

GEZE Industries (Tianjin) Co., Ltd

TEST REPORT

SCOPE OF WORKS

< Performance Test – Door closer – FDC 36>

REPORT NUMBER

240205044GZU-001

ISSUE DATE

2024-11-21

[REVISED DATE]

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PAGES

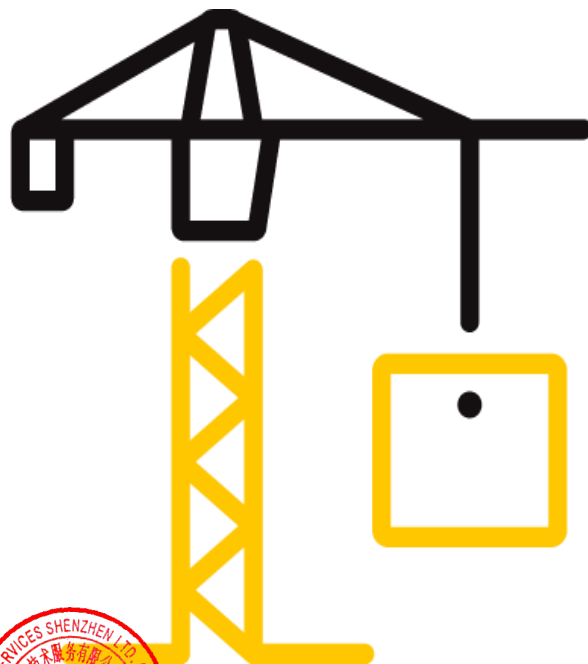
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DOCUMENT CONTROL NUMBER

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Effective date: 2024-5-22

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Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

Test Report

Report Number: 240205044GZU-001

Report Date: 2024-11-21

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- 5.All the test results if need to give the statement of conformity refer to the decision rule of ILAC G8:09/2019 Clause 4.2.1“Binary Statement for Simple Acceptance Rule”.

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Applicant:	GEZE Industries (Tianjin) Co., Ltd
Applicant Address:	No.16 Shuangchenzhong Road, Beichen Economic Development Area, Beichen District, Tianjin
Attn:	Peng.Sun@geze.com

Sample information	
Product:	Door closer
Trade Mark:	/
Model and/or type reference:	FDC 36
Manufacturer:	GEZE Industries (Tianjin) Co., Ltd
Manufacturer Address:	No.16 Shuangchenzhong Road, Beichen Economic Development Area, Beichen District, Tianjin
Sample ID:	S240205044GZU.001~007
Date of receipt of test item:	2024-01-11 & 2024-10-24
Situation of receipt samples:	Received in good condition
Date (s) of performance of tests:	2024-02-05 ~ 2024-11-11

Testing information							
Standard:	EN 1154:1996/A1:2002/AC:2006						
Rating(s):	<table border="1"><tr><td>4</td><td>8</td><td>3-6</td><td>0</td><td>1</td><td>4</td></tr></table>	4	8	3-6	0	1	4
4	8	3-6	0	1	4		
Testing Laboratory name:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch						
Address:	Room 4103 & 4203, No. 63, Punan Road, Huangpu District, Guangzhou, China.						
Possible Test Case Verdicts							
Test Case does not apply to the Test object:	N/A						
Test object does meet the requirement:	P (Pass)						
Test object does not meet the requirement:	F (Fail)						
Conclusion:							
Complied with all applicable clauses of EN 1154:1996/A1:2002/AC:2006 for the ratings. Item 5.2.17 was compliant after retest with second time received sample.							

Approved by:	Prepared by:
	
Name: Nelson Zhu	Name: Ziqing Chen
Title: Reviewer	Title: Project Engineer

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General product information:

The product detail information list on the following form

Model No.	Product type	Power size	Speed control	Latch control	Hold open	Back check	Delay closing
FDC 36	Door closer	3-6	Yes	Yes	No	Yes	No

Detail "Ratings" information listed as following:

First digit (Category of use):	Grade	4	— For closing doors from 180° open;
Second digit (Durability):	Grade	8	— 500 000 test cycles;
Third digit (Door closer power size):	Grade	3-6	— Power size 3-6
Fourth digit (suitability for use on fire/smoke doors):	Grade	0	— Not suitable for use on fire/smoke door assemblies;
Fifth digit (Safety):	Grade	1	— All door closers are required to satisfy the essential requirement of safety in use;
Sixth digit (Corrosion resistance):	Grade	4	— Very high resistance

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EN 1154:1996/A1:2002/AC:2006							
Building hardware- Controlled door closing devices							
-Requirements and test methods							
Clause	Requirement - Test				Result - Remark		Verdict
4	Classification						
4.1	Door closer shall be classified by six digit coding system:						
4.2	Category of use (1 st) :				Grade 4		--
4.3	Durability (2 nd) :				Grade 8		--
4.4	Door closer power size (3 rd)				Grade 3-6		--
4.5	Suitability for use on fire/smoke doors (4 th)				Grade 0		--
4.6	Safety (5 th)				Grade 1		--
4.7	Corrosion resistance (6 th)				Grade 4		--
5	REQUIREMENTS						
5.1	Product information A door closer manufactured to this standard shall be supplied with clear, detailed instructions for its installation, regulation and maintenance, which shall include any limitations of opening angle. Where a door closer is recommended for fitting in other than a standard application, these instructions shall clearly define the door closer power size for each application of fitting position stated.				Supplied with clear, detailed instructions. Power size: 3-6		P
5.2	Performance						
	Table 1						
	Door closer Power size	Closing moment				Opening moment 0° to 60°	Door closer efficiency 0° to 4°
		0° to 4°		88° to 92°	Any other angle		
		Nm min.	Nm max	Nm min.	Nm min.		
	1	9	< 13	3	2	26	50
	2	13	< 18	4	3	36	50
	3	18	< 26	6	4	47	55
	4	26	< 37	9	6	62	60
	5	37	< 54	12	8	83	65
6	54	< 87	18	11	134	65	
7	87	< 140	29	18	215	65	
5.2.1	General When tested in accordance with clauses 6 and 7,the door closer shall satisfy the relevant performance requirements of 5.2.2 to 5.2.11, and 5.2.12 to 5.2.18 as appropriate				See below clauses		—

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EN 1154:1996/A1:2002/AC:2006 Building hardware- Controlled door closing devices -Requirements and test methods			
Clause	Requirement - Test	Result - Remark	Verdict
5.2.2	Durability The door closer shall be able to close a test door conforming to 6.1.1 and 6.2 from an opening angle of 90°, for a minimum of 500 000 test cycles :	500 000 cycles	P
5.2.3	Closing moment After 5 000 test cycles and after 500 000 test cycles the measured closing moments shall be not less than the value stated in Table 1 :	Power size: 3 After 5 000 cycles 0° ~ 4°: 24,4 Nm 88° ~ 92°: 16,8 Nm 0° to maximum: 14,5 Nm After 500 000 cycles 0° ~ 4°: 25,0 Nm 88° ~ 92°: 18,4 Nm 0° ~ maximum: 13,2 Nm Power size: 6 After 5 000 cycles 0° ~ 4°: 71,4 Nm 88° ~ 92°: 27,4 Nm 0° ~ maximum: 27,7 Nm After 500 000 cycles 0° ~ 4°: 67,8 Nm 88° ~ 92°: 24,9 Nm 0° ~ maximum: 19,3 Nm	P
5.2.4	Opening moment After 5 000 test cycles the maximum measured opening moment shall be not more than the value stated in Table 1 for the particular power size of closer being tested. :	Power size: 3 0° ~ 60°: 40,0 Nm Power size: 6 0° ~ 60°: 97,6 Nm	P
5.2.5	Efficiency After 5 000 test cycles and after 500 000 test cycles the measured efficiency shall be not less than value stated in Table 1 :	Power size: 3 After 5 000 cycles 63.9 % After 500 000 cycles 66.4 % Power size: 6 After 5 000 cycles 74,1 % After 500 000 cycles 73,9 %	P

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EN 1154:1996/A1:2002/AC:2006 Building hardware- Controlled door closing devices -Requirements and test methods			
Clause	Requirement - Test	Result - Remark	Verdict
5.2.6	Closing time After 5 000 test cycles and after 500 000 test cycles, the closing time, from a door opening angle of 90 degree, shall be capable of adjustment to 3 seconds or less, and 20 seconds or more. After 500 000 test cycles, the closing time set at 5 000 test cycles shall not have increased by more than 100%, or decreased by more than 30 % :	Power size: 3 After 5 000 cycles The range of closing time: Minimum: 1"885 s Maximum: >3 min Set closing time: 4"205 s After 500 000 test cycles The range of closing time: Minimum: 1"740 s Maximum: >3 min Closing time: 3"50 s Not decrease more than 30%. Power size: 6 After 5 000 cycles The range of closing time: Minimum: 2"134 s Maximum: >3 min Set closing time: 4"260 s After 500 000 test cycles The range of closing time: Minimum: 2"218 s Maximum: >3 min Closing time: 3"859 s Not decrease more than 30%.	P

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EN 1154:1996/A1:2002/AC:2006 Building hardware- Controlled door closing devices -Requirements and test methods			
Clause	Requirement - Test	Result - Remark	Verdict
5.2.7	Angles of operation The door closer shall permit the test door to open according to its grade, and on closing, shall control the door from a minimum angle of 70 degree :	Power size: 3 After 5 000 test cycles Maximum opening angle: 180° The controlled angle: 153° After 500 000 test cycles Maximum opening angle: 182° The controlled angle: 164° Power size: 6 After 5 000 test cycles Maximum opening angle: 180° The controlled angle: 156° After 500 000 test cycles Maximum opening angle: 180° The controlled angle: 143°	P
5.2.8	Overload performance The door closer shall be capable of withstanding the closing overload tests :	After 5 000 and 500 000 test cycles Power size: 3 Overload weight: 21 kg Power size: 6 Overload weight: 30 kg No any defects, function normally after 10 times overload test.	P
5.2.9	Temperature dependence A set closing time of 5 seconds at an ambient temperature of 20 degree C, shall not increase to more than 25 seconds or decrease to less than 3 seconds when tested at -15 degree C and 40 degree C :	Power size: 3 Closing time at 20°C: 4"936 s Closing time at -15°C: 16"671 s Closing time at 40°C: 3"139 s Power size: 6 Closing time at 20°C: 4"917 s Closing time at -15°C: 14"131 s Closing time at 40°C: 3"492 s	P
5.2.10	Fluid leakage Throughout the test programme there shall be no leakage of fluid from the door closer :	Not found any fluid leakage throughout the test	P

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Clause	Requirement - Test	Result - Remark	Verdict
5.2.11	Damage Throughout the test programme there shall be no damage to the door closer or its arms that would adversely affect its performance to this standard :	Not found any damage throughout the test	P
5.2.12	Latch control (optional) Accelerated closing shall be effective over a maximum range of 15 degree from the closed position, and shall be adjustable :	Latch control was adjustable, maximum control angle: 12°	P
5.2.13	Backcheck (optional) The door closer shall be capable of arresting the test door before 90 degree position :	After 100 000 cycles test, Power size 3 arrested at 79 ° Power size 6 arrested at 78 °	P
5.2.14	Delay closing (optional) The delay time shall not be less than 20 seconds. The delay zone shall not extend below the 65 degree open position. The moment required to override manually the delay action shall not exceed 150 Nm. The delay time at the conclusion of 500 test cycles shall be between 10 seconds to 30 seconds :	Without delay closing	N/A
5.2.15	Adjustable closing force (optional) If provided with an adjustable closing function, the door closer shall comply with the performance at both the minimum and maximum power settings claimed by manufacture:	Compliant with both the minimum and maximum power settings	P

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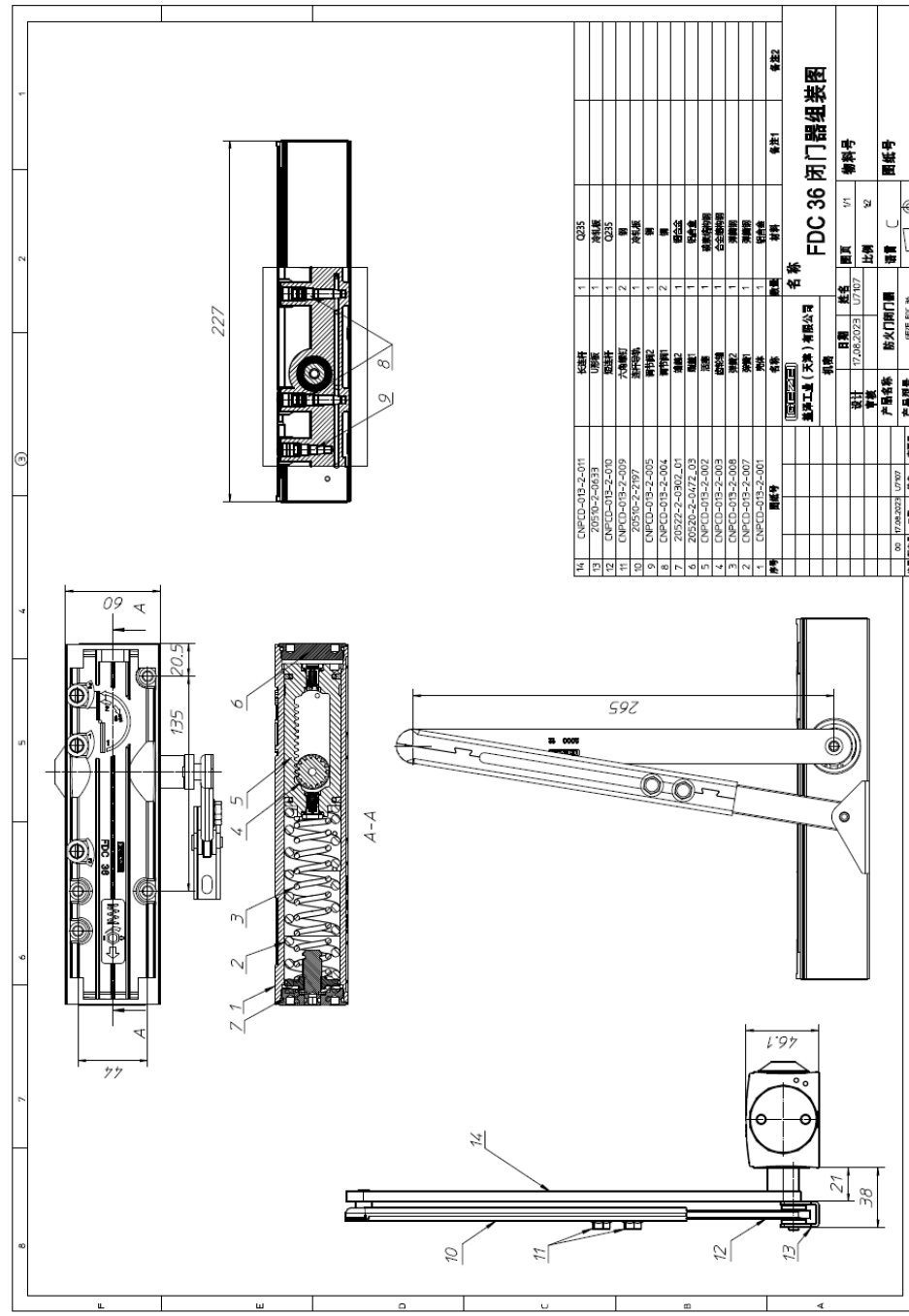
EN 1154:1996/A1:2002/AC:2006 Building hardware- Controlled door closing devices -Requirements and test methods			
Clause	Requirement - Test	Result - Remark	Verdict
5.2.16	Zero position (for double action door closers only) The amount of free play at the zero position of a new door closer shall not exceed 3 mm, and after 500 000 test cycles shall not exceed 6 mm :	Not applicable for door closer.	N/A
5.2.17	Corrosion resistance The requirement shall be according to EN 1670. The closing moment of the door closer shall be not less than 80% of the closing moment measured prior to the test. The acceptance conditions of EN 1670 shall be met for all surfaces of the door closer which are visible :	Before salt spray test 0° ~ 4°: 24,2 Nm 88° ~ 92°: 14,5 Nm 0° ~ maximum: 11,7 Nm Corrosion resistance grade 4 Salt spray time: 240 hour Not found any rust or blister on the visible surface. After salt spray test 0° ~ 4°: 24,6 Nm 88° ~ 92°: 14,9 Nm 0° ~ maximum: 11,7 Nm Not less than 80%	P
5.2.18	Fire/smoke door suitability A door closer for use on a fire/smoke door assembly shall meet the necessary requirements of Annex A :	Grade 0, not suitable for use on fire/smoke door assemblies.	N/A

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Appendix A: Product Documents



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Appendix B: Product photos



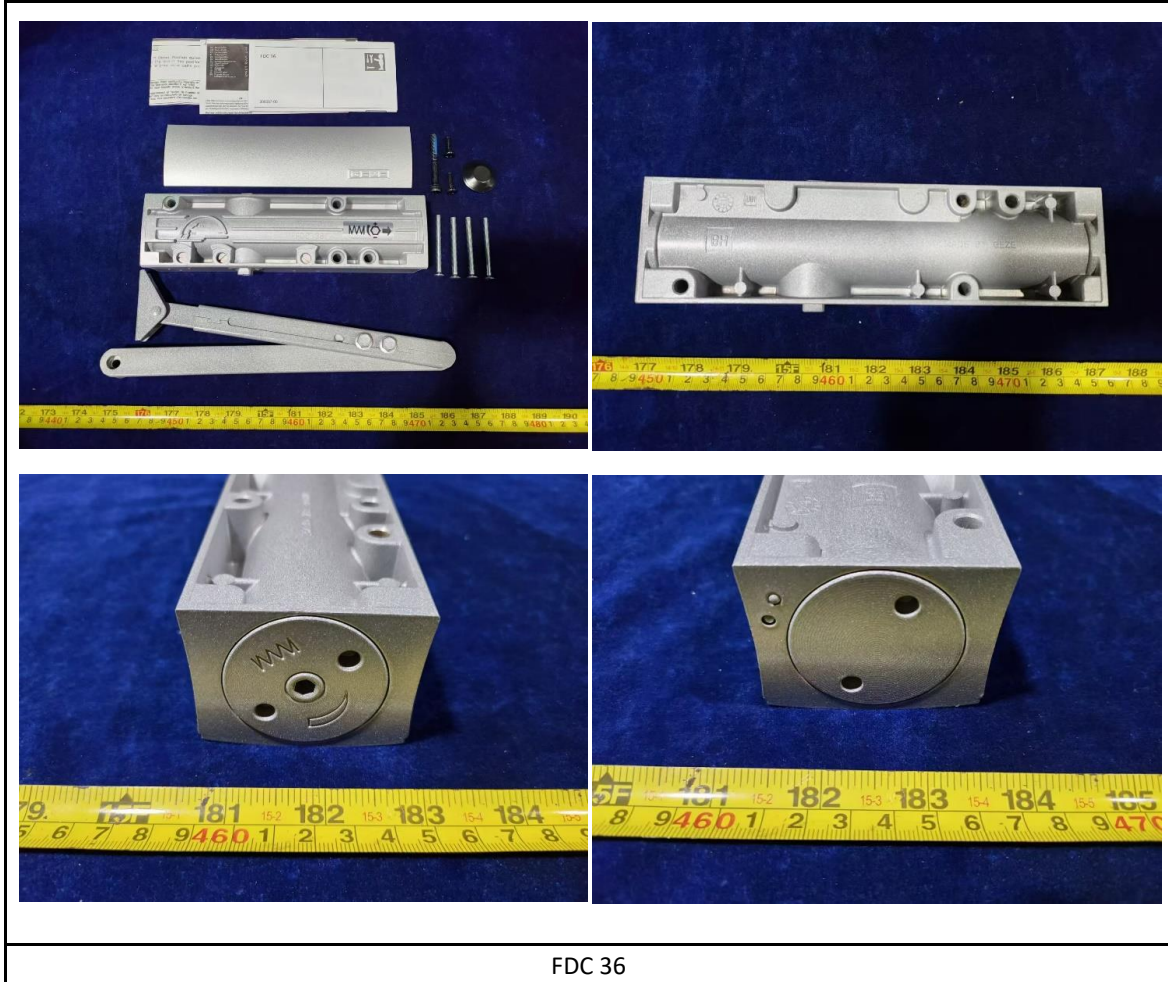
After 240 hours salt spray test

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Appendix B: Product photos



FDC 36

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Revision:

Revision No.	Date	Changes	Author	Reviewer
/	/	First issue	/	/

The End of Report