

DIMENSIONAL TOLERANCES ANSI B16.5

WELDING NECK FLANGES

O	Outside Diameter	When O is 24" or less. When O is over 24"	$\pm 0.06"$ $\pm 0.12"$	± 1.6 mm ± 3.2 mm
R	Diameter of Contact Face	0.06" (1.6 mm) raised face. 0.25" (6.4 mm) raised face.	$\pm 0.03"$ $\pm 0.02"$	± 0.8 mm ± 0.5 mm
A	Diameter of Hub at Point of Welding	NPS 5 and smaller. NPS 6 and larger.	$+0.09"$, $-0.03"$ $+0.16"$, $-0.03"$	$+2.4$ mm, -0.8 mm $+4.0$ mm, -0.8 mm
B	Inside Diameter	NPS 10 and smaller. NPS 12 to 18, inclusive. NPS 20 and larger.	$\pm 0.03"$ $\pm 0.06"$ $+0.12"$, $-0.06"$	± 0.8 mm ± 1.6 mm ± 3.2 mm, -1.6 mm
X	Diameter of Hub at Base	When Hub Base is 24" or less. When Hub Base is over 24"	$\pm 0.06"$ $\pm 0.12"$	± 1.6 mm ± 3.2 mm
C	Thickness	NPS 18 and smaller. NPS 20 and larger.	$+0.12"$ $+0.19"$	$+3.2$ mm $+4.8$ mm
	Drilling and Facings	Bolt circle diameter Bolt Hole	$\pm 0.06"$ $\pm 0.03"$	± 1.6 mm ± 0.8 mm
	Eccentricity of Bolt Circle and Facing with respect to Bore	NPS 2 1/2 and smaller. NPS 3 and larger.	$\pm 0.03"$ $\pm 0.06"$	± 0.8 mm ± 1.6 mm
	Length Through Hub	NPS 10 and smaller. NPS 12 and larger.	$\pm 0.06"$ $\pm 0.12"$	± 1.6 mm ± 3.2 mm

SLIP-ON, LAP JOINT, SOCKET WELD, THREADED AND BLIND FLANGES

O	Outside Diameter	When O is 24" or less. When O is over 24"	$\pm 0.06"$ $\pm 0.12"$	± 1.6 mm ± 3.2 mm
R	Facings	0.06" (1.6 mm) raised face. 0.25" (6.4 mm) raised face.	$\pm 0.03"$ $\pm 0.02"$	± 0.8 mm ± 0.5 mm
B	Inside Diameter at face of Socket Welding Flanges	NPS 10 and smaller. NPS 12 to 18, inclusive. NPS 20 and larger.	$\pm 0.03"$ $\pm 0.06"$ $+0.12"$, $-0.06"$	± 0.8 mm ± 1.6 mm ± 3.2 mm, -1.6 mm
	Inside Diameter of Slip-On, Lap Joint and Socket Welding	NPS 10 and smaller NPS 12 and larger	$+0.03"$ $+0.06"$	$+0.8$ mm $+1.6$ mm
Q	Counter bore, Threaded Flanges	NPS 10 and smaller NPS 12 and larger.	$+0.03"$ $+0.06"$	$+0.8$ mm $+1.6$ mm
X	Diameter of Hub at Base	NPS 12" and smaller. NPS 14" and larger.	$+0.09"$, $-0.06"$ $\pm 0.12"$	$+2.4$ mm, -1.6 mm ± 3.2 mm
C	Thickness	NPS 18 and smaller. NPS 20 and larger.	$+0.12"$ $+0.19"$	$+3.2$ mm $+4.8$ mm
	Drilling	Bolt Circle Diameter Bolt Hole	$\pm 0.06"$ $\pm 0.03"$	± 1.6 mm ± 0.8 mm
	Eccentricity of Bolt Circle and Facing with respect to Bore	NPS 2 1/2 and smaller. NPS 3 and larger.	$\pm 0.03"$ $\pm 0.06"$	± 0.8 mm ± 1.6 mm
	Overall Length Through Hub	NPS 18 and smaller. NPS 20 and larger.	$+0.12"$, $-0.03"$ $+0.19"$, $-0.03"$	$+3.2$ mm, -0.8 mm $+4.8$ mm, -1.6 mm

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