CKD

SM－256942－A

INSTRUCTION MANUAL

PUSH－IN JOINT

CHECK VALVE

CHL

- Please read this instruction manual carefully before using this product, particularly the section describing safety.
- Retain this instruction manual with the product for further consultation whenever necessary.

CKD Corporation

For Safety Use

To use this product safety, basic knowledge of pneumatic equipment, including materials, piping, electrical system and mechanism, is required (ISO 4414 *1 JIS B 8370 *2).
We do not bear any responsibility for accidents caused by any person without such knowledge or arising from improper operation.

Our customers use this product for a very wide range of applications, and we cannot keep track of all of them. Depending on operating conditions, the product may fail to operate to maximum performance, or cause an accident. Thus, before placing an order, examine whether the product meets your application, requirements, and how to use it.

This product incorporates many functions and mechanisms to ensure safety. However, improper operation could result in an accident. To prevent such accidents **read this operation manual carefully for proper operation**.

Observe the cautions on handling described in this manual, as well as the following instructions:
Additionally, the caution is classified into the following three groups, “CAUTION”, “WARNING”, and “DANGER”, to identify the degree of the danger it presents and possible hazard.

⚠ DANGER : Failure to pay attention to DANGER notices may cause a situation that results in a fatality or serious injury and that requires urgent addressing.

⚠ WARNING : Failure to pay attention to WARNING notices may result in a fatality or serious injury.

⚠ CAUTION : Failure to pay attention to WARNING notices may result in injury or damage to equipment or facilities.

*1) ISO 4414 : Pneumatic fluid power ··· Recommendations for the application of equipment to transmission and control systems.

*2) JIS B 8370 : General rule for pneumatic systems

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CHL
PUSH－IN JOINT CHECK VALVE
Manual No. SM-256942-A

1. PRODUCT

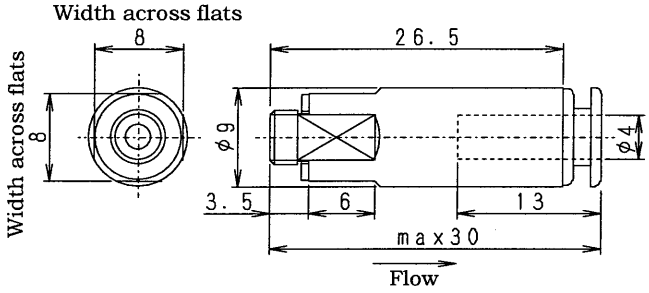
1.1 Specifications

Item		CHL-M54	CHL-H44	CHL-H66
Media		Compressed air		
Maximum working pressure	MPa	1.0		
Minimum working pressure	Mpa	0.03		
Cracking pressure	MPa	0.03		
Working vacuum range	kPa	-30 to -100		
Proof pressure	MPa	1.5		
Media temperature range	℃	0 to 60 (Not be frozen)		
Ambient temperature range	℃	0 to 60 (Not be frozen)		
Connecting port size		M5	ϕ4	ϕ6
Weight	g	8.9	10.8	16.6
O.D. of the applied pipes		ϕ4	ϕ4	ϕ6
Flow	λ/min(ANR)	170	180	440
Effective sectional area	mm^2	2.6	2.8	6.8

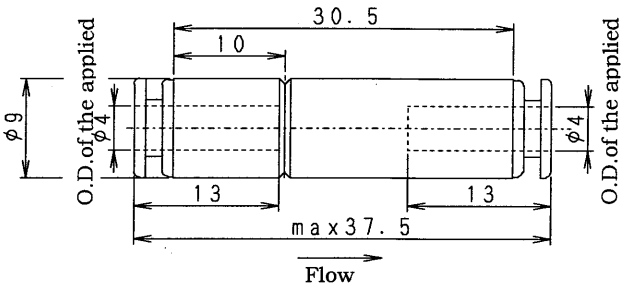
Note 1. The flow rate atmospheric conversion rate at 0.5MPa.

1.2 Envelop dimensions and JIS symbol

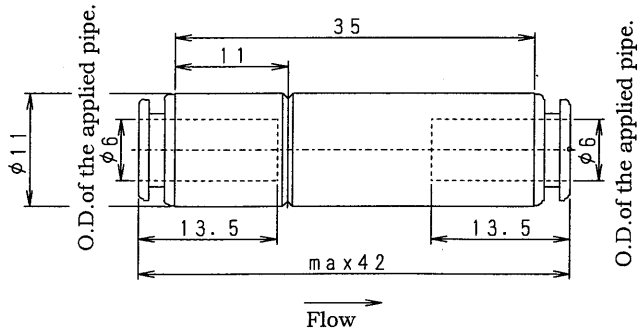
CHL-M54-※

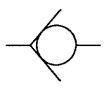


CHL-H44



CHL-H66

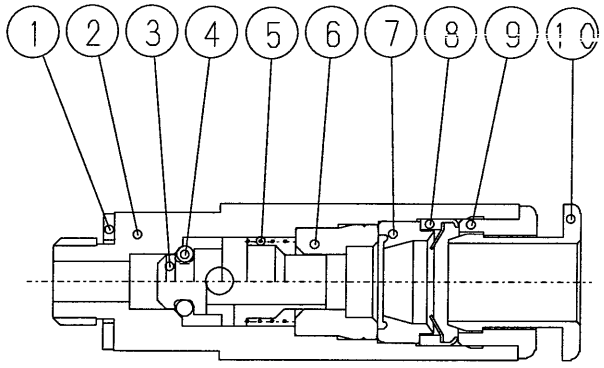




JIS symbol

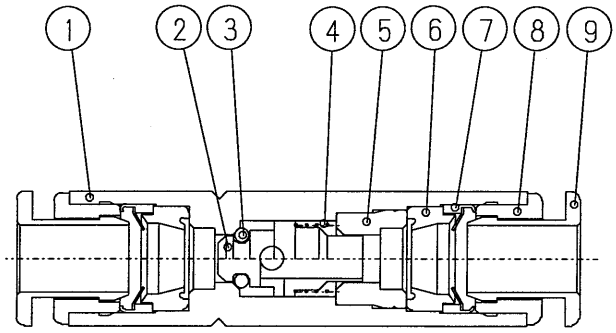
1.3 Internal structure and lists of parts

CHL-M54-※



No.	Part name	Material
1	Gasket	Steel
2	Body	Copper alloy (Autocatalytic nickel coating on metale)
3	Valve Body	Aluminium alloy
4	O-ring	Acrylonitrile butadiene rubber
5	Spring	Stainless steel
6	Valve seat	Aluminium alloy
7	Packing	Acrylonitrile butadiene rubber
8	Chuck	Copper alloy (Autocatalytic nickel coating on metale)
9	Outer ring	Copper alloy (Autocatalytic nickel coating on metale)
10	Push ring	Polybutylence terephthalate

CHL-H44,H66



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2. INSTALLATION

⚠ CAUTION :

1) Before tube exchange, the supply of compressed air and confirm the absence of residual pressure.
2) Tighten pipes with appropriate torque to prevent screw slack, air leakage and screw damage.
3) Carry out the piping work after checking the JIS symbols stated on the nameplate attached to the main body. If the piping is connected in an incorrect direction, this may cause the customer's equipment to break.

2.1 Piping

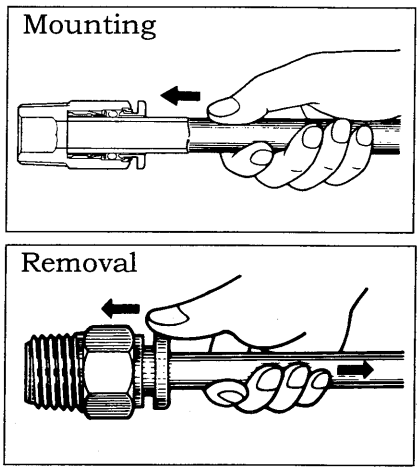
(1) Mounting and removal of tube

Mounting

Cut the tube vertically. Push the tube in until it reaches the bottom of the hole. Pull the tube slightly to see whether it chucks well or not. You can twist and insert it more easily.

Removal

Pull the tube out by single hand pushing the push ring.



(2) Use the joint with specified tubes and CKD's plastic plugs (GWP or GWJP series). Never use a metallic plug because it may cause problems.

Tube outside diameter precision :

Nylon and soft nylon tubes : ±0.1mm or better

Polyurethane tubes : +0.1mm

Newurethane tubes : −0.2mm

} or better

The hardness of the tube has to be 93° or more. Do not use a tube that does not satisfy the outside diameter precision and hardness requirements. If you do, the tube may be disconnected due to a lack of chucking force or it may be difficult to insert the tube into the joint. If you have to use a tube or a plug that does not satisfy the above requirements, consult us before using it.

(3) Tubes should be inserted firmly and before use tube should be checked that it is not come out. In case the tube is not inserted to the end, tube can be come out and leakage may happen.

(4) Do not bend atube at a radius smaller than the minimum allowable bending radius.(See table 1)

Toble 1 Minimum allowable bending radius of tubes

Model No / Tube bore	Minimum bending radius(mm)		
	F-15※※	U-95※※	NU-※※
φ4	10	10	8
φ6	20	20	15

(5) Since there a degradation and modifcation,do not reuse the tube used at once.

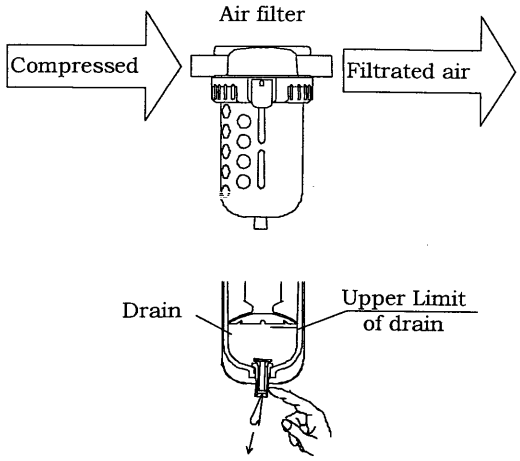
(6) Wherever a tube may whip when accidentally disconnected, prevent whipping by binding tubes together or install a safety cover.

(7) Tighten the pipe within a recommended tightening torque range (M5:0.5 to 1.0N·m) for an air leak and breakage prevention.
An M5 fitting is sealed using a gasket (Model No. for the gasket only :FGS).
Do not retighten the fitting screw when pressure is generated in the pneumatic circuit.

3. CAUTION

3.1 Fluid

1) It is necessary to use dehumidified air that has been filtered from compressed air. Carefully select an adequate filter that has an adequate filtration rate (preferably 5 μ m or less), flow rate and its mounting location (as nearest to the directional control valve as possible).



2) Be sure to drain out the accumulation in the filter periodically.

3) Note that the intrusion of carbide for the compressor oil (such as carbon or tarry substance) into the circuit causes malfunction of the solenoid valve and the cylinder. Be sure to carry out thorough inspection and maintenance of the compressor.

3.2 Instruction

1) The check valve is designed to be used in a pneumatic system; do not use it with a medium other than compressed air.
2) Always use the product under the specified condsitions.
3) Avoid using the speed controller in a hot or humid environment or outdoors, or where it is exposed to direct sunlight.
4) Avoid using the speed controller at a location where it may be splashed by cutting oil, coolant oil, spatters, etc.
5) Avoid using the speed controller in an environment that makes the speed controller susceptible to vibrations or shocks.
6) No mounting directions are specified for this product. However, when operating this product in a range having small differential pressure(0.05MPa or less), the operation may become slow. Therefore, carefully check this point.
7) Carry out the piping work after checking the JIS symbols stated on the nameplate attached to the main body.

4. HOW TO ORDER

CHL – M5 – 4 – A

Model code | (a) | (b) | (C)

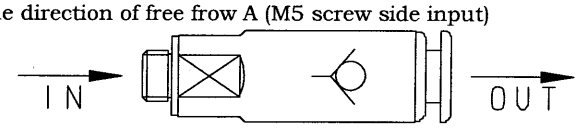
(a) Connecting pipe size	
M5	M5
H4	ϕ4
H6	ϕ6

(b) Outside diameter of the applied pipes	
4	ϕ4
4	ϕ4
6	ϕ6

(c) The direction of free frow	
A	M5 screw side input
B	M5 screw side output

(c) The direction of free frow (Only M5 type is Selected) Diagram

The direction of free frow A (M5 screw side input)



The direction of free frow B (M5 screw side output)