

# MAGNETIC FLUID

- for **Gas & Dust sealing SPECIFICATION**



## ● For Corrosive gas(Reactive gas) sealing (Base oil : perfluore polyether[PFPE])

| Item    | Saturation Magnetization | Viscosity       | Vapor Pressure      | Torr                    | Torr* L/s Helium gas leak | Max. working temperature | Pour point |
|---------|--------------------------|-----------------|---------------------|-------------------------|---------------------------|--------------------------|------------|
| Model   | Gauss                    | mPa.sec at 27°C | Pa. at 20°C         | mmHg                    | less than 1E-11           | °C                       | °C         |
| MFF-R68 | 600                      | 8,500           | 1X10 <sup>-14</sup> | 1 X 10 <sup>-16</sup>   | Ok                        | 120                      | -30        |
| MFF-R55 | 500                      | 5,000           | 1X10 <sup>-12</sup> | 7.5 X 10 <sup>-15</sup> | Ok                        | 120                      | -30        |
| MFF-R43 | 450                      | 2,800           | 1X10 <sup>-12</sup> | 7.5 X 10 <sup>-15</sup> | Ok                        | 120                      | -30        |
| MFF-R42 | 400                      | 2,000           | 1X10 <sup>-12</sup> | 7.5 X 10 <sup>-15</sup> | Ok                        | 120                      | -30        |
| MFF-KC5 | 500                      | <25,000         | 1X10 <sup>-14</sup> | 1 X 10 <sup>-16</sup>   | Ok                        | 190                      | -20        |
| MFF-03  | 550                      | 8,500           | 2X10 <sup>-9</sup>  | 1.5 X 10 <sup>-11</sup> | Ok                        | 200                      | -5         |
| MFF-02  | 400                      | 5,000           | 2X10 <sup>-9</sup>  | 1.5 X 10 <sup>-11</sup> | Ok                        | 200                      | -5         |

## ● For Non-Corrosive gas(Inert gas)&dust sealing

| Item    | Saturation Magnetization | Viscosity       | Vapor Pressure       | Torr                    | Torr* L/s Helium gas leak | Max. working temperature | Pour point |
|---------|--------------------------|-----------------|----------------------|-------------------------|---------------------------|--------------------------|------------|
| Model   | Gauss                    | mPa.sec at 27°C | Pa. at 20°C          | mmHg at 20°C            | less than 1E-11           | °C                       | °C         |
| MFS-630 | 600                      | 2,200           | 1 X 10 <sup>-7</sup> | 7.5 X 10 <sup>-10</sup> | Ok                        | 200                      | -40        |
| MFS-513 | 500                      | 900             | 1 X 10 <sup>-7</sup> | 7.5 X 10 <sup>-10</sup> | Ok                        | 200                      | -40        |
| MFS-407 | 400                      | 500             | 1 X 10 <sup>-7</sup> | 7.5 X 10 <sup>-10</sup> | Ok                        | 200                      | -40        |
| MFH-503 | 500                      | 210             | 1 X 10 <sup>-5</sup> | 1 X 10 <sup>-8</sup>    | Ok                        | 160                      | -30        |
| MFA-10  | 850                      | 2,900           | 4 X 10 <sup>-8</sup> | 3 X 10 <sup>-10</sup>   | Ok                        | 120                      | -10        |
| MFA-08  | 780                      | 800             | 4 X 10 <sup>-8</sup> | 3 X 10 <sup>-10</sup>   | Ok                        | 120                      | -10        |
| MFA-06  | 580                      | 400             | 4 X 10 <sup>-8</sup> | 3 X 10 <sup>-10</sup>   | Ok                        | 120                      | -10        |
| MFA-04  | 470                      | 240             | 4 X 10 <sup>-8</sup> | 3 X 10 <sup>-10</sup>   | Ok                        | 120                      | -10        |
| MFA-02  | 400                      | 160             | 4 X 10 <sup>-8</sup> | 3 X 10 <sup>-10</sup>   | Ok                        | 120                      | -10        |

## ■ Grease type (Not Liquid) For Non-Corrosive gas&dust sealing + lubrication

|        |     |  |                     |                         |    |     |     |
|--------|-----|--|---------------------|-------------------------|----|-----|-----|
| MFG-50 | 500 |  | 1X10 <sup>-10</sup> | 7.5 X 10 <sup>-13</sup> | Ok | 100 | -90 |
|--------|-----|--|---------------------|-------------------------|----|-----|-----|

\*Temperature is change depends on working temperature, vapor pressure, RPM, shaft diameter.

\*Vapor pressure and Torr are the value of Pure base oil used.

\*There are other standards we have except above, and we can customizing.

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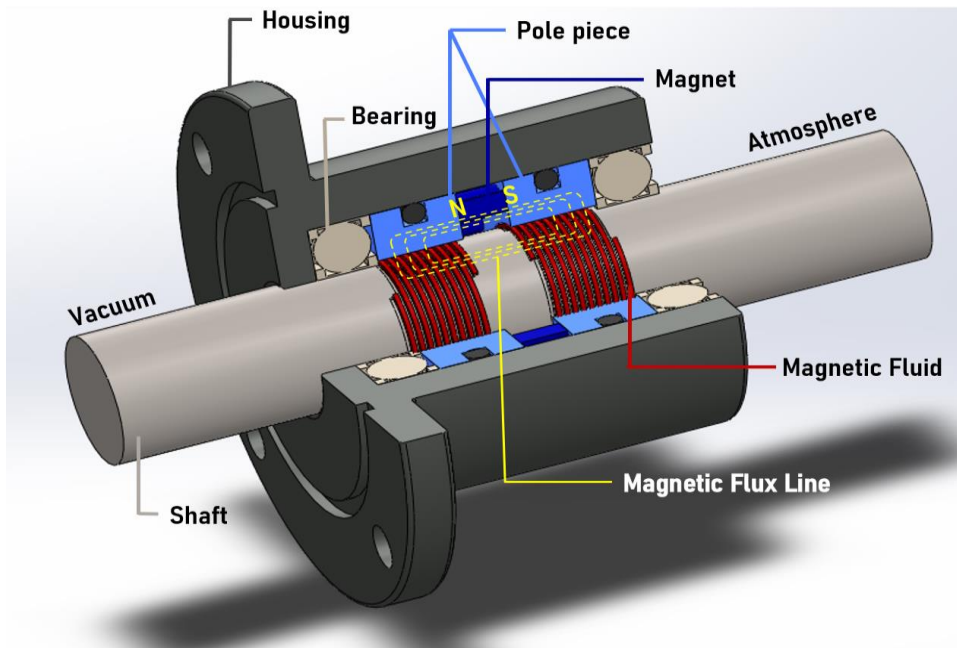
## Ferrofluid seal

Ferro-fluid seal : It is the no friction Sealing material that magnetic fluid injected into the gap between the magnet and the rotating shaft forms a type of "Liquid O-Ring" by magnetic field formed by the magnet and the pole piece. No friction, enhances facility durability and prevents harmful gas and dust from being subjected to ultra high vacuum conditions.

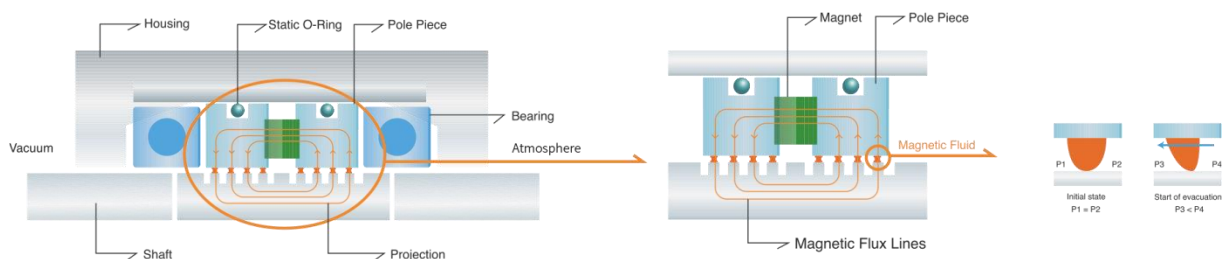
Used for Ion Implant Systems , CVD, Organic EL, Sputter, Ion implanters, X-ray generators, Wafer transfer robot, LCD conveying agitator, Plasma Etching Systems, Optical accelerator, HID Lamp, Automobile HID Lamp Manufacturing Process, CD RW and so on.

Main customers : Rigaku , Samsung, LG, SKhynix , etc.

## Feedthrough Parts diagram



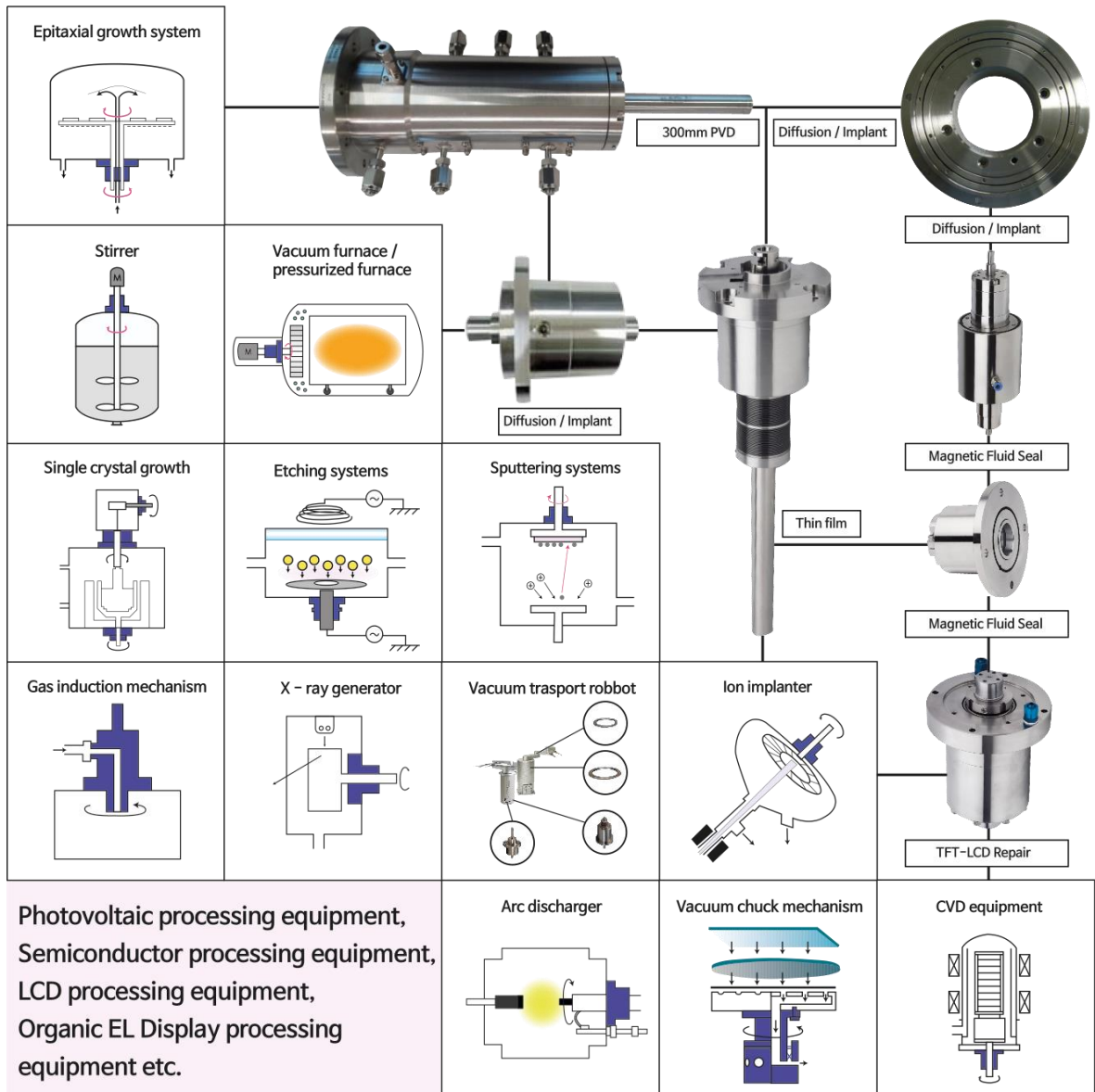
## Feedthrough Exploded view and how it works



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## ● Feedthrough and equipment where ferrofluids are used



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(For reference, the website of our cluster : <http://www.gtp.or.kr/>)

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