die erste®

1P-NCH

General Purpose Check Valve

Installation, Operation,

& Maintenance Manual

for wafer type spring check valve

IOM-1P-NCH Ver.1.1
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Table of Contents

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Chapter I:

Introduction

This manual is provided to ensure proper installation, operation, and maintenance for the check valves manufactured and supplied by Die Erste Industry Co., Ltd. The valves are identified by marking on the body or on a name plate or both.

1.1 Contact Information

For information concerning warranties, or for questions pertaining to installation, operation or maintenance of DIE ERSTE products, contact:

DIE ERSTE INDUSTRY CO., LTD.
5F-1, No.936, Wen-Sin Road, Sec 4,
Taichung City, Taiwan 406

Phone: +886 4 22310059
Fax: +886 4 22360236
Email: sales@die-erste.com

To order replacement parts, contact DIE ERSTE sales at the address listed above.

1.2 General Notes

The following instructions refer to DIE ERSTE Wafer Type Spring Load Check Valve (Series 1P-NCH) as described in the DIE ERSTE current catalog.

Keep the protective covers or plastic bags in place until the valve is ready for installation. The product performance depends upon prevention of damage of inner parts. After removing the cover/bag make sure that the valve free of obstructions, dirt, particles or any materials that may cause any damage.

The check valve may contain a silicon- based lubricant, which aids in the assembly of the valve. Lubricant may be removed with a solvent if found objectionable. Alternatively the valve can be ordered free of lubricants upon request.

Certain ferrous valves contain phosphate material, and are oil dipped during the course of manufacture. However, the processes used are completely non-toxic.

1.3 Precautions and Warnings

Choose the correct material of valve for different applications before obtaining the valve. The user should be aware of the operating situation, fluid properties, and the possible outcomes when implementing valves into the pipeline system. DIE ERSTE suggests that the user should make estimation beforehand.

Fluid undergoes property changes with respect to outside factors, particularly fluid left inside the sealed cavity. When temperature and pressure exceed allowable value, valve failure may occur. Also, user should be noted that excessive pressure and temperature at nearby pipeline system can also cause valve failure as well.

Do not touch the valve surface when high temperature fluid is flowing through the valve.

Do not attempt to disassemble the valve during operation, especially with the presence of high pressure in the pipeline system. For safety concern, unstable fluid should not be used in the pipeline system, unless otherwise specified with the category III in Declaration of conformity.

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⚠ **CAUTION**

Before removing valve from pipeline please note: Media flowing through a valve may be corrosive, toxic, flammable, or of a contaminant nature. Where there is evidence of harmful fluids having flowed through the valve, the utmost care must be taken. It is suggested that the following safety precautions must be strictly executed when handling valves.

1) Always wear eye shields.
2) Always wear gloves and footwear.
3) Wear protective headgear.
4) Ensure that running water is readily accessible.
5) Fire extinguisher must be obtainable if media is flammable.

Check the line gauges to ensure that no pressure is present in the valve. These valves, when installed, have body connectors which form an integral part of the pipeline and the valve cannot be removed from the pipeline without being dismantled.

Chapter II: Installation

2.1 General Notes

1) Direction

Most check valves have a direction arrow specified on the body. The user should read the sign before installation to configure the correct direction. This is due to the shape of the valve. It is important to identify the direction correctly since check valves are uni-directional. Improper installation could leads to pipeline system failure, and eventually unexpected accidents.

2) Position

Always install the check valve in the position specified. However, if not specified, the DIE ERSTE check valve can be installed in most positions since it does not depend greatly on gravity to bias the checking mechanism.

3) Systems hydrostatic test

Before delivery, the product is tested 1.5 times the allowable pressure at ambient temperature in open position. After installation, the piping system may subject to system tests, as condition not to exceed the above mentioned pressure.

4) After installation is complete, a pre-operation test should be conducted. User should consider the following action. Flush the whole system completely to wash away all the unnecessary particles. Then run the pipeline system through. Upon completion of the above tests, cleanse the valve thoroughly with water.

5) For different connection type, please make the appropriate connection method according to international standards, such as flanges, welding, and bolts. For flange ends, the flanges should be inspected for free of defects.

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Chapter III: Operation

3.1 To Start

To start the system, open the control gradually. This is crucial in flow control. No further operation is needed since the check valve will activate automatically. Do not change any inner components.

3.2 To Shut Down

Gradually turn off the fluid. No special procedure is required to shut down the check valve. It is ready for operation as received. Do not adjust any inner components.

Chapter IV: Maintenance

4.1 General Notes

With pressure equalizing discs, DIE ERSTE check valves have a long, trouble free life, and maintenance is seldom required. However, when necessary, check valves may be refurbished, using a minimal number of components, none of which require machining. DIE ERSTE valves are designed for easy service and assembly in the field.

Before maintenance, user should check availability of the service kit for 1P-NCH. DIE ERSTE strongly recommends using the genuine service kit produced directly from the DIE ERSTE. For more information, please contact our representatives.

4.2 Maintenance Frequency

The maintenance frequency is determined based upon the application of the valve. User should consider the following factors when determining the maintenance time interval: fluid type, flow velocity, operation frequency, pressure, and temperature.

One indication of when to maintenance is that fluid go through the disc gate under the specified pressure value. In this case, user should change the valve spring.

4.3 Maintenance Work

In most cases maintenance is not necessary. However in case of needs, the inner components can be replaced. For spring load check valve, the spring and the discs can be removed after loosening the cap with bent nose pliers.

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4.4 Disassembly and Reassembly

1) Disassembly

a) Depressurized and empty the seal up fluid before disassembly. Be cautious of the fluid.

b) With bent nose pliers, remove the cap by turning the cap along the groove.

c) The spring and the disc can then be removed and replaced with new ones. Lubricate parts if necessary.

d) All the components should be stored in a clean place.

2) Reassembly

Before reassembly, inspect the valve for any damage on all internals.

a) For *Wafer Type Spring Loaded Check Valve*, place the components in the following manner: disc, spring, and spring cap. Tighten the cap by turning into locking position with bent nose pliers.

b) Bolt the wafer check valve back onto the pipeline.

4.5 Troubleshooting

The following table lists the possible malfunctions that might occur after prolonged use.

Symptom	Possible fault	Actions
The valve is slamming	Air is trapped downstream of the check valve.	Bleed the air traps, and relieve the pressure
Valve bouncing at closure	Column separation upstream of the valve	Add a vacuum breaker
Massive leaking	Damaged spring	Clean the region or Replace the spring / valve
	Foreign substances clogging the system	

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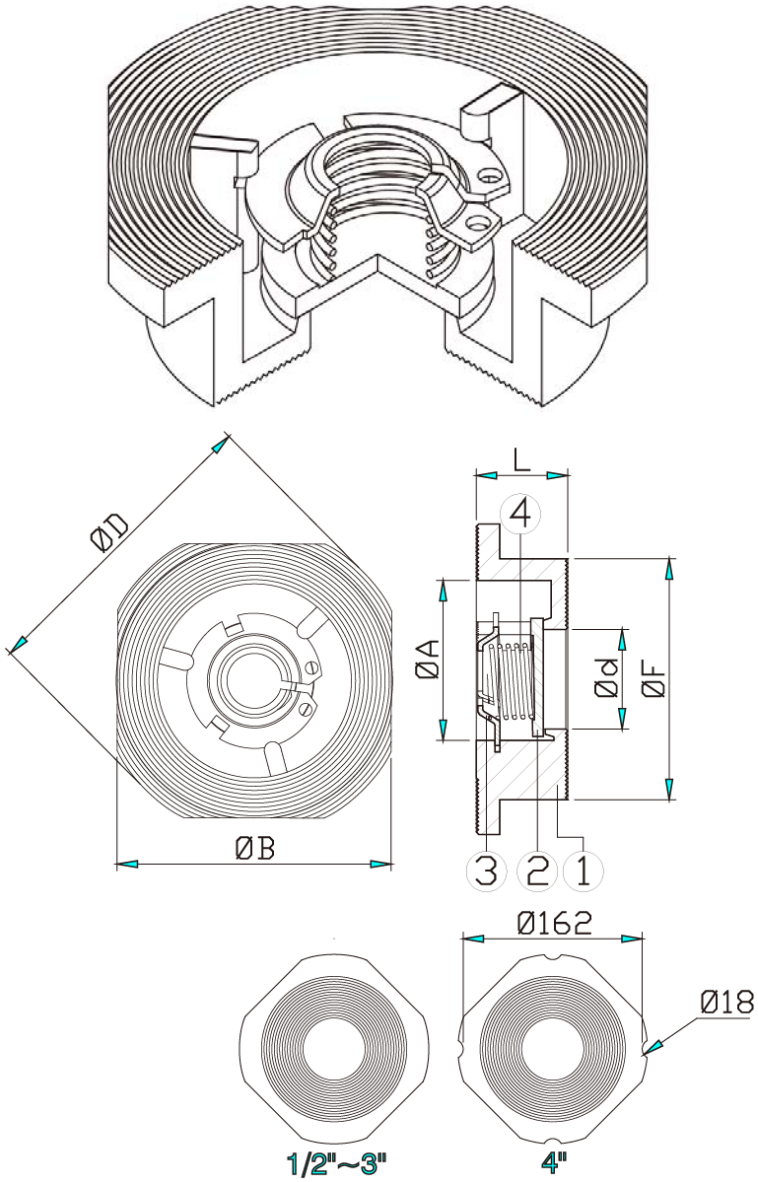
4.6 Technical Data and Product Information

Wafer Type:



ITEM	PARTS	MATERIAL	
1	BODY	ASTM A351-CF8M	ASTM A351-CF8
2	DISC	ASTM -A240 316/ASTM-A240 304	
3	CAP	ASTM -A240 316/ASTM-A240 304	
4	SPRING	ASTM -A240 316/ASTM-A240 304	

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