

KS표시인증제품



수자원공사 성과공유과제 (품질개선) 선정업체

www.dhmeter.com



DAE HAN Meter Tech

자재승인원 수도미터 · 수도용 감압밸브 · 수도용 앵글밸브



New
역류방지기능
수도용 앵글밸브

New
소음방지기능
수도용 감압밸브

New
에어백
동파방지기능



DAE HAN METER TECH CO.,LTD.



Complete view of Head Office



Test on water meter



Large-size water meter facility



Casting, manufacturing and processing facility for water meter



Status of injection machine for internal jet set of water meter



Status of metal mold for internal jet set of water meter



Booth of Water Korea in International Water & Sewage Exhibition



Digital electronic type water meter in exhibition



Freeze preventive & backflow preventive products in exhibition

History

May	1981	Kwangyong Precision established
Mar	1997	Changed company name to Seil Industrial Machinery & Tools
Dec	2004	Registered as corporate "Dae Han Industry Co., Ltd"
Feb	2005	Obtained Water meter type approval (Korean Agency for Technology & Standards, Ministry of Commerce, Industry and Energy)
Feb	2005	Obtained ISO 9001 Quality Management System Certification (International Institution for Standard and Certification)
May	2005	Moved to Western Industrial Complex, Incheon Metropolitan City
Jun	2005	Registered manufacturing business for meter, entire quantity gradation-carved tank (Seo-Gu, Incheon)
Jul	2005	Obtained certification of backflow preventive device attachment for all items of water meter (Korean Agency for Technology & Standards)
Sep	2005	Obtained type approval for hot water meter (Korean Agency for Technology & Standards, Ministry of Commerce, Industry and Energy)
Mar	2007	Obtained quality management system certification (No. KQS 6150)
Mar	2007	Obtained patent for backflow preventive water meter (No. 10-0700933)
Mar	2007	Obtained patent for freeze preventive & backflow preventive water meter (No. 10-0700932)
May	2007	Obtained excellent product certification for slide-type backflow preventive water meter (Public Procurement Service)
Sep	2007	Obtained excellent product certification for backflow preventive water meter (Public Procurement Service)
Jul	2007	Obtained environmental sign certification (No. 3118)
Oct	2007	Obtained performance certification (No. 21-107) from 'Small & Medium Business Administration)
Oct	2007	Obtained excellent product certification (No. 2007186) from Public Procurement Service
Mar	2008	Backflow preventive valve attached water meter (Patent certificate No.10-0817755)
Aug	2008	Designated as quality guaranteed company (No.08MPI-M-00020)
Aug	2008	Obtained KS Mark product certification from Korean Standard Association for cold water meter (No. KS B 50049-1108-0339)
Dec	2008	Selected as water meter material & equipment supplying company by Korea Water Resources Corporation
Aug	2010	Obtained type approval for integrating calorimeter (Korean Machine, Electricity, Electron Test & Research Institution)
Dec	2010	Moved to expanded factory in industrial complex, Sangma-Ri, Daegot-Myun, Gimpo City, Gyunggi-Do

Index

04	Indication of magnification for type approved water meter
05	Classification and selection of water meter
06	Manipulation preventive cap for tangential wing-type highly-sensitive wet water meter
07	Manipulation preventive cap for freeze preventive water meter (Airbag function)
08	Backflow preventive, differential pressure-type manipulation preventive cap for freeze preventive water meter (Airbag function)
09	Backflow preventive, differential pressure-type manipulation preventive cap for freeze preventive water meter
10	Manipulation preventive cap for highly sensitive backflow preventive slide-type water meter
11	Highly sensitive (Double-jet dry type) backflow preventive water meter
12	Backflow preventive, manipulation preventive cap (Check type) for freeze preventive water meter
13	Manipulation preventive cap for stainless water meter (for backflow prevention, freeze prevention)
14	Remote hot water meter for heating/ Hot water meter (long, short)
15	Remote water meter/ Dry water meter
16	Backflow preventive digital electronic type (Double-jet dry type) water meter
17	Eco-friendly water meter (Stainless highly-sensitive large water meter)
18	Pressure reducing valve direct-acting type (noise preventive function) for each household water supply
20	Angle integral, pressure reducing valve direct-acting type for water supply (Noise preventive function)
21	Inspected pressure reducing valve product for water supply
22	Comparison with other products
24	Assembly drawing of apartment-type protective box for water pressure reducing valve
25	Strainer built-in union pipe
26	Piping diagram of angle, pressure reducing valve for water supply, water meter
27	Angle valve for water supply (Backflow preventive device built-in type)
28	Manipulation preventive water meter (adopted by Office of Waterworks, Seoul)
29	Application for approval on material use (Water meter, water pressure reducing valve direct-acting type, water angle valve)

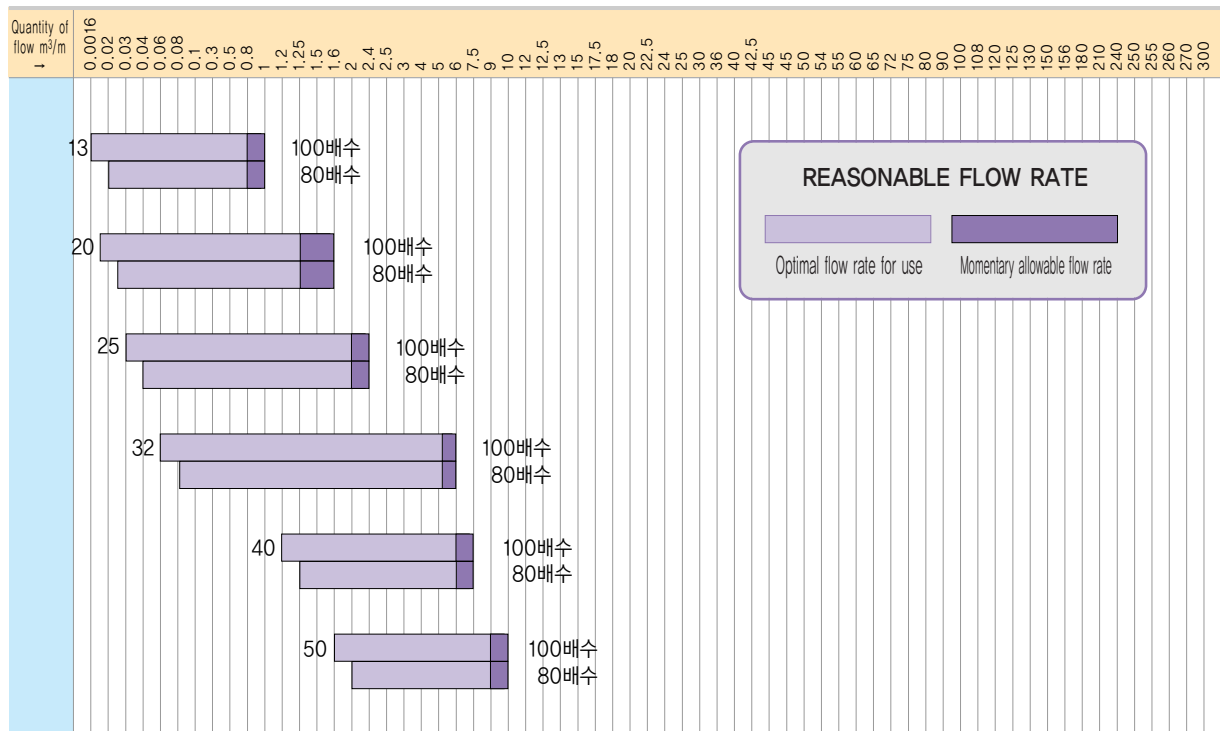
Indication of magnification for type approved water meter



INDICATION OF MAGNIFICATION FOR TYPE APPROVED WATER METER

Size	indicated quantity of flow	X40magnification	X50magnification	X63magnification	X80magnification	X100magnification	X125magnification	printing on character plate
15mm	Maximum(Q3)	1.6	1.6	1.6	1.6	1.6	1.6	Q3:1.6
	Variation(Q2/Q1:6.3)	0.252	0.202	0.160	0.126	0.101	0.081	Q2/Q1:6.3
	Minimum(Q1)	0.04	0.032	0.025	0.02	0.016	0.0128	Q1:각배율최소
20mm	Maximum(Q3)	2.5	2.5	2.5	2.5	2.5	2.5	Q3:1.6
	Variation(Q2/Q1:6.3)	0.391	0.315	0.250	0.197	0.158	0.126	Q2/Q1:6.3
	Minimum(Q1)	0.062	0.05	0.04	0.031	0.025	0.02	Q1:각배율최소
25mm	Maximum(Q3)	4	4	4	4	4	4	Q3:1.6
	Variation(Q2/Q1:6.3)	0.630	0.504	0.397	0.315	0.252	0.202	Q2/Q1:6.3
	Minimum(Q1)	0.1	0.08	0.063	0.05	0.04	0.032	Q1:각배율최소
32mm	Maximum(Q3)	6.3	6.3	6.3	6.3	6.3	6.3	Q3:1.6
	Variation(Q2/Q1:6.3)	0.945	0.756	0.630	0.4191	0.397	0.315	Q2/Q1:6.3
	Minimum(Q1)	0.15	0.12	0.1	0.078	0.063	0.05	Q1:각배율최소
40mm	Maximum(Q3)	10	10	10	10	10	10	Q3:1.6
	Variation(Q2/Q1:6.3)	1.575	1.260	0.995	0.788	0.630	0.504	Q2/Q1:6.3
	Minimum(Q1)	0.25	0.2	0.158	0.125	0.1	0.08	Q1:각배율최소
50mm	Maximum(Q3)	16	16	16	16	16	16	Q3:1.6
	Variation(Q2/Q1:6.3)	2.520	2.016	1.575	1.260	1.008	0.806	Q2/Q1:6.3
	Minimum(Q1)	0.4	0.32	0.25	0.2	0.16	0.128	Q1:각배율최소

NOMINAL FLOW RANGE

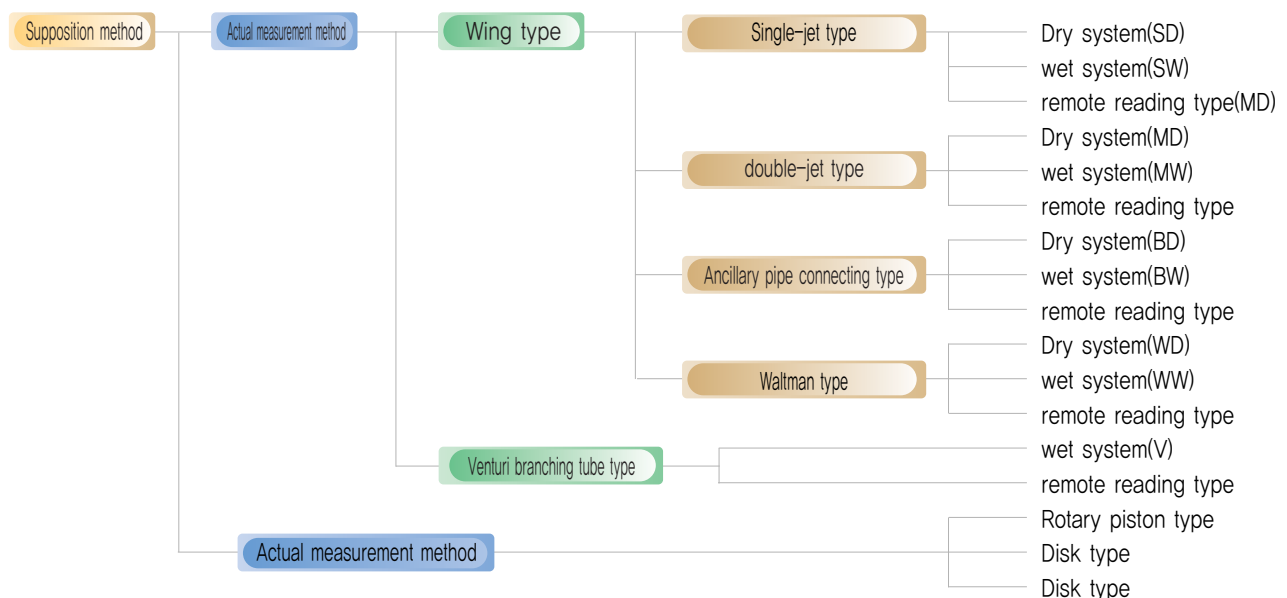


Note) This flow rate table is for your reference only and when you choose water meter actually, we recommend you to choose intermediate flow rate of optimal flow rate for use in above table.

Classification and selection of water meter

CLASSIFICATION OF WATER METERS

- **Actual measurement method(Positive displacement type)** : a method to measure by filling water in a certain volume, mainly for test
- **Supposition method (Current type)** : a method to measure actual flow rate indirectly according to velocity of flow or rotation speed of wing
- **Single jet type** : a method that flowing water rotates wing through one outlet
- **Double-jet type** : a method that flowing water passes inlet of bottom external wing and rotates wing through several branching outlets of bottom internal wing
- **Wet system** : a system where scale plate is immersed in flowing water
- **Dry system** : a system where scale plate is not immersed in flowing water
- **Liquid sealed direct reading method** : a method that character wing above m^3 is sealed with special liquid and displays indicating amount by figure
- **Remote reading** : a method that indicating amount of meter is converted into electric signal to be relayed to remote instruction unit through transmitting cable and actual used amount is recorded cumulatively



※ Actual measurement method : M : Multi-Jet / S : Single-Jet / W : Wet D : Dry

SELECTION OF TYPES WATER METERS

- **We recommend you to select suitable water meter depending on actual condition for use and place for installation.**
 - Waltman type: Suitable for the place where loss of pressure is small and quantity of flow is large
 - Ancillary pipe connecting type: Suitable for main line of apartment and the place where flow rate fluctuates a lot, etc
 - Venturi type: Being differential pressure branching flow type, suitable for the place where large amount of water flows
- **Select water meter according to actual amount of water to be used**
 - The bigger bore of water meter becomes, the more its capacity increases, however sensitivity decreases accordingly.
 - In contrary, the smaller bore of water meter becomes, the more its sensitivity and accuracy becomes excellent, however durability of water meter decreases due to overload in case that a lot of water flows. Therefore, do not select based on only bore of pipe but select suitable type and bore depending on actual flow of water to be used.
 - Select standard type water meter because amount of use differs a lot with same pipe, depending on the place where it is used.

Manipulation preventive cap for tangential wing-type highly-sensitive wet water meter



KS MARK CERTIFIED PRODUCT (KS B 50049-1)

●MW Type : 15(13), 20, 25, 32, 40, 50mm



Transparent magnifying lens water meter



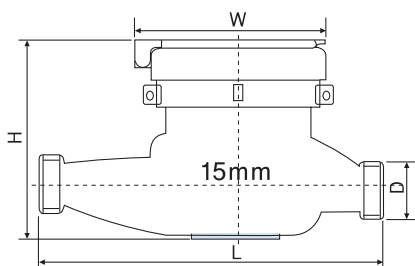
manipulation preventive cap



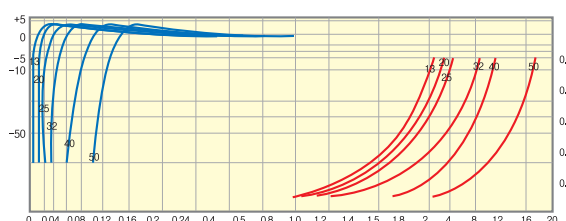
Eco-friendly water meter

CHARACTERISTIC

- It gives excellent performance in spite of installation place because it works precisely in the place where water pressure is low and water flows minutely.
- Figure is arranged in a row on scale plate and antifreeze is injected, which makes plate display figure clearly all the time and prevents from being frozen and burst.
- Performance of device does not change for a long time because engineering plastic is used for every product which is light and has excellent durability.
- There is no need to distinguish left & right and installation and reading scale is very easy because cover rotates by 360°.



PERFORMANCE CURVE



SIZES

Type	Size(mm)	length(L)	height(H)	width(W)	kind of connecting screw	external diameter(D)	umber of thread per inch	weight(kg)
MW-15	15	165	100	95	PF $\frac{3}{4}$ "	26.4	14	1.1
MW-20	20	190	109	100	PF 1"	33.2	11	1.7
MW-25	25	225	114	100	PF 1 $\frac{1}{4}$ "	41.9	11	2.0
MW-32	32	230	116	100	PF 1 $\frac{1}{2}$ "	47.38	11	2.3
MW-40	40	245	130	117	PF 2"	59.6	11	3.0
MW-50	50	305	155	138	PF 2 $\frac{1}{2}$ "	70	11	5.1

PERFORMANCE TABLE

Type	Starting quantity of flow (L/h)	Minimum quantity of flow (Q _i)	Scope of quantity of flow for optimal use (m ³ /h)	Maximum quantity of flow (Q _s)	Indicating quantity	
					Min(L)	Max(m ³)
MW-15(100배수)	6	16L/h	0.016~0.80	1.6	0.05	9.999
MW-20(100배수)	10	25L/h	0.025~1.2	2.5	0.05	99.999
MW-25(100배수)	15	40L/h	0.040~1.6	4	0.05	99.999
MW-32(100배수)	20	63L/h	0.063~3.2	6.3	0.05	99.999
MW-40(100배수)	30	100L/h	0.1~4.0	10	0.05	99.999
MW-50(100배수)	50	160L/h	0.16~6.0	16	0.5	999.999

Manipulation preventive cap for freeze preventive water meter (Airbag function)



KS MARK CERTIFIED PRODUCT (KS B 50049-1)

●MW Type : 15(13), 20, 25, 32, 40, 50mm

Product adopted as freeze preventive water meter with airbag function by Office of Waterworks, Seoul

Passed performance test (16 times repeated test of hot water thawing after cooling of -20°C for 48hours) carried out by Waterworks Research Institution



Manipulation preventive nickel plated cap for freeze preventive wet water meter

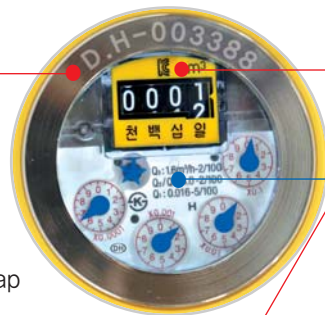


Manipulation preventive cap for freeze preventive wet water meter



Wet low-lead freeze preventive airbag transparent magnifying lens

When ordering as manipulation preventive cap, (Qty, Province) article number carving is plated and it has clear image for 10 years, which was approved and adopted by Office of Waterworks, Seoul

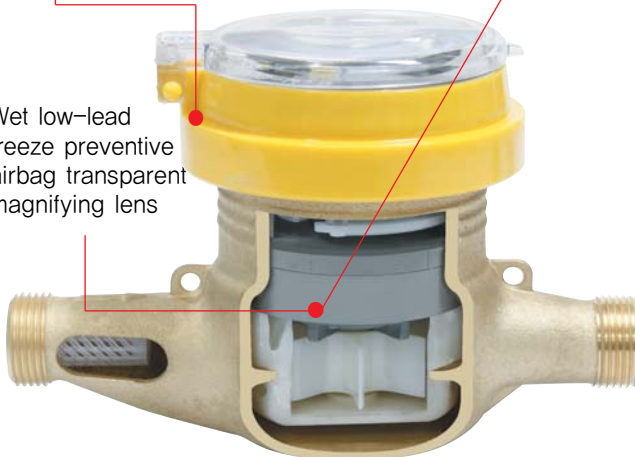


Manipulation preventive cap for freeze preventive wet water meter

● Special structure which absorbs cubical expansion when frozen

● Polycarbonate glass, being reinforced by 150times

Wet low-lead freeze preventive airbag transparent magnifying lens



CHARACTERISTIC

- Case being installed where airbag is built in which is filled with air pressure of 0.7MPa in-between impeller and gear set within main body of water meter, airbag absorbs cubical expansion when frozen, which prevents burst by freezing in advance.
- By decreasing space between glass plate and indicating unit, remaining water does not collect and it minimizes volume of water meter.
- Passed performance test (16 times repeated test of hot water thawing after cooling of -20°C for 48hours) for freeze preventive water meter, carried out by Waterworks Research Institution, Office of Waterworks, Seoul
- Possible to manufacture in various types like common type, backflow preventive type and manipulation preventive type according to order from user

Backflow preventive, differential pressure-type manipulation preventive cap for freeze preventive water meter (Airbag function)



KS MARK CERTIFIED PRODUCT (KS B 50049-1)

●MW Type : 15(13), 20, 25, 32, 40, 50mm

Selected as outcome sharing task (Quality improvement) by Korea Water Resources Corporation

A product selected as freeze preventive water meter (Airbag built-in type) by Korea Water Resources Corporation



향온항습기 수도미터 동파방지 테스트과정



향온항습기(수도미터 동파방지 전자동시시험기)



Stainless freeze preventive (Airbag),
differential pressure-type manipulation
preventive cap



Differential pressure, freeze preventive
(Airbag) manipulation preventive cap



Differential pressure, freeze preventive,
transparent magnifying lens

When ordering as manipulation preventive cap, (City, Province) article number carving is plated and it has clear image for 10 years, which was approved and adopted by Office of Waterworks, Seoul

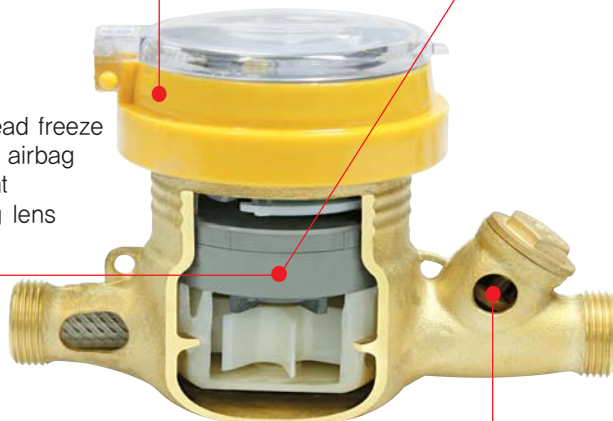


Manipulation preventive cap
for freeze preventive wet
water meter

● Special structure which absorbs cubical expansion when frozen

● Polycarbonate glass, being reinforced by 150times

Wet low-lead freeze
preventive airbag
transparent
magnifying lens



Backflow preventive, differential pressure

CHARACTERISTIC

- Case being installed where airbag is built in which is filled with air pressure of 0.7MPa in-between impeller and gear set within main body of water meter, airbag absorbs cubical expansion when frozen, which prevents burst by freezing in advance.
- By decreasing space between glass plate and indicating unit, remaining water does not collect and it minimizes volume of water meter.
- Passed performance test (16 times repeated test of hot water thawing after cooling of -20°C for 48hours) for freeze preventive water meter, carried out by Waterworks Research Institution, Office of Waterworks, Seoul
- Possible to manufacture in various types like common type, backflow preventive type and manipulation preventive type according to order from user

Backflow preventive, differential pressure-type manipulation preventive cap for freeze preventive water meter



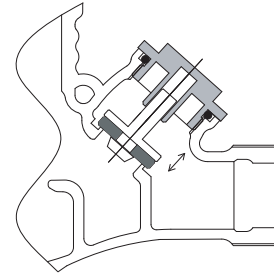
KS MARK CERTIFIED PRODUCT (KS B 50049-1) ●MW Type : 15(13), 20, 25, 32, 40, 50mm



Stainless freeze preventive (Silicon), manipulation preventive cap



Differential pressure, freeze preventive (Silicon) manipulation preventive cap

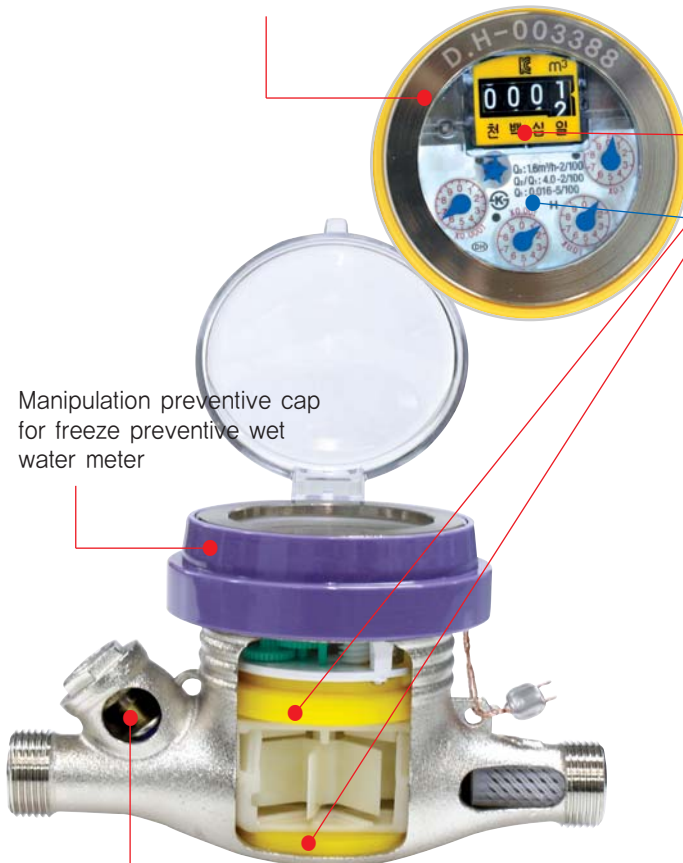


BACKFLOW PREVENTIVE, DIFFERENTIAL PRESSURE



Differential pressure, freeze preventive (Silicon) transparent magnifying lens

When ordering as manipulation preventive cap, (Qty, Province) article number carving is plated and it has clear image for 10 years, which was approved and adopted by Office of Waterworks, Seoul



Manipulation preventive cap for freeze preventive wet water meter

Backflow preventive, differential pressure

Special structure which absorbs cubical expansion when frozen

Polycarbonate glass, being reinforced by 150times

CHARACTERISTIC

- Patent registered product (No.10- 0700932)
- Passed freeze preventive test by Small & Medium Business Administration
- Passed freeze preventive test by Korea Mechanical, Electric and Electronic Test & Research Institution
- Cubical expansion absorbing structure and indicating unit glass where special material is used (By using reinforced glass, expected damage of breakage can be minimized which may occur at water meter and connection of water meter)
- Easy to select order specification by user (Common type, type for both of common and backflow preventive function)

Manipulation preventive cap for highly sensitive backflow preventive, slide-type water meter



KS MARK CERTIFIED PRODUCT (KS B 50049-1)

●MW Type : 15(13), 20, 25, 32, 40, 50mm



Slide type (Double-jet dry) manipulation preventive cap functional stainless steel



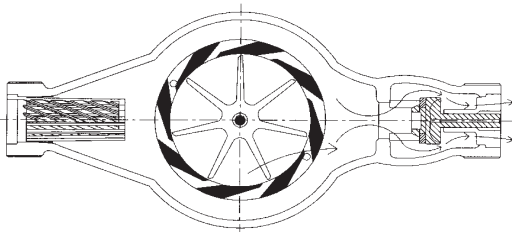
Slide type (Freeze preventive) transparent magnifying lens



Slide type (Double-jet dry) transparent magnifying lens

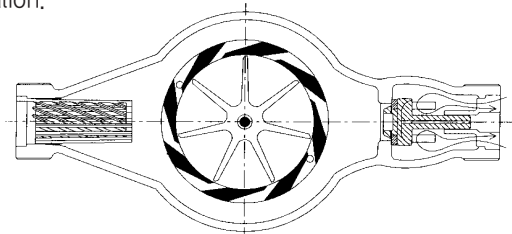
NORMAL FLOW OF WATER

Liquid flows in inlet pipe, water rotates wing normally which passes through nozzle in bottom internal jet, and opens on-off valve by water pressure and maintains open condition, which does not hinder water flow and enables normal operation for measurement.



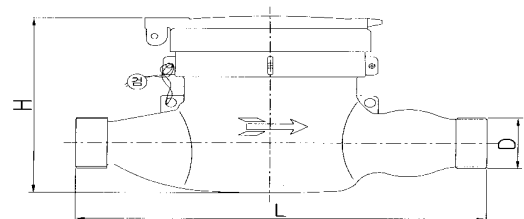
BACKFLOW PREVENTIVE CONDITION

If fluid discharged through outlet pipe flows backwards, on-off valve immediately closes entrance of outlet automatically due to water pressure of backflow, which prevent wing from reverse rotation. Therefore, each measuring component (gear and counter) linked with wing does not make any reverse rotation.



NORMAL FLOW OF WATER

It guarantees normal rotation of wing and each measuring component and enables exact measurement. At the same time, it prevents breakage or damage of components caused by overload due to reverse rotation, and is also designed for water not to pass reversely in any case, which prevents water stealing very effectively.



TECHNICAL SPECIFICATION

Dimension (mm)	15	20	25
Overloaded quantity of flow(Q4) (m³/h)	2.0	3.12	5.0
Maximum quantity of flow(Q3) (m³/h)	1.6	2.5	4.0
Variable quantity of flow(Q2) 6.3 (m³/h)	0.101	0.158	0.252
Minimum quantity of flow(Q1) (m³/h)	0.016	0.025	0.04
Maximum indicating quantity (m³)	9,999	99,999	
Maximum operating pressure (Mpa)	1(10bar)		

SIZE

Dimension (mm)	15	20	25
L	165	190	225
H	100	109	114
W	95	100	100
D	PF 3/4"	PF 1"	PF 1 1/4"
KG	1.2	1.8	2.0

Highly sensitive (Double-jet dry type) backflow preventive water meter

KS MARK CERTIFIED PRODUCT (KS B 50049-1) ●MW Type : 15, 20, 25, 32, 40, 50mm



Check type stainless
(Double-jet dry type) manipulation
preventive cap



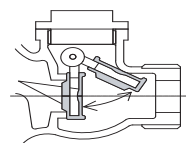
Check type
(Double-jet dry type) manipulation
preventive cap



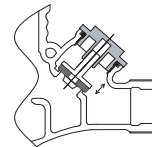
Differential pressure
(Double-jet dry), freeze preventive,
transparent magnifying lens

CHARACTERISTIC

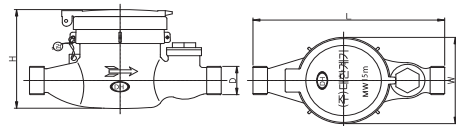
- Indicating unit is not immersed in the water, therefore character plate is always clear and there is no defect caused by foreign substance, which makes reading easy.
- Water does not enter gear unit, therefore it has strong freeze-resistance during winter season.
- With shielding device being installed, manipulation is impossible in spite of strong magnet.
- Backflow can be blocked even in minute flow or momentary backflow because backflow blocking device is equipped.
- Only wing is immersed in the water, therefore it has strong freeze-resistance during winter season and long durability.



BACKFLOW PREVENTIVE,
CHECK TYPE

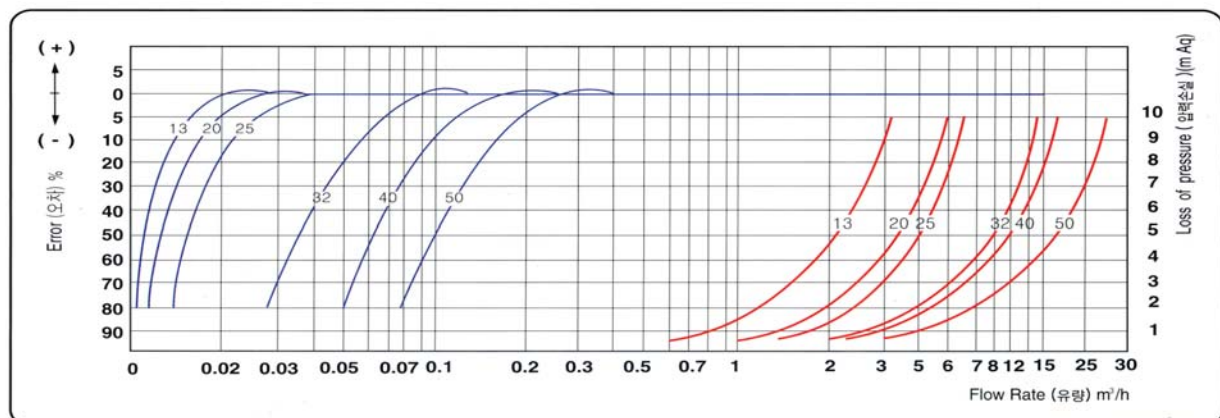


BACKFLOW PREVENTIVE,
DIFFERENTIAL PRESSURE



OUTSIDE VIEW

PERFORMANCE CURVE



PERFORMANCE TABLE

Dimension (mm)	Optimal quantity of flow for use m³/h	Minimum quantity of flow(Q ₁) m³/h	Variable quantity of flow(Q ₂) m³/h	Maximum quantity of flow(Q ₃) m³/h	Overloaded quantity of flow(Q ₄) m³/h	Minimum indicating quantity L	Maximum indicating quantity m³
15	0.016 ~ 0.8	0.016	0.064	1.6	2.0	0.05	9,999
20	0.025 ~ 1.25	0.025	0.1	2.5	3.1	0.05	99,999
25	0.04 ~ 2.0	0.04	0.16	4.0	5.0	0.05	99,999
32	0.063 ~ 3.0	0.063	0.252	6.3	7.8	0.05	99,999

Backflow preventive, manipulation preventive cap (Check type) for freeze preventive water meter



KS MARK CERTIFIED PRODUCT (KS B 50049-1)

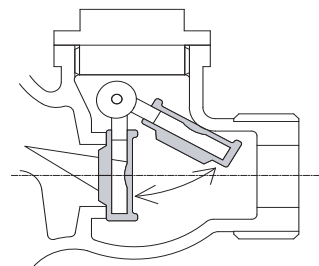
●MW Type : 15(13), 20, 25, 32, 40, 50mm



Check type stainless freeze preventive (Silicon), manipulation preventive cap



Check type freeze preventive (Silicon), manipulation preventive cap

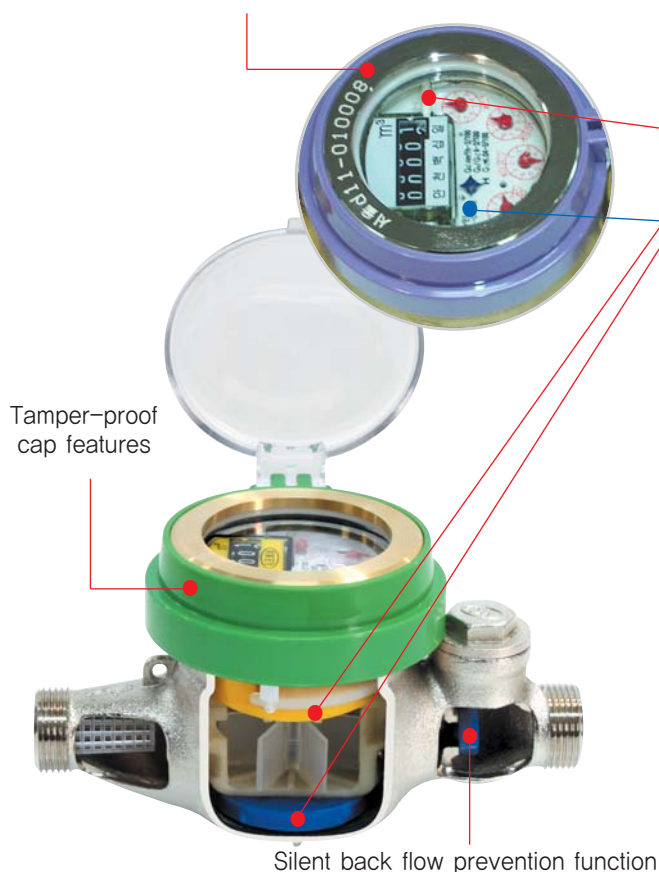


BACKFLOW PREVENTIVE, CHECK TYPE



Check type freeze preventive (Silicon), transparent magnifying lens

When ordering as manipulation preventive cap, (Qty, Province) article number carving is plated and it has clear image for 10 years, which was approved and adopted by Office of Waterworks, Seoul



Tamper-proof cap features

Silent back flow prevention function

Special structure which absorbs cubical expansion when frozen

● Polycarbonate glass, being reinforced by 150times

CHARACTERISTIC

- Patent registered product (No.10- 0700932)
- Passed freeze preventive test by Small & Medium Business Administration
- Passed freeze preventive test by Korea Mechanical, Electric and Electronic Test & Research Institution
- Cubical expansion absorbing structure and indicating unit glass where special material is used (By using reinforced glass, expected damage of breakage can be minimized which may occur at water meter and connection of water meter)
- Easy to select order specification by user (Common type, freeze preventive type, type for both of freeze preventive and backflow preventive function)

Manipulation preventive cap for stainless water meter (for backflow prevention, freeze prevention)

●MW Type : 15, 20, 25, 32, 40, 50mm



Check type (Double-jet dry)
stainless manipulation
preventive cap



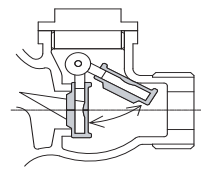
Check type (Stainless)
freeze preventive, manipulation
preventive cap



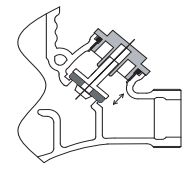
Differential pressure (Stainless) type
freeze preventive, manipulation
preventive cap

CHARACTERISTIC

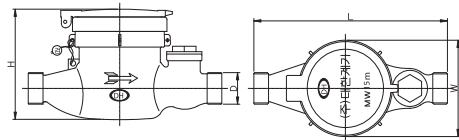
- Being manufactured with new material, stainless,
 - it has no toxicity and does not react to harmful chemicals.
 - it has strong corrosion-resistance internally and externally.
- Having excellent abrasion-resistance, it has permanent durability and it is eco-friendly product which can be recycled.
- It has strong resistance against change in quantity of flow and temperature and excellent durability.
- It has smart appearance thanks to suitable surface treatment.
- Possible to manufacture backflow preventive water meter (Check type, differential pressure type)
- Possible to manufacture freeze preventive water meter



BACKFLOW PREVENTIVE,
CHECK TYPE



BACKFLOW PREVENTIVE,
DIFFERENTIAL PRESSURE



OUTSIDE VIEW

PERFORMANCE AND DIMENSION

Standard(mm)		단위	13(15)	20	25	32	40	50
배 수 율			100배수	100배수	100배수	100배수	100배수	100배수
Starting flow		L/h	6	10	12	15	30	50
Minimum quantity of flow (Q1)	±5%	m³/h	0.016	0.025	0.04	0.063	0.1	0.16
Variable quantity of flow (Q2/Q1) : 4	±2%	m³/h	0.064	0.1	0.16	0.252	0.4	0.64
Maximum quantity of flow(Q3)	±2%	m³/h	1.6	2.5	4.0	6.3	10	16
적정사용유량범위		m³/h	0.016~0.8	0.025~1.2	0.04~1.5	0.63~3.0	0.1~5.0	0.16~8.0
최대지시량		m³	9,999	99,999				999,999
미터전장	L (mm)		165	190	225	230	245	305
미터높이	H (mm)		100	109	114	116	130	155
미터 폭	W (mm)		95	100	100	100	117	138
미터접속나사	D (inch)		PF ¾	PF1	PF1¼	PF1½	PF2	PF2 ½
설치접속나사	(inch)		PT ½	PT ¾	PT1	PT1¼	PT1½	PT2

■ Installation condition: Meter face to be horizontal ■ Maximum pressure for use: 10bar ■ Maximum temperature for use: below 30°C

Remote hot water meter for heating/ Hot water meter (long, short)

●DHHR Type : 15(13), 20, 25mm / DHH Type : 15(13), 20, 25mm

Remote hot water meter for heating is used in heating system where hot water circulation is used in apartment, officetel or shopping district.



CHARACTERISTIC

- Measurement is managed efficiently because indicating unit rotates by 360° and reading is easy in any position, furthermore if remote indicator is equipped, it is possible to read meter individually and collectively.
- Being dry type, indicating unit does not get damp, which makes scale plate clear all the time.
- Rotating noise is prevented by minute design, and wing magnet being improved, there is no immobility caused by attachment of foreign substance.
- Internal components being manufactured with synthetic stone having excellent abrasion-resistance and engineering plastic having high temperature-resistance, it is semi-permanent and it makes little error even in small quantity of flow because it is very sensitive to minute flow.
- There is S/W which can initialize value of flowing water meter with LCD type instructing unit (Up, Down, Reset function), and saved data is reverted when battery is changed.

Remote water meter/Dry water meter

●DHDR Type : 15(13), 20, 25mm / DHD Type : 15(13), 20, 25mm

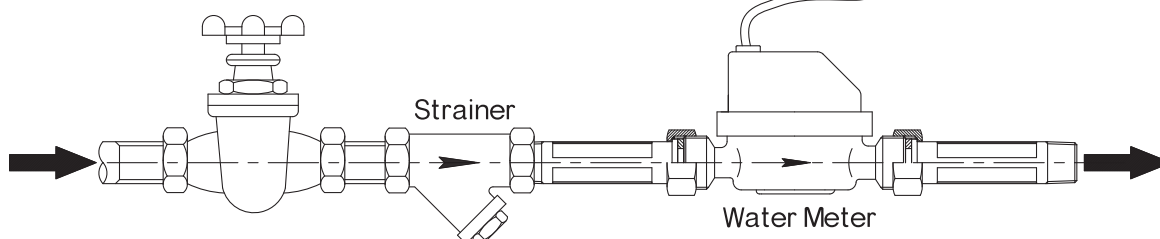
*It is easy to install even in narrow space and
it can prevent accident, like freeze.*



CHARACTERISTIC

- Accuracy of flowing water unit and directing unit is excellent.
- Has excellent durability and sensitivity, and exact measurement is possible even in very little quantity of flow.
- Being dry type, indicating unit does not get damp, which makes scale plate clear all the time.
- Indicating unit of water meter can rotate by 360°, therefore reading is possible in any position.
- Counter area inclines at 45°, which makes meter reading easy even in narrow space.
- Reducing valve can be installed easily because total length is short (possible to manufacture in all-in-one type of reducing valve and water meter)
- Individual reading or comprehensive remote reading is possible.

Standard piping diagram for remote
type hot water/dry water meter



Digital electronic type (Double-jet dry type), backflow preventive water meter

●MD Type : 15, 20, 25, 32, 40, 50mm



LCD Displaying Information

- Displaying battery remaining amount
- Indicating flow of reverse direction
- Indicating flow of normal direction
- displaying long time non-use (Flickering)
- Displaying flow of water



NEW
Height being low with 45° angle, reading is easy

역류방지용 무소음기능

CHARACTERISTIC

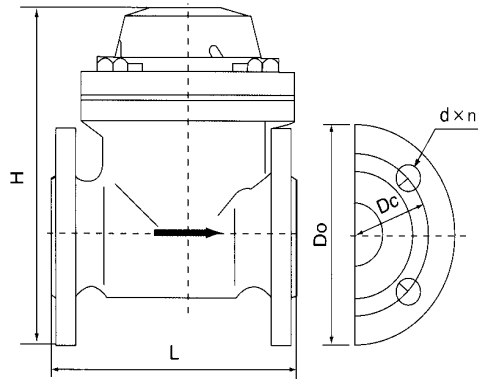
- As indicating value is displayed digitally, reading is easy.
- It is operated without gear set, which minimizes occurrence of defect caused by foreign substance, and accuracy is improved even in small quantity of flow.
- Slip phenomenon does not occur in large quantity of flow which has occurred at existing remote water meter because it is designed for rotating power of impeller to be transmitted in magnetic field sensor method, not magnetic transmitting method.
- It has perfect double water-proof structure with top and bottom case of electronic unit being fused by ultrasonic waves, therefore indicating window does not get damp.
- It displays intelligent self-diagnosis function, such as long time non-use, normal/ reverse direction flow and battery remaining amount etc., in addition to measurement value.
- It can be applied to outdoor reading, PDA reading and wireless remote reading, using UARP-Data communication method.
- Single-jet or double-jet can be selected depending on installation condition and total length of water meter can be both long and short, according to order.
- Special rubber being coated on both side of backflow preventive disk, noise is perfectly prevented while water flows.

HOW TO READ METER

How to read meter	Composing product	Composing elements	
Outdoor reading	Digital water meter, outdoor directing unit	Digital backflow preventive water meter with no-noise function 	옥외지시부
PDA reading	Digital water meter, Reading terminal PDA	Digital water meter+reading terminal 	Display type terminal PDA 수자원공사 지자체용
Wireless remote reading	Digital water meter, Reading terminal, Repeater, Collector, Server & operating program	Digital water meter, Display type 	Display type terminal Operating program Server CDMA mobile communication

Eco-friendly water meter (Stainless highly-sensitive large water meter)

● 40, 50, 80, 100, 150, 200, 250, 300mm



스테인리스 대형 수도미터

CHARACTERISTIC

- Being developed with new material, it has longer durability compared with other product thanks to elasticity of material in spite of water impact.
- Being manufactured with stainless material,
 - it has no toxicity and does not react to harmful chemicals.
 - it has strong corrosion-resistance internally and externally.
- Having excellent abrasion-resistance, it has permanent durability and it is eco-friendly product which can be recycled.
- It has smart appearance thanks to suitable surface treatment.
- It has high hardness and longer durability compared with other product.
- It is possible to install at any angle, i.e. horizontal, vertical or sloping surface.
- Bubble is entirely eliminated because indicating unit is perfectly sealed (IP 68 Grade).
- Rotating rotor is applied which maintain balance according to hydrodynamics.
- Reading is easy because indicating unit can rotate by 360°.
- Durability is increased thanks to overload resistance function.

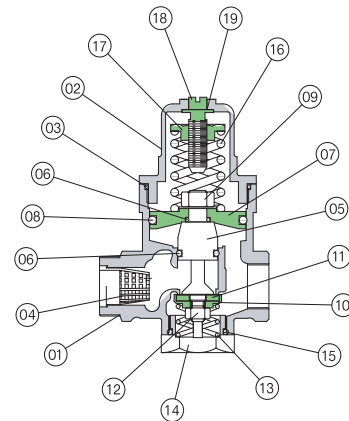
PERFORMANCE TABLE

Bore dimension	mm	40	50	80	100	150	200	250	300
Qmax(Q4)	Overload quantity of flow (m³/h)	78.75	78.75	125	200	312.5	560	787.5	1250
	One time among 24hours								
	in Q max or 1.2xQmax(±2%) within 5minutes								
Qn(Q3)	Maximum quantity of flow(±2%) (m³/h)	63	63	100	160	250	400	630	1000
Qn(Q2)	전이유량(±2%) (m³/h)	0.8	0.8	1.0	1.6	3.2	5.12	10.08	16.0
Qmin(Q1)	최소유량(±5%) (m³/h)	0.5	0.5	0.625	1.0	2.0	3.2	6.3	10.0
	시동유량 (m³/h)	0.30	0.30	0.35	0.40	1.0	1.5	3.0	8.0
최대지시량(m³)		999,999				999,999			
최소지시량(ℓ)		1ℓ				10ℓ			
사용조건		음용수(상수)40℃ 이하							

Pressure reducing valve direct-acting type (noise preventive function) for each household water supply

PATENT AND DESIGN REGISTERED

DHP-301, 302, 303



CHARACTERISTIC (Patented product for noise prevention)

- Pressure reducing valve of each household maintains pressure of supplying water constantly to protect device or pipe, and prevents trouble which occurs because of unbalance of pressure of water that flows in each household.
- Because O-ring unit of disk composed inside valve is operated in piston method on diameter area of main body of valve, valve is pushed gradually in spite of momentary strong pressure and it operates normally without noise and breakage even under the condition of 15~25kgf/cm² thanks to supplementary elasticity effect made by pressure-adjusting spring and compressing spring.
- Water can be supplied smoothly under comparatively low set pressure (3~5 kgf/cm²) even in low-rise and high-rise building.
- Strainer filtering foreign substance at inlet or backflow preventive valve preventing backflow can be attached optionally.

MAJOR COMPONENTS

No	Name of component	Quality of material
01	Body	CAC 203
02	Cover	CAC 203
03	Cover O-ring	SILICON
04	Strainer	PE
05	Spindle	C3604B E
06	Spindle O-ring	SILICON
07	Disk	C3604B E
08	Disk O-ring	SILICON
09	Disk Lock Nut	STS 304
10	Dise Holder	C3604B E

No	Name of component	Quality of material
11	Dise	NBR
12	Disk Lock Nut	STS 304
13	Spring	STS 304
14	Cap	C3604B E
15	Cap O-ring	NBR
16	Spring	SWRH 82B
17	Adjust Washel	C3604B E
18	Adjust Bolt	C3604B E
19	Adjust Bolt Washer	TEFLON

SPECIFICATION

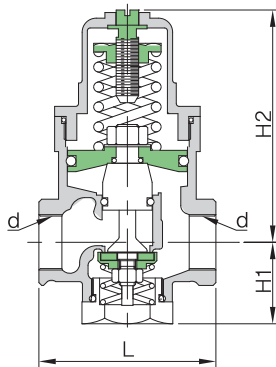
Model		DHP-301	DHP-302	DHP-303
Type		Direct Acting Type		
Size		15A / 20A		
Applicable Fluid		냉, 온수		
Applicable Inlet Pressure		MAX, 10kgf/cm ² (0.98 Mpa)		
Applicable Temperature)		MAX, 80℃		
Min Differential Pressure across the Dise		0.5 kgf/cm ²		
Adjustment Range		0.5~3.0, 2.5~5.0kgf/cm ²		
Standard Setting Temperature		2.5 kgf/cm ² (0.245 Mpa)		
Max Reducing Rate		5 : 1		
Min Controllable Flow		정격유량의 5%		
Lpm		38lpm 이상		
End Connections	Inlet	KS PT 암나사	KS PF UNION 숫나사	KS PT 숫나사
	Outlet	KS PT 암나사	KS PT 암나사	KS PT 암나사

Pressure reducing valve direct-acting type (noise preventive function) for each household water supply

PATENT AND DESIGN REGISTERED

DHP-301, 302, 303

■ DHP-301(Standard Socket Type)



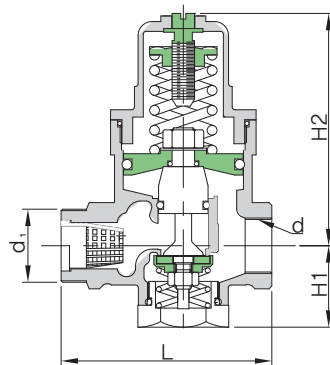
유니온 역류방지형
(15Ø~20Ø)

- Function of pressure reducing valve: Irregular pressure between households in apartment house can be adjusted according to condition of consumer and waste factor for water resources is eliminated.
- Rated quantity of flow : 44L/ min
- Connection : KS PT screwed

(Unit : mm)

SIZE	L	H1	H2	d	
15A	63	29	83	PT ½	
20A	68	29	83	PT ¾	

■ DHP-302(Strainer Built-in Type)

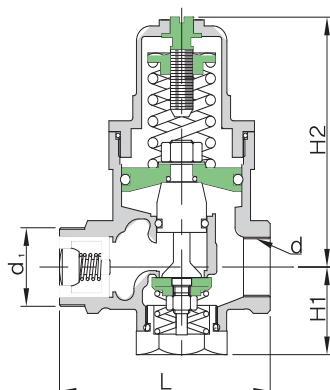


- Pressure reducing valve, strainer function : Foreign substance flowing-in is blocked by strainer and space for installation is saved.
- Connection : KS PT Union
- Rated quantity of flow : 44L/ min

(Unit : mm)

SIZE	L	H1	H2	d	d1
15A	75	29	83	PT ½	PF ¾
20A	80	29	83	PT ¾	PF 1

■ DHP-303(Backflow Preventive Device Built-in Type)



- Pressure reducing valve, check valve function : Blocking of backflow in low-pressure household is possible which is caused by unbalance of inflow pressure between households, and integrating error is prevented which can occur by reverse rotation of water meter.
- Connection : KS PT Union
- Rated quantity of flow : 43L/ min

(Unit : mm)

SIZE	L	H1	H2	d	d1
15A	75	29	83	PT ½	PT ¾
20A	80	29	83	PT ¾	PT 1

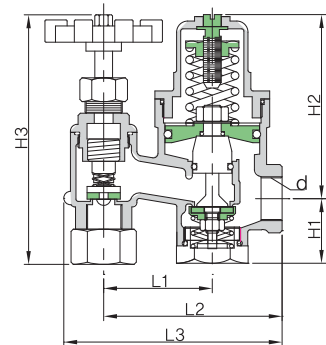
Angle integral, pressure reducing valve direct-acting type for water supply (Noise preventive function)

PATENT AND DESIGN REGISTERED

DHP-501

CHARACTERISTIC (Patented product for noise prevention)

- Being angle integral, pressure reducing valve for water supply, its construction is easy because installation in narrow space is possible.
- Connection clamping nut at bottom of angle valve being union type, pipe connection is easy.
- Backflow preventive function being built in, defect caused by idle running can be prevented, which assures exact measurement.
- Pressure reducing valve being manufactured in direct-acting type(Disk type), pressure loss also can be prevented when supplying water, and pressure within pipe can be maintained constantly in spite of change in momentary strong pressure.
- Especially, noise caused by unbalance of pressure within pipe can be prevented.



PIPING METHOD, USING ANGLE INTEGRAL TYPE PRESSURE REDUCING VALVE








(Unit : mm)

L1	L2	L3	H1	H2	H3(OPEN)	d
49	83.5	98.5	29	83	110	PT 1/2







SPECIFICATION

Size		15A/20A
Type		Direct Acting Type
Applicable fluid		Cold & Hot water
Inlet pressure for use		MAX, 10kgf/cm ² (0.98 MPa)
Outlet adjusted pressure		0.5~3.0, 2.5~5.0kgf/cm ²
Standard setting pressure		2.5 kgf/cm ² (0.245 MPa)
Applicable temperature		MAX, 80℃
Minimum differential pressure for operation		0.5 kgf/cm ² (0.049 MPa)
Maximum pressure reducing ratio		5 : 1
Minimum adjusted quantity of flow		5% of rated quantity of flow
Connection		KS taper screw for pipe (Rc), NPT screw
Major quality of material	Body	CAC203 (Ni-Cr도금)
	Cover	CAC203(Ni-Cr도금)
	Pressure actuating unit	DISK(C3604BE) Ni-Cr도금
	Spring	SWRH 72B(Ni-Cr도금)
	Disc	HOLDER(3604BE), NBR
	Packing & O-Ring	E.P.D.M

Product inspection

 PRODUCT INSPECTION Dae Han		PRODUCT NAME	EQUIPMENT NAME	공정명	구 격
		수도용 감압밸브	수도용 감압밸브 내압 및 압력조절 시험기	항목별 검사 방법	전규격 동일
TEST EQUIPMENT	PRECAUTION	검사순서 및 방법			
	Internal pressure & pressure adjustment setting device for pressure reducing valve for water supply	1	<ul style="list-style-type: none"> ● Connect power to power panel of tester (Use AC220V/60Hz) ● Make sure that circuit breaker is OFF certainly and then connect power 	5	 
		2	Connect pressure reducing valve to jig of tester as shown in picture. (Be careful that direction does not change when connecting)	6	 <p>If pressure does not reach 0.25MPa, you can adjust pressure with adjusting bolt using spanner. (Method of adjustment: If turning clockwise, pressure increases, and anticlockwise, it decreases)</p>
	Prepare pressure reducing valve to be tested (Prepare product of which assembly is completed)	3	Operate clamp by pressing clamp pressurizing button (Blue). (At this moment, check whether product is separated)	1	How to check 
	Prepare necessary spanner for setting pressure	4	Lower jig to immerse by pressing immersing button (Black). At this moment, check gauge at top of tester and make sure that pressure is 5MPa (2.5kgf/cm ²).	2	

Comparison with other products

ITEM	OTHER PRODUCTS	DAE HAN INDUSTRY CO.,LTD
UPPER CASE	Being aluminum product, it rusts easily by moisture and not suitable for eco-friendly product.	 <p>Being electro-less brass product, it has strong moisture-resistance and is suitable for eco-friendly product without corrosion.</p>
BODY	Body being not electro-less plated, it may cause malfunction due to corrosion, which may raise civil complaint from user.	 <p>Body being electro-less plated, there is no corrosion and malfunction, which improves its performance.</p>
DIAPHRAGM / DISK	Diaphragm method is weak for foreign substance, which causes malfunction frequently. Noise is generated due to breakage of diaphragm under momentary strong pressure and it results in the condition that pressure reducing is not possible.	 <p>Disk being operated in piston method on diameter area of valve main body, valve is operated gradually even under momentary strong pressure, which does not make any noise.</p>
SPRING	Strength of pressure-resistant spring does not reach pressure-resistant capacity of first axis, 15kg- 7kg, which causes malfunction; therefore it is not suitable for noise prevention.	 <p>It has double structures, i.e. pressure adjusting spring and compressing spring and such structure exercises supplementary elasticity, which enables smooth operation without noise and breakage.</p>
STRAINER	Mesh of strainer is too narrow; therefore if there is foreign substance in water flow, water cannot be supplied smoothly up to required quantity.	 <p>Being strainer mesh for hot water meter, it has sufficient space for foreign substance, which enables smoother water flow compared with other products.</p>
NOISE PREVENTION	<p>Piston being attached in diaphragm method, noise is generated too much due to impact of water, which increases defect ratio and it is highly corrosive due to non-plating and loss of pressure occurs. There is no noise preventive device at bottom of piston, which may cause defect.</p> <p>There is no noise preventive spring and disk device.</p>	 <p>Piston is electro-less plated therefore it has no corrosion and manufactured in direct-acting type, which prevents loss of pressure when supplying water and maintains pressure within pipe constantly in spite of change in momentary strong pressure. It prevents noise because noise preventive device is installed at bottom of piston.</p> <p>It has noise preventive (Patented product)spring and disk device.</p>

Assembly drawing of apartment-type protective box for water pressure reducing valve

Characteristic of protective box

Apartment-type protective box for water pressure reducing valve is very convenient to install when hot & cold water meter and pressure reducing valve are installed at the same time, because there is clearance in right & left narrow space.



Detachable case



Left & right movable assembly panel/
internal structure



Completed product

Dimension : W460 × H260 × 205

Characteristic of protective box

You can read scale without opening cover because cover of protective box is transparent.



Completed product

Dimension : W460 × H260 × 205

Strainer built-in union pipe

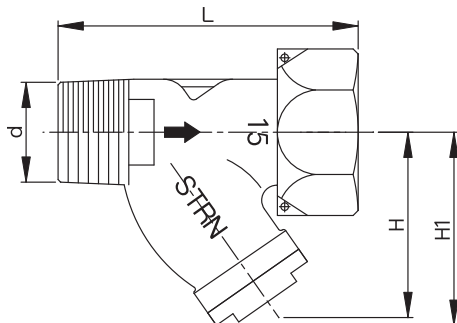
PATENT AND DESIGN REGISTERED



Y shaped strainer for water meter

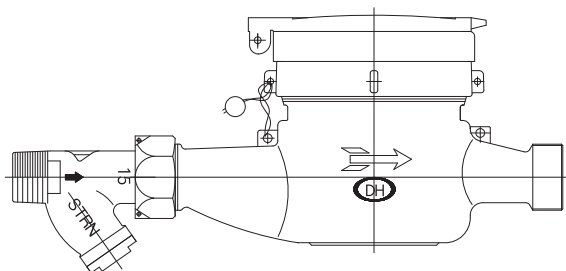
DIMENSION

Standard	L	H	H1	D
15A	55	36.5	39	PT 1/2"
20A				
25A				

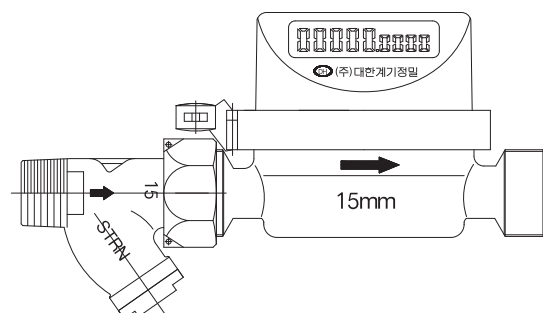


INSTALLATION DRAWING

Example of installation of wet water meter



Example of installation of single-jet dry water meter

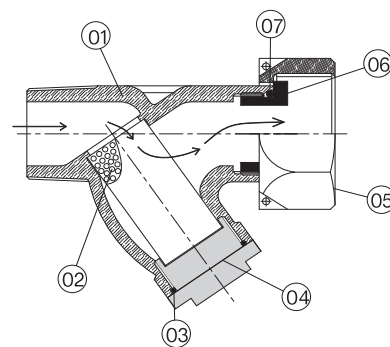


CHARACTERISTIC

- Y shaped strainer of union type with screw made by low-lead brass material
- Being compact and having large filtering area, it is optimal for installing water meter.
- Perforated mesh of stainless material is used as strainer mesh, therefore corrosion resistance is excellent.
- As strainer function is added to existing union pipe of water meter, length of pipe is short and construction cost can be saved.
- Immobility and defect of water meter caused by foreign substance can be prevented in advance.
- If cap is disassembled while cleaning foreign substance, strainer is also disassembled at the same time.

SPECIFICATION

Number	Name of component	Quality of material
01	Body	CAC203
02	타공망 (Perforated mesh)	STS304
03	캡오링 (Cap O-ring)	NBR
04	캡 (Cap)	C3771BE
05	유니언 너트 (Union nut)	CAC203
06	너트 볼싱 (Nut ball)	C3771BE
07	볼싱오링 (Ball O-ring)	NBR





Piping diagram of angle, pressure reducing valve for water supply, water meter

Piping diagram of angle pressure reducing valve for waterworks, freeze preventive water meter



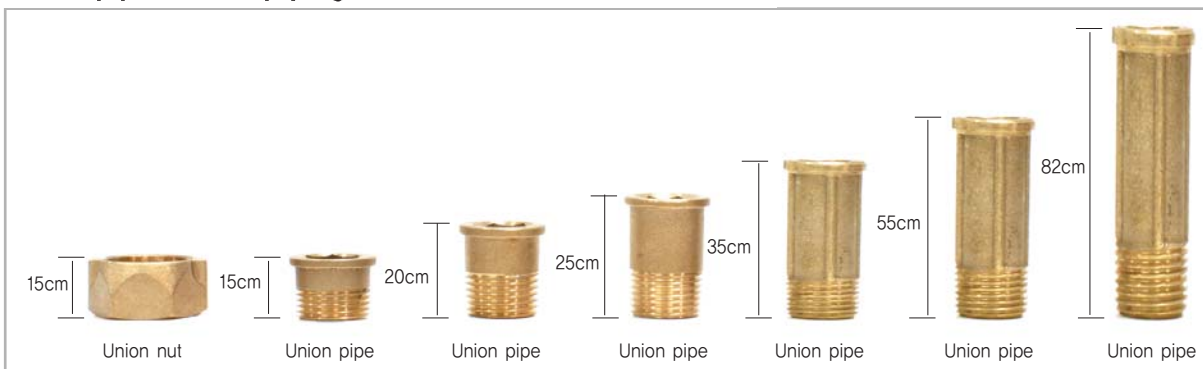
Piping diagram of angle pressure reducing valve for waterworks, remote type single-jet water meter



Piping diagram of angle pressure reducing valve for waterworks, dry single-jet water meter



Union pipe nut for piping (Dimension)





Angle valve for water supply (Backflow preventive device built-in type)



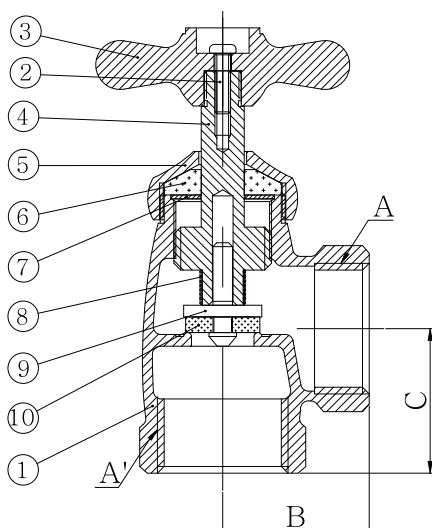
DHV-701 Water supply angle socket type (15mm~50mm)



DHV-702 Water supply angle screw type (15mm~50mm)



DHV-703 Water supply angle water meter protective box assembly type (Screw type 15mm~50mm)



CHARACTERISTIC OF PRODUCT

- As it is manufactured with brass material, it can be used widely for both household and industry.
- Being plated with Ni, Cr, it is not corroded and has elegant appearance.
- Backflow preventive device being built in, it can prevent defect caused by idling running and exact measurement is possible.
- It also has water hammer preventive function.

SPECIFICATION

- Use: For cold & hot water, Water supply angle
- Pressure for use: 0.98MPa
- Testing pressure (Internal pressure): 1.96MPa

MAJOR DIMENSION

Title	A	A'	B	C
15A	PT 1/2×14	PT 1/2×14	27.5	26
20A	PT 3/4×14	PT 3/4×14	32.5	32
25A	PT 1×11	PT 1×11	37.5	37
32A	PT 1 1/4×11	PT 1 1/4×11	47.5	46.5
40A	PT 1 1/2×11	PT 1 1/2×11	48.5	50
50A	PT 2×11	PT 2×11	54.5	56.5

QUALITY OF MATERIAL OF MAJOR COMPONENTS

No.	Part Name	Material
1	Body	CAC203
2	Handle Set Screw	STS304
3	Handle	ABS
4	Spindle Screw	C3604BE
5	Lock Nut	C3771BE
6	Spindle Packing	NBR
7	Flat Washer	STS304
8	Spring	STS304
9	Disk Holder	C3604BE
10	Disk Packing	NBR

Manipulation preventive water meter (adopted by Office of Waterworks, Seoul)



A-Type low-lead brass wet type
(Manipulation preventive cap)



B-Type low-lead brass stainless double-jet dry type
(Manipulation preventive cap)

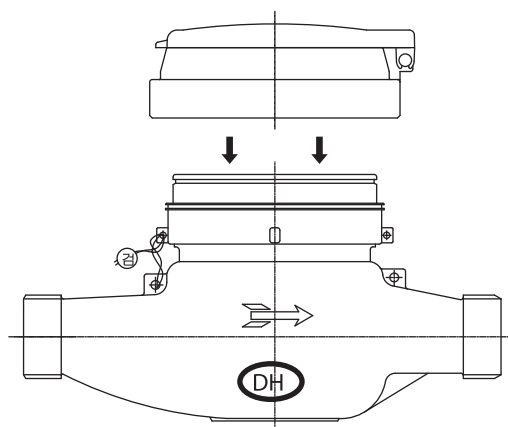


A-type low-lead brass, backflow preventive,
pressure differential type(Manipulation
preventive cap)



B-type low-lead brass, backflow preventive,
check type(Manipulation preventive cap)

ASSEMBLY DRAWING



A-Type

- Plastic cap (Fleam? preventive cap for water meter upper/bottom box) being attached on upper box of water meter, it cannot be dismantled with common tools, which prevents water-stealing and manipulation in advance.
- It was adopted and used by Waterworks Material Management Center, Office of Waterworks, Seoul.

Union pipe nut (Backflow preventive device built-in type)

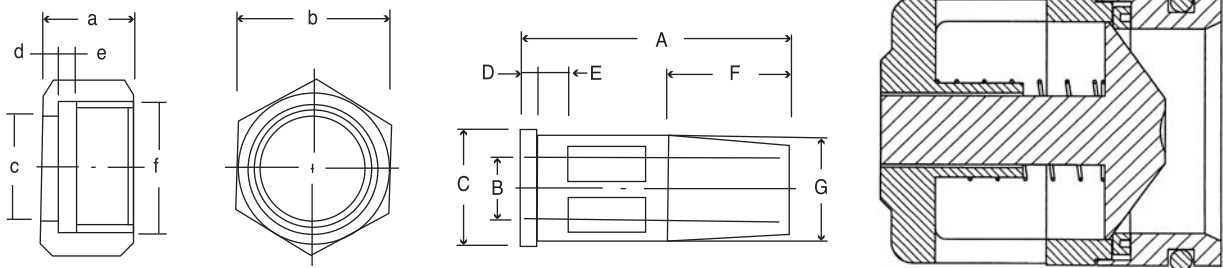
PATENT AND DESIGN REGISTERED

10-0797549호

Union pipe, nut copper pipe joint

Design patent No. 0345415 : Sealing nut

Design patent No. 0352504 : Pipe connecting tube



수도미터기용 유니언 역류방지밸브

MAJOR DIMENSION

품명치수	너 트						파 이 프						
규격(mm)	a	b	c	d	e	f	A	B	C	D	F	G	나사산수
15	16.5	29	22	3	4	26.4	55(15)	15	23.3	3	16	PT 1/2"	14
15	16.5	29	22	3	4	26.4	82(25)	15	23.3	3	16	PT 1/2"	14
20	18	35.5	28	3.5	4	33.2	60(40)	20	29	4	18	PT 3/4"	11
25	21.5	45	35.5	4	4	41.9	65(55)	25	38	4	20	PT 1"	11
32	24	52	43	5	4	46	65	32	44	5	23	PT 1 1/4"	11
40	26.5	65	50	5	5	59.6	75	40	55.5	5	25	PT 1 1/2"	11
50	34	70	61.5	8	6	70	80	50	66.5	6	27	PT 2"	11

※ ()는 최소규격임

Patent and design registration products



Union backflow preventive type
(20mm~4cm)



Union backflow preventive type
(15mm~2.5cm)



Backflow preventive cartridge (15Ø~20Ø)



New
동파에 강한
전자식 수도미터



New
소음방지 기능
수도용 감압밸브



New
스트레이너
이물질 방지 기능



Production Item

- | | | |
|-----------------------|-------------------|-----------------|
| ▶ 수도미터 | ▶ 수도용 감압밸브 직동식 | ▶ 적산 열량계 |
| ▶ 동파방지용 수도미터 | ▶ 수도용 앵글 일체형 감압밸브 | ▶ 대형 수도미터 |
| ▶ 역류방지용 수도미터 | ▶ 감압밸브 보일러용 | ▶ 스테인리스 대형 수도미터 |
| ▶ 건식 단갑 온·냉수용 | ▶ 수도용 앵글 스트레이너 겸용 | ▶ 온수미터 유량계·수량계 |
| ▶ 원격식 수도미터 | ▶ 수도용 유니언 파이프, 너트 | ▶ 스트레이너 내장형 유니언 |
| ▶ 전자식 수도미터 동파방지용 역류방지 | ▶ 수도용 앵글밸브 | |



DAE HAN METER TECH CO.,LTD.

Head office/Factory

81-35, Sangmasingi-ro, Daegot-myeon, Gimpo-si, Gyeonggi-do, Korea

T : 82-31-983-5721 F : 82-31-983-5723