

JOB NAME:	CONTRACTOR:
JOB LOCATION:	APPROVAL:
ENGINEER:	CONTRACTOR P.O.:
APPROVAL:	REPRESENTATIVE:



SERIES PNP-B

The PNP-B is an Pneumatic-Pneumatic Positioner that accurately controls valve stroke in response to an input signal of 3-15 psi from the controller.

MAIN FEATURES AND FUNCTIONS

- It is compatible with most of controllers
- Response time is very fast and accurate
- Split range 3~9 psi or 9~15 psi can be set by simple operating
- Low air consumption
- Simple Direct / Reverse Action change
- Simple Zero & Span adjustment
- Orifices can be installed even in the field to minimize the hunting occurrence and optimize operating conditions.
- It has IP66, Type 4X (FM) ingress protection grade
- Epoxy polyester powder coating resists the corrosion process
- Maintenance of the positioner is easy because of modularized inner structure

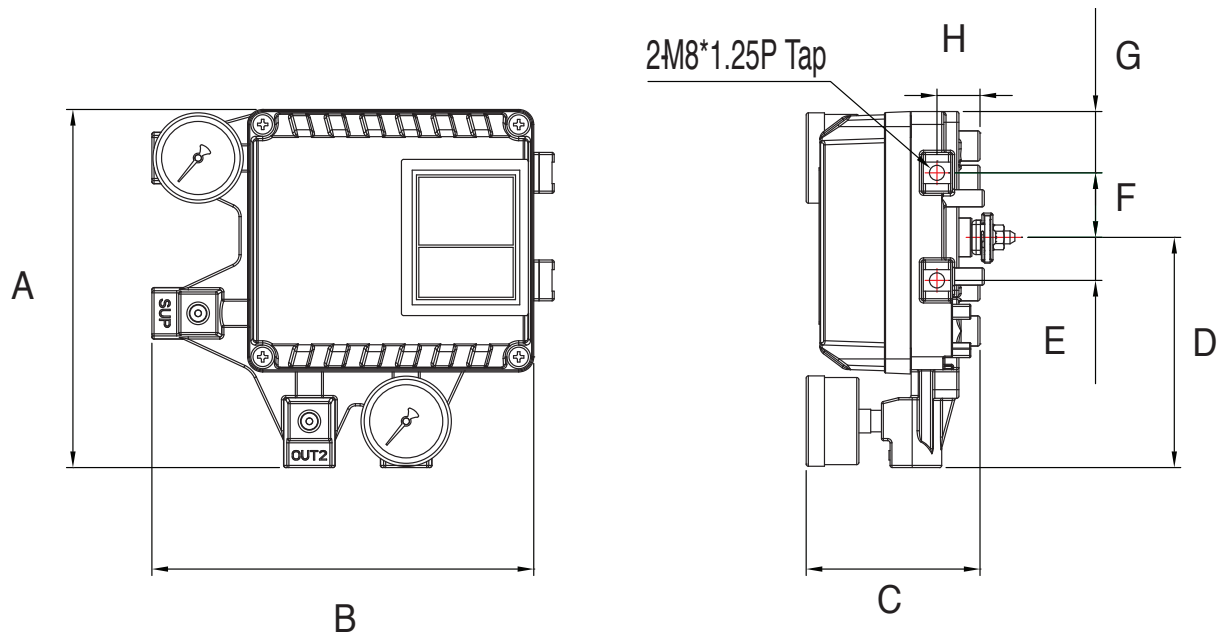
BONOMI P/P POSITIONER
NORTH AMERICA, INC.

MODEL NUMBER	:	PNP-B	
INPUT SIGNAL	:	3-15 PSI	
AMBIENT TEMP	:	-4°F to 158°F	
SUPPLY PRESSURE	:	20-100 PSI	
ENCLOSURE	:	IP66	
SERIAL NUMBER	:		

LABEL DESCRIPTION

MODEL NUMBER	Indicates the model number and any options of the positioner
INPUT SIGNAL	Indicated the input signal
AMBIENT TEMPERATURE	Indicates the allowable ambient temperature
SUPPLY PRESSURE	Indicates the supply pressure range
ENCLOSURE	Indicates enclosure protection grade
SERIAL NUMBER	Indicates unique product serial number

PRODUCT DIMENSIONS



A	B	C	D	E	F	G	H
6.55	6.99	3.18	4.21	0.79	1.18	1.12	0.79

PRODUCT SPECIFICATIONS

ITEM TYPE	SINGLE	DOUBLE
INPUT SIGNAL	3 - 15 psi	
SUPPLY PRESSURE	20 - 100 psi	
STROKE	0 - 90°	
AIR CONNECTION	PT (NPT) 1/4"	
GAUGE CONNECTION	PT (NPT) 1/8"	
INGRESS PROTECTION	IP66	
OPERATING TEMPERATURE (STANDARD TYPE)	-4°F to 158°F	
LINEARITY	± 2 % F.S.	
HYSTERESIS	± 1 % F.S.	
SENSITIVITY	± 0.5 % F.S.	
REPEATABILITY	± 0.5 % F.S.	
AIR CONSUMPTION	2.5 LPM (sup = 0.14 MPa)	
FLOW CAPACITY	80 LPM (sup = 0.14 MPa)	
MATERIAL	Aluminum Diecasting	
WEIGHT	3.10 lbs.	

INSTALLATION

SAFETY

When installing a positioner, please ensure to read and follow safety instructions.

- Any input or supply pressures to valve, actuator, and / or to other related devices must be turned off.
- Use bypass valve or other supportive equipment to avoid entire system “shut down”.
- Ensure there is no remaining pressure in the actuator.

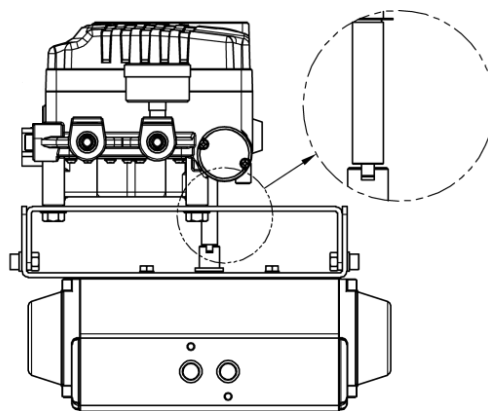
PNP-B INSTALLATION

PNP-B should be installed on rotary motion valve such as ball or butterfly type which uses rack and pinion, scotch yoke or other type of actuators which stem rotates 90 degrees. Before proceeding with the installation, ensure following components are available.

- Positioner
- Rotary bracket set (2 piece)
- 4 pcs x hexagonal headed bolts (M8 x 1.25P)
- 4 pcs x M8 plate washers
- 4 pcs x wrench headed bolts (M6 x 1P x 15L)
- 4 pcs x M6 nuts
- 4 pcs x M6 spring washers
- Bolts and washers to attach bracket to actuator – not supplied with the positioner

BRACKET INFORMATION

Standard bracket (included with the positioner) contains two components. The bracket can be used for NAMUR lever type. The bracket is designed to fit onto the actuator with 20mm stem height (H). If actuator’s stem height (H) is 30mm or 50mm, bracket must be adjusted.

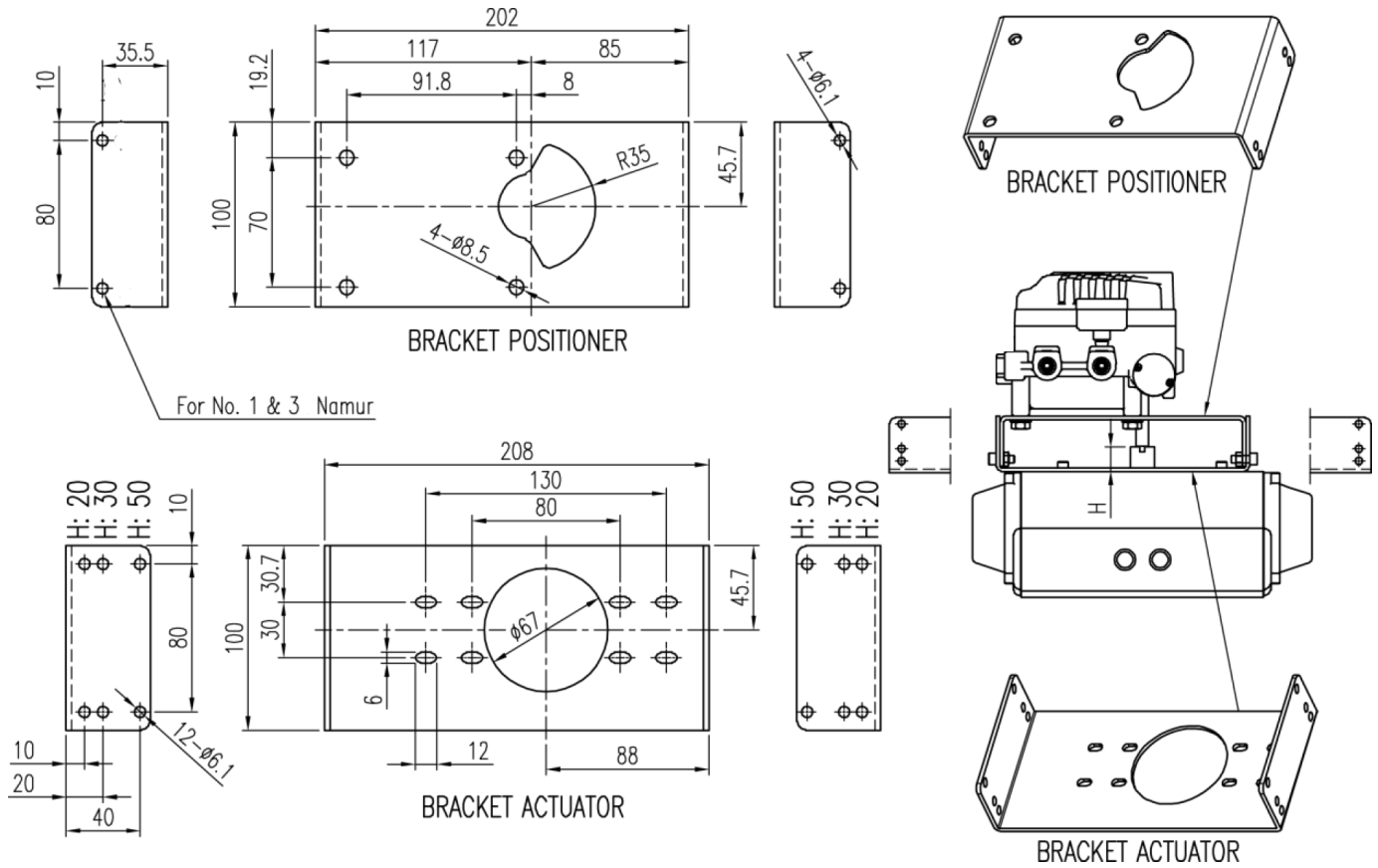


NAMUR lever type

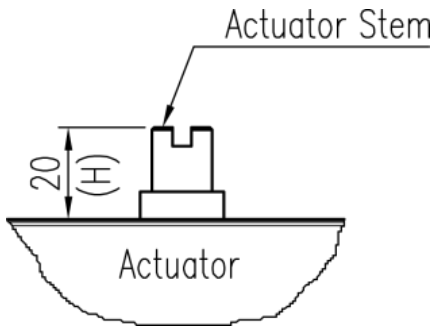


ROTARY BRACKET INFORMATION

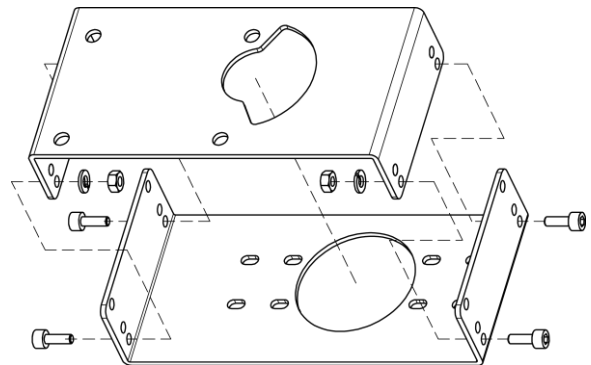
The rotary bracket set (included with the positioner) contains two components. The bracket is designed to fit onto the actuator with 20mm, 30mm and 50mm stem height (H) according to VDI/VDE 3845 standard. Please refer to below figures how to adjust the height of the bracket.



Brackets and Positioner



Actuator Stem Height

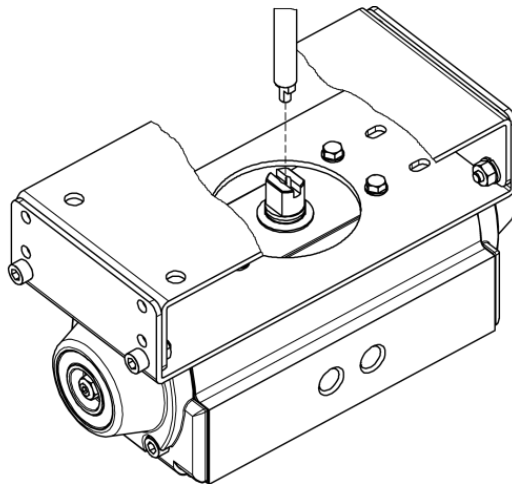


Rotary Brackets Assembly



ROTARY POSITIONER INSTALLATION STEPS

1. Please check the actuator's stem height and adjust the brackets by referring to the above bracket figures.
2. Attached the brackets onto the actuator. It is recommended to use spring washer so the bolts will not be loosen from vibration.
3. Set rotation position of the actuator stem at 0%. For single acting actuator, it is easy to check 0% point by supplying no pressure to the actuator. For double acting actuator, check actuator stem's rotation direction – clockwise or counter-clockwise - by supplying pressure to the actuator.
4. Attach the positioner to the bracket. Setting alignment of center of main shaft of the positioner and center of the actuator's stem is very important. Poor alignment of the main shaft and the actuator's stem decreases the positioner's durability due to unnecessary forces on the main shaft.



Main Shaft center alignment (NAMUR)

5. Tighten the positioner and the bracket with bolts **after checking the positioner's position**

CONNECTION AIR

SAFETY

- Supply pressure should be clean and dry air – avoiding moisture, oil or dust.
- Always recommended to use air filter regulator (i.e. BON-AW30-N02E-2Z).



SUPPLY PRESSURE CONDITION

- Dry air with at least 10°C lower than ambient temperature.
- Avoid from dusty air. Use 5 micron or smaller filter.
- Avoid oil.
- Comply with ISO 8573-1 or ISA 7.0.01.
- Supply pressure range is 0.14 ~0.7 MPa (1.4 ~ 7 bar)
- Set air filter regulator's pressure level 10% higher than actuator's spring range pressure.



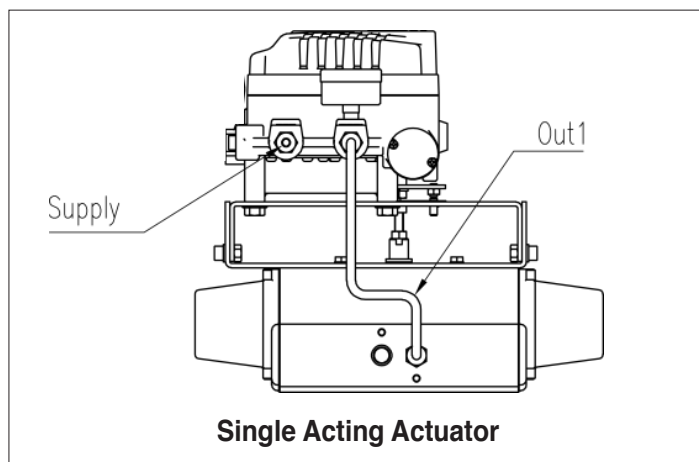
PIPING CONDITION

- Ensure inside of pipe is clean of obstructions.
- Do not use pipeline that is squeezed or shows any type of damages.
- Pipeline should have more than 6mm of inner diameter (10mm outer diameter) to maintain flow rate.
- The length of pipeline system should not be extremely long. Longer pipeline system may affect flow rate due to the friction inside of the pipeline.

CONNECTION - PIPING WITH ACTUATOR

SINGLE ACTING ACTUATOR

Single acting type positioner is set to use only Out1 port. Out1 port of positioner should be connected with port of actuator when using spring return actuator of single acting type. As input signal ampere increases, the supply air pressure will be supplied through Out1 port



DOUBLE ACTING ACTUATOR

Double acting type positioner is set to use both Out1 and Out2 port. As input signal increases, the supply pressure will be supplied through Out1 of positioner to actuator and the exhausting air from actuator will be exhausted through Out2 of positioner.

