

Instruction Manual  
Globe Single Seated  
Manual Operated  
Series- GBV 01





**Dembla**

**PAGE NO.**

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## 1.0 Foreword

### 1.1 Scope of Instruction Manual

This Instruction Manual covers Information regarding Installation and Maintenance of Dembla's Globe two way Manual Operated Valves, Series - GBV- 01

### 1.2 Copyrights And Modification Rights Reservation

Dembla Valves Ltd. retains the Copyright on the contents of this Instruction Manual. The Total content of this Instruction Manual described here corresponds to the information during preparation of the Instruction Manual. It is user's responsibility to refer the latest version. All data, specifications and illustrations here are subjected to Technical Modifications and improvements and hence Modification can be done by us at any time without any prior notice. No claim to Modification or repair of these valves, which have already been supplied by us, can be made.

## 2.0 Storage & Preservation

All Valves are dispatched in the closed/open position as ordered and it is recommended that they are left in this position during storage. All protective packing should remain in position until the Valve is to be installed. Valve should be stored in a clean and dry environment, without disturbing company setting. (E.g. Gland, Seat etc.) Protect it from shock & lifting damage.



If hoisting the Valve, use a nylon sling to protect the surface. Carefully position the sling to prevent damage to Actuator tubing and any Accessory. Also, take care to prevent people from being injured in case the hoist or rigging slips unexpectedly. For Weight refer Valve Packing Slip.

### 3.0 Valve Marking

- 1) Valve name plate attached on Valve by riveting carrying all Valve Identification Information.
- 2) Markings like Valve Size, Rating, Material etc. are as cast on Valve Bodies.
- 3) Valve Serial no. punched on Valve Body Flange for Valve Traceability.
- 4) If the product is not CE marked, then Name plate also without CE mark.

⊕

TAG No.

Sr. No.

SERIES

DNxRATING

TYPE

TRIM

BODY MOC

TRIM MOC

PS@TS bar(g)@°C

PS@TS bar(g)@°C

IMPACT °C


AIR TO

ACT. MODEL

STROKE

AIR SUPPLY

MONTH-YR



**Dembla  
INDIA**

⊕

### Name Plate For - GBV -01

MAXIMUM OPERATING PRESSURE AT  
MAXIMUM OPERATING TEMPERATURE.

MAXIMUM OPERATING PRESSURE AT  
MINIMUM OPERATING TEMPERATURE.

IMPACT TEST TEMPERATURE

AIR TO OPEN/AIR TO CLOSE

VALVE TRAVEL



## 4.0 Health & Safety

- 1) Before attending to Valve Installation / Maintenance, the Instruction Manual must be compulsorily read and understood properly.
- 2) Valve must be operated by qualified personnel.
- 3) Ensure that the operator handling these Valves must follow Safety and Accident Prevention Rules and Regulations.
- 4) Follow the Safety Instructions before Installation, Maintenance or removing the Valve.
- 5) Always wear protective gloves, clothing and eyewear when performing any Installation operations to avoid personal injury.
- 6) All Safety Messages such as Cautions, Warnings and Notes are highlighted in this Instruction Manual which must be strictly followed to avoid any possibility of arising danger / risk of damage to the equipment / person's life
- 7) No Liability on Manufacturer for any wrong handling, improper commissioning and wrong assembly.
- 8) Line must be fully drained and de-pressurized before Installation or Maintenance of Valve.
- 9) Never handle Valves that have been used on harmful substances unless they have been completely decontaminated and certified safe to handle.
- 10) If the processes or environments that the products are used in are likely to cause temperature (high or low) that may cause injury to person if touched, then adequate insulation /protection must be fitted. It is recommended that the insulation allows easy access for Maintenance , to the sealant fittings , and to the Valve operator.
- 11) Valve must be protected from earthquake loading, traffic & wind.
- 12) No Modification / Conversions are allowed without written authorization from Dembla Valves Ltd.

## 5.0 Unpacking

### For Carton

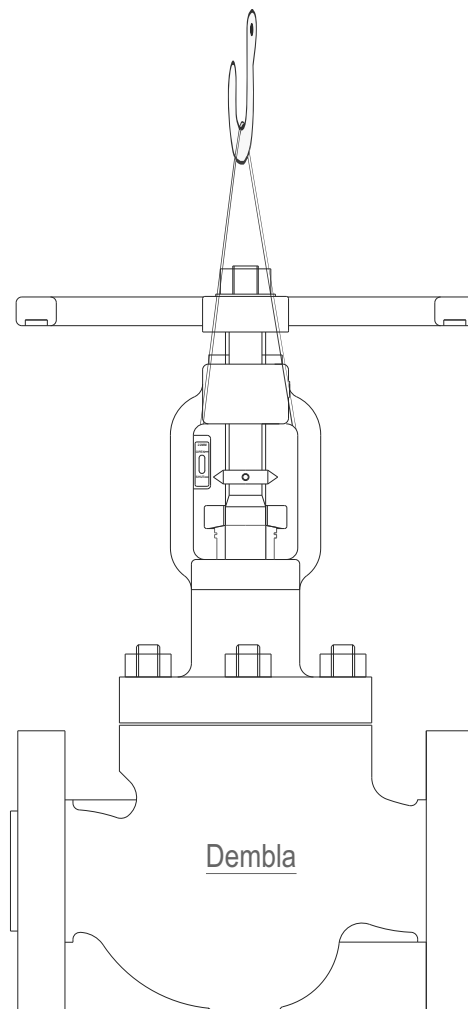
- Keep Carton in position (Carton up side should not be down).
- Cut plastic strip properly which is tied around Carton & remove it. (White in colour).
- Cut cello tape properly which is stuck on Carton opening.
- Open Carton properly.
- Remove foam properly along with polythene wrapping.
- Lift the valve properly & keep on clean & dry place

### For Wooden Box

- Keep Wooden Box in Position ( upside of Wooden box should not down ).
- Cut iron strip properly which is tied around Wooden Box & remove it.
- Remove nail properly from top cover with proper equipment.
- Loosen and remove Valve fixing nut (from inside of Box).
- Lift the Valve properly as shown in figure 1

## 6.0 Lifting Details

Valve should be lifted by using chain (Take care that Valve should not damage while handing) or bearer cables as shown in figure 1.



## 7.0 Installation

### **Warning**

- The Valve configuration & Material of construction were selected to meet particular pressure, temperature, pressure drop and controlled fluid condition. Since the Body and trim Material combinations are limited in their pressure drop and temperature ranges, hence do not apply any other condition to the valve without first contacting, Dembla Valves Sales office or Sales Representative.
- **Before installing any Control Valve please check the following. :-**
  - 1) Inspect it for any shipment damage and for any foreign material that might have been collected during packing & shipment.
  - 2) Blow out all pipe lines to remove pipe scale, chips, welding, slag & other foreign material.
  - 3) Before installing the Valve make sure that pipeline flow is in the same direction as the arrow on the side of the Valve.
  - 4) Install the Control Valve preferably in a straight run of pipe away from bends or sections of abnormal velocity.
  - 5) Control Valves install Vertical only. If required Valve can install  $+ 30^{\circ}$  with respected to vertical position (Actuator Vertical).
  - 6) If continuous operation is required during maintenance and inspection, a conventional three-way Valve by pass should be installed.
  - 7) Install the Valve using accepted piping practices. For Flanged Bodies use a suitable Gasket between the Body and pipe line Flanges and tighten the bolts evenly to avoid any strain on the Body or cracking of Flange.

### **Warning**

- Always wear protective gloves, clothing, and eye ware when performing any installation operation to avoid personal injury.

Rise in temperature on surface of Valve Body depend on working media. End user must be maintaining the surface temperature & it should not go beyond marking temperature on Valve (Name Plate).
- Always wear protective gloves, clothing, and eye ware when performing any installation operation to avoid personal injury.





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 **Warning**

- Valve should be used by End-user with same pressure & temperature rating which as given in valve marking (Name Plate) If there is any change please contact Dembla Sales Office.
- Personal injury could result from Packing Leakage. Valve Packing was tightened prior to shipment, but should there be any Gland Leakage after Installation, further tightening, just enough to stop Gland Leak is required. Excessive tightening will disturb Valve Calibration.
- Earthing facility must be provided by the end user before operating the Valve.
- Equipment should not be used for dead end service.

 **Caution**

- In case of Leak, presence of high temperature may be dangerous to the person life.
- Equipment to be used as per intended and not misused / improperly use to avoid dangerous effects such as over Load ,over heating ,stress corrosion cracking, etc.

## 8.0 Maintenance

### Warning

- Avoid personal injury or damage to process system from sudden release of pressure of process fluid.
- Before starting dis-assembly use by-pass Valve or completely shut off the process to isolate the Valve from process pressure. Drain fluid from both ends of the Valve.
- Earthing facility and Valve parts should be checked periodically by the end user.
- Any Gasket once removed should be replaced by a new one upon re-assembly. This is necessary to ensure a good seal since the used Gasket may not seal properly.
- Equipment should be cleaned regularly.

## 9.0 Disassembly :-

- 1) Loosen and Remove hand wheel locknut (23).
- 2) Remove hand wheel (20)
- 3) Loosen and Remove grub screw (21)
- 4) Loosen and Remove yoke Bush (19)
- 5) Loosen and Remove Body Bonnet Nuts (10)
- 6) Remove Bonnet assly. along with (2) plug
- 7) Remove Body bonnet gasket for body (9)
- 8) Loosen & Remove Plug Nut (5)
- 9) Remove Plug along with thrust washer (4) (6)
- 10) Loosen and Remove gland Nuts (18)
- 11) Push gland flange (15) toward hand wheel side for releasing load on gland packing (13)
- 12) Pull valve stem (8) from bottom side of bonnet along with rotation for removing Indicators (22)
- 13) Remove valve stem (8) from bonnet along with plug nut (5)
- 14) Remove plug Nut (5) from valve stem (8)
- 15) Gland flange (15) Indicator (22) Gland bush (14) keep on clean & dry place.
- 16) Remove gland Packing (13) & Gland packing washer (12) by pushing for bottom side of bonnet.
- 17) Loosen & Remove seat Ring (7) for valve body (1)
- 18) Keep all part lean & dry place.

## 10.0 Assembly :-

- 1) Insert and tighten seat ring in valve body.⑦
- 2) Insert Gland washer⑫& gland packing⑬ and gland bush⑭ in bonnet.② (refer fig.1....)
- 3) Insert gland flange⑮ on gland stud.⑮
- 4) Maintain gland Nuts⑱ position on gland stud.⑮(loose fit)
- 5) Plug Nut insert ⑤ on valve stem.⑧
- 6) Valve stem⑧ along with plug nut.⑤ Insert in the bonnet② from bottom side.
- 7) While inserting valve stem⑧ in bonnet② insert Indicator⑳ on the valve stem⑧ (refer fig.1.)
- 8) Insert yoke Bush⑲ in yoke③ and Tighten
- 9) Tighten grub screw⑲
- 10) Maintain position of indicator ⑳ as shown fig.1...
- 11) Insert hand wheel㉑ on valve stem⑧ and lock it with handwheel lock nut ㉒
- 12) Insert Thrust washer⑥ in plug④
- 13) Insert plug nut⑤ in plug④ and tighten
- 14) Tighten gland flange⑮ (Refer Table.13)
- 15) Insert body bonnet gasket⑨ in Valve body ①
- 16) Insert Bonnet assembly on valve body① (Maintain the position of stud)
- 17) Tighten body bonnet nuts⑩ properly with opposite sequence
- 18) Maintain position of plug④ on seat Ring⑦ by rotation of hand wheel.

**[\*Note:- circular numbering related with Fig. No.1]**



## 11.0 Trouble Shooting

| No. | Condition                          | Possible Cause                                    | Remedy   |
|-----|------------------------------------|---|--|
| 1   | Gland Leakage                      | Gland Nut loose                                   | Adjust Gland Nut   |
|     |                                    | Worn Out Gland Packing                            | Replace Gland Packing  |
| 2   | Seat Leakage                       | Sealing Edge of Seat Damaged                      | Replace Seat   |
|     |                                    | Valve pressurized to high+ pressure               | Reduce line pressure to rated pressure                             |
| 3   | Valve does not Open / Close Fully  | Foreign object got stuck up between Plug and Seat | Open the Valve and clean the line / Valve to remove Foreign object |
| 4   | Opening / Closing thrust excessive | Foreign object got stuck up between plug and seat | Open the Valve and clean the line / Valve to remove Foreign object |
|     |                                    | Extra Gland nut tightening                        | Retighten the Gland Nuts.  |

## 12.0 Torque for Studs

| Studs | Torque Nm |
|-------|-----------|
| 5/16  | 5         |
| 3/8   | 7         |
| 1/2   | 30        |
| 5/8   | 50        |
| 3/4   | 170       |



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## 13.0 Recommended Spares

Each Body-Bonnet assembly is assigned with a Serial number, which can be found on the Valve Flange O.D. This same number also appears on Actuator name plate. While ordering spares please do not miss to indicate Valve Serial No. The Valve Sr. No starts with Prefix V-12345...

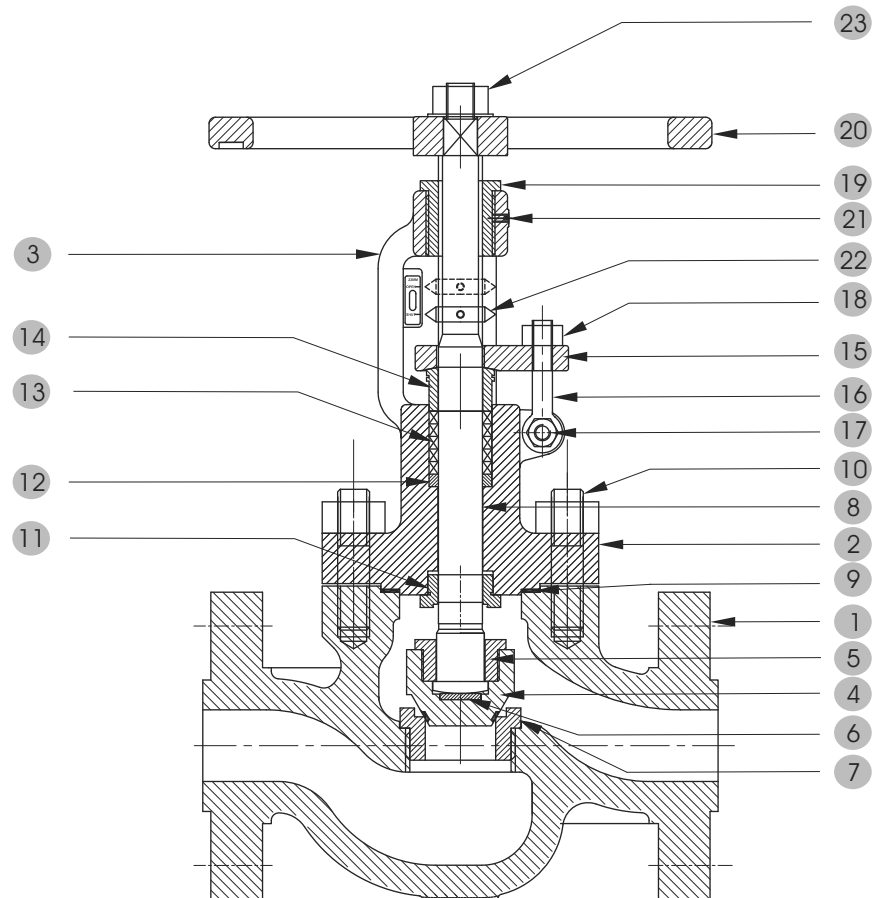
It is recommended to stock the following parts as spare for commission and routine service. Parts marked (\*) have generally longer life, hence are left to the choice of customer to include in their spares.

| Sr. No. | Part Name         | Recommended Quantity                        |
|---------|-------------------|---|
| 9       | Body BonnetGasket | One No. Per Unit                            |
| 13      | Gland Packing     | One Set Per Unit                            |
| 7       | Seat Ring         | One for Every Five Identical or One Minimum |
| 4       | Valve Plug        | One for Every Five Identical or One Minimum |



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### 14.0 Part Illustrated



| SR. NO. | PART NAME                  |
|---------|----------------------------|
| 1       | VALVE BODY                 |
| 2       | BONNET                     |
| 3       | YOKE (as cast with bonnet) |
| 4       | PLUG                       |
| 5       | PLUG NUT                   |
| 6       | THRUST WASHER              |
| 7       | SEATRING                   |
| 8       | VALVE STEM                 |
| 9       | BODY BONNET GASKET         |
| 10      | BODY BONNET STUD & NUTS    |
| 11      | BONNET BUSH                |
| 12      | GLAND PACKING WASHER       |

| SR. NO. | PART NAME            |
|---------|----------------------|
| 13      | GLAND PACKING        |
| 14      | GLAND BUSH           |
| 15      | GLAND FLANGE         |
| 16      | GLAND STUD (11 BOLT) |
| 17      | CROSS BOLT WITH NUTS |
| 18      | GLAND NUT            |
| 19      | YOKE BUSH            |
| 20      | HAND WHEEL           |
| 21      | GRUB SCREW           |
| 22      | INDICATOR            |
| 23      | HAND WHEEL LOCK NUT  |

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**Valve Disposal Detail :** After the complete use of valve. Dispose the valve with accessories as per your local laws.



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