

## Line Ball Valve

### SPECIFICATION

#### Line Ball Valves c/w NISTS - HTM02-01

Medical gas line ball valves complete with lockable NIST connections and blanking spade shall be provided as a means of isolation on medical gas pipelines at positions specified in the medical gas pipeline system design. Line ball valve assemblies shall comply with NHS Health Technical Memorandum 02-01 (HTM02-01). NIST connectors shall be manufactured to BS EN 15908. Valves shall operate from the fully open to the fully closed position by manual operation of a lever through 90°. Valve nominal bores shall be equal to the nominal pipework size.

All line ball valves shall be cleaned for oxygen service. Smaller type V assemblies (15 to 54mm inclusive) shall have flat-face connectors with 'O' ring seals. The larger VF type (76 to 108mm inclusive) shall be flanged and installed with stainless steel bolts, nuts and spring washers with 3mm Viton® sealing gaskets. PTFE tape or any other thread sealing media is not acceptable.

Each Medical gas line ball valve assembly shall terminate in copper stub pipes to enable brazing direct into the distribution system using the flux less brazing technique. Valve assemblies shall incorporate a sliding lock mechanism on the handle, which can be locked in either the open or closed position using a standard padlock with a 6mm (1/4") diameter shackle. Padlocks shall be available as a standard optional item.

Each valve shall be provided with a set of "through" and "blanking" spades; and shall be coloured white and red respectively, in order to provide a physical isolation and blanking of the pipeline both upstream and downstream of the valve. The connection of the copper stub pipe to the valve body shall be fixed with a drilled brass nut. The spade shall be visible through the drilled nut when deployed. In the event of leakage of the through or blanking spade, gas shall also vent to atmosphere through the drilled brass nut connection.

Each valve assembly shall be supplied with a plastic identification tag to assist the on site management of padlock keys.

#### NIST Tee Assemblies

For type V valve assemblies (15 to 54mm inclusive), the gas specific NIST connection shall be provided as a separate assembly (one required both upstream and downstream of the valve). This shall be supplied as a brass NIST connection pre-brazed onto a copper tee fitting. Each NIST body shall include a plastic gas identification disc to enable clear identification on site for installation and maintenance.

NIST blanking nuts shall be capable of being padlocked onto the NIST bodies as required by HTM02-01 clause 13.64. Long shackle padlocks, individually numbered per gas type shall be available as an optional item for locking the NIST connection.

#### Materials

Medical gas line ball valve assemblies shall be constructed in a two-piece full-bore design with brass body, Teflon® ball seals, stem packing seal, stem 'O' ring seal and a hard-chrome plated brass ball. Valves shall be designed to have a tight shut-off and blow out proof stem for protection against pressure surges. Copper stub pipes shall be manufactured from medical grade copper pipe to BS EN 13348:2001. Copper stub pipes shall be of sufficient length to enable brazing directly into the distribution system without the need for disassembly on site.

#### Testing

All ball valve assemblies shall be pressure tested for valve tightness and leakage prior to packing and shipping.

#### Part Numbers

##### HTM02-01 Type V Valve Assemblies

| Description                                                    | Size | Part No |
|----------------------------------------------------------------|------|---------|
| Line valve assembly with stub pipes and visible through spades | 15mm | 2005367 |
|                                                                | 22mm | 2005368 |
|                                                                | 28mm | 2005369 |
|                                                                | 35mm | 2005370 |
|                                                                | 42mm | 2005371 |
|                                                                | 54mm | 2005372 |

##### HTM02-01 Type VF Valve Assemblies c/w NISTS

| Description                                                   | Size  | Part No     |
|---------------------------------------------------------------|-------|-------------|
| Oxygen line valve assembly, flanged type, complete with NISTS | 76mm  | 1825636-OXY |
| Medical air line valve assembly complete with NISTS           | 76mm  | 1825636-MA4 |
| Surgical air line valve assembly complete with NISTS          | 76mm  | 1825636-SA  |
| Vacuum line valve assembly complete with NISTS                | 76mm  | 1825636-VAC |
| Vacuum line valve assembly complete with NISTS                | 108mm | 1825936-VAC |

#### Lockable NIST Tee

| Description                       | Size | Part No |
|-----------------------------------|------|---------|
| Lockable NIST tee, O <sub>2</sub> | 15mm | 2005560 |
|                                   | 22mm | 2005570 |
|                                   | 28mm | 2005580 |
|                                   | 35mm | 2005590 |
|                                   | 42mm | 2005600 |
|                                   | 54mm | 2005610 |

| Description                         | Size | Part No |
|-------------------------------------|------|---------|
| Lockable NIST tee, N <sub>2</sub> O | 15mm | 2005561 |
|                                     | 22mm | 2005571 |
|                                     | 28mm | 2005581 |
|                                     | 35mm | 2005591 |

| Description                                         | Size | Part No |
|-----------------------------------------------------|------|---------|
| Lockable NIST tee, O <sub>2</sub> /N <sub>2</sub> O | 15mm | 2005562 |
|                                                     | 22mm | 2005572 |
|                                                     | 28mm | 2005582 |
|                                                     | 35mm | 2005592 |

| Description            | Size | Part No |
|------------------------|------|---------|
| Lockable NIST tee, MA4 | 15mm | 2005563 |
|                        | 22mm | 2005573 |
|                        | 28mm | 2005583 |
|                        | 35mm | 2005593 |
|                        | 42mm | 2005603 |
|                        | 54mm | 2005613 |

| Description            | Size | Part No |
|------------------------|------|---------|
| Lockable NIST tee, SA7 | 15mm | 2005564 |
|                        | 22mm | 2005574 |
|                        | 28mm | 2005584 |
|                        | 35mm | 2005594 |
|                        | 42mm | 2005604 |
|                        | 54mm | 2005614 |

| Description            | Size | Part No |
|------------------------|------|---------|
| Lockable NIST tee, VAC | 15mm | 2005565 |
|                        | 22mm | 2005575 |
|                        | 28mm | 2005585 |
|                        | 35mm | 2005595 |
|                        | 42mm | 2005605 |
|                        | 54mm | 2005615 |

| Description                       | Size | Part No |
|-----------------------------------|------|---------|
| Lockable NIST tee, N <sub>2</sub> | 15mm | 2005566 |
|                                   | 22mm | 2005576 |
|                                   | 28mm | 2005586 |
|                                   | 35mm | 2005596 |

| Description                        | Size | Part No |
|------------------------------------|------|---------|
| Lockable NIST tee, CO <sub>2</sub> | 15mm | 2005568 |
|                                    | 22mm | 2005578 |
|                                    | 28mm | 2005588 |
|                                    | 35mm | 2005598 |

## Padlocks

| Description                            | Gas Type                            | Part No   |
|----------------------------------------|-------------------------------------|-----------|
| Long Shackle Padlock for NIST - No. 10 | O <sub>2</sub>                      | 2004604/A |
| Long Shackle Padlock for NIST - No. 20 | N <sub>2</sub> O                    | 2004604/B |
| Long Shackle Padlock for NIST - No. 30 | N <sub>2</sub> O/O <sub>2</sub> Mix | 2004604/C |
| Long Shackle Padlock for NIST - No. 40 | Med Air                             | 2004604/D |
| Long Shackle Padlock for NIST - No. 50 | Surg Air                            | 2004604/E |
| Long Shackle Padlock for NIST - No. 60 | VAC                                 | 2004604/F |
| Long Shackle Padlock for NIST - No. 80 | N <sub>2</sub>                      | 2004604/H |
| Long Shackle Padlock for NIST - No. 90 | CO <sub>2</sub>                     | 2004604/I |

| Description                                    | Size | Part No |
|------------------------------------------------|------|---------|
| Padlock for locking of line ball valve handles | All  | 2003520 |

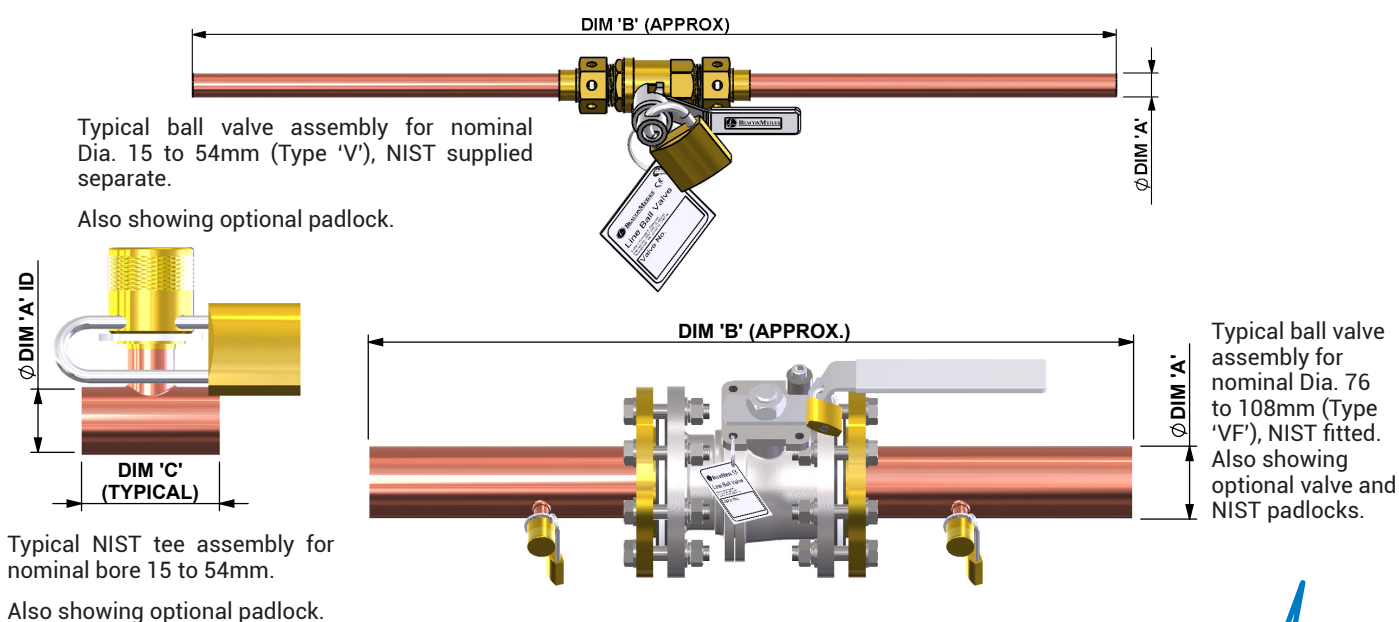
## Performance and Dimensions

| Nominal Dia<br>DIM 'A' (mm) | Torque<br>(Nm) | Working<br>Pressure<br>(bar) | DIM 'B'<br>(mm) | DIM 'C'<br>(mm) |
|-----------------------------|----------------|------------------------------|-----------------|-----------------|
| 15                          | 5.4            | 55                           | 577             | 38              |
| 22                          | 8              | 50                           | 574             | 48              |
| 28                          | 10             | 40                           | 687             | 56              |
| 35                          | 14             | 40                           | 705             | 68              |
| 42                          | 20             | 35                           | 868             | 73              |
| 54                          | 33             | 27                           | 872             | 83              |
| 76                          | -              | 16                           | 800             | -               |
| 108                         | -              | 16                           | 810             | -               |

## CE Marking

The standard range of BeaconMedaes line ball valves are 'CE' marked under the Medical Devices Directive 93/42/EEC with approval from a notified body (more info available on request). Under this directive, the specified products are classified as Class IIa Medical Devices.

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### Line Ball Valves - HTM2022

Medical gas line ball valves shall be provided as a means of isolation on medical gas pipelines at positions specified in the medical gas pipeline system design. Line ball valve assemblies shall comply with NHS Health Technical Memorandum No. 2022 (HTM2022) and NHS Model Engineering Specification C11. Valves shall operate from the fully open to the fully closed position by manual operation of a lever through 90°. Valve nominal bores shall be equal to the nominal pipework size.

All line ball valves shall be cleaned for oxygen service. Smaller type V assemblies (15 to 54mm inclusive) shall have flat-face connectors with 'O' ring seal. The larger VF type (76 to 108mm inclusive) shall be flanged and installed with stainless steel bolts, nuts and spring washers with 3mm Viton® sealing gaskets. PTFE tape or any other thread sealing media is not acceptable.

Each Medical gas line ball valve assembly shall terminate in copper stub pipes to enable brazing direct into the distribution system using the flux less brazing technique. Valves assemblies shall incorporate a sliding lock mechanism on the handle, which can be locked in either the open or closed position using a standard padlock with a 6mm (1/4") diameter shackle.

Each valve assembly shall be supplied with a plastic identification tag to assist the on site management of padlock keys.

### Materials

Medical gas line ball valve assemblies shall be constructed in a two-piece full-bore design with brass body, Teflon® ball seals, stem packing seal, stem 'O' ring seal and a hard-chrome plated brass ball. Valves shall be designed to have a tight shut-off and blow out proof stem for protection against pressure surges. Copper stub pipes shall be manufactured from medical grade copper pipe to BS EN 13348:2001. Copper stub pipes shall be of sufficient length to enable brazing directly into the distribution system without the need for disassembly on site.

### Testing

All ball valve assemblies shall be pressure tested for valve tightness and leakage prior to packing and shipping.

### Part Numbers

| Description                               | Size  | Part No |
|-------------------------------------------|-------|---------|
| Line valve assembly with stub pipes       | 15mm  | 2004356 |
|                                           | 22mm  | 2004357 |
|                                           | 28mm  | 2004358 |
|                                           | 35mm  | 2004359 |
|                                           | 42mm  | 2004360 |
|                                           | 54mm  | 2004361 |
| Line valve - flanged type with stub pipes | 76mm  | 1825636 |
|                                           | 108mm | 1825936 |

| Description                                    | Size | Part No |
|------------------------------------------------|------|---------|
| Padlock for locking of line ball valve handles | All  | 2003520 |

### Performance and Dimensions

| Nominal Dia<br>DIM 'A' (mm) | Torque<br>(Nm) | Working<br>Pressure<br>(bar) | DIM 'B'<br>(mm) |
|-----------------------------|----------------|------------------------------|-----------------|
| 15                          | 5.4            | 55                           | 570             |
| 22                          | 8              | 50                           | 567             |
| 28                          | 10             | 40                           | 680             |
| 35                          | 14             | 40                           | 697             |
| 42                          | 20             | 35                           | 858             |
| 54                          | 33             | 27                           | 859             |
| 76                          | -              | 24                           | 800             |
| 108                         | -              | 17                           | 810             |

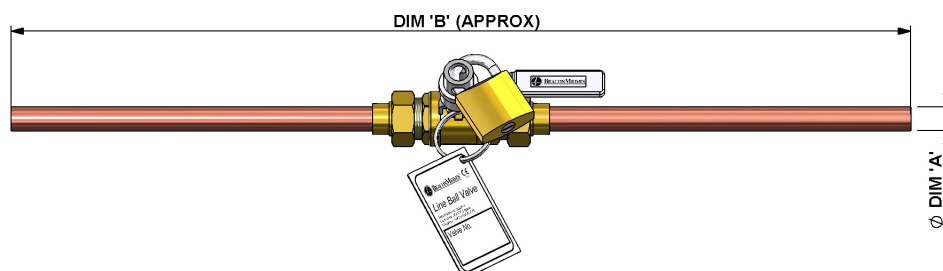
### CE Marking

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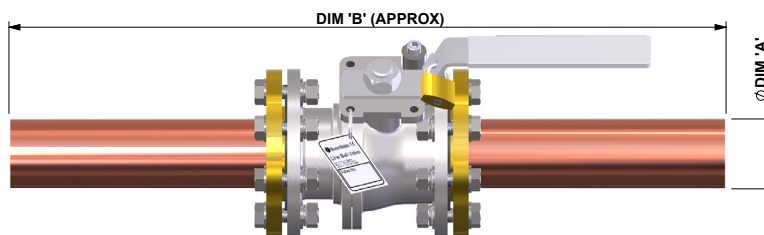
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Typical ball valve assembly for nominal Dia. 15 to 54mm (Type 'V').

Also showing optional padlock.



Typical ball valve assembly for nominal Dia. 76 to 108mm (Type 'VF'). Also showing optional valve padlock.



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