

1028

Q/RANCO.BGG-05

DHF-6A

Reversing Valve Design Specification

Confirmation
Confirmed on -----

_____ Dept. Tech Dept. _____ Section

Project Manager: _____

Verifier: _____

Production Manager: _____

Material Manager: _____

Manufacturer:
Changzhou Ranco Reversing Valve Co., Ltd

Technical Manager: 李卫民 2001.11.14

Quality Manager: 刘长升 14/11.01

Operation Manager: 李卫民 2001.11.14

Changzhou Ranco Reversing Valve Co., Ltd



Technical Specification

No.	ITEMS	Technical Specification
1	Application	DHF-6A Reversing Valve (hereafter Valve) manufactured by our company apply to 3 HP heat-pump air conditioner with R22, R134a, R407C.
2	Standards	Production technology is conform with Criteria of Changzhou Ranco Reversing Valve Co., Ltd.—REVERSING VALVE APPLY TO AIR CONDITIONER WHICH TAKE R410A AS REFRIGERATION MEDIUM
3	Certificate	Valves our company manufactured have been rewarded certificate of CCEE and TUV (Germany). (Attachment)
4	Structure	<ol style="list-style-type: none"> 1. Valve is produced according to drawings and technical documents which customer has recognized; 2. Valve is composed of pilot valve, valve and coil. (Coil is movable parts. Valve function will not change when subject to outside shock); 3. Valve inner is acid resisted, which has characteristic of smooth surface and without burrs, corrosion, flaw after antiseptic treatment; 4. Valve sketch refer to attachment; 5. Main parts and components refer to attachment.
5	Electric parameter	Rated voltage: 220V、50/60Hz, Voltage range: +10%~15% namely 187~242V, Power: 5~7W.
6	Operational conditions	<ol style="list-style-type: none"> 1. Applied fluid temperature: -20℃~+120℃ (Instant of defrost -25℃); 2. Application temperature and humidity: when engergized,-20℃~+50℃、 humidity less-than 95%RH; 3. Coil permitted maximum temperature: +130℃; 4. Maximum operational pressure: 3.0MPa; 5. Applied torque for coil screw: 253~383N·cm (26~39Kg·cm); 6. Valve should be horizontally positioned during assembling. When welding, valve temperature should be

7 Performance

kept less than: +120°C.

1. Internal leakage: Seal 'E' connection tube, input gas of 0.98Mpa through D tube and test leakage of S tube under two conditions: DHF-6A \leq 2000 ml/min.
2. Air tightness: Apply pressure of 3.0Mpa to inner valve. During one minute dipping in water, no leaks from valve body and braze joints.
3. Voltage withstand: Apply pressure of 4.5Mpa to inner valve slowly. Holding 3 minute, there should be no abnormality, transformation, leakage, destroy in any part.
4. Burst pressure: Applying pressure of 14.7MPa and 1 minute to inner valve, there is no valve destruction.
5. Maximum operational pressure difference: DHF-6A valve can reverse normally and reliably when pressure difference is 2.25 Mpa and voltage is 85% of rated voltage—220V.
6. Minimum operational pressure difference: DHF-6A valve can reverse normally and reliably when pressure difference is 0.34 Mpa and voltage is 85% of rated voltage—220V
7. Minimum operating voltage: When DHF-6A valve properly operate under pressure difference of 2.25 Mpa, coil operating voltage should be no more than 85% of rated voltage—220 V.
8. Insulation: After two days' dipping in water, using DC500V meg ohmmeter test insulation resistance between electric and non-electric metal parts, it should be no more than 100M Ω .
9. Electric voltage withstand: Having been dipped in water of normal temperature for 24 hours, it is able to endure sinusoidal AC of 50Hz, 1500V for 1 minute or sinusoidal AC of 1800V for 1 second without breakdown or flash over between electric and non-electric metal parts in the test under water.
10. Shorted turns: There is not shorted turns when exerted DC1500V voltage compared to the standard wave diagram.
11. Coil temperature rise: Temperature rise is no more than 80K.
12. Lead wire intension: Exert 49N force on each wire for 1 minute, there is no wire break.
13. Vibration: Under conditions of de-energized, no-load and without pressure, operated by vibration machine with amplitude of 33Hz, 2mm and direction of X, Y, Z for 2 hours, parts doesn't become loose, and can meet with performance requirements Item 1, 2, 5, 6, 7, 8.
14. Shock: Under conditions of de-energized, no-load and without pressure, conduct valve shock testing of 80g (784.5m/s²) once from all directions, parts doesn't become loose, and can reach performance requirements Item 1, 2, 5, 6, 7, 8.

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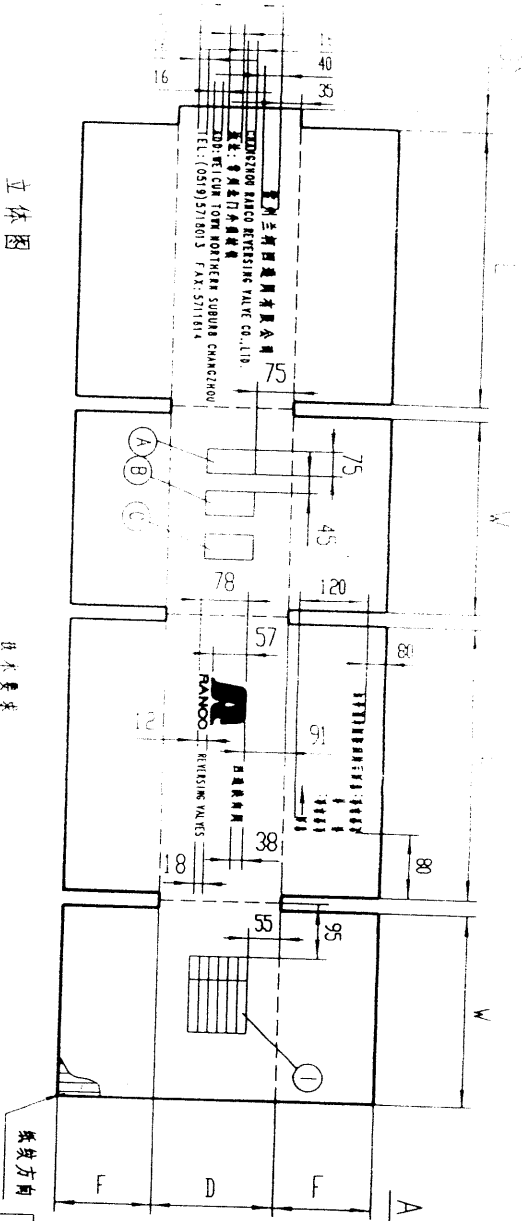
10.	Storage	Valve should be stored in environment with well ventilated and without corrosive gas.
9.	Package	Connection tubes have been covered by tube cap for preventing dust and moisture. After valve placed in box, whole case will be encapsulated by polyethylene plastic bag. The package will ensure safety transportation without transformation and destroy. Package drawing refer to attachment.
8.	Others	Unconcerned matters, implement according 《Reversing Valve for Domestic and similar use》 (JB/T8592-1997) .
		<p>15. Heat resistance: Under the condition of de-energized, no-load and without pressure, put in thermostat with temperature of $120 \pm 5^{\circ}\text{C}$ for 24 hours and then 1 hour in normal temperature and humidity, valve doesn't become loose, transformed and destroyed. can reach the performance requirement Item 1.2,5,6,7,8,9 and 10.</p> <p>16. Frozen resistance: Under the condition of de-energized, no-load and without pressure, put in thermostat with temperature of $-30 \pm 5^{\circ}\text{C}$ for 24 hours and then 1 hour in normal temperature and humidity, valve doesn't become loose, transformed and destroyed, can reach the performance requirement Item 1,2,5,6,7,8,9 and 10.</p> <p>17. Cold-hot shock: Adopt 1 hour of $120 \pm 5^{\circ}\text{C}$, 0.5 of normal temperature and 1 hour of $-30 \pm 5^{\circ}\text{C}$ as one circulation. Under the condition of de-energized, no-load and without pressure, conducted 5 cycles and normal temperature of 1 hour, valve doesn't become loose, transformed and destroyed, can reach the performance requirement Item 1,2,5,6,7,8,9 and 10.</p> <p>18. Life test: Sealing tube E, C, leaving tube S opened and apply compressed air of 1.57Mpa to tube D, having operated 20000 times with the frequency of 5~7 time/ per min, valve can reach the performance requirement Item 1,2,5,6,7,8,9 and 10.</p> <p>19. Salt test: Under the condition of de-energized, no-load and without pressure, having been tested according GB/T2423.17《Regulation of Electrical Basic Environment Test—Method of Ka, Salt Test》for 72 hours, no pernicious corrosion has been engendered, the valve can reach the performance requirement Item 2,8, and 9.</p> <p>20. Noise test: Providing rated voltage of 50 Hz to coil and placing a noise meter 30cm from valve, the measured result is not higher than 45dB (A) .</p>

Materials of Main Parts and Components

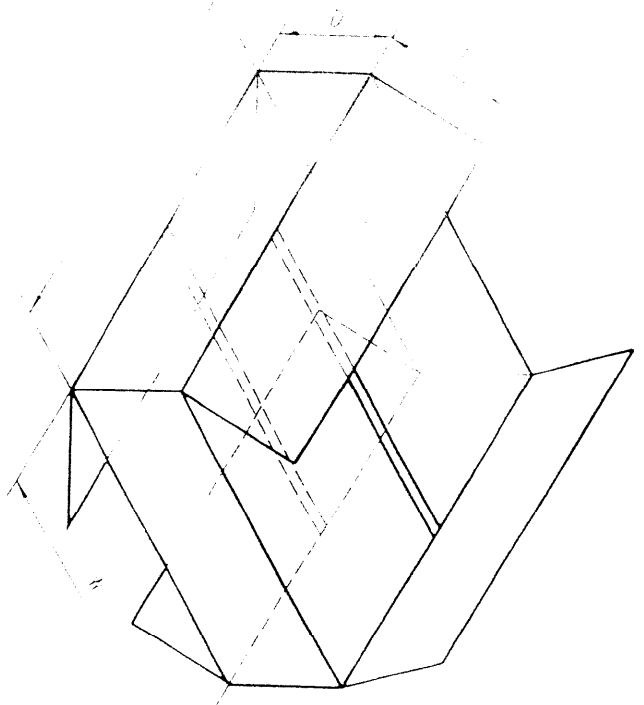
No.	Part Name	Material	Specification	Supplier
1	Pilot Valve Body	SUS304	φ11 × 0.5	Wujin Hengfeng Stainless Steel Tube Plant
2	Seat Stock	C3771 or C3604	R5	Shanghai First Copper Bar Plant
3	Capillary Tube	T ₂ Capillary Tube	φ2.5 × 0.5	Wujin Copper Tube Plant
4	Plunger Tube Cap	QMR5L	φ9.87, φ11	日本山阳特钢
5	Slide	Teflon		Shanghai Chemical Plant
6	Valve Body	H65-Y Brass Tube	φ28×2	Jiangsu Xuanli Group
7	Valve Seat	C3771 or C3604	R11.9	Shanghai First Copper Bar Plant
8	Seal Cup	Teflon	δ : 0.7	Nantong Tongmao Fluoroplastic Plant
9	slide	Nylon 66	CM3001N	日本东丽公司
10	Connection Tube	T ₂ Y ₂ Braze Tube		Jingjiang Copper Tube Plant
11	Coil Cover	Pure Iron Board DT4E	δ : 1.5	Changheng Group Parts Plant
12	Coil			Changzhou Ranco Coil Co., Ltd
13	Varnished Wire	QZ-1	φ0.1	Changzhou Wireless Materials General Plant
14	Encapsulation framework	Ethoxyline Resin		Changchun Plastic Plant
15	1 end wire	Ethylene propylene Wire	AWG120 (21/0.18) 125 C	Import

9-00000000

展开图



立体图



技术要求

1. 侧面搭接每份宽60mm，钉上6支经电镀的假象钢螺钉，排列均匀，头尾距离折面压紧边线15~20mm，钉合时，应钉透，钉牢，不叠钉，不转角等缺陷；
2. 图中“A”、“B”、“C”标志，按GB191-73<<包装储运标志>>的标注要求，其颜色为红色，且其中“DHF-6”的字样也为红色，其余各标志均为空蓝色，商标中“R”为空白蓝色空心体，“RANCO”为空白蓝色空心体，图中虚线为折痕线；
3. 4. 原样在左侧标注“CHANGZHOU RANCO REVERSING VALVE SUBBURB (CHANGZHOU)”右侧：“REVERSING VALVES”，中文均为黑体；
5. 图中字的排样尺寸为参考尺寸，字不得有模糊不清等不良影响；
6. 纸箱采用二层180g美安高强度瓦楞纸，一层180g芯纸，面纸采用300g单片牛皮纸(黄色)，底纸采用280g无蜡B级纸。

纸张方向

尺寸代号	L	W	D	F
内腔尺寸	540	484	244	-
外部尺寸	556	500	260	245

型号	DHF-6	容积	重量	净重	净重	日期
		556X500X260m ³	17.6 Kg	13.4 Kg	40	只
						85
						218

1处

包装箱

DHF-6-B1

瓦楞纸板 δ: 8
GB6544-6548

Changzhou Ranco

规格	数量	规格	数量	规格	数量
瓦楞纸板	1000	瓦楞纸板	1000	瓦楞纸板	1000
牛皮纸	1000	牛皮纸	1000	牛皮纸	1000
其他材料		其他材料		其他材料	

日期	姓名	职位
2004.5.18		

Changzhou Ranco

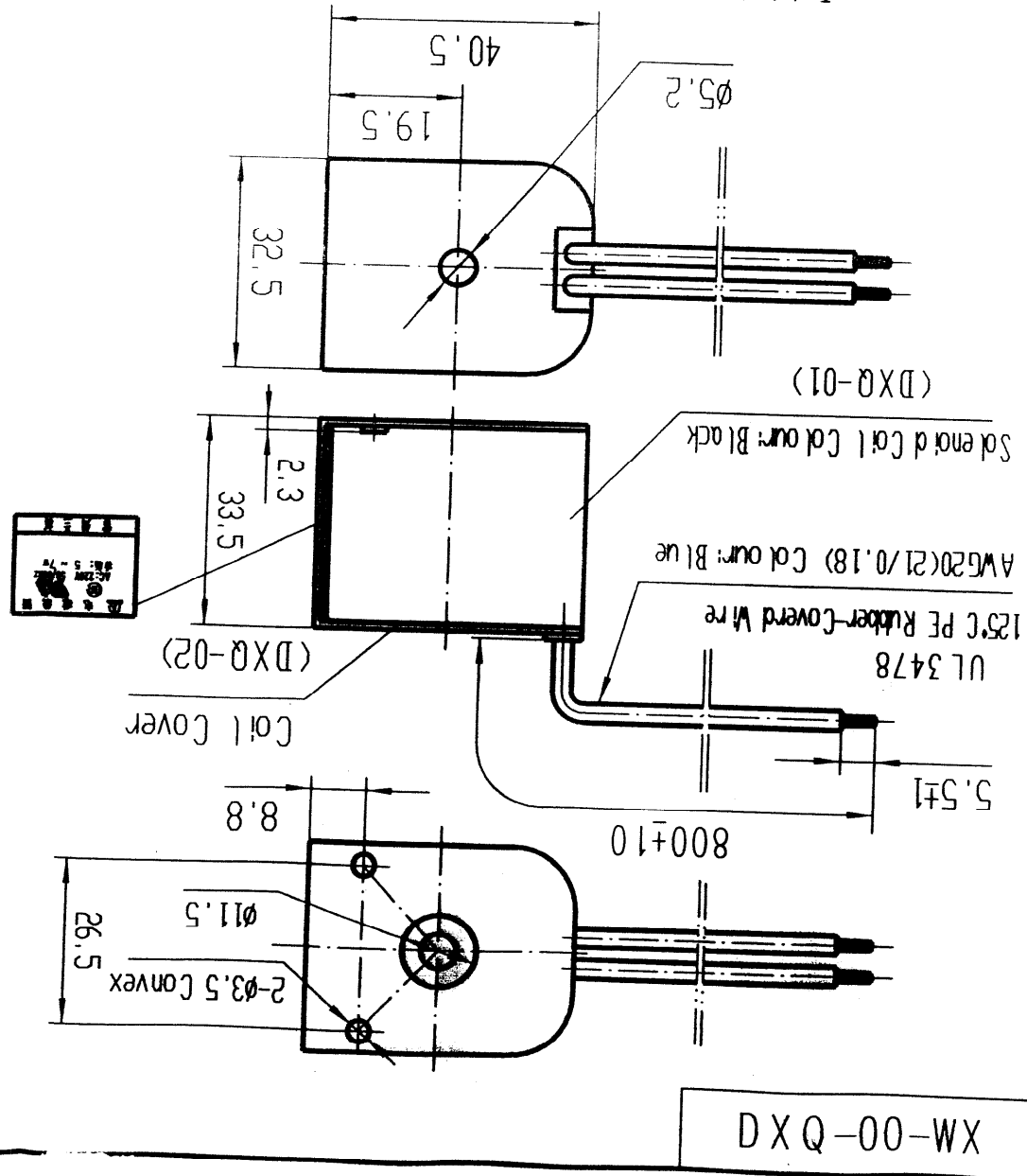
日期	2000.9.8	日期	2000.9.8
审核		日期	2000.9.8
设计		日期	2000.9.8
校对		日期	2000.9.8
工艺		日期	2000.9.8
图样标记		日期	2000.9.8
重量比例	1:1	日期	2000.9.8

DXQ-00-WX

Solenoid Coil

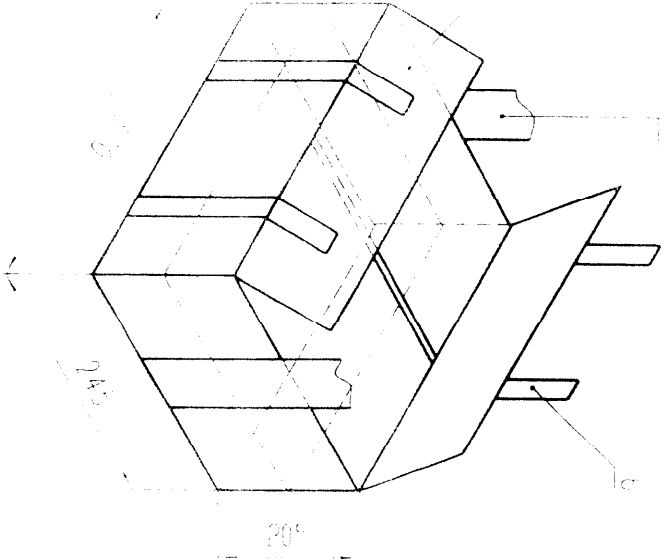
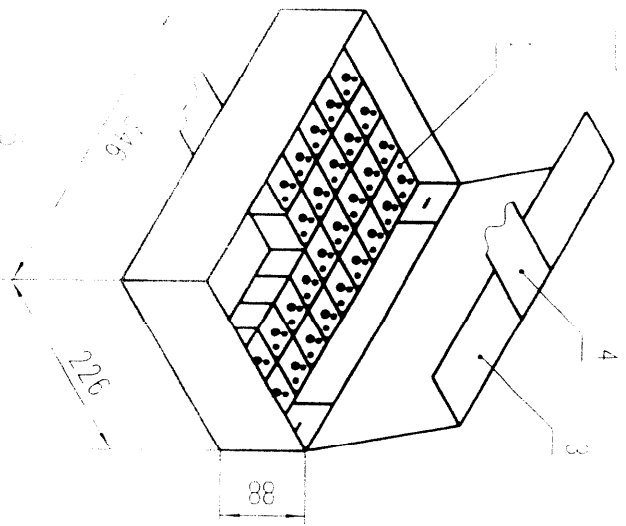
Technical Requirements

- Usage Conditions: Usage Ambient Temperature, In Energizing State $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$; Usage Ambient Humidity: 95RH Below; Coil Permittiting Max. Temperature: $+130^{\circ}\text{C}$.
- Rated Voltage: AC220V 50/60Hz, Allowance Voltage Change: $\pm 10\% \sim \pm 15\%$; Power: 5~7W.
- Working State: Continuance; Connection Mode: Two Wire 50/60Hz Com..
- Insulation Resistor: Not Less Than $100\text{M}\Omega$.
- Dielectric Strength: AC1500V/min.
- In 40°C Ambient Temperature Condition, Coil Temperature Rise Should Not Be More Than 80K.



DXQ-00-QX

图号	8	9
图名	内包装	
日期	2000.5.10	
比例	1:1	



技术要求

1. 每大箱内装有上下两小箱电磁线圈；
2. 每小箱内装有电磁线圈500个，分成5排10列，必须排列整齐，电线整理完好放在上层；
3. 电磁线圈必须表面整洁，无污杂物；
4. 小箱用胶带封箱，先用胶带封箱，再用打包带打包，胶带与打包带须整齐靠；
5. 按规定在外箱上填写有关数字；
6. 图中尺寸为外箱尺寸。

序号	图号	名称	材料	数量	备注
1	DXQ-00	电磁线圈		100	
2	DXQ-B1	线圈包装箱	瓦楞纸板 δ:8	1	
3	DXQ-B2	线圈内箱	瓦楞纸板 δ:8	1	
4		封箱胶带	宽60 长700	2	
5		封箱胶带	宽60 长1400	1	
6		打包带	长 1000	2	共2M

电磁线圈		DXQ-B	
比例	1:10	Changzhou Ranco	



电工产品认证合格证书(正本)

编号: CH0043438-2000



CERTIFICATE OF CONFORMITY FOR ELECTRICAL EQUIPMENT (ORIGINAL)

NO: CH0043438-2000

申请人: 常州兰柯四通阀有限公司

APPLICANT CHANGZHOU RANCO REVERSING VALVE CO., LTD

制造厂名称及所在地:

常州兰柯四通阀有限公司, 江苏省常州市北郊魏村镇

NAME AND ADDRESS OF THE MANUFACTURER:

CHANGZHOU RANCO REVERSING VALVE CO., LTD

产品名称、规格、型号: 四通换向电磁阀

NAME, MODEL AND SPECIFICATION:
REVERSING VALVE

DHF系列 (DHF-6,DHF-12) 220V 50/60Hz 5~7W

DHF系列 (DHF-6, DHF-12) 220V 50/60Hz 5~7W

产品安全认证检测依据的标准:

THE STANDARDS FOR THE PRODUCTS TO BE TESTED:

GB14536.2-96 GB14536.1-1998

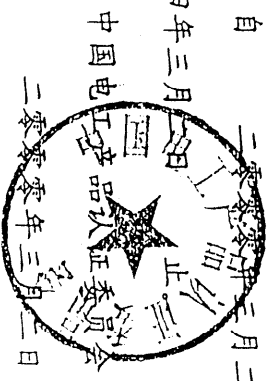
上述产品符合电工产品认证规则和要求

特发此证。

THIS IS TO CERTIFY THAT THE ABOVE MENTIONED
PRODUCTS HAVE QUALIFIED FOR THE REQUIREMENTS
ABOUT CERTIFICATION RULES AND PROCEDURES FOR
THE ELECTRICAL EQUIPMENT

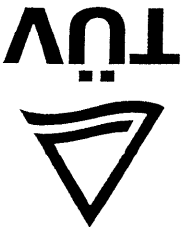
证书有效期: 自 二零零四年三月二日 起

至 二零零四年三月二日



PERIOD OF VALIDITY FROM 2 MAR 2000
UNTIL 2 MAR 2004
CHINA COMMISSION FOR CONFORMITY
CERTIFICATION OF ELECTRICAL EQUIPMENT
DATE OF ISSUE: 2 MAR 2000

TÜV Rheinland Product Safety GmbH
(TRPS)
Am Grauen Stein
Konstantin-Wille-Str. 1
51105 Köln
Fed. Rep. of Germany



Certificate

No. 086-14-0848-0108

Regarding the inspection of
manufacturing and operating facilities according to the General Agreement
with the Certification Body of TRPS

the Certificate Holder

Changzhou Ranco Reversing Valve Co., Ltd.
Xinhua Village, Weicun Town, Changzhou
Jiangsu 213127, P. R. China

has successfully demonstrated that an internal quality control
of those products approved by TÜV Rheinland is being carried out
and produced at the manufacturing facility

Changzhou Ranco Reversing Valve Co., Ltd.
Xinhua Village, Weicun Town, Changzhou
Jiangsu 213127, P. R. China

An inspection of the manufacturer's quality control procedures and
internal records was conducted by a TÜV Rheinland appointed inspector on

06.06.2001

This certificate is valid until the next scheduled inspection
or up to 12 months, at the discretion of TÜV Rheinland.

Report-No. H 2131366

Certification Body

Frank Mocking

Frank Mocking

