

Patent (ZL01 2 69494.0)
DQF Series Electric Ball Valve for Cement
Homogenizing Silo

Introduction Manual

Hangzhou Fuyang HENT Electromechanical
Engineering Co., Ltd.

Content

About us.....	3
DQF electric ball valve operator's manual.....	4
DQF Electric Ball valve Technical data.....	8
Technical Data details.....	9
Import parts list.....	12
Key parts using life assurance.....	13
Users Data.....	15
Patent Certificate.....	20
CE Certificate.....	22

About Us

Hangzhou Fuyang HENT Electromechanical Engineering Co., Ltd. is founded in October, 1996 which is located beside Fuchun River, Hangzhou, China. It well serves the fields of cement, petrol, chemistry, metallurgy, weaving, power, food and medicine all over the world for more than 10 years.

Since founded, the company has continually won awards for innovative technology and export success. We professionally manufacture clean system, Grate cooling machine, ball valve, gate valve, discharge valve, flow control valve, and check valve which are made of all kinds of carbon steel, stainless steel, and cast iron material. In particular, with national patent (ZL01 269494.0), HT DQF series electric ball valve employs Japanese OMRON electric appliance components, has characteristics of 2s/time start-shut speed, over 1 million times service life and burning-proof engine. This series product is well sold both throughout China and all over the world, including Pakistan, Vietnam, Laos, Chile, Peru, Russia, Thailand and Saudi Arabia.

Our company has employees over 80 including 10 manage staff and engineers. The covering area is 10,000M² with a building area of 7,000M²; it gains an annually output of 80 million RMB in recent years. With complete organization structure, quality staff and excellent culture, the company has been awarded AAA level credit enterprise for many years. The company has complete range of manufacturing equipment: all sorts of (lathe, mill, bore, grind, drill) full processing, sizing sheet and welding equipment with physical and chemical experiment as well as fault detection.

Employing Germany technology and importing controller and key parts, all of our products had won great fame for our high quality and competitive price. The warranty of all our products is 3 year. In order to ensure product quality , the company establishes product quality assurance system, which can strictly control the key processes during production, including raw material from first, semi-finished product, accessories, heat treatment, assembly, strength experiment, sealing leakage rate and so on, formulating the quality manuals to safeguard product quality. After more than 10 years' efforts, we have gained excellent profits.

Adhering to the four first principle “customer, quality, credit and service”, we passed ISO9001-2000 International Quality System Certification in 2000 which has further enhanced the product quality. We are willing to provide our customers with best product and excellent service. We look forward to serving you now and in the future.

The DQF series electric ball valve

(Which have passed by the testing of Hangzhou quality inspect center in 1997)

HENT brand DQF series electric ball valve have overcome the shortcoming of traditional electromagnetic valve which usually have been damaged in diaphragm and mechanical accessory, and it has been proved that our valve has highest reliability in high frequency working condition .

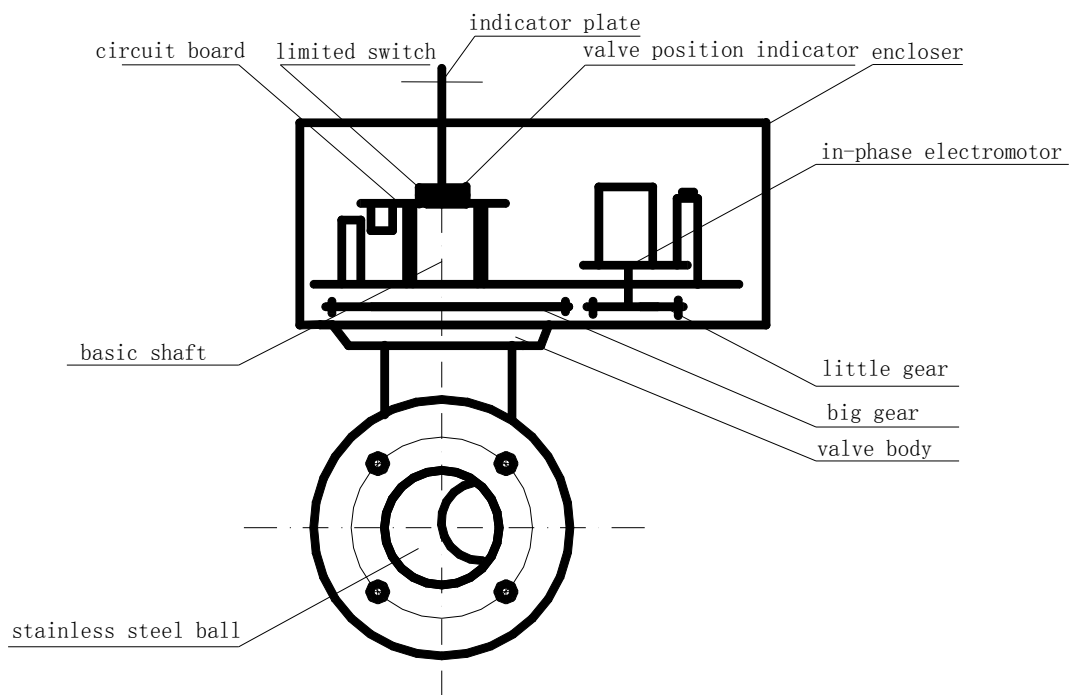
The HENT brand DQF series electric ball valve has many specifications of nominal diameter from 15 to 150 mm standard caliber. Control voltage: 220 v, nominal pressure: 0.25 MPa, Switching speed: 0.5

Time/sec. and continuous action life is over one million, its life is ten times than the traditional electromagnetic valve.

HENT brand DQF series electric ball valve has special nominal pressure type, its continuous action life reach one million too.

Structure of valve body

HENT DQF series electric ball valve is made up of in-phase electromotor, limit switch which is imported from OMRON company in Japan, stainless steel ball and mechanical drive device formed by gears, cast iron valve body. The flange and screw thread is manufactured in GB. And it's compatible with traditional electromagnetic valve; so it is convenience for replacing. The indicator plate above enclose can indicate actual valve position, the combination of electric indicator cock and control indicated lamp can reflecting valve position of working site actually. It has a precision manufacture techniques and good looking appearance.



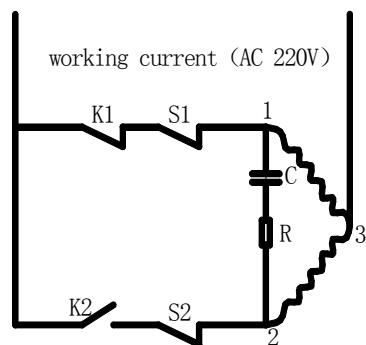
Working principle

When the HENT DQF series electric ball valve do not get the outer open signal, it is keeping electric lock in full cut-off position under the effect of operating power. And the indicator plate in full cut-off indicator position, there is no output signal (relay signal) at electric indicator cock.

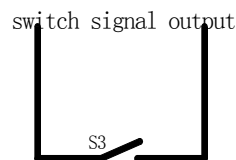
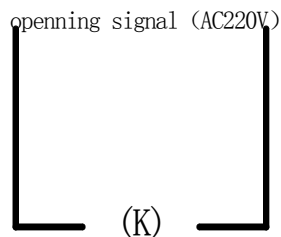
When it has been received signal, the inner relay act, and main electromotor rotating, the little gear in transmission shaft rotating synchronously, drive the big gear and basic shaft and stainless steel ball rotating synchronously, after 2 second, the valve is in full open position. The electro-motor stopped and keeping electric lock under the action of the limited switch. At the same time the signal indicator be touched off and acting, the signal output and let the indicated lamp has a corresponding indicate in the control room, and then the indicate plate is in full open indicate position.

On the opposite, when the signal disappear, the electromotor rotating to the opposite direction. And the electromotor will stop and keeping electric lock after 2 second under the action of reverse limited switch.

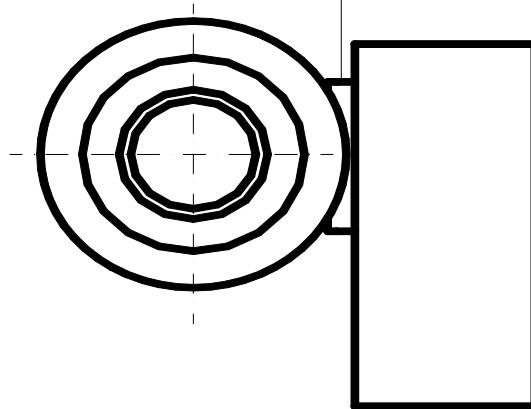
The circuit diagram of DQF Motorized ball valve



- K1. normally closed switch of relay
- K2. normally open switch of relay
- S1. the limited switch which indicate the valve is closing
- S2. the limited switch which indicate the valve is opening
- S3. the switch which output the signal of valve opening
- K. little relay



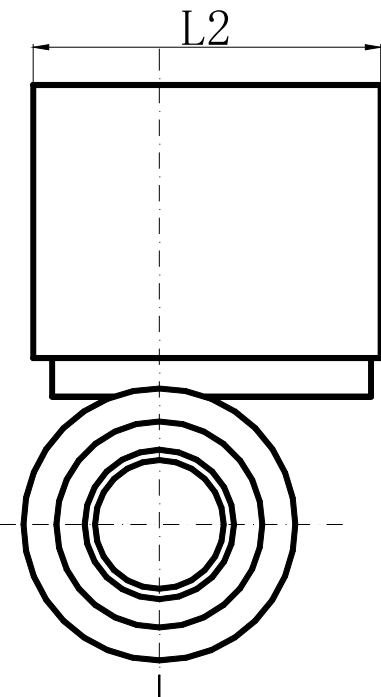
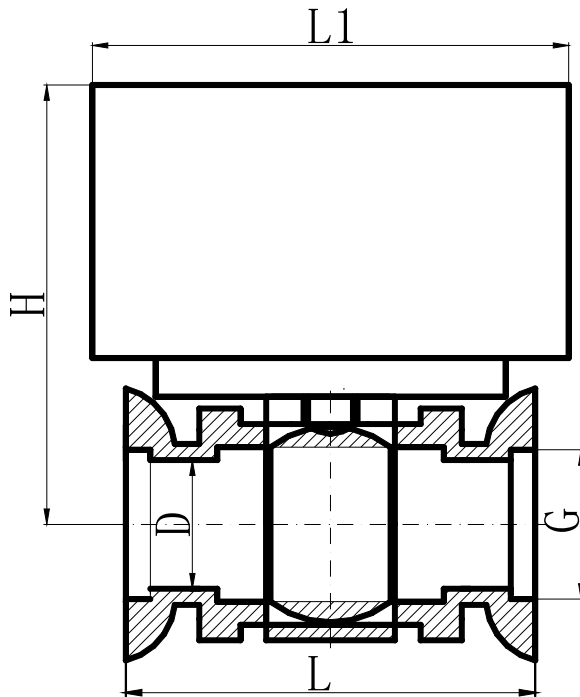
the wiring diagram of
DQF motorized ball valve



quadripartite wire

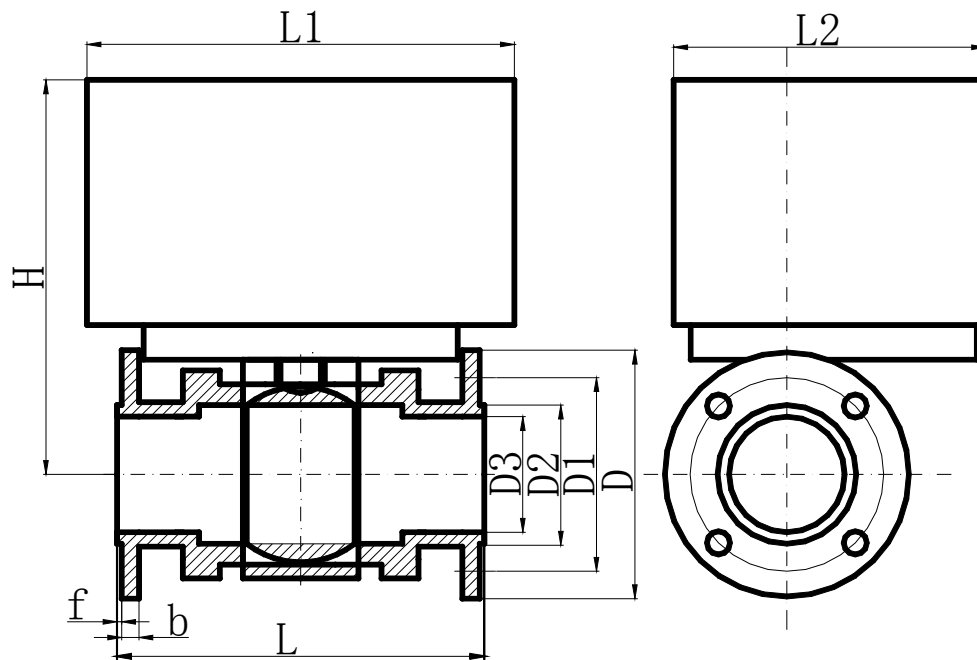
duplex wire

A (220VAC) N	red	green	yellow (220VAC) blue
working power	relay	output	signal
			input



The outline dimension of DQF Electric ball valve

nominal diameter D3(mm)	Pipe thread G(inch)	Main size(mm)					Weight (kg)
		L	I	H	L1	L2	
15	1/2	75	13	180	185	245	10
20	3/4	80	14	200	185	245	12
25	1	90	16	205	185	245	12
32	1 ₁ /4	120	20	210	185	245	12
40	1 ₁ /2	150	22	215	185	245	14
50	2	175	24	225	185	245	16



The outline dimension of DQF Electric ball valve

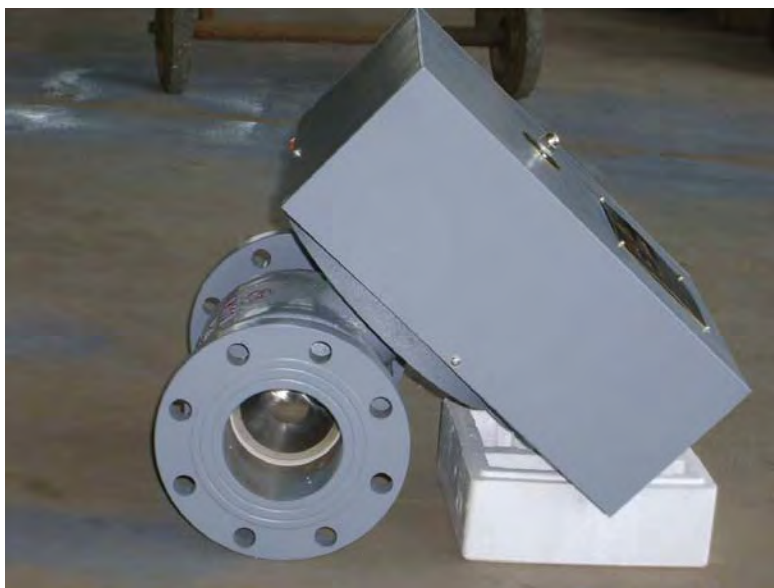
Nominal diameter D3(mm)	Main size(mm)											Weight (kg)
	L	D	D1	D2	f	b	d	hole (QTY)	L1	L2	H	
20	150	105	75	55	2	14	14	4	185	245	195	20
25	160	115	85	65	2	14	14	4	185	245	200	22.5
32	180	135	100	78	2	14	18	4	185	245	210	25
40	200	145	110	85	2	16	18	4	185	245	215	30
50	250	160	125	100	3	16	18	4	185	245	222.5	35
65	250	180	145	120	3	16	18	4	310	350	260	45
80	250	195	160	135	3	20	18	8	310	350	262.5	50
100	280	215	180	155	3	20	18	8	310	350	277.5	55
125	300	245	210	185	3	22	18	8	310	350	292.5	65
150	300	285	240	210	3	24	23	8	310	350	310	80

DQF Electric Ball valve Technical data

1. Supply power 220VAC
2. Control voltage 220VAC
3. Nominal pressure 0.25Mpa
4. Switch time 2s
5. Operating time 100 million, quality assurance for 5 years.
6. Relay signal output.

DQF Electric Ball Valve Parts List

Name	Material	Quantity pcs
Valve shell	Iron	1
Valve core	Stainless Steel	1
Seal ring	PTFE	3
Motor	Synchronous motor	1
Resistance	Electrical facilities	1
Capacitance	Electrical facilities	1
Limit switches and signals	Japan OmRon	3
Switch relay	Japan OmRon	1



Detailed Technical Data

—	Electric Ball Valve		
	— Equipment No.		
	— Quantity	Pc	1
	— Model		DQF
	— Spec		DN100
1.0	Basic parameters		
	— Application		
	— Supply power	V	220
	— Control power	V	220
	— Nominal pressure	MPa	0.25
	— Switch time	s/t	2
	— Operating life	million	100
	2.0 Equipment parameters		
	— Valve body		Iron
	— Valve core		Stainless Steel
	— Limit switch spec		VX-52-1A2
	— Limit switch brand		Japan OmRon
	— Signal switch spec		VX-52-1A2
	— Signal switch brand		Japan OmRon
	— Switch relay spec		MY2J 220/240VAC
	— Switch relay brand		Japan OmRon
	3.0 Transition device		
	— Motor spec		TDY4
	— Power	kw	150
	— Motor speed	rpm	60
	4.0 Weight	kg	55

Technical Data

—	Electric Ball Valve		
	— Equipment No.		
	— Quantity	Pc	1
	— Model		DQF
	— Spec		DN80
1.0	Basic parameters		
	— Application		
	— Supply power	V	220
	— Control power	V	220
	— Nominal pressure	MPa	0.25
	— Switch time	s/t	2
	— Operating life	million	100
	2.0 Equipment parameters		
	— Valve body		Iron
	— Valve core		Stainless Steel
	— Limit switch spec		VX-52-1A2
	— Limit switch brand		Japan OmRon
	— Signal switch spec		VX-52-1A2
	— Signal switch brand		Japan OmRon
	— Switch relay spec		MY2J 220/240VAC
	— Switch relay brand		Japan OmRon
	3.0 Transition device		
	— Motor spec		TDY4
	— Power	kw	130
	— Motor speed	rpm	60
	4.0 Weight	kg	50

Technical Data

—	Electric Ball Valve		
	— Equipment No.		
	— Quantity	Pc	1
	— Model		DQF
	— Spec		DN50
1.0	Basic parameters		
	— Application		
	— Supply power	V	220
	— Control power	V	220
	— Nominal pressure	MPa	0.25
	— Switch time	s/t	2
	— Operating life	million	100
	2.0 Equipment parameters		
	— Valve body		Iron
	— Valve core		Stainless Steel
	— Limit switch spec		VX-52-1A2
	— Limit switch brand		Japan OmRon
	— Signal switch spec		VX-52-1A2
	— Signal switch brand		Japan OmRon
	— Switch relay spec		MY2J 220/240VAC
	— Switch relay brand		Japan OmRon
	3.0 Transition device		
	— Motor spec		TDY4
	— Power	kw	90
	— Motor speed	rpm	60
	4.0 Weight	kg	35

Import parts list (Spare parts)

No.	Name	Spec	Material	Quantity	Unit	Unit Price RMB	Total Price RMB	Manufacturer
1	Micro Switch	VX-52-1A2			pc	30.00		Japan OmRon
2	Small Relay	MY2J220/240VAC			pc	60.00		Japan OmRon
.....								

Key parts using life assurance

Parts name	Aiming using hours	Max using hours
Micro synchronous motor	Never burn	
Japan OmRon switches and relays	43800	43800
Mechanical components	43800	43800
.....		

Preferential terms and after-sales service

Preferential terms	<ol style="list-style-type: none"> 1. During the installation and adjustment period, we will send one or two technicians to guide on site. 2. Free on-site training for personnel of maintenance and operation; 3. Free to do specific design with the consent of design institute and the users; 4. Free packaging, without recycle; 5. One-year warranty, since the installed equipment put into operation, during the warranty time, free to charge spare parts and wearing parts.
After-sales service	<ol style="list-style-type: none"> 1. On the quality problems of equipment, gives clear response within 2 hours. If necessary the technicians will arrive to the site in 2 business days; 2. Our company is totally responsible for the product quality. 3. Life maintenance; after the warranty period, the accessories will be available with a favorably price (at least 15% lower than the market price.)

Users' List for DQF Series Electric Ball Valve

1. Tailand TPCC2500TPD (2500t/d,raw meal silo, cement silo)
2. Tianjin-Laos Cement Industry Co., Ltd. (5000t/d, raw meal silo, cement silo)
3. Nanjing-Vietnam **VINA-KANSAI** Cement Company (2500t/d, raw meal silo,cement silo)
4. Zhejiang Leomax Special Cement Group Co., Ltd. (5000t/d, raw meal silo)
5. Zhejiang Jinlong Cement Co., Ltd.(5000t/d, raw meal silo)
6. Zhejiang Jianfeng Dengcheng Cement Co., Ltd. (5000t/d, raw meal silo)
7. Zhejiang Fuyang Qianchao Cement Co., Ltd. (5000t/d, raw meal silo, cement silo)
8. Zhejiang Linan Jinyuan Cement Co., Ltd. (5000t/d, cement silo)
9. The First-term Project for Zhejiang Leomax Group Tonglu Leomax Building Material Co., Ltd. (2500t/d, raw meal silo)
10. The Second-term Project for Zhejiang Leomax Group Tonglu Leomax Building Material Co., Ltd. (2500t/d, raw meal silo)
11. Zhejiang Yulang Cement Co., Ltd. (2500t/d, raw meal silo)
12. Zhejiang Changxing Meishan Zhongsheng Cement Co., Ltd. (5000t/d, 2sets of raw meal silo)
13. Zhejiang Changxing Xiaopu Zhongsheng Cement Co., Ltd. (2500t/d, raw meal silo)
14. Zhejiang Longyou Dushan Group Cement Co., Ltd. (2500t/d, raw meal silo, cement silo)
15. Zhejiang Jiangshan Hejiashan Cement Co., Ltd. (2500t/d, raw meal silo)
16. Hangzhou Xiaoshan Changhe Cement Co., Ltd. (2500t/d, raw meal silo)
17. Zhejiang Huying Cement Co., Ltd. (2500t/d, raw meal silo)
18. Zhejiang Zhonglida Cement Co., Ltd. (600t/d, raw meal silo)
19. Zhonglian Julong Huaihai Cement Co., Ltd. (rebuilt from the old cement silo)
20. Zhonglian Julong Cement (Suqian) Co., Ltd. (2000,000t/y, cement grinding station)
21. Zhonglian Julong Cement (Fuyang) Co., Ltd. (2000,000t/y, cement grinding station)

22. Zhonglian Julong Huaihai Cement Co., Ltd. (5000t/d, raw meal silo, replacing the old electromotion ball valve)
23. Jiangsu Tianshan Cement Co., Ltd. Liyang Branch (5000t/d raw meal silo)
24. Jiangsu Panshi Cement Co., Ltd. (5000t/d, raw meal silo)
25. Jiangsu Yangzi Cement Co., Ltd. (2500t/d, raw meal silo)
26. Jiangsu Yixing Jinshu Cement Co., Ltd. (2500t/d, raw meal silo)
27. Anhui Leomax Hede Cement Co., Ltd. (5000t/d, raw meal silo)
28. Anhui Huaibei Mining Group Cement Co., Ltd. (2500t/d, raw meal silo)
29. The First-term Project for Anhui Huainan Mining Group Cement Co., Ltd. (2500t/d, raw meal silo)
30. The Second-term Project for Anhui Huainan Mining Group Cement Co., Ltd. (2500t/d, raw meal silo)
31. Anhui Feida Cement Co., Ltd.(2500t/d, raw meal silo)
32. Anhui Fengyang Cement Company (2500t/d, raw meal silo, replacing the old solenoid valve)
33. Anhui Chuzhou Pearl Cement Co., Ltd. (2500t/d, raw meal silo)
34. Anhui Tiepeng Haibao Cement Co., Ltd. (2500t/d, raw meal silo)
35. Anhui Dajiang Co., Ltd. (2500t/d, raw meal silo)
36. Shandong Shaishui Group Rizhao Rongan Building Material Co., Ltd. (5000t/d, cement silo)
37. Shandong Shaishui Group Pingyin Shanshui Cement Co., Ltd. (5000t/d, cement silo)
38. Shandong Shaishui Group Cangle Shanshui Cement Co., Ltd. (cement grinding station)
39. Shandong Lunan Cement Co., Ltd. (5000t/d, raw meal silo)
40. Shandong Zibo Mining Group Bucun Mining Cement Co., Ltd.(1000,000t/y cement grinding station)
41. Shandong Zibo Mining Group Donghua Cement Co., Ltd. (2000,000t/y, cement grinding station)
42. Shandong Conglin Group Company (2500t/d,raw meal silo,cement silo)
43. Shandong Rizhao Rongan Building Material Co., Ltd. (2500t/d, raw meal silo)
44. Shandong Ansha Cement Group Co., Ltd. (2500t/d, raw meal silo)

45. Shandong Aluminium Industry Company Cement Branch (3000t/d, raw meal silo, cement silo)
46. Shandong Laiwu Steel Company Lubi Building Material Co., Ltd. (1200t/d, raw meal silo, replacing the old solenoid valve)
47. Shandong Jinghua Group Dezhou Daba Cement Co., Ltd. (2500t/d, raw meal silo)
48. Chengdu-Shandong Zaozhuang Dongyuan Cement Co., Ltd. (3000t/d, cement silo)
49. Hefei-Shandong Qingdao Lunan Hongshan Cement Co., Ltd. (2000,000t/y, cement grinding station)
50. Hefei-Shandong Heze Lunan Hongshan Cement Co., Ltd. (1000,000t/y, cement grinding station)
51. Jiangxi Jiujiang Xinshan Cement Co., Ltd. (2500t/d, raw meal silo, cement silo)
52. Jiangxi Huanyu Cement Co., Ltd. (2500t/d, raw meal silo)
53. Jiangxi Tianfeng Building Material Co., Ltd. (1500t/d, Coal-powder burner)
54. Jiujiang Lanfeng Cement Co., Ltd. (2500t/d, Clinker production line)
55. The Environment Protection Demonstration Project from Beijing Jinou Group Co., Ltd. (2500t/d, raw meal silo)
56. Hebei Jinlong Cement Group Co., Ltd. (2500t/d, raw meal silo)
57. Hebei Tangshan Longfeng Cement Co., Ltd. (2500t/d, raw meal silo)
58. Henan Tongli Cement Co., Ltd. (5000t/d, raw meal silo)
59. Henan Tongli Cement Co., Ltd. (2500t/d, raw meal silo, dispatched in bulk)
60. Henan Luoyang Yellowhe Tongli Cement Co., Ltd. (5000t/d, raw meal silo, cement silo)
61. Henan Xinxiang Pingyuan Cement Co., Ltd. (5000t/d, raw meal silo)
62. Henan Zhumadian Yulong Cement Co., Ltd. (5000t/d, raw meal silo, cement silo)
63. Henan Zhumadian Yulong Xinyang Cement Co., Ltd. (cement grinding station)
64. Henan Jiaozuo Zhongjing Cement Co., Ltd.
65. Guangyu Group ·Shanxi Fuping Cement Co., Ltd. (5000t/d, raw meal silo, cement silo)
66. Gansu Lanzhou Gancao Environment Protection Building Material Co., Ltd. (2500t/d, raw meal silo)
67. Ningxia Saima Lanshan Cement Co., Ltd. (2500t/d, raw meal silo)

68. Ningxia Saima Industry Dawukou Grinding station (500,000t/y, cement grinding station)
69. Nanjing-Guangdong TCC (Britain/Germany) Co., Ltd. (2×5000t/d, raw meal silo, cement silo)
70. Suzhou Sinoma-Guangdong Dongguan Resources Co., Ltd. (2×500,000t/d, Slag grinding production line)
71. Guangdong Sihui Junma Cement Co., Ltd. (2500t/d, raw meal silo, cement silo)
72. Tianjin-Guangdong Yunan Yueying Cement Co., Ltd. (2500t/d, raw meal silo, cement silo)
73. Guangdong Foshan Sanshui Beijiang Industry Co., Ltd. (2500t/d, raw meal silo, cement silo)
74. Fujian Cement Co., Ltd. Mineral Refining Cement Factory (2500t/d, raw meal silo)
75. Sichuan Yibin Tianyuan Special Cement Co., Ltd. (1500t/d, raw meal silo)
76. Chongqing Tenghui Group Diwei Cement Co., Ltd. (2500t/d, raw meal silo)
77. Chongqing Tenghui Group New-type Building Material Co., Ltd. (Slag powder grinding station, cement silo, slag powder silo)
78. Chongqing Tenghui Special Cement Co., Ltd. (2500t/d, raw meal silo)
79. Chongqing Jinjiang Cement Co., Ltd. (2500t/d, raw meal silo)
80. Yunnan Dali Hongshan Cement Co., Ltd. (1200t/d, raw meal silo)
81. Guizhou Puding Mingda Cement Co., Ltd. (1200t/d, raw meal silo, cement silo)
82. Guangxi Guidong Nanyan Cement Co., Ltd. (1500t/d, raw meal silo)
83. Guangxi Pingnan Resources Yufeng Cement Co., Ltd. (2X5000t/d, raw meal silo, cement silo)
84. Guangxi Resources Hongshuihe Cement Co., Ltd. (3200t/d, raw meal silo)
85. Xinjiang Kuche Cement Co., Ltd. (1500t/d, raw meal silo)
86. Liaoning Tieling Tiexin Cement Co., Ltd. (2500t/d, raw meal silo)
87. Jilin Liaoyuan Jingang Cement Company First-term Project (5000t/d, raw meal silo)
88. Jilin Liaoyuan Jingang Cement Company Second-term Project (5000t/d, raw meal silo)
89. Jilin Yatai Jinlu Cement Co., Ltd. (2500t/d, raw meal silo)
90. Handan Sinoma-Heilongjiang Binzhou Cement Co., Ltd. (5000t/d, raw meal silo)

91. Hainan Sanya Huasheng Tianya Cement Co., Ltd. (5000t/d、 raw meal silo, cement silo)
92. Inner Mongolia Jidong Cement Co., Ltd. (5000t/d、 raw meal silo, cement silo)
93. Hunan Liangtian Cement Co., Ltd. (2500t/d, raw meal silo、 cement silo)
94. Hubei Laohekou Jigang Gemstone Cement Co., Ltd. (2500t/d, raw meal silo)
95. Shanxi Yangquan Coal industry (Group) New-type Dry-process Cement Production line technical improvement project (2500t/d, raw meal silo)

It's only parts of our users, totally 235 companies till Dec. 31st 2008

Patent Certificate

实用新型专利证书

证书号 第 519082 号



实用新型名称: 水泥均化库用电动球阀

设计人: 王永良; 袁锡康

专利号: ZL 01 2 69494.0

专利申请日: 2001 年 10 月 22 日

专利权人: 王永良

授权公告日: 2002 年 10 月 16 日

本实用新型经过本局依照中华人民共和国专利法进行初步审查, 决定授予专利权, 颁发本证书并在专利登记簿上予以登记, 专利权自授权公告之日起生效。

本专利的专利权期限为十年, 自申请日起算, 专利权人应当依照专利法及其实施细则规定缴纳年费。缴纳本专利年费的期限是每年 10 月 22 日 前一个月内。未按照规定缴纳年费的, 专利权自应当缴纳年费期满之日起终止。

专利证书记载专利权登记时的法律状况, 专利权的转移、质押、无效、终止、恢复和专利权人的姓名或名称、国籍、地址变更等事项记载在专利登记簿上。

专利号



局长 王荣川

Utility Model Patent certificate

Utility model patent certificate name: electric ball valve for cement
homogenizing silo

Designer: Wang Yongliang Yuan XiKang

Patent No. : ZL 01 2 69494.0

The day of patent application: 22 October 2001

Patentee: Wang YongLiang

The day of authorization: 16 October 2002

Certificate No.: 519082

This utility model patent has been censored depend the patent law of China, and it is available since today.

The effect of this patent is ten years since the day of patent application. And the patentee shall pay an annual fee beginning with the year in which the patent right was granted. The time shall be before one month of 22 October every year. When an annual fee is not paid as prescribed, the patent right shall cease before the expiration of its duration.

The Patent certificate record the law status when the patent application. If there is any change, it must be recorded in the patent certificate. Such as the movement of patent possession, invalidation, Stop the change of the patent owner's name, nationality, address.

Director General:

Wang RongChuan

16 October 2002

