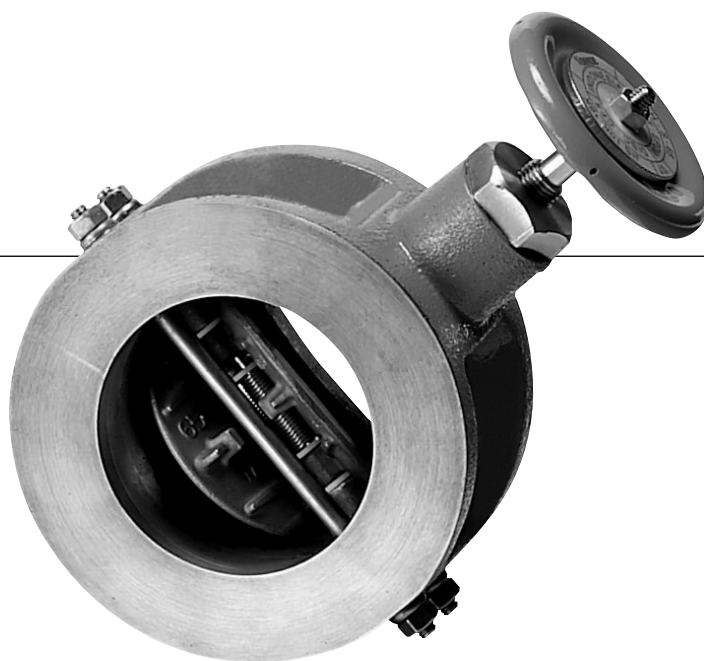


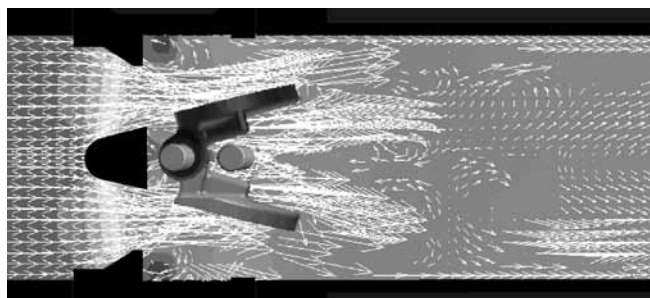
# MKT Series 907H / 908H



## Prevention of chattering.

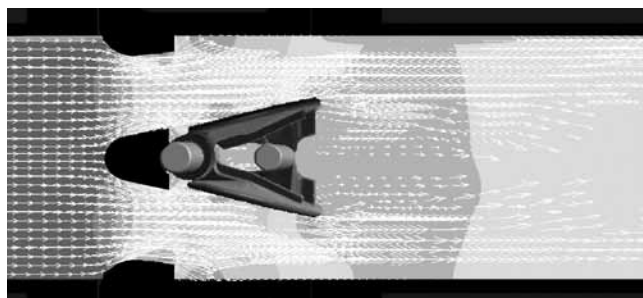
A new generation of check valves that reduce piping space and allow direct attachment of the pump.

### Previous Product



High pressure ← → Low pressure

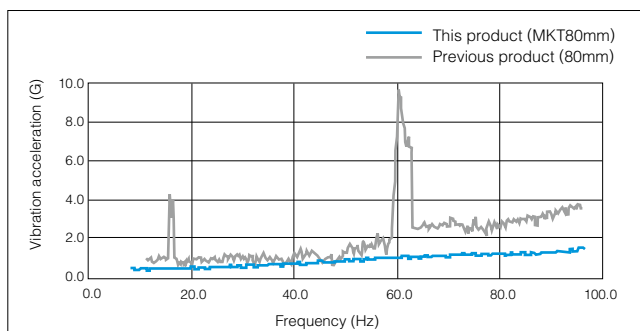
### MKT Series



(Note) The colors indicate the pressure distribution. Red indicates high pressure and blue indicates low pressure. Flow speed is indicated by arrow size.

Based on fluid theory and vibration analysis, we have achieved a new mechanism that does not allow chattering even at high flow speeds and during fluid fluctuations.

### Vibration Frequency Characteristics



As indicated above, there are no vibration peaks at any of the frequencies and damage due to vibration is prevented.

## Features and Benefits

### Helps reduce installation space, resulting less cost and lesser time.

#### Over 80% of piping space reduced around pump

Designed for anti-vibration, that previously found on the upstream side of check valves is no longer necessary and the piping space around the pump has been greatly reduced.

#### Direct pump installation possible

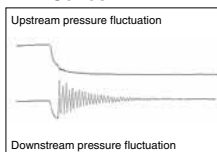
Designed for anti-vibration, the pump can now be installed directly. In fact, it achieved a smaller bore diameter that is 2 to 3 sizes smaller than previous one.

#### Prevents water hammer

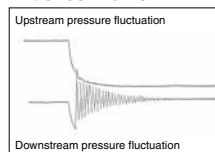
The combination of a light, compact plate with a small moment of inertia and an optimized spring quickly stop the flow when the pump is turned off, preventing water hammer.

The figure below contains measurement data of pressure fluctuations when the pump is suddenly stopped. Compared to other models, the MKT series have a smaller pressure fluctuation amplitude on the downstream side which makes it effective in preventing water hammer.

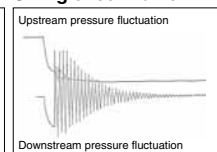
MKT Series



Lift check valve



Swing check valve



#### Suitable for all needs

Being able to handle water, steam, gases, and other fluids, all needs can be met. Also, use of a fluorocarbon resin sheet and stainless steel body allows chemicals, corrosive fluids and high temperature liquids (200 degrees C max.) to be used which means a wide range of application environments can be covered.

#### Standard Specifications

|                                              |                             | 907H                                                                                           | 908H                                       |
|----------------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------|
| Valve design                                 |                             | Wafer-type double-plate check valve                                                            |                                            |
| Valve nominal size ※1                        |                             | 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400mm                                           | 50, 65, 80, 100, 125, 150, 200, 250, 300mm |
| Valve type                                   |                             | Check valve with bypass                                                                        |                                            |
| Applicable flange standard                   |                             | JIS 10K, 16K, 20K, ASME B16.5 Class125/150                                                     |                                            |
| Face-to-face dimensions                      |                             | JV8-1 (stainless steel valves, wafer-type check valves), SAS358                                |                                            |
| Max. working pressure                        |                             | 2.0MPa                                                                                         |                                            |
| Allowed flow velocity                        |                             | 50-200mm : 0.5 m/s to 10 m/s, 250-300mm : 0.8 m/s to 10 m/s,                                   |                                            |
| Seat leakage                                 |                             | Tight shut                                                                                     |                                            |
| Test pressure                                | Pressure resistance of body | 3.0MPa                                                                                         |                                            |
|                                              | Valve seat leak             | High-pressure test 2.2MPa(hydraulic)                                                           |                                            |
| Working temperature range (without freezing) |                             | NBR seat : 0 to 60 degrees C, *EPDM seat : 0 to 100 degrees C                                  |                                            |
| Standard materials                           | Main body                   | A536 Gr.65-45-12 (ductile iron)                                                                | A351 CF8 (stainless steel)                 |
|                                              | Plate                       | A351 CF8 (stainless steel)                                                                     |                                            |
|                                              | Pin                         | 304 stainless steel                                                                            |                                            |
|                                              | Spring                      | 304 stainless steel                                                                            |                                            |
|                                              | Seat ring ※2                | NBR, *EPDM                                                                                     |                                            |
| Pipe gasket                                  |                             | Required (please purchase a commercially available gasket that satisfies the flange standards) |                                            |
| Coating                                      |                             | Resin baked finish (Munsell 2.5BG 6/12-Green)                                                  | No coating                                 |

※1 250mm and 300mm include rubber sleeves. Compared to the ones without rubber sleeves, loss of pressure increases 8% around. 907H 350mm & 400mm can be made to order. Please contact us for the details.

※2 The rubber seat is vulcanized to the valve body.

\* Never use an EPDM rubber seat ring if the valve is being used for oil or for a fluid containing even a slight amount of oil.

Butterfly Valve

TRITEC

TT2

334A

302A/303Q

304A/304Q

302Y/304Y

304M (HLV)

507V/508V

DTM

846T/847T/847Q

841T/842T

700Z

700G/704G/705G

700GB

731P/732P/732Q/752W

71LG

700E/700K/700S

704G/722F/720F

KRV

227P

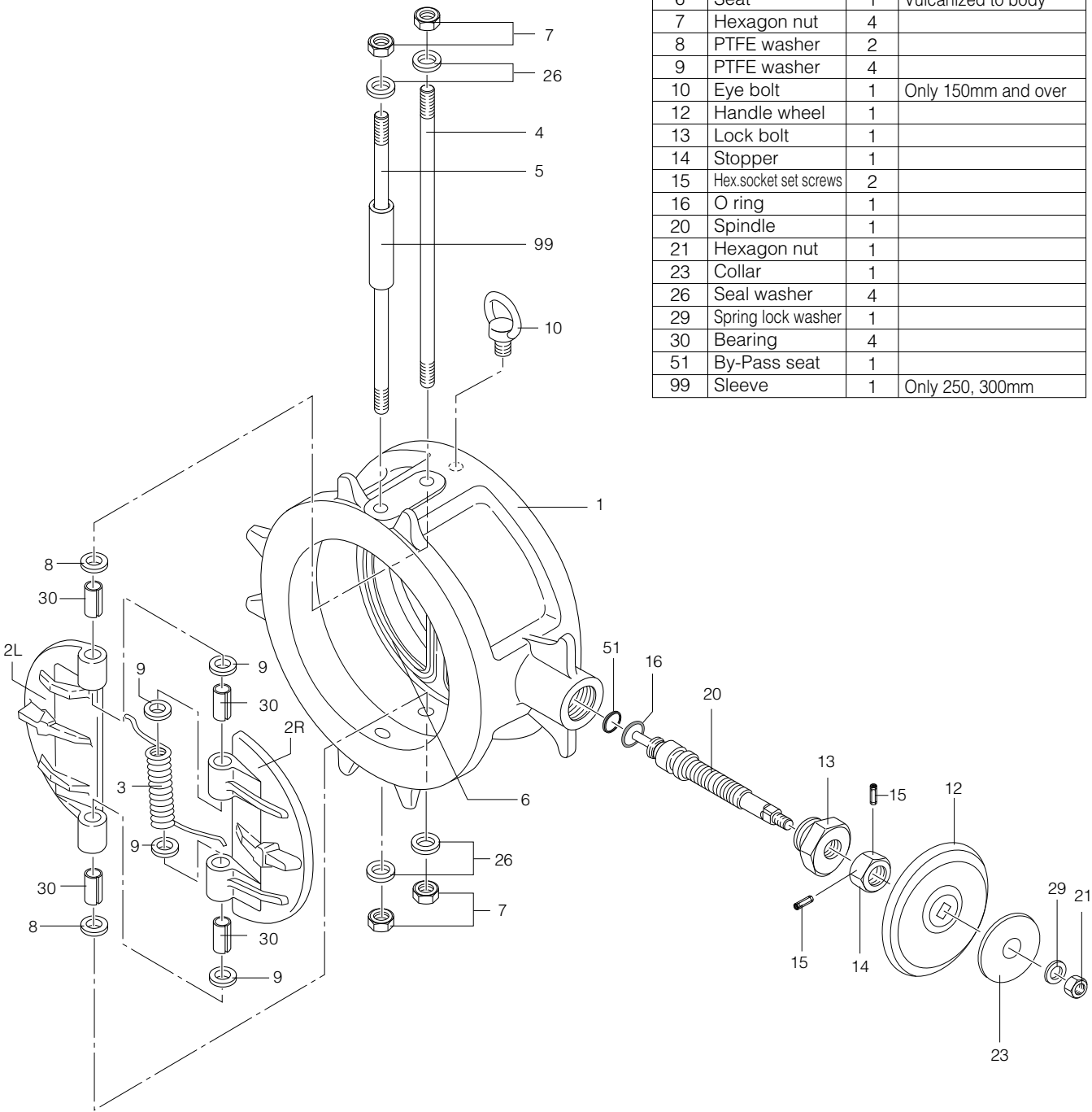
907H/908H (MKT)

903C

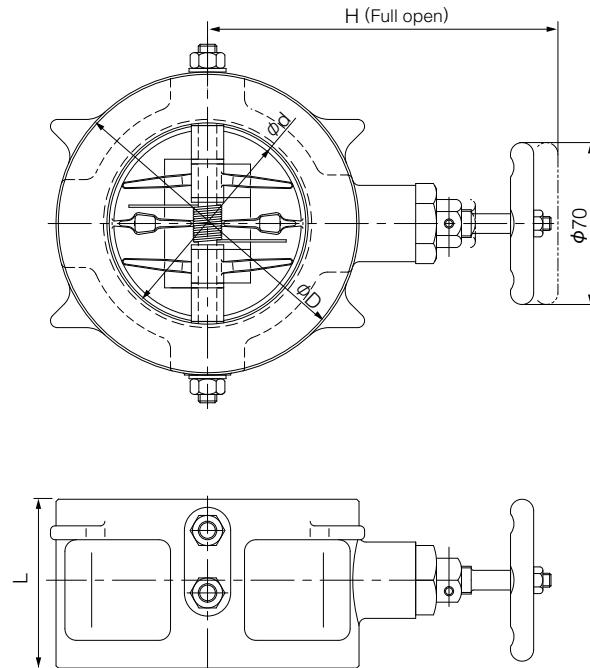
MKT Expanded view of components

■MKT Disc Expanded View/ Parts List

| No. | Description           | Q'ty | Remarks                   |
|-----|-----------------------|------|---------------------------|
| 1   | Body                  | 1    |                           |
| 2L  | Left plate            | 1    |                           |
| 2R  | Right plate           | 1    |                           |
| 3   | Spring                | 1    | 200 mm, 250 mm, 300 mm: 2 |
| 4   | Hinge pin             | 1    |                           |
| 5   | Stop pin              | 1    |                           |
| 6   | Seat                  | 1    | Vulcanized to body        |
| 7   | Hexagon nut           | 4    |                           |
| 8   | PTFE washer           | 2    |                           |
| 9   | PTFE washer           | 4    |                           |
| 10  | Eye bolt              | 1    | Only 150mm and over       |
| 12  | Handle wheel          | 1    |                           |
| 13  | Lock bolt             | 1    |                           |
| 14  | Stopper               | 1    |                           |
| 15  | Hex.socket set screws | 2    |                           |
| 16  | O ring                | 1    |                           |
| 20  | Spindle               | 1    |                           |
| 21  | Hexagon nut           | 1    |                           |
| 23  | Collar                | 1    |                           |
| 26  | Seal washer           | 4    |                           |
| 29  | Spring lock washer    | 1    |                           |
| 30  | Bearing               | 4    |                           |
| 51  | By-Pass seat          | 1    |                           |
| 99  | Sleeve                | 1    | Only 250, 300mm           |



## MKT Principal dimensions



## MKT Dimension

| Nominal size |       | Dimension (mm) |          |     |     | Approx. Mass (kg) |      |
|--------------|-------|----------------|----------|-----|-----|-------------------|------|
| mm           | inch  | $\phi d$       | $\phi D$ | L   | H   | SCS               | FCD  |
| 50           | 2     | 58             | 101      | 60  | 135 | 2.7               | 2.5  |
| 65           | 2 1/2 | 74             | 121      | 67  | 142 | 3.7               | 3.5  |
| 80           | 3     | 87             | 131      | 73  | 149 | 4.7               | 4.4  |
| 100          | 4     | 105            | 156      | 73  | 186 | 6.2               | 5.9  |
| 125          | 5     | 134            | 187      | 86  | 200 | 9.2               | 8.7  |
| 150          | 6     | 160            | 217      | 98  | 213 | 13.1              | 12.4 |
| 200          | 8     | 210            | 267      | 127 | 239 | 22.6              | 21.5 |
| 250          | 10    | 258            | 330      | 146 | 282 | 37.5              | 35.6 |
| 300          | 12    | 306            | 375      | 181 | 308 | 56.2              | 53.4 |

Butterfly Valve

**TRITEC**

**TT2**

**334A**

**302A/303Q**

**304A/304Q**

**302Y/304Y**

**304M**  
(HLV)

**507V/508V**

**DTM**

**846T/847T/847Q**

**841T/842T**

**700Z**

**700G/704G/705G**

**700GB**

**731P/732P/**  
**732Q/752W**

**71LG**

**700E/700K/700S**

**704G/722F/720F**

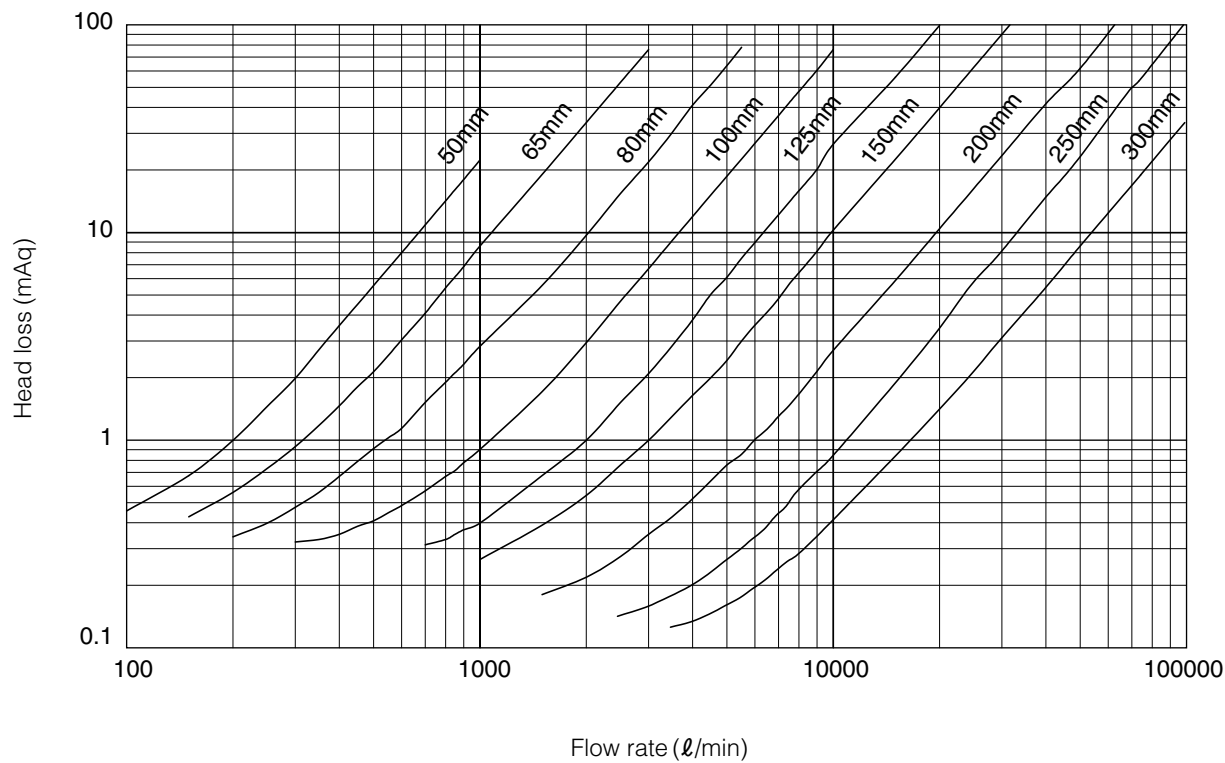
**KRV**

**227P**

**907H/908H**  
(MKT)

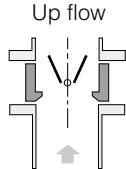
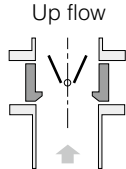
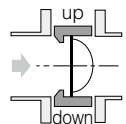
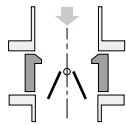
**903C**

MKT Head loss vs. Flow



## MKT Selection Criteria

**Chart 1** Selection table by application and spring

|   | Application                                                                                           | Velocity                                                              | Flow Direction                                                                                                  | Spring type                                                                                                                  |
|---|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| A | Fluid: Liquid and<br>Installation: directly after<br>3D expanding pie or elbow※1                      | See Chart 2                                                           |                                | Low torque spring with rubber sleeve<br><br>200mm and smaller: Special selection (※2)<br>250mm and above: standard selection |
| B | Fluid Gas (air)                                                                                       | 10m/s ~ 50m/s, and<br>line and differential<br>pressure 0.1MPa ~ 2MPa |                                                                                                                 | 200mm and smaller: special selection<br>(low torque spring)<br>250mm and above: standard selection                           |
| C | Fluid Liquid*<br><br>*If installed directly after<br>expanding pipe, it should<br>not be more than 2D | 0.5m/s ~ less than 2m/s                                               |                                | Standard torque spring                                                                                                       |
|   |                                                                                                       | 2m/s ~ less than 10m/s                                                |                                                                                                                 | Standard torque spring                                                                                                       |
|   |                                                                                                       | 2m/s ~ less than 10m/s                                                | Horizontal pipe layout<br><br> | Standard torque spring                                                                                                       |
|   |                                                                                                       | Less than 5m/s<br>Valve size less than 200mm                          | Down flow (※3)<br><br>       | High torque spring                                                                                                           |

※1 Please do not install MKT directly after 4D or more expanding pipe due to possible abnormal noise, damage and leakage. Selection C can be applied if 5D or more expanding pipe.

※2 For valve size 200mm and smaller, pressure loss at full open will increase due to rubber sleeve.

※3 There is possible seat leakage by reverse flow in case of down flow.

※ Please contact us for application other than above application to avoid possible abnormal noise, damage, and leakage.

※ Selection C can be applied if MKT is installed before expanding pipe.

**Chart 2** Minimum necessary average velocity for MKT installed after 3D expanding pipe and elbow

| Valve size                 | 50, 65, 80, 100mm | 125, 150, 200mm | 250, 300mm |
|----------------------------|-------------------|-----------------|------------|
| Minimum necessary velocity | 1.2m/s            | 1.6m/s          | 2.2m/s     |
| Maximum allowable velocity | 10m/s             | 10m/s           | 10m/s      |

**Butterfly  
Valve**

**TRITEC**

**TT2**

**334A**

**302A/303Q**

**304A/304Q**

**302Y/304Y**

**304M  
(HLV)**

**507V/508V**

**DTM**

**846T/847T/847Q**

**841T/842T**

**700Z**

**700G/704G/705G**

**700GB**

**731P/732P/  
732Q/752W**

**71LG**

**700E/700K/700S**

**704G/722F/720F**

**KRV**

**227P**

**907H/908H  
(MKT)**

**903C**

**MKT Applicable pipe list in case of A**

| Nominal size |       | SGP | Sch20 | Sch40 | Sch10S | Sch20S |
|--------------|-------|-----|-------|-------|--------|--------|
| mm           | inch  |     |       |       |        |        |
| 50           | 2     | ○   | ○     | ○     | ○      | ○      |
| 65           | 2 1/2 | ○   | ○     | ○     | ○      | ○      |
| 80           | 3     | ○   | ○     | ○     | ○      | ○      |
| 100          | 4     | ○   | ○     | ○     | ○      | ○      |
| 125          | 5     | ○   | ○     | ○     | ○      | ○      |
| 150          | 6     | ○   | ○     | ○     | ○      | ○      |
| 200          | 8     | ○   | ○     | ○     | ○      | ○      |
| 250          | 10    | ○   | ○     | ○     | ○      | ○      |
| 300          | 12    | ○   | ○     | ○     | ○      | ○      |

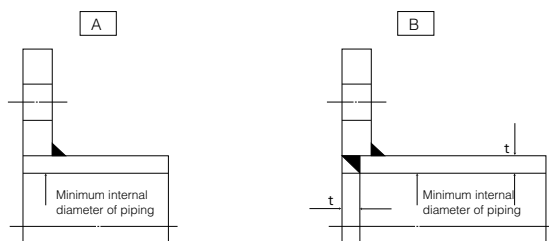
**MKT Applicable pipe list in case of B**

| Nominal size |       | SGP | Sch20 | Sch40 | Sch10S | Sch20S |
|--------------|-------|-----|-------|-------|--------|--------|
| mm           | inch  |     |       |       |        |        |
| 50           | 2     | ○   | ○     | ○     | ○      | ○      |
| 65           | 2 1/2 | ○   | ○     | ○     | ○      | ○      |
| 80           | 3     | ○   | ○     | ○     | ○      | ○      |
| 100          | 4     | ○   | ○     | ○     | ○      | ○      |
| 125          | 5     | ○   | ○     | ○     | ○      | ○      |
| 150          | 6     | ○   | ○     | ○     | ○      | ○      |
| 200          | 8     | ○   | ○     | ○     | ○      | ○      |
| 250          | 10    | ○   | ○     | ○     | ○      | ○      |
| 300          | 12    | ○   | ○     | ○     | ○      | ○      |

**Minimum internal diameters of piping (mm)**

| Nominal size |       | Minimum internal diameters of piping (mm) |
|--------------|-------|-------------------------------------------|
| mm           | inch  |                                           |
| 50           | 2     | 35.0                                      |
| 65           | 2 1/2 | 45.5                                      |
| 80           | 3     | 56.0                                      |
| 100          | 4     | 80.6                                      |
| 125          | 5     | 98.2                                      |
| 150          | 6     | 122.1                                     |
| 200          | 8     | 156.8                                     |
| 250          | 10    | 204.7                                     |
| 300          | 12    | 222.9                                     |

Remark: ○: Installation possible, —: No standard



## MKT Cracking Pressure (Opening Pressure)

Minimum required pressure difference for flowing in forward direction

| Nominal size |       | CV value | Standard torque spring |         | Low torque spring |         |
|--------------|-------|----------|------------------------|---------|-------------------|---------|
| mm           | inch  |          | mmAq                   | MPa     | mmAq              | MPa     |
| 50           | 2     | 46.0     | 116                    | 0.00114 | 12                | 0.00012 |
| 65           | 2 1/2 | 74.5     | 113                    | 0.00111 | 13                | 0.00013 |
| 80           | 3     | 138      | 160                    | 0.00157 | 22                | 0.00022 |
| 100          | 4     | 251      | 82                     | 0.00080 | 16                | 0.00016 |
| 125          | 5     | 435      | 49                     | 0.00048 | 12                | 0.00012 |
| 150          | 6     | 685      | 58                     | 0.00057 | 15                | 0.00015 |
| 200          | 8     | 1340     | 79                     | 0.00077 | 16                | 0.00016 |
| 250          | 10    | 2330     | 59                     | 0.00058 | 12                | 0.00012 |
| 300          | 12    | 3760     | 50                     | 0.00049 | 10                | 0.00010 |

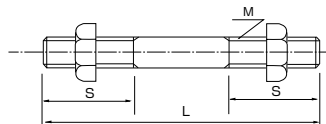
## MKT Piping Bolt and Nut Sizes

| Nominal size |       | JIS10K        | JIS16K        | JIS20K        | ASME B16.5 Class150 |
|--------------|-------|---------------|---------------|---------------|---------------------|
| mm           | inch  |               |               |               |                     |
| 50           | 2     | 4-M16×140×35  | 8-M16×140×35  | 8-M16×140×35  | 4-U5/8-11×145×40    |
| 65           | 2 1/2 | 4-M16×150×40  | 8-M16×150×40  | 8-M16×150×40  | 4-U5/8-11×160×40    |
| 80           | 3     | 8-M16×160×40  | 8-M20×175×50  | 8-M20×175×50  | 4-U5/8-11×170×40    |
| 100          | 4     | 8-M16×160×40  | 8-M20×175×50  | 8-M20×175×50  | 8-U5/8-11×170×40    |
| 125          | 5     | 8-M20×180×50  | 8-M22×200×50  | 8-M22×200×50  | 8-U3/4-10×190×50    |
| 150          | 6     | 8-M20×200×50  | 12-M22×215×50 | 12-M22×215×50 | 8-U3/4-10×205×50    |
| 200          | 8     | 12-M20×230×50 | 12-M22×240×50 | 12-M22×240×50 | 8-U3/4-10×240×50    |
| 250          | 10    | 12-M22×260×50 | 12-M24×275×60 | 12-M24×275×60 | 12-U7/8-9×265×55    |
| 300          | 12    | 16-M22×300×50 | 16-M24×315×60 | 16-M24×315×60 | 12-U7/8-9×305×55    |

Remark: \*Use a hexagon nut with 80% threading.  
\*Material: "SS400" (Unichrome plating)

●The bolt lengths are in accordance with JIS and thickness of steel flanges.

Long bolts and nuts



Example

Long bolts: 16 - M22 × 300 × 45  
 |        |        |        |  
 N       M       L       S