

# FIGURE SWG FLANGE GASKETS



## SPIRAL-WOUND GASKETS

### DESCRIPTION

The FNW figure SWG spiral-wound gaskets are made of a preformed metallic V-shaped strip and a soft filler material wound together under pressure, with an outer guide ring.

### CONSTRUCTION

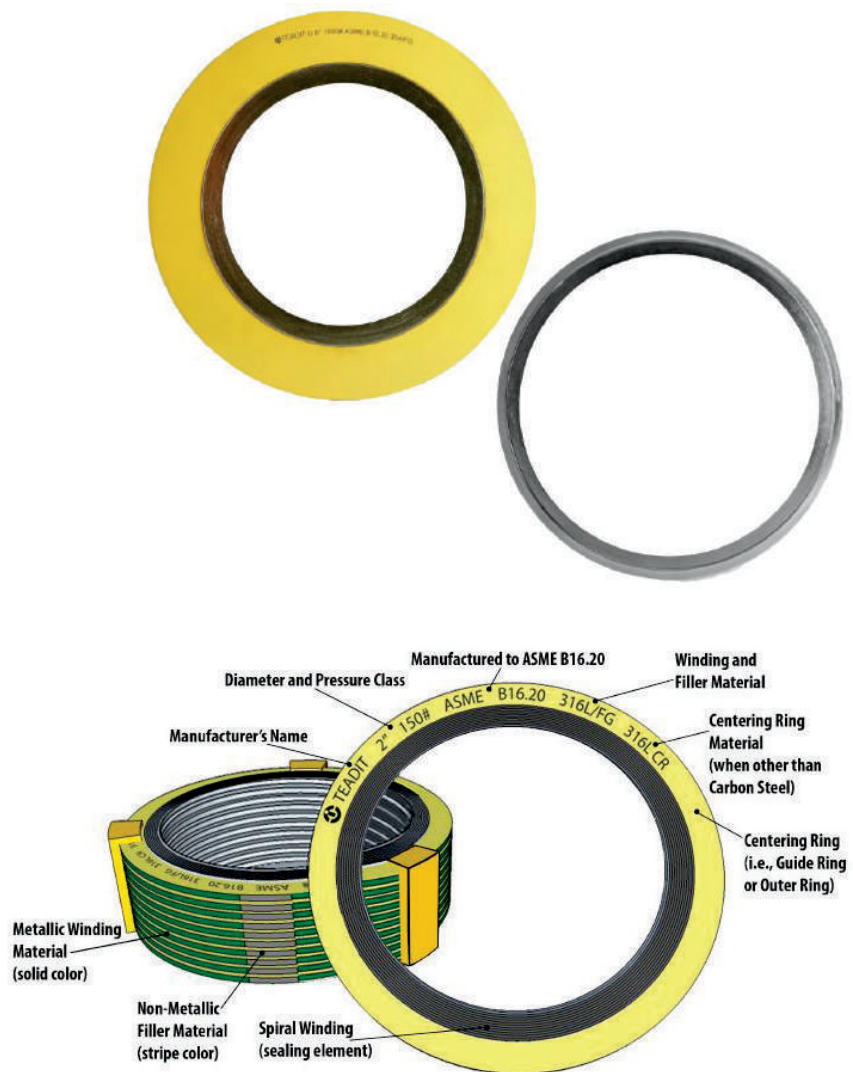
The winding is manufactured in the form of a spiral with filler material between the windings. The filler materials fill the irregularities of the flanges. The external guide ring has the function of centering the gasket in the flanges and gives the sealing elements additional resistance against line pressure and excessive bolt torque.

### APPLICATION/SERVICE

FNW spiral-wound gaskets are made for applications with high temperature variations (thermal cycling), and/or pressure variations, and/or flange rotation problems etc., and where gaskets with adequate residual stress (stress retention) and flexibility are needed.

### FEATURES

- Manufactured according to ASME B16.20
- Designed for use in ASME B16.5 flanges
- Fire-resistant
- Stainless steel windings (AISI 304 or AISI 316)
- Flexible graphite filler - GRAFLEX®
- Carbon steel outer guide ring (with zinc dichromate coating)
- Maximum temperature: 842°F (450°C)
- Maximum pressure: per ASME B16.5
- 1/2"–3" 300# gaskets are multi-rated and stamped "3/600#"



### FIGURE NUMBER MATRIX

FNW SWG	Class	Winding	Filler	Size			Color Codes
	1 = 150#	4 = 304SS	F = Flexible graphite	D = 1/2"	M = 3"	14 = 14"	Continuous color on guide ring edge denotes winding material. Yellow = 304SS Green = 316SS
	3 = 300#	6 = 316SS		F = 3/4"	P = 4"	16 = 16"	
				G = 1"	S = 5"	18 = 18"	
				H = 1-1/4"	U = 6"	20 = 20"	
				J = 1-1/2"	X = 8"	24 = 24"	
				K = 2"	10 = 10"		
				L = 2-1/2"	12 = 12"		Intermittent stripe on guide ring edge denotes filler material. Gray = Flexible graphite

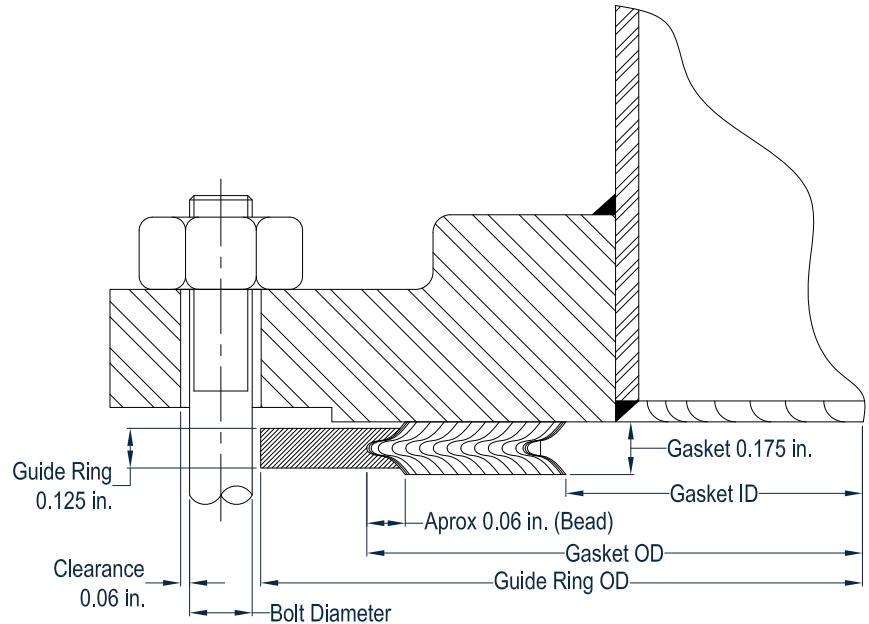
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### DIMENSIONS (INCHES)

Size	Gasket			Guide Ring	
	OD	ID		OD	
	Cls 150 and 300	Cls 150	Cls 300	Cls 150	Cls 300
1/2	1.25	0.75	0.75	1.88	2.13
3/4	1.56	1.00	1.00	2.25	2.63
1	1.88	1.25	1.25	2.63	2.88
1-1/4	2.38	1.88	1.88	3.00	3.25
1-1/2	2.75	2.13	2.13	3.38	3.75
2	3.38	2.75	2.75	4.13	4.38
2-1/2	3.88	3.25	3.25	4.88	5.13
3	4.75	4.00	4.00	5.38	5.88
4	5.88	5.00	5.00	6.88	7.13
5	7.00	6.13	6.13	7.75	8.50
6	8.25	7.19	7.19	8.75	9.88
8	10.38	9.19	9.19	11.00	12.13
10	12.50	11.31	11.31	13.38	14.25
12	14.75	13.38	13.38	16.13	16.63
14	16.00	14.63	14.63	17.75	19.13
16	18.25	16.63	16.63	20.25	21.25
18	20.75	18.69	18.69	21.63	23.50
20	22.75	20.69	20.69	23.88	25.75
24	27.00	24.75	24.75	28.25	30.50



### SUGGESTED TORQUE VALUES (FT.-LBS.)\*\*

Based on ASTM A193 B7 bolting or equal yield strength bolt material.

Class 150					
Size	Torque	Size	Torque	Size	Torque
1/2	50	3	160	14	500
3/4	60	4	120	16	500
1	60	5	200	18	710
1-1/4	60	6	200	20	710
1-1/2	60	8	260	24	1000
2	120	10	320		
2-1/2	120	12	320		

Class 300					
Size	Torque	Size	Torque	Size	Torque
1/2	50	3	175	14	620
3/4	90	4	200	16	875
1	105	5	200	18	1000
1-1/4	120	6	200	20	1000
1-1/2	200	8	320	24	1400
2	105	10	500		
2-1/2	140	12	710		

### FLANGE SEALING SURFACE

Although most commercial flange finishes can be used, the following are considered most appropriate for FNW spiral-wound gaskets.

Media	Flange Sealing Surface Finish (Ra)	
	μ m	μ in
General Use	6.3	250
Dangerous Service and Gases	3.2	125

Note: The sealing surface of flanges cannot have scratches or radial tool marks going from the inside to the outside diameter. These irregularities make the sealing very difficult for any style of gasket and especially for spiral-wound gaskets. **A smooth and polished surface can permit the gasket to inward buckle and should be avoided.**

### BOLTING CALCULATION

For ASME Code calculations

Gasket Factor (m value)	3.00
Minimum Design Seating Stress (y value)	10,000 PSI
Maximum Seating Stress*	30,000 PSI

\* Note: Per Division 2 Section VIII of the ASME Pressure Vessel and Boiler Code, the Maximum Gasket Stress or  $S_{g(max)}$  value should not exceed the Maximum Seating Stress.

\*\* Note: Use new, correct size, bolts/studs, nuts, and washers (torques NOT for PTFE coated bolting). Not suitable for flange materials with elongation at failure less than 20%. Use antiseize or graphite oil on bolt threads and nut faces. Listed torques are for the final pass. After hand tightening, torquing must follow the cross bolting sequence (star pattern) and there shall be 3 complete passes at 30%, 60%, and 100% of final torque. Once final torque is achieved, there should be a minimum of 2 clockwise passes until there is no further nut rotation. **As recognized by ASME, spiral-wound gaskets without an inner ring may buckle under ANY load due to the nature of materials used.**