



Top 15 Selection Tips For Pneumatic Actuator



NO	Parameter Classification	Option	Description
1	Description of the pneumatic actuator by the client?	1) Diaphragm type 2) Cylinder type 3) Special type	Generally, clients will provide a clear description. If there is no clear description, choose based on experience or commonly used products.
2	What action type of pneumatic actuator is used for?	1) Single-acting cylinder; 2) Double-acting cylinder; 3) Special type cylinder.	The action type of the pneumatic actuator must be clearly described for accurate selection in the next step.
3	Brand requirement (Here for quarter-turn actuators)?	1) Manufacturer's choice (preferably their own product); 2) Bettis / BIFFI; 3) Rotork; 4) Limitorque; 5) Other specified brands, such as Pro-control, Neles,	This should be chosen based on actual request.
4	Selection of air supply pressure	1) 2bar 2) 3 bar 3) 4 bar 4) 5 bar 5) 6 bar	For diaphragms type pneumatic actuator, the air supply pressure used for selection is generally not too high, usually from 1.4~4.0bar; for cylinders, it may be between 3~6 bar, see the inquiry document for specific requirements.



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5	Torque or thrust value	<ol style="list-style-type: none">1) For linear valves, the thrust value needs to be provided, please provide detailed thrust parameters;2) For quarter-turn valves, the torque value needs to be provided, generally including at least 5~6 torque values, such as BTO, BTC, RUN, ETO, ETC, MAST, etc., for the accuracy and cost-effectiveness of selection, please provide detailed torque values.	Torque and thrust are one of the most important parameters for calculating the actuator, please provide them accurately.
6	Valve stroke	<ol style="list-style-type: none">1) For linear valves, provide the accurate valve stroke;2) For quarter-turn valves, confirm if the valve turn is 0~90 ° or 0~180 °?	Please noted that this is mainly for linear valves.
7	Safety factor needed for selection	<ol style="list-style-type: none">1) 1.0, which means the value provided already includes a safety factor, no need to add extra;2) 1.25 times3) 1.3 times4) 1.5 times5) 2.0 times6) Customer's special required safety factor, etc.	Safety factor is an important parameter in selection, please make sure the customer provides it and let the actuator manufacturer select according to the requirement.



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8	Actuator housing material requirement	<ol style="list-style-type: none">1) Cast aluminum2) Cast iron3) Carbon steel4) Stainless steel5) Other special materials	Actuator material, sometimes customers have material requirements, but in most cases, the manufacturer selects based on their product, just pay attention to the requirements.
9	Actuator seal material requirement	<ol style="list-style-type: none">1) Natural rubber2) Nitrile rubber3) Viton rubber4) Other special materials	This material part, mainly because there are low temperature, high temperature, and other special circumstances requirements, so please pay attention to the specific requirements.
10	Requirements for ambient temperature	<ol style="list-style-type: none">1) No low temperature needed, normal ambient temperature;2) Low temperature needed, not lower than -20°C;3) Low temperature needed, not lower than -40°C;4) Low temperature needed, not lower than -60°C;5) High temperature needed, please list the high temperatures;6) Other special ambient temperatures, please mention.	Temperature issues must be paid attention to because for different manufacturers, different temperatures will lead to completely different actuator models and series selection, and the price difference is also significant, so theoretically, when selecting, the first thing to determine is the actuator's requirements for ambient temperature.



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11	Is a handwheel mechanism included?	<ol style="list-style-type: none">1) No handwheel mechanism;2) With handwheel mechanism, and the handwheel is top-mounted;3) With handwheel mechanism, and the handwheel is side-mounted;4) With handwheel mechanism, and there are special requirements.	The handwheel mechanism must be paid attention to because it affects the price significantly, and whether it is included or not, for the actuator manufacturer, the model and even the series are different.
12	Does it come with stroke adjustment or travel limit?	Do actuators at the 0° and 90° positions need 5° or 10° of adjustability? Can this be met, or does the owner have specific requirements for travel limits?	Stroke adjustability is necessary for certain valves, such as triple offset butterfly valves and trunnion mounted ball valves. Therefore, when selecting actuators for these types of valves, it's important to ensure that the actuators can be adjusted at both the 0° and 90° positions. Special circumstances also require special attention.



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13	Failure position in case of air loss?	<ol style="list-style-type: none">1) Fail Close (FC)2) Fail Open (FO)3) Fail Last (FL-1)4) Fail Lock (FL-2)5) Other requirements, please specify in detail.	<p>1) Often, the failure position listed in the data sheets refers to the position in case of air loss. Do not assume that the air loss failure position is the same as the power failure position; they are mostly consistent, but there can be inconsistencies.</p> <p>2) Please note, if the owner's specification for air loss is FL, it does not necessarily mean Fail Lock, it could also mean Fail Last. The purpose and process of the air circuit for locking and maintaining are different, this must be carefully noted.</p>
14	Failure position in case of power loss?	<ol style="list-style-type: none">1) Fail Close (FC)2) Fail Open (FO)3) Fail Last (FL-1)4) Fail Lock (FL-2)5) Other requirements, please specify in detail.	<p>If the failure position in case of power loss is not specified in the data sheet, it is assumed to be the same as the air loss failure position. If the data sheet specifies that the air loss and power loss failure positions are different, attention must be paid during the configuration of the air circuit. For single-acting pneumatic actuators, if the air loss and power loss failure positions are inconsistent, an air reservoir may need to be added to achieve the desired failure position during power loss. This is sometimes the reason why single-acting cylinders are fitted with an air reservoir.</p>
15	Are there any other requirements?		