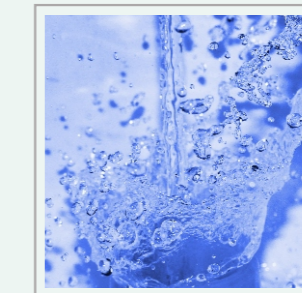
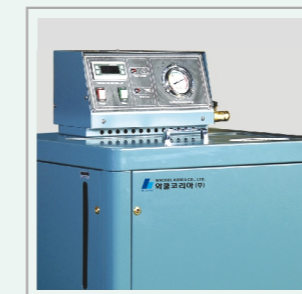
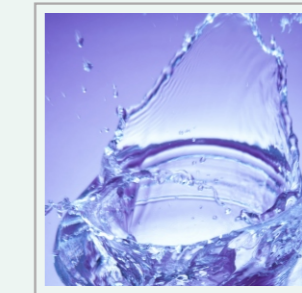
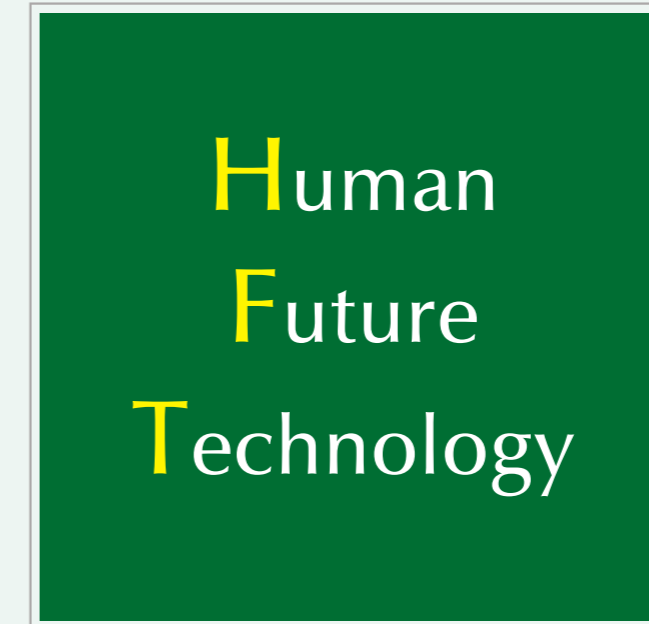
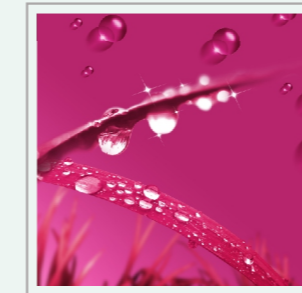


와쿨코리아 (주)
www.wacool.co.kr



Cooling System

Product Catalog



본사 : 인천시 임학동 68번지 씨티 2000 207호
TEL : (032) 556-4948 · 589-4945
FAX : (032) 589-4946

공장 : 인천시 송현동 129번지(산업유통센터)34동 133호
담당자 : 010-8713-1962

<http://www.wacool.co.kr> E-mail : wacool@hanmail.net

COOL TECH Co., Ltd is always considering **human** being.
(주)와쿨은 인간을 존중합니다.

COOL TECH Co., Ltd is thinking **future**.
(주)와쿨은 미래를 생각합니다.

COOL TECH Co., Ltd is pursued the **technology**.
(주)와쿨은 신기술을 추구합니다.



Small Type of Chiller

용접기용 냉각기 Chiller only for Welding Machine

■ 특징

- 고효율 냉각능력 극대화, 우수한 내구성, 정밀 온도제어
- 실외기, 실내기가 일체로 구성된 제품으로 콤팩트함
- 고성능, 저소음의 콤프레서 내장으로 탁월한 냉동기능 발휘
- 누적차단기 보호용 연동회로를 장착하여 고장발생을 사전에 예방하고 높은 안정성 유지
- 다이얼 T.C장착으로 사용온도 범위 조절 가능
- 전자식 자동온도 조절기 PID장착-정확한 온도 유지가능 (Option)

■ Feature

- Maximization of high-efficiency cooling capacity, excellent endurance, precise temperature control
- Compact product where outdoor unit and indoor unit are united
- Exerting excellent cooling function with built-in compressor of high performance and low noise
- Previously preventing occurrence of failure and maintaining high stability with a built-in of interface circuit for protecting electrical leakage
- Adjusting temperature range with built-in of dial T.C.
- Built-in of electronic thermostat PID(option)



WCA-2000UNIT

Operating range	Cooling Capacity (kcal/h)	720
	Temperature range(°C)	5~30
	Temperature stability(°C)	±2
	Outlet pressure(kg/cm ² G)	0~1
	Flow rate(L /min)	3~10
	Power requirements(V · A)	1 Ø 220V 6A
	Units Reservoir capacity(L)	15
	Refrigerant	Freon R-12 & R-134a
	Control	Temperature Controller
	Type	Reciprocation Hermetic
Refrigerant Compressor	Locked Rotor amp(LRA)	-
	Rated input(HP)	1/5
	Maker	-
Water Pump	Scorp of stroke(MAX.(M))	30~50
	Rated input(w)	200
	Maker	-
Dimensions	A(mm)	380
	B(mm)	530
	C(mm)	450
Painting Color	당사 지정색	

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※ Specifications specially ordered other than above specifications are also manufactured.



Air Cooler

냉풍기 Air Conditioning Cooler

■ 특징

- 디지털 전자온도조절기를 사용하여 정밀온도 제어가 가능
- 풍량을 임의로 조정할 수 있어 작업 조건에 맞게 사용 가능
- 연속 운전이 가능함
- 이동이 가능하므로 설치 후에도 장소 변경이 용이함

■ Feature

- Precise temperature control with a digital electronic thermostat
- Optionally adjusting wind quantity suitable for working conditions
- Consecutive operation available
- Easy to change location even after installation of product since movement is possible

■ 적용가능 기계

- 컨베이어 라인
- 압출시트기
- 자동화기계
- 식품기계
- 의료기계
- 각종 공압기기 등

■ Applicable machine

- Conveyor line
- Extruding sheet machine
- Automation machine
- Food machine
- Medical machine
- Various air pressure, etc



	WCA-2C	WCA-3C	WCA-5C
Capacity of compressor (kw)	1.5	2.25	3.75
Scope of temperature control (°C)	-5~20°C		
Scope of ambient temperature (°C)	Within 40°C		
Refrigerant used	Freon R-22 · 407C		
Wind blower Wind quantity (CCM)	25.5	25.5	50
Static pressure (mmAQ)	34	34	65
Motor	200wx6p	200wx6p	700wx6p
High Pressure S/W	SNS-C130		
Dual Pressure S/W	DNS-S306M		
Expansion Valve	0.9ton	1.28ton	3.2ton
Type	Hot Gas By pass & Electric Heater Air-cooled Type(Unit Type, Separate Type)		

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Company of Introduction

(주)와쿨은 전문성과 축적된 기술력을 바탕으로 쿨링시스템 분야를 선도해왔으며 품질향상, 기술개발 및 국제경쟁력 강화를 위한 확고한 목표와 전략으로 미래지향적인 기업이 되기 위해 노력하고 있습니다. 철저한 생산 공정과 사후관리를 통해 '최고의 제품, 최선의 서비스'로 고객을 감동시키고 새로운 기술의 리더가 되는 비전을 가지고 더욱 더 연구, 개발에 힘쓰겠습니다.

WACCOOL Co., Ltd, has been leading the cool system industries based on its expertise and accumulated technology, and trying to become a future-oriented company with the firmly established goal and strategies to improving quality, developing technology, and strengthening international competitiveness. With the thorough production process and follow-up service, we will do our utmost in research and development in order to Satisfy customers under the slogan of "the best products, the best service," and fulfill the vision of becoming a new leader of technology.

History

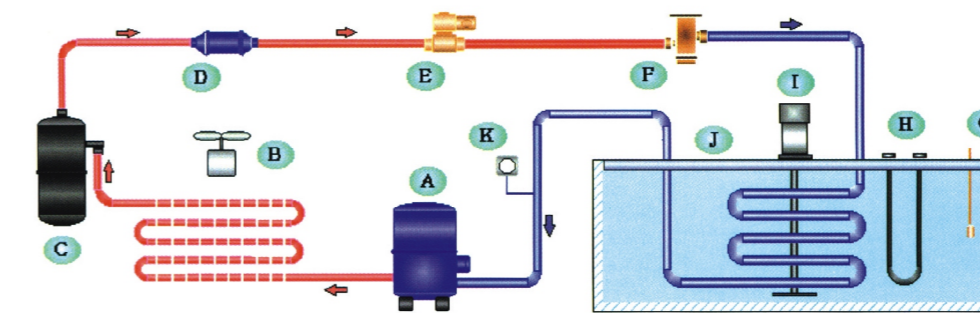
- 1993. 08 하영엔지니어링 설립
 - 11 이태리 MTA사와 기술이전 및 기술교육 이수
 - 1994. 03 Water Chiller 유압형 개발 완료
 - 1995. 04 공장자동화 전시회 출품(95 KOFA)
 - 07 상표등록출원(제25698호) 실용신안출원(제17077호) 의장등록출원(13411호)
 - 1996. 09 산, 학, 연 컨소시엄(냉각기용 HCFC-22 대체냉매의 열전달계수측정)
 - 11 한국 기계전 출품(96 KOMAF : COEX)
 - 1997. 08 인하대 기계공학과와 냉각효율 측정 및 냉매사이클 공동개발
 - 11 한국 기계전 (KOMAF 97)
 - 1998. 02 의장등록출원 (제24639호, 제24640호)
 - 12 온도편차 0,05℃ CHILLER 개발완료, 시판(포항공대 외 20여개 대학 및 연구소 설치)
 - 2000. 06 품질인증 시스템 ISO9001인증 (CCAS-Asia)
 - 2001. 11 한국 기계전 출품(KOMAF2001)
 - 2002. 05 한국무역협회 회원등록
 - 2003. 03 한국국제공장자동화 종합전시회 출품
 - 2004. 02 외클 법인 전환
-
- 1993. 08 Establishment of Hayoung Engineering
 - 11 Technology transfer and training in association with MTA in Italy
 - 1994. 03 Completing the development of European Water Chiller
 - 1995. 04 Exhibition of the factory automation (95 KOFA)
 - 07 Application for the trade mark registering (#25698), utility patent (#17077), and design patent (#13411)
 - 1996. 09 Industry-academia cooperation consortium (Measuring of heat transmission coefficient of freezer HCFC-22 alternative refrigerant)
 - 11 Placing on exhibition "96 KOMAF : COEX"
 - 1997. 08 Joint development (with the department of mechanical engineering, Inha Univ.) of the cooling efficiency measuring & refrigerant cycle unit
 - 11 Placing on exhibition "KOMAF 97"
 - 1998. 02 Application for design patent (#24639, #24640)
 - 12 Completing the development and selling of temperature deflection 0,05℃ CHILLER (Installation at Pohang University of Science and Technology @ other more than 20 universities and institutes)
 - 2000. 06 Certified by Quality Certification System ISO9001(CCAS-Asia)
 - 2001. 11 Placing on exhibition "KOMAF 2001"
 - 2002. 05 Enrolling at THE KOREAN INVESTORS AND TRADERS ASSOCIATION
 - 2003. 03 Placing on exhibition "Korea International Plant Automation Fare"
 - 2004. 02 Changed as a Corporation



Oil Cooler-Submerged Type specifications

		WCA-075D	WCA-150D	WCA-220D	WCA-375D
Horse Power		1HP	2HP	3HP	5HP
Cooling Capacity(kcal/hr) (50/60Hz)		2400/2700	5100/5400	8500/9200	-
Power Supplier		220V / 1PH 220V / 380V / 3PH			
Compressor		0,75Kw	1,5Kw	2,2Kw	3,75Kw
Refrigerants		R-22 · 407C			
Heat exchanger		Shell & Coil Type			
Condenser		Fin & Tube Type			
Motor for Stirring		120w x 6p (Reduction Ratio 5:1)	120w x 6p (Reduction Ratio 5:1)	200w x 6p (Reduction Ratio 5:1)	200w x 6p (Reduction Ratio 5:1)
Electric Heater		1Kw	2Kw	3Kw	3Kw
Temp Control Spec	Temp Controller	Electronic temp controller			
	Wanted temp control	Fixed temp Type/aligned room temp			
	Wanted temp scope	10~45℃			
		Room temp scope			
		10~40℃			
Usable Oil		Lubricant Oil for pressure(Mineral) (2~280cst) Water-cutting, Grinder fluid, Cutting, Grinder oil, Water			
Air Blower	Fan	ø250 x 2	ø300 x 2	ø350 x 2	ø400 x 2
	Motor	16Wx4Px2	66Wx4Px2	100Wx4Px20,	2Kwx6Px2
Exerior size (WxDxH)		457x480x1430	528x570x1537	588x620x1748	800x800x1768

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FLOW CHART

Oil Cooler-Submerged Type

- A : Compressor B : Condenser C : Liquid Receiver D : Filter Drier E : Solenoid Valve F : Expansion Valve
- G : Oil Sensor H : Electric Heater I : Motor for stirring & Rotation Plate J : Oil Tank & Evaporator K : Low Pressure

Oil Cooler

Oil Cooler 침적형 Oil Cooler-Submerged Type



■ 특징

- 강제냉각 방식으로 구성된 기기로 보다 높은 효율을 추구함
- 고성능, 저소음의 콤프레사 내장으로 탁월한 냉각 기능 발휘
- 운전상태를 한눈에 볼 수 있어 작업능률 향상
- 전자식 자동온도 조절기를 채택 PID를 이용한 정확한 온도 유지가 가능하고, 사용온도 범위를 폭넓게 조정
- 누전차단기 보호용 연동회로를 장착하여 고장발생을 사전에 예방하고, 높은 안정성 유지

■ Feature

- More higher efficiency is pursued from the equipments composed with forced cooling method,
- Excellent colling function exerts by high-difficient & low-noisy built-in compressor,
- Efficiency enhances by operation in one sight,
- Electronic auto heat controller make to keep temperature accurate by use of PID, and the scope of temperature used can be controlled widely,
- With gearing circuit to protect electric leakage attached, breakage can be prevented in advance, and high safety can be maintained,



Power Cool



- 고성능, 저소음의 콤프레서가 내장되어 탁월한 냉각 기능을 발휘합니다.
- 자체 개발된 열교환기가 내장되어 냉각 효율이 높습니다.
- 소음과 진동이 적은 순환용 Heat Pump를 장착하여 수명연장과 기능의 신뢰성을 실현합니다.
- 에이콘 P.B소재와 원터치회팅을 사용한 배관은 내부식성과 내열성이 강합니다.
- 운전 상태를 한 눈에 확인할 수 있는 제어판 장착으로 사용이 편리합니다.
- 디지털 온도조절기(PCB)사용으로 정확한 온도 유지와 사용 온도 범위를 폭넓게 조정할 수 있습니다.
- Compact한 설계로 공간이용 효율이 높습니다.
- 특수 분체도장과 세련된 실크 인쇄로 외관 디자인이 고급스럽습니다.
- 철저한 시운전 테스트를 통해 안정성을 추구합니다.
- 부품 수급이 용이하여 신속한 A/S를 제공합니다.

- Excellent cooling function of the embedded compressor of high-performance and low noise.
- High cooling efficiency of the embedded heat-exchanger that the company developed itself.
- Circulating Heat Pump of low noise and vibration that realizes lifespan extension and functional reliability.
- Corrosion/heat resistant pipes in which air conditioner P.B material and one-touch fitting are used.
- Convenient Control Panel through which the operation state can be checked.
- Digital Temperature Controller (PCB) through which the temperature maintains at a certain level and a wide range of temperature can be adjusted.
- Compact design that enables highly efficient special use,
- Special powder coating and sophisticated silk printing method that realize high-class appearance,
- Secured safety through the thorough test-drive procedure,
- Convenient parts supply and prompt customer service,



Uses

산업기기용
For industrial
equipment

플라스틱 사출성형 냉각기 Plastic injection molding
레이저가공 냉각기 Laser processing
와이어컷팅 냉각기 Wair cutting
방전가공 냉각기 Discharge Processing
고주파 냉각기 High frequency waves
초음파 냉각기 Ultrasonic waves
용접기기 냉각기 Welding machine

측정용 및 시험용
For measuring
and experiment
equipment

전자현미경 냉각기 Electronic microscopes
발포시험 냉각기 Forming experiment
광학기기 냉각기 Optical equipment
자동화기기 냉각기 Automation products
화학반응기 냉각기 Chemical machining system

식품 가공용
For experiment
and processing

식품 발효용 냉각기 Food fermentation
식품 성형용 냉각기 Food molding



Water Chiller- Standard Chiller

POWER COOL 공냉식 일체형 WCA Series
Air cooled-Unit Type WCA Series

■ 특징

- 실외기, 실내기가 일체로 구성된 제품으로 콤팩트함
- Caster가 장착되어 장소 이동이 편리함
- 고성능, 저소음의 콤프레사 내장으로 탁월한 냉동기능 발휘
- 디지털 온도제어장치를 채택하여 정확한 온도 유지가 가능하고, 사용온도 범위를 폭넓게 조정
- 누전차단기 보호용 연동회로를 장착하여 고장발생을 사전에 예방하고, 높은 안정성 유지
- 한 눈에 이상여부가 확인 가능한 그래픽 패널 부착

■ Feature

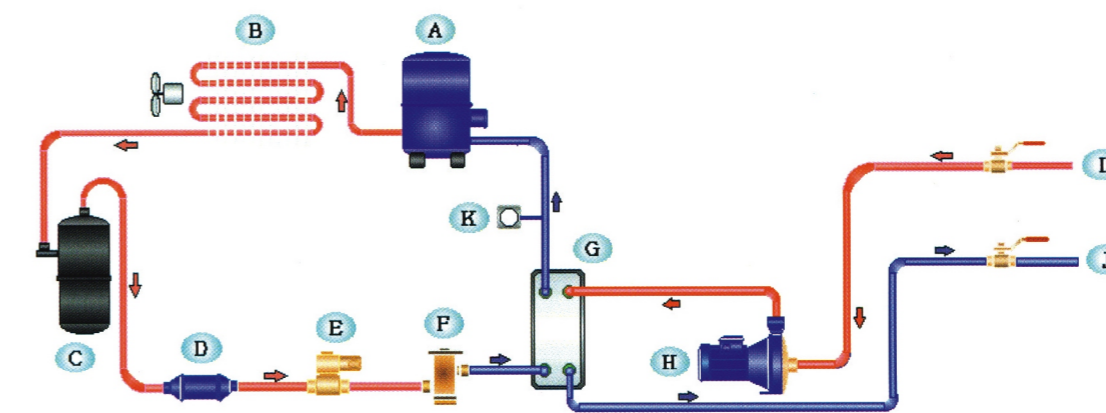
- Compact product whose outdoor unit and indoor unit consisted as single
- Convenient to move location with a built-in caster
- Exerting excellent freezing function since a compressor of high performance, low noise is built-in
- Maintaining accurate temperature by adopting digital thermostat and capable of widely adjusting scope of temperature used,
- Previously preventing occurrence of failure and maintaining high stability with built-in of interface circuit for protecting electrical leakage,
- Graphic panel through which any abnormal state can be easily checked,



Oil Cooler-General Type specifications

		WCA-030G	WCA-050G	WCA-075G	WCA-150G	WCA-220G	WCA-375G
Horse Power (HP)		1/2HP	3/4HP	1HP	2HP	3HP	5HP
	Cooling Capacity (kcal/hr) (50/60Hz)	820	1570	2700	5400	9200	13500
Power Supplier		220V / 3PH			220V / 380V / 3PH		
Compressor		0,3Kw	0,5Kw	0,75Kw	1,5Kw	2,2Kw	3,75Kw
Refrigerants		R-22 · 407C					
Heat exchanger		Plate Heat Exchanger					
Condenser		Fin & Tube Type					
Oil Pump (l /min)		10,8	15	27	36	36	66
Temp Control Spec	Temp Controller	Electronic temp controller					
	Wanted temp control	Fixed temp Type/aligned room temp					
	Wanted temp scope	10~45℃					
Room temp scope		10~40℃					
Usable Oil		Lubricant Oil for pressure (Mineral) (2~280cst)					
Coupling piping	Outlet	PT 1/2	PT 3/4	PT 3/4	PT 1	PT 1	PT 1
	Inlet	PT 1/2	PT 3/4	PT 3/4	PT 1	PT 1	PT 1/4
Air blower	Fan	∅250 x 1	∅300 x 1	∅250 x 2	∅300 x 2	∅350 x 2	∅400 x 2
	Motor	16Wx4Px1	66Wx4Px1	16Wx4Px2	66Wx4Px2	100Wx4Px2	0,2Kwx6Px2
Exterior size (WxDxH)		427x480x688	457x480x841	457x480x1095	528x570x1097	588x620x1198	800x800x1298

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FLOW CHART

Oil Cooler General Type
 A : Compressor B : Condenser C : Liquid Receiver D : Filter Drier E : Solenoid Valve F : Expansion Valve
 G : Plate Heat Exchanger (Evaporator) H : Oil Pump I : Oil Inlet J : Oil Outlet K : Low Pressure

Oil Cooler

Oil Cooler 일반형
Oil Cooler-General Type



■ 특징

- 세련된 디자인과 콤팩트함으로 주위 환경과 조화를 이룸
- 고성능, 저소음의 콤프레사 내장으로 탁월한 냉각 기능 발휘
- 운전상태를 한눈에 볼 수 있어 작업능률 향상
- 전자식 자동온도 조절기를 채택 PID를 이용한 정확한 온도 유지가 가능하고, 사용온도 범위를 폭넓게 조정
- 누전차단기 보호용 연동회로를 장착하여 고장발생을 사전에 예방하고, 높은 안정성 유지

■ Feature

- Compact structure & stylish appearance matches with ambience,
- Excellent cooling function exerts by high-efficient & low-noisy built-in compressor,
- Efficiency enhances by operation in one sight,
- Electronic auto heat controller make to keep temperature accurate by use of PID, and the scope of temperature used can be controlled widely,
- With gearing circuit to protect electric leakage attached, breakage can be prevented in advance, and high safety can be maintained.

■ 용도

- 윤활유 또는 유압작동유를 사용하는 장비
(머시닝 센터, 방전가공기, 대형유압프레스, 산업용 유압기계, 선박용 유압기계)

■ Usage

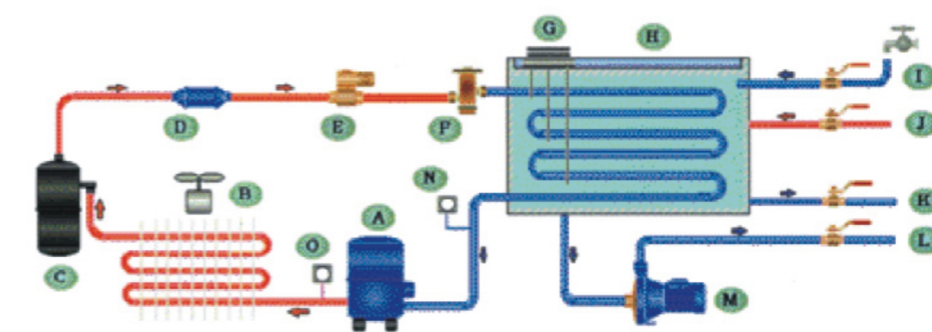
- Devices using lubricant oil or oil for machines operated by oil-pressure
(Machining center, discharge machine, Large-scale oil pressure unit, industrial oil press machine, ship oil press unit)



Air cooled-Unit Type WCA Series specifications

	WCA-1A	WCA-2A	WCA-3A	WCA-5A	WCA-7.5A	WCA-10A	WCA-15A	WCA-20A	WCA-30A	WCA-40A
Cooling capacity (Kcal/hr)	2,800	5,600	8,400	14,000	21,000	28,000	42,000	56,000	84,000	112,000
Temperature range (°C)	5~30 (Variation: ±2°C)									
Ambient temperature range (°C)	Within 0~45									
Cooling water pressure range(kgf/cm ²)	1.0~2.5	1.5~3.5	1.5~3.5	3.0~6.0	1.0~2.5	1.5~3.5	2.5~4.0	3.0~5.0	2.0~3.5	3.5~5.5
Cooling water circulation volume range (LPM)	5~20	15~80	15~80	15~80	30~130	30~130	100~210	100~210	160~430	160~430
Cooling water tank capacity (Liter)	20	40	60	80	100	135	165	280	350	500
Cooling water link pipe (A)	15	20	20	25	25	25	32	40	50	65
Refrigerant	Freon R-22 · 407C									
COMP capacity (Kw)	0.75	1.5	2.25	3.75	5.63	7.5	11.25	15	22.5	30
Circulation pump capacity (Kw)	0.35	0.75	0.75	1.1	1.1	1.1	2.2	3	4	5.5
Cooling fan motor capacity (Kw)	0.1	0.2	0.2	0.4	0.75	0.4x2	0.4x2	0.75x2	0.75x3	0.75x3
Power consumption (Kw)	1.2	2.45	3.2	5.25	7.48	9.4	14.95	19.5	28.75	37.75
Power	AC 220V 1ø 50 · 60Hz		AC 220 · 380 · 440V 3ø 50 · 60Hz							
Control circuit Power	AC 220V 1ø									
External dimension (WxLxH)	470 x760 x870	580 x960 x1050	580 x960 x1050	660 x1060 x1130	760 x1100 x1345	760 x1600 x1350	945 x1750 x1595	1050 x2100 x1768	1050 x2900 x1921	1200 x3800 x2140

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 ※ Specifications specially ordered other than above specifications are also manufactured.



FLOW CHART
Air cooled unit type

A : Compressor B : Condenser C : Liquid Receiver D : Filter Drier E : Solenoid Valve F : Expansion Valve
 G : Level Sensor H : Water Tank & Evaporator I : Water Supply J : Water Inlet K : Water Drain L : Water Outlet
 M : Water Pump N : Low Pressure O : High Pressure

Water Chiller- Standard Chiller

POWER COOL 공냉식 분리형 WCS Series
Air cooled-Separate Type WCS Series



■ 특징

- 실외기, 실내기를 분리하여 소음 없는 정숙한 환경 제공
- Caster가 장착되어 장소 이동이 편리함
- 실내온도 상승으로 인한 냉각기능 저하를 해소하여 탁월한 냉동기능 발휘
- Compact한 구조로 좁은 공간 활용시 유리함
- 디지털 온도제어장치를 채택하여 정확한 온도 유지가 가능하고, 사용온도 범위를 폭넓게 조정
- 누전차단기 보호용 연동회로를 장착하여 고장발생을 사전에 예방하고, 높은 안정성 유지
- 한 눈에 이상여부가 확인 가능한 그래픽 패널 부착

■ Feature

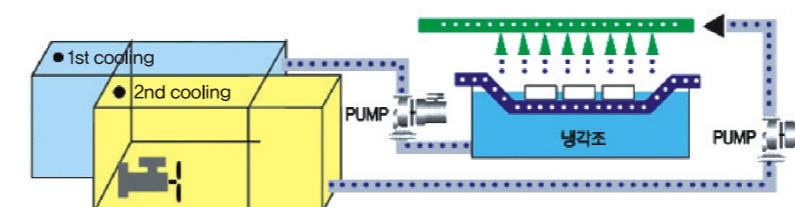
- Providing calm environment without noise through separation of outdoor unit and indoor unit,
- Convenient to move location with a built-in caster,
- Exerting excellent freezing function by solving problems of cooling function reduction due to rise of indoor temperature,
- Advantageous in use of narrow space due to compact structure,
- Maintaining accurate temperature by adopting digital thermostat and capable of widely adjusting scope of temperature used,
- Previously preventing occurrence of failure and maintaining high stability with built-in of interface circuit for protecting electrical leakage,
- Graphic panel through which any abnormal state can be easily checked,



Chiller for Food Molding specifications

Item	Model	Air-cooled, Separate Type			Air-cooled, Unit Type			
		WCA-20FS	WCA-30FS	WCA-40FS	WCA-20FU	WCA-30FU	WCA-40FU	WCA-60FU
Cooling capacity (Kcal/hr)		56,000	84,000	112,000	56,000	84,000	112,000	168,000
Temperature range (°C)		5~30 (Variation: ±2°C)						
Ambient temperature range (°C)		Within 0~45						
Cooling water pressure range(kgf/cm ²)		2.0~3.5						
Cooling water circulation volume range (LPM)		100~210	160~430	160~500	100~210	160~430	160~500	160~430x2
Cooling water link pipe (A)		40	50	65	40	50	65	50x2
Refrigerant		Freon R-22 · 407C						
COMP capacity (Kw)		15	22.5	30	15	22.5	30	22.5x2
Circulation pump capacity (Kw)		3	4	5.5	3	4	5.5	4x2
Power consumption (Kw)		19.5	28.75	37.75	19.5	28.75	37.75	57.5
Power		AC 220 · 380 · 440V 3ø 50 · 60Hz						
Control circuit Power		AC 220V 1ø						
External dimension	Indoor unit (WxLxH)	1000 x1900 x1280	1000 x2000 x1280	1200 x2200 x1400	1050 x2100 x1768	1050 x2900 x1921	1200 x3800 x2140	2304 x3110 x2250
	Outdoor unit (WxLxH)	1030 x2070 x1000	1050 x2740 x960	1863 x2230 x1307				

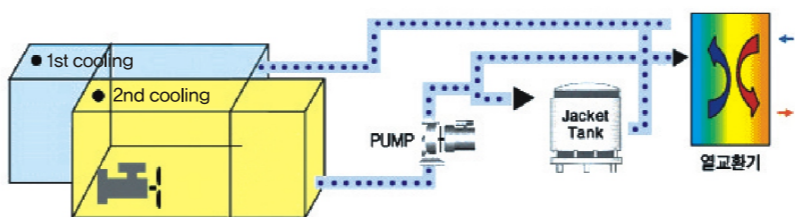
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직접냉각(순환)(0°C~30°C)
 showering냉각조, 침지냉각조로의 냉수공급
 pack용 / 두부냉각 / 소스냉각 / 마요네즈 냉각 / 활어 수족관

Direct cooling(circulating) (0°C~30°C)
 Cool water supply by means of showering / dipping cooling tanks

Packing / bean curd cooling / sauce cooling / mayonnaise cooling / live fish aquarium



간접냉각
 jacket 저온유지 tank, 열교환기로의 냉수공급
 우유 / 두유 / 육수 / 원료냉각 / 제품냉각 / 조미액냉각 / 식품공장, 화학공장 각종 기기 장비냉각

Indirect cooling
 Cool water supply by means of jacket low-temperature tank, heat-exchange unit
 milk / soy milk / beef-soup stock / raw material cooling / product cooling / liquid seasoning cooling / food processing plant, chemical factory units and facilities

Water Chiller- Special Chiller

식품기기용
Chiller for Food Molding



■ 특징

- 식품산업 전반에 걸쳐 적용 가능하며 특히 가공식품을 단시간에 냉각시켜 신선도를 오랫동안 지속할 수 있어 유통 관리에 유리함
- 부식되지 않는 배관재를 사용하여 깨끗한 수질을 유지함
- 고성능, 저소음, 저진동의 콤프레사 장착으로 효율적인 냉각능력 발휘
- 겨울철 낮은 주변온도에 대응할 수 있는 동파방지가능 장착
- 한눈에 이상여부가 확인 가능한 그래픽 패널 부착

■ Feature

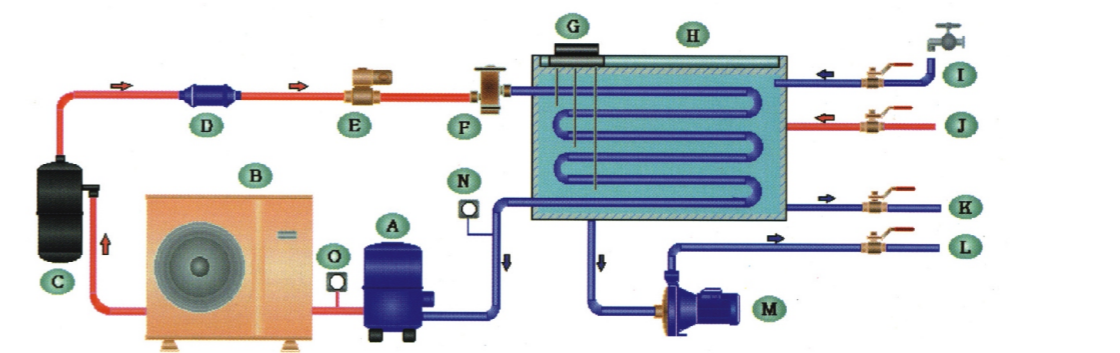
- Applicable to the whole area of food industry, and largely having effect on distribution management be cause of maintaining freshness level for a long time specially cooling process food for a short time.
- Maintaining clean water by pipe materials not eroded.
- Exertin effective cooling capacity with mounting of compressor of high performance, low noise and lower vibration.
- Mounting of winter rupture prevention function in respond to low ambient temperature in winter.
- Graphic panel through which any abnormal state can be easily checked.



Air cooled-Separate WCS Series specifications

	WCS-1S	WCS-2S	WCS-3S	WCS-5S	WCS-7.5S	WCS-10S	WCS-15S	WCS-20S	WCS-30S	WCS-40S
Cooling capacity (Kcal/hr)	2,800	5,600	8,400	14,000	21,000	28,000	42,000	56,000	84,000	112,000
Temperature range (°C)	5~30 (Variation:±2°C)									
Ambient temperature range (°C)	Within 0~45									
Cooling water pressure range(kgf/cm ²)	1.0~2.5	1.5~3.5	1.5~3.5	3.0~6.0	1.0~2.5	1.5~3.5	2.5~4.0	3.0~5.0	2.0~3.5	3.5~5.5
Cooling water circulation volume range (LPM)	5~20	15~80	15~80	15~80	30~130	30~130	100~210	100~210	160~430	160~430
Cooling water tank capacity (Liter)	20	40	60	80	100	135	165	280	350	500
Cooling water link pipe (A)	15	20	20	25	25	25	32	40	50	65
Refrigerant	Freon R-22 · 407C									
COMP capacity (Kw)	0.75	1.5	2.25	3.75	5.63	7.5	11.25	15	22.5	30
Circulation pump capacity (Kw)	0.35	0.75	0.75	1.1	1.1	1.1	2.2	3	4	5.5
Power consumption (Kw)	1.2	2.45	3.2	5.25	7.48	9.4	14.95	19.5	28.75	37.75
Power	AC 220V 1ø 50 · 60Hz		AC 220 · 380 · 440V 3ø 50 · 60Hz							
Control circuit Power	AC 220V 1ø									
Indoor Unit (WxLxH)	470 x760 x870	580 x960 x1050	580 x960 x1050	660 x1060 x1130	760 x1100 x1345	760 x1600 x1350	945 x1750 x1450	1050 x1900 x1450	1050 x2000 x1450	1200 x2200 x1600
Outdoor Unit (WxLxH)	400 x850 x630	530 x986 x720	530 x986 x930	605 x1125 x1065	900 x870 x895	900 x870 x1150	930 x1625 x1000	1030 x2070 x1000	1050 x2740 x960	1863 x2230 x1307

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FLOW CHART
Air cooled separated type
A : Compressor B : Condenser C : Liquid Receiver D : Filter Drier E : Solenoid Valve F : Expansion Valve
G : Level Sensor H : Water Tank & Evaporator I : Water Supply J : Water Inlet K : Water Drain L : Water Outlet
M : Water Pump N : Low Pressure O : High Pressure

Water Chiller— Standard Chiller

POWER COOL 수냉식 WCW Series
Water cooled WCW Series



■ 특징

- 지하수나 콜링타워의 물을 이용한 응축냉각 방식으로 실내의 소음을 최소화
- Caster가 장착되어 장소 이동이 편리함
- 공냉식보다 높은 냉각 효율이 장점
- Compact한 구조와 미려한 외관으로 주위 환경과 조화
- 디지털 온도제어장치를 채택하여 정확한 온도 유지가 가능하고, 사용온도 범위를 폭넓게 조정
- 누전차단기 보호용 연동회로를 장착하여 고장발생을 사전에 예방하고, 높은 안정성 유지
- 한 눈에 이상여부가 확인 가능한 그래픽 패널 부착

■ Feature

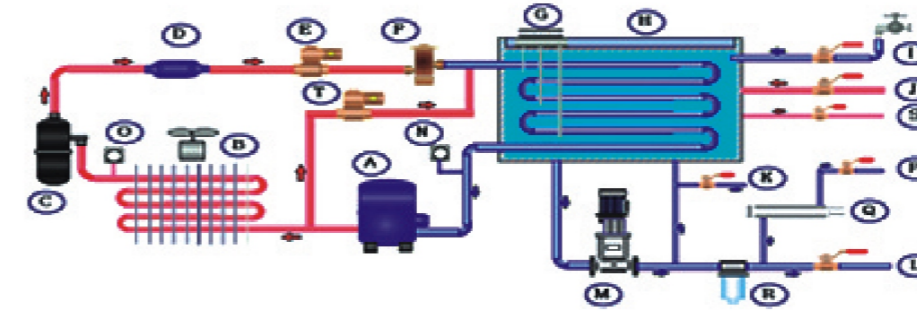
- Minimizing indoor noise in condensation & cooling method by using groundwater or cooling-tower.
- Convenient to move location with a built-in caster.
- More effective cooling than air-cooled method.
- Harmony with ambient environment thank to compact structure and beautiful appearance.
- Maintaining accurate temperature by adopting digital thermostat and capable of widely adjusting scope of temperature used.
- Previously preventing occurrence of failure and maintaining high stability with a built-in of interface circuit for protecting electrical leakage.
- Graphic panel through which any abnormal state can be easily checked.



Chiller for Laser Cutting specifications

	WCA-3L	WCA-5L	WCA-7.5L	WCA-10L	WCA-15L	WCA-20L
Cooling capacity (kcal/hr)	8,400	14,000	21,000	28,000	42,000	56,000
Temperature (°C)	Main	5~30 (Variation : ±1.0°C)			20 (Variation : ±1.0°C)	
	Mirror	24 (Variation : ±1.0°C)				
Ambient temperature range (°C)	Within 0~45					
Cooling water pressure range (Kgf/cm ²)	Max. 2.5~5 bar					
Circulation volume (LPM)	Main	15~80	15~80	30~130	110	160
	Mirror	-	-	-	5	10
Tank capacity (Liter)	60	80	100	135	200	280
Link pipe (mm)	Main	20	25	25	32	50
	Mirror	-	-	-	13	13
1/0 pipe line fileter (µm)	-	-	-	Outlet : 60		
Electric heater (kw)	-	-	-	3	5	5
Refrigerant	Freon R-22 · 407C					
COMP capacity (kw)	2.25	3.75	5.63	7.5	11.25	15
Circulation pump capacity (kw)	0.75	1.1	1.1	2.2	3	3
Cooling fan motor capacity (kw)	0.2	0.4	0.75	0.4x2	0.75x2	0.75x2
Power consumption (kw)	3.5	5.5	7.5	15	20	25
Power	AC 220 · 380 · 440V 3 Ø 50 · 60Hz					
Control circuit Power	AC 220V 1 Ø					
External dimension (WxLxH)	580	660	760	920	1020	1050
	x960	x1060	x1100	x1600	x1900	x2100
	x1050	x1130	x1345	x1786	x1871	x1768

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FLOW CHART
Chiller for
Laser Cutting

A : Compressor B : Condenser C : Liquid Receiver D : Filter Drier E : Solenoid Valve F : Expansion Valve
 G : Level Sensor H : Water Tank & Evaporator I : Water Supply J : Water Inlet(Main) K : Water Drain & Bypass
 L : Water Outlet(Main) M : Water Pump N : Low Pressure O : High Pressure P : Water Outlet(Mirror) Q : Heater
 R : Water Filter S : Water Inlet (Mirror) T : Solenoid Valve (Hot Gas)

Water Chiller— Special Chiller

레이저기기용
Chillers for Laser Cutting



■ 특징

- 레이저가공(절단)기에 적합한 구성으로 가공정밀도 향상
- CO₂ 레이저, Yag레이저, 알곤이온레이저 등의 레이저 응용기기에도 적합
- 고성능, 저소음, 저진동의 스크롤 콤프레샤 장착으로 효율적인 냉각능력 발휘
- 겨울철 낮은 주변온도에 대응할 수 있는 동파방지 기능 장착
- 한 눈에 이상여부가 확인 가능한 그래픽 패널 부착

■ Feature

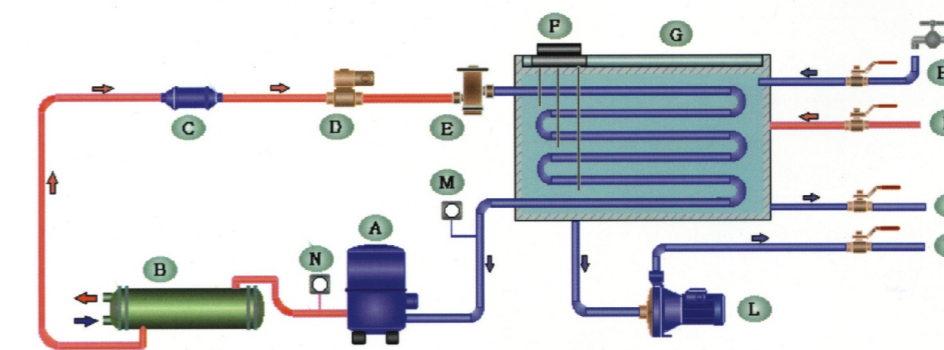
- Improving processing precision level with appropriate configuration of laser processing (cutting-off) machine.
- Appropriate even for laser applications such as CO₂ laser, Yag laser, Argon ion laser, etc.
- Exerting effective cooling capacity with mounting of scroll compressor of high performance, low noise and lower vibration.
- Mounting of winter rupture prevention function in respond to low ambient temperature in winter.
- Graphic panel through which any abnormal state can be easily checked.



Water Cooled WCW Series specifications

	WCW-1W	WCW-2W	WCW-3W	WCW-5W	WCW-7.5W	WCW-10W	WCW-15W	WCW-20W	WCW-30W	WCW-40W
Cooling capacity (Kcal/hr)	3,000	6,000	9,000	15,000	22,500	30,000	45,000	60,000	90,000	120,000
Temperature range (°C)	5~30 (Variation: ±2°C)									
Ambient temperature range (°C)	Within 0~45									
Cooling water pressure range(kgf/cm ²)	1.0~2.5	1.5~3.5	1.5~3.5	3.0~6.0	1.0~2.5	1.5~3.5	2.5~4.0	3.0~5.0	2.0~3.5	3.5~5.5
Cooling water circulation volume range (LPM)	5~20	15~80	15~80	15~80	30~130	30~130	100~210	100~210	160~430	160~430
Cooling water tank capacity (Liter)	20	40	60	80	100	135	165	280	350	500
Cooling water link pipe (A)	15	20	20	25	25	25	32	40	50	65
Refrigerant	Freon R-22 · 407C									
COMP capacity (Kw)	0.75	1.5	2.25	3.75	5.63	7.5	11.25	15	22.5	30
Circulation pump capacity (Kw)	0.35	0.75	0.75	1.1	1.1	1.1	2.2	3	4	5.5
Condensation water Circulation volume (LPM)	15	21.6	27	50	70	104	145	195	300	390
Power consumption (Kw)	1.1	2.25	3.2	4.85	6.73	8.6	13.45	18.0	26.5	35.5
Power	AC 220V 1ø 50 · 60Hz		AC 220 · 380 · 440V 3ø 50 · 60Hz							
Control circuit Power	AC 220V 1ø									
External dimension (WxLxH)	470 x760 x870	580 x960 x1050	580 x960 x1050	660 x1060 x1130	760 x1100 x1345	760 x1600 x1350	945 x1750 x1450	1050 x1900 x1450	1050 x2000 x1450	1200 x2200 x1600

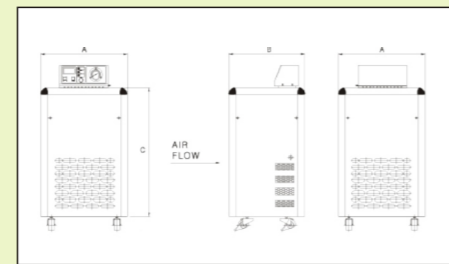
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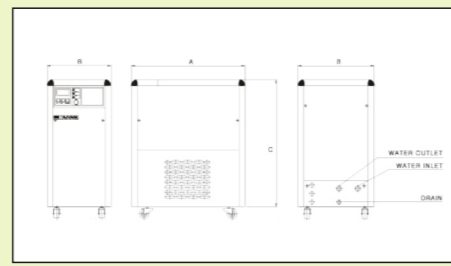
FLOW CHART
 Water cooled
 WCW Series
 A : Compressor B : Condenser C : Filter Drier D : Solenoid Valve E : Expansion Valve F : Level Sensor
 G : Water Tank & Evaporator H : Water Supply I : Water Inlet J : Water Drain K : Water Outlet
 L : Water Pump M : Low Pressure N : High Pressure

Water Chiller- Special Chiller

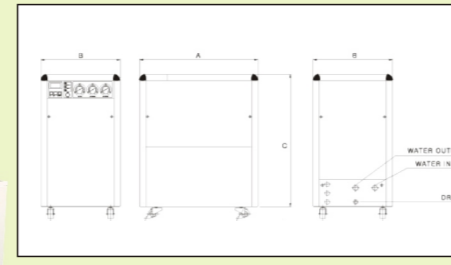
연구실험용 Chillers for Analysis



Model	A	B	C
WCA-15U(1/2HP)	580	480	800
WCA-20U(3/4HP)	580	480	800



Model	A	B	C
WCS-25S1(1HP)	705	450	900
WCS-25S2(1HP)	705	450	900



Model	A	B	C
WCS-50S3(2HP)	850	600	975

현재 국내 각 분야의 실험실 연구 장비들은 유럽, 미국 그리고 일본 등에서 수입되는 것이 대부분입니다. 주변기기 또한 고가로 수입하여 사용되고 있습니다. 와콜은 외화의 유출 억제와 수입대체를 위해 끊임없는 기술개발에 노력하여, 국내 대학연구소의 실험장비 및 의료, 반도체 장비에 맞는 초정밀 온도제어가 가능한 Water Chiller를 개발하여 공급하고 있습니다. 이러한 특수장비가 성능을 최대한 발휘하기 위해 서로 주변환경 조건을 맞춰주는 것이 중요합니다. 와콜의 Water Chiller는 적당한 온도유지를 필요로 하고 냉각수 온도 변화에 민감한 장비에 필수적입니다.

Most of research equipment for laboratory in each section in Korea are now imported from Europe, American and Japan, etc. Peripheral devices are also imported and used at a high price. Wacool endeavors for endlessly technology development for restriction of foreign current outflow and import substitution and develops and supplies water chillers, that super-precision temperature control is possible suitable for experiment equipment, medical & semi-conductor equipment used in domestic university institutes. It is essential to form neighboring environment conditions in order that such special equipment should exert optimum performance. Wacool water chillers require keeping of temperature and it is essential to equip with devices sensitive to change of cooling water temperature.



Chillers for Analysis specifications

		WCA-15U/CT-J20U	WCA-20U	WCA-25S1	WCA-25S2	WCA-50S3
Operating range	Cooling capacity(kcal/h)	1250	1670	2500	2500	5000
	Temperature range(°C)	16 ~ 25				
	Temperature stability(°C)	± 2	± 2	± 0.1	± 0.05	± 0.05
	Outlet pressure(kg/cm ² G)	0.5	0.5	0.5	2	3
	Flow rate(l /min)	5~10	5~10	3~10	10~35	10~40
Units	Power requirements (V · A)	1 ∅ 220V 9A	1 ∅ 220V 10A	1 ∅ 220V 15A	3 ∅ 220V 20A	3 ∅ 220V/380V (20A/15A)
	Reservoir capacity (l)	20	20	45	45	60
Refrigerant Compressor	Refrigerant	Freon R-22 · 407C				
	Control	Temperature Controller				
Water Pump	Type	Reciprocation Hermetic	Reciprocation Hermetic	Rotary	Rotary	Reciprocation Hermetic
	Locked Rotor amp (LRA)	21.5	23	35	35	40
	Rated input(kw)	0.4	0.6	0.75	0.75	2.27
Scope of stroke MAX(M)	Scope of stroke MAX(M)	5	5	5	33	33
	Rated Input(kw)	0.05	0.05	0.05	0.45	0.45
Weight(kg)		62	65	70	70	85

* 상기 제품은 기술개발에 따라 예고 없이 변경될 수 있습니다. * 상기 사양 외 특별주문 사양도 제작합니다.
 * Above product may be changed without previous notice depending on further development of technology.
 * Specifications specially ordered other than above specifications are also manufactured.

■ 특징

- 분석기 실험환경을 고려한 일정한 온도유지와 정속운전으로 고객만족 실현
- 냉각기 판넬 내부에 흡음재를 부착하여 소음발생을 최소화 함
- 순환수용 Filter는 스트레너 방식으로 반영구적이며 정기적으로 교환할 필요가 없음

■ 제품설명

- 디지털 전자온도조절기 · 온도제어범위 : 5~30°C (편차 : ±0.5°C) · 주변온도범위 : 0.45°C 이내
- 사용냉매 : Freon R-22 · 순환수 Filter : 50µm

■ 경보

- 장비알람경보 : 저수위, 고압이상, 과전류 · 온도알람경보 : 상한, 하한

■ Features

- Customer-satisfaction by maintaining temperature at a stable level and operating the unit silently in consideration of the analysis unit experiment environment
- Minimization of noise-making by using the noise controlling material within the cooler panel
- Strainer-type Circulating Water filter that is semi-permanent and needs no replacement

■ Specifications

- Digital thermostat · Temperature range : 5~30°C (variation : ±0.5°C) · Ambient temperature range : 0~45°C
- Refrigerant : Freon R-22 · Circulating Water Filter : 50µm

■ ALARM

- Device alarming : Low level water, abnormally high pressure, overloaded current
- Temperature alarming : Upper/lower limits

- 용도 전자현미경, 광학기기, 자동화기기
- Usage Electronic microscope, optical units, automotive units