

With Confidence, Service and Pride

KPC Flanges

KPC CORPORATION

KPC

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KPC CORPORATION



KPC^{is}

a specialized ball valve and flange manufacturer with vertically integrated production system that covers from material production to final assembly and inspection. **KPC** is equipped with state-of-the-art furnaces such as VAR, VIM and ESR, and capable of manufacturing high alloys such as Nickel base alloys, Titanium and Titanium alloys in its in-house foundry. This capability provides KPC unparalleled competitiveness in terms of price, quality, and delivery in high alloy flanges, as well as carbon steel and stainless steel flanges.

KPC is specialized in producing various kinds of high alloy, stainless steel and carbon steel flanges. Both national and international standards are applicable. The materials are Titanium, Nickel alloy(Inconel 625,825), Super Duplex, Stainless Steel, Carbon steel, Heat-resistant steel etc. The main size is from DN15(1/2") to DN1500(60").

KPC runs the most advanced CATIA systems and superprecision numerical control machines to produce, process and test equipment.

In addition to its own highly strict company quality standards, KPC is ISO 9001 certified and has a manufacturing ability to comply with ASME, DIN, API, and other internationally recognized standards.

KPC ensures that each flange fulfills all engineering specifications, including the most demanding applications. Our goal is to provide the best product at the most competitive price with in-time delivery and the backing of a full service program.

COMPANY HISTORY

- | | | |
|-----------|---|--|
| 1977. 10. | — | Established as Korea Precision Casting Co. |
| 1982. 03. | — | Started Ball Valve Division |
| 1987. 09. | — | Started Special Alloy Casting & Forging |
| 1988. 06. | — | Started Vacuum Arc Re-melting Division |
| 1997. 12. | — | Started Titanium Casting & Forging |
| 1998. 08. | — | Reactive Metal Research Institute Registered |
| 2004. 03. | — | Operated Wachon 1st Factory
(Vacuum Melting, Open Die Forging) |
| 2006. 11. | — | Operated Deokchon Factory (Machining, Welding) |
| 2007. 05. | — | Operated Sowol 1st & 2nd Factory
(Rolling Mill, Extrusion, Radial Forging, Centrifugal Casting) |
| 2010. 12. | — | KPC Metal Co., Ltd. spun off from KPC Corporation |
| 2015. 10. | — | Awarded the Gold Tower Order of Industrial Service Merit
from the Korean Government |



GAKSAN



DONGHO



WACHON



DEOKCHON



SOWOL

FLANGE TYPES



Welding Neck Flanges

This group of flanges is designed with a hub on the backside tapering to a diameter that will match the pipe to which it will be welded. These flanges are bored to match the inside diameter of the mating pipe, so there will be no restriction of product flow. This prevents turbulence at the joint and reduces erosion. Welding neck flanges are preferred for use in severe service applications involving high pressure, sub-zero and/or excellent stress distribution through the tapered hub and are easily radiographed for flaw detection.



Slip-On Flanges

Slip-on flanges are designed to slide over the outside diameter of the pipe to which it will be welded. These flanges are attached to the pipe by fillet welding at the hub and at the end of the pipe inside the flange. Because of the low hub and method of attachment, these flanges are not normally used in high stress application.



Socket Weld Flanges

These flanges are similar to slip-on flanges except they have a bore diameter equal to that of the matching pipe. They also have a counter bore from the hub side slightly larger than the outside diameter of the matching pipe. The counter bore provides a "socket" into which the end of the pipe is inserted. The flange is then attached to the pipe by a fillet weld at the hub. The shoulder made by the difference between the bore and counter bore is the same width as the wall of the pipe, thereby providing for an unrestricted flow of product through the connection. These flanges were initially developed for use in small diameter, high pressure lines. Internally welded socket type flanges are typically used in chemical processes, hydraulic lines and steam distribution lines.



Lap Joint Flanges

Used in conjunction with a "Lap Joint Stub End", these flanges are nearly identical to a slip-on flange with the exception of a radius at the intersection of the flange face and the bore to accommodate the flanged portion of the stub end. These flanges are used in applications where the joint must be frequently disassembled for cleaning or where there is a need to facilitate bolt alignment.



PRODUCT RANGE

Type of Flange	ASME B16.5	ASME B16.47 SER.A MSS SP-44	ASME B16.47 SER.B API 605
	0.5"~24"	26"~60"	
Welding Neck Flanges	150#~2500#	150#~2500#	150#~2500#
Long Welding Neck Flanges	150#~2500#	150#~2500#	150#~2500#
Slip-on Flanges	150#~1500#		
Lap Joint Flanges	150#~2500#		
Blind Flanges	150#~2500#	150#~2500#	150#~2500#
Socket Welding Flanges	150#~1500#		
Threaded Flanges	150#~2500#		



Threaded(Screwed) Flanges

Threaded flanges are threaded in the bore to match an external thread on the pipe. The threads are tapered to create a seal between the flange and pipe as the tapers approach the same diameter. These flanges are normally designed for low pressure, non-cyclic applications. They are also used in applications where welding is hazardous.



Blind Flanges

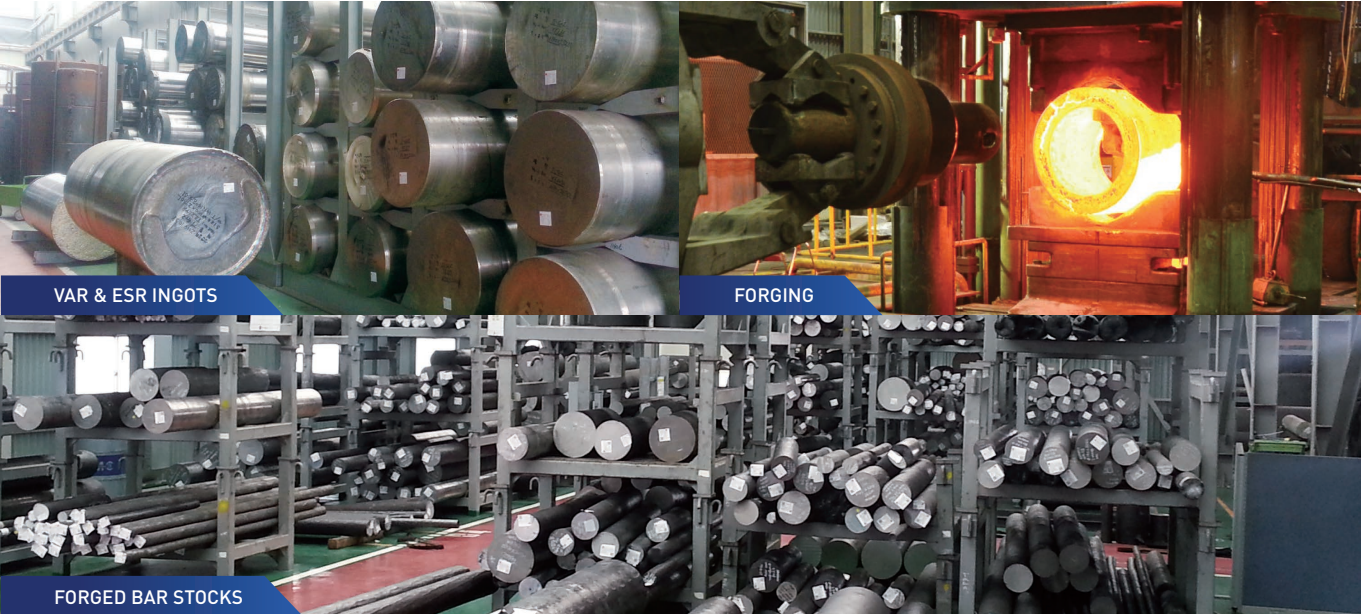
These flanges are manufactured without a bore and used as closures or seals for the ends of piping systems. They are also used to provide access covers for pressure vessels. Blind flanges are provided with or without a hub, depending on customer requirements. Under pressure and bolt loading, the blind flange is subjected to more stresses than any other flange type. However, the maximum stresses are bending stresses at the center and are easily absorbed by the flange.

CLASSIFICATION OF SUPPLYING MATERIALS

Material Group	Nominal Designation	Applicable ASTM Specifications [Note(1)]		
		Forgings	Castings	Plates
1.1	C-Si	A105	A216 Gr.WCB	A515 Gr.70
	C-Min-Si	A350 Gr.LF2	A352 Gr.LCC	A516 Gr.70 A537 Cl.1
	C-Min-Si-V	A350 Gr.LF6 Cl.1		
	3½Ni	A351 Gr.LF3		
1.2	C-Min-Si-V	A350 Gr.LF6 Cl.2		
1.4	C-Min-Si	A350 Gr.LF1 Cl.1	A352 Gr.LCB	A516 Gr.60
1.5	C-½Mo	A182 Gr.F1	A217 Gr.WC1 A352 Gr.LC1	A204 Gr.A A204 Gr.B
1.7	½Cr-½Mo	A182 Gr.F2		
1.9	1¼Cr-½Mo-Si	A182 Gr.F11 Cl.2		A387 Gr.11 Cl.2
1.10	2¼Cr-1Mo	A182 Gr.F22 Cl.3	A217 Gr.WC9	A387 Gr.22 Cl.2
1.13	5Cr-½Mo	A182 Gr.F5a	A217 Gr.C5	
1.14	9Cr-1Mo	A182 Gr.F9	A217 Gr.C12	
1.15	9Cr-1Mo-V	A182 Gr.F91	A217 Gr.C12A	A387 Gr.91 Cl.2
1.17	1Cr-½Mo	A182 Gr.F12 Cl.2		
	5Cr-½Mo	A182 Gr.F5		
2.1	18Cr-8Ni	A182 Gr.F304 A182 Gr.F304H	A351 Gr.CF8	A240 Gr.304 A240 Gr.304H
2.2	16Cr-12Ni-2Mo	A182 Gr.F316 A182 Gr.F316H	A351 Gr.CF8M	A240 Gr.316 A240 Gr.316H
	18Cr-13Ni-3Mo	A182 Gr.F317		A240 Gr.317
2.3	18Cr-8Ni	A182 Gr.F304L	A351 Gr.CF3	A240 Gr.304L
	16Cr-12Ni-2Mo	A182 Gr.F316L	A351 Gr.CF3M	A240 Gr.316L
2.4	18Cr-10Ni-Ti	A182 Gr.F321 A182 Gr.F321H		A240 Gr.321 A240 Gr.321H
2.5	18Cr-10Ni-Cb	A182 Gr.F347 A182 Gr.F347H A182 Gr.F348 A182 Gr.F34H	A351 Gr.CF8C	A240 Gr.347 A240 Gr.347H A240 Gr.348 A240 Gr.348H
2.7	25Cr-20Ni	A182 Gr.F310	A351 Gr.CK20	A240 Gr.310H
2.8	20Cr-18Ni-6Mo	A182 Gr.F44	A351 Gr.CK3MCuN	A240 Gr.S31254
	22Cr-5Ni-3Mo-N	A182 Gr.F51	A890 Gr.4A CD3MN	A240 Gr.S31803
	25Cr-7Ni-4Mo-N	A182 Gr.F53	A890 Gr.5A CE3MN	A240 Gr.S32750
	25Cr-7Ni-3.5Mo-N-Cu-W	A182 Gr.F55	A890 Gr.6A CD3MWCuN	A240 Gr.S32760
3.1	35Ni-35Fe-10Cr-Cb	B462 Gr.N08020	A351 Gr.CN7M	B463 Gr.N08020
3.2	99.0Ni	B160 Gr.N02200	A494 Gr.CZ100	B162 Gr.N02200
3.3	99.0Ni-Low C	B160 Gr.N02201		B162 Gr.N02201
3.4	67Ni-30Cu	B564 Gr.N04400	A494 Gr.M35-1	B127 Gr.N04400
	67Ni-30Cu-S	B564 Gr.N04405		

Material Group	Nominal Designation	Applicable ASTM Specifications [Note(1)]		
		Forgings	Castings	Plates
3.5	72Ni-15Cr-8Fe	B564 Gr.N06600		B168 Gr.N06600
3.6	33Ni-42Fe-21Cr	B564 Gr.N08800	A351 Gr.CT15C	B409 Gr.N08800
3.7	65Ni-28Mo-2Fe	B462 Gr.N10665		B333 Gr.N10665
	64Ni-29.5Mo-2Cr-2Fe-Mn-W	B462 Gr.N10675	A217 Gr.WC9	B333 Gr.N10675
3.8	54Ni-16Mo-15Cr	B462 Gr.N10276	A494 Gr.CW12MW	B443 Gr.N06625
	60Ni-22Cr-9Mo-3.5Cb	B564 Gr.N06625	A494 Gr.CW6MC	B443 Gr.N06625
	62Ni-28Mo-5Fe	B335 Gr.N10001		B333 Gr.N10001
	70Ni-16Mo-7Cr-5Fe	B573 Gr.N10003		B434 Gr.N10003
	61Ni-16Mo-16Cr	B574 Gr.N06455		B575 Gr.N06455
	42Ni-21.5Cr-3Mo-2.3Cu	B564 Gr.N08825	A494 Gr.CU5MCuC	B424 Gr.N08825
	55Ni-21Cr-13.5Mo	B462 Gr.N06022		B575 Gr.N06022
	55Ni-23Cr-16Mo-1.6Cu	B462 Gr.N06200		B575 Gr.N06200
3.9	47Ni-22Cr-9Mo-18Fe	B572 Gr.N06002		B435 Gr.N06002
3.10	25Ni-46Fe-21Cr-5Mo	B672 Gr.N08700		B599 Gr.N08700
3.11	44Fe-25Ni-21Cr-Mo	B649 Gr.N08904		B625 Gr.N08904
3.12	26Ni-43Fe-22Cr-5Mo	B621 Gr.N08320		B620 Gr.N08320
	47Ni-22Cr-20Fe-7Mo	B581 Gr.N06985		B582 Gr.N06985
	46Fe-24Ni-21Cr-6Mo-Cu-N	B462 Gr.N08367	A351 Gr.CN3MN	B688 Gr.N08367
3.13	49Ni-25Cr-18Fe-6Mo	B581 Gr-N06975		B582 Gr.N06975
	Ni-Fe-Cr-Mo-Cu-Low C	B564 Gr.N08031		B625 Gr.N08031
3.14	47Ni-22Cr-19Fe-6Mo	B581 Gr.N06007		B582 Gr.N06007
	40Ni-29Cr-15Fe-5Mo	B462 Gr.N06030		B582 Gr.N06030
3.15	33Ni-42Fe-21Cr	B564 Gr.N08810		B409 Gr.N08810
3.16	35Ni-19Cr-1¼Si	B511 Gr.N08330		B536 Gr.N08330
3.17	.10C-.30Fe-.05N-99Ti	B381 Gr-F-3	B367 Gr.C-3	B348 Gr.3
	.10C-.30Fe-.03N-.25Pd-99Ti	B381 Gr-F-7	B367 Gr.C-7	B348 Gr.7
	.10C-.30Fe-.03N-99Ti	B381 Gr-F-2	B367 Gr.C-2	B348 Gr.2

Notes :
(1) ASME Boiler and Pressure Vessel Code, Section II materials may also be used provided the requirements of the ASME specification are identical to or more stringent than the corresponding ASTM specification for the Grade, Class or Type listed.



QUALITY CONTROL

Test & Inspection

- » Chemical analysis by ASTM, ASME
- » Mechanical analysis
 - Tensile test by ASTM A370, E8/E8M
 - High temperature tensile test by ASTM E21
 - Impact test by ASTM A370, E23
 - Stress rupture test by ASTM E139
- » Micro structure test by ASTM E407
- » Macro test by ASTM E340, E381
- » Corrosion test by ASTM A262, A923, G48
- » NDE (UT, PT, MT) by ASTM A388, A745, MIL-STD-2154
- » 3D Dimensional check
- » EN10204 3.2 Certification

CERTIFICATION & APPROVAL

- » ISO 9001
- » ISO 14001
- » OHSAS 18001
- » CE 0035

Machining Equipments

- » CNC lathe & vertical lathe
- » CNC turning machine
- » CNC boring machine
- » CNC horizontal machining center
- » Ball machining & grinding



PRODUCTION

