



## Search results

| You may choose to <a href="#">Refine Your Search.</a> |  |                               |
|---|--|-------------------------------|
| Company Name  | Category Name                                | Link to File                  |
| SHANDONG LEDE MACHINERY CO LTD                        | Butterfly Valves                             | <a href="#">HLXS.EX26457</a>  |
| SHANDONG LEDE MACHINERY CO LTD                        | Butterfly Valves Certified for Canada        | <a href="#">HLXS7.EX26457</a> |
| SHANDONG LEDE MACHINERY CO LTD                        | Check Valves                                 | <a href="#">HMER.EX27050</a>  |
| SHANDONG LEDE MACHINERY CO LTD                        | Check Valves Certified for Canada            | <a href="#">HMER7.EX27050</a> |
| SHANDONG LEDE MACHINERY CO LTD                        | Fittings, Grooved and Plain End              | <a href="#">VIZA.EX15229</a>  |
| SHANDONG LEDE MACHINERY CO LTD                        | Fittings, Rubber Gasketed                    | <a href="#">VIZM.EX15228</a>  |
| SHANDONG LEDE MACHINERY CO LTD                        | Fittings, Welded Outlet                      | <a href="#">VIZU.EX26961</a>  |
| SHANDONG LEDE MACHINERY CO LTD                        | Fittings, Welded Outlet Certified for Canada | <a href="#">VIZU7.EX26961</a> |
| SHANDONG LEDE MACHINERY CO LTD                        | Gate Valves                                  | <a href="#">HMRZ.EX26407</a>  |
| SHANDONG LEDE MACHINERY CO LTD                        | Gate Valves Certified for Canada             | <a href="#">HMRZ7.EX26407</a> |
| Page: 1   |  |                               |

Model number information is not published for all product categories. If you require information about a specific model number, please contact [Customer Service](#) for further assistance.



**Search results**

| You may choose to <a href="#">Refine Your Search.</a> |  |                               |
|---|--|-------------------------------|
| Company Name  | Category Name                            | Link to File                  |
| SHANDONG LEDE MACHINERY CO LTD                        | Strainers, Pipeline                      | <a href="#">HLCV.EX27282</a>  |
| SHANDONG LEDE MACHINERY CO LTD                        | Strainers, Pipeline Certified for Canada | <a href="#">HLCV7.EX27282</a> |
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Model number information is not published for all product categories. If you require information about a specific model number, please contact [Customer Service](#) for further assistance.



## HMRZ.EX26407 Gate Valves

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### Gate Valves

[See General Information for Gate Valves](#)

**SHANDONG LEDE MACHINERY CO LTD**  
No 3998  
West Waihuan N Rd  
Weicheng District  
Weifang, Shandong 261057 CHINA

EX26407

| Pattern     | Model       | Size, in.  | End Configuration | Rated Pressure, psig       |        |
|-------------|-------------|--|-------------------|----------------------------|--------|
| OS&Y        | Z41X-01-2.5 | 2, 2.5, 3, 4, 5, 6, 8, 10, 12                                    | F By F            | 362                        |        |
|             | Z41X-02-2.5 |  |                   |                            |        |
|             | Z41X-01-1.6 | 2, 2.5, 3, 4, 5, 6, 8, 10, 12                                    |                   | 232                        |        |
|             | Z41X-02-1.6 |  |                   |                            |        |
|             | Z41X-03-175 | 2, 2.5, 3, 4, 5, 6, 8, 10, 12                                    |                   | 175                        |        |
|             | Z41X-03-300 | 2, 2.5, 3, 4, 5, 6, 8, 10, 12                                    |                   | 300                        |        |
|             | 1210        | 2, 2.5, 3, 4, 5, 6, 8, 10, 12                                    |                   | 300                        |        |
|             | Z81X-2.5    | 2, 2.5, 2.5 (76.1 mm), 3, 4, 5 (139.7 mm), 5, 6 (165.1 mm), 6, 8 |                   | G by G                     | 362    |
|             | 1211        | 2, 2.5, 3, 4, 5, 6, 8, 10, 12                                    |                   |                            | 362    |
|             | NRS         | Z45X-01-2.5  |                   | 2.5, 3, 4, 5, 6, 8, 10, 12 | F By F |
| Z45X-02-2.5 |             |  |                   |                            |        |
| Z45X-01-1.6 |             | 2.5, 3, 4, 5, 6, 8, 10, 12                                       | 232               |                            |        |
| Z45X-02-1.6 |             |  |                   |                            |        |
| Z45X-03-175 |             | 2.5, 3, 4, 5, 6, 8, 10, 12                                       | 175               |                            |        |
| Z45X-04-175 |             | 4, 5, 6, 8, 10, 12   | 300               |                            |        |
| Z45X-03-300 |             | 2.5, 3, 4, 5, 6, 8, 10, 12                                       |                   |                            |        |
| Z45X-04-300 |             | 4, 5, 6, 8, 10, 12   |                   |                            |        |
| 1110        |             | 2.5, 3, 4, 5, 6, 8, 10, 12                                       |                   |                            |        |
| Z85X-2.5    |             | 2.5, 2.5 (76.1 mm), 3, 4, 5 (139.7 mm), 5, 6 (165.1 mm), 6, 8    | G by G            | 362                        |        |
| 1111        |             | 2.5, 3, 4, 5, 6, 8, 10, 12                                       |                   | 362                        |        |
| 1112        |             | 3, 4, 6, 8, 10, 12   | MJ by MJ          | 362                        |        |
| 1113        |             | 4, 6, 8, 10, 12  |                   | 362                        |        |

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2/15/2017

HMRZ.EX26407 - Gate Valves

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**HMER.EX27050  
Check Valves**[Page Bottom](#)

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**Check Valves**[See General Information for Check Valves](#)**SHANDONG LEDE MACHINERY CO LTD**

EX27050

No 3998

West Waihuan N Rd

Weicheng District

Weifang, Shandong 261057 CHINA

**Swing-type check valve**, Model H44X, sizes 2, 2.5, 3, 4, 5, 6, 8, 10, and 12 in., 9 sizes, flange by flange end configuration, with resilient seat size for rated pressure of 300 psig horizontal and vertical positions.

Model H84X, sizes 2, 2.5, 2.5(76.1mm), 3, 4, 5, 5(139.7mm), 6, 6(165.1mm), 8, 10, and 12 in., 12 sizes, groove by groove end configuration, with resilient seat size for rated pressure of 365 psig horizontal and vertical positions.

Model H44X-01, sizes 2, 2.5, 3, 4, 5, 6, 8, 10, and 12 in., 9 sizes, flange by flange end configuration, with resilient seat size for rated pressure of 300 psig horizontal and vertical positions.

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## HLXS.EX26457 Butterfly Valves

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### Butterfly Valves

[See General Information for Butterfly Valves](#)
**SHANDONG LEDE MACHINERY CO LTD**

EX26457

No 3998

West Waihuan N Rd

Weicheng District

Weifang, Shandong 261057 CHINA

| Model                  | Size, NPS                                      | Body Type | Pressure Rating, psig (Bar) | Indicator Post | Supervisory Switch* |
|------------------------|--|-----------|-----------------------------|----------------|---------------------|
| <b>Butterfly valve</b> |  |           |                             |                |                     |
| XD381X                 | 2, 2.5, 3, 4, 5, 5 (139.7 mm), 6, 6 (165.1 mm) | Groove    | 362                         | —              | I, O                |
|                        | 8  |           | 232                         | —              | I, O                |
| XD371X                 | 2, 2.5, 3, 4, 5, 6                             | Wafer     | 362                         | —              | I, O                |
|                        | 8, 10, 12                                      |           | 232                         | —              | I, O                |

\* I = Indoor installation; O = Outdoor installation

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## HLCV.EX27282 Strainers, Pipeline

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### Strainers, Pipeline

[See General Information for Strainers, Pipeline](#)

#### SHANDONG LEDE MACHINERY CO LTD

EX27282

No 3998

West Waihuan N Rd

Weicheng District

Weifang, Shandong 261057 CHINA

**Strainers, Y type**, Model(s) Model 6101, in sizes 2, 2.5, 3, 4, 5, 6 and 8 with rated pressure of 300 psi utilize an ASME/ANSI B16.1 Class 125 Flange. Loss of head will approximate 2.96 psi (20.43 kPa) for the 2 in. size at 156.9 GPM (594 LPM), 2.91 psi (20.08 kPa) for the 2.5 in. size at 223.8 GPM (847 LPM), 2.76 psi (19.01 kPa) for the 3 in. size at 345.6 GPM (1308 LPM), 2.28 psi (15.69 kPa) for the 4 in. size at 595.2 GPM (2253 LPM), 1.81 psi (12.45 kPa) for the 5 in. size at 935.3 GPM (3541 LPM), 1.70 psi (11.74 kPa) for the 6 in. size at 1350.7 GPM (5113 LPM), 2.37 psi (16.32 kPa) for the 8 in. size at 2338.9 GPM (8854 LPM).

**Strainers, Y type**, Model(s) Model 6102, in sizes 2, 2.5(76.1mm), 3, 4, 5, 5(139.7mm), 6, 6(165.1mm) and 8 with rated pressure of 362 psi utilize an AWWA C606 Groove. Loss of head will approximate 2.96 psi (20.43 kPa) for the 2 in. size at 156.9 GPM (594 LPM), 2.91 psi (20.08 kPa) for the 2.5 in. size at 223.8 GPM (847 LPM), 2.76 psi (19.01 kPa) for the 3 in. size at 345.6 GPM (1308 LPM), 2.28 psi (15.69 kPa) for the 4 in. size at 595.2 GPM (2253 LPM), 1.81 psi (12.45 kPa) for the 5 in. size at 935.3 GPM (3541 LPM), 1.70 psi (11.74 kPa) for the 6 in. size at 1350.7 GPM (5113 LPM), 2.37 psi (16.32 kPa) for the 8 in. size at 2338.9 GPM (8854 LPM)

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# CERTIFICATE OF COMPLIANCE

Certificate Number 20150709-EX26457  
Report Reference EX26457-20150408  
Issue Date 2015-JULY-09

Issued to: SHANDONG LEDE MACHINERY CO LTD  
No 3998  
West Waihuan N Rd  
Weicheng District  
Weifang  
Shandong 261057 CHINA

This is to certify that BUTTERFLY VALVES  
representative samples of See addendum page

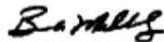
Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1091 - Standard for Butterfly Valves for Fire-Protection Service  
ULC/ORD C1091 - Preliminary Standard for Butterfly valves for fire-protection service  
UL 38 - Standard for Manual Signaling Boxes for Fire Alarm Systems  
UL 753 - Standard for Alarm Accessories for Automatic Water-Supply Control Valves for Fire Protection Service

Additional Information: See the UL Online Certifications Directory at [www.ul.com/database](http://www.ul.com/database) for additional information

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Bruce Mahenzelt, Director North American Certification Program

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20150709-EX26457  
**Report Reference** EX26457-20150408  
**Issue Date** 2015-JULY-09

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

**PRODUCT SUBMITTED:**

UL

| Model  | Size, in.                           | Body Type | Pressure Rating, psig | Indicator Post | Supervisory Switch* |
|--------|-------------------------------------|-----------|-----------------------|----------------|---------------------|
| XD381X | 2,2.5,3,4,5, 5(139.7mm)6,6(165.1mm) | Groove    | 362                   | -              | I, O                |
|        | 8                                   |           | 232                   |                | I, O                |
| XD371X | 2,2.5,3,4,5,6                       | Wafer     | 362                   | -              | I, O                |
|        | 8,10,12                             |           | 232                   |                | I, O                |

CUL

| *Model | Size, in.                         | Body Type | Pressure Rating, psig. | Indicator Post | Supervisory Switch* |
|--------|-----------------------------------|-----------|------------------------|----------------|---------------------|
| XD381X | 2.5,3,4,5,5(139.7mm),6,6(165.1mm) | Groove    | 300                    | -              | I, O                |
|        | 8                                 |           | 232                    |                | I, O                |
| XD371X | 2.5,3,4,5,6                       | Wafer     | 300                    | -              | I, O                |
|        | 8,10,12                           |           | 232                    |                | I, O                |

**Note:**

For the valve sizes 6 in. and smaller, configured with operator CDT-24, for the valve sizes 8 in. and larger, configured with operator CDT-30.  
 The shaft material designation is SS431

  
 Bruce Mahrenholz, Director North American Certification Program  
 UL LLC

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20150709-EX26457  
**Report Reference** EX26457-20150408  
**Issue Date** 2015-JULY-09

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

**PRODUCT SUBMITTED:**

UL

| Model  | Size, in.                           | Body Type | Pressure Rating, psig | Indicator Post | Supervisory Switch* |
|--------|-------------------------------------|-----------|-----------------------|----------------|---------------------|
| XD381X | 2,2.5,3,4,5, 5(139.7mm)6,6(165.1mm) | Groove    | 362                   | -              | I, O                |
|        | 8                                   |           | 232                   |                | I, O                |
| XD371X | 2,2.5,3,4,5,6                       | Wafer     | 362                   |                | I, O                |
|        | 8,10,12                             |           | 232                   |                | I, O                |

CUL

| *Model | Size, in.                         | Body Type | Pressure Rating, psig. | Indicator Post | Supervisory Switch* |
|--------|-----------------------------------|-----------|------------------------|----------------|---------------------|
| XD381X | 2.5,3,4,5,5(139.7mm),6,6(165.1mm) | Groove    | 300                    | -              | I, O                |
|        | 8                                 |           | 232                    |                | I, O                |
| XD371X | 2.5,3,4,5,6                       | Wafer     | 300                    |                | I, O                |
|        | 8,10,12                           |           | 232                    |                | I, O                |

**Note:**

For the valve sizes 6 in. and smaller, configured with operator CDT-24, for the valve sizes 8 in. and larger, configured with operator CDT-30.  
 The shaft material designation is SS431

*B. Mahholz*

Bruce Mahrenzholz, Director North American Certification Program  
 UL LLC

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# CERTIFICATE OF COMPLIANCE

Certificate Number 20160226- EX27050  
Report Reference EX27050-20160224  
Issue Date 2016-FEBRUARY-26

Issued to: SHANDONG LEDE MACHINERY CO LTD  
No 3998  
West Waihuan N Rd  
Weicheng District  
Weifang  
Shandong 261057 CHINA

This is to certify that  
representative samples of CHECK VALVES  
Models- H44X, H84X, H44X-01

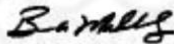
Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 312 and ULC/ORD-C312 Check Valves for Fire-  
Protection Service

Additional Information: See the UL Online Certifications Directory at  
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# CERTIFICATE OF COMPLIANCE

Certificate Number 20150306- EX26407  
Report Reference EX26407 -20150306  
Issue Date 2015-MARCH-06

Issued to: SHANDONG LEDE MACHINERY CO LTD  
No 3998, West Waihuan N Rd  
Weicheng District, Weifang, Shandong 261057 CHINA

This is to certify that  
representative samples of GATE VALVES  
USL – Gate Valve  
Type OS&Y: Z41X-01-2.5, Z41X-02-2.5, Z41X-01-1.6,  
Z41X-02-1.6, Z41X-03-175, Z41X-03-300, Z81X-2.5

USL, CNL – Gate Valve  
Type OS&Y: Z41X-01-2.5, Z41X-02-2.5, Z41X-01-1.6,  
Z41X-02-1.6, Z41X-03-175, Z41X-03-300, Z81X-2.5  
Type NRS: Z45X-01-2.5, Z45X-02-2.5, Z45X-01-1.6,  
Z45X-02-1.6, Z45X-03-175, Z45X-04-175, Z45X-03-300,  
Z45X-04-300, Z85X-2.5

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 262 - Gate Valves for Fire-Protection Service  
ULC/ORD-C262 - Gate Valves for Fire-Protection Service  
UL746A - Polymeric Materials - Short Term Property  
Evaluations

Additional Information: See the UL Online Certifications Directory at  
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Bruce Mehrholz, Assistant Chief Engineer, Global Inspection and Field Services  
UL LLC

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# Certificate of Compliance

This certificate is issued for the following:

## **Fire Service Water Control Valves (OS&Y and NRS Type Gate Valves)**

**Model Z41X, Z81X, 1210 and 1211 - OS&Y type  
Model Z45X, Z85X, 1110, 1112 and 1113 - NRS type**

**Sizes 2, 2-1/2, 3, 4, 5, 6, 8, 10 and 12 inch NPS**

### **Prepared For:**

Shandong Lede Machinery Co., Ltd.  
No. 3998 West Weinuan N Road  
Weicheng District  
Weifang City, Shandong 261057  
China

### **Manufactured at:**

Shandong Lede Machinery Co., Ltd.  
No. 3998 West Weinuan N Road  
Weicheng District  
Weifang City, Shandong 261057  
China

FM Approvals Class: 1120/1130, dated April 1997

Approval Identification: PR454628

Approval Granted: November 22, 2019

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

A handwritten signature in black ink, appearing to read 'D.B. Fuller', written over a horizontal line.

David B. Fuller  
VP – Manager, Fire Protection  
FM Approvals  
1151 Boston-Providence Turnpike  
Norwood, MA 02062 USA



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# APPROVAL REPORT

**Project No:** PR454628  
**Class:** 1120/1130  
**Product Type:** Fire Service Water Control Valves  
**Product Name:** Model Z41X, Z81X, 1210 and 1211 OS&Y gate valves and Model Z45X, Z85X, 1110, 1112 and 1113 NRS gate valves  
**Name of Report Holder:** Shandong Lede Machinery Co., Ltd.  
**Address of Report Holder:** No. 3998 West Weihuan N Rd  
Weicheng Dist, Weifang City  
Shandong 261057, China  
**Customer ID:** 113572  
**Customer Website:** <http://wflede.com>

**Prepared by**

Daniel T. Desautel  
Engineer

**Reviewed by**

Stanley M. Ziobro  
AVP, Technical Team Manager

David B. Fuller  
VP, Manager of Fire Protection

**November 22, 2019**

**Date of Approval**

**1 INTRODUCTION**

1.1 Shandong Lede Machinery Co., Ltd. requested FM Approval of their Model Z41X, Z81X, 1210 and 1211 OS&Y gate valves and Model Z45X, Z85X, 1110, 1112 and 1113 NRS gate valves in sizes 2 through 12 inch NPS for compliance with the standard listed in Section 1.3.

1.2 This Report may be freely reproduced only in its entirety and without modification.

**1.3 Standards**

**FM Approvals Standards**

| Title  | Number    | Issue Date |
|--|-----------|------------|
| Fire Service Water Control Valves<br>(OS&Y and NRS Type Gate Valves) | 1120/1130 | April 1997 |

**1.4 Listing**

The OS&Y and NRS type gate valves, discussed in this report, will be updated in the Approval Guide, an on-line resource of FM Approvals, as detailed in an attachment at the end of this Report. Deletions from any current product listing are shown with strikethroughs and additions to the current Approval listing are shown in red text.

**2 DESCRIPTION**

2.1 This Approval examination was opened to certify Model Z41X, Z81X, 1210 and 1211 OS&Y gate valves and Model Z45X, Z85X, 1110, 1112 and 1113 NRS gate valves in sizes 2 through 12 inch NPS.

2.2 The NRS and OS&Y gate valves discussed in this report are identical to those previously FM Approved under Project ID 3051487 dated April 3, 2015 and Project ID 3060255 dated March 28, 2017.

2.3 The rated working pressure of the Model 1210 outside screw and yoke type and Model 1110 inside screw type gate valves with Flange x Flange end connections discussed in this Report is 300 psi (2070 kPa).

2.4 The rated working pressure of the Model 1211 outside screw and yoke type gate valves with Groove x Groove end connections discussed in this Report is 362 psi (2500 kPa).

2.5 The rated working pressure of the Model 1112 and 1113 inside screw type gate valves with mechanical joint end connections discussed in this Report is 362 psi (2500 kPa). The two models are identical. The Model 1113 has an indicator post flange.

2.6 The maximum rated working pressure of the Model Z41X outside screw and yoke type gate valves is 365 psi (2500 kPa). However, alternate pressure ratings of 175 psi (1205 kPa), 232 psi (1600 kPa) and 300 psi (2070 kPa) are listed. All listed Model Z41X gate valves are identical in physical construction, with the exception of the pressure rating suffix in the model number and associated valve markings.

- 2.7** The maximum rated working pressure of the Model Z45X inside screw type gate valves is 365 psi (2500 kPa). However, alternate pressure ratings of 175 psi (1205 kPa), 232 psi (1600 kPa) and 300 psi (2070 kPa) are listed. All listed Model Z45X gate valves are identical in physical construction, with the exception of the pressure rating suffix in the model number and associated valve markings.
- 2.8** The rated working pressure of the Model Z81X outside screw and yoke type and Z85X inside screw type gate valves discussed in this Report is 365 psi (2500 kPa).
- 2.9** Major components of the Model 1210 and 1211 OS&Y type and Model 1110, 1112 and 1113 NRS type gate valves discussed in this Report are made of the following materials:

| <u>Component</u>         | <u>Material</u>            |
|--------------------------|----------------------------|
| Body, Bonnet             | Cast Ductile Iron          |
| Disc                     | Cast Ductile Iron and EPDM |
| Sealing Ring             | EPDM                       |
| Stem                     | Stainless Steel, 304       |
| Handwheel, Operating Nut | Cast Ductile Iron          |
| Packing                  | PTFE                       |

These gate valves are manufactured to conform with the requirements of AWWA C515.

- 2.10** Major components of the Z41X and Z81X Series OS&Y type and Model Z45X and Z85X Series NRS type gate valves discussed in this Report are made of the following materials:

| <u>Component</u>         | <u>Material</u>            |
|--------------------------|----------------------------|
| Body, Bonnet             | Cast Ductile Iron, QT500-7 |
| Disc                     | Cast Ductile Iron and EPDM |
| Sealing Ring             | EPDM                       |
| Stem                     | Steel, 1Cr17Ni2            |
| Handwheel, Operating Nut | Cast Ductile Iron, QT500-7 |
| Packing                  | PTFE                       |

These gate valves are manufactured to conform with the requirements of BS5163.

- 2.11** All wetted ductile iron components of the gate valves discussed in this Report are coated with red fusion bonded epoxy powder coating manufactured by Azko Nobel Powder Coating GmbH.

### **3 EXAMINATIONS AND TESTS**

- 3.1** Samples were submitted for examination and testing. The samples were considered to be representative of the product line and were examined, tested, and compared to the manufacturer's drawings. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.



3.2 All testing and analysis considered appropriate was conducted and verified to be in compliance with the standard defined in Section 1.3.

#### 4 MARKING

4.1 The following information appears on all valves identified within this Report and meets standard requirements:

- Manufacturer's name or trademark
- Date of manufacturer or code traceable to date of manufacture or lot identification
- Model (designation, stock number, etc.)
- Valve Size
- Rated Working Pressure
- The FM Mark of Approval

#### 5 REMARKS

5.1 The FM Global Property Loss Prevention Data Sheets should be strictly adhered to when installing this product.

5.2 Installations shall comply with the latest edition of the manufacturer's instruction manual.

#### 6 SURVEILLANCE AUDIT

The design and manufacturing facilities at the following locations are subject to follow-up audit inspections. The facilities and quality control procedures in place have been found to be satisfactory to manufacture product identical to that examined and tested as described in this Report. An FM Approved Product Revision Request Form shall be submitted to FM Approvals for requesting any additional manufacturing facilities which are not listed below. The products discussed in this Report are FM Approved only when designed and manufactured in the following facilities:

##### **Design**

Shandong Lede Machinery Co., Ltd.  
No. 3998 West Weihuan N Rd  
Weicheng Dist, Weifang City  
Shandong 261057  
China

##### **Manufacturing**

Shandong Lede Machinery Co., Ltd.  
No. 3998 West Weihuan N Rd  
Weicheng Dist, Weifang City  
Shandong 261057  
China

#### 7 MANUFACTURER'S RESPONSIBILITIES

7.1 Documentation considered critical to this Approval is on file at FM Approvals and is listed in the Documentation File, Section 8, of this Report. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The FM Approved Product Revision Request Form shall be forwarded to FM Approvals as notice of proposed changes.

7.2 The manufacturer is responsible for control of the product marking and installation instructions for the product.

7.3 The manufacturer shall provide installation, operating, and maintenance manual(s) with each system.

7.4 In accordance with the Master Agreement, the manufacturer shall make full and immediate disclosure to FM Approvals of all information concerning any defect in, or potential hazard of, the product or service manufactured or provided by the Customer which is Approved by, or being examined by, FM Approvals. The manufacturer shall make all necessary arrangements for the investigation of complaints / anomalies applicable to this approval and shall keep records of all complaints / anomalies including actions taken.

7.5 Test Requirement No. 1 – Seat Leakage

The manufacturer shall test 100 percent of production valves for seat leakage to the rated working pressure. Seating torque shall not exceed the requirements of Section 4.9, “Resilient Seat Leakage,” in compliance with the standard(s) defined in Section 1.3. The pressure shall be held for a minimum of 15 seconds with seat leakage not to exceed 0.075 in<sup>3</sup> (1.25 cm<sup>3</sup>) for metal-seated valves and zero leakage for resilient-seated valves. Following the seat leakage test, all valves shall be opened through their full travel range with no evidence of sticking or binding.

7.6 Test Requirement No. 2 – Body Leakage

The manufacturer shall test 100 percent of production valves for body leakage to twice the rated working pressure. The pressure shall be held for a minimum of 1 minute with no evidence of body leakage or distortion.

**8 DOCUMENTATION FILE**

All pertinent Report documents are outlined in the ATTACHMENTS list below.

**9 CONCLUSION**

The Model Z41X, Z81X, 1210 and 1211 OS&Y gate valves and Model Z45X, Z85X, 1110, 1112 and 1113 NRS gate valves in sizes 2 through 12 inch NPS meet FM Approvals requirements. Since a duly signed Master Agreement is on file for this manufacturer, Approval is effective the date of this Report.

**PROJECT DATA RECORD:** PR454628

**ATTACHMENTS:** Listing Sheet for Model Z41X, Z81X, 1210 and 1211  
Listing Sheet for Model Z45X, Z85X, 1110, 1112 and 1113  
CDL Control Drawing Blueprint Report

## Listing Sheet for Model Z41X, Z81X, 1210 and 1211

Automatic Sprinkler Systems  Valves  Gate Valves  Outside Screw and Yoke Gate Valves

### Model Z41X-150

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection            |
|------------|---|------------------------|---------------------------|
| Z41X-150   | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 175 psi (1205 kPa)     | Flange x Flange<br>(ANSI) |

### Model Z41X-300

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection            |
|------------|---|------------------------|---------------------------|
| Z41X-300   | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 300 psi (2070 kPa)     | Flange x Flange<br>(ANSI) |

### Model Z41X-1.6

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection                   |
|------------|---|------------------------|----------------------------------|
| Z41X-1.6   | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 232 psi (1600 kPa)     | Flange x Flange<br>(EN, BS, ISO) |

### Model Z41X-2.5

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection                   |
|------------|---|------------------------|----------------------------------|
| Z41X-2.5   | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 365 psi (2500 kPa)     | Flange x Flange<br>(EN, BS, ISO) |

**Model Z81X-2.5**

Resilient Seated Gate Valves. 2 through 8 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection                |
|------------|---|------------------------|-------------------------------|
| Z81X-2.5   | 2, 2-1/2, 3, 4, 5, 6, 8<br>(50, 65, 80, 100, 125, 150, 200) | 365 psi (2500 kPa)     | Groove x Groove<br>(GB, AWWA) |

**Model 1210**

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressures:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection            |
|------------|---|------------------------|---------------------------|
| 1210       | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 300 psi (2070 kPa)     | Flange x Flange<br>(ANSI) |

**Model 1211**

Resilient Seated Gate Valves. 3 through 12 inch NPS. Available with the following end connections and rated working pressures:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection            |
|------------|---|------------------------|---------------------------|
| 1211       | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 362 psi (2500 kPa)     | Groove x Groove<br>(AWWA) |

## Listing Sheet for Model Z45X, Z85X, 1110, 1112 and 1113

Automatic Sprinkler Systems  Valves  Gate Valves  Inside Screw Gate Valves

### Model Z45X-150

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection            |
|------------|---|------------------------|---------------------------|
| Z45X-150   | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 175 psi (1205 kPa)     | Flange x Flange<br>(ANSI) |

### Model Z45X-300

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection            |
|------------|---|------------------------|---------------------------|
| Z45X-300   | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 300 psi (2070 kPa)     | Flange x Flange<br>(ANSI) |

### Model Z45X-1.6

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection                   |
|------------|---|------------------------|----------------------------------|
| Z45X-1.6   | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 232 psi (1600 kPa)     | Flange x Flange<br>(EN, BS, ISO) |

### Model Z45X-2.5

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection                   |
|------------|---|------------------------|----------------------------------|
| Z45X-2.5   | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 365 psi (2500 kPa)     | Flange x Flange<br>(EN, BS, ISO) |

**Model Z85X-2.5**

Resilient Seated Gate Valves. 2 through 8 inch NPS. Available with the following end connections and rated working pressure:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection                |
|------------|---|------------------------|-------------------------------|
| Z85X-2.5   | 2, 2-1/2, 3, 4, 5, 6, 8<br>(50, 65, 80, 100, 125, 150, 200) | 365 psi (2500 kPa)     | Groove x Groove<br>(GB, AWWA) |

**Model 1110**

Resilient Seated Gate Valves. 2 through 12 inch NPS. Available with the following end connections and rated working pressures:

| Model Name | Size, in. (mm)  | Rated Working Pressure | End Connection            |
|------------|---|------------------------|---------------------------|
| 1110       | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>(50, 65, 80, 100, 125, 150, 200, 250, 300) | 300 psi (2070 kPa)     | Flange x Flange<br>(ANSI) |

**Model 1112**

Resilient Seated Gate Valves. 3 through 12 inch NPS. Available with the following end connections and rated working pressures:

| Model Name | Size, in. (mm)                                      | Rated Working Pressure | End Connection |
|------------|---|------------------------|----------------|
| 1112       | 3, 4, 6, 8, 10, 12<br>(80, 100, 150, 200, 250, 300) | 362 psi (2500 kPa)     | MJ             |

**Model 1113**

Resilient Seated Gate Valves. 4 through 12 inch NPS with Indicator Post Flange. Available with the following end connections and rated working pressures:

| Model Name | Size, in. (mm)                               | Rated Working Pressure | End Connection |
|------------|--|------------------------|----------------|
| 1113       | 4, 6, 8, 10, 12<br>(100, 150, 200, 250, 300) | 362 psi (2500 kPa)     | MJ             |

## CDL Control Drawing Blueprint Report

**Blueprint Report****Shandong Lede Machinery Co Ltd (113572)****Class No 1120****Original Project I.D. 3060255**

| <u>Drawing No.</u>      | <u>Revision Level</u> | <u>Drawing Title</u>        | <u>Last Report</u> | <u>Electronic Drawing</u> |
|-------------------------|-----------------------|-----------------------------|--------------------|---------------------------|
| 11-2000025-100-150-22   | -                     | Wrench Nut DN100-DN150      | 3060255            | Yes (pdf)                 |
| 11-2000025-200-22       | -                     | Wrench Nut DN200            | 3060255            | Yes (pdf)                 |
| 11-2000025-250-23       | -                     | Indicator Post Flange DN250 | 3060255            | Yes (pdf)                 |
| 11-2000025-250-300-22   | -                     | Wrench Nut DN250-DN300      | 3060255            | Yes (pdf)                 |
| 11-2000025-300-23       | -                     | Indicator Post Flange DN300 | 3060255            | Yes (pdf)                 |
| 1110-Mark               | -                     | 1110-Mark                   | 3060255            | Yes (pdf)                 |
| 1112-Mark               | -                     | 1112-Mark                   | 3060255            | Yes (pdf)                 |
| 1113-Mark               | -                     | 1113-Mark                   | 3060255            | Yes (pdf)                 |
| 1210-Mark               | -                     | 1210-Mark                   | 3060255            | Yes (pdf)                 |
| 1211-Mark               | -                     | 1211-Mark                   | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-10"-00  | -                     | Assembly AWWA 10" 362PSI MJ | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-10"-01  | -                     | Body AWWA 10" 362PSI MJ     | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-12"-00  | -                     | Assembly AWWA 12" 362PSI MJ | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-12"-01  | -                     | Body AWWA 12" 362PSI MJ     | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-3"-00   | -                     | Assembly AWWA 3" 362PSI MJ  | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-3"-01   | -                     | Body AWWA 3" 362PSI MJ      | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-4"-00I  | -                     | Assembly AWWA 4"362PSI MJ   | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-4"-00   | -                     | Assembly AWWA 4" 362PSI MJ  | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-4"-01   | -                     | Body AWWA 4" 362PSI MJ      | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-6"-00I  | -                     | Assembly AWWA 6" 362PSI MJ  | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-6"-00   | -                     | Assembly AWWA 6" 362PSI MJ  | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-6"-01   | -                     | Body AWWA 6" 362PSI MJ      | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-8"-00   | -                     | Assembly AWWA 8" 362PSI MJ  | 3060255            | Yes (pdf)                 |
| 17(MJ)-20000362-8"-01   | -                     | Body AWWA 8" 362PSI MJ      | 3060255            | Yes (pdf)                 |
| 17(MJ)-20003362-10"-00I | -                     | Assembly AWWA 10" 362PSI MJ | 3060255            | Yes (pdf)                 |
| 17(MJ)-20003362-12"-00I | -                     | Assembly AWWA 12" 362PSI MJ | 3060255            | Yes (pdf)                 |
| 17(MJ)-20003362-8"-00I  | -                     | Assembly AWWA 8" 362PSI MJ  | 3060255            | Yes (pdf)                 |
| 17-20003300-10"-00      | -                     | Assembly AWWA 10" 300PSI    | 3060255            | Yes (pdf)                 |
| 17-20003300-10"-01      | -                     | Body AWWA 10" 300PSI        | 3060255            | Yes (pdf)                 |
| 17-20003300-10"-21      | -                     | Handwheel AWWA OD406        | 3060255            | Yes (pdf)                 |
| 17-20003300-12"-00      | -                     | Assembly AWWA 12" 300PSI    | 3060255            | Yes (pdf)                 |
| 17-20003300-12"-01      | -                     | Body AWWA 12" 300PSI        | 3060255            | Yes (pdf)                 |
| 17-20003300-2"-00       | -                     | Assembly AWWA 2" 300PSI     | 3060255            | Yes (pdf)                 |
| 17-20003300-2"-01       | -                     | Body AWWA 2" 300PSI         | 3060255            | Yes (pdf)                 |
| 17-20003300-2.5"-00     | -                     | Assembly AWWA 2.5" 300PSI   | 3060255            | Yes (pdf)                 |
| 17-20003300-2.5"-01     | -                     | Body AWWA 2.5" 300PSI       | 3060255            | Yes (pdf)                 |
| 17-20003300-2.5"-21     | -                     | Handwheel AWWA OD178        | 3060255            | Yes (pdf)                 |
| 17-20003300-3"-00       | -                     | Assembly AWWA 3" 300PSI     | 3060255            | Yes (pdf)                 |
| 17-20003300-3"-01       | -                     | Body AWWA 3" 300PSI         | 3060255            | Yes (pdf)                 |
| 17-20003300-3"-06       | -                     | Bonnet AWWA 3" 300PSI       | 3060255            | Yes (pdf)                 |
| 17-20003300-3"-09       | -                     | Upper Cover AWWA 3" 300PSI  | 3060255            | Yes (pdf)                 |
| 17-20003300-3"-21       | -                     | Handwheel AWWA OD178        | 3060255            | Yes (pdf)                 |

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|                            |   |                             |         |           |
|----------------------------|---|-----------------------------|---------|-----------|
| 17-20003300-4"-00          | - | Assembly AWWA 4" 300PSI     | 3060255 | Yes (pdf) |
| 17-20003300-4"-01          | - | Body AWWA 4" 300PSI         | 3060255 | Yes (pdf) |
| 17-20003300-4"-06          | - | Bonnet AWWA 4" 300PSI       | 3060255 | Yes (pdf) |
| 17-20003300-4"-09          | - | Upper Cover AWWA 4" 300PSI  | 3060255 | Yes (pdf) |
| 17-20003300-4"-21          | - | Handwheel AWWA OD254        | 3060255 | Yes (pdf) |
| 17-20003300-5"-00          | - | Assembly AWWA 5" 300PSI     | 3060255 | Yes (pdf) |
| 17-20003300-5"-01          | - | Body AWWA 5" 300PSI         | 3060255 | Yes (pdf) |
| 17-20003300-5"-06          | - | Bonnet AWWA 5" 300PSI       | 3060255 | Yes (pdf) |
| 17-20003300-6"-00          | - | Assembly AWWA 6" 300PSI     | 3060255 | Yes (pdf) |
| 17-20003300-6"-01          | - | Body AWWA 6" 300PSI         | 3060255 | Yes (pdf) |
| 17-20003300-6"-06          | - | Bonnet AWWA 6" 300PSI       | 3060255 | Yes (pdf) |
| 17-20003300-6"-09          | - | Upper Cover AWWA 6" 300PSI  | 3060255 | Yes (pdf) |
| 17-20003300-6"-21          | - | Handwheel AWWA OD305        | 3060255 | Yes (pdf) |
| 17-20003300-8"-00          | - | Assembly AWWA 8" 300PSI     | 3060255 | Yes (pdf) |
| 17-20003300-8"-01          | - | Body AWWA 8" 300PSI         | 3060255 | Yes (pdf) |
| 17-20003300-8"-09          | - | Upper Cover AWWA 8" 300PSI  | 3060255 | Yes (pdf) |
| 17-20003300-8"-21          | - | Handwheel AWWA OD356        | 3060255 | Yes (pdf) |
| 17-20003362-4"-23          | - | Indicator Post Flange 4"    | 3060255 | Yes (pdf) |
| 17-20003362-6"-22          | - | Wrench Nut 6"               | 3060255 | Yes (pdf) |
| 17-20003362-6"-23          | - | Indicator Post Flange 6"    | 3060255 | Yes (pdf) |
| 17-20003362-8"-23          | - | Indicator Post Flange 8"    | 3060255 | Yes (pdf) |
| 17-60003300-10"-04         | - | Stem AWWA 10" 300PSI        | 3060255 | Yes (pdf) |
| 17-60003300-12"-04         | - | Stem AWWA 12" 300PSI        | 3060255 | Yes (pdf) |
| 17-60003300-2.5"-04        | - | Stem AWWA 2.5" 300PSI       | 3060255 | Yes (pdf) |
| 17-60003300-3"-04          | - | Stem AWWA 3" 300PSI         | 3060255 | Yes (pdf) |
| 17-60003300-4"-04          | - | Stem AWWA 4" 300PSI         | 3060255 | Yes (pdf) |
| 17-60003300-5"-04          | - | Stem AWWA 5" 300PSI         | 3060255 | Yes (pdf) |
| 17-60003300-6"-04          | - | Stem AWWA 6" 300PSI         | 3060255 | Yes (pdf) |
| 17-60003300-8"-04          | - | Stem AWWA 8" 300PSI         | 3060255 | Yes (pdf) |
| 17-70003300-10"-03         | - | Stem nut AWWA 10" 300PSI    | 3060255 | Yes (pdf) |
| 17-70003300-12"-03         | - | Stem nut AWWA 12" 300PSI    | 3060255 | Yes (pdf) |
| 17-70003300-2.5"-03        | - | Stem nut AWWA 2.5" 300PSI   | 3060255 | Yes (pdf) |
| 17-70003300-3"-03          | - | Stem nut AWWA 3" 300PSI     | 3060255 | Yes (pdf) |
| 17-70003300-4"-03          | - | Stem nut AWWA 4" 300PSI     | 3060255 | Yes (pdf) |
| 17-70003300-4"-08          | - | Sliding disc AWWA 4" 300PSI | 3060255 | Yes (pdf) |
| 17-70003300-5"-03          | - | Stem nut AWWA 5" 300PSI     | 3060255 | Yes (pdf) |
| 17-70003300-6"-03          | - | Stem nut AWWA 6" 300PSI     | 3060255 | Yes (pdf) |
| 17-70003300-6"-08          | - | Sliding disc AWWA 6" 300PSI | 3060255 | Yes (pdf) |
| 17-70003300-8"-03          | - | Stem nut AWWA 8" 300PSI     | 3060255 | Yes (pdf) |
| 17-80003300-3"-02          | - | Wedge AWWA 3" 300PSI        | 3060255 | Yes (pdf) |
| 17-80003300-4"-02          | - | Wedge AWWA 4" 300PSI        | 3060255 | Yes (pdf) |
| 17-80003300-4"-07          | - | Sealing ring AWWA 4" 300PSI | 3060255 | Yes (pdf) |
| 17-80003300-6"-02          | - | Wedge AWWA 6" 300PSI        | 3060255 | Yes (pdf) |
| 17-80003300-6"-07          | - | Sealing ring AWWA 6" 300PSI | 3060255 | Yes (pdf) |
| 17-80003300-8"-07          | - | Sealing ring AWWA 8" 300PSI | 3060255 | Yes (pdf) |
| 17G-20003362-10"(273)-01   | - | Body AWWA 10"-273 362PSI    | 3060255 | Yes (pdf) |
| 17G-20003362-12"(323.9)-01 | - | Body AWWA 12"-323.9 362PSI  | 3060255 | Yes (pdf) |
| 17G-20003362-2"(60)-01     | - | Body AWWA 2"-60 362PSI      | 3060255 | Yes (pdf) |
| 17G-20003362-2.5"(73)-01   | - | Body AWWA 2.5"-73 362PSI    | 3060255 | Yes (pdf) |
| 17G-20003362-3"(88.9)-01   | - | Body AWWA 3"-88.9 362PSI    | 3060255 | Yes (pdf) |
| 17G-20003362-4"(114)-01    | - | Body AWWA 4"-114 362PSI     | 3060255 | Yes (pdf) |
| 17G-20003362-5"(141)-01    | - | Body AWWA 5"-141 362PSI     | 3060255 | Yes (pdf) |



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|                         |   |   |         |           |
|-------------------------|---|---|---------|-----------|
| 17G-20003362-6"(168)-01 | - | Body AWWA 6"-168 362PSI                 | 3060255 | Yes (pdf) |
| 17G-20003362-8"(219)-01 | - | Body AWWA 8"-219 362PSI                 | 3060255 | Yes (pdf) |
| 18-20003300-10"-00      | - | Assembly AWWA 10" 300PSI                | 3060255 | Yes (pdf) |
| 18-20003300-10"-06      | - | Bonnet AWWA 10" 300PSI                  | 3060255 | Yes (pdf) |
| 18-20003300-10"-10      | - | Gland AWWA 10" 300PSI                   | 3060255 | Yes (pdf) |
| 18-20003300-10"-21      | - | Handwheel AWWA OD406                    | 3060255 | Yes (pdf) |
| 18-20003300-12"-00      | - | Assembly AWWA 12" 300PSI                | 3060255 | Yes (pdf) |
| 18-20003300-12"-06      | - | Bonnet AWWA 12" 300PSI                  | 3060255 | Yes (pdf) |
| 18-20003300-2"-00       | - | Assembly AWWA 2" 300PSI                 | 3060255 | Yes (pdf) |
| 18-20003300-2.5"-00     | - | Assembly AWWA 2.5" 300PSI               | 3060255 | Yes (pdf) |
| 18-20003300-2.5"-06     | - | Bonnet AWWA 2.5" 300PSI                 | 3060255 | Yes (pdf) |
| 18-20003300-2.5"-10     | - | Gland AWWA 2.5" 300PSI                  | 3060255 | Yes (pdf) |
| 18-20003300-2.5"-21     | - | Handwheel AWWA OD178                    | 3060255 | Yes (pdf) |
| 18-20003300-3"-00       | - | Assembly AWWA 3" 300PSI                 | 3060255 | Yes (pdf) |
| 18-20003300-3"-06       | - | Bonnet AWWA 3" 300PSI                   | 3060255 | Yes (pdf) |
| 18-20003300-3"-10       | - | Gland AWWA 3" 300PSI                    | 3060255 | Yes (pdf) |
| 18-20003300-3"-21       | - | Handwheel AWWA OD178                    | 3060255 | Yes (pdf) |
| 18-20003300-4"-00       | - | Assembly AWWA 4" 300PSI                 | 3060255 | Yes (pdf) |
| 18-20003300-4"-06       | - | Bonnet AWWA 4" 300PSI                   | 3060255 | Yes (pdf) |
| 18-20003300-4"-10       | - | Gland AWWA 4" 300PSI                    | 3060255 | Yes (pdf) |
| 18-20003300-4"-21       | - | Handwheel AWWA OD254                    | 3060255 | Yes (pdf) |
| 18-20003300-5"-00       | - | Assembly AWWA 5" 300PSI                 | 3060255 | Yes (pdf) |
| 18-20003300-5"-06       | - | Bonnet AWWA 5" 300PSI                   | 3060255 | Yes (pdf) |
| 18-20003300-6"-00       | - | Assembly AWWA 6" 300PSI                 | 3060255 | Yes (pdf) |
| 18-20003300-6"-06       | - | Bonnet AWWA 6" 300PSI                   | 3060255 | Yes (pdf) |
| 18-20003300-6"-10       | - | Gland AWWA 6" 300PSI                    | 3060255 | Yes (pdf) |
| 18-20003300-6"-21       | - | Handwheel AWWA OD305                    | 3060255 | Yes (pdf) |
| 18-20003300-8"-00       | - | Assembly AWWA 8" 300PSI                 | 3060255 | Yes (pdf) |
| 18-20003300-8"-06       | - | Bonnet AWWA 8" 300PSI                   | 3060255 | Yes (pdf) |
| 18-20003300-8"-10       | - | Gland AWWA 8" 300PSI                    | 3060255 | Yes (pdf) |
| 18-20003300-8"-21       | - | Handwheel AWWA OD356                    | 3060255 | Yes (pdf) |
| 18-60003300-10"-04      | - | Stem AWWA 10" 300PSI                    | 3060255 | Yes (pdf) |
| 18-60003300-12"-04      | - | Stem AWWA 12" 300PSI                    | 3060255 | Yes (pdf) |
| 18-60003300-2.5"-04     | - | Stem AWWA 2.5" 300PSI                   | 3060255 | Yes (pdf) |
| 18-60003300-3"-04       | - | Stem AWWA 3" 300PSI                     | 3060255 | Yes (pdf) |
| 18-60003300-4"-04       | - | Stem AWWA 4" 300PSI                     | 3060255 | Yes (pdf) |
| 18-60003300-5"-04       | - | Stem AWWA 5" 300PSI                     | 3060255 | Yes (pdf) |
| 18-60003300-6"-04       | - | Stem AWWA 6" 300PSI                     | 3060255 | Yes (pdf) |
| 18-60003300-8"-04       | - | Stem AWWA 8" 300PSI                     | 3060255 | Yes (pdf) |
| 18-70003300-10"-03      | - | Stem Nut AWWA 10" 300PSI                | 3060255 | Yes (pdf) |
| 18-70003300-10"-07      | - | Handwheel Nut AWWA 10" 300PSI           | 3060255 | Yes (pdf) |
| 18-70003300-10"-08      | - | Upside Sliding disc AWWA 10" 300PSI     | 3060255 | Yes (pdf) |
| 18-70003300-10"-09      | - | Underside Sliding disc AWWA 10" 300PSI  | 3060255 | Yes (pdf) |
| 18-70003300-2.5"-03     | - | Stem Nut AWWA 2.5" 300PSI               | 3060255 | Yes (pdf) |
| 18-70003300-2.5"-07     | - | Handwheel Nut AWWA 2.5" 300PSI          | 3060255 | Yes (pdf) |
| 18-70003300-2.5"-08     | - | Upside Sliding disc AWWA 2.5" 300PSI    | 3060255 | Yes (pdf) |
| 18-70003300-2.5"-09     | - | Underside Sliding disc AWWA 2.5" 300PSI | 3060255 | Yes (pdf) |
| 18-70003300-3"-03       | - | Stem Nut AWWA 3" 300PSI                 | 3060255 | Yes (pdf) |
| 18-70003300-3"-07       | - | Handwheel Nut AWWA 3" 300PSI            | 3060255 | Yes (pdf) |
| 18-70003300-3"-08       | - | Upside Sliding disc AWWA 3" 300PSI      | 3060255 | Yes (pdf) |
| 18-70003300-3"-09       | - | Underside Sliding disc AWWA 3" 300PSI   | 3060255 | Yes (pdf) |
| 18-70003300-4"-03       | - | Stem Nut AWWA 4" 300PSI                 | 3060255 | Yes (pdf) |

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|                            |   |  |         |           |
|----------------------------|---|--|---------|-----------|
| 18-70003300-4"-07          | - | Handwheel Nut AWWA 4" 300PSI               | 3060255 | Yes (pdf) |
| 18-70003300-4"-08          | - | Upside Sliding disc AWWA 4" 300PSI         | 3060255 | Yes (pdf) |
| 18-70003300-4"-09          | - | Underside Sliding disc AWWA AWWA 4" 300PSI | 3060255 | Yes (pdf) |
| 18-70003300-6"-03          | - | Stem Nut AWWA 6" 300PSI                    | 3060255 | Yes (pdf) |
| 18-70003300-6"-07          | - | Handwheel Nut AWWA 6" 300PSI               | 3060255 | Yes (pdf) |
| 18-80003300-10"-07         | - | Sealing ring AWWA 10" 300PSI               | 3060255 | Yes (pdf) |
| 18-80003300-2.5"-07        | - | Sealing ring AWWA 2.5" 300PSI              | 3060255 | Yes (pdf) |
| 18-80003300-3"-07          | - | Sealing ring AWWA 3" 300PSI                | 3060255 | Yes (pdf) |
| 18-80003300-4"-07          | - | Sealing ring AWWA 4" 300PSI                | 3060255 | Yes (pdf) |
| 18-80003300-6"-07          | - | Sealing ring AWWA 6" 300PSI                | 3060255 | Yes (pdf) |
| 18-80003300-8"-07          | - | Sealing ring AWWA 8" 300PSI                | 3060255 | Yes (pdf) |
| 18G-20003362-10"(273)-00   | - | Assembly AWWA 10"-273 362PSI               | 3060255 | Yes (pdf) |
| 18G-20003362-12"(323.9)-00 | - | Assembly AWWA 12"-323.9 362PSI             | 3060255 | Yes (pdf) |
| 18G-20003362-2"(60)-00     | - | Assembly AWWA 2"-60 362PSI                 | 3060255 | Yes (pdf) |
| 18G-20003362-2.5"(73)-00   | - | Assembly AWWA 2.5"-73 362PSI               | 3060255 | Yes (pdf) |
| 18G-20003362-3"(88.9)-00   | - | Assembly AWWA 3"-88.9 362PSI               | 3060255 | Yes (pdf) |
| 18G-20003362-4"(114)-00    | - | Assembly AWWA 4"-114 362PSI                | 3060255 | Yes (pdf) |
| 18G-20003362-5"(141)-00    | - | Assembly AWWA 5"-141 362PSI                | 3060255 | Yes (pdf) |
| 18G-20003362-6"(168)-00    | - | Assembly AWWA 6"-168 362PSI                | 3060255 | Yes (pdf) |
| 18G-20003362-8"(219)-00    | - | Assembly AWWA 8"-219 362PSI                | 3060255 | Yes (pdf) |

# Blueprint Report

## Shandong Lede Machinery Co Ltd (113572)

**Class No 1120****Original Project I.D. 3051487**

| <u>Drawing No.</u>       | <u>Revision Level</u> | <u>Drawing Title</u>     | <u>Last Report</u> | <u>Electronic Drawing</u> |
|--------------------------|-----------------------|--------------------------|--------------------|---------------------------|
| 11-2000025-100-150-22    | -                     | Wrench Nut DN100-DN150   | 3051487            | Yes (pdf)                 |
| 11-2000025-100-23        | -                     | Indicator Post Flange    | 3051487            | Yes (pdf)                 |
| 11-2000025-125-150-23    | -                     | Indicator Post Flange    | 3051487            | Yes (pdf)                 |
| 11-2000025-200-22        | -                     | Wrench Nut DN200         | 3051487            | Yes (pdf)                 |
| 11-2000025-200-23        | -                     | Indicator Post Flange    | 3051487            | Yes (pdf)                 |
| 11-2000025-250-23        | -                     | Indicator Post Flange    | 3051487            | Yes (pdf)                 |
| 11-2000025-250-300-22    | -                     | Wrench Nut DN250-DN300   | 3051487            | Yes (pdf)                 |
| 11-2000025-300-23        | -                     | Indicator Post Flange    | 3051487            | Yes (pdf)                 |
| 11-2000025-50-80-22      | -                     | Wrench Nut DN50-DN80     | 3051487            | Yes (pdf)                 |
| 11-20003150-100-001      | -                     | Assembly DN100           | 3051487            | Yes (pdf)                 |
| 11-20003150-100-00       | -                     | Assembly DN100           | 3051487            | Yes (pdf)                 |
| 11-20003150-100-01       | -                     | Body AWWA DN100 Class150 | 3051487            | Yes (pdf)                 |
| 11-20003150-100-300-00IM | -                     | Z45X-04-175 Marking      | 3051487            | Yes (pdf)                 |
| 11-20003150-125-001      | -                     | Assembly DN125           | 3051487            | Yes (pdf)                 |
| 11-20003150-125-00       | -                     | Assembly DN125           | 3051487            | Yes (pdf)                 |
| 11-20003150-125-01       | -                     | Body AWWA DN125 Class150 | 3051487            | Yes (pdf)                 |
| 11-20003150-150-001      | -                     | Assembly DN150           | 3051487            | Yes (pdf)                 |
| 11-20003150-150-00       | -                     | Assembly DN150           | 3051487            | Yes (pdf)                 |
| 11-20003150-150-01       | -                     | Body AWWA DN150 Class150 | 3051487            | Yes (pdf)                 |
| 11-20003150-200-001      | -                     | Assembly DN200           | 3051487            | Yes (pdf)                 |
| 11-20003150-200-00       | -                     | Assembly DN200           | 3051487            | Yes (pdf)                 |
| 11-20003150-200-01       | -                     | Body AWWA DN200 Class150 | 3051487            | Yes (pdf)                 |
| 11-20003150-250-001      | -                     | Assembly DN250           | 3051487            | Yes (pdf)                 |
| 11-20003150-250-00       | -                     | Assembly DN250           | 3051487            | Yes (pdf)                 |
| 11-20003150-250-01       | -                     | Body AWWA DN250 Class150 | 3051487            | Yes (pdf)                 |
| 11-20003150-300-001      | -                     | Assembly DN300           | 3051487            | Yes (pdf)                 |
| 11-20003150-300-00       | -                     | Assembly DN300           | 3051487            | Yes (pdf)                 |
| 11-20003150-300-01       | -                     | Body AWWA DN300 Class150 | 3051487            | Yes (pdf)                 |
| 11-20003150-50-00        | -                     | Assembly DN50            | 3051487            | Yes (pdf)                 |
| 11-20003150-50-01        | -                     | Body DN50 Class150       | 3051487            | Yes (pdf)                 |
| 11-20003150-50-300-00M   | -                     | Z45X-03-175 Marking      | 3051487            | Yes (pdf)                 |
| 11-20003150-65-00        | -                     | Assembly DN65            | 3051487            | Yes (pdf)                 |
| 11-20003150-65-01        | -                     | Body AWWA DN65 Class150  | 3051487            | Yes (pdf)                 |
| 11-20003150-80-00        | -                     | Assembly DN80            | 3051487            | Yes (pdf)                 |
| 11-20003150-80-01        | -                     | Body AWWA DN80 Class150  | 3051487            | Yes (pdf)                 |
| 11-2000316-100-00        | -                     | Assembly DN100           | 3051487            | Yes (pdf)                 |
| 11-2000316-100-01        | -                     | Body DN100               | 3051487            | Yes (pdf)                 |
| 11-2000316-125-00        | -                     | Assembly DN125           | 3051487            | Yes (pdf)                 |
| 11-2000316-125-01        | -                     | Body DN125               | 3051487            | Yes (pdf)                 |
| 11-2000316-150-00        | -                     | Assembly DN150           | 3051487            | Yes (pdf)                 |
| 11-2000316-150-01        | -                     | Body DN150               | 3051487            | Yes (pdf)                 |
| 11-2000316-200-00        | -                     | Assembly DN200           | 3051487            | Yes (pdf)                 |
| 11-2000316-200-01        | -                     | Body DN200               | 3051487            | Yes (pdf)                 |
| 11-2000316-250-00        | -                     | Assembly DN250           | 3051487            | Yes (pdf)                 |

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|                          |   |                          |         |           |
|--------------------------|---|--------------------------|---------|-----------|
| 11-2000316-250-01        | - | Body DN250               | 3051487 | Yes (pdf) |
| 11-2000316-300-00        | - | Assembly DN300           | 3051487 | Yes (pdf) |
| 11-2000316-300-01        | - | Body DN300               | 3051487 | Yes (pdf) |
| 11-2000316-50-00         | - | Assembly DN50            | 3051487 | Yes (pdf) |
| 11-2000316-50-01         | - | Body DN50                | 3051487 | Yes (pdf) |
| 11-2000316-50-300-00M    | - | Z45X-02-1.6 Marking      | 3051487 | Yes (pdf) |
| 11-2000316-65-00         | - | Assembly DN65            | 3051487 | Yes (pdf) |
| 11-2000316-65-01         | - | Body DN65                | 3051487 | Yes (pdf) |
| 11-2000316-80-00         | - | Assembly DN80            | 3051487 | Yes (pdf) |
| 11-2000316-80-01         | - | Body DN80                | 3051487 | Yes (pdf) |
| 11-20003300-100-001      | - | Assembly DN100           | 3051487 | Yes (pdf) |
| 11-20003300-100-00       | - | Assembly DN100           | 3051487 | Yes (pdf) |
| 11-20003300-100-01       | - | Body AWWA DN100 Class300 | 3051487 | Yes (pdf) |
| 11-20003300-100-300-00IM | - | Z45X-04-300 Marking      | 3051487 | Yes (pdf) |
| 11-20003300-125-001      | - | Assembly DN125           | 3051487 | Yes (pdf) |
| 11-20003300-125-00       | - | Assembly DN125           | 3051487 | Yes (pdf) |
| 11-20003300-125-01       | - | Body AWWA DN125 Class300 | 3051487 | Yes (pdf) |
| 11-20003300-150-001      | - | Assembly DN150           | 3051487 | Yes (pdf) |
| 11-20003300-150-00       | - | Assembly DN150           | 3051487 | Yes (pdf) |
| 11-20003300-150-01       | - | Body AWWA DN150 Class300 | 3051487 | Yes (pdf) |
| 11-20003300-200-001      | - | Assembly DN200           | 3051487 | Yes (pdf) |
| 11-20003300-200-00       | - | Assembly DN200           | 3051487 | Yes (pdf) |
| 11-20003300-200-01       | - | Body AWWA DN200 Class300 | 3051487 | Yes (pdf) |
| 11-20003300-250-001      | - | Assembly DN250           | 3051487 | Yes (pdf) |
| 11-20003300-250-00       | - | Assembly DN250           | 3051487 | Yes (pdf) |
| 11-20003300-250-01       | - | Body AWWA DN250 Class300 | 3051487 | Yes (pdf) |
| 11-20003300-300-001      | - | Assembly DN300           | 3051487 | Yes (pdf) |
| 11-20003300-300-00       | - | Assembly DN300           | 3051487 | Yes (pdf) |
| 11-20003300-300-01       | - | Body AWWA DN300 Class300 | 3051487 | Yes (pdf) |
| 11-20003300-50-00        | - | Assembly DN50            | 3051487 | Yes (pdf) |
| 11-20003300-50-01        | - | Body DN50 Class300       | 3051487 | Yes (pdf) |
| 11-20003300-50-300-00M   | - | Z45X-03-300 Marking      | 3051487 | Yes (pdf) |
| 11-20003300-65-00        | - | Assembly DN65            | 3051487 | Yes (pdf) |
| 11-20003300-65-01        | - | Body AWWA DN65 Class300  | 3051487 | Yes (pdf) |
| 11-20003300-80-00        | - | Assembly DN80            | 3051487 | Yes (pdf) |
| 11-20003300-80-01        | - | Body AWWA DN80 Class300  | 3051487 | Yes (pdf) |
| 11-2001416-100-00        | - | Assembly DN100           | 3051487 | Yes (pdf) |
| 11-2001416-100-01        | - | Body DN100               | 3051487 | Yes (pdf) |
| 11-2001416-100-02.1      | - | Wedge casting DN100      | 3051487 | Yes (pdf) |
| 11-2001416-100-061       | - | Bonnet DN100             | 3051487 | Yes (pdf) |
| 11-2001416-100-06        | - | Bonnet DN100             | 3051487 | Yes (pdf) |
| 11-2001416-100-09        | - | Upper cover DN100        | 3051487 | Yes (pdf) |
| 11-2001416-125-00        | - | Assembly DN125           | 3051487 | Yes (pdf) |
| 11-2001416-125-01        | - | Body DN125               | 3051487 | Yes (pdf) |
| 11-2001416-125-02.1      | - | Wedge casting DN125      | 3051487 | Yes (pdf) |
| 11-2001416-125-06        | - | Bonnet DN125             | 3051487 | Yes (pdf) |
| 11-2001416-150-00        | - | Assembly DN150           | 3051487 | Yes (pdf) |
| 11-2001416-150-01        | - | Body DN150               | 3051487 | Yes (pdf) |
| 11-2001416-150-02.1      | - | Wedge casting DN150      | 3051487 | Yes (pdf) |
| 11-2001416-150-06        | - | Bonnet DN150             | 3051487 | Yes (pdf) |
| 11-2001416-150-09        | - | Upper cover DN150        | 3051487 | Yes (pdf) |
| 11-2001416-200-00        | - | Assembly DN200           | 3051487 | Yes (pdf) |

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|                       |   |                     |         |           |
|-----------------------|---|---------------------|---------|-----------|
| 11-2001416-200-01     | - | Body DN200          | 3051487 | Yes (pdf) |
| 11-2001416-200-02.1   | - | Wedge casting DN200 | 3051487 | Yes (pdf) |
| 11-2001416-200-06     | - | Bonnet DN200        | 3051487 | Yes (pdf) |
| 11-2001416-200-09     | - | Upper cover DN200   | 3051487 | Yes (pdf) |
| 11-2001416-250-00     | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 11-2001416-250-01     | - | Body DN250          | 3051487 | Yes (pdf) |
| 11-2001416-250-02.1   | - | Wedge casting DN250 | 3051487 | Yes (pdf) |
| 11-2001416-250-06     | - | Bonnet DN250        | 3051487 | Yes (pdf) |
| 11-2001416-250-09     | - | Upper cover DN250   | 3051487 | Yes (pdf) |
| 11-2001416-300-00     | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 11-2001416-300-01     | - | Body DN300          | 3051487 | Yes (pdf) |
| 11-2001416-300-02.1   | - | Wedge casting DN300 | 3051487 | Yes (pdf) |
| 11-2001416-300-06     | - | Bonnet DN300        | 3051487 | Yes (pdf) |
| 11-2001416-300-09     | - | Upper cover DN300   | 3051487 | Yes (pdf) |
| 11-2001416-50-00      | - | Assembly DN50       | 3051487 | Yes (pdf) |
| 11-2001416-50-02.1    | - | Wedge casting DN50  | 3051487 | Yes (pdf) |
| 11-2001416-50-300-00M | - | Z45X-01-1.6 Marking | 3051487 | Yes (pdf) |
| 11-2001416-65-00      | - | Assembly DN65       | 3051487 | Yes (pdf) |
| 11-2001416-65-01      | - | Body DN65           | 3051487 | Yes (pdf) |
| 11-2001416-65-02.1    | - | Wedge casting DN65  | 3051487 | Yes (pdf) |
| 11-2001416-65-06      | - | Bonnet DN65         | 3051487 | Yes (pdf) |
| 11-2001416-80-00      | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 11-2001416-80-02.1    | - | Wedge casting DN80  | 3051487 | Yes (pdf) |
| 11-2001416-80-06      | - | Bonnet DN80         | 3051487 | Yes (pdf) |
| 11-2001416-80-09      | - | Upper cover DN80    | 3051487 | Yes (pdf) |
| 11-2001425-100-00     | - | Assembly DN100      | 3051487 | Yes (pdf) |
| 11-2001425-100-01     | - | Body DN100          | 3051487 | Yes (pdf) |
| 11-2001425-125-00     | - | Assembly DN125      | 3051487 | Yes (pdf) |
| 11-2001425-125-01     | - | Body DN125          | 3051487 | Yes (pdf) |
| 11-2001425-150-00     | - | Assembly DN150      | 3051487 | Yes (pdf) |
| 11-2001425-150-01     | - | Body DN150          | 3051487 | Yes (pdf) |
| 11-2001425-200-00     | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 11-2001425-200-01     | - | Body DN200          | 3051487 | Yes (pdf) |
| 11-2001425-250-00     | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 11-2001425-250-01     | - | Body DN250          | 3051487 | Yes (pdf) |
| 11-2001425-300-00     | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 11-2001425-300-01     | - | Body DN300          | 3051487 | Yes (pdf) |
| 11-2001425-50-00      | - | Assembly DN50       | 3051487 | Yes (pdf) |
| 11-2001425-50-01      | - | Body DN50           | 3051487 | Yes (pdf) |
| 11-2001425-50-300-00M | - | Z45X-01-2.5 Marking | 3051487 | Yes (pdf) |
| 11-2001425-65-00      | - | Assembly DN65       | 3051487 | Yes (pdf) |
| 11-2001425-65-01      | - | Body DN65           | 3051487 | Yes (pdf) |
| 11-2001425-80-00      | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 11-2001425-80-01      | - | Body DN80           | 3051487 | Yes (pdf) |
| 11-2001925-100-00     | - | Assembly DN100      | 3051487 | Yes (pdf) |
| 11-2001925-100-01     | - | Body DN100          | 3051487 | Yes (pdf) |
| 11-2001925-125-00     | - | Assembly DN125      | 3051487 | Yes (pdf) |
| 11-2001925-125-01     | - | Body DN125          | 3051487 | Yes (pdf) |
| 11-2001925-150-00     | - | Assembly DN150      | 3051487 | Yes (pdf) |
| 11-2001925-150-01     | - | Body DN150          | 3051487 | Yes (pdf) |
| 11-2001925-200-00     | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 11-2001925-200-01     | - | Body DN200          | 3051487 | Yes (pdf) |

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|                                |   |                     |         |           |
|--------------------------------|---|---------------------|---------|-----------|
| 11-2001925-250-00              | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 11-2001925-250-01              | - | Body DN250          | 3051487 | Yes (pdf) |
| 11-2001925-300-00              | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 11-2001925-300-01              | - | Body DN300          | 3051487 | Yes (pdf) |
| 11-2001925-50-00 Assembly DN50 | - | Assembly DN50       | 3051487 | Yes (pdf) |
| 11-2001925-50-01 Body DN50     | - | Wedge casting DN50  | 3051487 | Yes (pdf) |
| 11-2001925-50-300-00M          | - | Z45X-02-2.5 Marking | 3051487 | Yes (pdf) |
| 11-2001925-65-00 Assembly DN65 | - | Assembly DN65       | 3051487 | Yes (pdf) |
| 11-2001925-65-01 Body DN65     | - | Body DN65           | 3051487 | Yes (pdf) |
| 11-2001925-80-00 Assembly DN80 | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 11-2001925-80-01 Body DN80     | - | Body DN80           | 3051487 | Yes (pdf) |
| 11-6001416-100-04              | - | Stem DN100          | 3051487 | Yes (pdf) |
| 11-6001416-125-04              | - | Stem DN125          | 3051487 | Yes (pdf) |
| 11-6001416-150-04              | - | Stem DN150          | 3051487 | Yes (pdf) |
| 11-6001416-200-04              | - | Stem DN200          | 3051487 | Yes (pdf) |
| 11-6001416-250-04              | - | Stem DN250          | 3051487 | Yes (pdf) |
| 11-6001416-300-04              | - | Stem DN300          | 3051487 | Yes (pdf) |
| 11-6001416-65-04               | - | Stem DN65           | 3051487 | Yes (pdf) |
| 11-6001416-80-04               | - | Stem DN80           | 3051487 | Yes (pdf) |
| 11-7001416-100-03              | - | Stem nut DN100      | 3051487 | Yes (pdf) |
| 11-7001416-100-08              | - | Sliding disc DN100  | 3051487 | Yes (pdf) |
| 11-7001416-150-03              | - | Stem nut DN150      | 3051487 | Yes (pdf) |
| 11-7001416-150-08              | - | Sliding disc DN150  | 3051487 | Yes (pdf) |
| 11-7001416-200-03              | - | Stem nut DN200      | 3051487 | Yes (pdf) |
| 11-7001416-200-08              | - | Sliding disc DN200  | 3051487 | Yes (pdf) |
| 11-7001416-250-03              | - | Stem nut DN250      | 3051487 | Yes (pdf) |
| 11-7001416-250-08              | - | Sliding disc DN250  | 3051487 | Yes (pdf) |
| 11-7001416-300-03              | - | Stem nut DN300      | 3051487 | Yes (pdf) |
| 11-7001416-300-08              | - | Sliding disc DN300  | 3051487 | Yes (pdf) |
| 11-7001416-80-03               | - | Stem nut DN80       | 3051487 | Yes (pdf) |
| 11-7001416-80-08               | - | Sliding disc DN80   | 3051487 | Yes (pdf) |
| 11-8001416-100-02              | - | Wedge DN100         | 3051487 | Yes (pdf) |
| 11-8001416-100-05              | - | Protector DN100     | 3051487 | Yes (pdf) |
| 11-8001416-100-07              | - | Sealing ring DN100  | 3051487 | Yes (pdf) |
| 11-8001416-100-10              | - | Bonnet gasket DN100 | 3051487 | Yes (pdf) |
| 11-8001416-125-02              | - | Wedge DN125         | 3051487 | Yes (pdf) |
| 11-8001416-125-05              | - | Protector DN125     | 3051487 | Yes (pdf) |
| 11-8001416-125-10              | - | Bonnet gasket DN125 | 3051487 | Yes (pdf) |
| 11-8001416-150-02              | - | Wedge DN150         | 3051487 | Yes (pdf) |
| 11-8001416-150-05              | - | Protector DN150     | 3051487 | Yes (pdf) |
| 11-8001416-150-07              | - | Sealing ring DN150  | 3051487 | Yes (pdf) |
| 11-8001416-150-10              | - | Bonnet gasket DN150 | 3051487 | Yes (pdf) |
| 11-8001416-200-02              | - | Wedge DN200         | 3051487 | Yes (pdf) |
| 11-8001416-200-05              | - | Protector DN200     | 3051487 | Yes (pdf) |
| 11-8001416-200-07              | - | sealing ring DN200  | 3051487 | Yes (pdf) |
| 11-8001416-200-10              | - | Bonnet gasket DN200 | 3051487 | Yes (pdf) |
| 11-8001416-250-02              | - | Wedge DN250         | 3051487 | Yes (pdf) |
| 11-8001416-250-05              | - | Protector DN250     | 3051487 | Yes (pdf) |
| 11-8001416-250-07              | - | Sealing ring DN250  | 3051487 | Yes (pdf) |
| 11-8001416-250-10              | - | Bonnet gasket DN250 | 3051487 | Yes (pdf) |
| 11-8001416-300-02              | - | Wedge DN300         | 3051487 | Yes (pdf) |
| 11-8001416-300-05              | - | Protector DN300     | 3051487 | Yes (pdf) |

FM APPROVALS PROJECT NO: PR454628

|                         |   |                     |         |           |
|-------------------------|---|---------------------|---------|-----------|
| 11-8001416-300-07       | - | Sealing ring DN300  | 3051487 | Yes (pdf) |
| 11-8001416-300-10       | - | Bonnet gasket DN300 | 3051487 | Yes (pdf) |
| 11-8001416-50-02        | - | Wedge DN50          | 3051487 | Yes (pdf) |
| 11-8001416-65-02        | - | Wedge DN65          | 3051487 | Yes (pdf) |
| 11-8001416-65-05        | - | Protector DN65      | 3051487 | Yes (pdf) |
| 11-8001416-65-10        | - | Bonnet gasket DN65  | 3051487 | Yes (pdf) |
| 11-8001416-80-02        | - | Wedge DN80          | 3051487 | Yes (pdf) |
| 11-8001416-80-05        | - | Protector DN80      | 3051487 | Yes (pdf) |
| 11-8001416-80-07        | - | Sealing ring DN80   | 3051487 | Yes (pdf) |
| 11-8001416-80-10        | - | Bonnet gasket DN80  | 3051487 | Yes (pdf) |
| 11G-2000325-100(114)-00 | - | Assembly DN100-114  | 3051487 | Yes (pdf) |
| 11G-2000325-100(114)-01 | - | Body DN100-114      | 3051487 | Yes (pdf) |
| 11G-2000325-125(140)-00 | - | Assembly DN125-140  | 3051487 | Yes (pdf) |
| 11G-2000325-125(140)-01 | - | Body DN125-140      | 3051487 | Yes (pdf) |
| 11G-2000325-125(141)-00 | - | Assembly DN125-141  | 3051487 | Yes (pdf) |
| 11G-2000325-125(141)-01 | - | Body DN125-141      | 3051487 | Yes (pdf) |
| 11G-2000325-150(165)-00 | - | Assembly DN150-165  | 3051487 | Yes (pdf) |
| 11G-2000325-150(165)-01 | - | Body DN150-165      | 3051487 | Yes (pdf) |
| 11G-2000325-150(168)-00 | - | Assembly DN150-168  | 3051487 | Yes (pdf) |
| 11G-2000325-150(168)-01 | - | Body DN150-168      | 3051487 | Yes (pdf) |
| 11G-2000325-200-00      | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 11G-2000325-200-01      | - | Body DN200          | 3051487 | Yes (pdf) |
| 11G-2000325-50(60)-00   | - | Assembly DN50-60    | 3051487 | Yes (pdf) |
| 11G-2000325-50(60)-01   | - | Body DN50-60        | 3051487 | Yes (pdf) |
| 11G-2000325-50-300-00M  | - | Z85X-2.5 Marking    | 3051487 | Yes (pdf) |
| 11G-2000325-65(73)-00   | - | Assembly DN65-73    | 3051487 | Yes (pdf) |
| 11G-2000325-65(73)-01   | - | Body DN65-73        | 3051487 | Yes (pdf) |
| 11G-2000325-65(76)-00   | - | Assembly DN65-76    | 3051487 | Yes (pdf) |
| 11G-2000325-65(76)-01   | - | body DN65-76        | 3051487 | Yes (pdf) |
| 11G-2000325-80-00       | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 11G-2000325-80-01       | - | Body DN80           | 3051487 | Yes (pdf) |
| 12-2000025-125-150-21   | - | Handwheel OD300     | 3051487 | Yes (pdf) |
| 12-2000025-200-21       | - | Handwheel OD330     | 3051487 | Yes (pdf) |
| 12-2000025-250-300-21   | - | Handwheel OD406     | 3051487 | Yes (pdf) |
| 12-2000025-50-100-21    | - | Handwheel OD203     | 3051487 | Yes (pdf) |
| 12-20003150-100-00      | - | Assembly DN100      | 3051487 | Yes (pdf) |
| 12-20003150-125-00      | - | Assembly DN125      | 3051487 | Yes (pdf) |
| 12-20003150-150-00      | - | Assembly DN150      | 3051487 | Yes (pdf) |
| 12-20003150-200-00      | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 12-20003150-250-00      | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 12-20003150-300-00      | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 12-20003150-50-00       | - | Assembly DN50       | 3051487 | Yes (pdf) |
| 12-20003150-50-300-00M  | - | Z41X-03-175 Marking | 3051487 | Yes (pdf) |
| 12-20003150-65-00       | - | Assembly DN65       | 3051487 | Yes (pdf) |
| 12-20003150-80-00       | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 12-2000316-100-00       | - | Assembly DN100      | 3051487 | Yes (pdf) |
| 12-2000316-125-00       | - | Assembly DN125      | 3051487 | Yes (pdf) |
| 12-2000316-150-00       | - | Assembly DN150      | 3051487 | Yes (pdf) |
| 12-2000316-200-00       | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 12-2000316-250-00       | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 12-2000316-300-00       | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 12-2000316-50-00        | - | Assembly DN50       | 3051487 | Yes (pdf) |

FM APPROVALS PROJECT NO: PR454628

|                        |   |                     |         |           |
|------------------------|---|---------------------|---------|-----------|
| 12-2000316-50-300-00M  | - | Z41X-02-1.6 Marking | 3051487 | Yes (pdf) |
| 12-2000316-65-00       | - | Assembly DN65       | 3051487 | Yes (pdf) |
| 12-2000316-80-00       | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 12-20003300-100-00     | - | Assembly DN100      | 3051487 | Yes (pdf) |
| 12-20003300-125-00     | - | Assembly DN125      | 3051487 | Yes (pdf) |
| 12-20003300-150-00     | - | Assembly DN150      | 3051487 | Yes (pdf) |
| 12-20003300-200-00     | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 12-20003300-250-00     | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 12-20003300-300-00     | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 12-20003300-50-00      | - | Assembly DN50       | 3051487 | Yes (pdf) |
| 12-20003300-50-300-00M | - | Z41X-03-300 Marking | 3051487 | Yes (pdf) |
| 12-20003300-65-00      | - | Assembly DN65       | 3051487 | Yes (pdf) |
| 12-20003300-80-00      | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 12-2001416-100-00      | - | Assembly DN100      | 3051487 | Yes (pdf) |
| 12-2001416-100-06      | - | Yoke DN100          | 3051487 | Yes (pdf) |
| 12-2001416-100-10      | - | Gland DN100         | 3051487 | Yes (pdf) |
| 12-2001416-125-00      | - | Assembly DN125      | 3051487 | Yes (pdf) |
| 12-2001416-125-06      | - | Yoke DN125          | 3051487 | Yes (pdf) |
| 12-2001416-125-10      | - | Gland DN125         | 3051487 | Yes (pdf) |
| 12-2001416-150-00      | - | Assembly DN150      | 3051487 | Yes (pdf) |
| 12-2001416-200-00      | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 12-2001416-200-06      | - | Yoke DN200          | 3051487 | Yes (pdf) |
| 12-2001416-200-10      | - | Gland DN200         | 3051487 | Yes (pdf) |
| 12-2001416-250-00      | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 12-2001416-250-06      | - | Yoke DN250          | 3051487 | Yes (pdf) |
| 12-2001416-250-10      | - | Gland DN250         | 3051487 | Yes (pdf) |
| 12-2001416-300-00      | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 12-2001416-300-06      | - | Yoke DN300          | 3051487 | Yes (pdf) |
| 12-2001416-300-10      | - | Gland DN300         | 3051487 | Yes (pdf) |
| 12-2001416-50-00       | - | Assembly DN50       | 3051487 | Yes (pdf) |
| 12-2001416-50-300-00M  | - | Z41X-01-1.6 Marking | 3051487 | Yes (pdf) |
| 12-2001416-65-00       | - | Assembly DN65       | 3051487 | Yes (pdf) |
| 12-2001416-80-00       | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 12-2001416-80-06       | - | Yoke DN80           | 3051487 | Yes (pdf) |
| 12-2001416-80-10       | - | Gland DN80          | 3051487 | Yes (pdf) |
| 12-2001425-100-00      | - | Assembly DN100      | 3051487 | Yes (pdf) |
| 12-2001425-125-00      | - | Assembly DN125      | 3051487 | Yes (pdf) |
| 12-2001425-150-00      | - | Assembly DN150      | 3051487 | Yes (pdf) |
| 12-2001425-200-00      | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 12-2001425-250-00      | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 12-2001425-300-00      | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 12-2001425-50-00       | - | Assembly DN50       | 3051487 | Yes (pdf) |
| 12-2001425-50-300-00M  | - | Z41X-01-2.5 Marking | 3051487 | Yes (pdf) |
| 12-2001425-65-00       | - | Assembly DN65       | 3051487 | Yes (pdf) |
| 12-2001425-80-00       | - | Assembly DN80       | 3051487 | Yes (pdf) |
| 12-2001925-100-00      | - | Assembly DN100      | 3051487 | Yes (pdf) |
| 12-2001925-125-00      | - | Assembly DN125      | 3051487 | Yes (pdf) |
| 12-2001925-150-00      | - | Assembly DN150      | 3051487 | Yes (pdf) |
| 12-2001925-200-00      | - | Assembly DN200      | 3051487 | Yes (pdf) |
| 12-2001925-250-00      | - | Assembly DN250      | 3051487 | Yes (pdf) |
| 12-2001925-300-00      | - | Assembly DN300      | 3051487 | Yes (pdf) |
| 12-2001925-50-00       | - | Assembly DN50       | 3051487 | Yes (pdf) |



FM APPROVALS PROJECT NO: PR454628

|                         |   |                              |         |           |
|-------------------------|---|------------------------------|---------|-----------|
| 12-2001925-50-300-00M   | - | Z41X-02-2.5 Marking          | 3051487 | Yes (pdf) |
| 12-2001925-65-00        | - | Assembly DN65                | 3051487 | Yes (pdf) |
| 12-2001925-80-00        | - | Assembly DN80                | 3051487 | Yes (pdf) |
| 12-4000025-100-05       | - | Nut 55x2 DN100               | 3051487 | Yes (pdf) |
| 12-4000025-100-07       | - | Compaction nut M34x1.5 DN100 | 3051487 | Yes (pdf) |
| 12-4000025-125-05       | - | Nut M55x1.5 DN125            | 3051487 | Yes (pdf) |
| 12-4000025-200-05       | - | Nut M60x2 DN200              | 3051487 | Yes (pdf) |
| 12-4000025-200-07       | - | Compaction nut M40x1.5 DN200 | 3051487 | Yes (pdf) |
| 12-4000025-250-05       | - | Nut M68x2 DN250              | 3051487 | Yes (pdf) |
| 12-4000025-250-07       | - | Compaction nut M46x1.5 DN250 | 3051487 | Yes (pdf) |
| 12-6001416-100-04.1     | - | Nut DN100                    | 3051487 | Yes (pdf) |
| 12-6001416-100-04.2     | - | Stem Shaft DN100             | 3051487 | Yes (pdf) |
| 12-6001416-100-04       | - | Stem DN100                   | 3051487 | Yes (pdf) |
| 12-6001416-125-04.2     | - | Stem Shaft DN125             | 3051487 | Yes (pdf) |
| 12-6001416-125-04       | - | Stem DN125                   | 3051487 | Yes (pdf) |
| 12-6001416-125-150-04.1 | - | Nut DN125-150                | 3051487 | Yes (pdf) |
| 12-6001416-150-04.2     | - | Stem Shaft DN150             | 3051487 | Yes (pdf) |
| 12-6001416-150-04       | - | Stem DN150                   | 3051487 | Yes (pdf) |
| 12-6001416-200-04.1     | - | Nut DN200                    | 3051487 | Yes (pdf) |
| 12-6001416-200-04.2     | - | Stem Shaft DN200             | 3051487 | Yes (pdf) |
| 12-6001416-200-04       | - | Stem DN200                   | 3051487 | Yes (pdf) |
| 12-6001416-250-04.1     | - | Nut DN250                    | 3051487 | Yes (pdf) |
| 12-6001416-250-04.2     | - | Stem Shaft DN250             | 3051487 | Yes (pdf) |
| 12-6001416-250-04       | - | Stem DN250                   | 3051487 | Yes (pdf) |
| 12-6001416-300-04.1     | - | Nut DN300                    | 3051487 | Yes (pdf) |
| 12-6001416-300-04.2     | - | Stem Shaft DN300             | 3051487 | Yes (pdf) |
| 12-6001416-300-04       | - | Stem DN300                   | 3051487 | Yes (pdf) |
| 12-6001416-50-04.2      | - | Stem Shaft DN50              | 3051487 | Yes (pdf) |
| 12-6001416-50-04        | - | Stem DN50                    | 3051487 | Yes (pdf) |
| 12-6001416-50-80-04.1   | - | Nut DN50-80                  | 3051487 | Yes (pdf) |
| 12-6001416-65-04.2      | - | Stem Shaft DN65              | 3051487 | Yes (pdf) |
| 12-6001416-65-04        | - | Stem DN65                    | 3051487 | Yes (pdf) |
| 12-6001416-80-04.2      | - | Stem Shaft DN80              | 3051487 | Yes (pdf) |
| 12-6001416-80-04        | - | Stem DN80                    | 3051487 | Yes (pdf) |
| 12-7001416-100-03       | - | Stem nut DN100               | 3051487 | Yes (pdf) |
| 12-7001416-100-08       | - | Upside sliding disc DN100    | 3051487 | Yes (pdf) |
| 12-7001416-100-09       | - | Underside sliding disc DN100 | 3051487 | Yes (pdf) |
| 12-7001416-125-03       | - | Stem nut DN125               | 3051487 | Yes (pdf) |
| 12-7001416-125-08       | - | Upside sliding disc DN125    | 3051487 | Yes (pdf) |
| 12-7001416-125-09       | - | Underside sliding disc DN125 | 3051487 | Yes (pdf) |
| 12-7001416-200-03       | - | Stem nut DN200               | 3051487 | Yes (pdf) |
| 12-7001416-200-08       | - | Upside sliding disc DN200    | 3051487 | Yes (pdf) |
| 12-7001416-200-09       | - | Underside sliding disc DN200 | 3051487 | Yes (pdf) |
| 12-7001416-250-03       | - | Stem nut DN250               | 3051487 | Yes (pdf) |
| 12-7001416-250-08       | - | Upside sliding disc DN250    | 3051487 | Yes (pdf) |
| 12-7001416-250-09       | - | Underside sliding disc DN250 | 3051487 | Yes (pdf) |
| 12-7001416-300-03       | - | Stem nut DN300               | 3051487 | Yes (pdf) |
| 12-7001416-80-03        | - | Stem nut DN80                | 3051487 | Yes (pdf) |
| 12G-2000325-100(114)-00 | - | Assembly DN100-114           | 3051487 | Yes (pdf) |
| 12G-2000325-125(140)-00 | - | Assembly DN125-140           | 3051487 | Yes (pdf) |
| 12G-2000325-125(141)-00 | - | Assembly DN125-141           | 3051487 | Yes (pdf) |
| 12G-2000325-150(165)-00 | - | Assembly DN150-165           | 3051487 | Yes (pdf) |

FM APPROVALS PROJECT NO: PR454628

|                               |   |                               |         |           |
|-------------------------------|---|-------------------------------|---------|-----------|
| 12G-2000325-150(168)-00       | - | Assembly DN150-168            | 3051487 | Yes (pdf) |
| 12G-2000325-200-00            | - | Assembly DN200                | 3051487 | Yes (pdf) |
| 12G-2000325-50(60)-00         | - | Assembly DN50-60              | 3051487 | Yes (pdf) |
| 12G-2000325-50-300-00M        | - | Z81X-2.5 Marking              | 3051487 | Yes (pdf) |
| 12G-2000325-65(73)-00         | - | Assembly DN65-73              | 3051487 | Yes (pdf) |
| 12G-2000325-65(76)-00         | - | Assembly DN65-76              | 3051487 | Yes (pdf) |
| 12G-2000325-80-00             | - | Assembly DN80                 | 3051487 | Yes (pdf) |
| FM Gate Valve 1101 ONTOR Mark | - | FM Gate Valve 1101 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1102 ONTOR Mark | - | FM Gate Valve 1102 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1105 ONTOR Mark | - | FM Gate Valve 1105 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1106 ONTOR Mark | - | FM Gate Valve 1106 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1107 ONTOR Mark | - | FM Gate Valve 1107 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1201 ONTOR Mark | - | FM Gate Valve 1201 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1202 ONTOR Mark | - | FM Gate Valve 1202 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1205 ONTOR Mark | - | FM Gate Valve 1205 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1206 ONTOR Mark | - | FM Gate Valve 1206 ONTOR Mark | 3060201 | Yes (pdf) |
| FM Gate Valve 1207 ONTOR Mark | - | FM Gate Valve 1207 ONTOR Mark | 3060201 | Yes (pdf) |



# Certificate of Compliance

This certificate is issued for the following:

## Single Check Valves

### Model H84X Grooved End

Sizes 2, 2-1/2, 3, 4, 5, 6, 8, 10 and 12 inch NPS  
Sizes 76.1, 139.7 and 165.1 mm

### Models H44X and H44X-01 Flanged End

Sizes 2, 2-1/2, 3, 4, 5, 6, 8, 10 and 12 inch NPS

#### Prepared For:

Shandong Lede Machinery Co., Ltd.  
No. 3998 West Weinhuan N Road  
Weicheng District  
Weifang City, Shandong 261057  
China

#### Manufactured at:

Shandong Lede Machinery Co., Ltd.  
No. 3998 West Weinhuan N Road  
Weicheng District  
Weifang City, Shandong 261057  
China

FM Approvals Class: 1210, dated June 2004

Approval Identification: PR454783

Approval Granted: November 26, 2019

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

A handwritten signature in black ink, appearing to read 'D.B. Fuller', written over a horizontal line.

David B. Fuller  
VP – Manager, Fire Protection  
FM Approvals  
1151 Boston-Providence Turnpike  
Norwood, MA 02062 USA



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# APPROVAL REPORT

**Project No:** PR454783  
**Class:** 1210  
**Product Type:** Single Check Valves  
**Product Name:** Model H84X, H44X and H44X-01 Single Check Valves  
Sizes 2 through 12 inch NPS  
**Name of Report Holder:** Shandong Lede Machinery Co Ltd  
**Address of Report Holder:** No. 3998 West Weihuan N Rd.  
Weicheng Dist. Weifang City  
Shandong 261057, China  
**Customer ID:** 113572  
**Customer Website:** <http://wflede.com>

**Prepared by**



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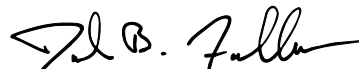
Daniel T. Desautel  
Engineer – Fire Protection

**Reviewed by**



---

Stanley M. Ziobro  
AVP, Technical Team Manager



---

David B. Fuller  
VP, Manager of Fire Protection

**November 26, 2019**

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**Date of Approval**

## 1 INTRODUCTION

1.1 Shandong Lede Machinery Co., Ltd. requested Approval of the Model H44X, H44X-01 and H84X check valves listed in Section 1.4 for compliance with the standard listed in Section 1.3.

1.2 This Report may be freely reproduced only in its entirety and without modification.

### 1.3 Standards

#### FM Approvals Standards

| Title                                    | Number | Issue Date |
|--|--------|------------|
| Approval Standard for Swing Check Valves | 1210   | June 2004  |

### 1.4 Listing

The Model H44X, H44X-01 and H84X check valves discussed in this report will be updated in the Approval Guide, an on-line resource of FM Approvals, as detailed in an attachment at the end of this Report. Deletions from any current product listing are shown with strikethroughs and additions to the current Approval listing are shown in red text.

## 2 DESCRIPTION

2.1 The check valves discussed in this Report are identical in physical construction to those previously FM Approved under Project ID 3057546 dated July 5, 2016.

2.2 The Model H44X and H44X-01 swing check valves discussed in this Report have flanged end connections to ASME/ANSI B16.1 Class 125 and ASME/ANSI B16.42 Class 150 with a rated working pressure of 300 psi (2070 kPa).

2.3 The Model H84X swing check valves discussed in this Report have grooved end connections with a rated working pressure of 365 psi (2515 kPa).

2.4 Model H44X check valves incorporate an access hand hole cover in the body design to accommodate maintenance and inspection. Model H44X-01 and H84X check valves utilize identical internal components, differing only in body end connections.

2.5 The check valves discussed in this Report are for use in horizontal and vertical installations and are manufactured to comply with AWWC508.

## 3 EXAMINATIONS AND TESTS

3.1 Samples were submitted for examination and testing. The samples were considered to be representative of the product line and were examined, tested, and compared to the manufacturer's drawings. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.

3.2 All testing and analysis considered appropriate was conducted and verified to be in compliance with the standard defined in Section 1.3.

#### 4 MARKING

4.1 The following information appears on all valves identified within this Report and meets standard requirements:

- Manufacturer's name or trademark
- Date of manufacturer or code traceable to date of manufacture or lot identification
- Model (designation, stock number, etc.)
- Valve Size
- Rate Working Pressure
- The FM Mark of Approval

#### 5 REMARKS

5.1 The FM Global Property Loss Prevention Data Sheets should be strictly adhered to when installing this product.

5.2 Installations shall comply with the latest edition of the manufacturer's instruction manual.

#### 6 SURVEILLANCE AUDIT

The design and manufacturing facilities at the following locations are subject to follow-up audit inspections. The facilities and quality control procedures in place have been found to be satisfactory to manufacture product identical to that examined and tested as described in this Report. An FM Approved Product Revision Request Form shall be submitted to FM Approvals for requesting any additional manufacturing facilities which are not listed below. The products discussed in this Report are FM Approved only when designed and manufactured in the following facilities:

##### Design

Shandong Lede Machinery Co., Ltd.  
No. 3998 West Weihuan N Rd  
Weicheng Dist, Weifang City  
Shandong 261057  
China

##### Manufacturing

Shandong Lede Machinery Co., Ltd.  
No. 3998 West Weihuan N Rd  
Weicheng Dist, Weifang City  
Shandong 261057  
China

#### 7 MANUFACTURER'S RESPONSIBILITIES

7.1 Documentation considered critical to this Approval is on file at FM Approvals and is listed in the Documentation File, Section 8, of this Report. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The FM Approved Product Revision Request Form shall be forwarded to FM Approvals as notice of proposed changes.

7.2 The manufacturer is responsible for control of the product marking and installation instructions for the product.

**7.3** The manufacturer shall provide installation, operating, and maintenance manual(s) with each system.

**7.4** In accordance with the Master Agreement, the manufacturer shall make full and immediate disclosure to FM Approvals of all information concerning any defect in, or potential hazard of, the product or service manufactured or provided by the Customer which is Approved by, or being examined by, FM Approvals. The manufacturer shall make all necessary arrangements for the investigation of complaints / anomalies applicable to this approval and shall keep records of all complaints / anomalies including actions taken.

**7.5** Test Requirement No. 1 – Seat Leakage

The manufacturer shall test 100 percent of production valves for seat leakage to the rated working pressure. The pressure shall be held for a minimum of 15 seconds. If there is no visible leakage after 15 seconds, then the test may be considered acceptable. For metal seated valve, only, if there is leakage visible during the 15 second test, then the test duration shall be extended to a minimum of 1 minute so that the leakage rate can be determined. If the metal seated valve is observed to have leakage in excess of 1 fluid ounce/hr (30 ml/hr) the valve is considered to have failed the test. Resilient-seated valves of any size shall exhibit no visible leakage.

Following the seat leakage test, all valves shall be opened through their full range with no evidence of sticking or binding.

**7.6** Test Requirement No. 2 – Body Leakage

The manufacturer shall test 100 percent of production valves for body leakage to twice the rated working pressure. The pressure shall be held for a minimum of 1 minute with no evidence of body leakage or distortion.

**8** **DOCUMENTATION FILE**

All pertinent Report documents are outlined in the ATTACHMENTS list below.

**9** **CONCLUSION**

The Model H84X grooved end and Model H44X and H44X-01 flanged end swing check valves described in Section 1.4 meet FM Approvals requirements. Since a duly signed Master Agreement is on file for this manufacturer, Approval is effective the date of this Report.

**PROJECT DATA RECORD:** PR454783

**ATTACHMENTS:** Listing Sheet for Model H84X, H44X and H44X-01  
CDL Control Drawing Blueprint Report

**Listing Sheet for Model H84X, H44X and H44X-01**

☒ Automatic Sprinkler Systems ☒ Valves ☒ Check Valves ☒ Single Check Valves

**Models H84X, H44X and H44X-01**

| <b><i>Product Designation</i></b> | <b><i>Description</i></b>       | <b><i>Nominal Pipe Size, in.</i></b>                        | <b><i>Max Working Pressure, psi (kPa)</i></b> | <b><i>Remarks</i></b> |
|-----------------------------------|---------------------------------|---|---|-----------------------|
| Model H84X                        | Swing Check Valve, Grooved Ends | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12<br>76.1, 139.7 and 165.1 mm | 365<br>(2515)                                 | a, b                  |
| Model H44X                        | Swing Check Valve, Flanged Ends | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12                             | 300<br>(2070)                                 | a, b                  |
| Model H44X-01                     | Swing Check Valve, Flanged Ends | 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12                             | 300<br>(2070)                                 | a, b                  |

- a. For use in horizontal and vertical installations.
- b. Resilient seat.



## CDL Control Drawing Blueprint Report

**Blueprint Report****Shandong Lede Machinery Co Ltd (113572)****Class No 1210****Original Project I.D. 3057546**

| <u>Drawing No.</u>  | <u>Revision Level</u> | <u>Drawing Title</u>     | <u>Last Report</u> | <u>Electronic Drawing</u> |
|---------------------|-----------------------|--------------------------|--------------------|---------------------------|
| 31-20000300-100 -05 | -                     | Disc DN100 300PSI        | 3057546            | No                        |
| 31-20000300-100 -08 | -                     | Clapper Arm DN100 300PSI | 3057546            | No                        |
| 31-20000300-100 -17 | -                     | Bonnet DN100 300PSI      | 3057546            | No                        |
| 31-20000300-100-00  | -                     | Assembly DN100 300PSI    | 3057546            | No                        |
| 31-20000300-100-01  | -                     | Body DN100 300PSI        | 3057546            | No                        |
| 31-20000300-125 -05 | -                     | Disc DN125 300PSI        | 3057546            | No                        |
| 31-20000300-125 -08 | -                     | Clapper Arm DN125 300PSI | 3057546            | No                        |
| 31-20000300-125 -17 | -                     | Bonnet DN125 300PSI      | 3057546            | No                        |
| 31-20000300-125-00  | -                     | Assembly DN125 300PSI    | 3057546            | No                        |
| 31-20000300-125-01  | -                     | Body DN125 300PSI        | 3057546            | No                        |
| 31-20000300-150 -05 | -                     | Disc DN150 300PSI        | 3057546            | No                        |
| 31-20000300-150 -08 | -                     | Clapper Arm DN150 300PSI | 3057546            | No                        |
| 31-20000300-150 -17 | -                     | Bonnet DN150 300PSI      | 3057546            | No                        |
| 31-20000300-150-00  | -                     | Assembly DN150 300PSI    | 3057546            | No                        |
| 31-20000300-150-01  | -                     | Body DN150 300PSI        | 3057546            | No                        |
| 31-20000300-200 -05 | -                     | Disc DN200 300PSI        | 3057546            | No                        |
| 31-20000300-200 -08 | -                     | Clapper Arm DN200 300PSI | 3057546            | No                        |
| 31-20000300-200 -17 | -                     | Bonnet DN200 300PSI      | 3057546            | No                        |
| 31-20000300-200-00  | -                     | Assembly DN200 300PSI    | 3057546            | No                        |
| 31-20000300-200-01  | -                     | Body DN200 300PSI        | 3057546            | No                        |
| 31-20000300-250 -05 | -                     | Disc DN250 300PSI        | 3057546            | No                        |
| 31-20000300-250 -08 | -                     | Clapper Arm DN250 300PSI | 3057546            | No                        |
| 31-20000300-250 -17 | -                     | Bonnet DN250 300PSI      | 3057546            | No                        |
| 31-20000300-250-00  | -                     | Assembly DN250 300PSI    | 3057546            | No                        |
| 31-20000300-250-01  | -                     | Body DN250 300PSI        | 3057546            | No                        |
| 31-20000300-300 -05 | -                     | Disc DN300 300PSI        | 3057546            | No                        |
| 31-20000300-300 -08 | -                     | Clapper Arm DN300 300PSI | 3057546            | No                        |
| 31-20000300-300 -17 | -                     | Bonnet DN300 300PSI      | 3057546            | No                        |
| 31-20000300-300-00  | -                     | Assembly DN300 300PSI    | 3057546            | No                        |
| 31-20000300-300-01  | -                     | Body DN300 300PSI        | 3057546            | No                        |
| 31-20000300-50 -05  | -                     | Disc DN50 300PSI         | 3057546            | No                        |
| 31-20000300-50 -08  | -                     | Clapper Arm DN50 300PSI  | 3057546            | No                        |
| 31-20000300-50 -17  | -                     | Bonnet DN50 300PSI       | 3057546            | No                        |
| 31-20000300-50-00   | -                     | Assembly DN50 300PSI     | 3057546            | No                        |
| 31-20000300-50-01   | -                     | Body DN50 300PSI         | 3057546            | No                        |
| 31-20000300-65 -05  | -                     | Disc DN65 300PSI         | 3057546            | No                        |
| 31-20000300-65 -08  | -                     | Clapper Arm DN65 300PSI  | 3057546            | No                        |
| 31-20000300-65 -17  | -                     | Bonnet DN65 300PSI       | 3057546            | No                        |
| 31-20000300-65-00   | -                     | Assembly DN65 300PSI     | 3057546            | No                        |
| 31-20000300-65-01   | -                     | Body DN65 300PSI         | 3057546            | No                        |
| 31-20000300-80 -05  | -                     | Disc DN80 300PSI         | 3057546            | No                        |
| 31-20000300-80 -08  | -                     | Clapper Arm DN80 300PSI  | 3057546            | No                        |

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|                     |   |                                 |         |    |
|---------------------|---|---------------------------------|---------|----|
| 31-20000300-80 -17  | - | Bonnet DN80 300PSI              | 3057546 | No |
| 31-20000300-80-00   | - | Assembly DN80 300PSI            | 3057546 | No |
| 31-20000300-80-01   | - | Body DN80 300PSI                | 3057546 | No |
| 31-60000300-100 -02 | - | Seat Ring DN100 300PSI          | 3057546 | No |
| 31-60000300-100-04  | - | Nut DN100 300PSI                | 3057546 | No |
| 31-60000300-100-13  | - | Hinge Pin DN100 300PSI          | 3057546 | No |
| 31-60000300-100-14  | - | Hinge Plug DN100 300PSI         | 3057546 | No |
| 31-60000300-125 -02 | - | Seat Ring DN125 300PSI          | 3057546 | No |
| 31-60000300-125-04  | - | Disc Plate DN125 300PSI         | 3057546 | No |
| 31-60000300-125-13  | - | Hinge Pin DN125 300PSI          | 3057546 | No |
| 31-60000300-150 -02 | - | Seat Ring DN150 300PSI          | 3057546 | No |
| 31-60000300-150-04  | - | Disc Plate DN150 300PSI         | 3057546 | No |
| 31-60000300-150-13  | - | Hinge Pin DN150 300PSI          | 3057546 | No |
| 31-60000300-150-14  | - | Hinge Plug DN150 300PSI         | 3057546 | No |
| 31-60000300-200 -02 | - | Seat Ring DN200 300PSI          | 3057546 | No |
| 31-60000300-200-04  | - | Disc Plate DN200 300PSI         | 3057546 | No |
| 31-60000300-200-13  | - | Hinge Pin DN200 300PSI          | 3057546 | No |
| 31-60000300-200-14  | - | Hinge Plug DN200 300PSI         | 3057546 | No |
| 31-60000300-250 -02 | - | Seat Ring DN250 300PSI          | 3057546 | No |
| 31-60000300-250-04  | - | Disc Plate DN250 300PSI         | 3057546 | No |
| 31-60000300-250-13  | - | Hinge Pin DN250 300PSI          | 3057546 | No |
| 31-60000300-250-14  | - | Hinge Plug DN250 300PSI         | 3057546 | No |
| 31-60000300-300 -02 | - | Seat Ring DN300 300PSI          | 3057546 | No |
| 31-60000300-300-04  | - | Disc Plate DN300 300PSI         | 3057546 | No |
| 31-60000300-300-13  | - | Hinge Pin DN300 300PSI          | 3057546 | No |
| 31-60000300-300-14  | - | Hinge Plug DN300 300PSI         | 3057546 | No |
| 31-60000300-50 -02  | - | Seat Ring DN50 300PSI           | 3057546 | No |
| 31-60000300-50-04   | - | Nut DN50 300PSI                 | 3057546 | No |
| 31-60000300-50-13   | - | Hinge Pin DN50 300PSI           | 3057546 | No |
| 31-60000300-50-14   | - | Hinge Plug DN50 300PSI          | 3057546 | No |
| 31-60000300-65 -02  | - | Seat Ring DN65 300PSI           | 3057546 | No |
| 31-60000300-65-13   | - | Hinge Pin DN65 300PSI           | 3057546 | No |
| 31-60000300-80 -02  | - | Seat Ring DN80 300PSI           | 3057546 | No |
| 31-60000300-80-04   | - | Nut DN80 300PSI                 | 3057546 | No |
| 31-60000300-80-13   | - | Hinge Pin DN80 300PSI           | 3057546 | No |
| 31-60000300-80-14   | - | Hinge Plug DN80 300PSI          | 3057546 | No |
| 31-70000300-100-12  | - | Hinge Bushing DN100 300PSI      | 3057546 | No |
| 31-70000300-150-12  | - | Hinge Bushing DN150 300PSI      | 3057546 | No |
| 31-70000300-200-12  | - | Hinge Bushing DN200 300PSI      | 3057546 | No |
| 31-70000300-250-12  | - | Hinge Bushing DN250 300PSI      | 3057546 | No |
| 31-70000300-300-12  | - | Hinge Bushing DN300 300PSI      | 3057546 | No |
| 31-70000300-50-12   | - | Hinge Bushing DN50 300PSI       | 3057546 | No |
| 31-70000300-80-12   | - | Hinge Bushing DN80 300PSI       | 3057546 | No |
| 31-80000300-100 -03 | - | Sealing Ring DN100 300PSI       | 3057546 | No |
| 31-80000300-100 -06 | - | Disc Sealing Ring DN100 300PSI  | 3057546 | No |
| 31-80000300-100 -15 | - | Hinge Sealing Ring DN100 300PSI | 3057546 | No |
| 31-80000300-100 -16 | - | Bonnet Gasket DN100 300PSI      | 3057546 | No |
| 31-80000300-125 -03 | - | Sealing Ring DN125 300PSI       | 3057546 | No |
| 31-80000300-125 -06 | - | Disc Sealing Ring DN125 300PSI  | 3057546 | No |
| 31-80000300-125 -16 | - | Bonnet Gasket DN125 300PSI      | 3057546 | No |
| 31-80000300-150 -03 | - | Sealing Ring DN150 300PSI       | 3057546 | No |
| 31-80000300-150 -06 | - | Disc Sealing Ring DN150 300PSI  | 3057546 | No |

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|                          |   |                                 |         |    |
|--------------------------|---|---------------------------------|---------|----|
| 31-80000300-150 -15      | - | Hinge Sealing Ring DN150 300PSI | 3057546 | No |
| 31-80000300-150 -16      | - | Bonnet Gasket DN150 300PSI      | 3057546 | No |
| 31-80000300-200 -03      | - | Sealing Ring DN200 300PSI       | 3057546 | No |
| 31-80000300-200 -06      | - | Disc Sealing Ring DN200 300PSI  | 3057546 | No |
| 31-80000300-200 -15      | - | Hinge Sealing Ring DN200 300PSI | 3057546 | No |
| 31-80000300-200 -16      | - | Bonnet Gasket DN200 300PSI      | 3057546 | No |
| 31-80000300-250 -03      | - | Sealing Ring DN250 300PSI       | 3057546 | No |
| 31-80000300-250 -06      | - | Disc Sealing Ring DN250 300PSI  | 3057546 | No |
| 31-80000300-250 -15      | - | Hinge Sealing Ring DN250 300PSI | 3057546 | No |
| 31-80000300-250 -16      | - | Bonnet Gasket DN250 300PSI      | 3057546 | No |
| 31-80000300-300 -03      | - | Sealing Ring DN300 300PSI       | 3057546 | No |
| 31-80000300-300 -06      | - | Disc Sealing Ring DN300 300PSI  | 3057546 | No |
| 31-80000300-300 -15      | - | Hinge Sealing Ring DN300 300PSI | 3057546 | No |
| 31-80000300-300 -16      | - | Bonnet Gasket DN300 300PSI      | 3057546 | No |
| 31-80000300-50 -03       | - | Sealing Ring DN50 300PSI        | 3057546 | No |
| 31-80000300-50 -06       | - | Disc Sealing Ring DN50 300PSI   | 3057546 | No |
| 31-80000300-50 -15       | - | Hinge Sealing Ring DN50 300PSI  | 3057546 | No |
| 31-80000300-50 -16       | - | Bonnet Gasket DN50 300PSI       | 3057546 | No |
| 31-80000300-65 -03       | - | Sealing Ring DN65 300PSI        | 3057546 | No |
| 31-80000300-65 -06       | - | Disc Sealing Ring DN65 300PSI   | 3057546 | No |
| 31-80000300-65 -16       | - | Bonnet Gasket DN65 300PSI       | 3057546 | No |
| 31-80000300-80 -03       | - | Sealing Ring DN80 300PSI        | 3057546 | No |
| 31-80000300-80 -06       | - | Disc Sealing Ring DN80 300PSI   | 3057546 | No |
| 31-80000300-80 -15       | - | Hinge Sealing Ring DN80 300PSI  | 3057546 | No |
| 31-80000300-80 -16       | - | Bonnet Gasket DN80 300PSI       | 3057546 | No |
| 31F-20000300-100-00      | - | Assemble DN100                  | 3057546 | No |
| 31F-20000300-100-01      | - | Body DN100                      | 3057546 | No |
| 31F-20000300-125-00      | - | Assemble DN125                  | 3057546 | No |
| 31F-20000300-125-01      | - | Body DN125                      | 3057546 | No |
| 31F-20000300-150-00      | - | Assemble DN150                  | 3057546 | No |
| 31F-20000300-150-01      | - | Body DN150                      | 3057546 | No |
| 31F-20000300-200-00      | - | Assemble DN200                  | 3057546 | No |
| 31F-20000300-200-01      | - | Body DN200                      | 3057546 | No |
| 31F-20000300-250-00      | - | Assemble DN250                  | 3057546 | No |
| 31F-20000300-250-01      | - | Body DN250                      | 3057546 | No |
| 31F-20000300-300-00      | - | Assemble DN300                  | 3057546 | No |
| 31F-20000300-300-01      | - | Body DN300                      | 3057546 | No |
| 31F-20000300-50-00       | - | Assemble DN50                   | 3057546 | No |
| 31F-20000300-50-01       | - | Body DN50                       | 3057546 | No |
| 31F-20000300-65-00       | - | Assemble DN65                   | 3057546 | No |
| 31F-20000300-65-01       | - | Body DN65                       | 3057546 | No |
| 31F-20000300-80-00       | - | Assemble DN80                   | 3057546 | No |
| 31F-20000300-80-01       | - | Body DN80                       | 3057546 | No |
| 31G-2000025-100 -02.1    | - | Disc core DN100                 | 3057546 | No |
| 31G-2000025-100-00       | - | Assemble DN100                  | 3057546 | No |
| 31G-2000025-100-01       | - | Body DN100                      | 3057546 | No |
| 31G-2000025-125 -00      | - | Assemble DN125                  | 3057546 | No |
| 31G-2000025-125 -01      | - | Body DN125                      | 3057546 | No |
| 31G-2000025-125 -02.1    | - | Disc core DN125                 | 3057546 | No |
| 31G-2000025-125(140) -00 | - | Assemble DN125(140)             | 3057546 | No |
| 31G-2000025-125(140) -01 | - | Body DN125(140)                 | 3057546 | No |
| 31G-2000025-150 -00      | - | Assemble DN150                  | 3057546 | No |

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|                          |   |                     |         |    |
|--------------------------|---|---------------------|---------|----|
| 31G-2000025-150 -01      | - | Body DN150          | 3057546 | No |
| 31G-2000025-150 -02.1    | - | Disc core DN150     | 3057546 | No |
| 31G-2000025-150(165) -00 | - | Assemble DN150(165) | 3057546 | No |
| 31G-2000025-150(165) -01 | - | Body DN150 (165)    | 3057546 | No |
| 31G-2000025-200 -00      | - | Assemble DN200      | 3057546 | No |
| 31G-2000025-200 -01      | - | Body DN200          | 3057546 | No |
| 31G-2000025-200 -02.1    | - | Disc core DN200     | 3057546 | No |
| 31G-2000025-250 -00      | - | Assemble DN250      | 3057546 | No |
| 31G-2000025-250 -01      | - | Body DN250          | 3057546 | No |
| 31G-2000025-250 -02.1    | - | Disc core DN250     | 3057546 | No |
| 31G-2000025-300 -00      | - | Assemble DN300      | 3057546 | No |
| 31G-2000025-300 -01      | - | Body DN300          | 3057546 | No |
| 31G-2000025-300 -02.1    | - | Disc core DN300     | 3057546 | No |
| 31G-2000025-50 -00       | - | Assemble DN50       | 3057546 | No |
| 31G-2000025-50 -01       | - | Body DN50           | 3057546 | No |
| 31G-2000025-50 -02.1     | - | Disc core DN50      | 3057546 | No |
| 31G-2000025-65 -00       | - | Assemble DN65       | 3057546 | No |
| 31G-2000025-65 -01       | - | Body DN65           | 3057546 | No |
| 31G-2000025-65 -02.1     | - | Disc core DN65      | 3057546 | No |
| 31G-2000025-65(76) -00   | - | Assemble DN65(76)   | 3057546 | No |
| 31G-2000025-65(76) -01   | - | Body DN65(76)       | 3057546 | No |
| 31G-2000025-80 -00       | - | Assemble DN80       | 3057546 | No |
| 31G-2000025-80 -01       | - | Body DN80           | 3057546 | No |
| 31G-2000025-80 -02.1     | - | Disc core DN80      | 3057546 | No |
| 31G-5000025-100-05       | - | Clapper Arm DN100   | 3057546 | No |
| 31G-5000025-125-05       | - | Clapper Arm DN125   | 3057546 | No |
| 31G-5000025-150-05       | - | Clapper Arm DN150   | 3057546 | No |
| 31G-5000025-200-05       | - | Clapper Arm DN200   | 3057546 | No |
| 31G-5000025-250-05       | - | Clapper Arm DN250   | 3057546 | No |
| 31G-5000025-300-05       | - | Clapper Arm DN300   | 3057546 | No |
| 31G-5000025-50-05        | - | Clapper Arm DN50    | 3057546 | No |
| 31G-5000025-65-05        | - | Clapper Arm DN65    | 3057546 | No |
| 31G-5000025-80-05        | - | Clapper Arm DN80    | 3057546 | No |
| 31G-6000025-100 -04      | - | Hinge Pin DN100     | 3057546 | No |
| 31G-6000025-100-02.2     | - | Bolt M8 DN100       | 3057546 | No |
| 31G-6000025-125 -04      | - | Hinge Pin DN125     | 3057546 | No |
| 31G-6000025-125-02.2     | - | Bolt M10 DN125      | 3057546 | No |
| 31G-6000025-200 -04      | - | Hinge Pin DN200     | 3057546 | No |
| 31G-6000025-200-02.2     | - | Bolt M14 DN200      | 3057546 | No |
| 31G-6000025-250 -04      | - | Hinge Pin DN250     | 3057546 | No |
| 31G-6000025-250-02.2     | - | Bolt M16 DN250      | 3057546 | No |
| 31G-6000025-300 -04      | - | Hinge Pin DN300     | 3057546 | No |
| 31G-6000025-300-02.2     | - | Bolt M20 DN300      | 3057546 | No |
| 31G-6000025-50-02.2      | - | Bolt M6 DN50        | 3057546 | No |
| 31G-6000025-50-04        | - | Hinge Pin DN50      | 3057546 | No |
| 31G-7000025-100 -07      | - | Hinge Bushing DN100 | 3057546 | No |
| 31G-7000025-100-10       | - | Seat Ring DN100     | 3057546 | No |
| 31G-7000025-125 -07      | - | Hinge Bushing DN125 | 3057546 | No |
| 31G-7000025-125-10       | - | Seat Ring DN125     | 3057546 | No |
| 31G-7000025-150-10       | - | Seat Ring DN150     | 3057546 | No |
| 31G-7000025-200 -07      | - | Hinge Bushing DN200 | 3057546 | No |
| 31G-7000025-200-10       | - | Seat Ring DN200     | 3057546 | No |

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|---------------------|---|-------------------------------------|---------|-----------|
| 31G-7000025-250 -07 | - | Hinge Bushing DN250                 | 3057546 | No        |
| 31G-7000025-250-10  | - | Seat Ring DN250                     | 3057546 | No        |
| 31G-7000025-300 -07 | - | Hinge Bushing DN300                 | 3057546 | No        |
| 31G-7000025-300-10  | - | Seat Ring DN300                     | 3057546 | No        |
| 31G-7000025-50 -07  | - | Hinge Bushing DN50                  | 3057546 | No        |
| 31G-7000025-50-10   | - | Seat Ring DN50                      | 3057546 | No        |
| 31G-7000025-65-10   | - | Seat Ring DN65                      | 3057546 | No        |
| 31G-7000025-80-10   | - | Seat Ring DN80                      | 3057546 | No        |
| 31G-8000025-100 -02 | - | Disc DN100                          | 3057546 | No        |
| 31G-8000025-100 -50 | - | Stoper DN100                        | 3057546 | No        |
| 31G-8000025-125 -02 | - | Disc DN125                          | 3057546 | No        |
| 31G-8000025-125 -50 | - | Stoper DN125                        | 3057546 | No        |
| 31G-8000025-150 -02 | - | Disc DN150                          | 3057546 | No        |
| 31G-8000025-200 -02 | - | Disc DN200                          | 3057546 | No        |
| 31G-8000025-200 -50 | - | Stoper DN200                        | 3057546 | No        |
| 31G-8000025-250 -02 | - | Disc DN300                          | 3057546 | No        |
| 31G-8000025-250 -50 | - | Stoper DN250                        | 3057546 | No        |
| 31G-8000025-300 -02 | - | Disc DN250                          | 3057546 | No        |
| 31G-8000025-300 -50 | - | Stoper DN300                        | 3057546 | No        |
| 31G-8000025-50 -02  | - | Disc DN50                           | 3057546 | No        |
| 31G-8000025-50 -50  | - | Stoper DN50                         | 3057546 | No        |
| 31G-8000025-65 -02  | - | Disc DN65                           | 3057546 | No        |
| 31G-8000025-80 -02  | - | Disc DN80                           | 3057546 | No        |
| H44X-01             | - | Mark-H44X-01                        | 3057546 | No        |
| H44X                | - | Mark-H44X                           | 3057546 | No        |
| H84X                | - | Mark-H84X                           | 3057546 | No        |
| Mark                | - | GSC-365 Resilient Swing Check Valve | 3060175 | Yes (pdf) |