

Air-cooled CHILLER

风冷式冷水机



TIC-A

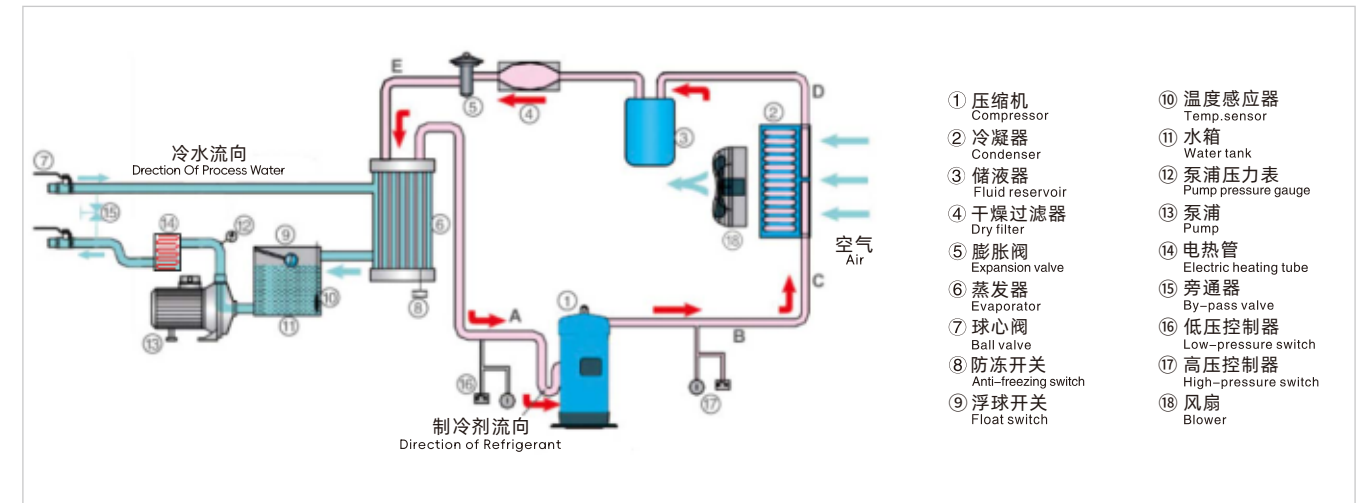


产品特点 Features

- 冷却温度范围7°C--35°C;
- 意大利原装精密温控表, 精度达±0.1°C;
- 不锈钢保温水箱, 放结冰保护装置;
- 采用R22制冷剂, 可选配407环保制冷剂;
- 压缩机与泵浦均有过载保护;
- 风冷式采用套管式冷凝器, 传热效果好, 无需提供冷却水;
- 根据不同国家地区客户需求可选低、中、高压泵浦。

- Cooling temperature range from 7°C to 35°C.
- Italian original precision temperature control meter with accuracy of ± 0.1°C.
- Stainless steel insulated tank with defroster.
- Adopt R22 refrigerant, environmentally friendly R407 one is for option.
- Both compressor and pump equipped with overload relays.
- Air-cooled chiller adopt multipass crossfined tube condenser with good heat transfer effect and no need to provide cooling water.
- Low, medium and high pressure pumps are available according to the needs of customers in different countries.

工作原理图 Working Principle



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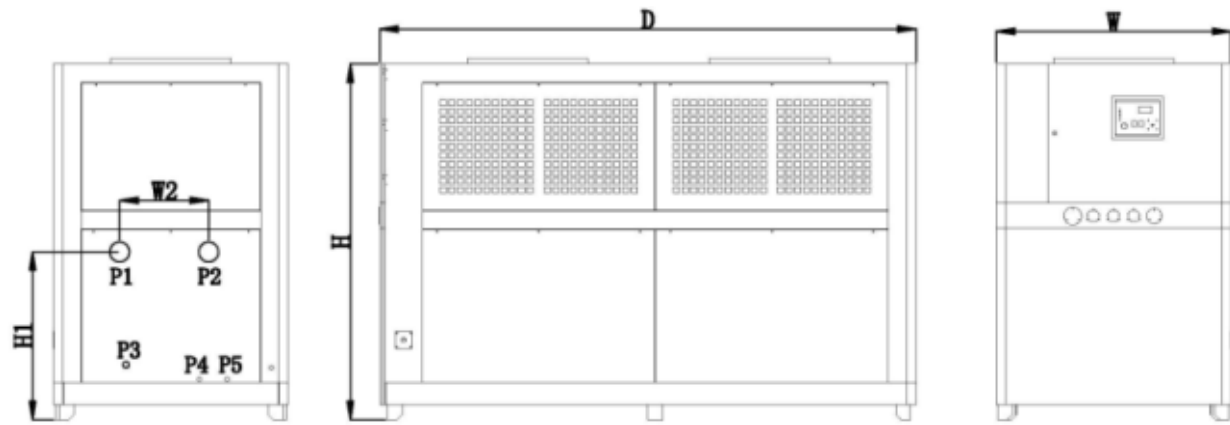
TIC-A系列冰水机主要由压缩机、冷凝器、热力膨胀阀和蒸发器四大部件组成, 采用单级蒸气压缩制冷系统, 利用制冷剂的气液相互转换, 吸收和释放热量的原理, 达到制冷的效果。

TIC-A系列开机后, 压缩机(1)开始工作, 制冷剂在压缩机的压缩作用下变成高压高温气体, 往A-B的方向循环; 在B-C-D过程, 高压高温的制冷剂气体通过冷凝器(2), 与空气发生热交换, 由气态转变为液态, 同时被空气带走热量; D-E过程, 液态的高压制冷剂通过热力膨胀阀(5), 压力下降, 部分制冷剂由液态转变为气态, 此时制冷剂为液态和气态两相混合的状态; E-A过程中, 制冷剂通过蒸发器(6), 在蒸发器内与热媒介发生交换, 冷却冷冻水到所需的温度, 满足设定要求; 经蒸发器后的气体制冷剂循环回到压缩机, 完成一次制冷循环。

TIC-A air-cooled water chiller is mainly composed of four parts: compressor, condenser, thermal expansion valve and evaporator. It adopts single-stage vapour compression refrigeration system, which makes use of the principle of gas-liquid inter-conversion of refrigerant, absorbing and releasing heat, to achieve the effect of refrigeration.

When the machine is started, compressor(1)starts working. Refrigerant is compressed into high-pressure and high-temperature gas and circulates in the A-B direction; in the process of B-C-D, the high-pressure and high-temperature refrigerant gas passes through the condenser(2)and undergoes the cold-heat exchange with air and is transformed from the gaseous state to the liquid state while the heat is taken away by the cooling water; in the process of D-E,the high-pressure refrigerant in the liquid state passes through the thermostatic expansion valve(5). The pressure drops, part of the refrigerant from the liquid state into a gaseous state. At this time, the refrigerant is a mixture of liquid and gaseous phases; In the E-A process, the refrigerant passes through the evaporator(6),where it exchanges heat with the heat transfer medium and cools the chilled water to the desired temperature to meet the set requirements.The gas refrigerant is circulated back to the compressor after evaporator to complete a refrigeration cycle.

TIC-A风冷式冷水机外形及接口尺寸图 Outline Drawings of Air-cooled Models



机型 Model	H (mm)	H1 (mm)	W (mm)	W1 (mm)	W2 (mm)	D (mm)	P1(inch) 冷冻水入口	P2(inch) 冷冻水入口	P3(inch) 水箱排水口	P4(inch) 水箱溢流口	P5(inch) 水箱补水口	净重 (kg)
TIC-3A	1225	640	1425	360	174	650	1"	1"	1/2"	1/2"	1/2"	305
TIC-5A	1625	640	1375	360	174	800	1"	1"	1/2"	1/2"	1/2"	315
TIC-8A	1670	640	1650	300	204	800	1 1/2"	1 1/2"	1/2"	1/2"	1/2"	400
TIC-10A	1670	640	1650	300	204	800	1 1/2"	1 1/2"	1/2"	1/2"	1/2"	420
TIC-12.5A	1520	648	905	457	189	1780	2"	2"	1/2"	1/2"	1/2"	520
TIC-15A	1770	648	1735	457	189	990	2"	2"	1/2"	1/2"	1/2"	560
TIC-20A	2010	700	2900	450	150	1270	2"	2"	1"	1/2"	1/2"	775
TIC-25A	1960	700	2100	450	150	1700	2"	2"	1"	1/2"	1/2"	800
TIC-30A	1960	760	2100	430	160	1850	2 1/2"	2 1/2"	1"	1/2"	1/2"	840
TIC-40A	2290	780	3400	450	200	1500	2 1/2"	2 1/2"	1"	1"	1"	1400
TIC-45A	1970	780	1300	450	200	3800	2 1/2"	2 1/2"	1"	1"	1"	1800
TIC-50A	1970	823	1420	700	360	4000	2 1/2"	2 1/2"	1"	1"	1"	2000

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选型参考

Model Selection Reference

成型机锁 模力 (T)	成型能力 (kg/hr)型号	型号 Model
≤250	≤25	TIC-3W TIC-3A
≤350	≤35	TIC-5W TIC-5A
≤450	≤45	TIC-8W TIC-8A
≤550	≤55	TIC-10W TIC-10A
≤650	≤65	TIC-12.5W TIC-12.5A
≤850	≤85	TIC-15W TIC-15A
≤1000	≤100	TIC-20W TIC-20A
≤1300	≤130	TIC-25W TIC-25A
		TIC-30W TIC-30A
		TIC-40W TIC-40A
		TIC-45W TIC-45A
		TIC-50W TIC-50A

成型机锁 模力 (T)	成型能力 (kg/hr)型号	型号 Model
≤1500	≤150	TIC-15W TIC-15A
≤1800	≤180	TIC-20W TIC-20A
≤2200	≤220	TIC-25W TIC-25A
≤2500	≤250	TIC-30W TIC-30A
≤3000	≤300	TIC-40W TIC-40A
≤4000	≤400	TIC-45W TIC-45A
≤5000	≤500	TIC-50W TIC-50A
≤6000	≤600	TIC-50W TIC-50A
≤7000	≤700	TIC-50W TIC-50A

规格参数 Specifications

项目 Item	参数 Parameter	型号 Model	TIC-3A	TIC-5A	TIC-8A	TIC-10A	TIC-12.5A	TIC-15A	TIC-20A	TIC-25A	TIC-30A	TIC-40A	TIC-45A	TIC-50A
(1) 制冷量 Refrigeration Capacity	kW		7.69	13.5	19.08	25.56	31.41	38.79	51.12	62.82	77.58	102.24	113.94	125.64
	kcal/hr		6612	11607	16405	21976	27006	33352	43943	54013	66703	87906	97956	108026
压缩机 Compressor	类型 Type		涡旋式 ⁽²⁾					涡旋式						
	输出功率 Power	Kw	2.2	3.7	6	7.5	9.4	11	15	18.7	22	30	34	37.5
		Hp	3	5	8	10	12.5	15	20	25	30	40	45	50
制冷剂 Refrigerant	填充量(kg) Weight		2.7	4.3	7	8	11	13	18	22	26	34	42	48
	控制方式 Control Model		热力膨胀阀											
蒸发器 Evaporator	类型 Type		壳管式											
	类型 Type		套管式											
冷凝器 Condenser	风机功率(kW) Blower Power		0.25	0.25	0.25×2	0.47×2	0.82×2	1*2	1×2	1.73×2	1.73×2	1.73×2	1.73×2	1.73×2
	水箱容量度(L) Water Tank Capacity		50	85	150	180	200	270	400	650				
水泵 (50Hz) Pump	功率(KW) Power		0.55	1.1	2.2	2.2	4	4						
	工作流量(L/min) Pump Flow		80	200	300	450	833	1100						
	工作压力(kg/cm ²) Working Pressure		2.0/2.6/3.8	2.0/2.6/3.5	2.0/3/4.2	2.5/3/4.2	2.7/3.4/4.3							
总功率(KW) Total power			3	4.5	7.6	9.1	12.5	14.1	18.8	22.9	28	37.5	42.5	46
配管 口径 (inch) Pipe Coupling	冷冻水出口 Cooling Water Outlet		1/2"x4	1 1/2"x1	2"x1	2 1/2"x1	2 1/2"x1							
	冷冻水入口 Cooling Water Inlet		1/2"x4	1 1/2"x1	2"x1	2 1/2"x1	2 1/2"x1							
	水箱排水口 Drainage Port of water Tank			1/2"	1"	1"								
	水箱溢流口 Overflow Port of water tank			1/2"	1"	1"								
保护 装置 Protection Safety Device	压缩机 Compressor		过载继电器 Overload relay											
	泵浦 Pump		过载继电器 Overload relay											
	冷冻回路 Refrigerant Circuit		高低压开关/防冻开关 High and low pressure switch/Anti-freezing switch											
	水回路 Cooling water Circuit		水箱水位开关 (选配) /旁通阀 By-pass valve/Water level switch(Option)											
电压规格 Power			3Φ,380V,50Hz											
单位换算 Unit conversion			1KW=860kcal/hr			1RT = 3024 kcal/hr			10000 Btu/hr = 2520 Kca/hr					

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- 注：1) 制冷能力是依据出水口温度12°C，环境温度30°C下测得；
2) 在3Φ,230V时，压缩机类型为活塞式(TIC-3A~TIC-5A)；
3) 制冷剂可选择R407C环保型冷媒(用U表示，例如：TIC-5A-U)；
4) 此泵浦为内销及外销东南亚标配，客户可依需求换装中压泵浦，例如：TIC-5A-P，也可换装高压泵浦(用HP表示，例如：TIC-5A-HP)，具体参数依次如上表示；
5) 该风冷式冷水机适用于环境温度35°C以下的使用条件；
6) 机器电压可按客户要求特殊订购。

Note:1) Refrigeration capacity is tested under the condition that cold water outlet temperature is at 12°C and ambient.
2) A piston type compressor is used when power supply is 3Φ,230V.(TIC-3A~TIC-5A).
3) Environment-friendly R407C refrigerant is optional.(Model denotes "U", such as TIC-5A-U).
4) This pump is used as standard either for domestic or Southeast Asia; medium(Model denotes "P", such as TIC-5A-P) or high pressure pump (Model denotes "HP", such as TIC-5A-HP) are optional for installation on customer's demands.
5) Air-cooled chillers are best to be used in the environment with ambient temperature under 35°C.
6) Demands on special voltage of power supply could be satisfied.