



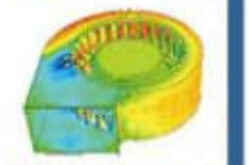




# Sunon DR (Dust Resistant)
# MagLev Motor Fan



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# Worldwide recognitions of Sunon MagLev Motor Fan

**The global sales quantity has surpassed 600M pieces since Sunon first introduced the MagLev Motor Fan in 1999. The patented Sunon MagLev Motor technology has won worldwide recognitions:**



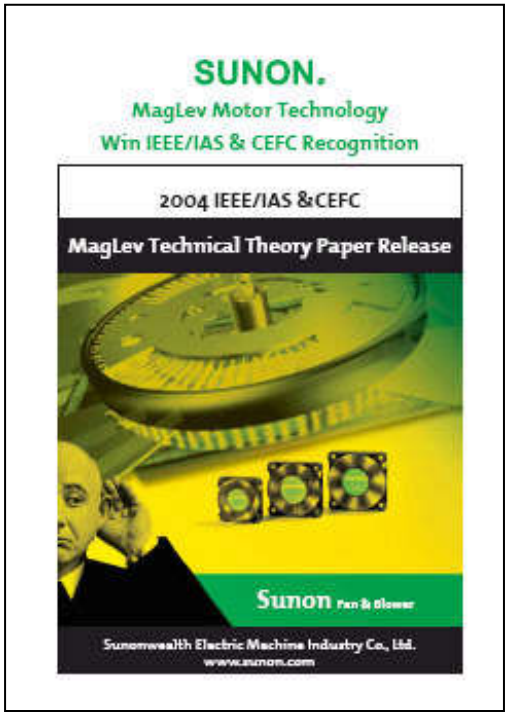
**2002**
**National Quality Award**



**2003**
**Magnetic Industrial Technology Contribution Award**

台灣精品標誌
SYMBOL OF EXCELLENCE

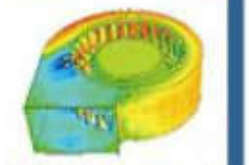
**2001~2004**
**Taiwan Excellence Award**




**2004**
**IEEE/IAS & CEFC Recognition**



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# Advantages of DR MagLev

## DR MagLev = Dust Resistant MagLev



- **Sunon DR MagLev Motor Fan uses the MagLev technology with new design features to increase dust-resistance and prevent oil leakage.**
- **After 8 years of development and testing, Sunon's DR MagLev Motor Fan is being introduced in 2009 with four advantages:**

  **- Better oil leak prevention**

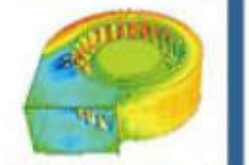
  **- Better dust-resistance**

  **- Higher reliability**

  **- Longer life expectancy**



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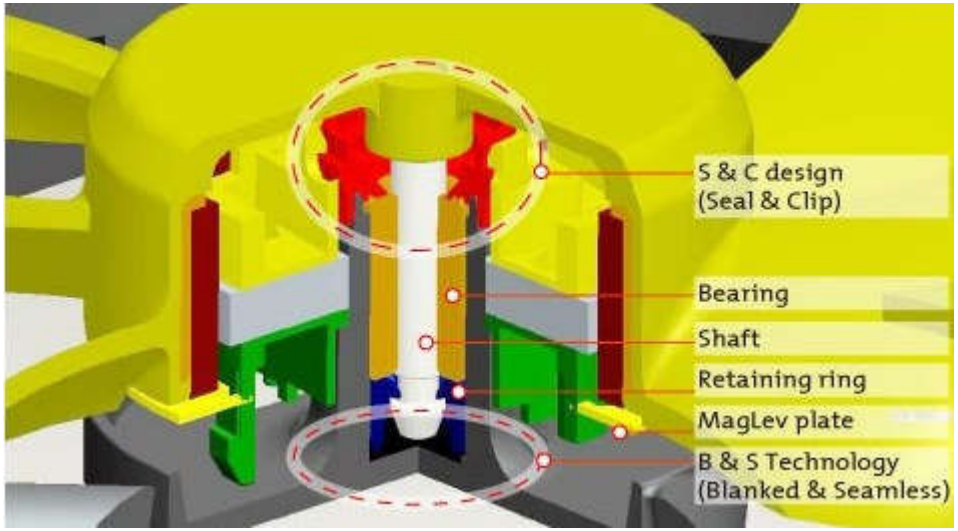
# The Innovative Design Concepts of DR MagLev

◎ Two innovative design concepts of DR MagLev development:

1. The B&S (Blanked & Seamless) Technology
2. The S&C (Seal & Clip) Design

◎ Three excellent efficiencies to extend fan life:

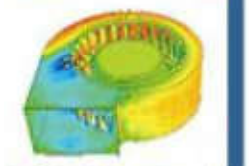
1. To avoid dust invasion and extend motor life
2. To prevent oil leakage
3. To prevent the motor components from falling off.




**Note: DR MagLev Motor can be used with different motors types (radial, axial) and sizes, so the final design may vary from the above, according to the different motor structures.**



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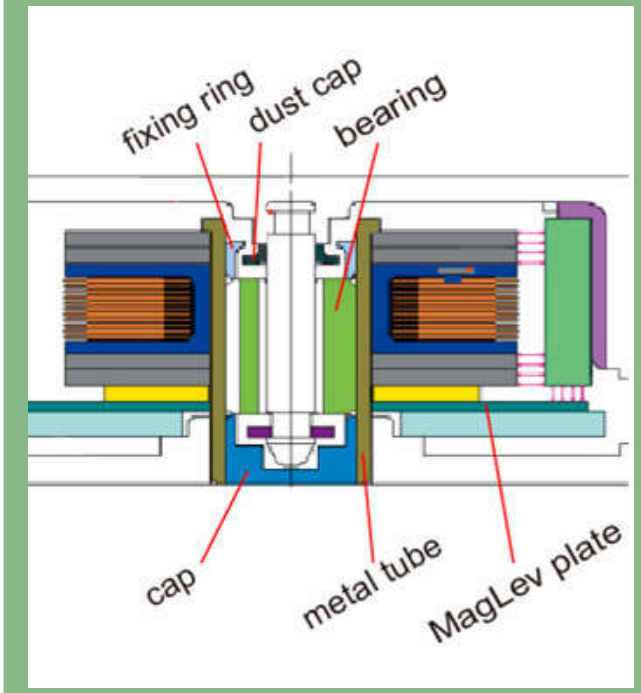





# Characteristic 1： S&C (Seal & Clip) Design

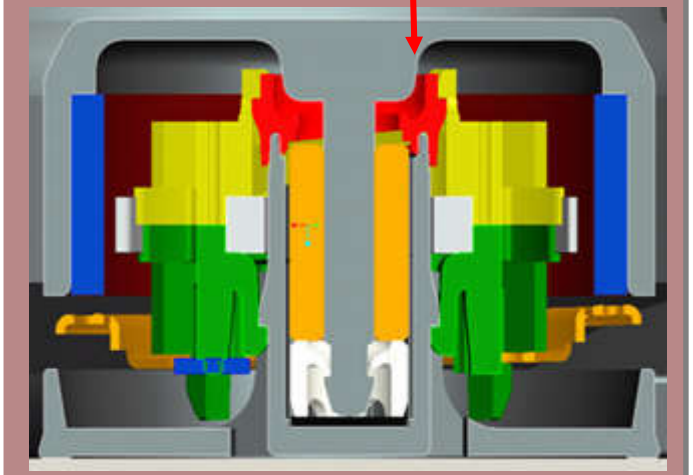
**The innovative S&C (Seal & Clip) Design provides the best resistance to dust invasion.**

## MagLev



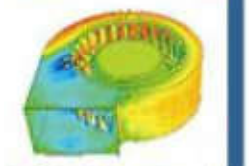

## DR MagLev

**S&C Design**





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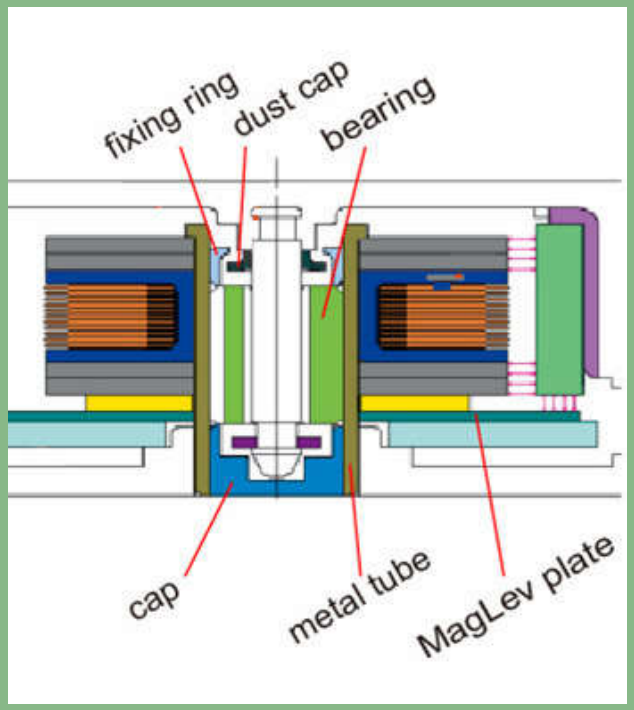





## Characteristic 2：Innovative B&S (Blanked & Seamless) Technology

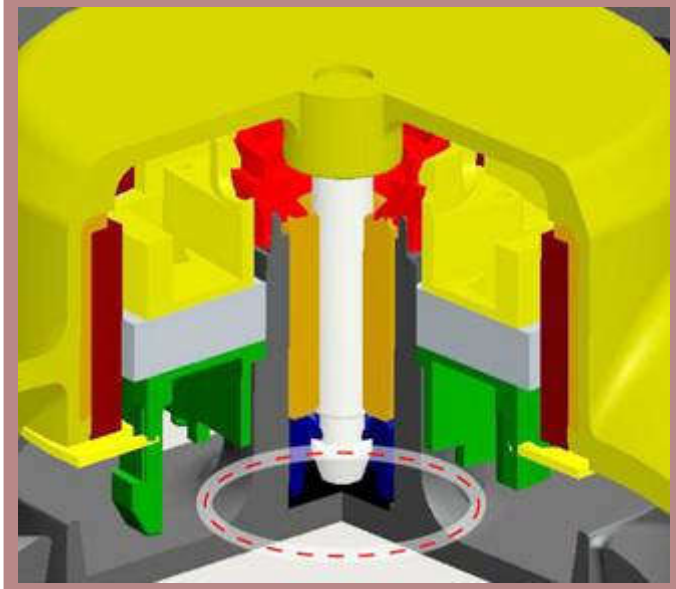
**DR MagLev's one-piece structure with the B&S (Blanked & Seamless) Technology and S&C (Seal & Clip) Design provides the best prevention of oil leakage.**

### MagLev




Cap & metal tube combination

### DR MagLev

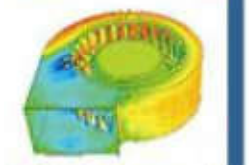


B&S Technology

One-piece Structure



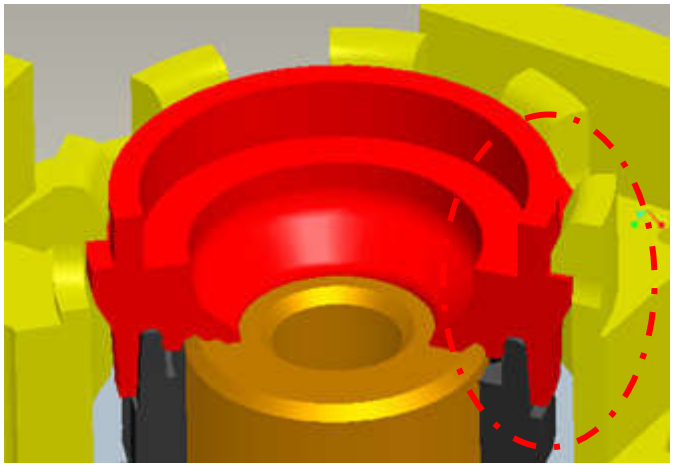
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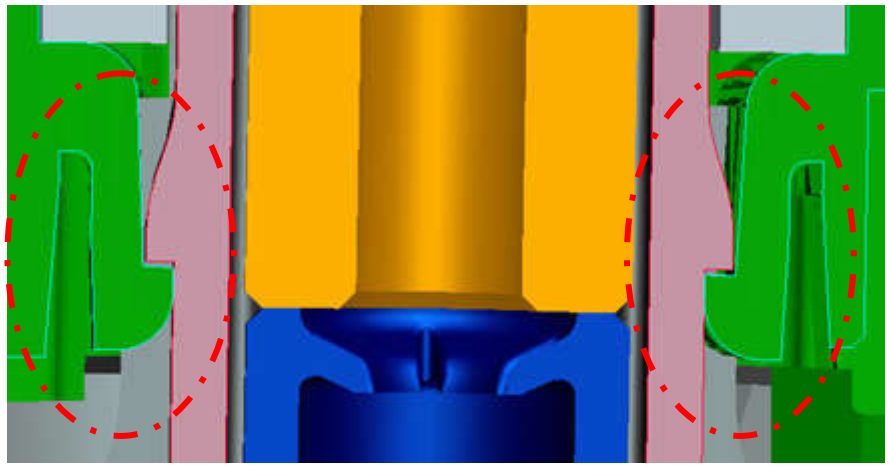





# Characteristic 3：High Reliability Design

**The S&C (Seal & Clip) Design can prevent the stator and impeller from falling off and help reduce noise that is caused by stator and impeller movement after a period of usage. The design greatly improves the life expectancy and the reliability.**





**The S&C (Seal & Clip) Design strengthens the locked position of both motor and stator to avoid stator and impellor from moving due to temperature changes. This allows the product to be more stable and run longer.**



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# Better Life Expectancy

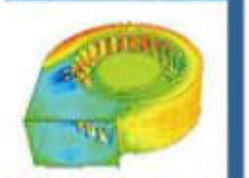
**Comparing the life expectancy of DR MagLev Motor design with other bearing systems, the life expectancy of the Precise VAPO bearing performs similar to 2 Ball bearing and therefore meets the customer's requirements for continuous fan operation.**

| Bearing type | Life expectancy |
|---|---|
| DR MagLev Precise VAPO | 70,000 hours@40℃ continuous operation |
| 2 Ball | 70,000 hours@40℃ continuous operation |
| DR MagLev VAPO | 60,000 hours@40℃ |
| Sleeve | 35,000 hours@40℃ |

Note: Life testing on all Sunon products is done on the fan only (not installed in a system), therefore L10/MTTF data is for reference only.



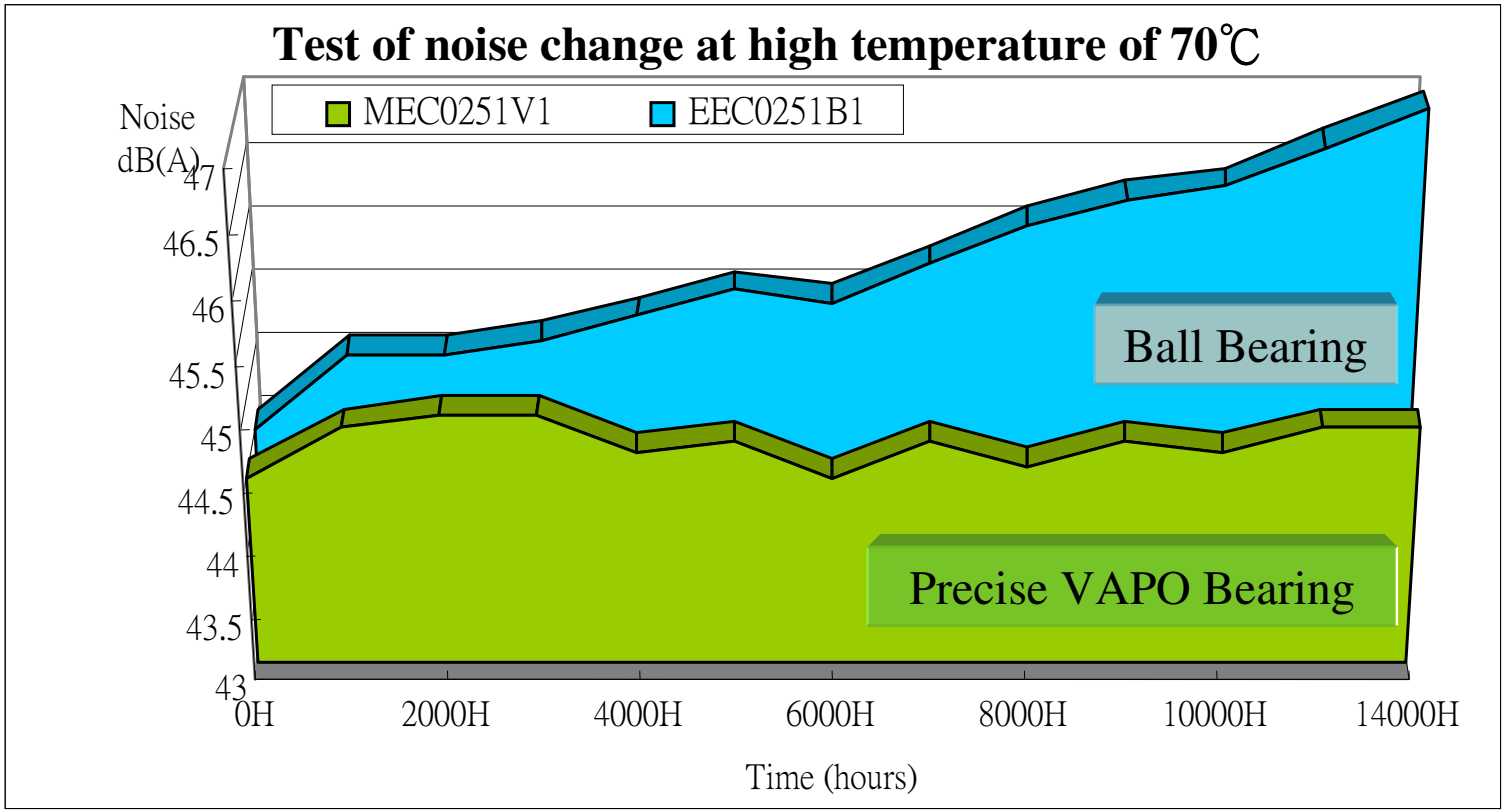
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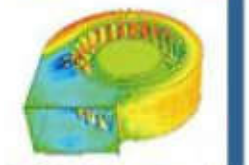
# VAPO Bearing has lower acoustic noise than Ball Bearing

**A test of continuous fan operation at a temperature of 70℃ shows that Ball bearing's noise value will increase gradually over time while the noise value from the Precise VAPO bearing remains stable.**






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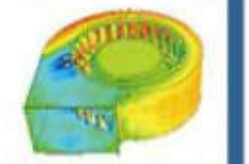


# MagLev vs DR MagLev

| Benefits | MagLev | DR MagLev |
|---|---|---|
| Dust Resistance | Good | ✓ Excellent |
| Shock Resistance | Good | ✓ Excellent |
| Noise | Silent | ✓ Super Silent |
| Oil Leak Prevention | Good | ✓ Excellent |
| Vibration | Low | ✓ Lower |



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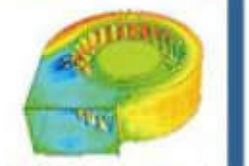
# Product Transformation

**To achieve improved performance and provide the best product, Sunon introduces the DR MagLev Motor Fan with the B&S (Blanked & Seamless) Technology and S&C (Seal & Clip) Design to replace KDE, KD, PMD/PMB, & GM series.**

| | |
|---|---|
| GM | MC, MF |
| KDE | ME, MB |
| KD | EE, EB |
| PMD/PSD | PE, PF |



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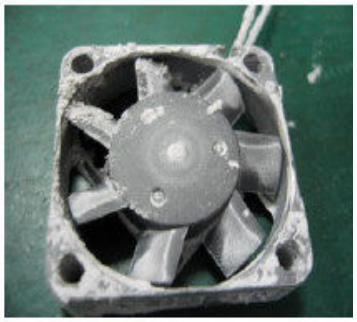



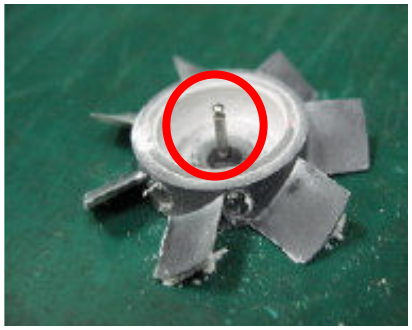


# Dust Test: No Dust Invasion into Bearing

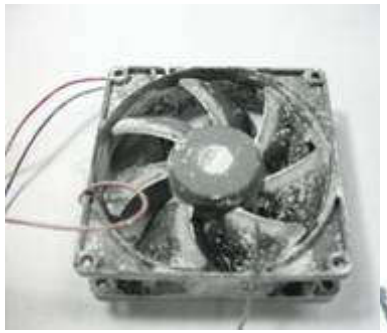
**According to IEC60529 (IP5X) standard, there's no dust invasion in bearing after 8 hours of dust test.**

**Model: ME40101VX-0000-A99**





**Model: ME92251V1-0000-A99**

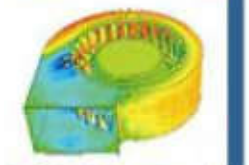






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# DR MagLev Design Passed Mechanical Shock & Drop Test



**DR MagLev design performs to the highest reliability level as it passed Mechanical Shock and Drop Test.**



Model: KDE1209PTV2.MS.E5 (ME9225V2)
Purpose: Mechanical Shock Test.
Condition:Input Voltage:12.0VDC,Pulse shape:halve-sine wave,Velocity:60 in/sec(op) & 80 in/sec(non-op)
Start : 2008/1/17 Up to Date: 2008/1/24 Total Times: 168 Hrs

| delta NO | Current (AMP) | | | Speed (RPM) | | | start voltage | | | Noise(1M) | | | Noisy by ear | Judge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Amp over 15% of original | | | RPM under 15% of original | | | Over spec | | | Noise over 5dB(A) of original | | | | |
| | Before | After | Var. | Before | After | Var. | Before | After | Var. | Before | After | Var. | | |
| 1 | 0.136 | 0.140 | 2.9% | 2769 | 2726 | 1.6% | 2.8 | 2.7 | 0.1 | 31.2 | 31.8 | 0.6 | OK | OK |
| 2 | 0.139 | 0.145 | 4.3% | 2743 | 2648 | 3.5% | 2.7 | 2.7 | 0.0 | 32.0 | 32.1 | 0.1 | OK | OK |
| 3 | 0.138 | 0.138 | 0.0% | 2784 | 2718 | 2.4% | 2.7 | 2.8 | 0.1 | 32.8 | 32.9 | 0.1 | OK | OK |
| 4 | 0.138 | 0.140 | 1.4% | 2746 | 2723 | 0.8% | 2.7 | 2.8 | 0.1 | 33.7 | 32.4 | 1.3 | OK | OK |
| 5 | 0.138 | 0.139 | 0.7% | 2754 | 2762 | 0.3% | 2.8 | 2.7 | 0.1 | 32.4 | 32.6 | 0.2 | OK | OK |
| AVG | 0.138 | 0.140 | 1.9% | 2759 | 2715 | 1.7% | 2.7 | 2.7 | 0.1 | 32.4 | 32.4 | 0.5 | | |
| MIN | 0.136 | 0.138 | 0.0% | 2743 | 2648 | 0.3% | 2.7 | 2.7 | 0.0 | 31.2 | 31.8 | 0.1 | | |
| MAX | 0.139 | 0.145 | 4.3% | 2784 | 2762 | 3.5% | 2.8 | 2.8 | 0.1 | 33.7 | 32.9 | 1.3 | | |

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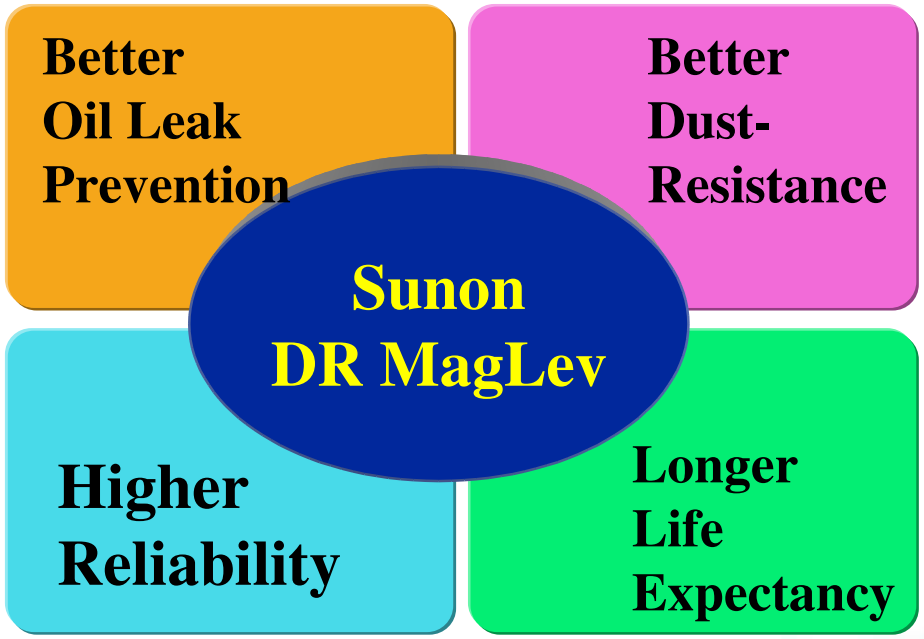
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# Your Best Choice - DR MagLev

**The SUNON brand has become a symbol of innovation & high-tech since it introduced the MagLev technology in 1999.**

**Due to Sunon's pursuit of the best design and highest quality, Sunon's R&D group persist in developing the DR MagLev. With 52 worldwide patents, Sunon successfully creates the birth of DR MagLev.**






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For more information

please contact your local Sunon sales office

or visit sunon website:

www.sunon.com

E-mail:sunon@email.sunon.com.tw