



Most Suitable for Automating
Existing Manual Valves

PNEUMATIC VALVE ACTUATOR V-TORQUE SERIES



Manual handle on the side



Manual handle on the top

Safe and
Relieved

Архангельск (8182)63-90-72
Астана +7(7172)727-132
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Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41

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V-TORQUE SERIES

Features

1. A most advanced, compact and lightweight valve actuator that readily mounts on an existing manual valve to retrofit it for automatic control. (Accommodates valves 2" to 40" in bore size, or larger.)
2. Constructed by plain gears treated with induction hardening process for virtually wear-free gear teeth, our proprietary torque limiter which serves to maintain consistent shutoff torque is a standard feature and safeguards the valve against damage by overtightening, while it ensures smooth opening and closing movement.
3. The air motor is of field proven vane type for quiet and smooth rotation.
4. A dedicated manual handle allows manual operation in case of emergency. (The manual handle remains locked in position to prevent movement during automatic operation, thus affording protection to the operator.)
5. Component parts are unitized to facilitate modification, maintenance and inspection.
6. With the addition of a potentiometer, a valve position indicator output is also available.

☆What is the torque limiter?

Our torque limiter is a mechanism designed for the purpose of closing the valve at consistent, proper torque.

(Patented No. 1993887)

Using a spring-balance arrangement, it accurately detects valve's shutoff torque and, when a preset torque is reached, it stops the air motor.

The design therefore eliminates such complaints as valve overtightening or inoperative valve that has been shut off, characterized by most desirable performance for the valve with increased safety and service life.

Shutoff torque adjustment is also simple in the field.

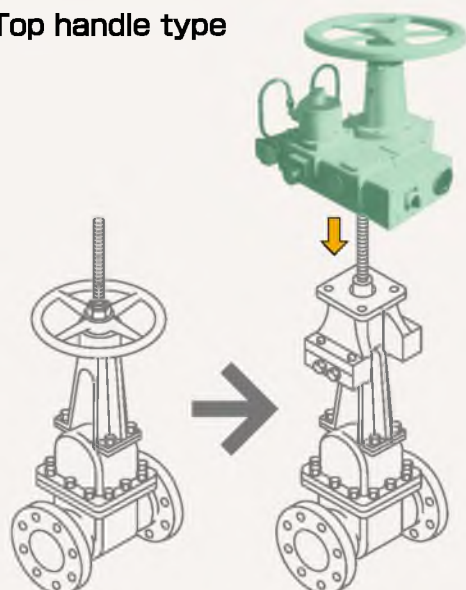
Specifications

Item \ Model		Top handle		Side handle with reduction gear	
		VTC-15 (Standard torque type)	VTC-25 (High torque type)	VTC-25 (High torque type)	
Shutoff torque		N·m	40 to 250	150 to 400	60 to 100
Opening torque		N·m	400	600	200
Rotational speed		rpm	23 (standard)		90
Required number of revolutions		rev	Applicable valve Set to 80 to 90% of the total number of handle revolutions.		
Supply air pressure		MPa	0.40 (0.35 to 0.70)		
Air consumption		NL/min	680	1100	
Connections	Drive line	Rc	3/8	1/2	
	Signal line	Rc	1/8		
Housing material		Aluminum casting			
Finish		Munsell 7.5G7/2.5			
Ambient temp. range		－10 to ＋60℃			
Mass		kg	27	29	
※ Air triple set	Connection	Rc	3/8	1/2	
	Filter	5 μm			
	Reducing valve	Preset range 0.1 to 0.83MPa			
	Oiler	Recommended oil : Turbine oil (JIS 2213) ISO VG32			

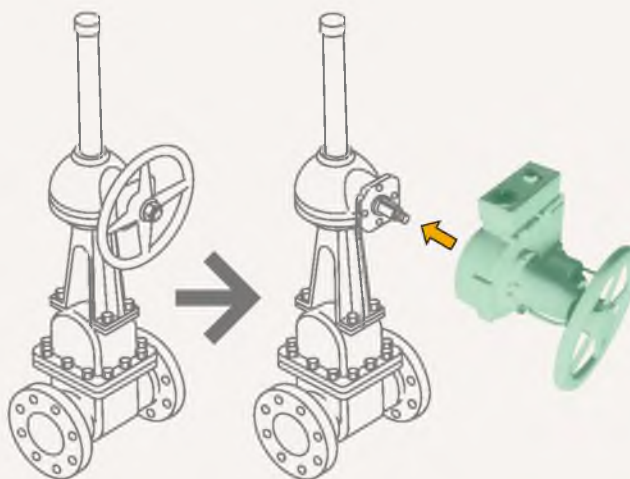
※ Air triple set, control switch box and the like are individually shipped. Customer to support (all equipment) installation and tubing in the field.

Installation Procedures

■ Top handle type



■ Side handle type



※ : Most typical installation is shown here.

V-TORQUE SERIES

Outline Dimensions

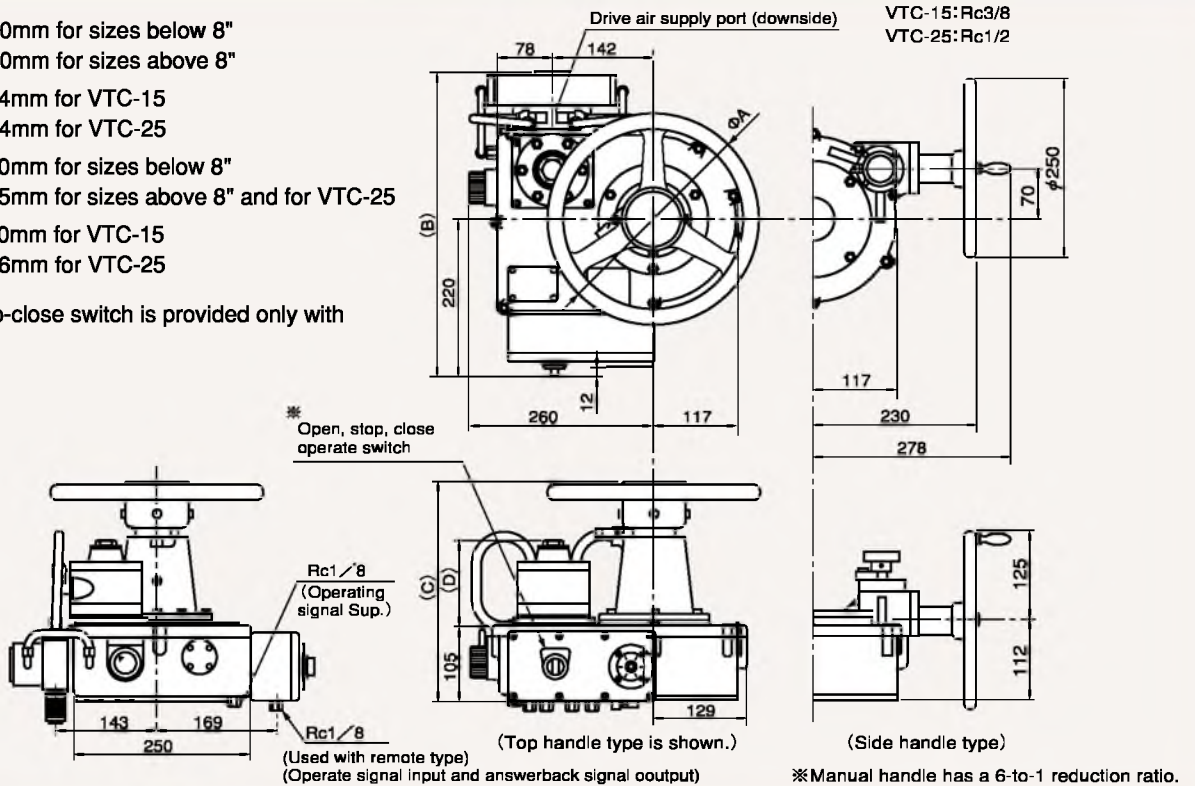
Dim. ΦA : 300mm for sizes below 8"
360mm for sizes above 8"

Dim. B : 414mm for VTC-15
444mm for VTC-25

Dim. C : 310mm for sizes below 8"
355mm for sizes above 8" and for VTC-25

Dim. D : 120mm for VTC-15
166mm for VTC-25

* Open-stop-close switch is provided only with Type A.



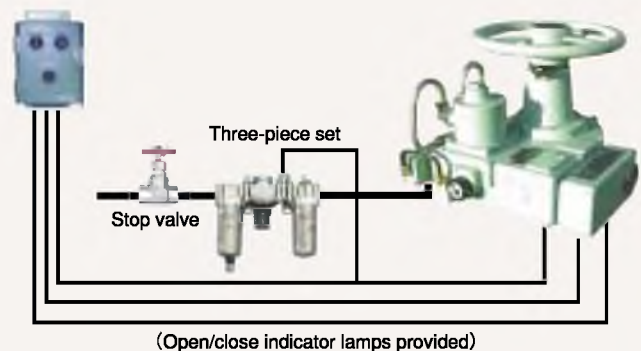
Operating principle

All pneumatic

Opens and closes the valve at a switch box located remotely from V-Torque.
(intermediate stop possible).

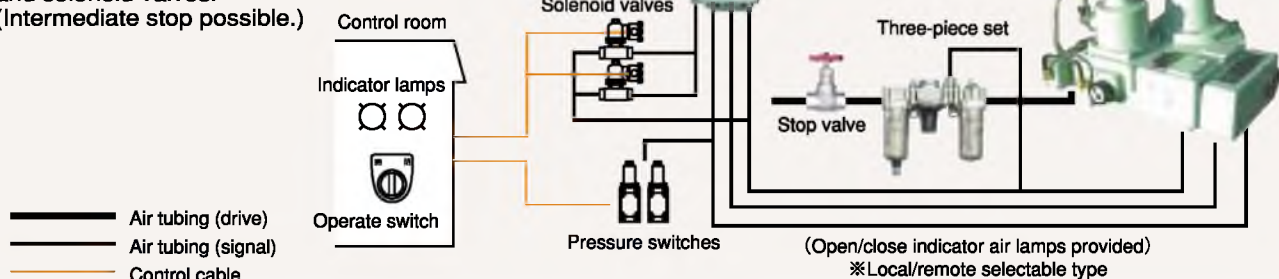
- ◆ Two tubing for operate signals
Full close signal "1": Full close "0": Others
Full open signal "1": Full open "0": Others
(If intermediate stop is not required, single tubing suffices.)
- ◆ Two tubing for answerback signals
Full close signal "1": Full close "0": Others
Full open signal "1": Full open "0": Others
(If specified for full close or full open only, single tubing suffices.)
- ◆ With the addition of pressure switches, full close and full open indicators can be provided in the control room.

Switch box
(SB-031)



Remote control with solenoid valve type

Can control the entire system from control room or in the field by using a local/remote selector equipped switch box with the addition of pressure switches and solenoid valves.
(Intermediate stop possible.)



※ : Examples of selectable operations are shown.

V-TORQUE SERIES

Product Code Explanation

Item	Product code													Description
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	
Model	V	T												Valve actuator
Type			C	—										V-Torque series
Air motor type					1	5								Low torque service (4AM)
					2	5								High torque service (6AM)
Operating principle (※1)						A	—							All-air, field type. Operates valve with direct-mount switch (intermed. stop - Yes). ※No for V-Torq Mini.
						B	—							All-air, remote ctrlld. Operates valve with air switch box.
						C	—							Remote ctrlld (full close or full open at pwr. failure). Operates valve with solenoid v. (Status sig.: intermed. stop - No)
						E	—							Remote ctrlld (holds at pwr. failure). Operates valve with 2 solenoids. (Status sig.: intermed. stop - Yes)
						H	—							Remote ctrlld (holds at pwr. failure). Operates valve with 2 solenoids. (Status sig.: intermed. stop - No)
						P	—							Type E operation + pot. unit to provide valve pos. sig. (resist. value) to control room.
Valve dia.							※	※						V-Torque series (reads in inch) Ex.: "0.4" means "4B"
V-Torque series manual handle type,								T	—					Top handle
								S	—					Side handle
Indicator type								S						Dial type (standard)
								O						Pointer type(option)
Reduction ratio								A	—					A reduction
								D	—					D reduction
								E	—					E reduction
								Z	—					Specials
Remote control signal										0				Not req'd (Sw. directly mounted to V-Torque series does the job) Operation "A"
										1				Close sig. only. Sig. "1": Valve close Sig. "0": Valve open Operation "B," "C"
										2				Open sig. only. Sig. "1": Valve open Sig. "1": Valve open Operation "B," "C"
										3				2 open/close input (status sig.) intermed. stop - Yes Operation "B," "E," "P"
										4				2 open/close input (pulse sig. ※0.3s min.) intermed. stop - No Operation "B," "H"
Remote output signal (※2)										0				None
										1				Full close signal only
										2				Full open signal only
										3				Full close, full open signal
										4				Analog output (pot. output)
										5				Analog output + full close, full open signal
										9				Specials

- ※1. With all operating principles, answerback signals (air signals) of full open and full closure signal are available.
In an application where electrical signals are required, pressure switches (externally attached) serve the purpose.
- ※2. For analog output, consult the factory.

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