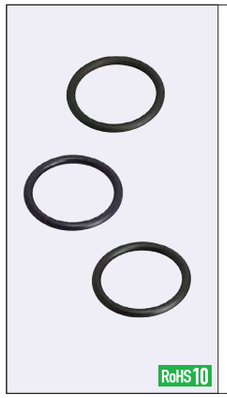
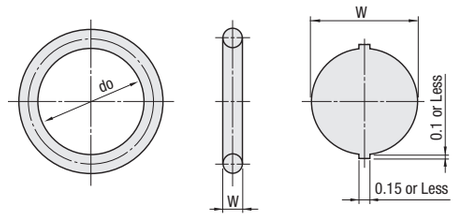


RoHS 10

| Type | Material | Hardness (JIS Hs) | Color | Operable Temperature Range | JIS Symbol | Applications |
|---|---|---|---|---|---|---|
| NVA | Nitrile Rubber | 70±5 | Black | -30~100°C | Class 1 A | Mineral Oil Resistant |
| NVF | Fluoro Rubber | 70±5 | Black | -15~200°C | Class 4 D | Heat Resistant |
| NASA | Nitrile Rubber | 70±5 | Black | -30~100°C | - | Mineral Oil Resistant |
| NASF | Fluoro Rubber | 70±5 | Black | -15~200°C | - | Heat Resistant |




## ■JIS B 2401 V Series (For Vacuum Flanges)

| Part Number | | JIS Nominal Number | W | I.D. | | | NVA | | NVF | |
|---|---|---|---|---|---|---|---|---|---|---|
| Type | No. | | | do | NVA Tolerance | NVF Tolerance | Unit Price | Volume Discount Rate | Unit Price | Volume Discount Rate |
| | | | | | | | 1~49 | 50~100 | 1 ~ 49 pc (s). | 50~100 |
| NVA (Nitrile Rubber, Black) / NVF (Fluoro Rubber, Black) | 15 | V15 | 4.0±0.1 | 14.5 | ±0.20 | ±0.24 | | | | |
| | 24 | V24 | | 23.5 | ±0.24 | ±0.29 | | | | |
| | 34 | V34 | | 33.5 | ±0.33 | ±0.40 | | | | |
| | 40 | V40 | | 39.5 | ±0.37 | ±0.45 | | | | |
| | 55 | V55 | | 54.5 | ±0.49 | ±0.59 | | | | |
| | 70 | V70 | | 69.0 | ±0.61 | ±0.74 | | | | |
| | 85 | V85 | | 84.0 | ±0.72 | ±0.87 | | | | |
| | 100 | V100 | | 99.0 | ±0.83 | ±1.00 | | | | |
| | 120 | V120 | | 119.0 | ±0.97 | ±1.17 | | | | |
| | 150 | V150 | | 148.5 | ±1.18 | ±1.42 | | | | |
| | 175 | V175 | | 173.0 | ±1.36 | ±1.63 | | | | |

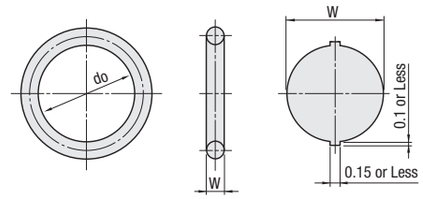
## ■AS568 AS Series

| Part Number | | W | I.D. | | NASA | | NASF | |
|---|---|---|---|---|---|---|---|---|
| Type | No. | | do | Tolerance | Unit Price | Volume Discount Rate | Unit Price | Volume Discount Rate |
| | | | | | 1 ~ 49 pc (s). | 50~100 | 1 ~ 49 pc (s). | 50~100 |
| NASA (Nitrile Rubber, Black) / NASF (Fluoro Rubber, Black) | 001 | 1.02±0.07 | 0.74 | ±0.10 | | | | |
| | 002 | 1.27±0.07 | 1.07 | | | | | |
| | 003 | 1.52±0.07 | 1.42 | | | | | |
| | 004 | 1.78±0.07 | 1.78 | ±0.12 | | | | |
| | 005 | | 2.57 | | | | | |
| | 006 | | 2.90 | | | | | |
| | 007 | | 3.68 | | | | | |
| | 008 | | 4.47 | | | | | |
| | 009 | | 5.28 | | | | | |
| | 010 | | 6.07 | | | | | |
| | 011 | | 7.65 | | | | | |
| | 012 | | 9.25 | | | | | |
| | 013 | | 10.82 | | | | | |
| | 014 | | 12.42 | | | | | |
| | 015 | | 14.00 | | | | | |
| | 016 | | 15.60 | | | | | |
| | 017 | | 17.17 | | | | | |
| | 018 | | 18.77 | | | | | |
| | 019 | | 20.35 | ±0.15 | | | | |
| | 020 | | 21.95 | | | | | |
| | 021 | | 23.52 | | | | | |
| | 022 | | 25.12 | | | | | |
| | 023 | | 26.70 | | | | | |
| | 024 | | 28.30 | | | | | |
| | 025 | | 29.87 | | | | | |
| | 026 | | 31.47 | | | | | |
| | 027 | | 33.05 | | | | | |
| | 028 | | 34.65 | | | | | |
| | 029 | | 37.82 | ±0.25 | | | | |
| | 030 | | 41.00 | | | | | |

Ordering Example: Part Number NASA001

RoHS 10

| Type | Grade | Color | Max. Operating Temp. | Material |
|---|---|---|---|---|
| MPPEM | Chemical Resistant Grade | Black | 260°C | Perfluoro Rubber |
| MPPEJ | Special Heat Resistant Grade | Black | 320°C | |




■Features
①Excellent resistances required in extreme conditions such as strong acid, strong alkali, amines, steam and high temperature polar solvent (260 ~ 320°C).
②Has the properties of Low gas precipitation, Low Out-gas, etc. and can be used under high vacuum.
③Heavy metal and molding agents are not used in the process of production.

## ■P Series (For Mounting, Dynamic)

| Part Number | | Nominal Number | W | I.D. | | Matching Material | | | | MPPEM | | MPPEJ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | No. | | | do | MPPEM, MPPEJ Tolerance | d | Tolerance | D | Tolerance | Unit Price | Volume Discount Rate | Unit Price | Volume Discount Rate |
| | | | | | | | | | | 1 ~ 19 pc (s). | 20~50 | 1 ~ 19 pc (s). | 20~50 |
| MPPEM (Chemical Resistant Grade) / MPPEJ (Special Heat Resistant Grade) | 3 | 3 | 1.9±0.08 | 2.8 | ±0.16 | 3 | 0 -0.05 | 6 | +0.05 0 | | | | |
| | 4 | 4 | | 3.8 | | 4 | | 7 | | | | | |
| | 5 | 5 | | 4.8 | ±0.18 | 5 | | 8 | | | | | |
| | 6 | 6 | | 5.8 | | 6 | | 9 | | | | | |
| | 7 | 7 | | 6.8 | ±0.19 | 7 | | 10 | | | | | |
| | 8 | 8 | | 7.8 | | 8 | | 11 | | | | | |
| | 9 | 9 | | 8.8 | ±0.20 | 9 | | 12 | | | | | |
| | 10 | 10 | | 9.8 | | 10 | | 13 | | | | | |
| | 11 | 11 | 2.4±0.09 | 10.8 | ±0.21 | 11 | 0 -0.06 | 15 | +0.06 0 | | | | |
| | 12 | 12 | | 11.8 | ±0.22 | 12 | | 16 | | | | | |
| | 14 | 14 | | 13.8 | | 14 | | 18 | | | | | |
| | 15 | 15 | | 14.8 | ±0.24 | 15 | | 19 | | | | | |
| | 16 | 16 | | 15.8 | | 16 | | 20 | | | | | |
| | 18 | 18 | | 17.8 | ±0.25 | 18 | | 22 | | | | | |
| | 20 | 20 | | 19.8 | ±0.26 | 20 | | 24 | | | | | |
| | 21 | 21 | | 20.8 | ±0.27 | 21 | | 25 | | | | | |
| | 22 | 22 | | 21.8 | ±0.28 | 22 | | 26 | | | | | |
| | 24 | 24 | 3.5±0.1 | 23.7 | | 24 | 0 -0.08 | 30 | +0.08 0 | | | | |
| | 25 | 25 | | 24.7 | ±0.30 | 25 | | 31 | | | | | |
| | 26 | 26 | | 25.7 | ±0.31 | 26 | | 32 | | | | | |
| | 28 | 28 | | 27.7 | ±0.33 | 28 | | 34 | | | | | |
| | 29 | 29 | | 28.7 | ±0.34 | 29 | | 35 | | | | | |
| | 30 | 30 | | 29.7 | | 30 | | 36 | | | | | |

## ■Specifications

| Type | | MPPEM | MPPEJ |
|---|---|---|---|
| | | Chemical Resistant Grade | Special Heat Resistant Grade |
| Color | | Black | Black |
| Hardness | (Shore) | 75 | 74 |
| Tensile Strength | (kgf/cm²) | 216 | 161 |
| Elongation | (%) | 183 | 205 |
| Operable Temperature Range | (°C) | 260 | 320 |
| Compression Set | 200°Cx70h(%) | 21 | 19 |
| | 230°Cx70h(%) | 31 | 26 |

Ordering Example: Part Number MPPEM5

## ■Chemical Resistance Data (MPPEM Chemical Resistant Grade)

[Evaluation] A: ΔV = ~ 5%, B: 5 ~ 20%, C: 21 ~ 35%

| Chemical | Soaking Temperature (°C) | Soaking Time (Day) | Volume Change (ΔV%) |
|---|---|---|---|
| Sodium Hydroxide (50%) | 150 | 7 | A |
| Ammonia Water (35%) | 45 | 20 | A |
| Ammonia | 100 | 7 | A |
| N-Butylamine | 23 | 7 | A |
| Formic Acid (12%) | 100 | 7 | B |
| Chlorosulfonic Acid | 23 | 7 | A |
| Hydrochloric Acid (37%) | 24 | 28 | B |
| Nitric Acid (65%) | 40 | 30 | B |
| Sulfuric Acid (94%) | 70 | 14 | A |
| Phosphoric Acid (45%) | 60 | 7 | A |
| Hydrogen Sulfide | 70 | 7 | A |
| Hydrogen Fluoride (50%) | 80 | 7 | B |
| MIBK (Methyl Isobutyl Ketone) | 118 | 7 | A |
| Dimethylformamide | 153 | 7 | B |
| 1.2-Dichlorobenzene | 180 | 7 | B |
| Chlorobenzol | 100 | 7 | A |
| R123 (CFC) | 24 | 28 | C |
| Steam | 121 | 7 | A |
| Phenol | 220 | 7 | A |
| Ethylene Oxide | 23 | 7 | A |

*Data above are not guaranteed values but experimental value.
For actual use, confirm the applicability under specific conditions.