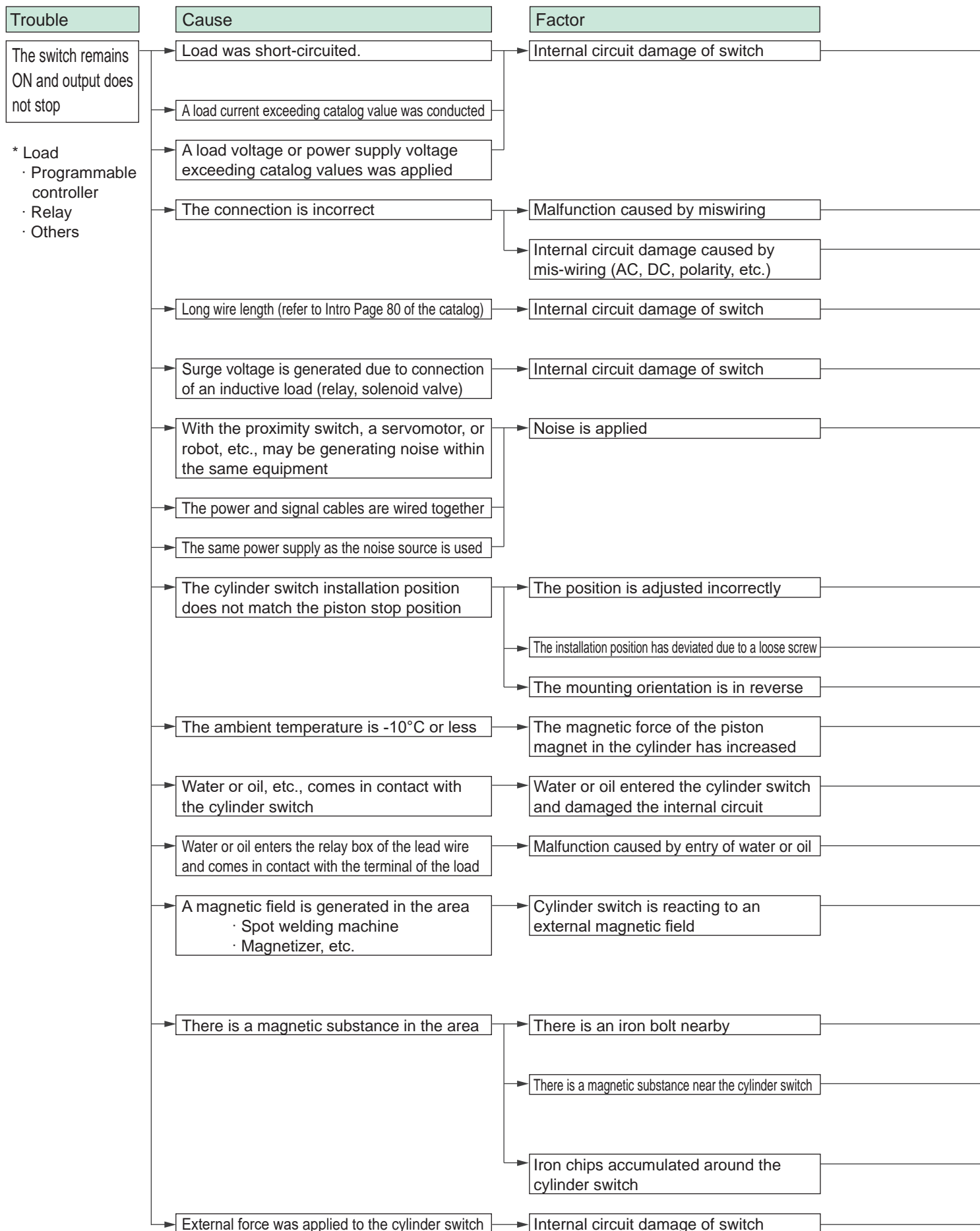


# Cylinder switch

## Troubleshooting [Cylinder switch] (1)



### Countermeasures

(1) Replace the cylinder switch and select a cylinder switch with maximum rating matching the load rating

(1) Connect correctly

(1) Replace the cylinder switch and connect correctly

(1) Replace the cylinder switch and wire the protective circuit (Refer to Intro Pages 80 and 82)

(1) Replace the cylinder switch and wire the protective circuit (Refer to Intro Pages 80 and 82)

(1) Add a noise filter or replace with a reed switch

(2) Separate the power cable and signal cable

(3) Separate the power source

(1) Adjust the position again

(1) Tighten within the specified tightening torque range

(1) Mount in the correct direction

(1) Raise the ambient temperature to -10°C or higher

(1) Change from standard cylinder switch to T□YL of coolant proof specifications (T-switch only)

(2) Replace the cylinder switch, and provide a partition so that water and oil do not make excessive contact.

(1) Set a partition so water and oil do not come in contact with the relay box, or place the relay box in a waterproof box

(1) Change to a strong magnetic field proof switch. The cylinder body must also be changed to one for strong magnetic fields

(2) Check that magnetic fields are not applied  
a. Move the magnetic field generator away.  
b. Set a magnetic material partition between the magnetic field origin and cylinder switch

(3) Provide magnetic shield

(1) Replace with a stainless steel bolt

(2) Mount the cylinder switch on a surface distanced from the iron bolt

(1) Separate the cylinder switch from the magnetic substance to the value recommended in the catalog

(2) Mount the cylinder switch on a surface distanced from the magnetic substance

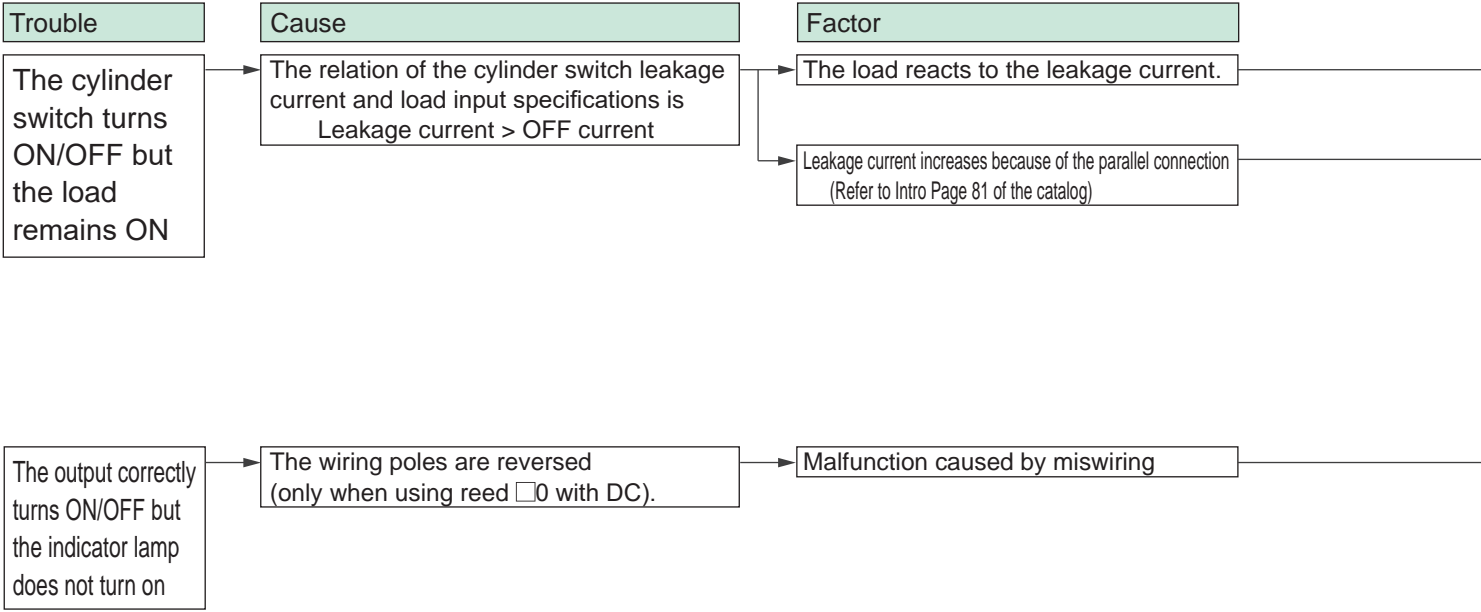
(3) Change the magnetic substance's material to a nonmagnetic material such as stainless steel, aluminum, copper, etc.

(1) Remove iron chips

(1) Replace the cylinder switch and check that external force is not applied to the cylinder switch

# Cylinder switch

## Troubleshooting [Cylinder switch] (2)



### Countermeasures

- ➔ (1) Change the cylinder switch from □2 to □0 or □3 type
- ➔ (2) Change the cylinder switch to one with a large load OFF current value
- ➔ (3) Wire the bleeder resistance

- \* Select a programmable controller or relay, etc., that does not malfunction due to proximity switch leakage current.
- \* For the load input specifications, check the model No. and contact the manufacturer or CKD.

- ➔ (1) Wire normally

# Cylinder switch

## Troubleshooting [Cylinder switch] (3)

Trouble	Cause	Factor
Cylinder switch does not turn ON	The applied voltage is incorrect	Internal circuit damage of switch
	Load was short-circuited	Internal circuit damage of switch
There is no output Load does not react	A load current exceeding catalog value was conducted	Internal circuit damage of switch
	A load voltage or power supply voltage exceeding catalog values was applied	
* Load · Programmable controller · Relay · Others	The connection is incorrect	The switch is not operational due to miswiring
		Internal circuit damage caused by miswiring (AC, DC, polarity, etc.)
	Excessive bending is applied to the lead wire	Disconnection of lead wire
	Excessive tension is applied to the lead wire	Disconnection of lead wire
	Long wire length (refer to Intro Page 80 of the catalog)	Internal circuit damage of switch
	Surge voltage is generated due to connection of an inductive load (relay, valve)	Internal circuit damage of switch
	With the proximity switch, a servomotor, or robot, etc., may be generating noise within the same equipment	Noise is applied
	The power and signal cables are wired together	
	The same power supply as the noise source is used	
	The cylinder switch installation position does not match the piston stop position	The position is adjusted incorrectly
		The installation position has deviated due to a loose screw
		The mounting orientation is in reverse
	The ambient temperature exceeds 60°C	The magnetic force of the piston magnet in the cylinder has weakened
	Water or oil, etc., comes in contact with the cylinder switch	Water or oil entered the cylinder switch and damaged the internal circuit
	Water or oil enters the relay box of the lead wire and comes in contact with the terminal of the load	Internal circuit abnormality caused by entry of water or oil
	A magnetic field is generated in the area · Spot welding machine · Magnetizer, etc.	Cylinder switch does not react due to the effect of peripheral magnetic fields
	There is a magnetic substance in the area	There is an iron bolt nearby
		There is a magnetic substance near the cylinder switch
		Iron chips accumulated around the cylinder switch
	External force was applied to the cylinder switch	Internal circuit damage of switch

### Countermeasures

- (1) Replace the cylinder switch and set the correct rated voltage
- (2) Replace with a cylinder switch in correct rated voltage

- (1) Replace the cylinder switch and select a cylinder switch with maximum rating matching the load rating

- (1) Connect correctly

- (1) Replace the cylinder switch and connect correctly

- (1) Replace the cylinder switch and provide a sufficient bending radius (9 mm or over) for the lead wire so that one location is not subject to excessive bending
- (2) Change the cylinder switch to T2□R type with elasticity specifications (T-switch only)

- (1) Replace the cylinder switch, and take measures to prevent excessive tension from being applied

- (1) Replace the cylinder switch and wire the protective circuit (Refer to Intro Pages 80 and 82)

- (1) Replace the cylinder switch and wire the protective circuit (Refer to Intro Pages 80 and 82)

- (1) Add a noise filter or replace with a reed switch

- (2) Separate the power cable and signal cable

- (3) Separate the power source

- (1) Adjust the position again

- (1) Tighten within the specified tightening torque range

- (1) Mount in the correct direction

- (1) Lower the ambient temperature to 60°C or less

- (2) Replace with a heat-resistant cylinder switch (Refer to the catalog for compatible models)

- (1) Change from standard cylinder switch to T□YL of coolant proof specifications (T-switch only)

- (2) Replace the cylinder switch, and provide a partition so that water and oil do not make excessive contact

- (1) Set a partition so water and oil do not come in contact with the relay box, or place the relay box in a waterproof box

- (1) Change to a strong magnetic field proof switch. The cylinder body must also be changed to one for strong magnetic fields

- (2) Check that magnetic fields are not applied

a. Move the magnetic field generator away.

b. Set a magnetic material partition between the magnetic field origin and cylinder switch

- (3) Provide magnetic shield

- (1) Replace with a stainless steel bolt

- (2) Mount the cylinder switch on a surface distanced from the iron bolt

- (1) Separate the cylinder switch from the magnetic substance to the value recommended in the catalog

- (2) Mount the cylinder switch on a surface distanced from the magnetic substance

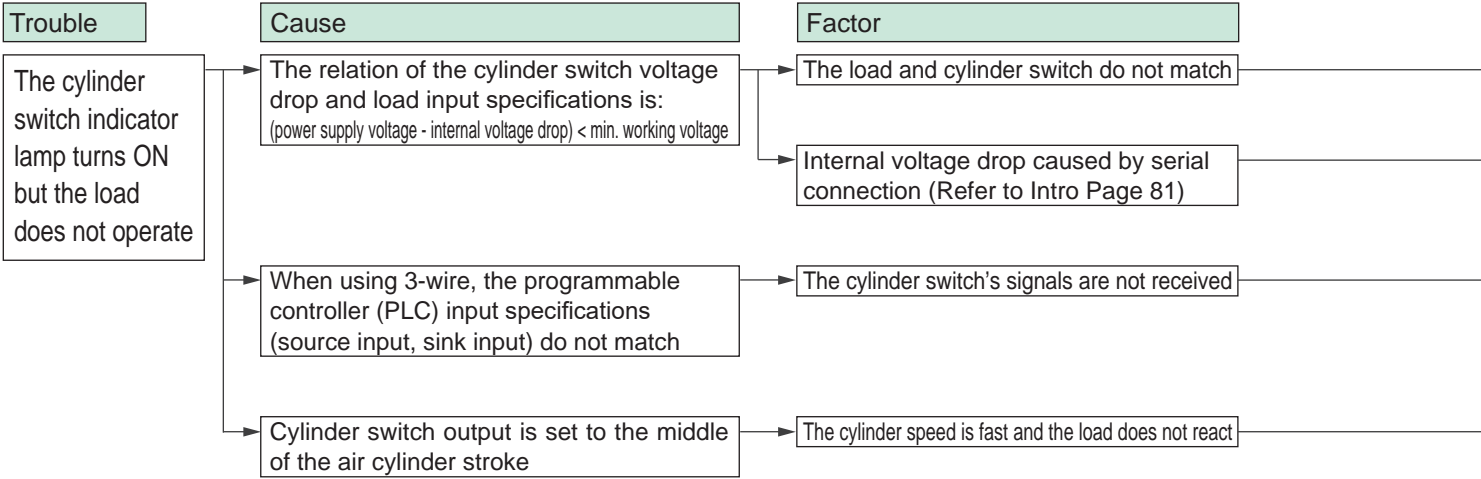
- (3) Change the magnetic substance's material to a nonmagnetic material such as stainless steel, aluminum, copper, etc.

- (1) Remove iron chips

- (1) Replace the cylinder switch and check that external force is not applied to the cylinder switch

# Cylinder switch

## Troubleshooting [Cylinder switch] (4)



### Countermeasures

- (1) Replace the cylinder switch with a model with small internal voltage drop  
□2 type → □0 type → □3 type → □5 type
- (2) Replace the load with one with smaller min. working voltage

- (1) Source input ---- Select NPN output □3 type (NPN output is standard)
- (2) Sink input ----- Select PNP output □3P type (T, K, M or F-switch only)
- (3) Change the cylinder switch to 2-wire

- (1) Change to T2J with OFF delay specifications (T-switch only)
- (2) Connect several cylinder switches in parallel to increase the operating range.
- (3) Connect a sensor controller, etc., between the cylinder switch and load, and change to a signal time that matches load performance.  
Example: OMRON S3D2
- (4) Decrease cylinder speed