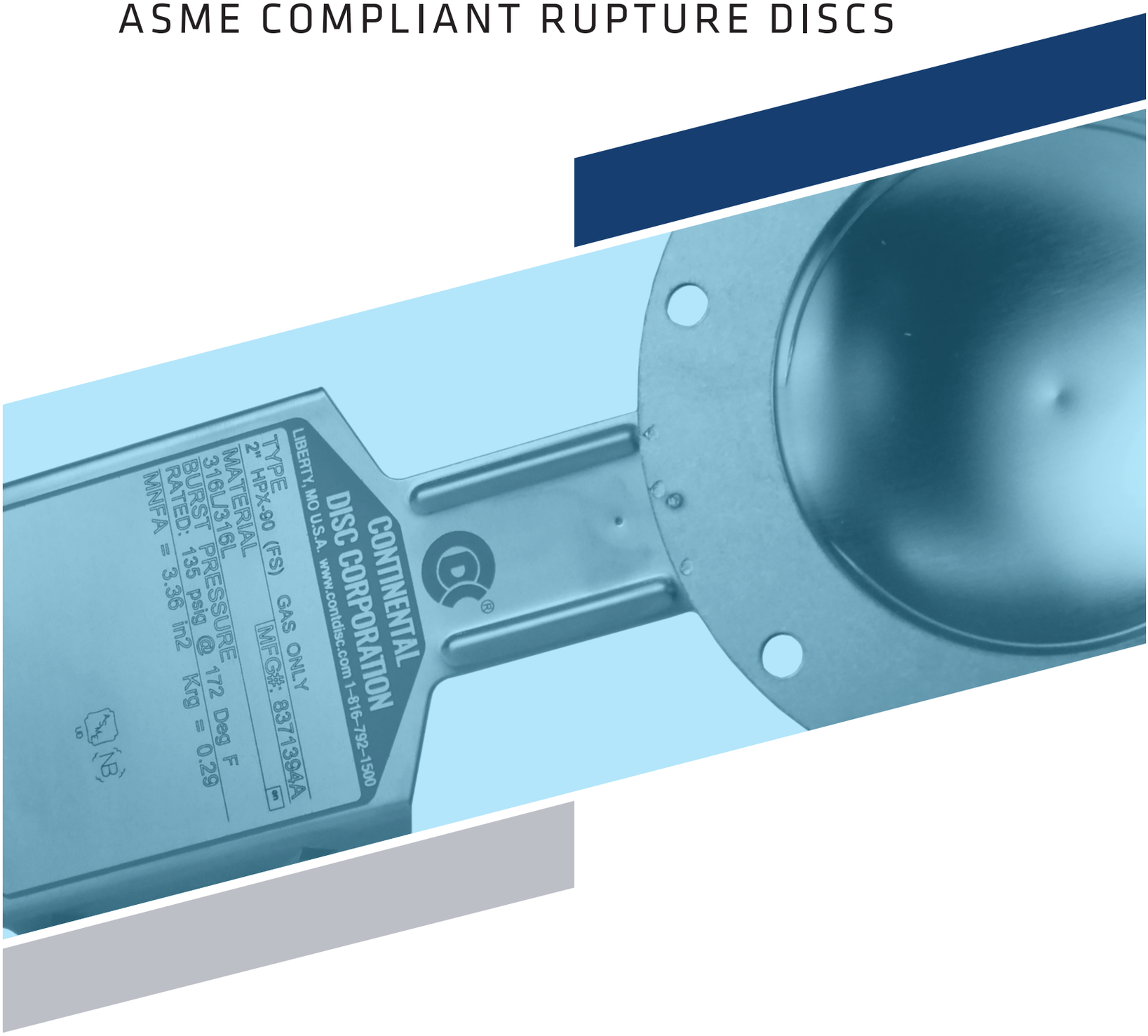
Continental Disc®
Corporation

CERTIFLOW®

ASME COMPLIANT RUPTURE DISCS



Continental Disc® Corporation

CERTIFLOW®

Continental Disc Corporation is accredited and authorized by the ASME to utilize the ASME UD Code Symbol Stamp for product built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

Rupture disc products manufactured in accordance with all applicable rules of ASME Code Section VIII, Division 1 must carry the ASME UD Code Symbol Stamp on the tag, as well as the certified flow resistance (K_R) and minimum net flow area (MNFA) values. The "NB" stamp acknowledges The National Board of Boiler and Pressure Vessel Inspectors as the organization that certified the flow tests.

The complete line of CERTIFLOW® rupture discs meet all ASME Code requirements, including K_R and MNFA values. With the extensive line of CERTIFLOW rupture discs, there is one available to meet most applications and operating conditions.

"K" values are pressure loss expressed as the number of velocity heads and they are available for nearly all piping system devices and components, including rupture discs.

Rupture disc devices should be included in the flow equation in the same manner as all other system components to determine the relieving capacity of the entire relief system.

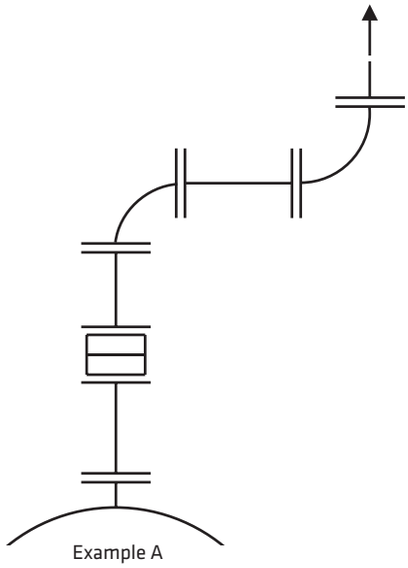
Design engineers are provided with certified K_R values:

- Which enable the designer to meet ASME Code Section VIII, Division 1 for relief system design
- Which may permit a reduction in pipe size and associated piping costs when utilized during a relief system design
- For use when evaluating relief systems where two-phase flow may occur
- For use when re-evaluating existing relief systems to comply with design documentation requirements of OSHA CFR 1910.119," Process Safety Management of Highly Hazardous Chemicals."

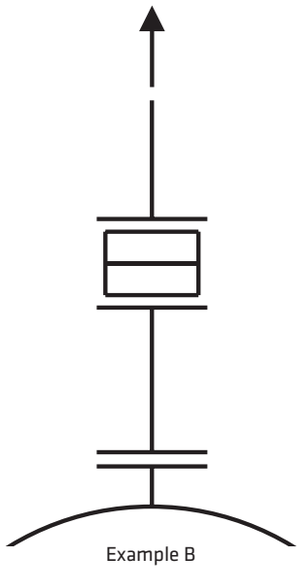
Certified K_R values represent tested flow resistance values. Relief systems can be designed or evaluated more precisely and safely if certified flow resistance values are used, rather than industry practiced estimates. These estimates may not accurately reflect the flow resistance of the rupture disc. Using the certified flow resistance value, along with proper engineering practices, allows precise, efficient, and safe design of relief systems.

The ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, specifies that rupture disc devices, like all other pressure relief products, should be tested and certified as to their flow characteristics, and that these certified values should be used in flow and sizing calculations.

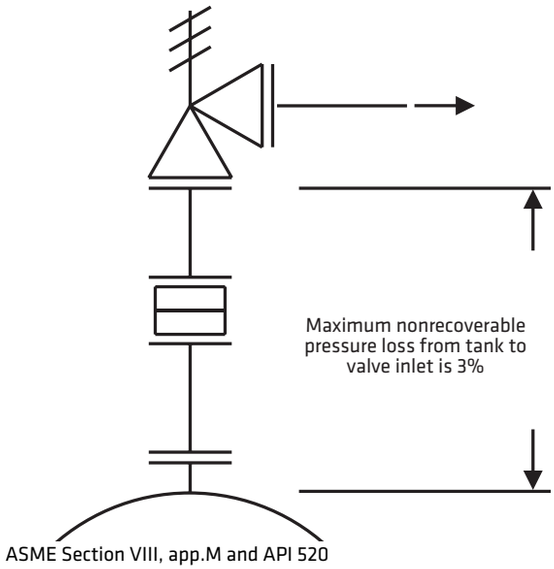
CERTIFIED FLOW RESISTANCE FACTOR



Example A



Example B



ASME Section VIII, app.M and API 520

To confirm relief capacity requirements in a sole relief device system

Combining the certified flow resistance (K_R) with the K values of other piping components (shown in example A) allows the design engineer to accurately calculate and evaluate a relief system's flow capacity. Even for simple relieving systems that can be evaluated with the coefficient of discharge method (8 & 5 rule), utilizing the certified flow resistance (K_R) along with the associated K values for the other piping components (shown in example B) will allow for the flow capacity to be more accurately evaluated.

To confirm a rupture disc/PRV combo follows the "3% Rule"

The system shown might be designed new, or it might be re-evaluated to comply with OSHA CFR 1910.119, which requires that systems be designed with "recognized and generally accepted engineering practices." In the past, an estimated value for the flow resistance of the rupture disc would be used for calculations.

Combining the certified flow resistance value (K_R) with the K values of the other piping components, a design engineer can now accurately evaluate this system's nonrecoverable pressure loss.

To specify a rupture disc device to comply with the ASME Code:

- Select the most appropriate rupture disc model for your application
- Find the type, holder, media, required options, and estimated size
- Find the corresponding MNFA
- Use the K_R and MNFA values to confirm the flow characteristics of your relieving system

For assistance with flow of fluids calculations, publications like Crane Technical Paper No. 410 can be helpful. There is also a variety of software titles that will automate your flow of fluid calculations. Be certain that your evaluation uses proper engineering practices such as including all piping system components into your flow calculations and multiplying the calculated relieving capacity by a factor of 0.90 or less as specified in ASME Code Section VIII, Division 1. A copy of Continental Disc Corporation's Certificate of Authorization to use the ASME UD Code Symbol Stamp can be found on our website at contdisc.com.

CONTINENTAL DISC CERTIFIED PRODUCTS

Rupture Disc Type	Seat Code	Rupture Disc Holder Type	Media	Options	Size Range		Min. Net Flow Area Group	K_R Value	National Board Certification Number
					in	mm			
REVERSE ACTING RUPTURE DISCS FOR INSERT TYPE HOLDERS									
HPX®, HPX®-Ta	FS	HPX, HPX-RH, HPX-PT, HPX-PT-RH	Gas	Liners, Coatings	1-12	25-300	A	0.29	75585
HPX®, HPX®-Ta	FS	HPX, HPX-RH, HPX-PT, HPX-PT-RH	Liquid	Liners, Coatings	1-12	25-300	A	0.38	75596
HPX®, HPX®-Ta	DD	HPX (DD)*	Gas, Liquid	Liners, Coatings	1-12	25-300	A	0.97	75664
LOTRX®	FS	LOTRX®	Gas	Coatings	1-8	25-200	A	0.42	75620
LOTRX®	FS	LOTRX®	Liquid	Coatings	1-8	25-200	A	0.42	75631
RCS	FS	RCS	Gas	None	1-32	25-800	A	0.35	75226
RCS	FS	RCS	Gas	Liners	1-32	25-800	A	0.59	75147
RCS	DD	RCS (DD)*	Gas	Liners	1-32	25-800	A	0.60	75518
REVERSE ACTING RUPTURE DISCS FOR SANITARY SERVICE									
SANITRX HPX®	SF, IS, NA	Standard Sanitary Ferrules	Gas	Coatings, B.D.I.®/BDI-FLX®	1-3	25-80	D	1.13	75608
SANITRX HPX®	SF, IS, NA	Standard Sanitary Ferrules	Liquid	Coatings, B.D.I.®/BDI-FLX®	1-3	25-80	D	1.60	75619
SANITRX HPX® II	SF, IS, NA	Standard Sanitary Ferrules	Gas	Coatings, B.D.I.®/BDI-FLX®	1½-4	40-100	D	1.60	75675
SANITRX HPX® II	SF, IS, NA	Standard Sanitary Ferrules	Liquid	Coatings, B.D.I.®/BDI-FLX®	1½-4	40-100	D	1.88	75686
SANITRX® LPX	SF, IS, NA	Standard Sanitary Ferrules	Gas	Coatings	1½-3	40-80	D	1.13	75608
TENSION TYPE RUPTURE DISCS FOR INSERT, BOLTED AND UNION HOLDERS									
MX-9T™	FS	MX-9T™, MX-9T™-RH	Gas, Liquid	Liners, Coatings, Gaskets, Rings	1-36	25-900	A	0.29	75079
MX-9T™-V	FS	MX-9T™, MX-9T™-RH	Gas	Liners, Coatings, Gaskets, Rings	1-36	25-900	A	0.29	75080
MX-9T™-V	FS	MX-9T™, MX-9T™-RH	Liquid	Liners, Coatings, Gaskets, Rings	1-36	25-900	A	1.10	75181
MX-9T™ & MX-9T™-V	DD	MX-9T™ (DD)*	Gas, Liquid	Liners, Coatings, Gaskets, Rings	1-36	25-900	A	5.59	75473
MICRO X®	FS	RHI, UNISERT®	Gas, Liquid	Liners, Coatings, Gaskets, Rings	1-36	25-900	A	0.29	75079
MICRO X®-V	FS	RHI, UNISERT®	Gas	Liners, Coatings, Gaskets, Rings	1-36	25-900	A	0.29	75080
MICRO X®-V	FS	RHI, UNISERT®	Liquid	Liners, Coatings, Gaskets, Rings	1-36	25-900	A	1.10	75181
MICRO X®, MICRO X®-V	DD	UNISERT® (DD)*	Gas, Liquid	Liners, Coatings, Gaskets, Rings	1-36	25-900	A	5.59	75473
CDC	FS	RHI, UNISERT®	Gas, Liquid	Coatings, Gaskets, Rings	1-36	25-900	A	0.34	75002
CDCV	FS	RHI, UNISERT®	Gas, Liquid	None	1-36	25-900	A	0.53	75215
CDCV	FS	RHI, UNISERT®	Gas, Liquid	Coatings, Gaskets, Rings	1-36	25-900	A	1.04	75046
CDC & CDCV	DD	UNISERT® (DD)*	Gas, Liquid	Coatings, Gaskets, Rings	1-36	25-900	A	1.81	75642
PL & PLV	FS	RHI, UNISERT®	Gas, Liquid	Coatings, Gaskets, Rings, Vacuum Support	1-36	25-900	A	1.60	75169
CDC	LL, UL	Insert, Full Bolted, & Union	Gas, Liquid	Coatings, Gaskets, Rings, B.D.I.®	1-30	25-750	B	1.81	75057
CDCV	LL, UL	Insert, Full Bolted, & Union	Gas, Liquid	Coatings, Gaskets, Rings, B.D.I.®	1-30	25-750	B	2.80	75507
PL & PLV	LL UL	Insert, Full Bolted, & Union	Gas, Liquid	Coatings, Gaskets, Rings, B.D.I.®, Vacuum Support	1-30	25-750	C	5.00	75170
STANDARD	LL, UL	Insert, Full Bolted, & Union	Gas	Liners, Coatings, Gaskets, Rings, B.D.I.®	½-30	13-750	B	1.13	75091
STANDARD & STANDARD-V	LL, UL	Insert, Full Bolted, & Union	Gas, Liquid	Liners, Coatings, Gaskets, Rings, B.D.I.®, Vacuum Support	1-30	25-750	B	1.88	75495
ENVIRO-SEAL I & II**	N/A	N/A	Gas, Liquid	Coatings, B.D.I.®	1-36	25-900	A	2.00	75013

CONTINENTAL DISC CERTIFIED PRODUCTS

Rupture Disc Type	Seat Code	Rupture Disc Holder Type	Media	Options	Size Range		Min. Net Flow Area Group	K_R Value	National Board Certification Number
					in	mm			
TENSION TYPE RUPTURE DISCS FOR CLEAN-SWEEP HOLDERS									
MICRO X®	CF	CLEAN-SWEEP®	Gas, Liquid	Liners, Coatings, Gaskets, Rings	1-6	25-150	A	1.52	75383
MICRO X®-V	CF	CLEAN-SWEEP®	Gas, Liquid	Liners, Coatings, Gaskets, Rings	1-6	25-150	A	1.74	75394
CDC	CF	CLEAN-SWEEP®	Gas, Liquid	Coatings, Gaskets, Rings	1-6	25-150	A	1.57	75361
CDCV	CF	CLEAN-SWEEP®	Gas, Liquid	Coatings, Gaskets, Rings	1-6	25-150	A	2.54	75372
PL	CF	CLEAN-SWEEP®	Gas, Liquid	Coatings, Gaskets, Rings	1-6	25-150	A	1.57	75349
PLV	CF	CLEAN-SWEEP®	Gas, Liquid	Coatings, Gaskets, Rings	1-6	25-150	A	2.64	75350
TENSION TYPE OR REVERSE ACTING RUPTURE DISCS FOR TITE-SEAL AND SCREW TYPE HOLDERS									
SRA	FS	SRA Tite-Seal, SRA Screw Type, SRA Union	Gas, Liquid	Coatings, Gaskets, Rings	¼-1	6-25	H	3.59	75282
CDCV	FS	Tite-Seal, Screw Type	Gas, Liquid	Gaskets	¼-½	6-13	G	5.73	75338
STANDARD	FS	Tite-Seal, Screw Type	Gas, Liquid	Coatings, Gaskets, Rings	¼-1	6-25	G	9.59	75327
STANDARD-V	FS	Tite-Seal, Screw Type	Gas, Liquid	Coatings, Gaskets, Rings	¼-1	6-25	G	10.50	75293
STANDARD	LL	Screw Type	Gas, Liquid	Coatings, Gaskets, Rings	¼-½	6-13	G	6.09	75305
STANDARD-V	LL	Screw Type	Gas, Liquid	Coatings, Gaskets, Rings	¼-½	6-13	G	13.30	75316
RUPTURE DISCS FOR MAINTENANCE REPLACEMENT ONLY									
ULTRX® & ULTRX® HP	FS	ULTRX®	Gas	None	1-12	25-300	A	0.36	75248
ULTRX® & ULTRX® HP	FS	ULTRX®	Gas, Liquid	Liners, Coatings	1-12	25-300	A	0.62	75125
ULTRX®	DD	ULTRX® (DD)*	Gas, Liquid	Liners, Coatings	1-12	25-300	A	0.97	75271
MINTRX®	FS	MINTRX®	Gas, Liquid	None	1-8	25-200	A	0.46	75237
MINTRX®	FS	MINTRX®	Gas	Liners, Coatings	1-8	25-200	A	0.45	75552
MINTRX®	FS	MINTRX®	Liquid	Liners, Coatings	1-8	25-200	A	0.50	75541
STAR X® & STAR X® HP	FS	STAR X®	Gas	Coatings	1-6	25-150	A	0.29	75529
STAR X® & STAR X® HP	FS	STAR X®	Liquid	Coatings	1-6	25-150	A	0.38	75530
VRD®	FS	VRD®	Gas, Liquid	Liners, Coatings	1-8	25-200	A	0.48	75428
KBA	FS	KBA	Gas	Liners	1-32	25-800	E	3.62	75035
ZAP	FS	ZAP	Gas	Liners, Coatings	1-8	25-200	F	5.88	75024
SANITRX®	SF, IS, NA	Standard Sanitary Ferrules	Gas	Coatings, B.D.I.®/BDI-FLX®	1½-4	40-100	D	1.13	75462
SANITRX®	SF, IS, NA	Standard Sanitary Ferrules	Liquid	Coatings, B.D.I.®/BDI-FLX®	1½-4	40-100	D	1.60	75451
SANITRX® MP	SF, IS, NA	Standard Sanitary Ferrules	Gas	Coatings, B.D.I.®/BDI-FLX®	1-3	25-80	D	1.13	75574
SANITRX® MP	SF, IS, NA	Standard Sanitary Ferrules	Liquid	Coatings, B.D.I.®/BDI-FLX®	1-3	25-80	D	1.60	75563
SANITRX® LP	SF, IS, NA	Standard Sanitary Ferrules	Gas	Coatings, B.D.I.®/BDI-FLX®	1-3	25-80	D	0.29	75440
SANITRX® LP	SF, IS, NA	Standard Sanitary Ferrules	Liquid	Coatings, B.D.I.®/BDI-FLX®	1-3	25-80	D	0.32	75439

* A single rupture disc device that incorporates two rupture discs into one rupture disc holder.
** ENVIRO-SEAL I & II are not offered in 28" size.
NOTES: • Consult the appropriate product literature for the specifications available for each device. • All product types containing "V" denote use of vacuum support

MINIMUM NET FLOW AREA FOR CERTIFIED PRODUCTS

Min Net Flow Area Group	Disc Size		MNFA	
	in	mm	in^2	mm^2
A	1	25	0.86	555
A	1 ½	40	2.04	1316
A	2	50	3.36	2168
A	3	80	7.39	4768
A	4	100	12.7	8194
A	6	150	28.8	18581
A	8	200	50.0	32258
A	10	250	78.8	50839
A	12	300	113	72903
A	14	350	137	88387
A	16	400	182	117419
A	18	450	233	150322
A	20	500	291	187742
A	24	600	424	273548
A	28	700	583	376128
A	30	750	671	432902
A	32	800	766	494193
A	36	900	975	629031
B	½	13	0.23	148
B	¾	19	0.43	277
B	1	25	0.72	465
B	1 ½	40	1.77	1142
B	2	50	3.36	2168
B	3	80	7.39	4768
B	4	100	12.7	8194
B	6	150	28.8	18581
B	8	200	50.0	32258
B	10	250	78.8	50839
B	12	300	113	72903
B	14	350	137	88387
B	16	400	182	117419
B	18	450	233	150322
B	20	500	291	187742
B	24	600	424	273548
B	30	750	671	432902

Min Net Flow Area Group	Inlet Connection*	MNFA	
		in^2	mm^2
G	¼"	0.04	25,8
G	3/8"	0.10	64,5
G	½"	0.17	110
G	¾"	0.29	187
G	1"	0.52	335
H	¼"	0.07	45,2
H	3/8"	0.14	90,3
H	½"	0.23	148
H	¾"	0.43	277
H	1"	0.72	465

*Applies to MPT, BSPT, and BSPP connnections

Min Net Flow Area Group	Disc Size		MNFA	
	in	mm	in^2	mm^2
C	1	25	0.52	335
C	1½	40	1.40	903
C	2	50	3.36	2168
C	3	80	7.39	4768
C	4	100	12.7	8194
C	6	150	28.8	18581
C	8	200	50.0	32258
C	10	250	78.8	50839
C	12	300	113	72903
C	14	350	137	88387
C	16	400	182	117419
C	18	450	233	150322
C	20	500	291	187742
C	24	600	424	273548
C	30	750	671	432902
D	1	25	0.493	318
D	1 ½	40	1.18	761
D	2	50	2.25	1452
D	3	80	5.49	3542
D	4	100	9.77	6303
E	1	25	0.72	465
E	1 ½	40	1.77	1142
E	2	50	2.95	1903
E	3	80	6.61	4265
E	4	100	11.5	7419
E	6	150	26.0	16774
E	8	200	45.6	29419
E	10	250	71.8	46322
E	12	300	101	65161
E	14	350	122	78710
E	16	400	160	103226
E	18	450	204	131613
E	20	500	252	162580
E	24	600	365	235483
E	28	700	498	321290
E	30	750	572	369032
E	32	800	651	419999
F	1	25	0.56	361
F	1 ½	40	1.45	935
F	2	50	2.36	1523
F	3	80	4.85	3129
F	4	100	7.99	5155
F	6	150	17.2	11097
F	8	200	30.1	19419

CONTDISC.COM