



VALVE

ENGINEERING



OYSTER
FLOWMASTER
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The Oyster Flowmaster rotary dosing valve is the ideal solution for controlled dispensing of powders in pharmaceutical, high-end chemical and food applications owing to its relatively small dimensions and low weight compared with alternative types of valve.

Designed with pharmaceutical requirements in mind, the Oyster Flowmaster valve has no dead space where product can remain, and ValvEngineering's patent "Clamshell" clamp system ensures easy dismantling for cleaning. Build and finish quality are second to none to ensure that the Oyster Flowmaster valve retains its sanitary qualities over a long operational lifetime.

The valve is available either as a standard product off-the-shelf or else as part of a fully customised installation designed to fit the exact end-user requirements.

GENERAL DESIGN FEATURES

The valve consists of a 6-lobe rotor mounted in a two part valve body. In operation the rotor rotates forward and back through 180° dispensing a volume of product roughly equal to the volume of the lobes.

The lobes are designed so that in the closed position the valve gives a degree of tightness equivalent to a corresponding butterfly valve, but in operation gives minimal wear on the gasket.

The valve has a 22mm trunnions and 6mm lobes; a robust construction which ensures reliable performance in the most demanding applications.

The valve body features our patent clamp system for ease of maintenance and cleaning.

The actuator support has a retaining pin machined into it to ensure the correct location in the corresponding hole in the half body, in order to retain the support in position.

There are three identical bushes to ensure that the stem is properly supported and there is no risk of a rubbing contact between steel surfaces which will degrade the valve and risk leaving steel particles in the product.

SIZES

The Oyster Flowmaster valve is available in the following standard sizes

- DN 100 (4")
- DN 150 (6")
- DN 200 (8")
- DN 250 (10")
- DN 300 (12")

Other sizes can be produced to order



RATE OF FLOW

| Size | Displaced volume ml (cu.in.) per cycle |
|--------------|--|
| DN 100 (4") | 325 (19.8) |
| DN 150 (6") | 1230 (75.0) |
| DN 200 (8") | 3300 (201.4) |
| DN 250 (10") | 6850 (418.0) |
| DN 300 (12") | 12280 (749.4) |

The volume of product dispensed with each forward/back cycle is roughly equal to the volume displaced by the lobes.

This value is purely indicative and actual rates of discharge can only be evaluated by experiment in the installation and with the actual product.

VALVE WEIGHT

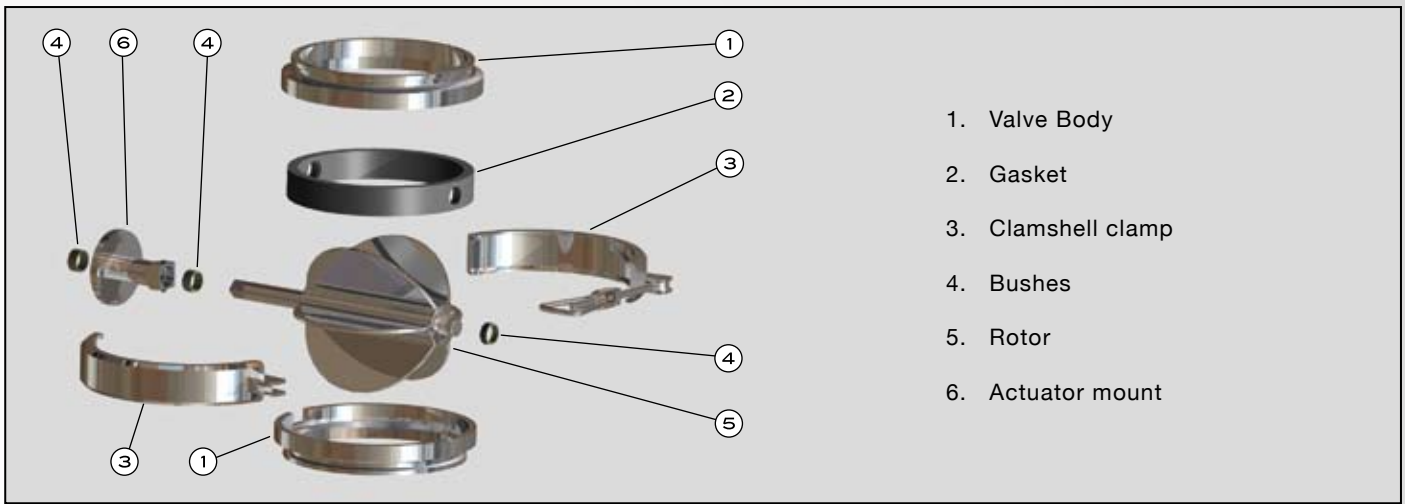
| Size | Indicative weight Kg (Lb) |
|--------|---------------------------|
| DN 100 | 8.3 (18.3) |
| DN 150 | 14.1 (31.0) |
| DN 200 | 17.2 (37.8) |
| DN 250 | 25.2 (55.4) |
| DN 300 | 28.9 (63.6) |

The weights of the valve varies with choice of mounting options and body type (eg. clamp/bolted). Indicative weights are given in the table for a VCFW type, with bare shaft excluding actuator. If required, estimated weight for any given configuration including actuator can be supplied on application.

FINISH

The Oyster Flowmaster valve is finished to the highest standards suitable for pharmaceutical installations

- Contact surfaces: mirror polished (Ra max < 0.4 µm)
- Optional full mirror finish available for clean room installations
- Ceramic sandblasting, electro-polished finish available on request



1. Valve Body
2. Gasket
3. Clamshell clamp
4. Bushes
5. Rotor
6. Actuator mount

| MATERIALS | |
|-------------------|--|
| 1. Valve body | AISI 316L (DIN 1.4404), Hastelloy C22 |
| 2. Gasket | Silicone, EPDM, PTFE, Kaflon (Perfluorelastomer) |
| 3. Clamp | AISI 304 (DIN 1.4301) |
| 4. Bushes | PTFE |
| 5. Rotor | AISI 316L (DIN 1.4404), Hastelloy C22 |
| 6. Actuator mount | AISI 304 (DIN 1.4301) |

OPERATION

The valve is normally supplied for automatic operation via pneumatic actuator. Where required we can supply brushless motors and other actuation solutions.

Automatic options

- Double action (DA) pneumatic actuators (rack and pinion type)
- Aluminium or stainless steel
- Can be fitted with NAMUR solenoid valves, limit switches or position sensors
- ATEX certified on request
- Air supply required for pneumatic actuators; min 5 bar (75 psi), max 10 bar (150 psi)

APPLICATIONS

The Oyster Compact Series valve is fully FDA compliant and is suitable for controlled discharge of Powders and Granules in pharmaceutical, chemical or food plants.

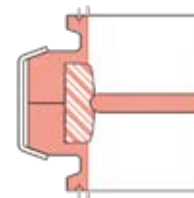
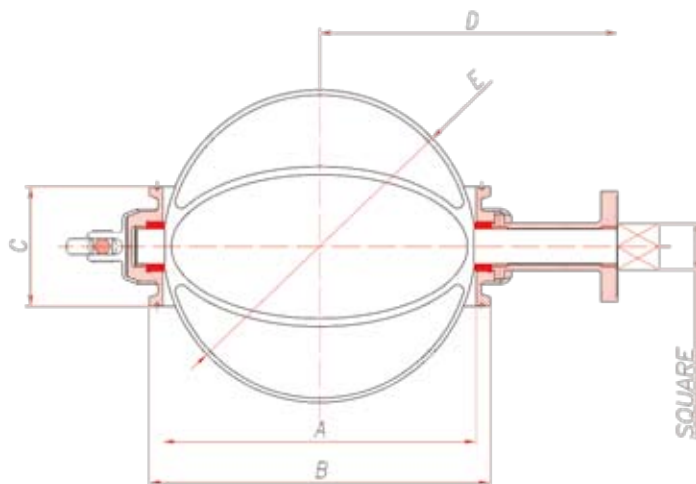
The materials used for Oyster Flowmaster valves fully conform to best practice and FDA norms (see table). Material certificates 3.1B are supplied for all contact parts and certificates of conformity for seals and gaskets. Valves are marked with company name and are individually identified with lot and serial numbers.

| OPENING AND CLOSING TORQUE | | | |
|----------------------------|--------|-------|-----------|
| Size | Torque | Lb-ft | Tolerance |
| DN 100 | 28 Nm | 20.6 | +/- 10% |
| DN 150 | 42 Nm | 31.0 | +/- 10% |
| DN 200 | 59 Nm | 43.5 | +/- 10% |
| DN250 | 80 Nm | 59.0 | +/- 10% |
| DN 300 | 109 Nm | 80.4 | +/- 10% |

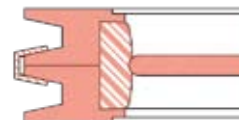
NB These figures are obtained with new valves with dry gaskets under test conditions in our workshop. Actual torque found may differ depending on the product being handled and the condition of the gasket. All valves are tested before despatch, and the test results can be supplied on request.

CE  II 2GD c IIB T4/T135°C

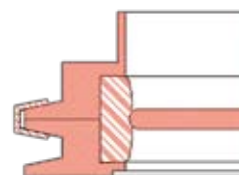




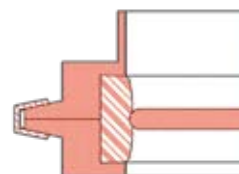
VCSTT
Clamshell clamp body
Triclamp above - Triclamp below



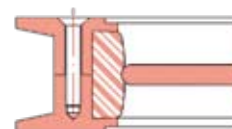
VCCC
Clamped body
Clamp above - Clamp below



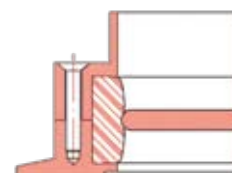
VCFC
Clamped body
Spigot above - Clamp below



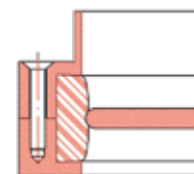
VCFW
Clamped body
Spigot above - Wafer below



VBCC
Bolted body
Clamp above - Clamp below



VBFC
Bolted body
Spigot above - Clamp below



VBFW
Bolted body
Spigot above - Wafer below

| STANDARD DIMENSIONS | | | | | |
|---------------------|-------|------|------|------|------------|
| Size | B mm | C mm | D mm | E mm | Square* mm |
| DN 100 (4") | 118.8 | 76 | 140 | 98 | 17 |
| DN 150 (6") | 167.0 | 76 | 165 | 148 | 17 |
| DN 200 (8") | 217.4 | 76 | 190 | 198 | 17 |
| DN 250 (10") | 268.5 | 76 | 215 | 248 | 17 |
| DN 300 (12") | 319.3 | 76 | 240 | 298 | 17 |

*Non-standard dimensions are produced to order. DIN and BS tri-clamp ends produced on request. The square can be supplied to other sizes, including keyway. Actuator supports are machined to ISO standards to suit the most appropriate actuator type. Variations can be supplied on request.

VALVE BODY TYPES

The valve body can be supplied either bolted or clamped using our proprietary "Clamshell" clamp system which greatly simplifies valve disassembly and re-assembly for cleaning. Standard clamp type can also be supplied on request.

The valve body can be supplied with the following inlet / outlet end types: Standard clamp, welding end (spigot), tri-clamp (BS4825 or DIN32676) or wafer (for mounting between flanges).

Some typical configurations are indicated below. Other configurations and special requirements are available on request.



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Other mounting options can be produced to order, as well as non standard ferrule lengths etc.