

VTork Actuated Wafer Butterfly Valve

Concentric Wafer Body · EPDM Liner · VT Series Rack & Pinion Pneumatic Actuator · DN32 – DN400

A ductile iron wafer-pattern butterfly valve, factory-fitted with a VT Series rack-and-pinion pneumatic actuator for automated on/off or throttling duty in general industrial, HVAC, water and process service. The bare-shaft valve is supplied by the manufacturer with an ISO 5211 top flange, mating directly to the actuator's integral mounting pad without a bracket or adaptor on all sizes covered by this sheet. The full-vulcanised EPDM liner seals against both mating pipe flanges without additional gaskets, giving zero-leakage shut-off to API 598 across the full DN32–DN400 range. The actuator is available double acting or spring return, with dual independent travel stops for precise open/close alignment.

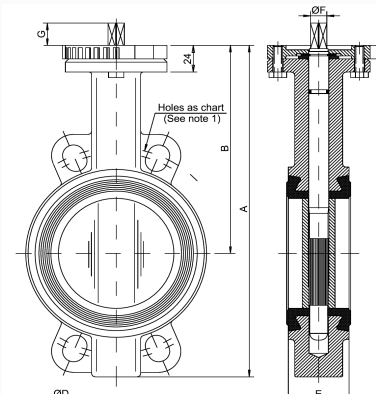


FIG. 1 — WAFER VALVE, FRONT & SECTIONAL VIEWS



FIG. 2 — VTORK ACTUATED WAFER BUTTERFLY VALVE ASSEMBLY

Technical Data

Valve type	Wafer-pattern, concentric disc, bare-shaft butterfly valve, factory-actuated
Size range	DN32 to DN400 (1¼" – 16")
Pressure rating	PN10/16 & ANSI Class 150 — drilled as PN10-16 & ANSI 150 Lb combined
Body	Ductile iron, EN 1563 GJS500-7
Disc	Stainless steel, ASTM A351 CF8M
Shaft	Stainless steel, ASTM A182 F304
Seat / liner	EPDM, full vulcanised, sealing directly against pipe flange faces
Valve temperature range	–20°C to +110°C (EPDM liner)
Face to face	EN 558 Series 20 / ISO 5752 Series 20 / API 609 Table 1 / BS 5155 Series 4
Pressure test	EN 12266-1, ISO 5208 — body 1.5×PN, seat 1.1×PN
Tightness test	ISO 5208, zero leakage, API 598
Actuator type	VT Series rack & pinion pneumatic actuator, double acting or spring return
Actuator body	Extruded aluminium alloy, hard anodised; end caps aluminium alloy
Actuator mounting	Direct ISO 5211 / DIN 3337 / VDI-VDE 3845 flange, NAMUR-compliant top pad
Standard sealing	Nitrile rubber, –18°C to +80°C (HT / LT / LLT options — see page 2)
Actuator certification	ISO 9001 manufactured, CE marked, ATEX 2014/34/EU compliant
Reference drawings	W32200203040E0 · W250400203040E0 (valve) — VT Series catalogue (actuator)

Key Features

- **Wafer installation** — clamps directly between pipe flanges with no separate gaskets; the EPDM liner forms the seal against both mating flange faces.
- **Zero-leakage shut-off** to API 598, with body and seat pressure tested to EN 12266-1 / ISO 5208.
- **Ductile iron body** (EN 1563 GJS500-7) with a mirror-polished CF8M stainless steel disc for corrosion resistance and low operating torque.
- **Common actuator platform** — the VT Series body and end caps are shared between double-acting and spring-return versions of the same frame size, simplifying spares holding; spring cartridges are added or removed in the field.
- **Dual independent travel stops**, externally adjustable $\pm 4^\circ$ in both directions, for precise alignment of the actuator with the valve's open and closed positions.
- **Rack and pinion, double-piston drive** with high-precision gearing for low backlash, long cycle life and fast stroke times; rotation direction is reversed simply by inverting the pistons.
- **NAMUR-compliant top-mounted position indicator**, accepting standard solenoid valves, limit switch boxes and proximity sensors without adaptors.
- **Corrosion-resistant construction** — hard-anodised extruded aluminium actuator body and stainless steel internal/external fasteners throughout.
- **ATEX 2014/34/EU compliant** actuator, manufactured under ISO 9001; every unit is factory pressure and leak tested and individually serial-marked for traceability.

Materials of Construction

Valve	
Body	Ductile iron, EN 1563 GJS500-7
Disc	Stainless steel, ASTM A351 CF8M
Shaft	Stainless steel, ASTM A182 F304
Seat / liner	EPDM

Actuator (VT Series)	
Body / end caps	Aluminium alloy, hard anodised
Pinion / OCTI-CAM	45# carbon steel
Piston	Aluminium alloy
Spring (spring-return)	Spring steel, coated cartridge
Bearings / bushings	Advanced polymer composite
Piston / travel-stop O-rings	NBR standard (FKM / silicone optional)
Fasteners	Stainless steel throughout
Output shaft	304 or 316 stainless steel (on request)

Actuator Options

Seal code	Elastomer	Temperature range
Standard	Nitrile rubber (NBR)	-18°C to +80°C
HT	Fluororubber (FPM/FKM)	-18°C to +150°C
LT	Silicone (silastic)	-40°C to +80°C
LLT	Fluorosilicone	-60°C to +80°C

Actuator sealing is selected independently of the valve liner — confirm the combined system temperature range against the EPDM valve liner limit of -20°C to +110°C stated on page 1. Double-acting and spring-return actuators share the same body and end caps; spring-return units are ordered with 4 to 12 spring cartridges depending on frame size and fail-safe torque required. Pneumatic operation is clockwise-to-close as standard. Full double-acting and spring-return torque tables (by air supply pressure, 2.5–8 bar) are available from Actuation Valve & Control Ltd on request.

Dimensions Valve envelope, all dimensions in millimetres

DN	inch	A	B	D	E	F	G	J	ISO 5752 Connection	Weight kg
32	1¼"	205	140	88	33	9.8	14	8	F5/F7	2
40	1½"	205	140	88	33	9.8	14	8	F5/F7	2
50	2"	228	156	88	43	9.8	14	8	F5/F7	3.5
65	2½"	248	161	88	46	12	16	9	F5/F7	4.5
80	3"	265	169	88	46	14	16	11	F5/F7	5
100	4"	298	187	88	52	14	20	11	F5/F7	6.5
125	5"	331	206	105	56	18	20	14	F7	8
150	6"	349	215	105	56	18	20	14	F7	9
200	8"	430	255	105	60	22	24	17	F7	15
250	10"	461	248	150	68	25	24	19	F10	21.5
300	12"	524	280	150	78	28	24	22	F10	30
350	14"	570	300	170	78	28	29	22	F14	39
400	16"	644	340	170	102	35	29	27	F14	52

Valve weight only (excludes actuator). Holes drilled as PN10-16 & ANSI 150 Lb combined — see Fig. 1. Dimensions and standards may vary without prior notice.

ISO 5211 Actuator Interface Flange compatibility guide

Valve flange	DN range	Actuator flange group	VT models sharing this flange*
F5/F7	DN32–100	F05 / F07	VT050 – VT125
F7	DN125–200	F07	VT095 – VT125
F10	DN250–300	F10	VT140 – VT190
F14	DN350–400	F14	VT190 – VT210

* Indicates ISO 5211 bolt-circle and pinion-bore compatibility only, taken directly from the valve and actuator manufacturers' published flange tables. It is **not** a torque rating. Final actuator frame size must be confirmed against the valve's break-to-open and running torque at the specified pressure, seat friction and service conditions before ordering — contact Actuation Valve & Control Ltd for a sized selection.

Typical Specification Reference

Example	DN150-20W3040E0-VT125D-EPDM-P7046
Description	DN150 wafer butterfly valve, ductile iron body, EPDM liner (ref. 20W3040E0), fitted with a VT125 double-acting actuator on ISO 5211 F07/10 flange, standard nitrile rubber sealing, grey (RAL 7046) actuator end caps.

Redrawn by Actuation Valve & Control Ltd from manufacturer data: wafer butterfly valve assembly drawings W32200203040E0 (DN32–200) and W250400203040E0 (DN250–400); VT Series Rack and Pinion Pneumatic Actuator catalogue (VTORK Technology (Wuxi) Co., Ltd.). Certified drawings and full torque data are available on request against a specific order. Pressure-temperature ratings and dimensions in this catalogue are typical values for general guidance; users should confirm suitability for their specific application before specifying.