COMPRESSOR TECHNICAL AGREEMENT

压缩机技术协议书

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WHP01620BSQ-H6JUW

GE Appliances

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SHEC 技术中心

上海日立电器有限公司

Shanghai Hitachi Electrical Appliances Co., Ltd.

SPECIFICATION APPROVED AS A SUPPLEMENTAL DOCUMENT TO GE DRAWING 184D1812P001 COMPRESSOR. THE GE DRAWING SHALL HAVE PRECEDENCE OVER THIS SPECIFICATION.

6/3/2014

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1. SCOPE 应用范围

This specification is applied to SHANGHAI HITACHI Heat pump water heater compressor.
此规格适用于上海日立电器有限公司生产的热泵热水器专用压缩机。

2. SPECIFICATION OF COMPRESSOR 压缩机规格

2.1 Model
型号 WHP01620BSQ-H6JUW

2.2 Rated Voltage/Frequency/Phase 208V～240V/60Hz/single
额定电压/频率/相数 208V～240V/60Hz/单相

2.3 Application Heat pump water heater
应用 热泵热水器

2.4 Refrigerant
制冷剂 R-134a

2.5 Compressor Cooling Forced air
压缩机冷却 强制空冷

2.6 Displacement
排气量 8.6ml/rev

2.7 Performance 性能参数

Performance (Voltage 208～240V)
性能参数 (电压 208～240V)

Item 项目	Rated Condition 额定工况	
	208V	240V
Nominal Heating Capacity 名义制冷量	1215W	1225W
Motor input 电机输入功率	380W	386W
Current 电流	1.88A	1.69A
COP(see*) 能效比(见*)	3.20	3.17
Test Conditions 测试条件		
Evaporating temp. 蒸发温度	7.2℃	
Condensing temp. 冷凝温度	54.4℃	
Liquid temp. entering expansion valve. 膨胀阀前液体温度	46.1℃	
Return gas temp. 回气温度	35℃	
Ambient temp. 周围温度	35℃	
Wind speed 风速	2m/s	

* COP= Heating capacity 名义制热量 (W)
Motor input 电机输入功率 (W)

2.8 Allowable amount of refrigerant charge 制冷剂充注允许量	900 g
2.9 Amount of oil charge 油充注允许量	270±20 ml(Initial) 270±20 ml(最初)
2.10 Oil 油	HAF68D1 or equivalent HAF68D1 或者 SHEC 指定同类冷冻机油
2.11 Space volume of inner case 壳体内容积	900 ml
2.12 Net weight 净重	9.3 kg incl.oil 9.3 kg 包括油
2.13 Hermetic Terminal 密封接线柱	1/4"quick connect type 1/4" 快速连接型

2.14 Motor

Type	Permanent Split Capacitor
Capacitor	12MFD/450 Volts
Locked rotor amps	14.0 A (240V/60Hz)
Approved voltage range	Rated Voltage (-10%, +10%)
Winding resistance(M/S)	5.10/5.03Ω(at 20℃)
电机	
形式	PSC
电容器	12μF/450 V
堵转电流	14.0 A (240V/60Hz)
电压变动范围	额定电压 (-10%, +10%)
电阻(主线圈/副线圈)	5.10/5.03Ω(at 20℃)

2.15 Starting performance

(1) The starting voltage should be as follows.

(2) The starting pressure should be balanced between the suction and discharge of the compressor and should be adjusted to the following table.

(3) The temperatures of the compressor enclosure should be more than 20℃continuously at the following table.

起动性能

(1) 起动电压如表 1 所示。

(2) 起动压力必须在吸气压力及排气压力之间进行平衡，并按下表予以调节。

(3) 在起动工况下，压缩机环境温度要保持在 20℃以上。

TABLE 1 表 1

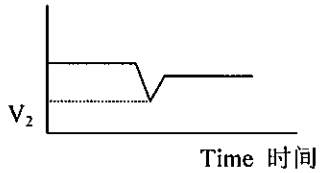
Starting Conditions 起动工况		Spec 规格
Motor temperature 电机状态	Pressure 平衡压力 MPa{kgf/cm²G}	Starting voltage 起动电压 (V_2)**
Cold-Starting 冷起动 Cold state (room temperature) 冷工况(室温)	0.73{6.38}	Below 85% of rated voltage 不高于额定电压的 85%
Hot-Starting(Standard) 热起动(标准) Hot state after operated under standard load condition 在标准负载下运行后的工况	0.69{6.03}	Below 85% of rated voltage 不高于额定电压的 85%
Hot-starting(Overload) 热起动(超负荷) Hot state after operated under overload condition 在超负载条件下运行后的工况	0.95{8.61}	Below 90% of rated voltage 不高于额定电压的 90%

* Refrigerant capacity and motor input are measured by secondary Refrigerant calorimeter Methods of GB5773by Shanghai Hitachi Electrical Appliances Co.,Ltd. Allowable heating capacity should be more than 97% of the nominal heating capacity and allowable motor input should be less than103% of nominal motor input.

制冷量和电机输入功率由本公司根据 GB5773 的第二制冷剂法测试。允许制热量量应名义制热量的 97%以上，允许电机输入功率应为电机名义输入功率的 103%以下。

**. V_2 means minimum voltage measured between pins of hermetic terminal at the compressor starts.

V_2 是指压缩机起动时所测密封接线柱端子间的最小电压。



***. The suction pressure is measured on the position above the filter of accumulator.

吸入压力测定位置在储液器滤网上面。

3. PARTS AND DRAWING LIST 零件及图纸清单

WHP01620BSQ-H6JUW		图号 Drawing code	使用数量 Q'ty	备注 Remarks
◆ 外形图	Outline dwg.	4CYCD0107	—	尺寸简图 Dimensioned sketch
◆ 接线图	Wiring diagram	SC01D576	—	
◆ 电气部品	Electrical components			
马达保护器	Motor protector	4CYC00970	**	MRA 12454-9201
运转电容	Running capacitor	4CYC00173H31	*	12μF-450WV
◆ 接线盒部品	Terminal parts accessories			
接线端子示意图	Terminal part assy	SC01DA46	—	
接线盒盖	Terminal cover	4CYC01076	**	
螺杆护套	Sleeve	4CYC00995	**	
马达保护器弹簧	Motor Pro. Spring	SC01DA45	**	
密封垫	Packing	SC01DA54	**	
橡胶垫圈	Rubber washer	SC01DA63	**	
凸缘螺母	Flange nut	SC01D430	**	

*. Out of supply, for reference. 不提供，仅供参考。

**. Each for one compressor, and supply individually. 每个压缩机一个，均单独供货。

4. CHARACTERISTICS 一般特性

4.1 Residual moisture 120mg MAX
残余水分含量 以下

4.2 Residual impurities 100mg MAX
杂质含量 以下

1. SYSTEM DESIGN LIMITATIONS 系统设计限制

1.1 Power source and Voltage 电源及电压

Voltage applied to hermetic terminal should be within the range mentioned in this specification.

In the case of three phase, the phase imbalance should be within 3% among the compressor terminals. The phase imbalance should be calculated according to the follow formula.

密封接线柱的电压应在规格规定的范围内。

如为三相，压缩机终端间的相位不平衡率应在3%以内。相位不平衡率按下式计算：

$$\text{the phase imbalance} = \frac{(V)\max - (V)\text{mean}}{(V)\text{mean}} \quad 100\%$$

(V)max:Maximum voltage among the three terminals.(V)最大：三终端中最大电压。

(V)mean:average voltage among the three terminals.(V) 平均：三终端平均电压。

1.2 Operating Temperatures and Pressures 运行温度及压力

The operating temperatures and pressures of the compressor should be within the range shown in the table 2 and graph 1.

压缩机运行温度及压力应与表2和图1中所示规定相符。

1.3 Operating and Shut-off Period 运行及间隔时间

The compressor should be operated continuously at least for 5 minutes after being turned ON.

3 minutes shut-off time should be ensured at least until restarting.

压缩机通电后，至少要连续运行5分钟，关机后至少停3分钟才可再次起动。

1.4 Oil Back and height of the oil level 回油以及油面高度

Oil should be returned continuously to the compressor and not kept in the refrigeration system.

Oil level of compressor should be higher than 7.5 mm from the lubricating piece fixed on the end of the crankshaft.

Compressor must not be started operated under a dual-layer separate status.

However, in case of foaming situation, the height of this foam does not mean the height of the oil level.

If you do not keep the oil level, the oil shortage will occur, and influence the reliability of compressor.

(Please check the oil level in the compressor with the sight glass we supply.)

冷冻机油应持续性地向压缩机返回，而不能停留在制冷系统内。

压缩机内的油面高度应高于供油口 7.5mm 以上。压缩机运转中，不可让油和冷媒两层分离。

但是，当产生泡沫状态，液体变泡沫时，这部分不属于油面高度。

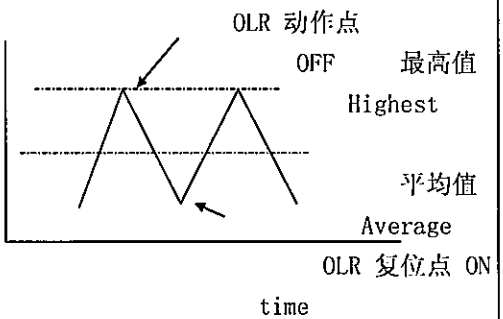
假如不能满足油面高度，将造成滑动部分的供油不足，严重影响可靠性。

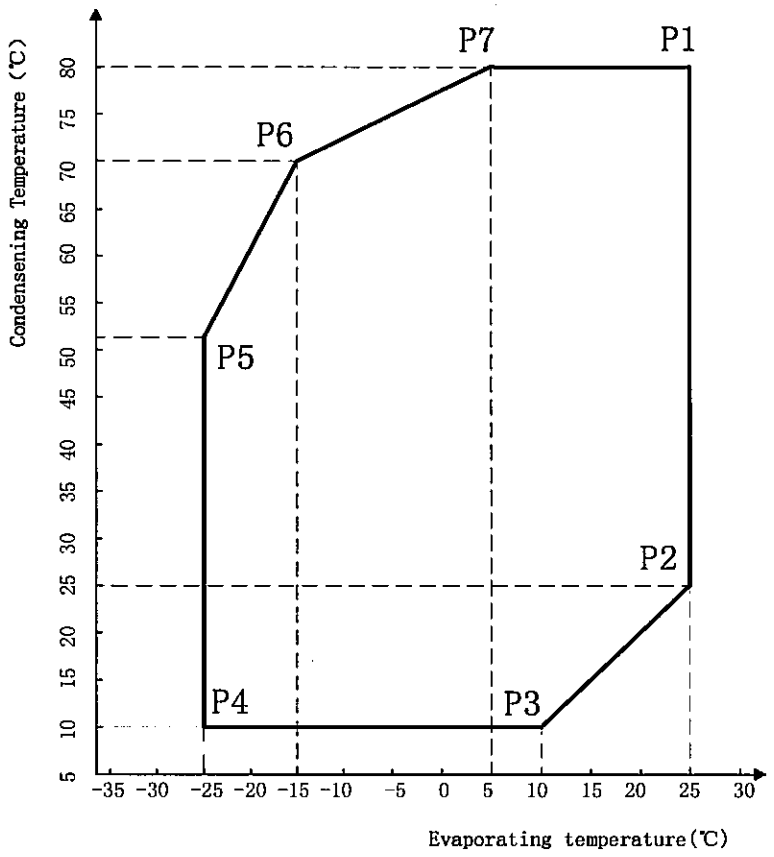
(可用观察油面用的带视镜压缩机进行确认)

There should be superheated gas returned to the compressor under all normal operating conditions.

在正常运行条件下，应有过热气体向压缩机回流。

Table 2 表 2

Item 项目	Operating Envelope 运行范围	
Discharge pressure 排气压力 MPa{kgf/cm²G}	2.63{25.85} MAX 以下 (condensing temperature 冷凝温度:80℃)	(see graph 1) (见图 1)
Suction Pressure 吸气压力 MPa{kgf/cm²G}	0.11~0.67 {0.12~5.83} (Evaporation Temperature 蒸发温度: -25℃~25℃)	
Compressor case bottom temp 壳体底部温度	99℃or below and 6 degrees higher than condensing temperature 99℃或更低并比冷凝温度高 6℃	
Motor winding temp. 电机线圈温度	Voltage±10% 127℃MAX 额定电压±10%时: 以下	
Motor winding temp. under locked-rotor condition 堵转时电机线圈温度	under stable condition: 稳定条件时: Average 温度 165℃MAX Temp 以下 Highest 190℃ MAX 以下  	
Accumulator temp 储液器温度	Higher than outlet pipe of evaporator 比蒸发器出口高	



Graph 1 图1

	P1	P2	P3	P4	P5	P6	P7
Condensing temperature 冷凝温度	80℃	25℃	10℃	10℃	52℃	70℃	80℃
Evaporation Temperature 蒸发温度	25℃	25℃	10℃	-25℃	-25℃	-15℃	5℃

1.5 Discharge pipe temperature 排气管温度

Discharge pipe temperature is measured at a distance 300mm from the surface of compressor and should be less than 110℃. The tip of the thermocouple is fixed by soldering when measuring discharge pipe temperature . Furthermore, soldering point is covered with urethane foam to prevent the effect of wind.

排气管的温度是在距离压缩机表面300mm的位置测定，应在110℃以下。而且，测量排气管温度时热电偶的前端用锡焊固定，并且为了防止送风的影响，用氨基甲酸乙脂泡沫塑料罩住锡焊的部位。

1.6 Temperature of Shell Bottom 壳底温度

The Temperature of compressor shell Bottom must be 6 degrees higher than the corresponding saturated temperature of discharge pressure under normal operating conditions.

在正常运转过程中均应保证压缩机壳底部温度高于压缩机排气压力对应的冷媒饱和温度6度以上。

1.7 Avoid refrigerant migration 避免冷媒迁移

The refrigerant migration to compressor shell should be avoided during the heat pump water heater system shut down periods, It's suggested that the electric heating belt should be used around the shell bottom when necessary.

热泵热水器系统在停机过程中应避免冷媒迁移至压缩机壳体中，必要时建议在压缩机壳体底部增加电加热带。

1.8Allowable Incline 倾斜

The allowable incline should be less than 5° during operation.
运行中可允许的倾斜为小于5°。

1.9 Pipe Vibration 管道振动

The displacement of the pipes, which connect from the compressor to otherParts of the refrigerator systems, should be less than 0.8mm(1/32")when the compressor is operating at rated frequency +10Hz/ -10Hz and voltage range of rated ±10%.

Displacement in excess of 0.8mm(1/32") will require changing tube length and/or routing.

如压缩机在额定频率 ±10Hz 及额定电压的 ±10%的范围内运行，连接压缩机及制冷系统部件的管道的位移应小于 0.8mm(1/32")。
如上述位移超过 0.8mm，则应改变管子的长度或者路径。

1.10 Connecting Tube Design 连接管设计

In designing and routing tubing that connect from the compressor to the other parts of the heat pump water heater, following should be considered.

Moving tubes to the moving parts; minimum clearance 12.7mm(1/2")

Moving tubes to non-moving parts; minimum clearance 9.5mm(3/8")

Moving tubes never touch to lead wire.

在设计及考虑连接压缩机及热泵热水器其它部件的管子路径时，应考虑以下各因素：

移动管道至移动部件：最小间隙 12.7mm(1/2")

移动管道至非移动部件：最小间隙 9.5mm(3/8")

移动管道不得与引线接触。

2. PROCESS LIMITATIONS 工艺限制

2.1 The degree of vacuum in the refrigerating system should be less than 20Pa {150×10^{-3}mmHg}at room temperature just before charging refrigerant.

The quantity of water should be less than 0.15ml.

充注制冷剂前，在室温下，制冷系统的真空度应小于 20Pa(150×10^{-3}mmHg)。

含水量应小于 0.15ml。

2.2 Prevent moisture from entering into the enclosed unit system . When the moisture entered into the unit with refrigerant R134a, the refrigerant oil and the organic compound material presented in the hermetic motor will possibly decompose on the affecting of water . It will result in the capillary depositing and the reducing of insulation resistance.

应避免水分进入系统。当使用 R134a 冷媒的系统里混入过多的水分时，冷冻机油和压缩机电机中使用的有机材料将发生加水分解，从而成为毛细管堵塞、压缩机绝缘不良的原因。

It is necessary to install a dryer to dehumidify the residual moisture mixed in the refrigerant in the cycling system . The specially defined device for drying and filtering of HFC-R134a is advised.

为了除去残存在系统中并与冷媒一起循环的水分，有必要追加除去系统中水分用的干燥器。请使用指定的分子筛干燥过滤器。

2.3 The weight of foreign particles on the inside surface of the heat exchanger tubes should be less than 0.05g/m^2.

Metallic dust should not be permitted to enter the refrigerating system.

This value means the weight of foreign particles filtered after washing inside surface of the heat exchanger tubes with R-11.

附着在热交换器管道内表面的外来含尘量应小于 0.05g/m^2，金属灰尘不得进入制冷系统。

上述数值是指用 R-11 清洗热交换器管道内表面的液体过滤后的含尘量。

Prevent the impurities from entering into the enclosed unit system . When the impurities entered into the enclosed system , it will damage the moving mechanism parts and result in the capillary depositing.

应避免垃圾等进入系统。当使用 R134a 冷媒的系统里混入较多的垃圾等杂质时，将成为促使压缩机的滑动部件发生损伤和毛细管堵塞的原因。

2.4 Eliminate all system contaminants such as trichlorethylene, alkalies,soap ,acid ,oil & washing fluid used at machining the heat exchanger tubes.

清洗所有在加工热交换器管道时残留的污物如三氯乙烯、酸、碱、肥皂液、油和清洗液等。

2.5 Purge parts with dry nitrogen or dry air to remove remains in parts (dust, detergent， etc.) before assembly of system.. Time for purging :over one second for pipe ;over three seconds for heat exchanger . Purging pressure: 0.9±0.1MPaG.Dew point of dry air: Below-20° C.

为把部品内的残留物（灰尘，清洗剂等）除去，在组装系统的部品前，要用干燥氮气或干燥空气吹净部品。吹的时间：管件要在 1 秒以上，热交换器要在 3 秒以上。

吹气压力：0.9±0.1MPaG,干燥空气露点：-20° C 以下.

Dry nitrogen should be charged in compressor before assembly of system.
Welding should be finished within one minute after charge of nitrogen. Dry nitrogen needs to be charged again and weld if over one minute. Always purge the compressor with dry nitrogen during assembly of system .
在系统组装时，先往压缩机里充入干燥氮气。充入氮气后，在 1 分钟内完成焊接。如果超过 1 分钟，须再次充入干燥氮气焊接。在系统装配时要经常用干燥氮气吹净压缩机。

2.6 The motor winding temperatures should be less than 149℃ in process of manufacturing the refrigerating system. The temperature of the hermetic terminal body should be less than 177℃.
在制造制冷系统时，电机绕线的温度应小于 149℃，密封接线柱体温度小于 177℃。

2.7 The compressor should be operated for more than 20 seconds within 15 minutes after charging refrigerant into the system so proper lubrication results.
在充注制冷剂之后的 15 分钟内，压缩机必须运转 20 秒以上，以保证适当的润滑。

3. MISCELLANY 其它

3.1 The pipe and hermetic pins attached to the compressor should not be bent.
与压缩机连接的管道及密封接线柱销子不得弯曲。

3.2 The compressor should never be operated while under vacuum; otherwise, internal arcing can cause damaging parts.
压缩机不得在真空情况下运行，否则内部的弧形电流将损坏内部零件。

3.3 The compressor should not be operated to form a vacuum and to absorb air.
压缩机不得自身抽真空及空运转。

3.4 The compressor should not be left opened in the atmosphere for more than 5 minutes.
压缩机不得在空气中持续打开 5 分钟以上。
When the air entered into the unit system with refrigerantR134a , it will expedite the deterioration of the oil and result in the capillary depositing and the reducing of insulation resistance.
应避免空气进入系统。当使用 R134a 冷媒的系统里混入过多的空气时，将促使冷冻机油分解和裂化，从而成为毛细管堵塞和压缩机绝缘不良的原因。

3.5 The electric pulse should not be applied to the hermetic terminals when the compressor is under vacuum.
当压缩机处于真空状态下，不应向密封接线柱上加电脉冲。

3.6 The compressor should be kept in the clean place with low-moisture.
压缩机应保存在清洁、低湿处。

3.7 The compressor must not be applied for transportation equipment, such as automobiles, trains, ships, and others.
压缩机不应直接用于汽车、火车、轮船及其它运输工具上。

3.8 The compressor should not be splashed with water intentionally.
不得有水溅入压缩机。

3.9 Use the refrigerant of specified brand . When the refrigerant not specified used , it will possibly cause trouble of the performance and reliability of the compressor by the impurities in the refrigerant.
请使用指定的冷媒。当使用指定以外的冷媒时，会因不纯物较多而影响压缩机的性能和可靠性的情况。

3.10 Refrigerant should be charged from the end of condenser of refrigerating systems. Never charge refrigerant to the compressor directly.
制冷剂应从制冷系统冷凝器的尾端注入，而不能直接注入压缩机。

3.11 Compressor mounting 压缩机防振构造

Rubber grommets are designed soft to provide the noise isolation and to lessen vibration energy transmission.Stud bolt should be designed to provide sufficient clearance for noise and vibration isolation and to prevent compressor from coming off its mount.
橡胶避振脚是采用防止由于噪音引起的振动及振动能量吸收原理设计的。
所设计的固定杆应提供足够的间隙用于噪音及振动隔离，并且防止压缩机从避振脚上滑落。

3.12 The first starting voltage supplied to the refrigerating system should be more than the starting voltage mentioned TABLE 1(page 3).

The refrigerant can not dissolve in the oil at the beginning because of the high viscidity of the oil.
制冷系统的首次起动电压应高于表 1(第 3 页) 中的起动电压。
因为油的粘度可能太高而不能使制冷剂在初起动时溶解在冷冻机油里。

3.13 The compressor should be kept out of the corrosive atmosphere such as in a chemicals storage, beside a hot spring and so on.
压缩机不得保存在腐蚀性的空气中如化学仓库、温泉旁边。

3.14 The lead wires should be connected to hermetic terminals without being touched on the surface of the compressor.

引线连接至密封接线柱时，不得与压缩机表面相接触。

3.15 The fuse or/and breaker should be equipped in the main circuit.

保险丝、断路器应配备在主电路中。

3.16 The oil should be returned continuously to the compressor and not stayed in the refrigerating system.

冷冻机油应持续性地向压缩机返回，而不能停留在制冷系统内。

3.17 There should be adequate clearance between the OD26-under-surface of Bolt -Head and the upper surface of rubber grommets.

在固定螺栓头下表面与橡胶避振脚的上表面之间应保留足够的间隙。

3.19 To avoid water and impurity into the refrigeration system and make sure no leakage of refrigerant during the operating course. It's required to direct the erector and maintenance man of heat pump water heater.

对于实施热泵热水器安装、维修等作业的服务人员，要求对其进行指导和教育，在相关作业时，必须确保冷冻系统中不能进入水分、异物，必须确认无冷媒泄漏事项。

1. Basis for Checking upon Delivery 验收依据

The Performance test will be carried out in accordance with this "compressor specification".

The Safety Performance in accordance with GB4706.1 Safety of household and similar electrical appliances General requirements and GB 4706.17 Safety of household and similar electrical appliances Particular requirements for motor-compressor.

性能试验方法按本仕样书中有关内容执行。

安全性能按GB4706.1家用和类似用途电器的安全通用要求及GB4706.17家用和类似用途电器的安全电动机--压缩机的特殊要求。

2. Rule for Checking upon Delivery 验收规则

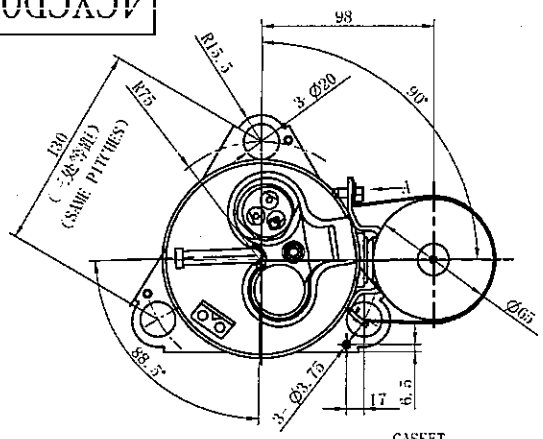
If come across any quality problem, please notify the company in written form within 30 days after the arrival of the cargo, the company shall exchange exactly the number of the products, otherwise they shall be regarded as being up to standard.

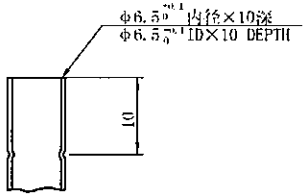
若发现质量问题，请在到货后30天内向本公司提出书面通知，经确认确属本公司责任，本公司将如数掉换，否则将作自然合格。

版本标识	C

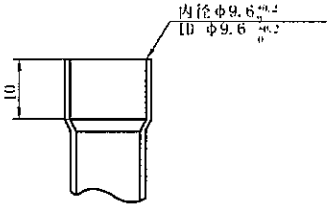
4CYCD0107

记号	来历	年月日	订正	审查	记号	来历	年月日	订正	审查
①					④				
②					⑤				
③					⑥				

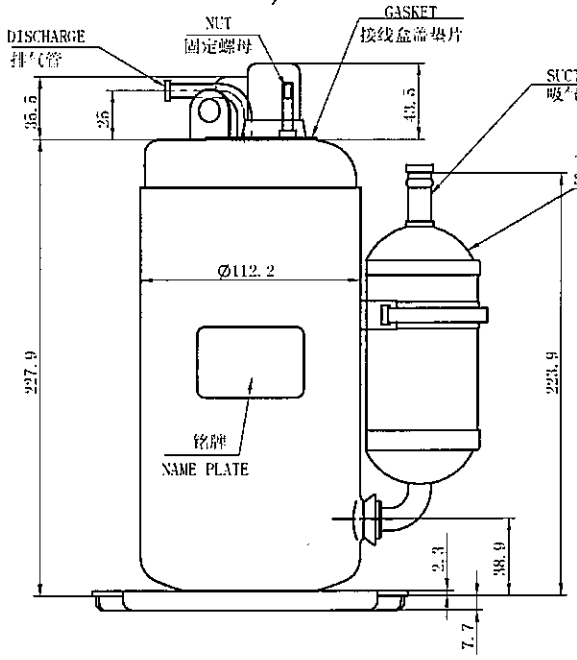


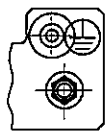


DISCHARGE PIPE (NTS)
排气管

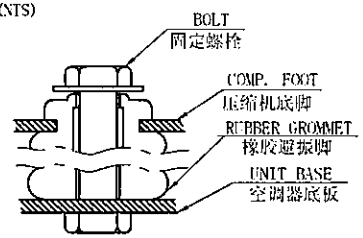


SUCTION PIPE (NTS)
吸气管





VIEW FROM A (NTS)
A向



RUBBER GROMMET STRUCTURE
橡胶避振脚结构

具体外形以实物为准
THE CONCRETE APPEARANCE IS
SUBJECT TO MATERIAL OBJECT

NOTE:
注: 1. THE TORQUE ENFORCED ON THE NUT IS 0.4~0.6N.m.
接线盒盖固定螺母的安装扭矩为 0.4~0.6N.m。
2. PUTTING OUT RUBBER PLUG WHEN FIXING EARTH PARTS.
接地螺孔橡胶塞拔去后，安装接地附件。

DIMENSION: mm
尺寸单位: mm

WHP01620BSQ-H6JUW

	RE-MARKS			PROJECTION	SCALE
					NTS

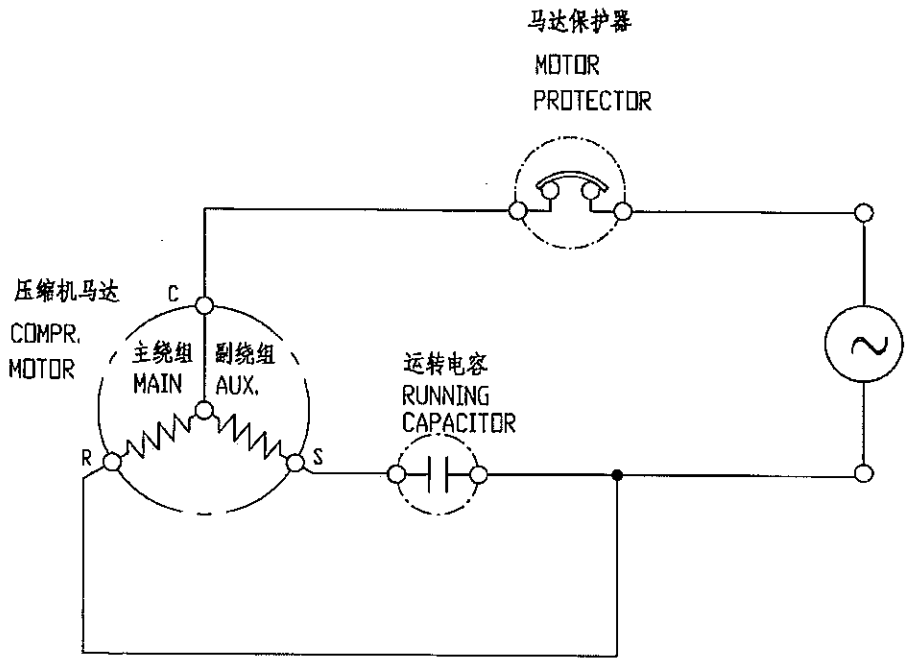
REGD	DRN.	[illegible]	11.5.29	TITLE: DIMENSIONED SKETCH	shanghai Hitachi Ltd.
	CHKD.				
	CHKD.	[illegible]	11.5.29		
	APPD.	[illegible]	11.5.29		

DWG.NO. 4CYCD0107

注 1. 此图用于"PSC"接线方式。

NOTE

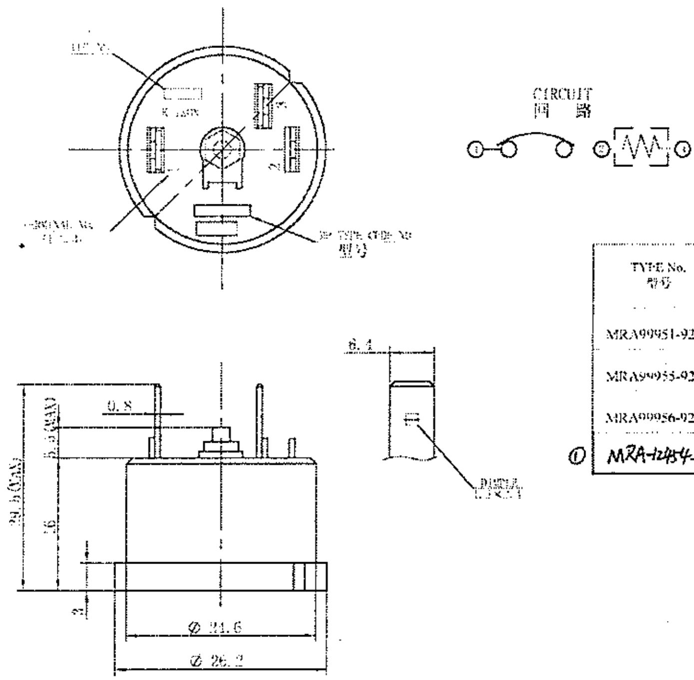
1. THIS DIAGRAM IS FOR 'PSC' CONNECTION.



更改处 CHANGE	毛新宇	00-6-2	换版

上海日立电器有限公司 SHANGHAI HITACHI ELECTRICAL APPLIANCES CO.,LTD.				
DIM.IN mm	制作日期 DATE	97-12-20	审核 APPROVED	接线图 WIRING DIAGRAM
比例 SCALE	制作 DRAWN	周润	王幼贵 石鸣	
NTS	校对 CHECKED	何大泉		SC01D576 1/1
	设计 DESIGN	周润	会签	

4CYC00970 B



TYPE No. 型号	SIGN 刻字	OPERATING TEMP OPEN (°C)	OPERATING TEMP CLOSE (°C)	SHORT TIME SPEC CURRENT (A)	SHORT TIME SPEC TRIP TIME (SEC)	U.T SPEC REFERENCE 90degC BLOCK(A)
MRA99951-9201	MRA99951-9201	105^{+5}_{-5}	75 [illegible]	15.5	6~16	(8.6)
MRA99955-9201	MRA99955-9201	105^{+5}_{-5}	70 [illegible]	15	6~16	(8.4)
MRA99956-9201	MRA99956-9201	155^{+5}_{-5}	65 [illegible]	13.5	6~16	(9.0)
① MRA-12454-9201	MRA 12454-9201	155^{+5}_{-5}	69^{+9}_{-9}	10.5	6~16	100degC BLOCK(A) (3.6) ②

NOTE
1. CASE MATERIAL: PHENOLIC RESIN
   壳体材料：酚醛树脂
2. TERMINAL: 1/4" Q.C. TYPE
   端子：1/4" Q.C. 型
3. DIMENSION: mm
   单位：mm

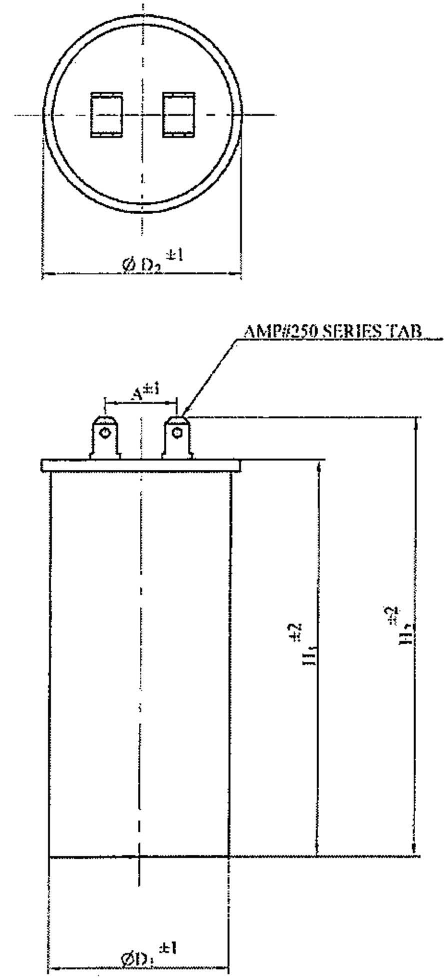
TITLE: OVER LOAD PROTECTOR

Shanghai Hitachi Ltd

PROJECTION | SCALE: N.S

4CYC00970

4CYC00173 版本标识 B

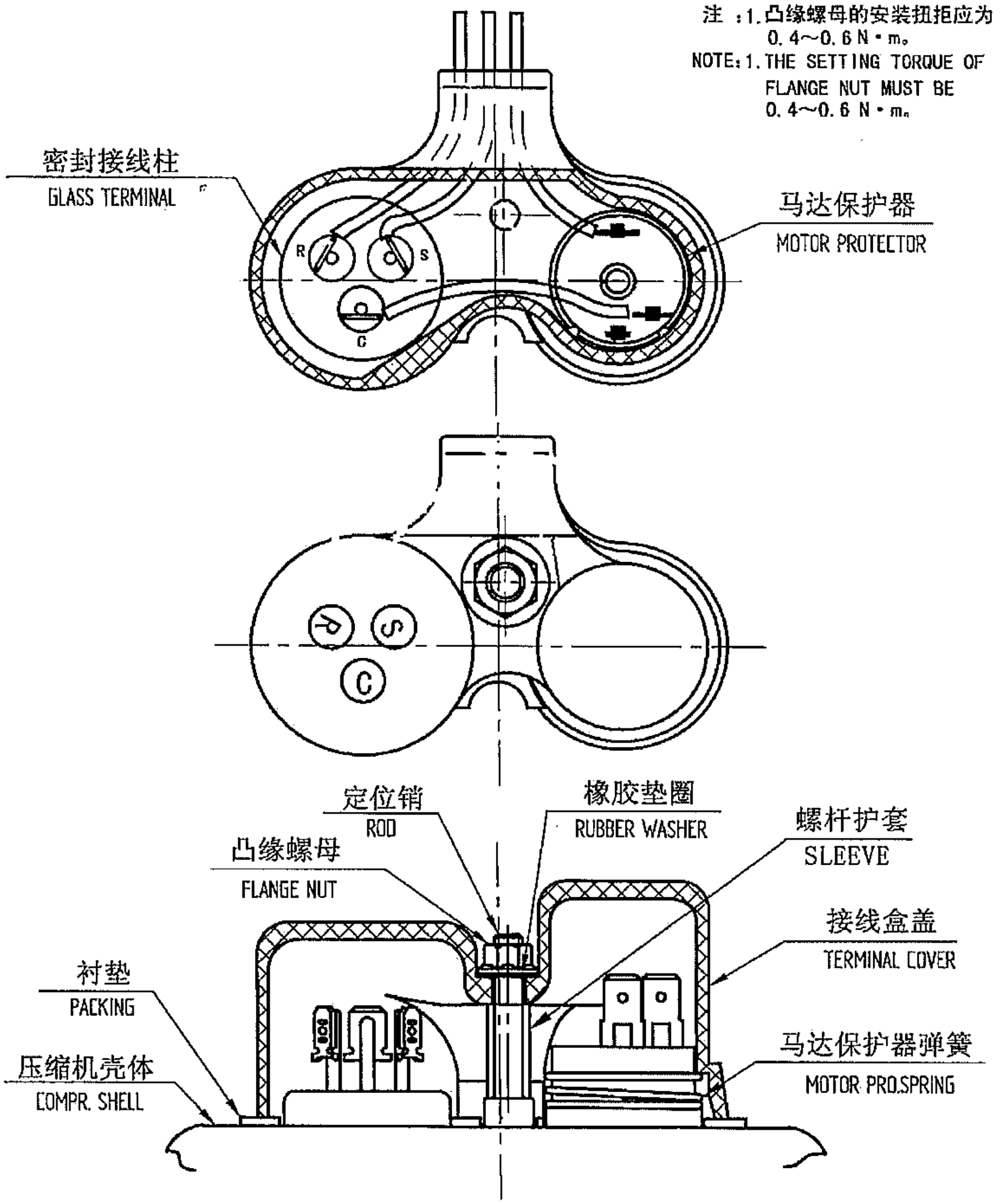


SPECIFICATION 规格

NO	RATING			DINENTIONS					MFG. NO.
	CAPACITANCE MFD	VOLTAGE VAC	FREQUENCY Hz	ΦD₁	ΦD₂	H₁	H₂	A	
1	25	330	50/60	44.5	48	95	106	18	RRCG1492
2	30	230	50/60	44.5	48	80	88	18	RRCG1239
3	30	400	50/60	44.5	48	130	138	18	RRCG1281
4	35	400	50/60	50	54	130	138	20	RRCG1282
5	40	230	50/60	44.5	48	80	88	20	RRCH1240
6	40	400	50/60	50	54	130	138	20	RRCH1283
7	45	230	50/60	44.5	48	80	88	18	RRCH1241
8	50	230	50/60	44.5	48	80	88	18	RRCH1242
9	55	230	50/60	44.5	48	95	103	18	RRCH1148
10	60	230	50/60	44.5	48	95	103	18	RRCH1150
11	25	400	50/60	44.5	48	130	138	18	RRCG1456
12	14	230	50/60	40.5	44	80	88	16	RRCF1502
13	23	230	50/60	40.5	44	80	88	16	RRCF1491
14	50	400	50/60	60	64	130	138	20	RRCH1284
15	60	400	50/60	40.5	44	80	88	16	RRCF1496
16	35	450	50/60	60	64	130	138	20	RRCF1517
17	45	250	50/60	44.5	48	95	103	18	RRCH1661
18	60	250	50/60	44.5	48	130	138	18	RRCH1676
19	25	450	50/60	50	54	130	138	20	RRCG1537
20	50	270	50/60	44.5	48	130	138	18	RRCH1288
21	50	250	50/60	44.5	48	130	138	18	
22	50	450	50/60	44.5	48	130	138	18	
① 23	15	420	50/60	45	48	100	113	20	
② 24	45	450	50/60	44.5	48	130	138	18	
② 25	40	450	50/60	44.5	48	130	138	18	
② 26	60	450	50/60	44.5	48	130	138	18	
② 27	65	450	50/60	44.5	48	130	138	18	
② 28	70	450	50/60	44.5	48	130	138	18	
③ 29	15	400	50/60	44.5	48	130	138	18	
③ 30	17	450	50/60	44.5	48	130	138	18	
④ 31	12	450	50/60	44.5	48	130	138	18	

REMARKS			PROJECTION	SCALE NTS
DWN. 02.1.28	TITLE			DWN NO.
CHKD. 02.1.28	RUNNING CAPACITOR	Shanghai Hitachi,Ltd.		4CYC00173
CHKD.				
APPD. 02.1.[illegible]				

注：1.凸缘螺母的安装扭拒应为
0.4～0.6 N・m。
NOTE：1.THE SETTING TORQUE OF
FLANGE NUT MUST BE
0.4～0.6 N・m。



更改栏 CHANGE
增加螺杆护套
09.03.12
A

上海日立电器有限公司
SHANGHAI HITACHI ELECTRICAL APPLIANCES CO.,LTD.

DIM. IN mm	制作日期 DATE	2001-12-11	审核 APPROVED	
比例 SCALE	制作 DRAWN	施持		
	校对 CHECKED			
	设计 DESIGN	施持	会签	

接线端子示意图
TERMINAL PART ASSY

SC01DA46

1/1

4CYC01076

记号	来　历	年月日	工　艺	审　查	记号	来　历	年月日	工　艺	审　查
①					③				
②					①				

注

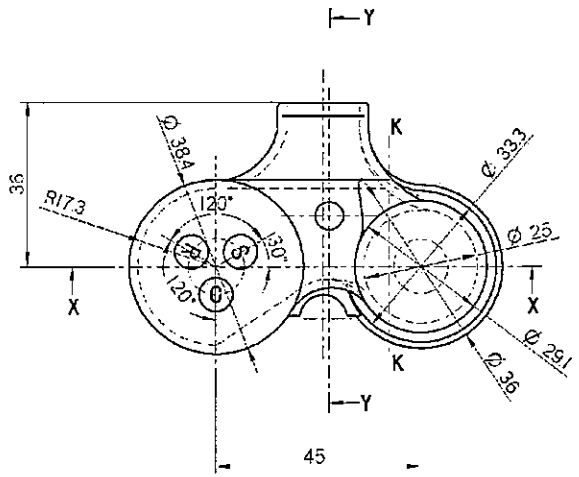
1、材料：PBT-FR-S51

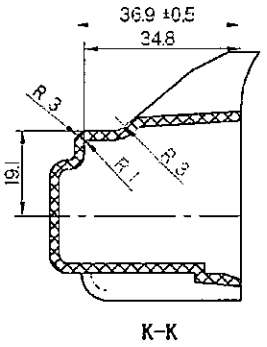
2、最小壁厚大于1.6。

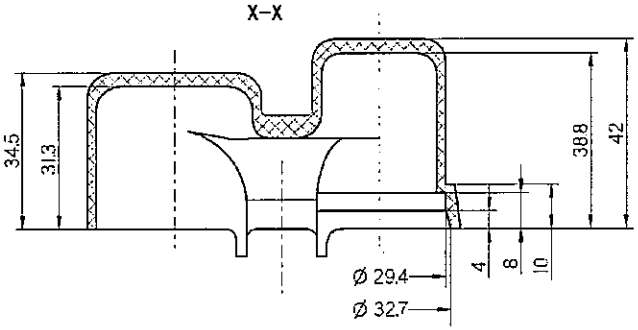
NOTES

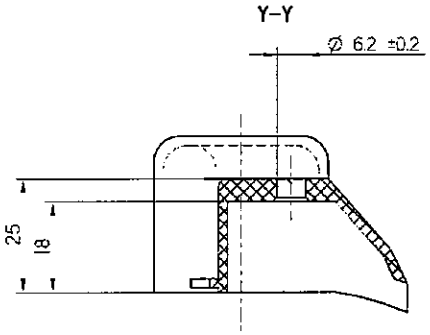
1、MATERIAL：PBT-FR-S51

2、MINIMAL THICKNES SABOVE 1.6.









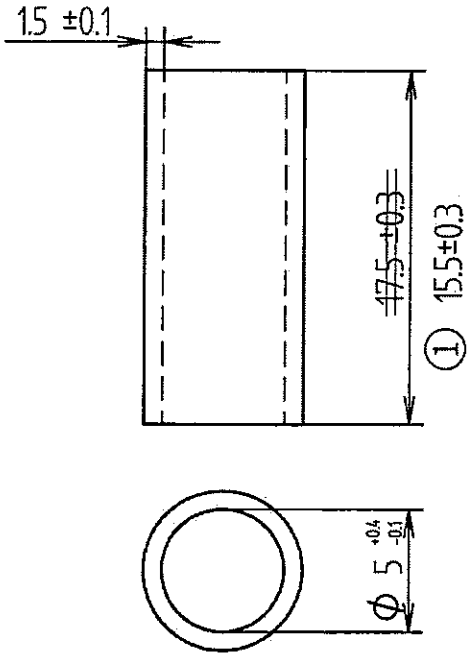
设计		13.08.01	比例	1:1	TERMINAL COVER
审查		13.08.01			
承认		13.08.01			4CYC01076

上海日立电器有限公司

19/27

4CYC00995 | 版本标识 | A

记号	来历	年月日	订正	审查	记号	来历	年月日	订正	审查
①	长度更改	09.11.10			④				
②					⑤				
③					⑥				

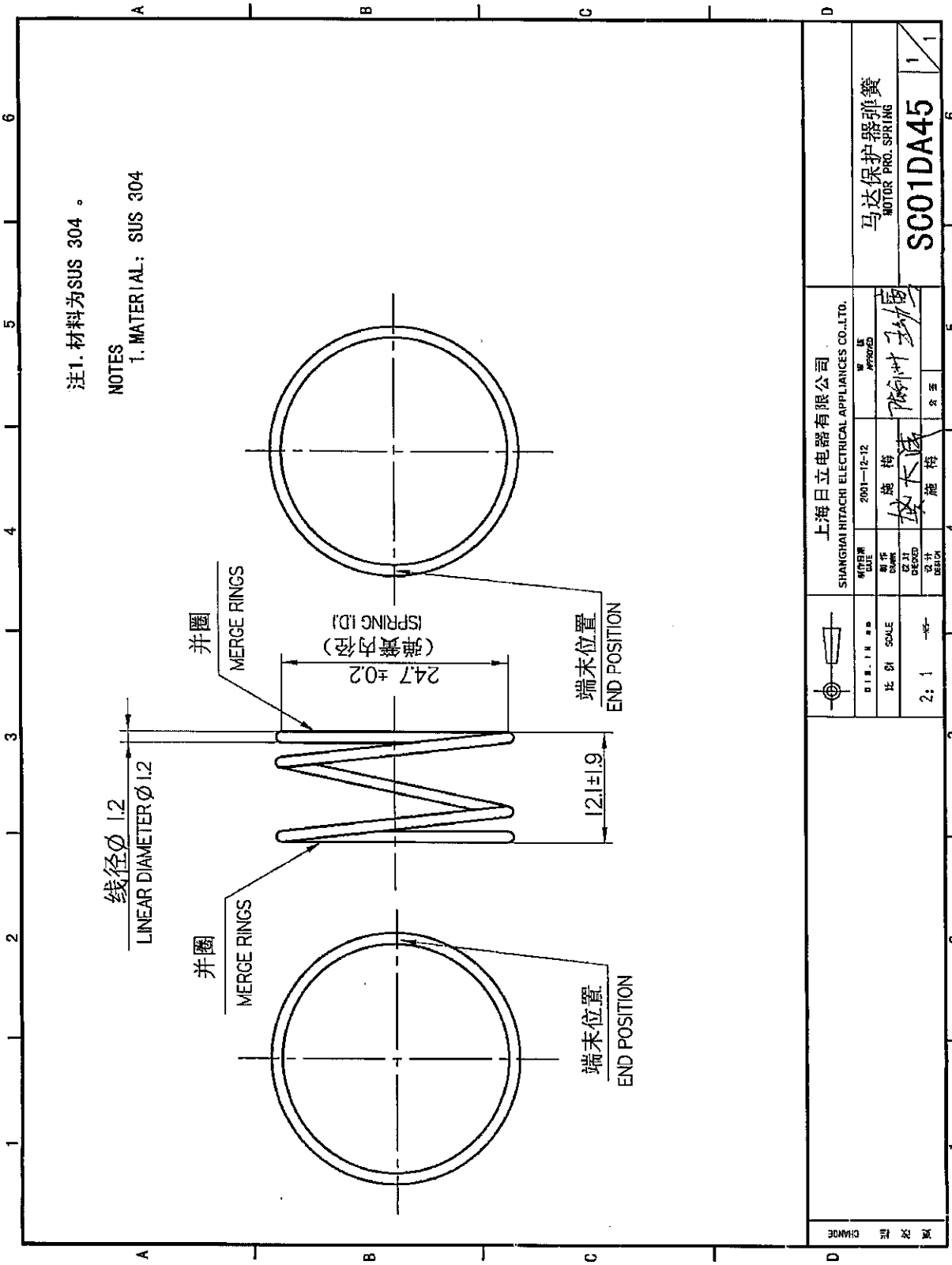


注：
1. 颜色为白色
2. 材质为硅橡胶

NOTE:
1. COLOR:WHITE
2. MATERIAL:SILICONE RUBBER

DIMENSION: mm
尺寸单位： mm

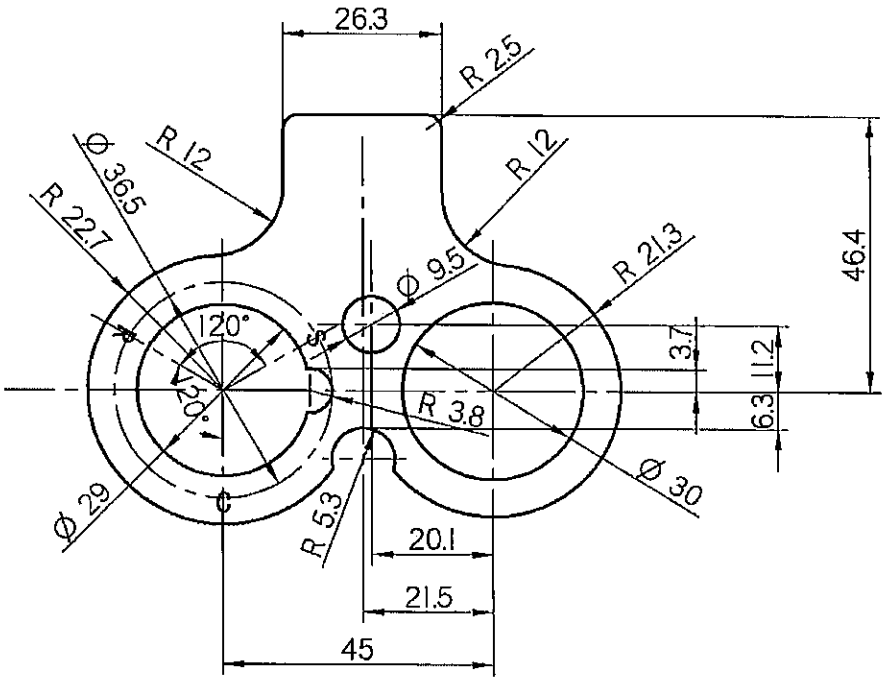
	RE-MARKS				PROJECTION	SCALE	
REGD	DFN.		09.11.10	TITLE		NTS	DWG.NO.
	CHKD.		09.11.10	SLEEVE	Shanghai Hitachi,Ltd.		4CYC00995
	CHKD.		09.11.10				
	APPD.		09.11.10				


注1. 材料为SUS 304 。
NOTES
1. MATERIAL: SUS 304
线径Ø 1.2
LINEAR DIAMETER Ø 1.2
并圈
MERGE RINGS
端末位置
END POSITION
24.7 ±0.2
(弹簧内径)
(SPRING I.D.)
12.1±1.9
上海日立电器有限公司
SHANGHAI HITACHI ELECTRICAL APPLIANCES CO.,LTD.
2001—12-12
施 梅
2:1
马达保护器弹簧
MOTOR PRO. SPRING
SC01DA45

NOTES

1. MATERIAL: EPTR (ETHYLENE PROPYLENE TRIPOLYMER RUBBER)
2. THICKNESS: 1.5mm

注 1. 材料：三元乙丙橡胶
2. 厚度：1.5mm

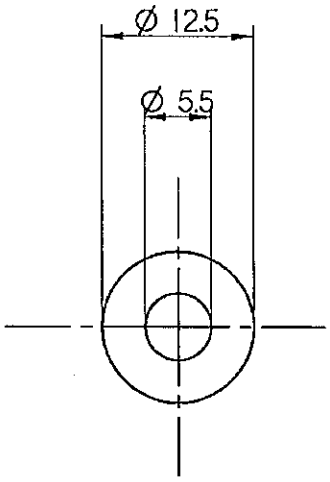


更改处 CHANGE				
DIM. IN mm	制作日期 DATE	2001-12-12	审核 APPROVED	密封垫 PACKING
比例 SCALE	制作 DRAWN	施伟		
1:1	校对 CHECKED	施伟		SC01DA54 1/1
	设计 DESIGN	施伟	会签	

上海日立电器有限公司
SHANGHAI HITACHI ELECTRICAL APPLIANCES CO.,LTD.

NOTES
1. MATERIAL: CR
2. HARDNESS: Hs80
3. THICKNESS: 1.0

注1. 材料：氯丁橡胶
2. 硬度：Hs80
3. 厚度：1.0



更改处 CHANGE				
	上海日立电器有限公司 SHANGHAI HITACHI ELECTRICAL APPLIANCES CO.,LTD.			
DIM IN mm	制作日期 DATE	02-3-19	审核 APPROVED	橡胶垫圈 RUBBER WASHER
比例 SCALE	制图 DRAWN	施 梅		
2: 1	校对 CHECKED	金 荣		SC01DA63 1/1
	设计 DESIGN	施 梅	会 签	

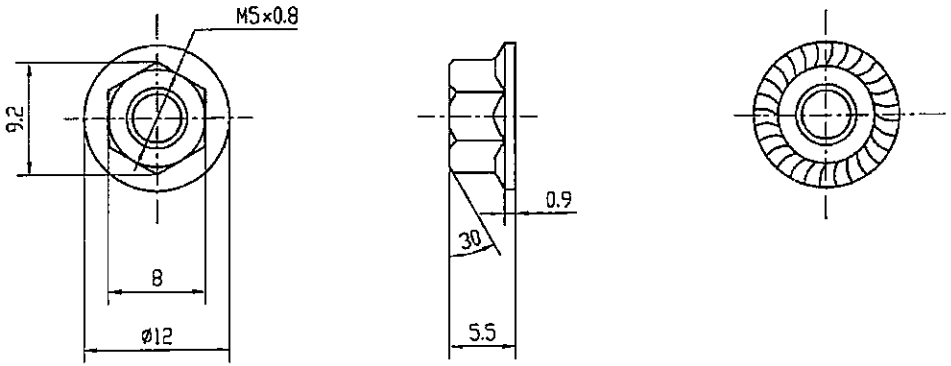
注 1. 材料：SWRM3

2. 防腐蚀：表面氧化处理

NOTES

1. MATERIAL : SWRM3

2. CORROSION PROTECTION : ZINCING

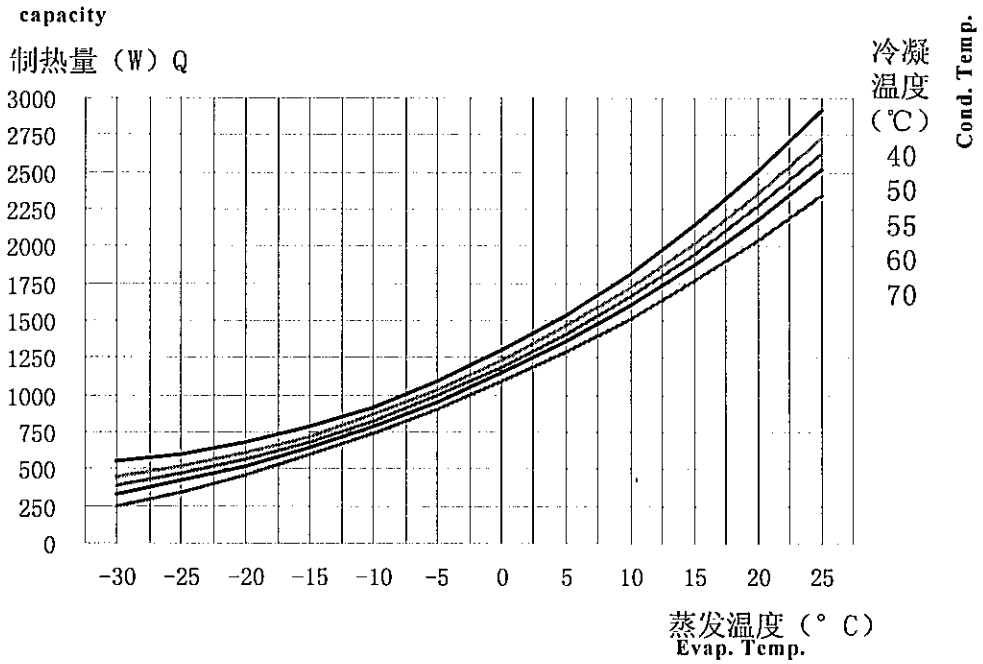


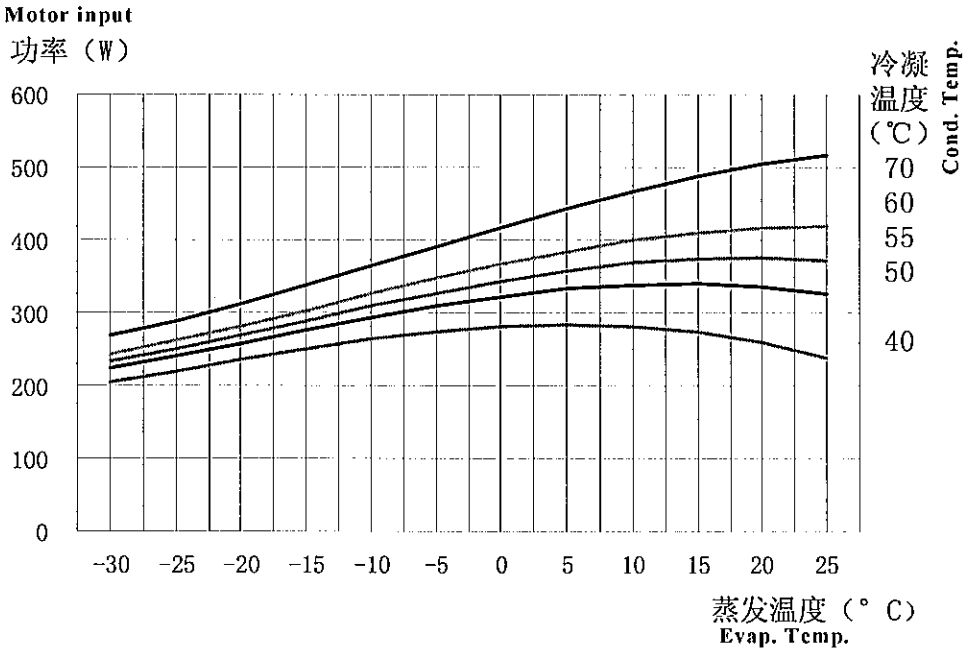
更改处 CHANGE	毛新宇 龚大清	00-6-2	换版	

上海日立电器有限公司
SHANGHAI HITACHI ELECTRICAL APPLIANCES CO.,LTD.

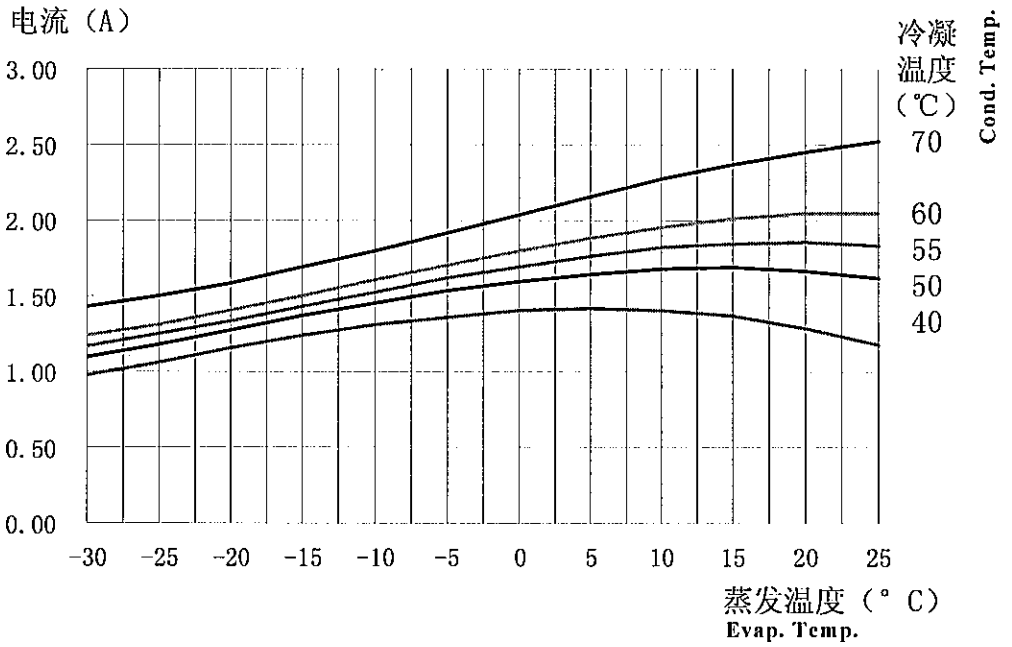
DIM.IN mm	制作日期 DATE	97-12-22	审核 APPROVED	凸缘螺母 FLANGE NUT
比例 SCALE	制作 DRAWN	周润	王幼寅 石屿	
2:1 ~~NTS~~	校对 CHECKED	何文藻		SC01D430 1/1
	设计 DESIGN	周润	金基	

WHP01620BSQ-H6JUW 在电源 1Φ，208V，60Hz 下性能曲线

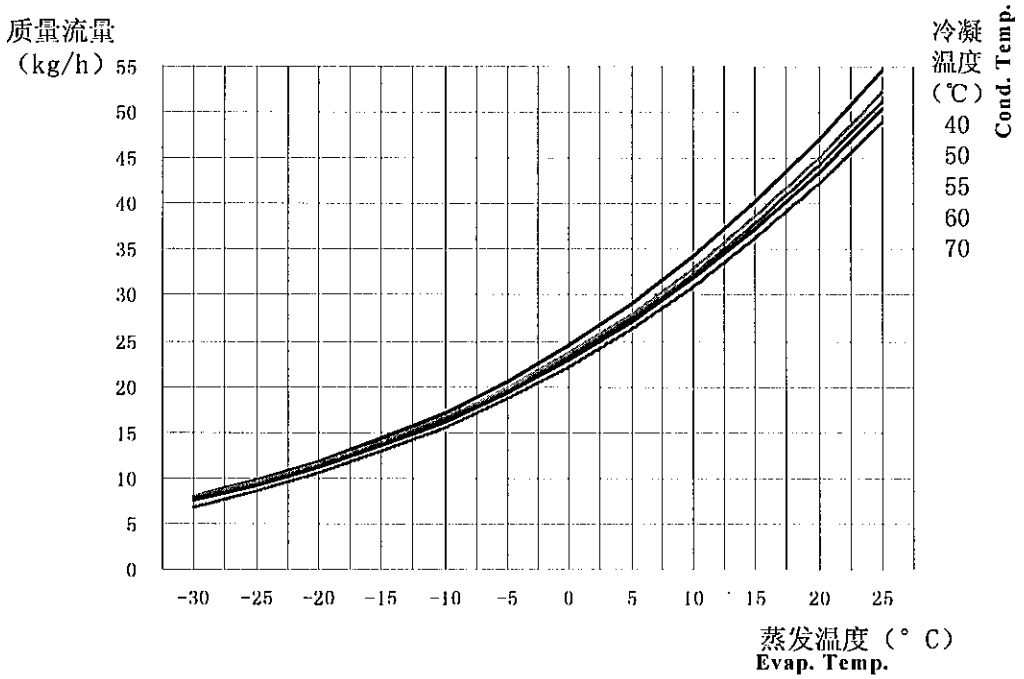




current



flux



五、规格书修改经历 Specification Revision Record				
序号 No.	日期 Date	页码 Page in Spec	修订理由 Revision Reason	客户承认日期 Conclusion Date
A				
B				
C				
D				
E				
F				
G				
H				
J				
K				
L				
M				
N				
P				
Q				
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U				