

# In-Line Filter

- PLF050N (Filtered particle size :0.01 $\mu$ m)
- PLF100N (Filtered particle size :0.01 $\mu$ m)

## Purify Air !

### ▶ Quality Improvement

#### End-of-Line Filter for Compressed Air

Fluorine porous hollow fiber membrane  
element installed

#### High environment resistance

(Cutting oil, alcohol atmosphere etc)

Uses highly chemical resistant PCT for  
plastic housing material



#### Compact & Light weight

PLF050N : 15g  
PLF100N : 35g

#### Ozone resistant specifications

Fluorine material is used for  
hollow fiber membrane and O-ring.

# In-Line Filter

filtration rating 0.01  $\mu\text{m}$  **PLF Series**

**NEW**  
**PLF050N**  
 Female thread type  
 M5×0.8



**NEW**  
**PLF100N**  
 Female thread type  
 Rc1/8

- Filtered particle size 0.01  $\mu\text{m}$ , Particle filtering efficiency 99.99%
- Compact body & High flow rate : PLF050N ▶ 40L/min(ANR)  
 PLF100N ▶ 100L/min(ANR)

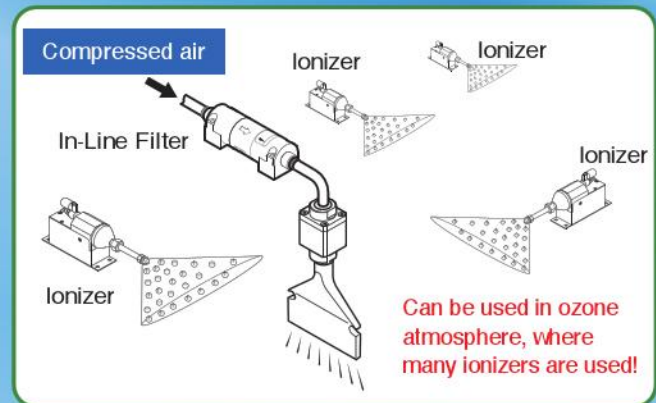
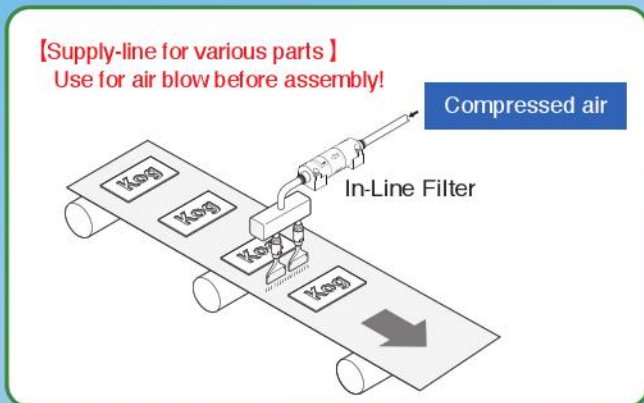
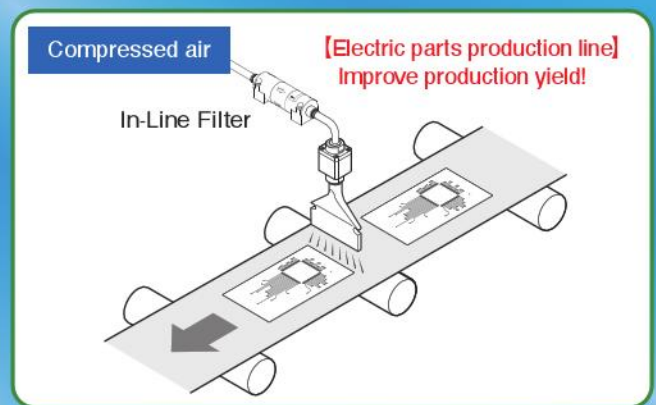
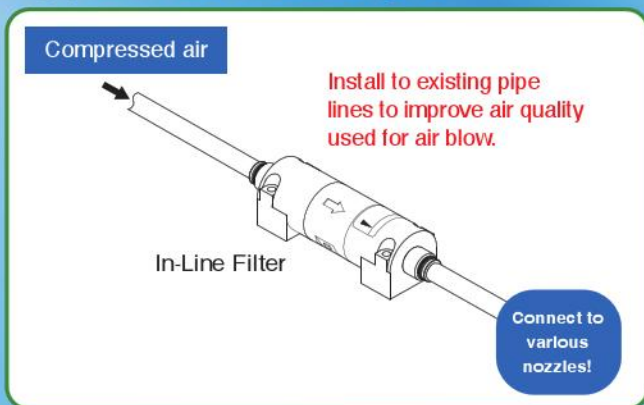
\*Recommended max. flow rate when 0.7 MPa is supplied. (Pressure drop: 0.03 MPa)

- Uses fluoro-type hollow fiber membrane and fluoro rubber for **ozone resistant specifications**
- Uses highly chemical resistant PCT for plastic housing material ▶ **Improved resistance to cutting oils and alcohol**
- Long life: The membrane area is **10 times larger than other filters of the same size which use flat membrane.**

$\mu\text{m}$ filtration rating	Model	Piping port		Process air volume L/min (ANR) [ft <sup>3</sup> /min (SCFM)] <sup>Note</sup>	Particle filtering efficiency%	Positive pressure	Negative pressure
0.01	PLF050N	Female thread	M5×0.8	40[1.413]	99.99	○	—
	PLF100N	Female thread	Rc1/8	100[3.532]	99.99	○	—

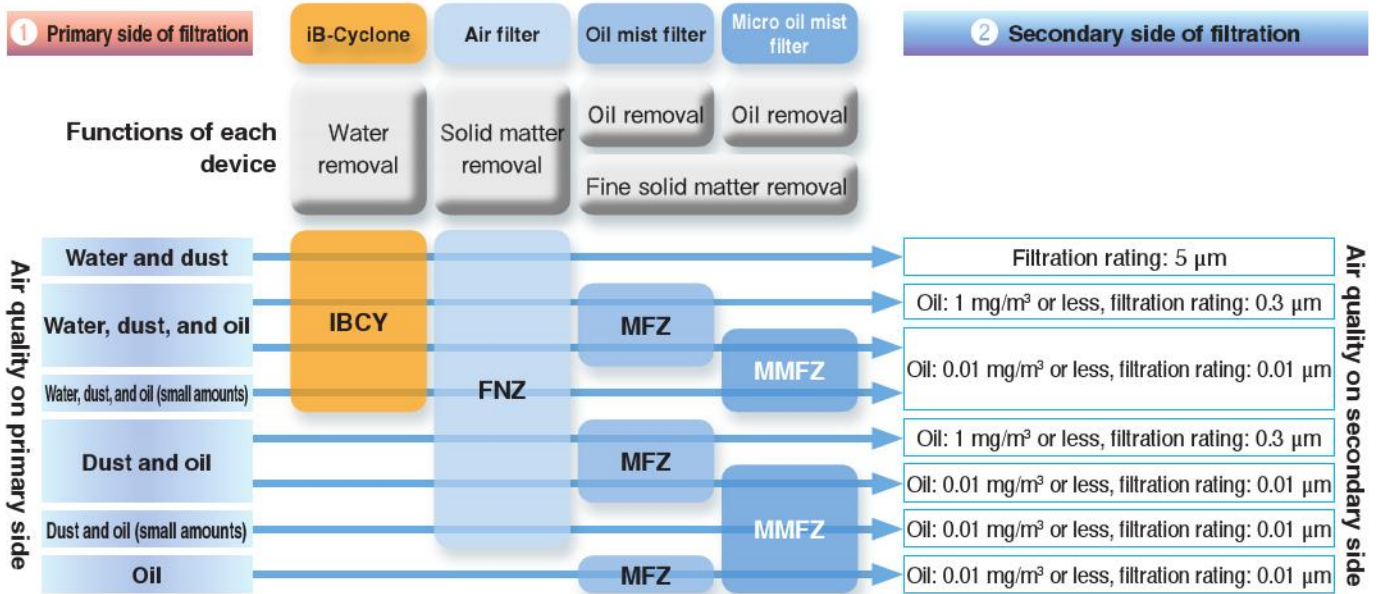
Note: Recommended maximum flow rate at primary side pressure 0.7 MPa [102 psi]

## Application example



## About air supply to in-line filters

- The objective of in-line filters is to remove solid matter, so water and oil must be removed first. Examples for removing water and oil are shown below. For detailed information about selecting a system, see Catalog No. E4051 "Filter regulator FRZ Series and Combination CMZ Series".



### <Selection procedure>

- 1 Confirm quality of air used on primary side
- 2 Confirm air quality needed on secondary side
- 3 Decide configuration of devices needed for conditions in 1 and 2

CMZF550—CFMD—□—□PG  
 Configured device code







## Koganei fittings introduction (Oil free type)

Shape	Model	Tube size	Thread size	Quantity	Applicable models
Straight	ATS4-M5-D	4	M5×0.8	1 bag (10 pcs)	PLF050N
	ATS6-M5-D	6	M5×0.8		PLF050N
	ATS6-01-D	6	Rc 1/8		PLF100N
	ATS8-01-D	8	Rc 1/8		PLF100N
Elbow	ATL4-M5-D	4	M5×0.8		PLF050N
	ATL6-M5-D	6	M5×0.8		PLF050N
	ATL6-01-D	6	Rc 1/8		PLF100N
	ATL8-01-D	8	Rc 1/8		PLF100N

Before selecting and using products, please read all the Safety Precautions carefully to ensure proper product use. The Safety Precautions shown below are to help you use the product safely and correctly, and to prevent injury or damage to assets. Always adhere to the following safety regulations: ISO4414 (Pneumatic fluid power - General rules and safety requirements for systems and their components) and JIS B 8370 (Pneumatic system regulations).

The directions are classified according to the degree of potential danger or damage as **DANGER**, **WARNING**, **CAUTION**, and **ATTENTION**.

 <b>DANGER</b>	Indicates situations that can be clearly predicted as dangerous. Death or serious injury may result if the situation is not avoided. It could also result in damage or destruction of assets.
 <b>WARNING</b>	Indicates situations that, while not immediately dangerous, could become dangerous. Death or serious injury may result if the situation is not avoided. It could also result in damage or destruction of assets.
 <b>CAUTION</b>	Indicates situations that, while not immediately dangerous, could become dangerous. Minor or semi-serious injury may result if the situation is not avoided. It could also result in damage or destruction of assets.
 <b>ATTENTION</b>	While there is no chance of injury, these points should be observed for appropriate use of the product.

**■ This product was designed and manufactured as parts for use in general industrial machinery.**

- In the selection and handling of the equipment, the system designer or other responsible person with fully adequate knowledge and experience should always read the Safety Precautions, Catalog, Owner’s Manual and other literature before commencing operation. Incorrect handling is dangerous.
- After reading the Owner’s Manual, etc., always store them where they are easily available for reference to users of this product.
- If transferring or lending the product to another person, always attach the Owner’s Manual, etc., to the product where they are easily visible, to ensure that the new user can use the product safely and properly.
- The danger, warning, and caution items listed under these “Safety Precautions” do not cover all possible cases. Read the Catalog and Owner’s Manual carefully, and always keep safety first.

 **DANGER**

- Do not use the product for the purposes listed below:
  1. Medical equipment related to maintenance or management of human lives or bodies
  2. Mechanical devices or equipment designed for the purpose of moving or transporting people
  3. Critical safety components in mechanical devices
 This product has not been planned or designed for purposes that require high levels of safety. It could cause loss of human life.
- Do not use the product in locations with or near dangerous substances, such as flammable or ignitable substances. This product is not explosion-proof. It could ignite or burst into flames.
- When installing the product, always firmly support and secure it (including the workpiece) in place. Injury could result if the product overturns, falls, or is operated abnormally.
- Never attempt to modify the product. Abnormal operation could result in injury.
- Never attempt inappropriate disassembly, assembly, or repair of the product relating to its basic inner construction, performance, or functions. It could result in injury.
- Do not splash water on the product. Spraying the product with water, washing it, or using it in water could result in malfunction leading to injury.
- While the product is in operation, avoid touching it with your hands or otherwise approaching too close. Also, do not attempt to make any adjustments to internal or attached mechanisms, or to perform any type of adjustment (releasing slide locks, disconnecting tubes or sealed plugs, adjustment of the product’s mounting position, etc.) while the product is in operation. Injury could result if the product falls, is operated abnormally, or ejects the medium.

 **WARNING**

- Koganei products can be used under a variety of conditions. Therefore, the person responsible for system design must fully evaluate the products to determine compatibility with the system. The designer who determines the suitability of the system is responsible for guarantying the desired performance and safety of the system. Safe and reliable system configuration (e.g., failsafe) is required considering the possibility of equipment failure through adequate verification and evaluation of the specifications based on the latest catalog and other technical documents.
- Do not use the product in excess of its specification range. Using the product outside of its specified range could result in product breakdowns, stop of functions, or damage. It could also drastically reduce the operating life.
- Before supplying air to the product and starting operation, always conduct a safety check within the range of machine operations. Unintentional supply of air could result in injury caused by contact with moving parts.
- Do not throw the product into fire. The product could explode and/or release toxic gases.
- Do not sit on the product, place your foot on it, or place other objects on it. Doing so creates the risk of injury due to tripping or the product tipping over or falling, and erratic or runaway operation due to damage or breakage to the product.
- Before doing maintenance inspections, repairs, or replacement of any parts, always completely cut off all air and vacuum pressure connections, and confirm that the pressure in the product and connected pipes is atmospheric pressure. In particular, be aware that pressure remains in compressors, vacuum pumps, and air tanks. If residual air pressure remains inside the piping, the actuator could abruptly move and cause injury.
- Use safety circuits or system designs to prevent damage to machinery or injury to personnel when the machine is shut down abnormally due to emergency stop or power failure.

- Always check the catalog and other reference materials for correct product piping. Improper piping creates the risk of damage to and abnormal operation of the actuator.
- Do not use the product near the ocean, in direct sunlight, near mercury vapor lamps, or near equipment that generates ozone. Deterioration of rubber parts caused by ozone may reduce performance and functions or stop functions. (except for ozone resistant products)
- Do not use any medium that is not stipulated in the specifications. Using a non-specified medium could lead to loss of functions within a short period, sudden degradation in performance, or reduced operating life.
- Do not use in locations where there is a heat source nearby or that are subject to radiated heat.
- Do not use the product in locations subject to direct sunlight (ultraviolet radiation); in locations subjected to high temperature or humidity; in locations where dust, salt, or iron particles are present; or in locations with media and/or an ambient atmosphere that includes organic solvents, phosphate ester type hydraulic oil, sulfur dioxide gas, chlorine gas, acids, etc. Such uses could lead to loss of functions within a short period, sudden degradation in performance, or reduced operating life. For information about materials, see Major Parts and Materials.

### CAUTION

- When installing the product, leave room for adequate working space around it. Failure to ensure adequate working space will make it more difficult to conduct daily inspections or maintenance, which could eventually lead to system shutdown or damage to the product.
- Do not scratch, dent, or deform the product by climbing on it, using it as a step, or placing objects on top of it. Doing so could damage or break the product, resulting in operation shutdown or degraded performance.
- Post "Work in Progress" signs when doing installations, adjustments, or other work, so that air is not supplied unintentionally. Unintended supply of air could cause sudden operation resulting in injury.
- Pneumatic equipment is not completely air-leak-free. Designs should take into consideration the capacity and retention time required for an application, such as retention of pressure (as well as vacuum) within a pressurized vessel. A reduction in retaining force could cause a workpiece to fall or slip out of position and damage the equipment or cause injury.

### ATTENTION

- When considering using the product for applications that demand extreme safety, such as aviation facilities, combustion equipment, leisure equipment, safety devices, or in other ways predicted to greatly affect assets or human lives, or in situations or environments not described in the Catalog or Owner's Manual, etc., take sufficient safety precautions, such as by allowing ample rating and performance margins for the application and by implementing adequate safety measures, such as fail-safes. Also, be sure to consult us about such applications.
- Wear protective gloves, safety glasses, safety shoes, and other protective clothing as necessary to be safe when handling the product.
- When the product can no longer be used or is no longer necessary, dispose of it appropriately as industrial waste.
- Pneumatic equipment can exhibit degraded performance and function over its operating life. Always conduct daily inspections of the pneumatic equipment, and confirm that all requisite system functions are satisfactory, to prevent accidents from happening.

- For inquiries about the product, contact your nearest Koganei sales office or Koganei overseas department. The addresses and telephone numbers are shown on the back cover of this catalog.

### OTHERS

- Always observe the following items.
  1. When using this product in a pneumatic system, use only genuine Koganei parts or compatible parts (recommended parts).  
When doing maintenance or repairs, always use genuine Koganei parts or compatible parts (recommended parts). Use only specified procedures and methods.
  2. Never inappropriately disassemble or assemble the product in relation to its basic construction, performance, or functions.

Koganei bears no responsibility if all safety precautions are not properly observed.

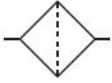
#### Warranty and disclaimer

1. Warranty Period  
The warranty period of Koganei products is one year from the date of delivery.  
\* Some products have a two-year warranty period. For details, contact the nearest Koganei sales office or Overseas Department.
2. Scope of Warranty and General Disclaimer
  - (1) If a failure attributable to Koganei is found in a product purchased from Koganei or an authorized retailer/dealer during the warranty period, Koganei will repair or replace it free of charge. For some products, a service life, such as the number of operations, may be specified in their warranty periods. For details, contact the nearest Koganei sales office or the Overseas Department.
  - (2) The Koganei product warranty covers that product alone. Consequently, Koganei is not responsible for any incidental damage (including costs incurred for the repair and replacement of the product) attributable to any failure of the Koganei product, decrease in function, or decrease in performance.
  - (3) Koganei is not responsible for any losses or for any damages to other machinery caused by breakdown, loss of function, or loss of performance of Koganei products.
  - (4) Koganei is not responsible for any losses due to use or storage of the product in a way that is outside of the product specifications prescribed in Koganei catalogs and instruction manuals, and/or due to actions that violate the mounting, installation, adjustment, maintenance or other safety precautions.
  - (5) Koganei is not responsible for any losses caused by breakdown of the product due to factors outside the responsibility of Koganei, including but not limited to fire, natural disaster, the actions of third parties, and intentional actions or errors by the purchaser.

# In-Line Filter

## PLF Series

### Symbols



### Specifications

Item	Model	PLF050N	PLF100N
Medium		Air, N <sub>2</sub>	
Connection port diameter		M5×0.8	Rc1/8
Filtered particle size	μm	0.01	
Particle filtering efficiency	%	99.99	
Process air volume <sup>Note1</sup>	L/min (ANR) [ft <sup>3</sup> /min (SCFM)]	40 [1.413]	100 [3.532]
Operating pressure range	MPa [psi]	0 to 1.0 [0 to 145]	
Proof pressure	MPa [psi]	1.5 [216]	
Proof pressure differential <sup>Note2</sup>	MPa [psi]	0.3 [44]	
Operating temperature range	°C [°F]	5 to 60 [41 to 140]	
Weight	g [oz]	15 [0.53]	3535 [1.23]

Note1 : Recommended maximum flow rate when primary side pressure is 0.7 MPa [102 psi] (pressure drop of 0.03 MPa [4 psi]).

See flow rate characteristics on page 6 for details.

2 : This is when momentary pressure differential occurs, normally use the product within the recommended maximum flow rate.

### Order Codes

#### ● PLF050N, PLF100N

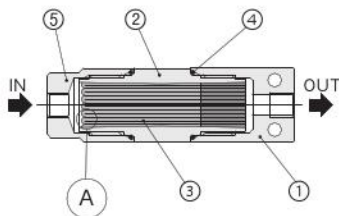
PLF   N

Main unit model      Connection port diameter  
 050                      M5×0.8  
 100                      Rc1/8

In-line filter

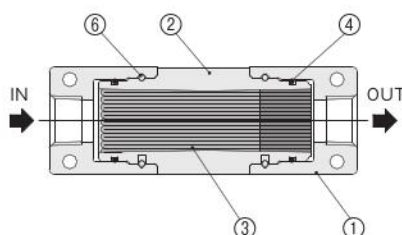
### Inner Construction and Parts Names and Major Materials

#### PLF050N

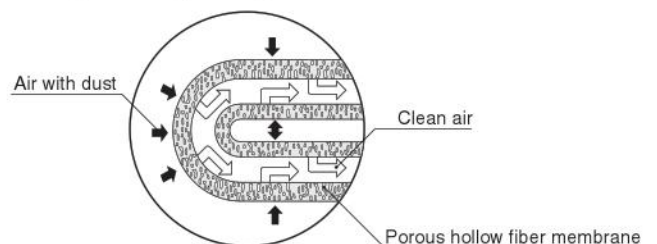


No.	Name	Material
①	Main unit	Aluminum (electroless nickel plated)
②	Plastic housing	PCT
③	Element	Fluorine type porous hollow fiber membrane
④	O-ring	Fluoro rubber (FKM)
⑤	Adapter (PLF050 only)	Aluminum (electroless nickel plated)
⑥	Retaining ring (PLF100 only)	SUS304

#### PLF100N



Ⓐ : Enlarged diagram of element



Caution: Do not disassemble the PLF050 or PLF100.

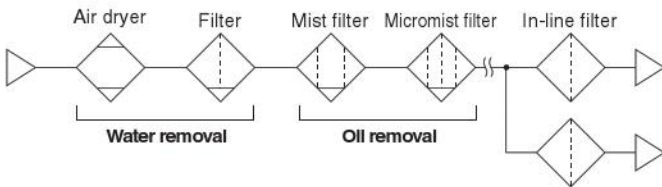




**General precautions**

1. Before doing piping work, thoroughly flush the inside of the pipes (blow out with compressed air). Machining chips, sealing tape, rust and other debris remaining from the piping work may cause reduced performance and functionality or stop functions.
2. Do not use any medium except air and N<sub>2</sub>. Contact the nearest Koganei sales office or overseas department if you are considering using something other than these.
3. Avoid installation and use in locations where the supplied air or ambient temperature exceeds the operating temperature range.
4. The objective of in-line filters is to remove solid matter, so remove any water and oil first.

● Recommended circuit

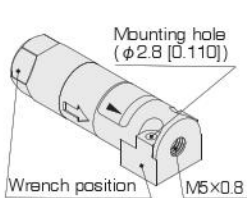


5. Cover the unit when using it in locations where it might be subject to excessive dust, dripping water, dripping oil, etc.
6. Do not allow excessive external forces to act on the product.
7. Do not directly expose the product to ultraviolet light or wind and rain.

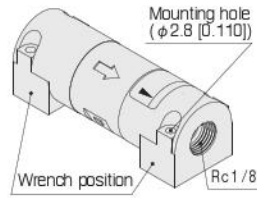


**Mounting and Piping**

1. When working on piping, use the metal part with the piping thread as shown in the illustration below for spanner hanging. For PLF100N, the metal and plastic parts can be rotated in circumference direction, but it is not designed to withstand rotational usage for operation. Mount the product without rotating as much as possible. After mounting, make sure to use the product so it will not rotate during operation.



PLF050N

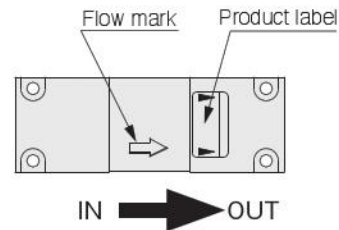


PLF100N

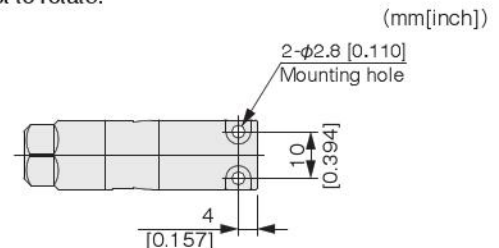
2. When connecting steel pipes, fittings, etc. to the threaded area of the IN and OUT sides, follow the recommended tightening torque specified by our company.

Recommended tightening torque		N·m [in·lbf]
Connecting thread	M5 × 0.8	R1/8
Torque	1 to 1.5 [8.851 to 13.277]	4.5 to 6.5 [39.830 to 57.532]

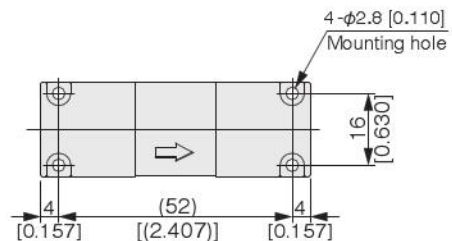
3. Pipe the product so that air will flow in the direction of the arrow (flow mark) on the product, or the black arrow on the product label. (Do not use in the opposite direction.)



4. The mounting direction is free, but make sure not to apply strong impact or vibration to the main body.
5. Use the mounting holes and mount securely. For PLF100N, mounting is possible even by only 2 mounting holes on either IN or OUT side. However, be careful not to rotate.



PLF050N



PLF100N

6. The inline filter uses plastic parts and cannot be installed with bending or torsional moments applied. Doing so may cause damage to the product.



Memo

A series of horizontal dotted lines for writing.

Memo

A series of horizontal dotted lines for writing.

# Limited Warranty

KOGANEI CORP. warrants its products to be free from defects in material and workmanship subject to the following provisions.

**Warranty Period** The warranty period is **180** days from the date of delivery.

**Koganei Responsibility** If a defect in material or workmanship is found during the warranty period, KOGANEI CORP. will replace any part proved defective under normal use free of charge and will provide the service necessary to replace such a part.

**Limitations**

- This warranty is in lieu of all other warranties, expressed or implied, and is limited to the original cost of the product and shall not include any transportation fee, the cost of installation or any liability for direct, indirect or consequential damage or delay resulting from the defects.

- KOGANEI CORP. shall in no way be liable or responsible for injuries or damage to persons or property arising out of the use or operation of the manufacturer's product.

- This warranty shall be void if the engineered safety devices are removed, made inoperative or not periodically checked for proper functioning.

- Any operation beyond the rated capacity, any improper use or application, or any improper installation of the product, or any substitution upon it with parts not furnished or approved by KOGANEI CORP., shall void this warranty.

- This warranty covers only such items supplied by KOGANEI CORP. The products of other manufacturers are covered only by such warranties made by those original manufacturers, even though such items may have been included as the components.

The specifications are subject to change without notice.

URL <http://www.koganei.co.jp>

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