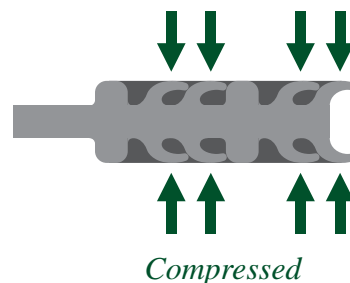
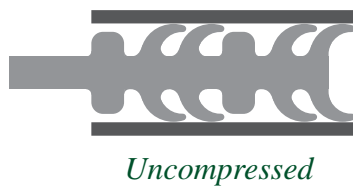


# THE FUTURE OF HIGH PERFORMANCE SEALING HAS ARRIVED

*Patented* **FISHBONE™**



- **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*

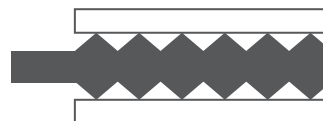
### ● **Camprofile Gaskets** - A good improvement in gasket strength

#### 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

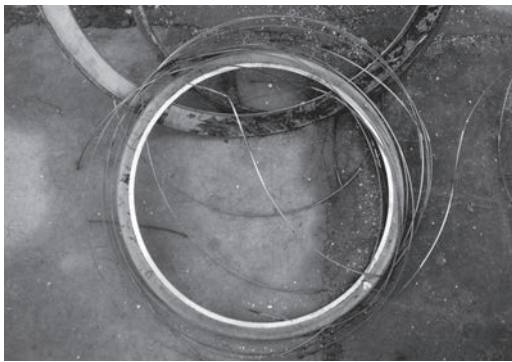
### Design

- 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



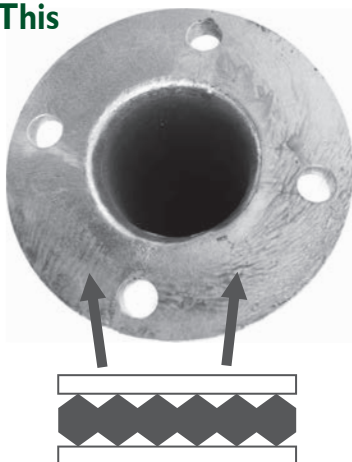
Unwound Spiral Wound Gaskets

### To This



Fishbone™ Gasket

### Change This



Camprofile Teeth Damaging Flange Face

### To This



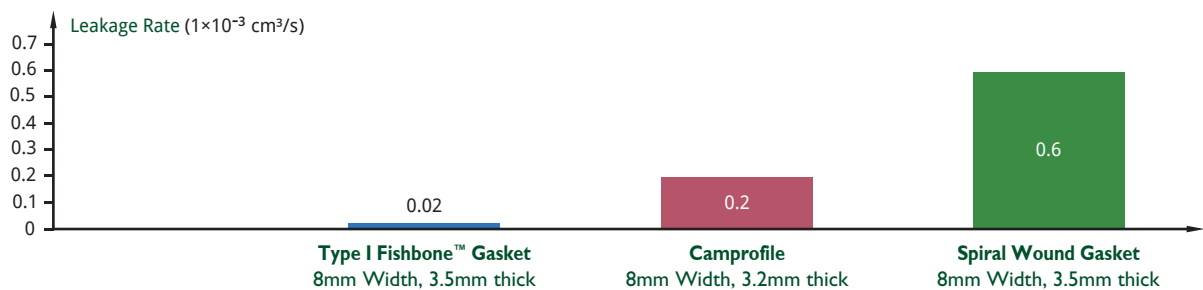
Fishbone™ Gasket

## ● 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

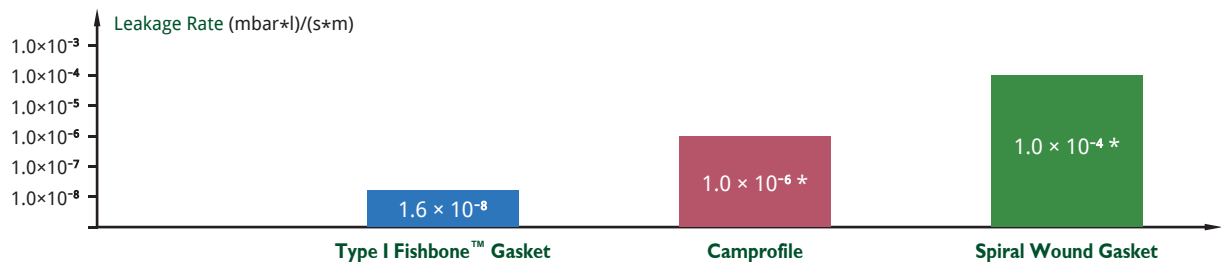
Test Item	Type I Fishbone™ Gasket 8mm Width, 3.5mm thick	Camprofile 8mm Width, 3.2mm thick	Spiral Wound Gasket 8mm Width, 3.5mm thick
Leakage Rate ( $1 \times 10^{-3} \text{ cm}^3/\text{s}$ )	0.02	0.2	0.6



### TA-LUFT Test - Fishbone™ Gasket vs. Spiral Wound vs. Camprofile

- Test Parameters – VDI Guideline 2440 & VDI Guideline 2200

Test Item	Type I Fishbone™ Gasket	Camprofile	Spiral Wound Gasket
Leakage Rate ( $\text{mbar} \cdot \text{l} / (\text{s} \cdot \text{m})$ )	$1.6 \times 10^{-8}$	$1.0 \times 10^{-6} *$	$1.0 \times 10^{-4} *$



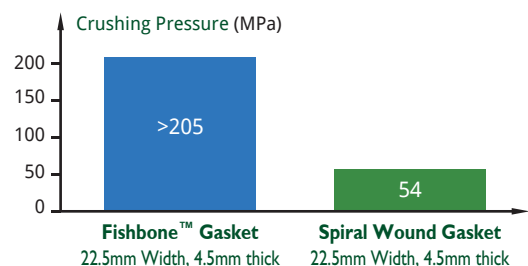
\*Average values from accredited international laboratory

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

### Crush Resistance Test - Fishbone™ vs. Spiral Wound

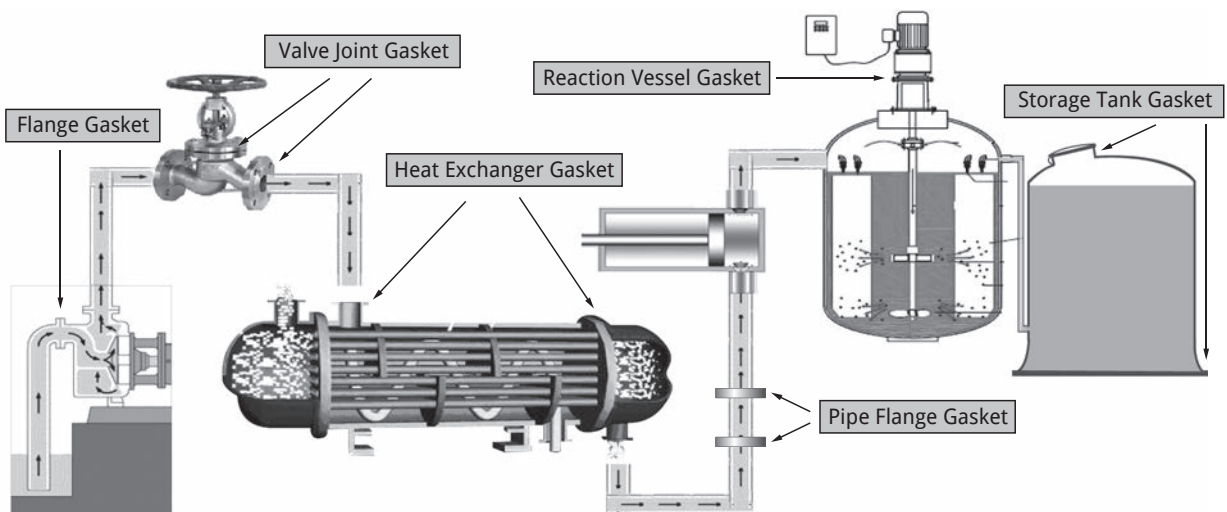
- Test Parameters Pressure 205 MPa / 29732 psi  
Test Report#: MF-130936

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



## Technical Specifications

### Standard Materials

#### Metal Materials

304, 304L, 316, 316L, 321

#### Non-metallic Sealing Materials

Flexible Graphite, PTFE, Mica

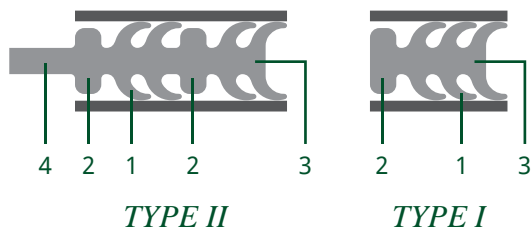
※ Other Materials on request

### 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 (Type II) or without (Type I) a centering ring



## ● How to Order

### ● Standard Sizes

#### Imperial

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

CLASS (lbs): 150 ~ 2500

#### Metric

DN (mm): 10 ~ 2000

PN (bar): 2.5 ~ 400

### ● International Standard

EN 1514

ASME B16.20a

JIS B2404

EN 12560

ANSI B 16.21

JPI-75-41

BS 4865

API 601

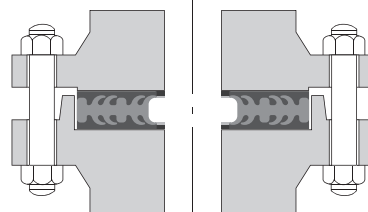
BS 3381

DIN 2690~2692

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

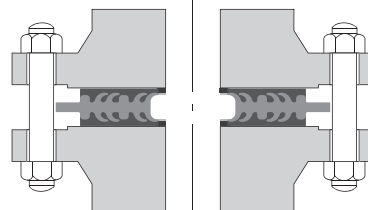
### Interchangeable

#### *Basic Construction*



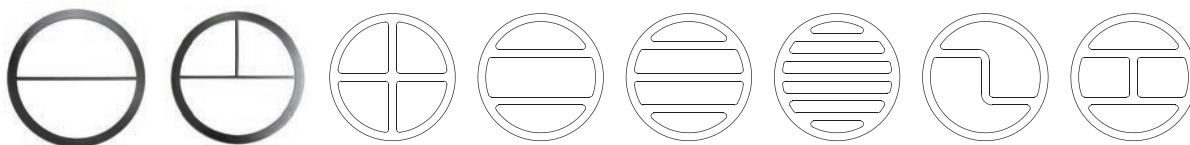
Replaces Spiral Wound Style R, Style RIR & Camprofile Basic Type

#### *Centering Ring Construction*



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

Heat Exchanger is available!



and more !



**AIGI ENVIRONMENTAL INCORPORATED**

— A Subsidiary of AIGI Group —

81 Suyuan Avenue, Jiangning District, Nanjing 211100, PR China [www.aigienvironmental.com](http://www.aigienvironmental.com)



**You Tube**

To visit our channel go to :  
<http://youtube.com/Aigienvironmental1996>

Distributed by:

AIGI ENVIRONMENTAL INC. inspected this product under experimental conditions. Users shall judge independently whether to use this product, and shall ensure correct storage, installation and application of this product. As such, our company assumes no responsibility with regard to any situation arising from inappropriate storage, installation and application. All products of our company were strictly examined under the relevant national or business standards. Users shall complete checking this product within 30 working days upon receipt of the same. If users discover any problem related to the quality of this product, they shall raise their concerns within the above-mentioned period. If users fail to raise their concerns upon expiration of the above-mentioned period, this shall be treated as full acceptance of the product. Our company guarantees the provision of products of premium quality. Should any dispute arise with regard to the quality of the products, the verification of a third-party authority shall then be required. If any defect in quality is spotted out during inspection upon delivery, our company undertakes to provide a new product of equivalent value. Our company reserves the right to change the manufacturing processes, the materials and sources of the materials without further notification. In addition, our company assumes no responsibility or liability for any unintentional typographical error or omission during printing, or any non-timely update of information. Thank you for your consideration.

G049-2017P3V1.0E