

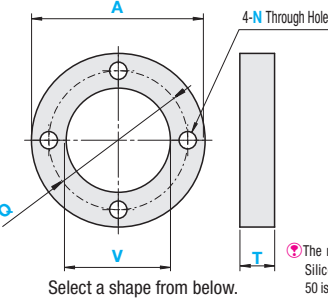
# Rubber, Sponge Gaskets

Popular gasket shapes in 9 materials are provided.



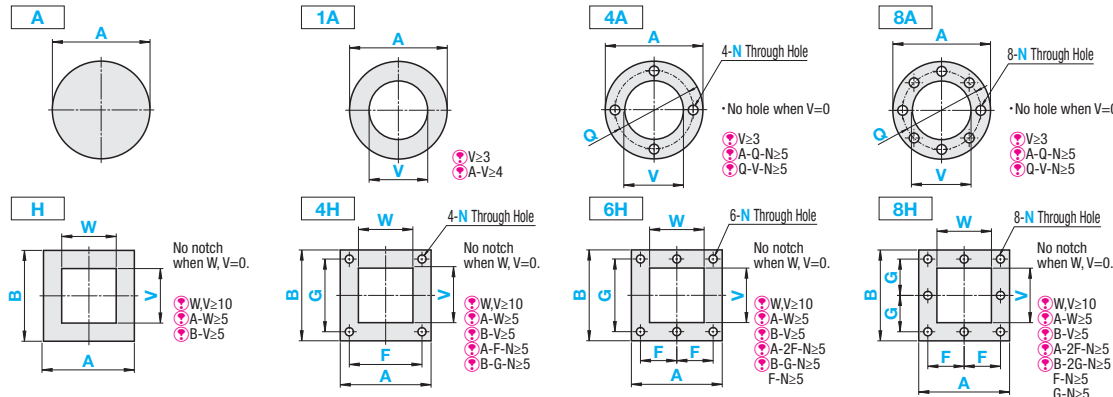
| Type  | Material                  | Hardness  | Color       |
|-------|---------------------------|-----------|-------------|
| FRN   | Nitrile Rubber (NBR)      | Shore A70 | Black       |
| FRC   | Chloroprene Rubber (CR)   | Shore A65 | Black       |
| FRCAN | Amber Color Rubber        | Shore A45 | Amber Color |
| FRSM  | Silicon Rubber            | Shore A70 | Light Gray  |
| FRAM  | Silicon Rubber            | Shore A50 | Milky White |
| FRFF  | Fluororubber (FPM)        | Shore A80 | Black       |
| FSNC  | Chloroprene Rubber Sponge | Asker C25 | Black       |
| FSNF  | Fluororubber Sponge       | Asker C35 | Black       |
| FSNA  | Silicon Rubber Sponge     | Asker C35 | Orange      |
| FREP  | Ethylene Rubber (EPDM)    | Shore A65 | Black       |

☞ Sponge Hardness: ASKER-C

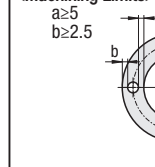


☞ The milky white color of Silicon Rubber Shore A 50 is translucent.

## Shape Selection



### <Machining Limits>



### Accuracy Standards

| Material                          | T Dimension Tolerance | 1~3           | 5       | 10      | 15~30        | Sponge T Dimension Tolerance | 3, 5          | 10                  |
|-----------------------------------|-----------------------|---------------|---------|---------|--------------|------------------------------|---------------|---------------------|
| Rubber                            |                       | ±0.3          | ±0.4    | ±0.6    | +2.0<br>-0.5 |                              | ±0.3          | ±1.5                |
| Dimension Tolerance of A, B and V |                       | 200mm or Less | 201~300 | 301~500 |              | A, B Dimension Tolerance     | 190mm or Less | 191~390 391 or More |
|                                   |                       | ±0.5          | ±1.0    | ±1.5    |              |                              | ±1.5          | ±2 ±3               |

☞ A, B dimension tolerance has been changed. Please refer to the accuracy standards.

| Part Number | Type                        | Shape Selection | T Selection |        | 1mm Increment (A≥B≥T)          |                                |   |   |   | 0.5mm Increment |   |      |
|-------------|-----------------------------|-----------------|-------------|--------|--------------------------------|--------------------------------|---|---|---|-----------------|---|------|
|             |                             |                 | Rubber      | Sponge | A                              | B                              | W   | V | F |                 | G | Q    |
| FRN         | (Nitrile Rubber)            | A               | 1           |        |                                |                                |   |   |   |                 |   |      |
| FRC         | (Chloroprene Rubber)        | 1A              | 2           |        |                                |                                |   |   |   |                 |   |      |
| FRFF        | (Fluororubber)              | 4A              | 3           | 3      |                                |                                |   |   |   |                 |   |      |
| FRSM        | (Silicon A70)               | 8A              | 5           |        |                                |                                |   |   |   |                 |   |      |
| FRAM        | (Silicon A50)               |                 |             | 5      |                                |                                |   |   |   |                 |   |      |
| FRCAN       | (Amber Color Rubber)        | H               | 10          |        | 25-500<br>(When T=30,<br>A≥30) | 25-500<br>(When T=30,<br>B≥30) | 0.5mm Increment<br><Refer to Machining Limits and<br>Condition Formula> |   |   |                 |   | 3~30 |
| FSNC        | (Chloroprene Rubber Sponge) | 4H              | 15          |        |                                |                                |   |   |   |                 |   |      |
| FSNF        | (Fluororubber Sponge)       | 6H              | 20          | 10     |                                |                                |   |   |   |                 |   |      |
| FSNA        | (Silicon Rubber Sponge)     | 8H              | 30          |        |                                |                                |   |   |   |                 |   |      |
| FREP        | (Ethylene Rubber EPDM A65)  |                 |             | 30     |                                |                                |   |   |   |                 |   |      |

☞ For FRFF (Fluororubber) with T dimension 15 ~ 30, maximum value for A and B is 300.

Ordering Example

| Part Number  | Type | Shape | T | A    | B    | W    | V    | F    | G    | Q | N   |
|--|------|-------|---|------|------|------|------|------|------|---|-----|
| FRN 4H 3 - A300 - B200 - W200 - V100 - F250 - G150 - N11 | FRN  | 4H    | 3 | A300 | B200 | W200 | V100 | F250 | G150 |   | N11 |

| Alterations | Part Number  |   |   |
|-------------|--|---|---|
|             | Type   | Shape   | T   |
|             | FRN  | 4H  | 30  |
|             | A300 - B200 - W200 - V100 - F250 - G150  |   |   |
|             | N11 - ZC-Z18-J20   |   |   |
| Alterations | 1-Flat   | 2-Flat  | Counterbored Hole   |
|             |  |   |   |
| Code        | SC   | WSC   | ZC  |
| Spec.       | Adds one flat. Applicable to Shape A and Shape 1A. [Ordering Code] SC100 SC=1mm Increment Shape A: A/2≤SC<A-2 Shape 1A: A/2+V/2+2.5<SC<A-2 | Adds two flats. Applicable to Shape A and Shape 1A. [Ordering Code] WSC100 WSC=1mm Increment Shape A: A/2≤WSC<A-4 Shape 1A: V+5<WSC<A-4 | Changes N (Through Hole) to Counterbored Hole. [Ordering Code] ZC-Z17.5-J15 Z, J=0.5mm Increment Z-N≥4 T-J≥2 ☞ Not available for Sponge Type. |

### <Price Calculation Method>

For the prices of rubber and sponge gaskets, add the shape machining charge below to the price in the list.

### Shape Machining Charge

| Shape Code | Price | Shape Code | Price |
|------------|-------|------------|-------|
| A          |       | H          |       |
| 1A         |       | 4H         |       |
| 4A         |       | 6H         |       |
| 8A         |       | 8H         |       |

### Nitrile Rubber, Chloroprene Rubber, Silicon Rubber

| Part Number | Type            | T                  | A                  | Unit Price |         |         |         |         |         |  |
|-------------|-----------------|--------------------|--------------------|------------|---------|---------|---------|---------|---------|--|
|             |                 |                    |                    | B          | 25-100  | 101-200 | 201-300 | 301-400 | 401-500 |  |
| FRN         | Nitrile Rubber  | 1                  | 25-100             |            |         |         |         |         |         |  |
|             |                 |                    | 101-200            |            |         |         |         |         |         |  |
|             |                 |                    | 201-300            |            |         |         |         |         |         |  |
|             |                 |                    | 301-400            |            |         |         |         |         |         |  |
|             |                 |                    | 401-500            |            |         |         |         |         |         |  |
|             | FRC             | Chloroprene Rubber | 3                  | 25-100     |         |         |         |         |         |  |
|             |                 |                    |                    | 101-200    |         |         |         |         |         |  |
|             |                 |                    |                    | 201-300    |         |         |         |         |         |  |
|             |                 |                    |                    | 301-400    |         |         |         |         |         |  |
|             |                 |                    |                    | 401-500    |         |         |         |         |         |  |
|             |                 | FRCAN              | Amber Color Rubber | 10         | 25-100  |         |         |         |         |  |
|             |                 |                    |                    |            | 101-200 |         |         |         |         |  |
|             |                 |                    |                    |            | 201-300 |         |         |         |         |  |
|             |                 |                    |                    |            | 301-400 |         |         |         |         |  |
|             |                 |                    |                    |            | 401-500 |         |         |         |         |  |
| FREP        | Ethylene Rubber | 20                 | 25-100             |            |         |         |         |         |         |  |
|             |                 |                    | 101-200            |            |         |         |         |         |         |  |
|             |                 |                    | 201-300            |            |         |         |         |         |         |  |
|             |                 |                    | 301-400            |            |         |         |         |         |         |  |
|             |                 |                    | 401-500            |            |         |         |         |         |         |  |
|             | FRAM            | Silicon Rubber     | 5                  | 25-100     |         |         |         |         |         |  |
|             |                 |                    |                    | 101-200    |         |         |         |         |         |  |
|             |                 |                    |                    | 201-300    |         |         |         |         |         |  |
|             |                 |                    |                    | 301-400    |         |         |         |         |         |  |
|             |                 |                    |                    | 401-500    |         |         |         |         |         |  |
|             |                 | FRSM               | Silicon Rubber     | 10         | 25-100  |         |         |         |         |  |
|             |                 |                    |                    |            | 101-200 |         |         |         |         |  |
|             |                 |                    |                    |            | 201-300 |         |         |         |         |  |
|             |                 |                    |                    |            | 301-400 |         |         |         |         |  |
|             |                 |                    |                    |            | 401-500 |         |         |         |         |  |

### Examples of Price Calculation

(1): For Round Shape (considering A=B)

Nitrile Rubber  
FRN1A3-A300-V200 (Find the price for T3, A300, B300.)  
Body Price  
Shape Machining Charge  
Total

(2): For Square Shape

Ethylene Rubber  
FREP4H3-A300-B200-W200-V100-F250-G150-N11  
(Find the price for T3, A300, B200.)  
Body Price  
Shape Machining Charge  
Total

### Fluororubber

| Part Number | Type         | T                         | A                   | Unit Price |         |         |         |         |         |  |
|-------------|--------------|---------------------------|---------------------|------------|---------|---------|---------|---------|---------|--|
|             |              |                           |                     | B          | 25-100  | 101-200 | 201-300 | 301-400 | 401-500 |  |
| FRFF        | Fluororubber | 5                         | 25-100              |            |         |         |         |         |         |  |
|             |              |                           | 101-200             |            |         |         |         |         |         |  |
|             |              |                           | 201-300             |            |         |         |         |         |         |  |
|             |              |                           | 301-400             |            |         |         |         |         |         |  |
|             |              |                           | 401-500             |            |         |         |         |         |         |  |
|             | FSNC         | Chloroprene Rubber Sponge | 3                   | 25-100     |         |         |         |         |         |  |
|             |              |                           |                     | 101-200    |         |         |         |         |         |  |
|             |              |                           |                     | 201-300    |         |         |         |         |         |  |
|             |              |                           |                     | 301-400    |         |         |         |         |         |  |
|             |              |                           |                     | 401-500    |         |         |         |         |         |  |
|             |              | FSNF                      | Fluororubber Sponge | 5          | 25-100  |         |         |         |         |  |
|             |              |                           |                     |            | 101-200 |         |         |         |         |  |
|             |              |                           |                     |            | 201-300 |         |         |         |         |  |
|             |              |                           |                     |            | 301-400 |         |         |         |         |  |
|             |              |                           |                     |            | 401-500 |         |         |         |         |  |

### Chloroprene Rubber Sponge, Fluororubber Sponge, Silicon Rubber Sponge

| Part Number | Type                      | T                   | A                     | Unit Price |         |         |         |         |         |  |
|-------------|---------------------------|---------------------|-----------------------|------------|---------|---------|---------|---------|---------|--|
|             |                           |                     |                       | B          | 25-100  | 101-200 | 201-300 | 301-400 | 401-500 |  |
| FSNA        | Chloroprene Rubber Sponge | 5                   | 25-100                |            |         |         |         |         |         |  |
|             |                           |                     | 101-200               |            |         |         |         |         |         |  |
|             |                           |                     | 201-300               |            |         |         |         |         |         |  |
|             |                           |                     | 301-400               |            |         |         |         |         |         |  |
|             |                           |                     | 401-500               |            |         |         |         |         |         |  |
|             | FSNA                      | Fluororubber Sponge | 5                     | 25-100     |         |         |         |         |         |  |
|             |                           |                     |                       | 101-200    |         |         |         |         |         |  |
|             |                           |                     |                       | 201-300    |         |         |         |         |         |  |
|             |                           |                     |                       | 301-400    |         |         |         |         |         |  |
|             |                           |                     |                       | 401-500    |         |         |         |         |         |  |
|             |                           | FSNA                | Silicon Rubber Sponge | 5          | 25-100  |         |         |         |         |  |
|             |                           |                     |                       |            | 101-200 |         |         |         |         |  |
|             |                           |                     |                       |            | 201-300 |         |         |         |         |  |
|             |                           |                     |                       |            | 301-400 |         |         |         |         |  |
|             |                           |                     |                       |            | 401-500 |         |         |         |         |  |