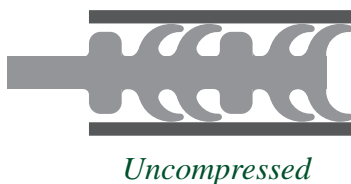
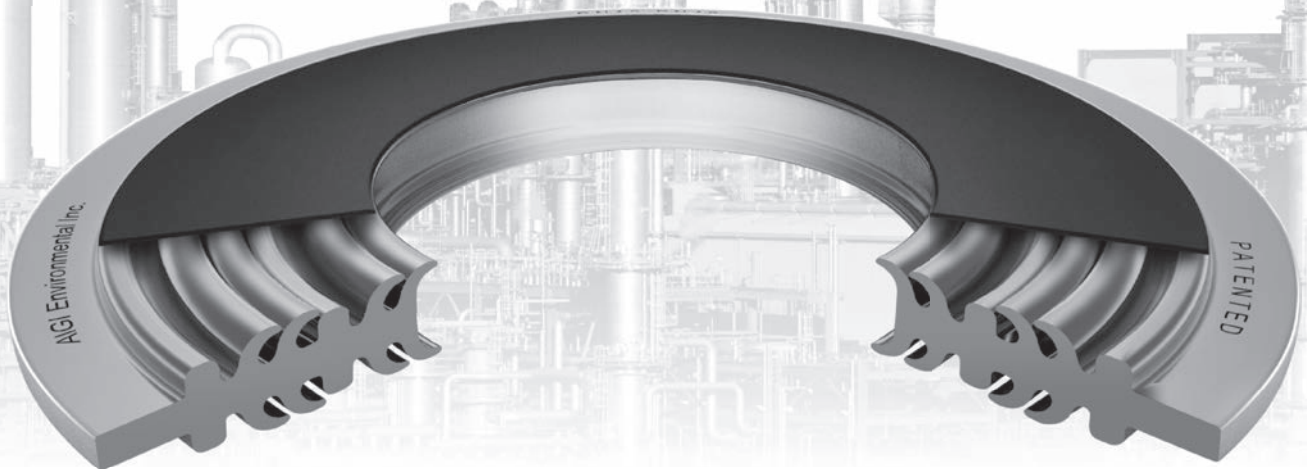
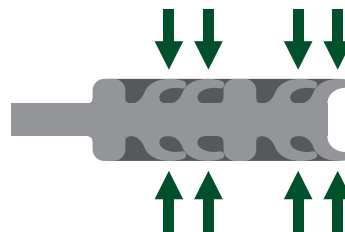


THE FUTURE OF
HIGH PERFORMANCE SEALING
HAS ARRIVED

Patented **FISHBONE[®]**



Uncompressed



Compressed

- **1,000,000** times **lower leakage** than TA-LUFT Test limit
- **25** times **lower leakage** than Chevron Fugitive Emissions Test limit
- **Pass** API 6FB Fire Test

● A brief history of Metal Gaskets

In 1912, over 100 years ago

● **Spiral Wound Gaskets** - A great invention for its time

Advantages

- ※ Combine strength from metal strips with sealing capability from a non-metallic material
- ※ Self-energized by fluid pressure

Disadvantages

- ※ The “un-wind” and crushing problem
- ※ High minimum sealing load requirement causes bolt yielding and flange rotation



In 1976, over 36 years ago

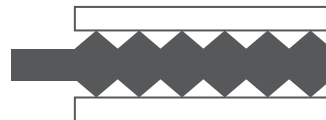
● **Camprofile Gaskets** - A good improvement in gasket strength

Advantages

- ※ Strong, will not un-wind and will not crush
- ※ Interchangeable with spiral-wound gaskets

Disadvantages

- ※ Less elastic compared to spiral wound gaskets resulting in poor recovery
- ※ Sharp teeth bite into flange surfaces causing damage and need to re-surface
- ※ Not self-energized by fluid pressure



Now

● **Fishbone® Gaskets**

- ※ Balance strength with flexibility
- ※ Interchangeable with existing gaskets standards
- ※ Will not damage flanges
- ※ Uncrushable and does not unwind
- ※ Extremely low minimum load requirements dramatically improve sealing performance



● The Fishbone® Gasket Design & Advantages

Design

- Helical concentric bevelled ribs, each side covered with Graphite, PTFE or Mica
- Unitary design with or without a centering ring
- Rounded, non-sharp contact surface
- Unique Stop-Step design

Advantages

- Internally self-energized and by fluid pressure for better sealing performance
- Interchangeable with all spiral wound gaskets and Camprofile gaskets
- Will not damage flange like Camprofile gaskets and spiral wound gaskets
- Prevents over-compression of sealing element

Change This



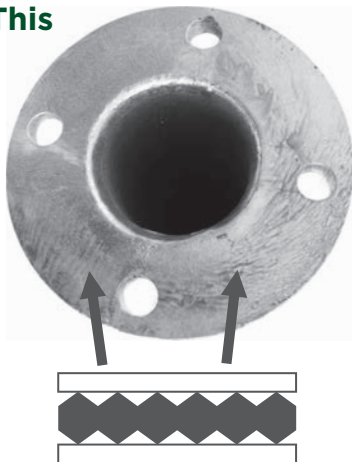
Unwound Spiral Wound Gaskets

To This



Fishbone® Gasket

Change This



Camprofile Teeth Damaging Flange Face

To This



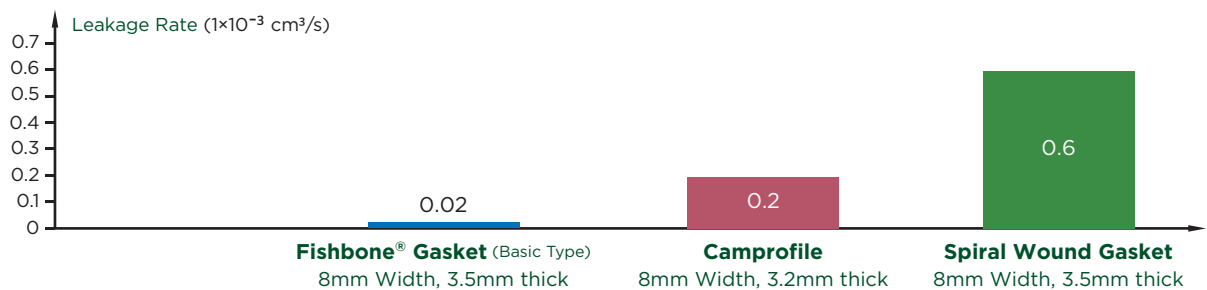
Fishbone® Gasket

● Test Results

Leakage Test - Fishbone® Gasket vs. Spiral Wound vs. Camprofile

- Test Parameters (ASTM F37) Gasket Stress 30 MPa / 4351 psi | Nitrogen Pressure 4 MPa / 580 psi
Test Report#: MF-130933 & MF-130935

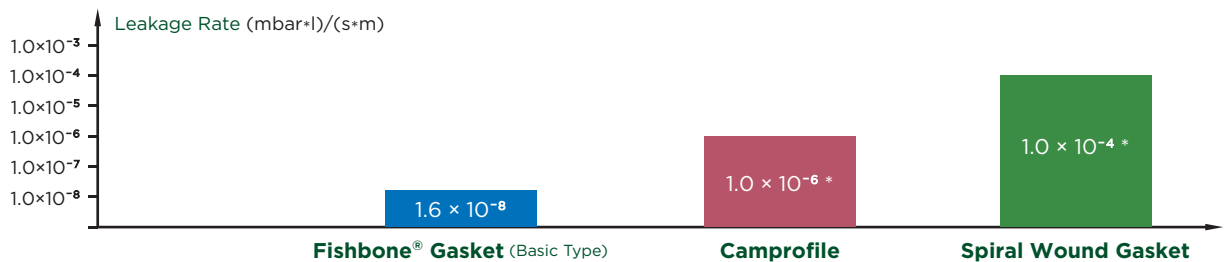
Test Item	Fishbone® Gasket (Basic Type) 8mm Width, 3.5mm thick	Camprofile 8mm Width, 3.2mm thick	Spiral Wound Gasket 8mm Width, 3.5mm thick
Leakage Rate (1×10 ⁻³ cm ³ /s)	0.02	0.2	0.6



TA-LUFT Test - Fishbone® Gasket vs. Spiral Wound vs. Camprofile

- Test Parameters - VDI Guideline 2440 & VDI Guideline 2200

Test Item	Fishbone® Gasket (Basic Type)	Camprofile	Spiral Wound Gasket
Leakage Rate (mbar·l)/(s·m)	1.6 × 10 ⁻⁸	1.0 × 10 ⁻⁶ *	1.0 × 10 ⁻⁴ *



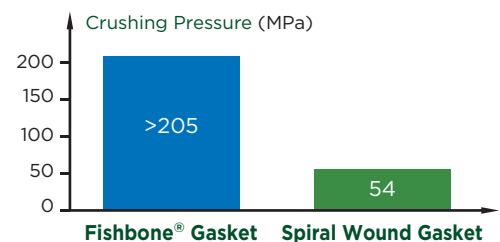
*Average values from accredited international laboratory

The Fishbone® Gasket is considered to be of High Grade Performance according to TA-Luft.

Crush Resistance Test - Fishbone® Gasket vs. Spiral Wound

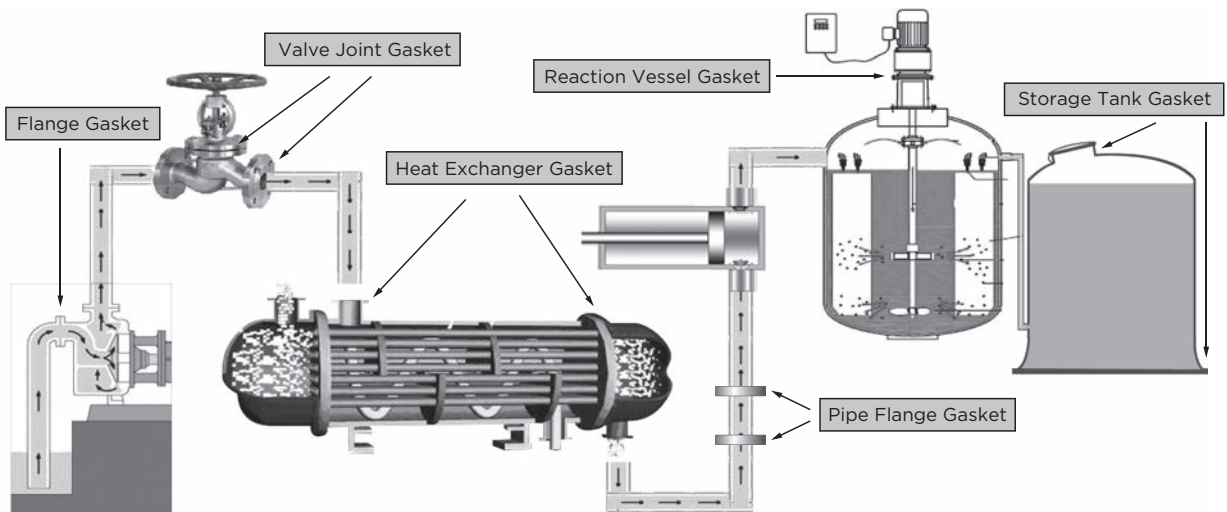
- Test Parameters Pressure 205 MPa / 29732 psi
Test Report#: MF-130936

Test Item	Fishbone® Gasket 22.5mm Width, 4.5mm thick	Spiral Wound Gasket 22.5mm Width, 4.5mm thick
Crushing Pressure (MPa)	>205	54



● Applications

- Critical Flange Applications
- Steam Sealing
- Direct Replacement of All Spiral Wound Gaskets and Camprofile Gaskets
- Low Emissions Sealing
- Fire Safe Requirements
- High Pressure Flanges
- Piping and Equipment



● Technical Specifications

Standard Materials

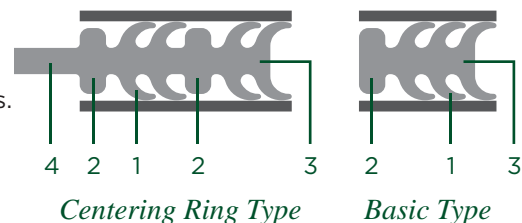
- Metal Materials
304, 304L, 316, 316L, 321
- Non-metallic Sealing Materials
Flexible Graphite, PTFE, Mica
- ※ Other Materials on request

Temperature Range

Facing Material	Minimum °C	Maximum °C	Minimum °F	Maximum °F
Flexible Graphite	-212	400	-350	750
PTFE	-240	260	-400	500
H.T.GR(High Temp. Graphite)	-250	550	-418	1022
ePTFE(Expanded PTFE)	-240	260	-400	500
Mica	-212	1000	-350	1850

Features

1. Patented helical concentric bevelled ribs.
The number of ribs grows with the increasing pressure class.
2. Unique Stop-Step design Manufactured with single or double stop-steps depends upon the sealing width.
3. Self-energized by fluid pressure
4. Unitary design with (Centering Ring Type) or without (Basic Type) a centering ring



● How to Order

● Standard Sizes

Imperial

NPS (in): 1/2" ~ 60"

CLASS (lbs): 150 ~ 2500

Metric

DN (mm): 10 ~ 2000

PN: 1.6 ~ 40

● International Standard

EN 1514

API 601

BS 4865

EN 12560

DIN 2690-2692

BS 3381

ASME B16.20

JIS B2404

BS 10

ANSI B 16.21

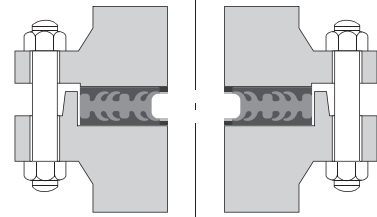
JPI-7S-41

BS 4504

※ Please consult with AIGI Environmental Inc. for all your standard and non standard gasket requirements.

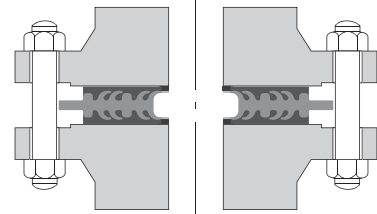
Interchangeable

Basic Type



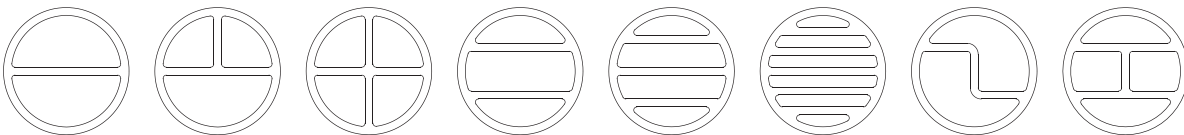
Replaces Spiral Wound Style R, Style RIR & Camprofile Basic Type

Centering Ring Type



Replaces Spiral Wound Style CG, Style CGI & Camprofile Reinforced Type

Heat Exchanger is available!



and more!



AIGI ENVIRONMENTAL INCORPORATED

— A Subsidiary of AIGI Industrial Group —

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