

**Discontinue**

**CKD**

---

**MAINLINE FILTER**

**AF1003, AF1004, AF1008  
AF1012, AF1013, AF1017, AF1024**

**INSTRUCTION MANUAL**

- Be sure to read this manual before installing and operating your Main line filter.
- Keep this manual within the reach of an operator all the time.

**C K D Corporation**

06-07 6th EDITION SM-12018-A

Discontinue



FOR SAFETY USE

The product is intended for use solely in industrial systems and NOT intended for consumer use or application.

Do not attempt to use, apply, install and repair the product unless you are trained in the proper techniques for working on electric, fluid power and refrigeration systems.

Inappropriate or improper use, application installation and servicing of the product may or could create a danger or hazard to personnel and/or equipment.

Discontinue

## INTRODUCTION

Thank you for adopting Main line filter.

Read this booklet and understand idea for efficient utilization of Main line filter and its proper operation as we have lined up fundamental suggestions regarding its installation ,operation and maintenance.

Keep this booklet handy for quick reference.

Please be advised in advance that there may be some discrepancies between products and contents of this book due to improvement of specification after printing.

## Table of Contents

1. PRODUCTS	
1-1 Specifications .....	1
1-2 External dimensions .....	2
2. CAUTIONS .....	3
3. INSTALLATION .....	4
4. MAINTENANCE	
4-1 Break-up diagram .....	5
4-2 Filter element replacement .....	6
4-3 Fitting differential pressure indicator .....	7
4-4 Accessories .....	8

Discontinue

## 1. PRODUCTS

### 1-1. Specifications

Model coding		AF1003□-20	AF1004□-25	AF1008□-40	AF1012□-40	AF1013□-50	AF1017□-50	AF1024□-65
Item								
Maximum air flow	m <sup>3</sup> /min (ANR)	3	4.5	8	12	13.2	17	24
Fluid used		Compressed air						
Operating pressure range	MPa	0.1~1.0						
Withstanding pressure	MPa	1.5						
Port size	G	3/4	1	1 1/2	2	2 1/2		
Mass	kg	2.4	2.9	9.1	12.9	12.1		
Diff. press. indicator		Standard equipment (X Series is except)						
Drain discharger		Built-in (X Series is except)						
Drain discharge port	Rc	1/8 (X Series is except)						

Series		P Series	S Series	M Series	X Series
Item					
Working temperature range	°C	5~60			5~30
Removal particle size	μm	3	0.3	0.01	Adsorb by Activated carbon
Secondary side oil concentration	mg/m <sup>3</sup>	—	0.5	0.01	0.003
Pressure drop	Initial pressure at rated flow	0.005	0.007	0.01	0.007
	Nominal operating pressure drop	0.01	0.014	0.02	—
	Element replacement timing	0.035	0.035	0.035	—

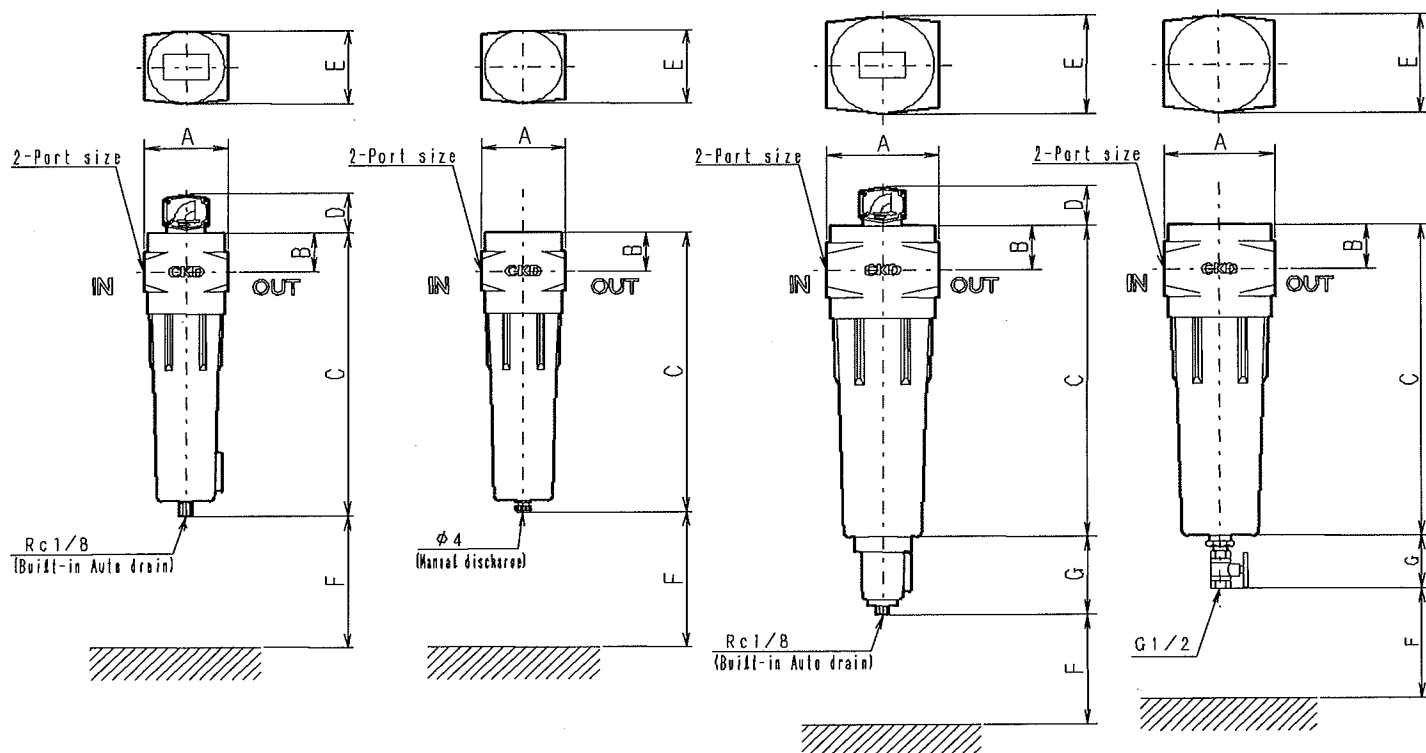
Note1. G is straight internal thread.

Note2. Permissible max. air flow is converted to atmospheric at 0.7MPa.

Note3. A. N. R. indicates that each treated flow rate is specified under atmospheric pressure with a temperature of 20°C and relative humidity 65%.

## 1-2. External dimensions

AF1003P/S/M~AF1008P/S/M    AF1003X~AF1008X    AF1012P/S/M~AF1024P/S/M    AF1012X~AF1024X



Model	Port size	A	B	C	D	E	F	G
AF1003P/S/M-20	G <sup>3</sup> / <sub>4</sub> "	120	55	330	60	110	190	—
AF1003X-20	G <sup>3</sup> / <sub>4</sub> "	120	55	324	—	110	190	—
AF1004P/S/M-25	G1 "	120	55	430	60	110	290	—
AF1004X-25	G1 "	120	55	424	—	110	290	—
AF1008P/S/M-40	G1 <sup>1</sup> / <sub>2</sub> "	120	55	430	60	110	290	—
AF1008X-40	G1 <sup>1</sup> / <sub>2</sub> "	120	55	424	—	110	290	—
AF1012P/S/M-40	G1 <sup>1</sup> / <sub>2</sub> "	160	64	470	60	150	350	118
AF1012X-40	G1 <sup>1</sup> / <sub>2</sub> "	160	64	470	—	150	350	80
AF1013P/S/M-50	G2 "	160	64	470	60	150	350	118
AF1013X-50	G2 "	160	64	470	—	150	350	80
AF1017P/S/M-50	G2 "	160	64	775	60	150	650	118
AF1017X-50	G2 "	160	64	775	—	150	650	80
AF1024P/S/M-65	G2 <sup>1</sup> / <sub>2</sub> "	202	77	574	60	190	500	118
AF1024X-65	G2 <sup>1</sup> / <sub>2</sub> "	202	77	574	—	190	500	80

X series without differential pressure indicator (No size D)

Size F show maintenance space.

## 2. CAUTIONS

- 1) Air flow rate through Main line filter must not exceed processed air flow rate. Otherwise, water and/or dust in compressed air could not be removed.
- 2) When pressurizing Main line filter which is set-up in front or in the rear of valves, operate valve, etc. slowly enough so that index of indicator with diff. press. indicator may not exceed max. range. Rapid operation of valve may damage filter element and indicator with diff. Press. indicator. In case that indicator with diff. press. indicator points over 0.035MPa during pressurizing, water, dust and/or oil could not be removed by element.
- 3) When releasing pressure from piping, release it slowly at secondary side of Main line filter. If released at primary side, reverse flow may arise in Main line filter, resulting in damage of indicator with diff. press. switch and element.
- 4) Do not use the dryer for pneumatic caisson shield or respiratory medical equipment.  
※It could cause an accident includes injury.
- 5) Do not use the dryer for transportation devices such as automobile, ship etc.  
※Vibration could be a cause of break down of the internal components.

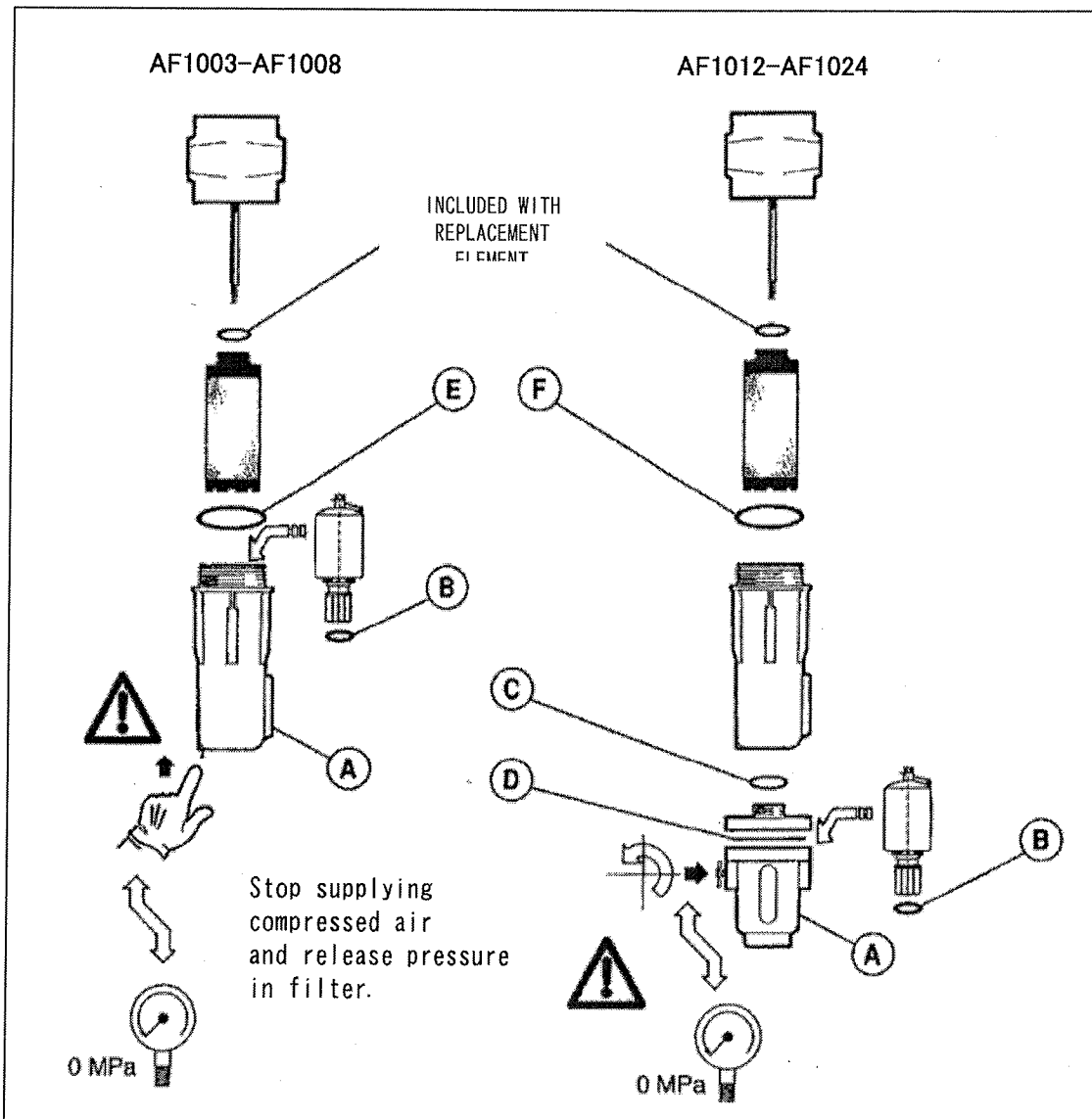


## 3. INSTALLATION

<p style="text-align: center;">Direction of mounting</p> <div style="display: flex; align-items: center;"> <div> <p style="font-size: small;">Direction of Arrow and flow direction put together</p> </div> </div>	<p style="text-align: center;">Posture of mounting</p> <p style="text-align: right; font-size: small;">Vertical mounting</p> <div style="display: flex; align-items: center; justify-content: center;"> </div>
<p style="text-align: center;">Fitting of Module-kit and Bracket-kit</p> <p style="font-size: small;">(Reference to page 7)</p> <div style="text-align: center;"> </div>	
<p style="text-align: center;">Example of mounting</p> <div style="text-align: center;"> </div> <p style="font-size: small;">             Drain discharge port of P·S·M series is Rc1/8.              The drain pipe must be <math>\phi 6</math> or smaller in I.D. and within 5m in length and must not be installed upward.              And Drain discharge port must not be join in force.              Turn a fitting with holding NUT by a spanner.              When pressurizing filter which is set-up in front or in the rear of valves, operate slowly.         </p>	

## 4. MAINTENANCE

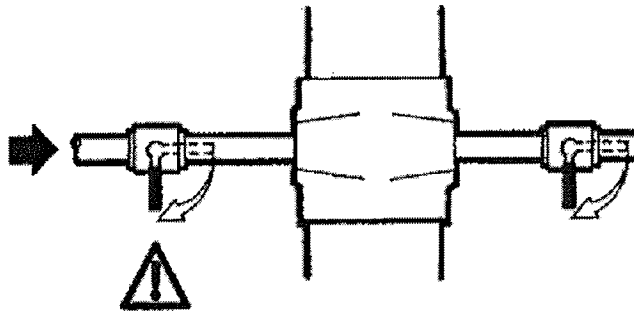
### 4-1. Break-up diagram



(A)(B)(C)(D)(E)(F)—see Accessories.

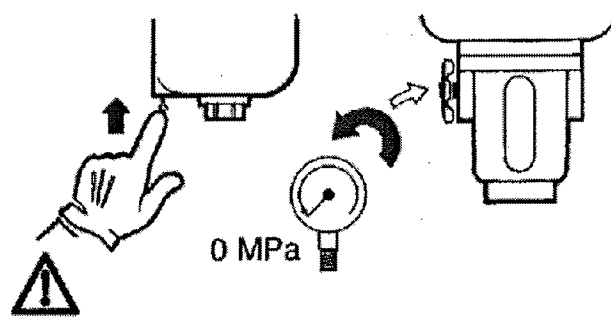
## 4-2. Filter element replacement

(1) Isolate air supply

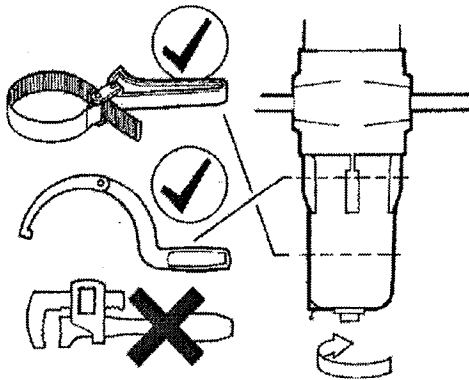


(2) Depressurise filter housings

Make sure that no compressed air supplied.  
Pressure relief hole gives an audible warning if any attempt is made to remove filter bowl whilst under pressure.

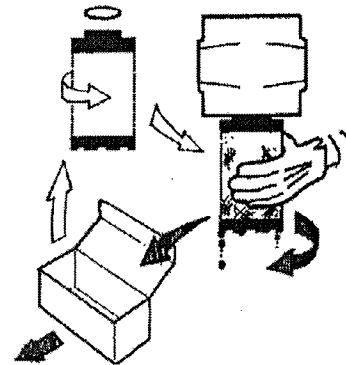


(3) Release the bowl.

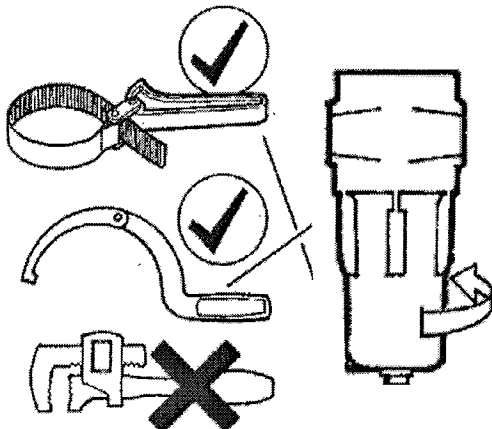


(4) Replace element

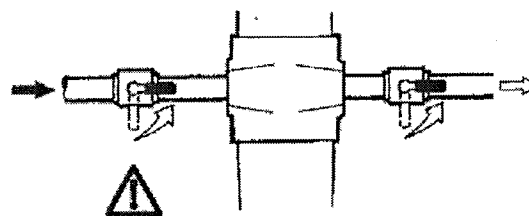
Don't touch the surface of new element.  
Make sure installed the O-ring.



(5) Put on the bowl.



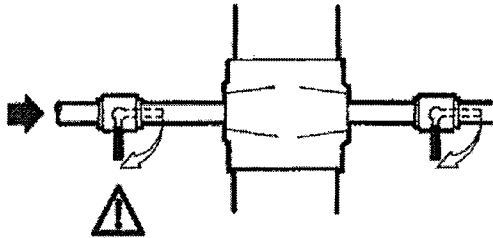
(6) Supply compressed air silently.



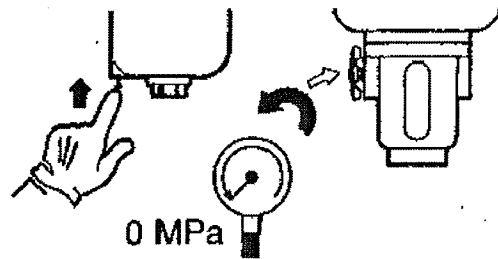
Rapid operation of valve may damage.

## 4-3. Fitting differential pressure indicator

(1) Isolate air supply.

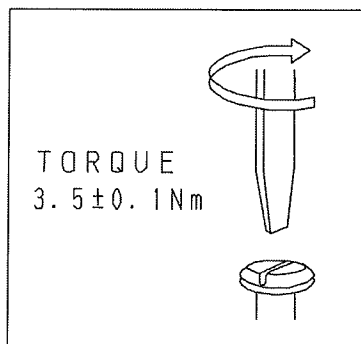


(2) Depressurise filter housing.

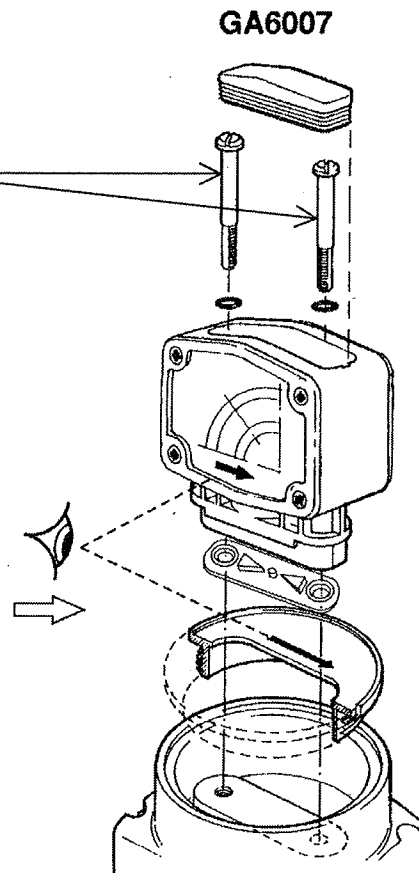


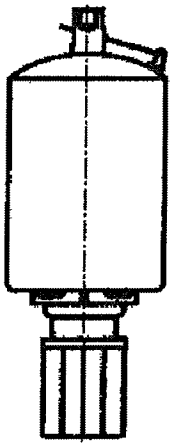
Make sure that no compressed air is supplied to the filter

(3)



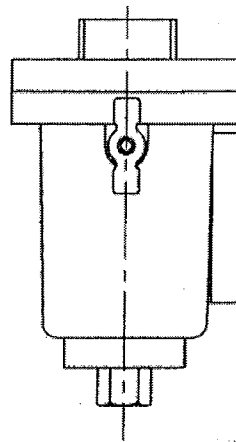
Directional arrow put together.





## Automatic drain discharge

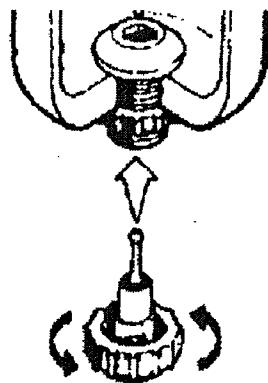
Applicable model	Model coding	No
AF1003 -AF1024	AF1003-AUTOMATIC- DRAIN-ASSY	F4-26056 8



## Automatic drain discharge

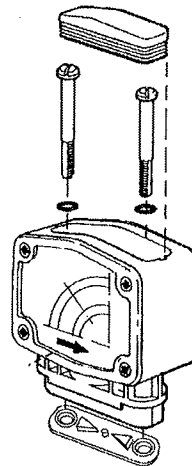
Applicable model	Model coding	No
AF1012 -AF1024	AF1012-AUTOMATIC- DRAIN	F4-333654

Note: Including AF1003- Auto drain-assy

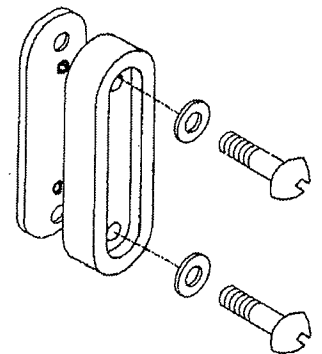


## Manual Drain

Applicable model	Model coding	No
AF1003X -AF1008X	AF1003-MANUAL- DRAIN-KIT	F4-368521

Differential pressure indicator  
Model coding: GA6007

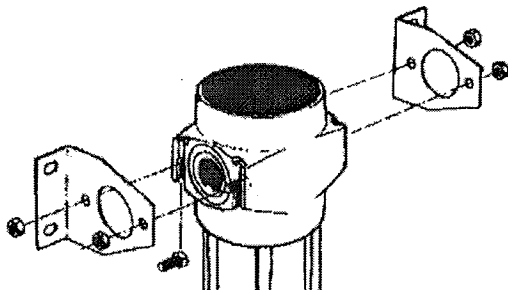
## Sight gauge-kit ①



Model coding	No
AF1003-SIGHT-GAUGE-KIT	F4-280974

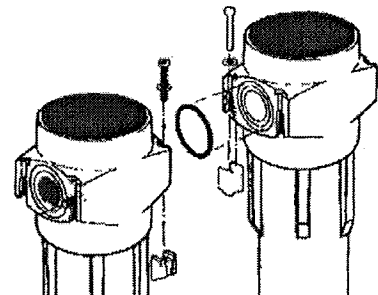
Applicable model	Model coding	No	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ
AF1003 -AF1008	AF1003-SERVICE-KIT	F4-280977					
AF1012 -AF1017	AF1012-SERVICE-KIT	F4-280978					
AF1024	AF1024-SERVICE-KIT	F4-470112					

## Bracket-Kit



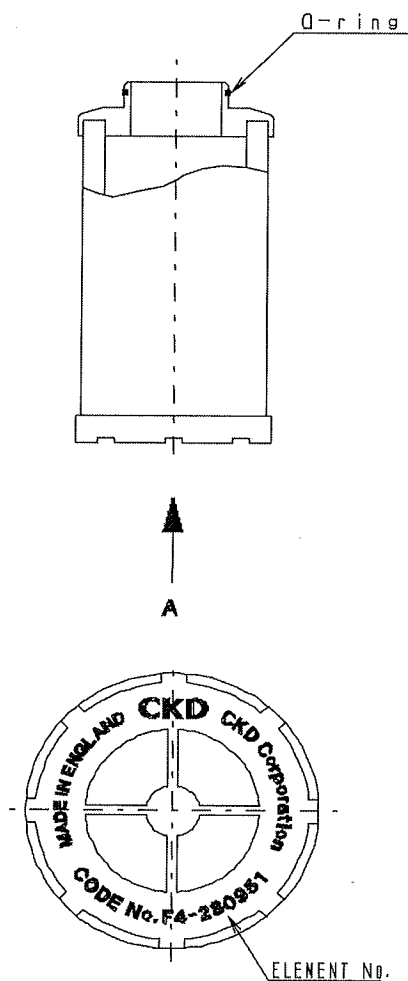
Applicable model	Model coding	No
AF1003 -AF1008	AF1003-BRACKET-KIT	F4-280970
AF1012 -AF1017	AF1012-BRACKET-KIT	F4-280971
AF1024	AF1024-BRACKET-KIT	F4-470113

## Module-kit



Applicable model	Model coding	No
AF1003 -AF1008	AF1003-MODULAR-KIT	F4-280967
AF1012 -AF1017	AF1012-MODULAR-KIT	F4-280968
AF1024	AF1024-MODULAR-KIT	F4-407154

## Element kit



Directional arrow A

Model coding	No
AF1003P-ELEMENT-KIT	F4-280951
AF1003S-ELEMENT-KIT	F4-280952
AF1003M-ELEMENT-KIT	F4-280953
AF1003X-ELEMENT-KIT	F4-280954
AF1004P-ELEMENT-KIT	F4-280955
AF1004S-ELEMENT-KIT	F4-280956
AF1004M-ELEMENT-KIT	F4-280957
AF1004X-ELEMENT-KIT	F4-280958
AF1008P-ELEMENT-KIT	F4-280955
AF1008S-ELEMENT-KIT	F4-280956
AF1008M-ELEMENT-KIT	F4-280957
AF1008X-ELEMENT-KIT	F4-280958
AF1012P-ELEMENT-KIT	F4-280959
AF1012S-ELEMENT-KIT	F4-280960
AF1012M-ELEMENT-KIT	F4-280961
AF1012X-ELEMENT-KIT	F4-280962
AF1013P-ELEMENT-KIT	F4-280959
AF1013S-ELEMENT-KIT	F4-280960
AF1013M-ELEMENT-KIT	F4-280961
AF1013X-ELEMENT-KIT	F4-280962
AF1017P-ELEMENT-KIT	F4-280963
AF1017S-ELEMENT-KIT	F4-280964
AF1017M-ELEMENT-KIT	F4-280965
AF1017X-ELEMENT-KIT	F4-280966
AF1024P-ELEMENT-KIT	F4-407150
AF1024S-ELEMENT-KIT	F4-407151
AF1024M-ELEMENT-KIT	F4-407152
AF1024X-ELEMENT-KIT	F4-407153