

INSTALLATION, OPERATION & MAINTENANCE MANUAL



This instruction is for NEXTEK Controls "VECTOR" Series of NAMUR Pilot Valves.

- ▼ **VECTOR-PV₄**: NEMA 4, weatherproof available with a variety of supply voltages
- ▼ **VECTOR-PV₇**: IP66 for hazardous areas available with a variety of supply voltages

CAUTION!

Never remove enclosure cover or make/break electrical connections with power connected to the unit.

- ▼ Perform all wiring in accordance with site and local codes and the National Electric Code ANSI-NFPA-70 (US) or the Canadian Electric Code Part I (Canada) for the appropriate area classifications.
- ▼ Ensure that all electrical devices are appropriately rated for the area where they will be operating.
VECTOR-PV₄ = NEMA 4, Weather-proof; **VECTOR-PV₇** = IP66, Hazardous Areas.
- ▼ Confirm that supply power to switches is within rated specifications listed on the unit identification label.
- ▼ Protect the unit from exposure to aggressive substances or atmospheres to ensure that the hazardous area rating is not compromised.

The "VECTOR" Series pilot valves are designed to fit to a NAMUR footprint and are supplied with everything required for 3-Way and 4-Way configurations. **NOTE: A minimum of 40 psi is required to operate the VECTOR Pilot Valve.** Pilot Valves can be used with air, nitrogen or natural gas.

FEATURES

- ▼ The solenoid operated spool valves have 1/4" NPT threaded port connections and NAMUR interface
- ▼ The same spool valve can be adapted for 3/2 or 5/2 function for controlling double-acting (5/2) and single-acting (3/2) actuators
- ▼ All the exhaust ports of this spool valve are connectable, providing better environmental protection, particularly recommended for sensitive areas, such as clean rooms, and applications in the pharmaceutical and food processing sectors
- ▼ The valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)
- ▼ Electrical conduit connection is 1/2" NPT

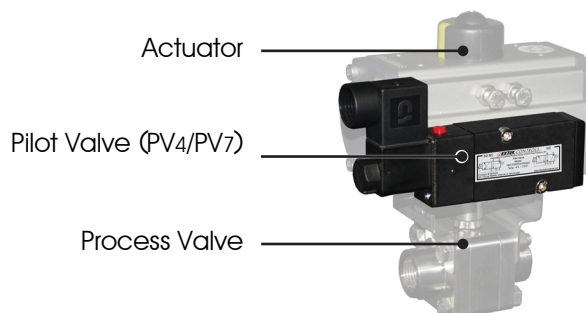
Terms used in this IOM:

Energize-To-Open: Applying power to the pilot valve will cause the Process Valve to OPEN

Energize-To-Close: Applying power to the pilot valve will cause the Process Valve to CLOSE

NOTE: The installation of this device assumes common automated valve practices:

- CCW rotation of the process valve/actuator is OPEN.
- CW rotation of the process valve/actuator is CLOSE.



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VECTOR-PV₄ & PV₇

The VECTOR Series Pilot Valve (Figure 2.1) is shipped with two interface plates to adapt the device for 3/2 or 5/2 functionality. (Figure 2.2: 3/2 = for single acting actuators, Figure 2.3: 5/2 = for double acting actuators). Each interface plate is marked with the appropriate numbers.

Included in the PV Mounting Kit:

- ▼ 1 X pilot valve (Figure 2.1)
- ▼ 2 X Interface plates (Figures 2.2, 2.3)
- ▼ Fasteners
- ▼ Coil and conduit connector (may already be assembled/installed to the valve)
- ▼ Instructions



Figure 2.1
(PV4 or PV7 Pilot Valve)



Figure 2.2
(3/2 Interface Plate)



Figure 2.3
(5/2 Interface Plate)

SVF PV4 (NEMA 4 weatherproof) and PV7 (Hazardous Areas, ATEX) pilot valves are direct mount (NAMUR VDI/DE 3845, Figure 2.4) valves used to pilot pneumatic actuators. The valve is a universal type (5/2 convertible to 3/2) and can be used on double acting or spring return actuators by simply installing the correct interface plates.

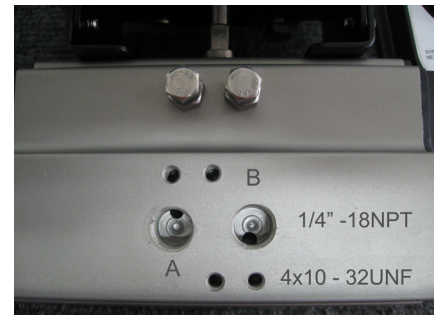
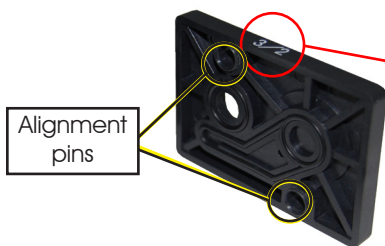
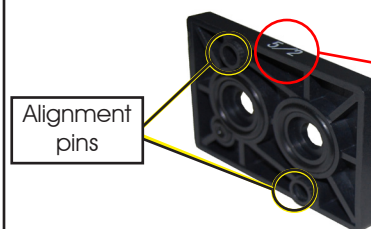


Figure 2.4
ISO/NAMUR VDI/DE 3845

The mounting kit includes 2 interface plates that will direct the supply air to the correct manifold ports for either double acting (5/2) or Spring return (3/2) actuators.



For Spring Return actuators use Interface Plate 3/2



For Double Acting actuators use Interface Plate 5/2

Each interface plate has a set of alignment pins to ensure proper engagement.

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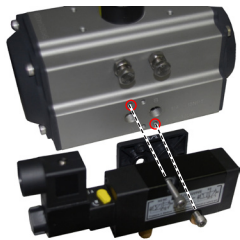


INSTALLATION:

Always note the orientation of the Pilot Valve body, manual override lever (Figure 3.1) and supply air porting when following these instructions. **NOTE: A minimum of 40 psi is required to operate the VECTOR Pilot Valve.**

SPRING RETURN ACTUATORS*:

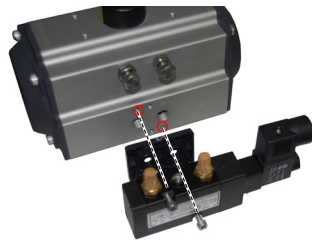
Using the 3/2 Interface Plate, mount the Pilot Valve to the actuator as shown.



DOUBLE ACTING ACTUATORS:

Using the 5/2 Interface Plate, mount the Pilot Valve to the actuator as shown for:

ENERGIZE TO CLOSE*



ENERGIZE TO OPEN**

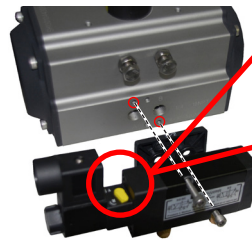
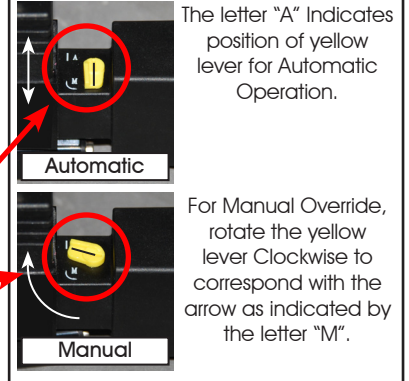


Figure 3.1 Manual Override



The letter "A" indicates position of yellow lever for Automatic Operation.

For Manual Override, rotate the yellow lever Clockwise to correspond with the arrow as indicated by the letter "M".

* Supply air porting is on the top of the VECTOR

** Supply air porting is on the bottom of the VECTOR

MANUAL OVERRIDE (Figure 3.1): Use of the manual override will by-pass automatic operation. This function is helpful in the event that the valve must be cycled when electrical supply is unavailable.

▼ When the yellow lever is in line with "A" it is in Automatic Operation.

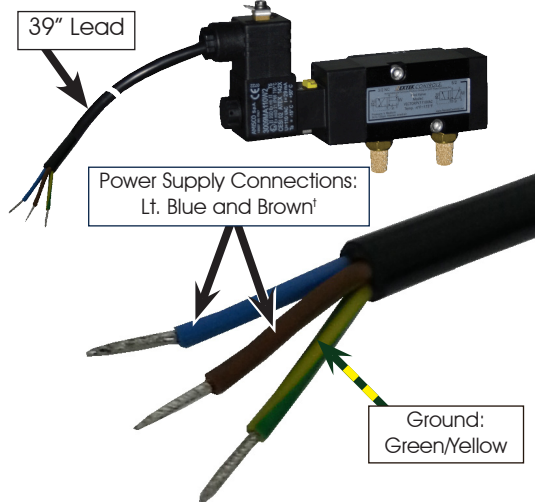
▼ For Manual Override Operation, rotate the yellow lever Clockwise as indicated by the letter "M".

FIELD WIRING: See Page 1 of this document for important cautions/warnings pertaining to the wiring of VECTOR units.

CAUTION! Never remove enclosure cover or make/break electrical connections with power connected to the unit.

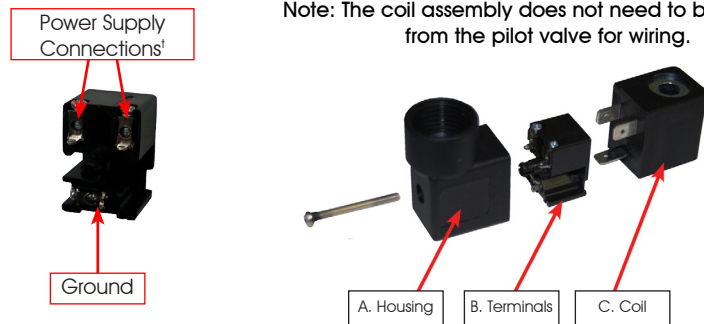
WIRING THE VECTOR PV7

The VECTOR-PV7 is pre-wired with a 39" (100mm) lead.



WIRING THE VECTOR-PV4

Note: The coil assembly does not need to be removed from the pilot valve for wiring.



1. Remove the Housing/Terminal assembly from the coils by loosening the fastener. Note: Items A and B are a single unit.
2. Remove the Terminals (B) from the housing. (A flat head screwdriver will help in this)
3. Connect the supply wiring as shown above left.
4. Insert Terminal block (B) back into the housing
5. Slide onto Coil (C) and tighten.

Figure 3.2 (VECTOR-PV4 Coil Assembly)

NOTE: The positive terminal can be connected to either of the two Power Supply Connections (Light Blue or Brown on the VECTOR-PV7) or either of the two Power Supply Connections on the VECTOR-PV4 without affecting the operation of the valve.