

PURI-TEQ Damper

ULTRA LOW LEAKAGE DAMPER (FBL-PURI-TEQ PBF-ISO)

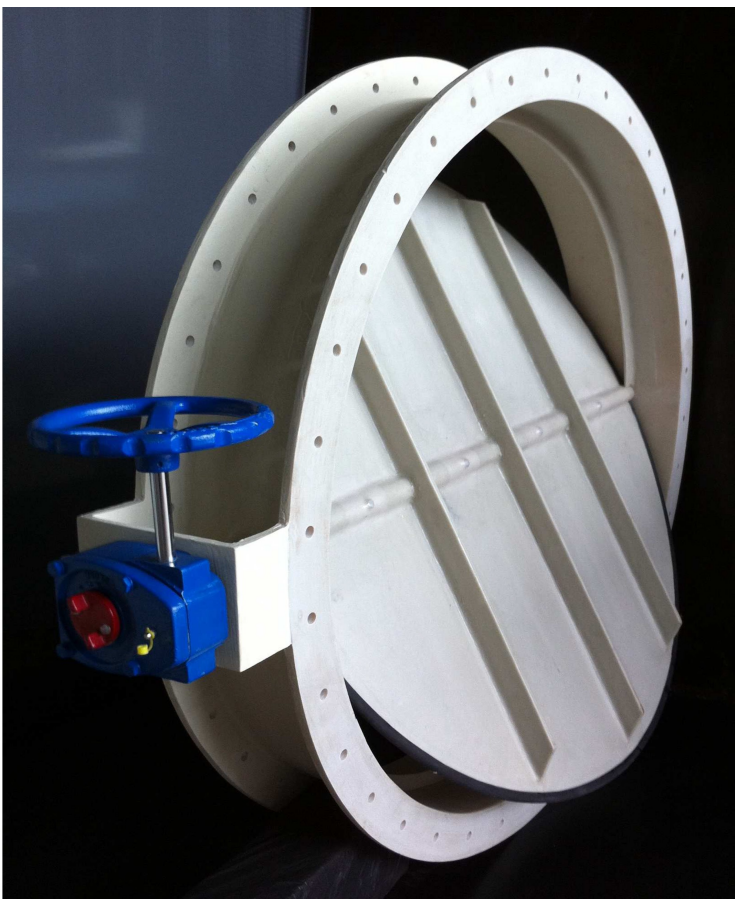
INTRODUCTION

Air extraction and ventilation systems in industries and wastewater plants have a need for an efficiently sealed and Ultra Low Leakage Dampers (FBL-PURI-TEQ PBF-ISO) and Volume Control Dampers (PBF-VC) for purpose of isolating process equipment and air balancing. Proper ductwork isolation is of highest importance to protect operators of leaking toxic gases which can be harmful to health and endanger human life.

FBL-PURI-TEQ PBF's dampers are designed and endorsed by a registered Composite Professional Engineer to ensure high product quality, operability and reliability.

Our dampers are being used in:

- Municipal Wastewater/Water Treatment Plant
- Semiconductor Plant
- Petrochemical Plant
- Pharmaceutical Plant



Typical Damper design with reinforcement stiffener, seal, blade stopper and manual actuator

FEATURES

Damper Performance:

- Design to achieve the high performance and low leakage.
- Suitable for corrosive air medium, Eg, high H₂S for odour control

Damper Strength:

- Up to pressure rating of ± 15 kpa
- Finite Element Analysis (FEA) can be provided as optional

Maintainability:

- Shaft seals can be replaced without removing damper from ductwork
- Blade and blade seal can be replaced with 1 flanged end is opened

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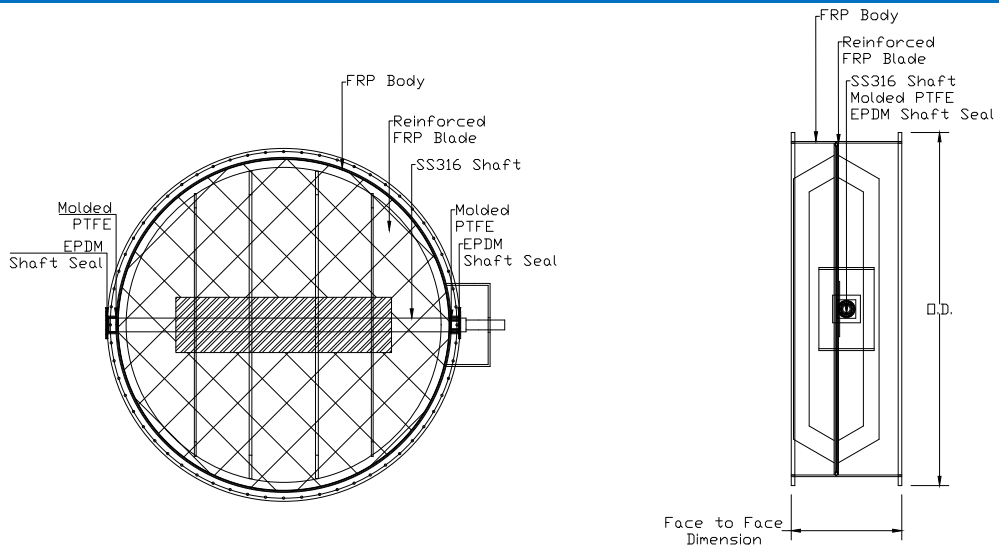
DAMPER CONSTRUCTION

| | | |
|---------------------------------|--|--|
| Construction Standard | | <ul style="list-style-type: none"> • RTP-1 • ASTM D3982-92 • ASTM D2996 |
| Material of Construction | | |
| Body and Housing | | <ul style="list-style-type: none"> • Fibre-Reinforced Plastic (FRP) |
| | Corrosion Resistant Layer / Interior liner | <ul style="list-style-type: none"> • Premium corrosion-resistant Vinyl Ester Resin |
| | Fire Retardant | <ul style="list-style-type: none"> • Added 3 - 5% Antimony Trioxide or • ASTM E84 Class 1 Rating |
| | Weather resistance | <ul style="list-style-type: none"> • Ultraviolet absorbers to exterior surfacing resin to improve weather resistance. |
| Shaft | | <ul style="list-style-type: none"> • Single rod construction SS316 with shaft seal at both ends to improve leakage performance. |
| Bushing | | <ul style="list-style-type: none"> • PTFE |
| Seal | | |
| | Shaft seal | <ul style="list-style-type: none"> • EPDM Seal |
| | Blade seal | <ul style="list-style-type: none"> • EPDM |
| Blade | | <ul style="list-style-type: none"> • Fibre-Reinforced Plastic (FRP) • Optional: Reinforcement stiffeners provided for higher pressure rating |

| | | |
|------------------|--------------------|---|
| OPERATION | | |
| Manual | Lever | <ul style="list-style-type: none"> • Stainless steel 316 locking quadrant |
| | Hand actuator | <ul style="list-style-type: none"> • Single or multi-reduction worm gear • Optional: Chain wheel for damper located at high level |
| Control | Electric Actuator | <ul style="list-style-type: none"> • Remote control by motorised actuator • Option: Smart control on-off or modulating |
| | Pneumatic Actuator | <ul style="list-style-type: none"> • Remote control by pressurised air |

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GENERAL DATASHEET & DIMENSION (METRIC)



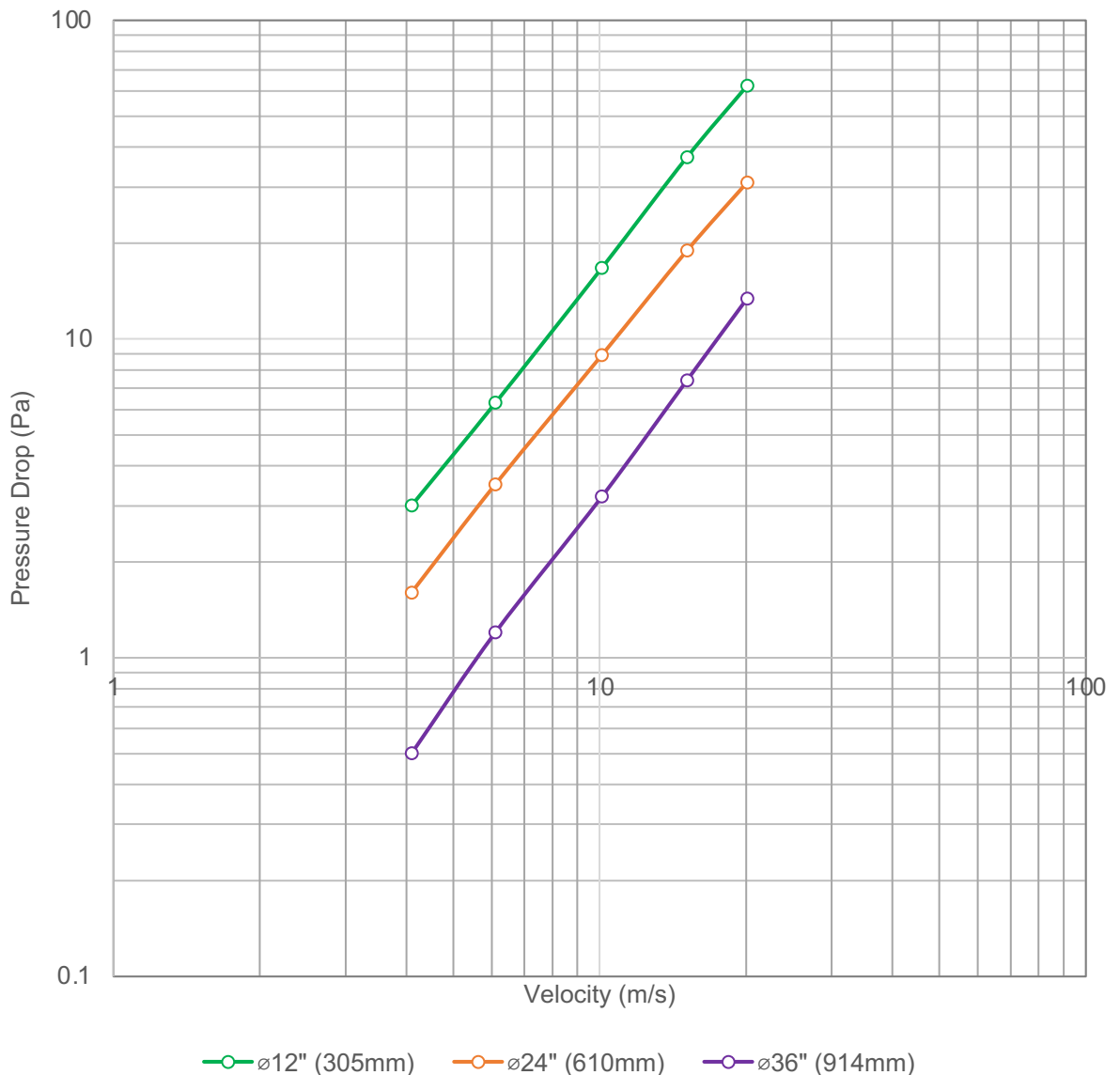
| I.D. (mm) | FACE TO FACE DIMENSION (mm) | O.D. ASTM3982 / NBS-PS15-69 (mm) | O.D. PN6 FLANGE DRILLING (mm) | O.D. PN10 FLANGE DRILLING (mm) | O.D. PN16 FLANGE DRILLING (mm) |
|--------------|-----------------------------------|---|--|---|---|
| 100 | 300 | 211 | 210 | 220 | 220 |
| 200 | 300 | 311 | 320 | 340 | 340 |
| 300 | 300 | 411 | 440 | 445 | 450 |
| 400 | 300 | 511 | 540 | 565 | 580 |
| 500 | 300 | 611 | 645 | 670 | 715 |
| 600 | 300 | 711 | 755 | 780 | 840 |
| 700 | 400 | 811 | 860 | 895 | 910 |
| 800 | 400 | 911 | 975 | 1015 | 1025 |
| 900 | 400 | 1011 | 1075 | 1115 | 1125 |
| 1000 | 400 | 1111 | 1175 | 1230 | 1255 |
| 1100 | 450 | 1211 | 1305 | 1355 | 1385 |
| 1200 | 450 | 1311 | 1405 | 1455 | 1485 |
| 1300 | 450 | 1411 | 1530 | 1576 | 1585 |
| 1400 | 450 | 1511 | 1630 | 1675 | 1685 |
| 1500 | 450 | 1611 | 1730 | 1815 | 1830 |
| 1600 | 550 | 1711 | 1830 | 1915 | 1930 |
| 1700 | 550 | 1811 | 1945 | 2015 | 2030 |
| 1800 | 550 | 1911 | 2045 | 2115 | 2130 |



Puri-Teq Pte Ltd certifies that FBL-PURI-TEQ PBF-ISO single blade damper shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program.

The AMCA Certified Ratings Seal applies to air performance and air leakage ratings only

AIR PERFORMANCE





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AIR LEAKAGE

| DAMPER | | | PRESSURE (PA) | | | | |
|--|-------------|--------|---------------|------|------|------|------|
| ø12" (304mm) | | | 250 | 1000 | 1500 | 2000 | 2500 |
| Actual Leakage | | l/s/m2 | 2.00 | 4.85 | 6.09 | 7.25 | 8.31 |
| AMCA 511-21 Table 3 Allowable Air Leakage to Achieve Classification | Class 1A | l/s/m2 | 15.2 | NA* | NA* | NA* | NA* |
| | Class 1 | l/s/m2 | 20 | 40 | 49 | 57 | 63 |
| DAMPER | | | PRESSURE (PA) | | | | |
| ø36" (914mm) | | | 250 | 1000 | 1500 | 2000 | 2500 |
| Actual Leakage | | l/s/m2 | 0.05 | 0.18 | 0.31 | 0.44 | 0.65 |
| AMCA 511-21 Table 3 Allowable Air Leakage to Achieve Classification | Class 1A | l/s/m2 | 15.2 | NA* | NA* | NA* | NA* |
| | Class 1 | l/s/m2 | 20 | 40 | 49 | 57 | 63 |

- Tested for air leakage in accordance with ANSI/AMCA Standard 500-D, Figure 5.6A.
- Air Leakage is based on operation between 0 °C - 49 °C (32 °F - 120 °F).
- Closing torque is 30Nm, 120Nm for ø12"(305mm), ø36"(914mm) respectively. Data are based on a torque of 410.6 Nm/m2 applied to close and seat the damper during the test.
- *Not Applicable according to AMCA 511-21 Table 3 Allowable Air Leakage to Achieve Classification.

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