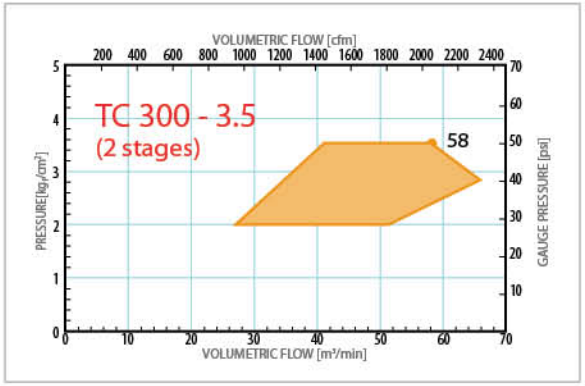


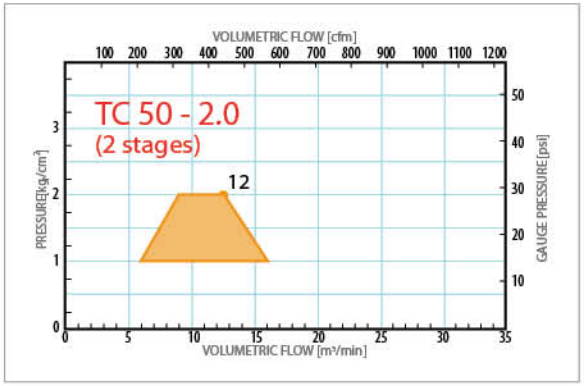


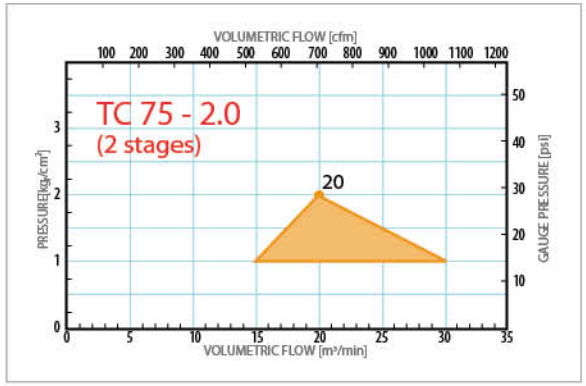


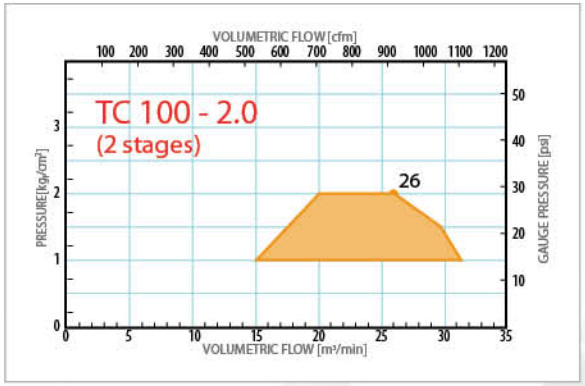


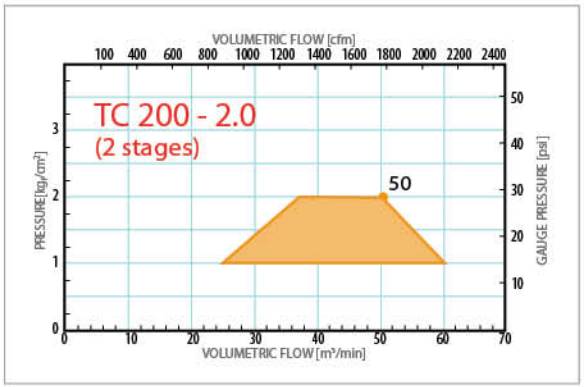


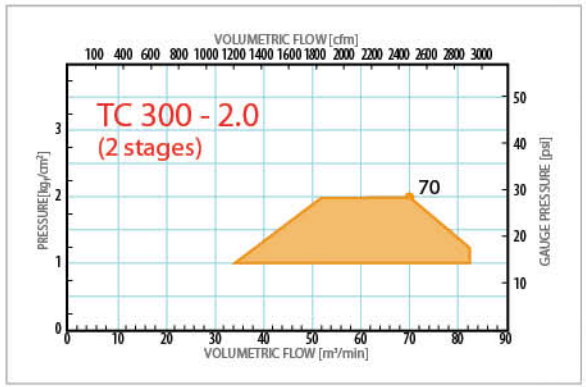












Tolerance +/- 4% on capacity and +/- 5% on Specific power

V2.2 (2014.05)
TurboMann 2014, All rights reserved.

터보만 주식회사

본 사 376-841 충북 보은군 장안면 매화구인로 332-13 (구인리182-20번지)

영 업 본 부 (대전사무실) 305-509 대전광역시 유성구 테크노중앙로 54 (관평동 943번지) 남정빌딩 3층
전화 : 042-933-8388 / 팩스 : 042-933-8390 / 이메일 : sales-korea@turbomann.co.kr

Global Sales Namjeong Bldg. 3F, 54 Technojoongangno, Yusung-gu, Daejeon, 305-509, KOREA
Tel : +82-70-8800-8386 / Fax. : +82-42-933-8390 / email : sales-world@turbomann.co.kr

Home page www.turbomann.co.kr