

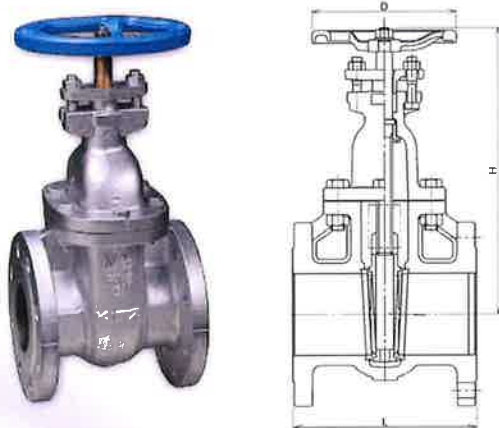
# 铸铁暗杆闸阀

CAST IRON NON RISING STEM GATE VALVE



## PN16 铸铁暗杆闸阀 (不带开度指示器)

PN16 CAST IRON NON RISING STEM GATE VALVE(WITHOUT POSITION INDICATOR)  
Fig.EN16FCWE



### 技术规格 \ Technical Specifications

- 公称压力 \ Nominal Pressure: 1.6MPa
- 工作温度 \ Working Temperature: -10℃~120℃
- 工作介质 \ Working Medium: 水 \ Water
- 连接方式 \ End Connection: EN1092-2 PN16

### 部件&材质 \ Parts&Materials

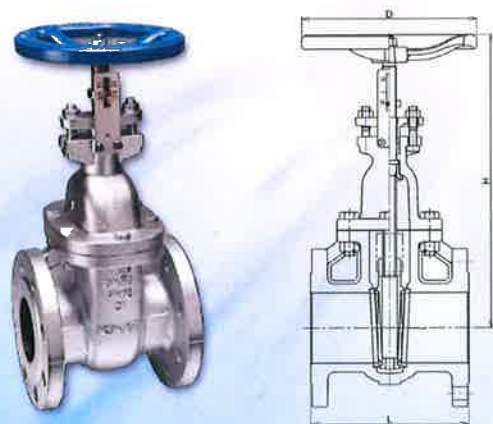
部件 \ Parts	材质 \ Material
阀体 Body	铸铁 Cast Iron
阀盖 Bonnet	铸铁 Cast Iron
阀杆 Stem	黄铜 Brass
阀板 Disc	铸铁 Cast Iron
阀体阀座 Body Seat Ring	青铜 Cast Bronze
阀板阀座 Disc Seat Ring	青铜 Cast Bronze

### 尺寸 \ Dimensions

	50	65	80	100	125	150	200	250	300	350	400	450	500	600
DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
In.	2	2.1/2	3	4	5	6	8	10	12	14	16	18	20	24
L	178	190	203	229	254	267	292	330	356	381	406	432	457	508
H	240	265	323	365	413	477	585	710	789	987	1044	1148	1257	1418
D	180	180	200	254	254	300	300	350	400	560	560	610	610	765

## PN16 铸铁暗杆闸阀 (带开度指示器)

PN16 CAST IRON NON RISING STEM GATE VALVE(WITH POSITION INDICATOR)  
Fig. EN16FCWEI



### 技术规格 \ Technical Specifications

- 公称压力 \ Nominal Pressure: 1.6MPa
- 工作温度 \ Working Temperature: -10℃~120℃
- 工作介质 \ Working Medium: 水 \ Water
- 连接方式 \ End Connection: EN1092-2 PN16

### 部件&材质 \ Parts&Materials

部件 \ Parts	材质 \ Material
阀体 Body	铸铁 Cast Iron
阀盖 Bonnet	铸铁 Cast Iron
阀杆 Stem	黄铜 Brass
阀板 Disc	铸铁 Cast Iron
阀体阀座 Body Seat Ring	青铜 Cast Bronze
阀板阀座 Disc Seat Ring	青铜 Cast Bronze

### 尺寸 \ Dimensions

	50	65	80	100	125	150	200	250	300	350	400	450	500	600
DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
In.	2	2.1/2	3	4	5	6	8	10	12	14	16	18	20	24
L	178	190	203	229	254	267	292	330	356	381	406	432	457	508
H	282	309	364	411	461	524	642	775	858	1011	1073	1199	1318	1489
D	180	180	200	254	254	300	300	350	400	560	560	610	610	765

**KITZ 开滋**  
KITZ CORPORATION

上海开滋国际贸易有限公司  
(KITZ CORPORATION OF SHANGHAI)

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TEST REPORT

Lab. Information

Report No. : PMA71165  
Issue Date : 24 March 2017  
W.I. No. : PH/6/10/39  
ETL Lab. No. : P/6/0828/01-09  
Page No. : 1 of 8

Results of laboratory testing conducted on the above mentioned samples are as follows :

Information of the products

Product brand name : KITZ  
Country of origin : China  
Name of manufacturer : KITZ Corporation of Shanghai  
Material (Copper-zinc alloys, stem) : Grade CC754S of BS EN 1982:2008  
Material (Copper-zinc alloys, stem nut) : Grade CC754S of BS EN 1982:2008  
Material (Copper-tin-lead alloys, disc seat ring) : Grade CC491K of BS EN 1982:2008  
Material (Grey cast iron, body) : Grade EN-GJL-250 of BS EN 1561:2011

<u>Sample description</u>				
ETL Lab. No.	Model no.	Product type	Nominal size (mm)	Markings on valve body
P/6/0828/01	EN16FCWEI	"KITZ" brand cast iron gate valve, non-rising stem, metal seated, with position indicator, flanged PN16 (Category 1) silver color coated outside.	DN65	DN65 PN16 CI
P/6/0828/02	EN16FCWEI		DN80	DN80 PN16 CI
P/6/0828/03	EN16FCWEI		DN100	DN100 PN16 CI
P/6/0828/04	EN16FCWEI		DN125	DN125 PN16 CI
P/6/0828/05	EN16FCWEI		DN150	<b>KITZ</b> DN150 PN16 CI
P/6/0828/06	EN16FCWEI		DN200	DN200 PN16 CI
P/6/0828/07	EN16FCWEI		DN250	DN250 PN16 CI
P/6/0828/08	EN16FCWEI		DN300	DN300 PN16 CI
P/6/0828/09	EN16FCWEI		DN350	DN350 PN16 CI



Photo 1. "KITZ" brand cast iron gate valve, non-rising stem, metal seated, with position indicator, flanged PN16 (Category 1) silver color coated outside.

Report No.: PMA71165

Page 2 of 8

- 1.0) Date samples received** : 24 September, 2016
- 2.0) Period of test** : 24 September, 2016 to 19 March, 2017
- 3.0) Applicable standard** :
- Dimensional measurement  
BS 5163-1 : 2004, BS EN 1092-1:2007+A1:2013,  
BS EN 1171 : 2015 and product catalogue
  - Leak-tightness of shell to internal pressure test  
Clause 5.2.1.1 BS EN 1074-3 : 2000 & refer  
to Clause 5.2.1.1 BS EN 1074-1 : 2000
  - Strength torque test  
Annex B of BS EN 1171 : 2015
  - Seat tightness at high differential pressure  
Clause 5.2.2.1 of BS EN 1074-1 : 2000 and BS EN 12266-1:2012
  - Tensile strength test (Grey cast iron, body)  
BS EN 1561 : 2011
  - Chemical composition analysis (Copper-zinc alloys, stem)  
BS EN 1982 : 2008
  - Chemical composition analysis (Copper-zinc alloys, stem nut)  
BS EN 1982 : 2008
  - Chemical composition analysis (Copper-tin-lead alloys, disc seat ring)  
BS EN 1982 : 2008

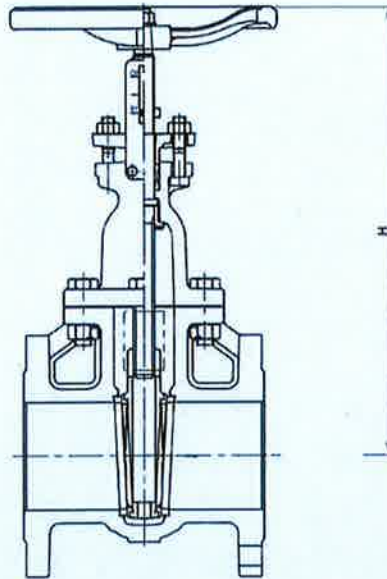
**4.0) Scope of testing**

- 4.1) Dimensional measurement
- 4.2) Leak-tightness of shell to internal pressure test
- 4.3) Strength torque test
- 4.4) Seat tightness at high differential pressure
- 4.5) Tensile strength test (Grey cast iron, body)
- 4.6) Chemical composition analysis (Copper-zinc alloys, stem)
- 4.7) Chemical composition analysis (Copper-zinc alloys, stem nut)
- 4.8) Chemical composition analysis (Copper-tin-lead alloys, disc seat ring)

**5.0) Reported by** : Mr. SUNG Man Lung

6.0) Test results

6.1) Dimensional measurement

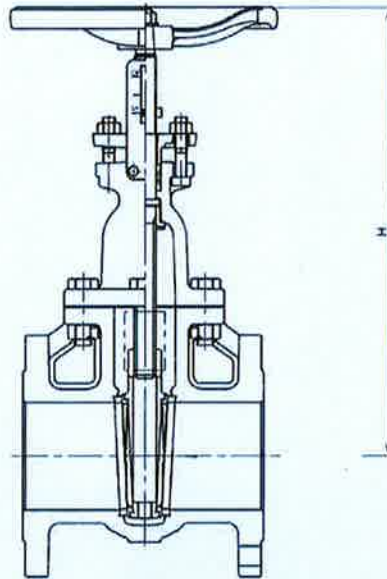


Sectional Drawing

ETL Lab. No.	Nominal size	Measured results										Remark
		Face-to-face, L	Maximum height, H	Outside diameter, D	Diameter of bolt circle, K	Facing diameter, d	Bolt hole no.	dia.	Facing height, f	Flange thickness, b	Handwheel, OD	
(mm)		(mm)										
P/6/0828/01	65	191	310	184	145	116	4	19.0	2.6	19.7	180	Pass
<b>Requirements -</b>												
BS EN 1171:2015		188-192	425max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	180	
BS EN 1092-2:1997 (PN16)		---	---	185	145	114-118	4	19-20.5	1min.	14-21	---	
P/6/0828/02	80	204	373	200	158	130	8	19.1	2.2	21.0	198	Pass
<b>Requirements -</b>												
BS EN 1171:2015		201-205	475max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	200	
BS EN 1092-2:1997 (PN16)		---	---	200	160	128-132	8	19-20.5	1min.	16-23	---	
P/6/0828/03	100	229	418	219	186	155	8	19.0	1.4	23.0	252	Pass
<b>Requirements -</b>												
BS EN 1171:2015		227-231	575max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	254	
BS EN 1092-2:1997 (PN16)		---	---	220	180	152-156	8	19-20.5	1min.	18-25	---	
P/6/0828/04	125	253	476	247	207	181	8	19.0	2.6	25.0	252	Pass
<b>Requirements -</b>												
BS EN 1171:2015		251-257	650max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	254	
BS EN 1092-2:1997 (PN16)		---	---	250	210	179.5-184	8	19-20.5	1min.	20-27	---	



6.1) Dimensional measurement



Sectional Drawing

ETL Lab. No.	Nominal size	Measured results										Remark
		Face-to-face, L	Maximum height, H	Outside diameter, D	Diameter of bolt circle, K	Facing diameter, d	Bolt hole no.	Bolt hole dia.	Facing height, f	Flange thickness, b	Handwheel, OD	
(mm)		(mm)										
P/6/0828/05	150	268	533	280	245	210	8	23.1	2.6	25.6	295	Pass
<b>Requirements -</b>												
BS EN 1171:2015		264-270	700max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	300	
BS EN 1092-2:1997 (PN16)		---	---	285	240	206.5-211	8	23-24.5	1min.	20-27	---	
P/6/0828/06	200	290	645	340	290	266	12	23.0	1.9	28.4	296	Pass
<b>Requirements -</b>												
BS EN 1171:2015		289-295	850max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	300	
BS EN 1092-2:1997 (PN16)		---	---	340	295	261.5-266	12	23-24.5	1min.	24-31	---	
P/6/0828/07	250	331	769	400	350	318	12	28.0	2.6	29.4	351	Pass
<b>Requirements -</b>												
BS EN 1171:2015		327-333	1025max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	350	
BS EN 1092-2:1997 (PN16)		---	---	400	355	314.5-319	12	28-29.5	1min.	26-33	---	
P/6/0828/08	300	355	865	453	410	370	12	28.0	3.1	27.0	400	Pass
<b>Requirements -</b>												
BS EN 1171:2015		353-359	1125max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	400	
BS EN 1092-2:1997 (PN16)		---	---	455	410	365.5-370	12	28-29.5	1min.	25-32	---	
P/6/0828/09	350	380	1007	520	470	430	16	28.1	2.7	35.0	560	Pass
<b>Requirements -</b>												
BS EN 1171:2015		378-384	1150max.	---	---	---	---	---	---	---	---	
Product catalogue		---	---	---	---	---	---	---	---	---	560	
BS EN 1092-2:1997 (PN16)		---	---	520	470	424-429	16	28-29.5	1min.	29-36	---	

6.2) Leak-tightness of shell to internal pressure test

ETL Lab. No.	Nominal size (mm)	Pressure applied (bar)	Test duration (seconds)	Test results	Remark
P/6/0828/01	65	24 (1.5 x PN)	60	No visually detectable leakage for the duration of the test	Pass
P/6/0828/02	80		60		Pass
P/6/0828/03	100		60		Pass
P/6/0828/04	125		60		Pass
P/6/0828/05	150		60		Pass
P/6/0828/06	200		120		Pass
P/6/0828/07	250		120		Pass
P/6/0828/08	300		120		Pass
P/6/0828/09	350		300		Pass

6.3) Strength torque test

ETL Lab. No.	Nominal size (mm)	Number of operating turns corresponding with the max. travel of the obturator (Before testing)	Strength torque applied (N.m)	Pressure applied (bar)	Requirements	Number of operating turns corresponding with the max. travel of the obturator (After testing)		Remark
P/6/0828/01	65	10.1 nos.	100	16	+5% max.	10.4 nos.	3.0 %	Pass
P/6/0828/02	80	9.7 nos.	150	16		9.9 nos.	2.1 %	Pass
P/6/0828/03	100	11.6 nos.	190	16		11.9 nos.	2.6 %	Pass
P/6/0828/04	125	14 nos.	190	16		14.2 nos.	1.4 %	Pass
P/6/0828/05	150	17.1 nos.	190	16		17.3 nos.	1.2 %	Pass
P/6/0828/06	200	21.9 nos.	240	16		22 nos.	0.5 %	Pass
P/6/0828/07	250	21.4 nos.	240	16		21.8 nos.	1.9 %	Pass
P/6/0828/08	300	26.9 nos.	300	16		27.2 nos.	1.1 %	Pass
P/6/0828/09	350	31.5 nos.	300	16		31.9 nos.	1.3 %	Pass

**6.4) Seat tightness at high differential pressure**

ETL Lab. No.	Nominal size (mm)	Pressure applied (bar)	Test duration (seconds)	Test results	Remark
P/6/0828/01	65	17.6 (1.1 x PN)	60	No visually detectable leakage for the duration of the test	Pass
P/6/0828/02	80		60		Pass
P/6/0828/03	100		60		Pass
P/6/0828/04	125		60		Pass
P/6/0828/05	150		60		Pass
P/6/0828/06	200		120		Pass
P/6/0828/07	250		120		Pass
P/6/0828/08	300		120		Pass
P/6/0828/09	350		300		Pass

**6.5) Tensile strength test (Grey cast iron, body)**

ETL Lab. No.	Nominal size (mm)	Tensile strength, $R_m$		Remark
		Requirements (N/mm <sup>2</sup> )	Test results (N/mm <sup>2</sup> )	
P/6/0828/01	65	250min. (Grade EN-GJL-250 of BS EN 1561:2011)	309	Pass
P/6/0828/03	100		307	Pass
P/6/0828/05	150		284	Pass
P/6/0828/07	250		270	Pass
P/6/0828/09	350		256	Pass



**6.6) Chemical composition analysis (Copper-zinc alloys, stem)**

ETL Lab. No.	Nominal size (mm)	Component	Test results, % (elements)										Remark
			Zinc Zn	Lead Pb	Tin Sn	Phosphorus P	Manganese Mn	Iron Fe	Nickel Ni	Silicon Si	Aluminium Al	Copper Cu	
P/6/0828/01	65	Stem	39.2	1.8	0.3	<0.01	<0.1	0.2	<0.1	<0.01	<0.1	58.5	Pass
P/6/0828/03	100		39.4	1.4	0.3	<0.01	<0.1	0.3	0.1	<0.01	<0.1	58.5	Pass
P/6/0828/05	150		39.1	1.4	0.3	<0.01	<0.1	0.3	0.1	<0.01	<0.1	58.8	Pass
P/6/0828/07	250		38.6	1.5	0.3	<0.01	<0.1	0.3	0.1	<0.01	<0.1	59.3	Pass
P/6/0828/09	350		39.8	1.6	0.2	<0.01	<0.1	0.1	0.1	<0.01	<0.1	58.1	Pass
<b>Requirements - Grade CC754S of BS EN 1982:2008 Table 7</b>			<i>Remainder</i>	<i>0.5-2.5</i>	<i>max. 1.0</i>	<i>max. 0.02</i>	<i>max. 0.5</i>	<i>max. 0.7</i>	<i>max. 1.0</i>	<i>max. 0.05</i>	<i>max. 0.8</i>	<i>58.0-63.0</i>	

**6.7) Chemical composition analysis (Copper-zinc alloys, stem nut)**

ETL Lab. No.	Nominal size (mm)	Component	Test results, % (elements)										Remark
			Zinc Zn	Lead Pb	Tin Sn	Phosphorus P	Manganese Mn	Iron Fe	Nickel Ni	Silicon Si	Aluminium Al	Copper Cu	
P/6/0828/01	65	Stem nut	39.2	2.0	<0.1	<0.01	<0.1	<0.1	<0.1	<0.01	<0.1	58.7	Pass
P/6/0828/03	100		39.2	1.9	<0.1	<0.01	<0.1	<0.1	<0.1	<0.01	<0.1	58.8	Pass
P/6/0828/05	150		39.3	1.9	<0.1	<0.01	<0.1	<0.1	<0.1	<0.01	<0.1	58.8	Pass
P/6/0828/07	250		38.7	2.1	<0.1	<0.01	<0.1	<0.1	<0.1	<0.01	<0.1	59.1	Pass
P/6/0828/09	350		39.0	2.1	<0.1	<0.01	<0.1	<0.1	<0.1	<0.01	<0.1	58.8	Pass
<b>Requirements - Grade CC754S of BS EN 1982:2008 Table 7</b>			<i>Remainder</i>	<i>0.5-2.5</i>	<i>max. 1.0</i>	<i>max. 0.02</i>	<i>max. 0.5</i>	<i>max. 0.7</i>	<i>max. 1.0</i>	<i>max. 0.05</i>	<i>max. 0.8</i>	<i>58.0-63.0</i>	

6.8) Chemical composition analysis (Copper-tin-lead alloys, disc seat ring)

ETL Lab. No.	Nominal size (mm)	Component	Test results, % (elements)											Remark
			Zinc Zn	Lead Pb	Tin Sn	Phosphorus P	Antimony Sb	Iron Fe	Nickel Ni	Silicon Si	Aluminium Al	Copper Cu	Sulphur S	
P/6/0828/01	65	Disc seat ring	4.0	5.3	4.7	<0.01	0.06	0.2	0.1	<0.01	<0.01	85.4	0.07	Pass
P/6/0828/03	100		4.4	5.2	4.2	<0.01	0.05	0.3	<0.1	<0.01	<0.01	85.7	0.05	Pass
P/6/0828/09	350		5.2	4.2	4.1	0.02	0.04	0.3	0.1	<0.01	<0.01	85.9	0.09	Pass
P/6/0828/05	150		5.2	5.4	4.7	<0.01	<0.01	<0.1	<0.1	<0.01	<0.01	84.5	<0.01	Pass
P/6/0828/07	250		5.2	5.1	4.7	<0.01	<0.01	<0.1	<0.1	<0.01	<0.01	84.8	<0.01	Pass
<b>Requirements - Grade CC491K of BS EN 1982:2008 Table 23b</b>			<b>4.0-6.0</b>	<b>4.0-6.0</b>	<b>4.0-6.0</b>	<b>max. 0.10</b>	<b>max. 0.25</b>	<b>max. 0.3</b>	<b>max. 2.0</b>	<b>max 0.01</b>	<b>max. 0.01</b>	<b>83.0-87.0</b>	<b>max. 0.10</b>	

7.0) Summary of results (applied only to the samples tested)

- |  |                |
|--|----------------|
| Dimensional measurement  | - Satisfactory |
| Leak-tightness of shell to internal pressure test                      | - Satisfactory |
| Strength torque test   | - Satisfactory |
| Seat tightness at high differential pressure                           | - Satisfactory |
| Tensile strength test (Grey cast iron, body)                           | - Satisfactory |
| Chemical composition analysis (Copper-zinc alloys, stem)               | - Satisfactory |
| Chemical composition analysis (Copper-zinc alloys, stem nut)           | - Satisfactory |
| Chemical composition analysis (Copper-tin-lead alloys, disc seat ring) | - Satisfactory |

Approved Signatory

WONG Yiu Keung Tony

TW/MLB/cw

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- END OF REPORT -



水務署

**Water Supplies Department**

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24 May 2017

Dear Sir,

### Approval of "KITZ" Gate Valves

Your letter ref. BEP/EME/LET/MF261 dated 28 April 2017 refers.

Having considered the test report ref. PMA71165 issued on 24 March 2017 by ETS-Testconsult Ltd., this Authority accepts that the fittings described below comply with, and their use when correctly installed does not contravene, the Waterworks Ordinance and Regulations.

**Name of Manufacturer:** Kitz Corporation

**Country of Origin:** China

**Brand:** Kitz

**Details of Fitting:** Cast iron gate valve

**Model:** EN16FCWEI

**Size:** 65mm, 80mm, 100mm, 125mm, 150mm, 200mm, 250mm, 300mm, 350mm

**Body Markings:** **KITZ** size in DN PN16 CI

**Expiry Date:**

18 March 2022

**Proviso:** The fittings can only be used in non-potable water plumbing system.

This Authority hereby permits the use of the above fittings in fresh water plumbing systems, flushing water plumbing systems and fresh water fire services systems subject to full adherence to Waterworks installation requirements.

A condition of this acceptance is that the fittings to be installed shall be replicas of the samples as certified by the testing agent mentioned above and without modifications. This acceptance may be withdrawn at any time if the standard of the fittings installed fail to meet that of the approved samples or if the fittings are found to be unsuitable for use in the water supply systems mentioned above.

For the use of the fittings in any project, the Acceptance Reference Number at the bottom of this letter must be quoted as a means of identification of acceptance of the fittings by this Authority.

Should you have any enquiries, please contact our Engineer Mr. Terry KUNG at tel. no. 2294 2656.

Yours faithfully,



(CHAN Chung Kun)  
for Water Authority

c.c. WSD 3321/1/82 ] - without catalogue  
ME/MC ] - with soft copy only