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ANSI B16.5 Bolt Torque (ft.-lbs) for 7500psi Gasket Sealing Stress for Raised Face Flanges						
	Pressure Classes					
Nominal Pipe Size	**150 Class**	**300 Class**	**600 Class**	**900 Class**	**1500 Class**	**2500 Class**
1/2	21	21	21	30	30	30
3/4	30	37	37	43	43	43
1	40	49	49	86	86	86
1 1/4	60	73	73	100	100	113
1 1/2	78	113	113	148	148	165
2	150	75	75	102	102	116
2 1/2	184	109	109	142	142	158
3	262	155	155	178	225	248
3 1/2	148	175	202	N/A	N/A	N/A
4	186	219	253	320	352	417
5	277	277	363	448	528	610
6	352	234	307	342	411	878
8	490	377	478	573	670	815
10	475	404	496	542	967	1272
12	618	588	517	565	1004	1817
14	767	512	617	689	1228	N/A
16	713	700	829	894	1684	N/A
18	1038	783	1169	1338	2413	N/A
20	917	842	1078	1572	2889	N/A
22	1187	1172	1355	N/A	N/A	N/A
24	1289	1272	1570	2481	4293	N/A

ANSI B16.5 Bolt Torque (ft.-lbs) for 7500psi Gasket Sealing Stress for RTJ Flanges						
	Pressure Classes					
Nominal Pipe Size	**150 Class**	**300 Class**	**600 Class**	**900 Class**	**1500 Class**	**2500 Class**
1/2	N/A	29	29	62	62	77
3/4	N/A	55	55	76	76	97
1	35	63	63	93	93	142
1 1/4	45	78	78	115	115	228
1 1/2	61	127	127	178	178	335
2	122	85	85	143	144	205
2 1/2	185	113	113	193	193	278
3	201	144	144	218	354	381
3 1/2	143	168	192	N/A	N/A	N/A
4	179	199	230	341	479	596
5	233	290	380	532	778	903
6	270	250	328	365	471	1390
8	382	438	555	738	870	1248
10	398	466	572	686	1247	2374
12	698	665	588	698	1230	3415
14	724	680	819	899	1732	N/A
16	875	847	1009	1178	2178	N/A
18	990	931	1427	1712	3111	N/A
20	877	1083	1398	2062	3858	N/A
22	1055	1374	1588	N/A	N/A	N/A
24	1321	1628	2007	3273	5935	N/A

Notes:
1) Recommended bolt torque is based on generating a minimum gasket seating stress of 7,500 PSI arrived at using API 6A Annex D recommended flange bolt torque.
2) Bolt torque values listed assume a lubricated stud bolt resulting in a .16 friction factor.
3) Recommended torque values are based on using weld-neck (integral) flanges.
4) The torque figures above are based on a flange surface finish between 125 -250 rms finish, surface flatness within 0.020" tolerance and no misaligned flanges.
5.) Deviation from these specific requirements may affect product performance or longevity

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PGE
Technical Specifications

PGE System Specifications

The Pikotek PGE is a non-critical service seal kit designed for electrical flange isolation and/or general sealing applications: This sealis suitable for use in raised-face flanges up to ANSI class 600 (or equivalent) and is excellent for isolating flanges made of dissimilar metals or where prevention of flange face corrosion is desired. The design of the Pikotek PGE seal incorporated patented overlapping and offsetting seal grooves. The purpose of this design is to break each layer of laminate within the seal itself thereby creating a barrier through which fluid and/or gas cannot migrate. The sealing element can be any elastomeric material as well as more sophisticated Spring-Energized Teflon lip seals. As a result of this advanced seal design, maintenance free flange isolation and flange face corrosion mitigation are achieved economically.

The PGE retainer is constructed of very rigid Glass-Reinforced Epoxy (GRE) laminates, which exhibit excellent dielectric strength, high compressive strength and superior sealing characteristics.

When ordering a complete PGE isolating kit, the following must be specified:

1) Flange Specification (ANSI/ASME, API, MSS, BSI or DIN standard)
2) Size Pressure Rating (ANSI class 600 maximum).
3) Operating Pressure, Temperature and Media
4) Required Seal Material
5) Isolating Sleeve Material
6) Isolating Washer Material
7) Metal Washer Material

Gasket Thickness

All PGE gaskets are standard 1/8" (.125) thick.

1) G-10 NEMA grade G-10 Glass-Reinforced Epoxy (GRE) laminate:

Compressive Strength:	65,000 PSI
Dielectric Strength:	750-800 VPM
Max. Continuous Operating Temp:	300° F (150° C)
Water Absorption:	.05%
Flexural Strength:	65,000 PSI
Tensile Strength:	50,000 PSI

2) G-11 NEMA grade G-11 Glass-Reinforced Epoxy (GRE) High Temp. laminate material:

Compressive Strength:	50,000 PSI
Dielectric Strength:	500 VPM
Max Continuous Operating Temp:	398° F (200° C)
Water Absorption:	.085%
Flexural Strength:	57,700 PSI
Tensile Strength:	41,000 PSI

Seal Material

The sealing elements are intended to provide an impervious barrier through which no maintained media or other substance can penetrate. Consequently, the composite retainer backing material behind the seal remains uncontaminated and thus permanently holds the seal in place in a static, fully encapsulated manner.

Seal Material Options

1) Teflon (Spring-Energized)

Recommended for all environments. Helical wound spring provides radial load. Encapsulation in the seal groove eliminates creep or cold flow. This sealing system truly distinguishes Pikotek gaskets from all other flange sealing systems. Teflon is the most reliable sealing element.

Temperature Range: -250 °C TO 250 °C (note: gasket material is limiting factor)

2) Viton

General-purpose oilfield elastomer. Excellent resistance to aliphatic hydrocarbons and glycols. Good resistance to aromatic hydrocarbons.

Not recommended for: Systems with amine inhibitors and in piping systems containing significant partial pressures of H2S, polar gases (i.e., CO2) or where radical pressure drops (2000 PSI to 0 PSI) commonly occur.

Temperature Range: -15° F to +392° F

3) Nitrile

General Purpose elastomer. Excellent for use in water systems with some aliphatic hydrocarbons, silicone base fluids and glycol based systems.

Not recommended for: Systems containing H2S, aromatic hydrocarbons, phosphate esters or halogenated hydrocarbons; piping systems subjected to radical pressure drops (2000 PSI to 0 PSI) or piping systems containing significant partial pressures of polar gases (i.e., CO2).

Temperature Range: -30° F to +250° F

Isolating Sleeve Options

1) GRE

GRE (Glass-Reinforced Epoxy) tubing is suitable for continuous exposure to 350° F. This material is an epoxy laminate that offers excellent resistance to crushing, cracking, breaking and thread pinch.

2 Mylar

Spiral wound Mylar is a general-purpose material recommended for bolting applications with flange temperatures below 250° F. This material has generally fair resistance to crushing, cracking, breaking and thread pinch.

3) NOMEX

Nomex is a high temperature sleeve material manufactured from solid organic polymer and is suitable for temperatures up to 425 degree F.

Isolating Washers

1) GRE – G10/G3/G11

1/8" (.125) thick Glass Reinforced Epoxy washers

Steel Washer Options

1) (HCS) Hardened Carbon Steel

2) ZPS

1 Zinc plated Steel

2. (HCS)Hardened Carbon Steel

3. Stainless Steel

3) SS

Stainless Steel washers