Dual Valve Model No. TX-A User Manual

Make sure to read this section before using the product.

Necessary information for ensuring the safe and correct use of this product is described in this User Manual. This product has been made to high quality and reliability standards. However, the user should ensure safety on their machinery and equipment to prevent fatal accidents, fire accidents and extensive damage even in the event that this product malfunctions. The following describes cautions to observe to prevent harm to users and others, and damage to property. Be sure to thoroughly read the precautions in this User Manual to ensure correct use. Make sure that this User Manual is handed over to the person-in-charge of using this product. The person-in-charge of using this product should store the User Manual at a place where it can be immediately retrieved at all times, and should read it again, as required.
When ordering or using this product, be sure to read "Items to Consent to Upon Ordering and Use" in the following web site.
https://atc.azbil.com/en/products/order.html
Please note that the content of materials and descriptions in these materials are subject to change without notice. Please refrain from the unauthorized reproduction and duplication of these materials.

Safety Precautions

■ The following categorizes harm and damage that may occur as a result of mishandling the product according to the extent of harm and damage.

⚠	WARNING	This indicates that mishandling might result in death or serious injury.
⚠	Caution	This indicates that mishandling might result in minor injury or damage to property.

■ The following symbols are used to describe details that the user must observe.

⃠	Prohibited action	This indicates an action that must not be performed.
❗	Instruction	This indicates instructions that must be followed.

⚠ WARNING	
❗	Use a clutch that is not engaged at 10 % or below of the operating pressure range of this product for the mechanical press. The power press might not stop due to failure of this product.
❗	Use a brake that is not released at 10 % or below of the operating pressure range of this product for the mechanical press. The power press might not stop due to failure of this product.
⃠	Do not drive the two valves by one drive circuit. This may result in failure of the drive circuit.
⃠	Do not limit the displacement for purposes other than appropriate silencing. Brake operation of the operating press might be delayed.
❗	Periodically check that the silencer is not clogged. There is a risk that the brake operation of the power press will be delayed due to clogging.
❗	Connect the earth lead to the solenoid. Otherwise, this may result in electric shock.
⃠	Do not use this product without a pressure switch connected. The power press might not stop due to failure of this product.
❗	Use this product with a safety interlock provided externally. The power press might not stop due to failure of this product.
❗	Before starting wiring work, turn the power OFF. Otherwise, this may result in electric shock.
❗	Be sure to ensure the safety of the surrounding area before manually operating the valves. If this product is operated without having sufficiently checking safety, this might result in a serious accident.
⃠	Do not place your feet on or get on this product.
❗	If a delay occurs in operation of the valves, immediately stop use of this product.
❗	If your hear abnormal noise, sense abnormal vibration or smell abnormal odor, immediately stop use of this product.
❗	If one of the valves malfunctions, immediately stop use of this product.
⃠	Do not disassemble or modify this product. Doing so might result in injury or an accident.
❗	The rubber sheet of the manual operation section should be placed over the hole of the manual operation section. If not, there is a risk that debris may enter, which could prevent the press machine from stopping.
❗	Replace the product within 5 million operating cycles.

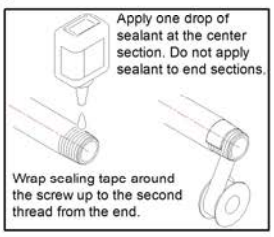
⚠ Caution	
⃠	Use this product only for clutch and brake control of power presses. Do not use this product in other applications.
❗	Use this product in environments laid down in the specifications.
❗	Install and wire this product in accordance with instructions in the User Manual for the power press.
❗	Use clean filtered air.
❗	Use this product at installation sites that are not subject to direct sunlight.
❗	Use this product at installation sites that are not subject to splashing by water.
❗	If there is a heat source in the surrounding area, shield this product from radiating heat.
❗	Before removing piping, bleed pressure from all piping connected to this product. Otherwise, air suddenly flowing out of piping might cause an injury.
❗	Installation work should be performed by qualified personnel only. Work performed by unqualified personnel may cause electrical circuits to malfunction, which might result in a short circuit and cause electric shock.
❗	Keep piping between the clutch and brake as short as possible.
⃠	Do not use piping with a constricted internal diameter.
❗	Provide an overcurrent protection circuit externally. If electrical circuits malfunction, this might result in overcurrent, which might lead to fire.
❗	Use crimped terminals with insulated coating. Short circuiting might result in fire.
❗	Tighten the screws securing the DIN terminal at the specified torque (0.3 N•m). Failure to do so might result in fire.
⃠	Do not place flammable objects in the area around this product. Doing so might result in fire.
❗	Perform inspection periodically in accordance with instructions in the User Manual.
❗	Inspection and maintenance should be performed by personnel who have received the appropriate training.
❗	Before performing inspection and maintenance, turn the power supply OFF. Otherwise, this may result in electric shock.

This is a group 1, class A product according to EN 55011. This means that this product does not generate and/or use intentionally radio-frequency energy, in the form of electromagnetic radiation, inductive and /or capacitive coupling, for the treatment of material or inspection / analysis purpose and that it is suitable for use in all establishments other than domestic and those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.
This is a class A product. There may be potential difficulties in ensuring electromagnetic compatibility in environments other than industrial, due to conducted as well as radiated disturbances.
Do not use this product in a residential environment. This product may interfere with other products.

<Method of Use>

♦ Piping method
Before installing piping, make sure the area is sufficiently blown with air or washed, and remove all chips, cutting oil, and debris from inside the piping.
When tightening pipes, make sure that chips from the pipe thread and sealing material do not enter the valve.
When using sealing tape, wrap it to ensure that there is one layer on the thread.
Tighten at the appropriate torque by using the proper spanner. The table below shows tightening torques for reference.

Connecting thread size	Proper tightening torque N•m
R1/4	13
R1/2	25
R3/4	32
R1	37



Please ensure that the resin components are not subjected to excessive stress during the piping installation.

♦ Installation method
Use the following bolts and torque to install this product.
Please install with the solenoid part facing upward.

Product format	Bolt	Torque
TX-A040/06J	M6 hexagon socket head bolt. Length 55mm or more.	5N•m
TX-A060/100	M8 hexagon socket head bolt. Length 80mm or more.	12N•m

♦ Wiring method

For electrical wiring, use DIN terminal that comply with DIN EN 175 301-803-A (DIN 43650).
When doing so, be sure to connect it to the ground terminal.

♦ Use

Use compressed air as the fluid used.
Do not use synthetic oils that contain chemical agents or organic solvents, and compressed air that contains salt, corrosive gases, etc.
Do not subject this product to vibration or impact that exceeds the operating ranges.
Do not allow wire scraps, chips, water or other foreign matter to get inside this product.
Use this product at locations where there is little dust.
Take steps to ensure that the drain and water content do not become frozen when using this product at low temperatures.

♦ Lubrication

Use turbine oil ISO VG32 for the oil supply. Once oil is supplied, be sure to continue oiling.

♦ Maintenance and inspection

External inspection: Check the product for apparent damage, if it is stably installed and if air is leaking.
Operation inspection: Manually operate both of the left and right valves simultaneously, and check for any abnormalities in air supply and exhaust. Manually operate the left and right valves individually, and check that the clutch does not operate by operation of just one valve and that the brake status is held.

<Product Specifications>

TX-A 040 N N 11 0
① ② ③ ④

♦ How to order

① Port size

	Port 1, 2	Port 3
040	Rc1/2	Rc3/4
06J	Rc3/4	
060	Rc3/4	Rc1 1/4
100	Rc1	

② With DIN terminal

N	None

③ With pressure switch

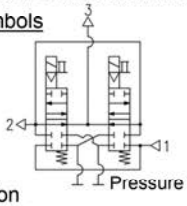
N	None

④ Rated voltage

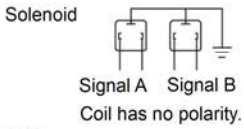
11	100 VAC 50/60 Hz, 110 VAC 60 Hz
12	200 VAC 50/60 Hz, 220 VAC 60 Hz
14	110 VAC 50 Hz
16	220 VAC 50 Hz
33	24 VDC

♦ JIS Symbols / Connection Method

JIS Symbols



Wiring method



♦ Specification

Valve specifications

Fluid used	Compressed air passed through a filter element of 40 µm or less
Type of actuation	Normally closed
Operation	Internal pilot
Operating pressure range	0.2 to 0.7 MPa
Ambient temperature	5 to 50°C
Lubrication	Not required (Use turbine oil ISO VG32 or equivalent, if lubricated) Once oil is supplied, continue oiling.
Manual override	Push button
Weight	TX-040/06J:2.3kg TX-A060/100:3.5kg

Flow characteristics

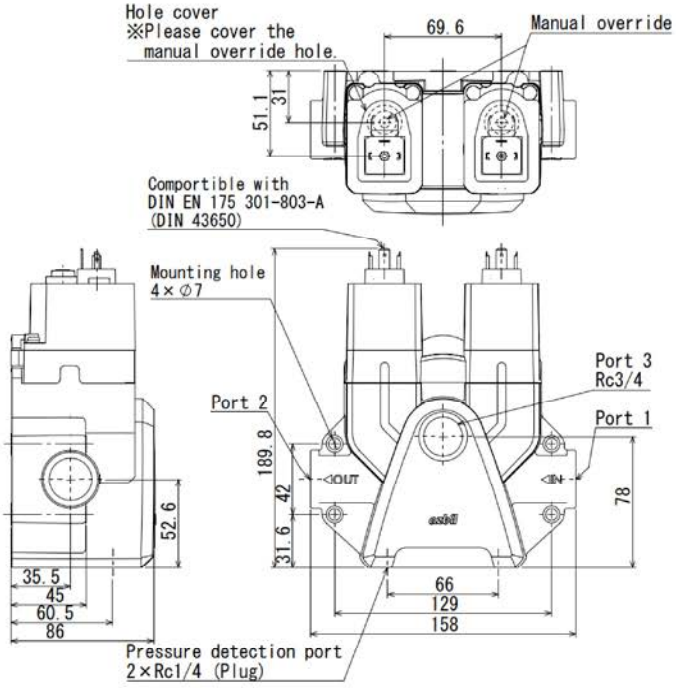
Model	Port 1→2		Port 2→3	
	S [mm²]	Cv	S [mm²]	Cv
TX-A040	40	2.1	170	9.2
TX-A06J	40	2.1	206	11.1
TX-A060	63	3.4	307	16.6
TX-A100	63	3.4	393	21.3

Solenoid specifications (Power is per solenoid)

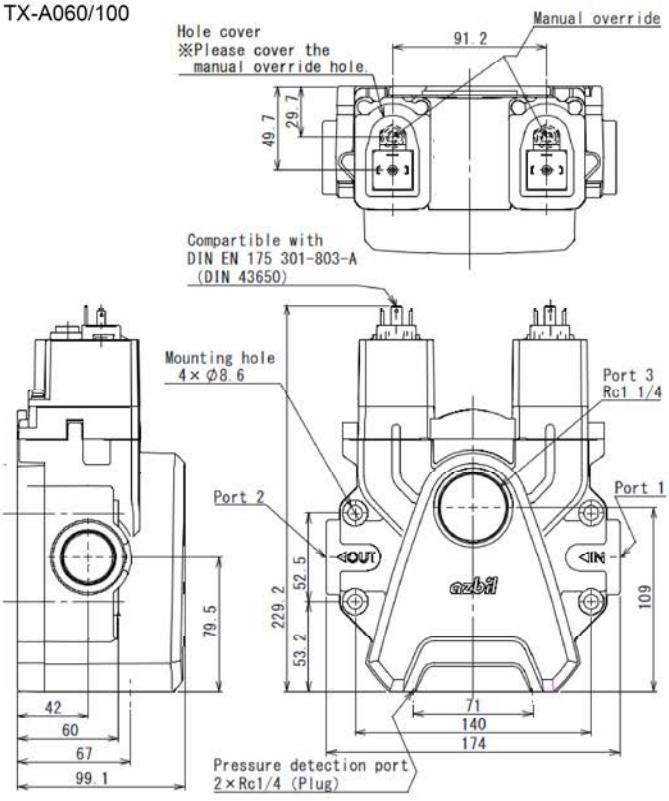
Electrical wiring			DIN-type terminal DIN EN 175301-803-A (DIN 43650)	
Rated voltage			AC100V 50/60Hz, AC110V 60Hz AC110V 50Hz AC200V 50/60Hz, AC220V 60Hz AC220V 50Hz DC24V	
Allowable voltage fluctuation			-10 to +10%	
Apparent power	AC	Start	100 VAC 50/60 Hz, 110 VAC 60 Hz 110 VAC 50 Hz 200 VAC 50/60 Hz, 220 VAC 60 Hz 220 VAC 50 Hz	: 26 VA : 26 VA : 22 VA : 20 VA
		Excitation	100 VAC 50/60 Hz, 110 VAC 60 Hz 110 VAC 50 Hz 200 VAC 50/60 Hz, 220 VAC 60 Hz 220 VAC 50 Hz	: 19 VA : 19 VA : 16 VA : 14 VA
Power consumption	DC		24 VDC	: 7W

♦ Dimensions

TX-A040/06J



TX-A060/100



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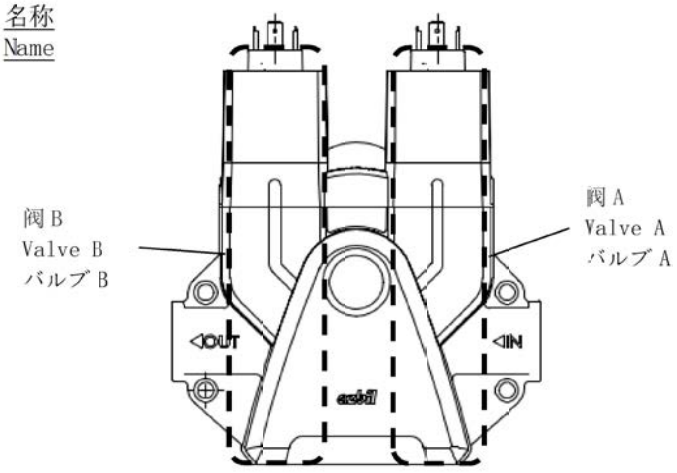
175-068 rev.07

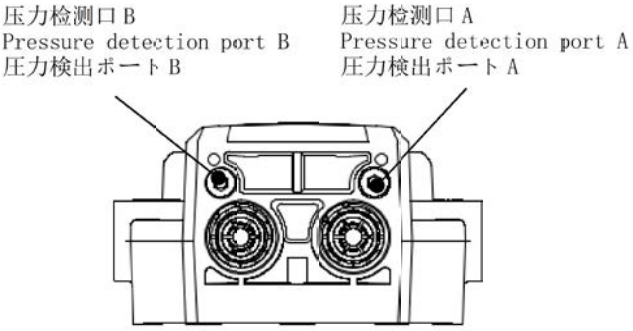
压力检测口说明
Explanation about pressure detection port
圧力検出ポートについての説明

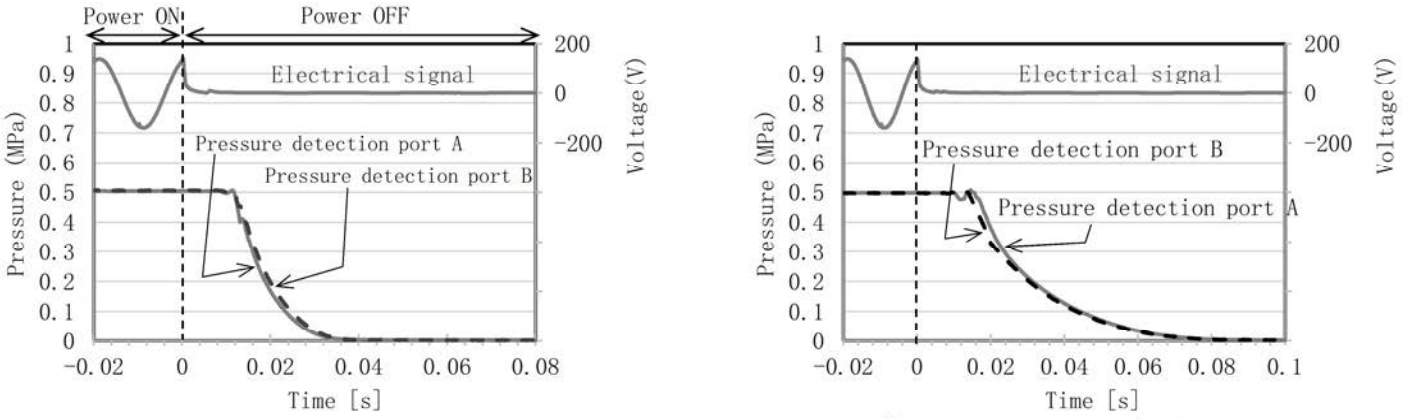
使用本产品时，请在压力检测口安装压力开关，并构建一个安全回路。
本资料是一份关于压力开关选择的参考资料，描述了压力检测口的压力特性。
由于数据受到供应压力和管道容量等使用环境因素的影响，因此不能保证结果的准确性。
Please attach a pressure switch to the pressure detection port of this product and construct a safety circuit for use.
This document is a reference material that describes the pressure characteristics of the pressure detection port for pressure switch selection. Since the data is influenced by the operating environment such as supply pressure and pipe volume, it does not guarantee accuracy.
本製品は圧力検出ポートに圧力スイッチを取り付けて、安全回路を構築してご使用ください。
本資料は圧力スイッチ選定用に圧力検出ポートの圧力特性を記載した参考資料です。
データは供給圧力や配管容積などの使用環境に左右されるため、保証するものではありません。

名称
Name



压力开关安装位置
Pressure switch mounting position
圧力スイッチ取り付け位置

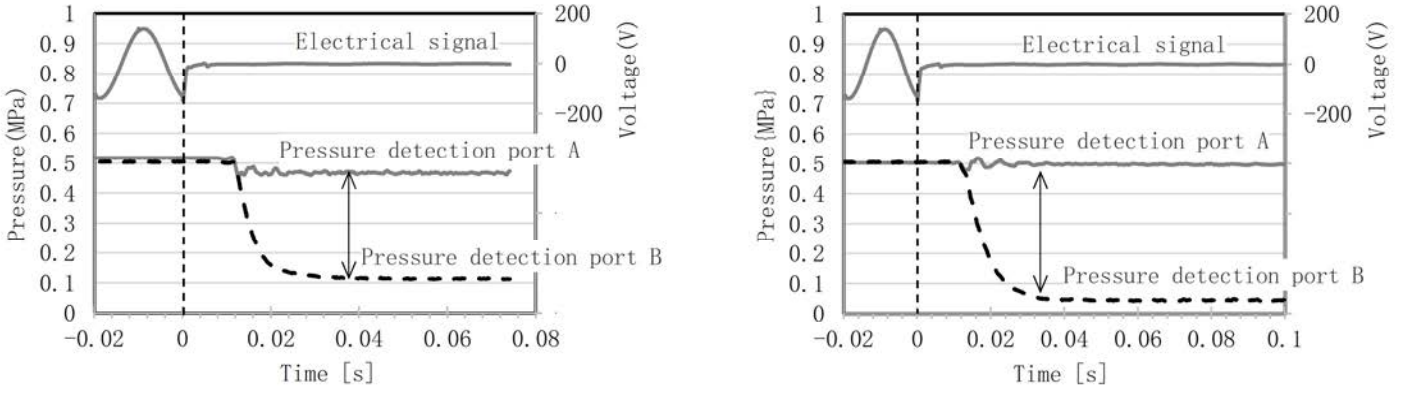




(a) ON⇒OFF（TX-A040/06J）　(b) ON⇒OFF（TX-A060/100）

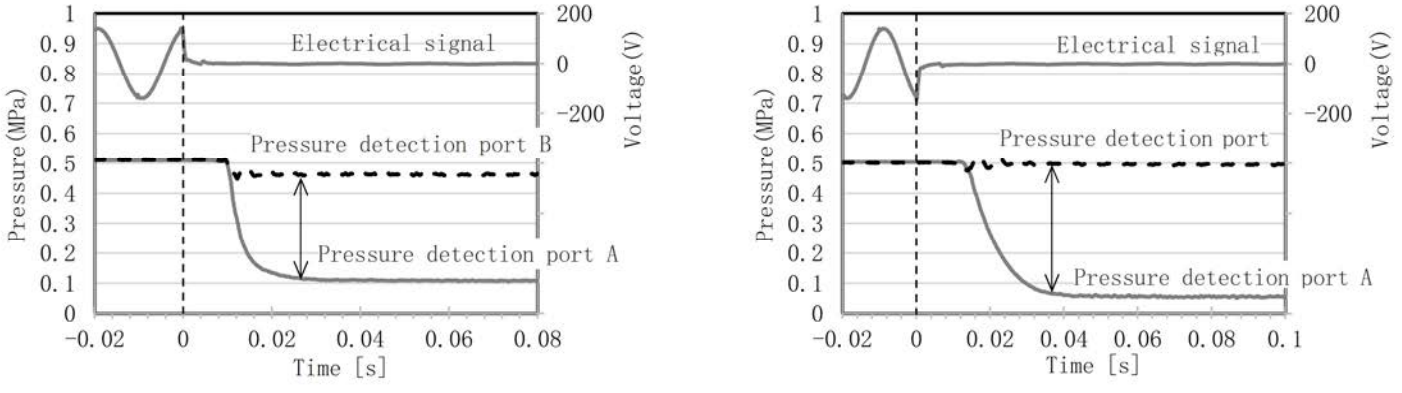
Fig.1 正常时 Normal condition 正常時

正常情况下，压力检测口 A 和 B 的输出压力是同步的。
During normal operation, the output pressure of ports A and B will be synchronized.
正常時、圧力ポート A,B の出力圧は同期します。



(a) ON⇒OFF（TX-A040/06J）　(b) ON⇒OFF（TX-A060/100）

Fig.2 当阀 A 故障时　In case of valve A failure　バルブ A 故障時



(a) ON⇒OFF（TX-A040/06J）　(b) ON⇒OFF（TX-A060/100）

Fig.3 当阀 B 故障时　In case of valve A failure　バルブ B 故障時

The diagram above shows the pressure characteristics that occur at the pressure detection port when one valve fails.
If one valve fails, the pressures at pressure detection ports A and B will no longer be synchronized.
Use the fact that the pressures are no longer synchronized to detect failures.

上图显示了当一个阀出现故障时，压力检测口处出现的压力特性。
如果其中一个阀出现故障，压力检测口 A 和 B 的压力将不再同步。
请利用压力不同步的特性来检测故障。

上の図は片側のバルブが故障したときに圧力検出ポートに発生する圧力特性になります。
片側のバルブが故障すると圧力検出ポート A と B の圧力が同期しなくなります。
圧力が同期しなくなることを利用して故障を検出してください。