

HAITIMA

Instruction Manual

Needle Valve


2032

HIM-066 Version: B




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		Needle Valve 2032	Version	B
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CONTENTS

1. Introduction and Safety Information	1
1.1 Introduction	1
1.2 Safety Information	1
2. General Precautions.....	2
2.1 Material Selection	2
2.2 Pressure-Temperature Rating	2
2.3 Fluid Thermal Expansion	2
2.4 Hydrostatic Test	2
2.5 Liquids with High Fluid Velocity	2
2.6 Throttling Service	3
3. Storage and Preparation	4
3.1 Storage	4
3.2 Preparation	4
4. Installation and Operation	5
4.1 Installation	5
4.2 Operation	5
5. Maintenance and Repair	6
5.1 Maintenance frequency	6
5.2 Disassembly.....	6
5.3 Parts inspection, maintenance and replacement	7
5.4 Assembly	8

		<p style="text-align: center;">Needle Valve 2032</p>	<p style="text-align: center;">Version</p>	<p style="text-align: center;">B</p>
<p>Document No.</p>	<p>HIM-066</p>		<p style="text-align: center;">Date</p>	<p style="text-align: center;">Mar.18.2011</p>

6. Quality Assurance and Service	9
6.1 Quality Assurance	9
6.2 Service.....	9
7. Technical Parameters and Valve Structure	10
7.1 Specification List	10
7.2 Torque.....	10
7.3 Valve Structure.....	10

		Needle Valve 2032	Version	B
Document No.	HIM-066		Date	Mar.18.2011
			Page	1

1. INTRODUCTION AND SAFETY INFORMATION

1.1 INTRODUCTION

This manual has been prepared to serve as a guide to insure continuous satisfactory service and assist in restoring a valve to proper working condition.

It covers 6000 PSI, stainless steel needle valves.


The installation, storage, operation, inspection and repair, service problems, maintenance and preventive maintenance, quality assurance and service, technical parameters covering these valves are also included in this manual.

All these valves are widely used in water system, petroleum, chemical, power plant and allied industries.

1.2 SAFETY INFORMATION

The following general safety notices supplement the specific warnings and cautions appearing elsewhere in this manual. They are recommended precautions that must be understood and applied during operation and maintenance of the equipment covered herein.

- a. Always wear eye shields, gloves and overalls. Wear protective footwear and headgear.
- b. To avoid injury, never attempt disassembly while there are pressures either upstream, or downstream. Even when replacing packing rings, caution is necessary to avoid possible injury.
- c. Do not attempt to disassemble a valve while there is pressure in the line. Make sure both upstream and downstream pressures are removed. Disassemble with caution in the event all pressures have not been relieved.
- d. Prior to replacing packing rings remove all pressure from the valve.
- e. To prevent valve distortion, inefficient operation, or early maintenance problems, support piping on each side of the valve.
- f. Do not touch surface of valve on high temperature.
- g. Valves are not to be used with unstable fluids.

		Needle Valve 2032	Version	B
Document No.	HIM-066		Date	Mar.18.2011
			Page	2

2. GENERAL PRECAUTIONS

2.1 MATERIAL SELECTION

The possibility of material deterioration in service and the need for periodic inspections is depended on the contained fluid. Carbide phase conversion to graphite, oxidation of ferrite materials, and decrease in ductility of carbon steels at low temperature (even in applications above 29°F) and susceptibility to inter-granular corrosion of austenitic materials or grain boundary attack of nickel-base alloys are among those items. Information about corrosion data is provided in this I.O.M, the user is requested to take attention or consideration to determine if the used materials are suitable for the application.

2.2 PRESSURE-TEMPERATURE RATING

The Pressure-Temperature rating, published by manufacturer is usually considered an appropriate guide to the maximum temperature and pressure those ball valves may withstand. The principle of pressure-temperature rating is depending on static pressure. For reference client can ask the valve distributor or manufacturer for assurance of suitability when ball valves are subjected to the following conditions:

- Valves are left closed for long periods of service under high-temperature or high-pressure service conditions
- Valves are operated frequently for long periods with high-temperature or high-pressure service conditions.

2.3 FLUID THERMAL EXPANSION

It is possible, with the ball in closed condition; the sealed cavity inside the valve body is filled with liquid. If this liquid is not released, by partially opening the valve, and the valve is subject to a temperature increase, excessive pressure can occur inside the body. These HAITIMA ball valves have self-relieving pressure seats to prevent pressure built up. Our client is recommended to prevent a pressure build-up inside the valve exceeding the design pressure, by means of piping design, installation, or operation procedure.


2.4 HYDROSTATIC TEST

Before delivery, all valve body's are tested 1.5 times the working pressure in open position. After installation, the pipeline system may be subject to a system test not to exceed the above mention pressure.

(For example: 6000 WOG is hydrostatic tested $1.5 \times 6000 = 9000$ psi testing pressure)


2.5 LIQUIDS WITH HIGH FLUID VELOCITY

When ball valves must be operated frequently on liquids with very high velocity, a check shall be made with the valve distributor or manufacturer for appropriate advice to minimize the possibility of seat deformation, especially when working pressure and temperature is reaching maximum ranges.

		Needle Valve 2032	Version	B
			Date	Mar.18.2011
Document No.	HIM-066		Page	3

2.6 THROTTLING SERVICE

Standard ball valves are generally not recommended for throttling service. The fluid flow can damage the leading edge of the ball and/or damage or deform the resilient ball seats causing leakage. High fluid velocity and/or the presence of solid particles in the media will reduce the lifetime of seat and ball during throttling applications.

		Needle Valve 2032	Version	B
Document No.	HIM-066		Date	Mar.18.2011
			Page	4

3. STORAGE AND PREPARATION

3.1 STORAGE

3.1.1 Temporary Storage

If valves are to be stored before installation, the following should be observed.

- a. Keep the valves wrapped and protected as shipped from the manufacturer.
- b. Do not remove the plastic bag or protective end covering until the valve is ready for installation. This will reduce the possibility of foreign material damaging internal valve components.
- c. Valves stored outdoors should be positioned such that water does not accumulate in the valve body.


3.1.2 Long Term Storage

If the valves are to be stored more than of one year, they should be prepared in the following manner.

- a. Remove the packing and apply a preservative to the packing chamber.
- b. Do not remove the protective end covering.
- c. Valve which will remain in storage for an excessive period of time should have a preservative applied to the external surface.
- d. Do not store the valves outdoors.

3.2 PREPARATION

- a. Remove the plastic bag or valve end protection (if any).
- b. Prior to shipment from the manufacturer, a preservative may have been applied to the inner body of the valve. This preservative may be removed with a solvent.
- c. The inside of the valve should be inspected and blown out with compressed air. Adjacent piping must be clean and free from debris to prevent damage to the valve.
- d. To prevent valve distortion, inefficient operation or early maintenance problems, support piping on each side of the valve.
- e. Make sure the valve is positioned such that there is sufficient space so that the handle is easily and safely reached.
- f. The needle valves are not designed for throttling and should be kept in the fully open or closed position. Should the valve be used in a partially open or closed position, the ball and seats may become eroded in a very short time. This may also cause a chatter noise in the line.

		Needle Valve 2032	Version	B
Document No. HIM-066			Date	Mar.18.2011
			Page	5

4. INSTALLATION AND OPERATION

4.1 INSTALLATION

4.1.1 Cleaning

Prior to pipe connection, remove sand, mud, molten spatter deposits and any other foreign materials from the interior of the pipes to be connected to the valve.

4.1.2 Thread Cutting

Care should be taken not to thread-cut the pipes excessively. Care should be taken not to over-tighten the pipe connected to the valve. If the pipe is inadvertently screwed deep into the thread chamber of the valve, it may deform the body seat. Prior to pipe connection, remove all foreign material deposits, such as mud, rust, oil and swarf, from the thread-cut portion of the pipe.

4.1.3 Valve Installation

Remove any swarf from the thread-cut portion of the pipe, then wrap with Teflon tap, or apply a thin coat of an appropriate liquid sealant (pipe compound), to that portion. The liquid sealant should be selected with due consideration to the kind and temperature of the fluid, and must be applied on the thread of the pipe.

When a screwed-end valve will be connected to the pipe, be sure to hold the pipe in the pipe vice and screw the valve onto it. In this case, always apply the wrench to the connected end of the valve.


4.1.4 Hanger Inspection

Proper installation and maintenance of the pipe hangers are essential for the proper functioning of the valve installed. The valve and adjoining pipes should always be kept in a straight line.

4.2 OPERATION

Generally, Valves are supplied with a T-handle. Close the valve by turning the T-handle in clockwise direction when viewed from above the T-handle.

During operation, the disc is required fully opened or fully closed. It is not recommended to partly open the valve for adjustment of flow rate.

		Needle Valve 2032	Version	B
Document No.	HIM-066		Date	Mar.18.2011
			Page	6

5. MAINTENANCE AND REPAIR

5.1 MAINTENANCE FREQUENCY

The maintenance frequency is determined upon the application of valve. User shall consider the maintenance time interval depend on the kinds of fluid, flow velocity, operation frequency, high-pressure and high-temperature effect etc.

5.2 DISASSEMBLY

5.2.1

The user should check the service kit of 2032, whether available or not in the local market. Otherwise, please make order from the original manufactory or local distributor for the service kit of 2032.

5.2.2

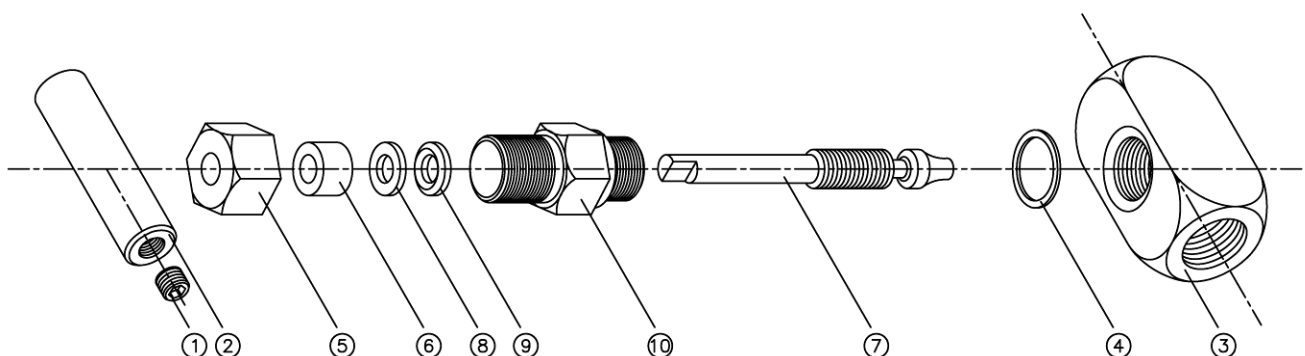
To dismantle the valve, please refer to the procedure and drawings as mentioned below.


5.2.3

It doesn't matter where the position of valve located is; usually it contained the seal up fluid, so operator must be very carefully when removing the valve on the pipe. It must open the valve a little and let the fluid come out slowly, it also need to watch out the poisonous and inflammability objects if there is any.

5.2.4

It must turn the disc in the close position before dismantle the valve. Then release the end cap carefully to avoid the seat retainer fall down from the cap. The right position for store the valve is put the end on the ground. If it is a valve with the T-handle , than it must dismantle the T-handle from the valve first.



		Needle Valve 2032	Version	B
Document No. HIM-066			Date	Mar.18.2011
			Page	7

5.3 PARTS INSPECTION, MAINTENANCE AND REPLACEMENT

5.3.1

Check the surface of disc is it scraped? It may use the PT for inspection if necessary. If there is any damaged on the surface, than found out the root cause such as the dirt fluid...etc. It must avoid the damage factors as far as possible.

5.3.2

If the scraped area is not at the location described in above, than it must re-fine milling the damage area again. Otherwise, the disc will damage the soft seat during the open and close operation or it will dig out the ball seat and cause a heavy damage to disc and seat.

5.3.3

Check the wall thickness of valve body and cap. The minimum thickness shall be maintained in according to EN12516-1 table 10.

5.3.4


To inspect the surface of seat, has it any scrape mark, concave, dusts (including weld dregs, iron bit, sands...etc.), abrasion, abnormal press scrape, and a tiny scrape. Usually, the scrape mark and damage by dusts will occur the same time as disc damaged. It is the root cause for leakage. If leakage occur before repairing, than suggest to change a new seat. The mark from press or fine scrape is happen in an abnormal operation pressure. It must reconsider to choice a right valve.

5.3.5

The stem packing may be replaced by the new parts after dismantle the valve. User shall make sure that the your distributor able to serve the same packing of your valve if you do not have a service pack. To tight the gland nut, please see information for Torque Data.

5.3.6

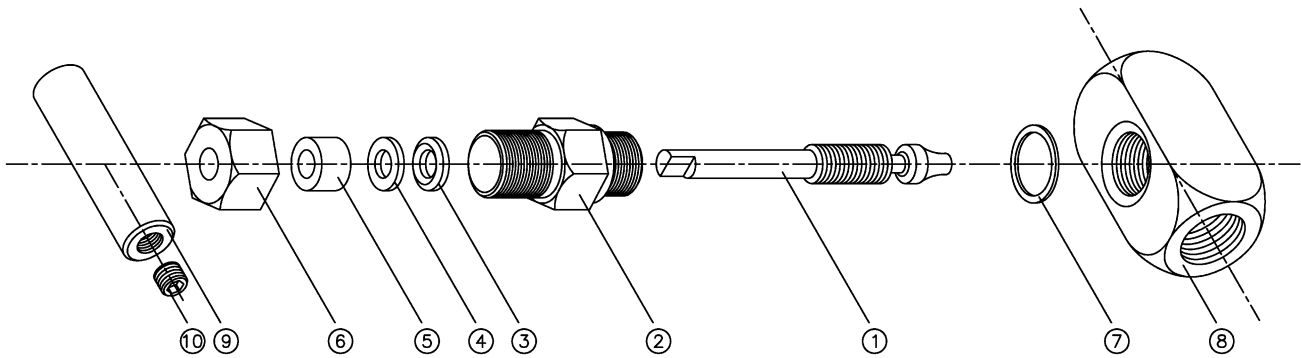
To do the final inspection for a valve, it must operate 3 times of open and close to ensure all the parts are assembling correctly. To ensure the torque in a same value during the open/close operation. If the torque is not the same in operation, than it may has some parts in a not corrected position or interference. It must dismantle and re-assembly. Otherwise, it is easy to damage if let this valve works on a pipeline under higher pressure.


		Needle Valve 2032		Version	B
				Date	Mar.18.2011
Document No.	HIM-066			Page	8

5.4 ASSEMBLY

For assembly process, it takes the opposite way of dismantle process. The disc must in the close open position during assembling the body and bonnet.

To make sure the correct assembly, after tightening, user shall operate the valve several times. Then, do pressure test and leakage test in according to EN 12266-1, P10, P11 and P12



		Needle Valve 2032	Version	B
			Date	Mar.18.2011
Document No.	HIM-066		Page	9

6. QUALITY ASSURANCE AND SERVICE

6.1 QUALITY ASSURANCE


HAITIMA's warrants its products to be free from defects in material and workmanship for a period of eighteen (18) months from the date of shipment or twelve (12) months from the date of installation whichever comes first. This warranty is limited to the repair or replacement of the defective item providing that it was handled, installed, used and maintained in accordance with the manufacturer's recommendations and applicable standard industry practices. HAITIMA will not be liable for any additional direct or indirect costs beyond the repair or replacement of the defective item.

This warranty is in lieu of any other warranty expressed or implied.

6.2 SERVICE

Manufacturer may provide field installation and debugging where contractually specified.

Manufacturer will follow up the quality of the valve provided and offer service in accordance with customer requirements.

		Needle Valve 2032	Version	B
			Date	Mar.18.2011
Document No.	HIM-066		Page	10

7. TECHNICAL PARAMETERS AND VALVE STRUCTURE

7.1 SPECIFICATION LIST

Type	2032
Technical Parameters	
Nominal pipe size	DN8 ~ DN25, (1/4" ~ 1")
Nominal pressure	6000 WOG
Working temperature	-20°C ~ 180°C, (-4°F ~ 356°F)
Medium	Water, Steam, Oxygen, Vacuum, Chemical, Oil, Food Processing
Pressure test	EN 12266-1

Table 1 - Specification List

7.2 TORQUE

NPS	DN	Body & Bonnet		Gland Nut	
		Torque		Torque	
		(N-M)	(in-lb)	(N-M)	(in-lb)
1/4"	8	115~120	1018~1062	50~60	442~531
3/8"	10	115~120	1018~1062	50~60	442~531
1/2"	15	120~130	1062~1151	50~60	442~531
3/4"	20	120~130	1062~1151	50~60	442~531
1"	25	170~190	1505~1682	50~60	442~531

Table 2 – Torque

7.3 VALVE STRUCTURE

Please refer to drawings for each type of valve structure, main parts, materials and dimensions.