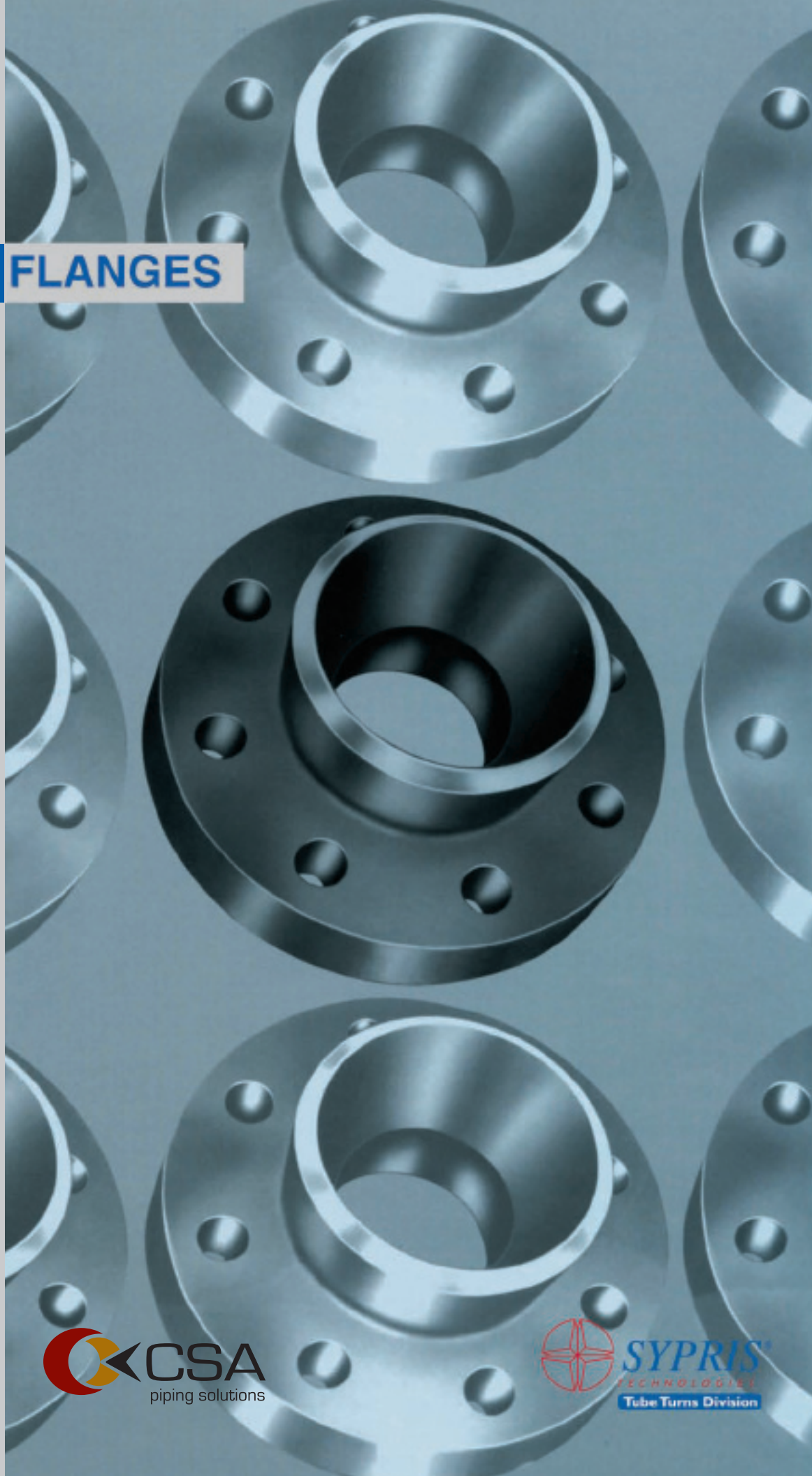
EXPANDER FLANGES



For Increasing
Pipe Size at
Flanged
Connections

CSA
piping solutions

SYPRIS
TECHNOLOGIES
Tube Turns Division

EXPANDER FLANGES

For Increasing Pipe Size at Flanged Connections

CSA piping solutions

The EXPANDER FLANGE is a one-piece combination reducer and welding neck flange designed expressly for effecting pipe size increases at flanged connections to pumps, valves, compressors and other equipment. It provides a more compact, more efficient and frequently a more economical means than is permitted by the conventional two-piece combination of a concentric reducer and welding neck flange.

SAVES SPACE

When space is severely limited, the compactness of the Expander Flange simplifies difficult installation problems. For Example: a 24" X 30" class 300 Expander Flange is only 8" in overall length as compared to 30-5/8" for a reducer-welding neck flange alone.

SAVE TIME

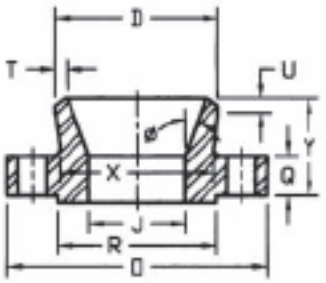
Only one butt-weld is required to install the Expander Flange into the pipeline. This is an important consideration, especially in large diameter piping where the cost of the additional circumferential weld might run as high as 25% of the price of the flange alone.

COSTS LESS

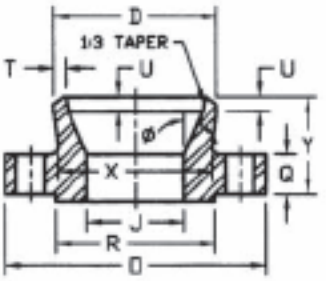
Expander Flanges are competitively priced and frequently provide substantial savings over conventional flange/reducer assemblies. A 20" X 24" class 600 Expander Flange, for example, costs approximately 20% less than a comparable fabricated unit.

FULL SIZE RANGE

Expander Flanges are regularly available in sizes 2" X 3" through 24" X 30" and in classes 150, 300 and 600 corresponding with ratings given in ASME/ANSI B16.5. Other sizes to 72" are furnished on special order. Standard material for Expander Flanges is A105 carbon steel. They can be furnished in stainless steel, aluminum and other alloys, and for all service pressure ratings, as well as for matching with high yield pipe.



DESIGN A



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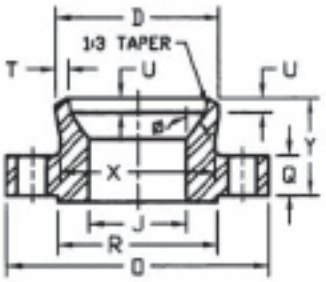

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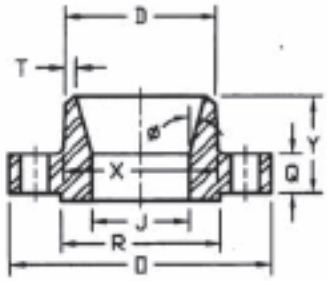

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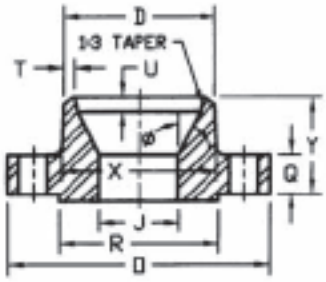

DESIGN E

REF	NOM PIPE SIZE	DIA OF HUB AT BEVEL D	WALL THICK-NESS T	OUTSIDE DIA OF FLANGE O	DIA OF BORE J	DIA OF HUB AT BASE X	THICK-NESS OF FLANGE Q*	LENGTH THRU HUB Y*	SLOPE AT BEVEL Ø	DIA OF RAISED FACE R	COM-POUND TAPER U	BOLT CIRCLE DIA	NO. OF BOLT HOLES	BOLT HOLE DIA
CLASS 150														
A	2x3	3.50	.216	6.00	2.07	3.06	0.75	2.50	16°	3.62	0.50	4.75	4	0.75
C	2x4	4.50	.237	6.00	2.07	3.06	0.75	3.62	29°†	3.62	0.50	4.75	4	0.75
A	3x4	4.50	.237	7.50	3.07	4.25	0.94	2.75	15°	5.00	0.50	6.00	4	0.75
C	4x6	6.62	.280	9.00	4.03	5.31	0.94	3.25	30°†	6.19	0.50	7.50	8	0.75
C	6x8	8.62	.322	11.00	6.07	7.56	1.00	4.00	28°†	8.50	0.50	9.50	8	0.88
C	8X10	10.75	.365	13.50	7.98	9.69	1.12	4.00	29°†	10.62	0.50	11.75	8	0.88
C	8x12	12.75	.375	13.50	7.98	9.69	1.12	6.12	28°†	10.62	0.62	11.75	8	0.88
C	10x12	12.75	.375	16.00	10.02	12.00	1.19	4.06	29°†	12.75	0.62	14.25	12	1.00
C	10x14	14.00	.375	16.00	10.02	12.00	1.19	5.44	30°†	12.75	0.62	14.25	12	1.00
D	12x14	14.00	.375	19.00	12.00	14.38	1.25	4.50	11°	15.00		17.00	12	1.00
C	12x16	16.00	.375	19.00	12.00	14.38	1.25	4.81	30°†	15.00	0.62	17.00	12	1.00
A	14x16	16.00	.375	21.00	13.25	15.75	1.38	5.00	15°	16.25	0.62	18.75	12	1.12
C	14x18	18.00	.375	21.00	13.25	15.75	1.38	5.69	30°†	16.25	0.62	18.75	12	1.12
A	18x20	20.00	.375	25.00	17.25	19.88	1.56	5.50	14°	21.00	0.62	22.75	16	1.25
C	18x24	24.00	.375	25.00	17.25	19.88	1.56	8.81	28°†	21.00	0.62	22.75	16	1.25
C	20x24	24.00	.375	27.50	19.25	22.00	1.69	6.44	30°†	23.00	0.62	25.00	20	1.25
C	24x30	30.00	.375	32.00	23.25	26.12	1.88	8.75	30°†	27.25	0.75	29.50	20	1.38
CLASS 300														
A	2x3	3.50	.216	6.50	2.07	3.31	0.88	2.75	15°	3.62	0.50	5.00	8	0.75
C	2x4	4.50	.237	6.50	2.07	3.31	0.88	3.69	28°†	3.62	0.50	5.00	8	0.75
D	3x4	4.50	.237	8.25	3.07	4.62	1.12	3.12	13°	5.00		6.62	8	0.88
C	4x6	6.62	.280	10.00	4.03	5.75	1.25	3.81	30°†	6.19	0.50	7.88	8	0.88
B	6x8	8.62	.322	12.50	6.07	8.12	1.44	3.88	22°†	8.50	0.50	10.62	12	0.88
A	8x10	10.75	.365	15.00	7.98	10.25	1.62	4.38	20°	10.62	0.50	13.00	12	1.00
A	10x12	12.75	.375	17.50	10.02	12.62	1.88	4.62	20°	12.75	0.62	15.25	16	1.12
D	12x14	14.00	.375	20.50	12.00	14.75	2.00	5.12	11°	15.00		17.75	16	1.25
D	14x16	16.00	.375	23.00	13.25	16.75	2.12	5.62	16°	16.25		20.25	20	1.25
D	16x18	18.00	.375	25.50	15.25	19.00	2.25	5.75	16°	18.50		22.50	20	1.38
D	18x20	20.00	.375	28.00	17.25	21.00	2.38	6.25	14°	21.00		24.75	24	1.38
B	20x24	24.00	.375	30.50	19.25	23.12	2.50	6.38	29°†	23.00	0.62	27.00	24	1.38
C	24x30	30.00	.625	36.00	23.25	27.62	2.75	8.00	30°†	27.25	0.75	32.00	24	1.62
CLASS 600														
A	2x3	3.50	.300	6.50	1.94	3.31	1.00	2.88	14°	3.62	0.50	5.00	8	0.75
C	2x4	4.50	.337	6.50	1.94	3.31	1.00	3.75	29°†	3.62	0.50	5.00	8	0.75
D	3x4	4.50	.337	8.25	2.90	4.62	1.25	3.25	13°	5.00		6.62	8	0.88
A	4x6	6.62	.432	10.75	3.83	6.00	1.50	4.00	21°	6.19	0.62	8.50	8	1.00
D	6x8	8.62	.500	14.00	5.76	8.75	1.88	4.62	19°	8.50		11.50	12	1.12
D	8x10	10.75	.500	16.50	7.63	10.75	2.19	5.25	19°	10.62		13.75	12	1.25
D	10x12	12.75	.500	20.00	9.75	13.50	2.50	6.00	16°	12.75		17.00	16	1.38
D	12x14	14.00	.500	22.00	11.75	15.75	2.62	6.12	10°	15.00		19.25	20	1.38
D	14x16	16.00	.562	23.75	13.00	17.00	2.75	6.50	14°	16.25		20.75	20	1.50
D	16x18	18.00	.625	27.00	14.88	19.50	3.00	7.00	13°	18.50		23.75	20	1.62
D	18x20	20.00	.687	29.25	16.75	21.50	3.25	7.25	13°	21.00		25.75	20	1.75
E	20x24	24.00	.812	32.00	18.62	24.00	3.50	7.50	27°†	23.00	1.00	28.50	24	1.75
C	24x30	30.00	1.000	37.00	22.38	28.25	4.00	9.94	30°†	27.25	1.00	33.00	24	2.00

* Includes 0.06" raised face for Class 150 and Class 300.
Does not include 0.25" raised face for Class 600.

† The slope at the welding bevel approximates 1:3 max in sizes marked (†), the flange bore has a compound-angle taper of 18° through dimension "U" and the remaining taper as indicated.

NOTES:

Designs A, B and C require insertion of bolts from face side of expander flanges.

Bolts may be inserted from either back or face side of Design D or E.

Expander flanges that accept bolts from the face can be furnished in all sizes and pressure on special order.

The overall lengths listed here are for bores shown above.
The overall length may vary for other bores.

CSA
piping solutions

CSA Piping Solutions
#208 6051b 47 Street
Leduc, Alberta
T9E-7A5

Phone: 780-980-9666
Fax: 780-980-9688