

DK Series Pneumatic Diaphragm Valves

Product Data Sheet



1/2" to 2-1/2"

< STANDARDS >



ASTM D1784
ASTM D1785
ASTM D4101
ASTM D3222
ASTM D2464
ASTM D2466
ASTM D2467
ASTM F441
ASTM F437
ASTM F439
ASTM F1498



ISO 3609
ISO 10931



ANSI B16.5

IPEX DK Series Pneumatic Diaphragm Valves are the ideal solution for modulating flow and controlling dirty or abrasive fluids in a variety of applications. The modular nature of this valve results in many material, body style, and diaphragm options. The re-designed weir-style body has significantly improved the DK's flow rate compared to the old design and it facilitates precise linear flow regulation through the valve's full range of operation. This pneumatically actuated version provides automatic control with an extensive range of options and accessories.

VALVE AVAILABILITY

Body Material:	PVC, CPVC, PP, PVDF
Size Range:	1/2" through 2-1/2"
Pressure:	150 psi
Diaphragm:	EPDM, FKM or PTFE (EPDM backed)
Control Style:	Pneumatically Actuated (Double Acting, Normally Open, Normally Closed)
End Connections:	Spigot, True Union (Socket, Threaded) Flanged (ANSI 150)

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Sample Specification

1.0 Diaphragm Valves – DK Pneumatic

1.1 Material

- The valve body, including end connectors and unions, shall be made of PVC compound which shall meet or exceed the requirements of cell classification 12454 according to ASTM D1784.
- or The valve body, including end connectors and unions, shall be made of Corzan® CPVC compound which shall meet or exceed the requirements of cell classification 23447 according to ASTM D1784.
- or The valve body, including end connectors and unions, shall be made of stabilized PP homopolymer compound, also containing a RAL 7032 pigment, which shall meet or exceed the requirements of Type I Polypropylene according to ASTM D4101.
- or The valve body, including end connectors and unions, shall be made of virgin, non-regrind PVDF compound which shall meet or exceed the requirements of Table 1 according to ASTM D3222.
- The pneumatic valve bonnet assembly shall be made of high temperature, high strength, glass-filled polypropylene (GFPP).

1.2 Diaphragm

- The diaphragm shall be made of EPDM.
- or The diaphragm shall be made of FKM.
- or The diaphragm shall be made of PTFE (backed with EPDM).

2.0 Connections

2.1 Spigot Style

- The IPS spigot PVC end connectors shall conform to the dimensional standard ASTM D1785.
- or The IPS spigot CPVC end connectors shall conform to the dimensional standard ASTM F441.
- or The Metric spigot PP end connectors shall conform to the dimensional standard ISO 3609.
- or The Metric spigot PVDF end connectors shall conform to the dimensional standard ISO 10931.

2.2 Socket Style

- The IPS socket PVC end connectors shall conform to the dimensional standards ASTM D2466 and ASTM D2467.
- or The IPS socket CPVC end connectors shall conform to the dimensional standard ASTM F439.
- or The Metric socket PP end connectors shall conform to the dimensional standard ISO 3609.
- or The Metric socket PVDF end connectors shall conform to the dimensional standard ISO 10931.

2.3 Threaded Style

- The female NPT threaded PVC end connectors shall conform to the dimensional standards ASTM D2464, ASTM F1498, and ANSI B1.20.1.
- or The female NPT threaded CPVC end connectors shall conform to the dimensional standards ASTM F437, ASTM F1498, and ANSI B1.20.1.

2.4 Flanged Style

- The ANSI 150 flanged PVC end connectors shall conform to the dimensional standard ANSI B16.5.
- or The ANSI 150 flanged CPVC end connectors shall conform to the dimensional standard ANSI B16.5.
- or The ANSI 150 flanged PP end connectors shall conform to the dimensional standard ANSI B16.5.
- or The ANSI 150 flanged PVDF end connectors shall conform to the dimensional standard ANSI B16.5.

DK Series Pneumatic Diaphragm Valves

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Sample Specification, continued

3.0 Design Features

- All valves shall be weir-style for throttling applications.
- Valves shall have a standard optical position indicator to allow for a visual check of the valve position.
- Valves shall have a custom labelling plate housed in a transparent cap.
- All through bolts shall be made of stainless steel.
- The valve shall incorporate a feature that allows an identification tag to be easily affixed to the valve body.
- Bodies of PVC, CPVC and PP valves shall have brass mounting inserts.
- Bodies PVDF valves shall have stainless steel mounting inserts.

3.1 Actuators

- All actuators shall be made of high strength glass-filled polypropylene (GFPP).
- Actuators shall be piston style.
- Actuators shall have 6 independent cartridge springs arranged radially to uniformly distribute the load on the piston.
- All spring shall be cut from spring grade steel for maximum memory life and epoxy coated for maximum chemical resistance.
- The following accessories shall be available for all actuators: position indicator, stroke limiter, stroke limiter with position indicator, limit switch, limit switch box, 3-15 psi positioner, 4-20 mA positioner, pilot solenoid valve.

3.2 Pressure Rating

- All valves shall be rated at 150 psi at 73°F.

3.3 Markings

- All valves shall be marked to indicate size, material designation, and manufacturers name or trade mark.

3.4 Color Coding

- All PVC valves shall be color-coded dark gray.
or All CPVC valves shall be color-coded light gray.
or All PP valves shall be color-coded beige gray.
or All PVDF valves shall not be color-coded and be white in appearance.
- All bonnet assemblies shall be color-coded black.

- 4.0** All valves shall be Xirtec® PVC, Xirtec® CPVC, PP or PVDF by IPEX or approved equal.

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Valve Selection – Double Acting

Valve Size (inches)	Body Material	Diaphragm Material	IPEX Part Number				Pressure Rating @ 73°F
			IPS Spigot	IPS Socket	FNP Threaded	ANSI 150 Flanged	
1/2	PVC	EPDM	354040	354052	354058	354076	150 psi
		FKM	354042	354054	354060	354078	
		PTFE	354044	354056	354062	354080	
	CPVC	EPDM	354082	354094	354100	354118	
		FKM	354084	354096	354102	354120	
		PTFE	354086	354098	354104	354122	
3/4	PVC	EPDM	354041	354053	354059	354077	
		FKM	354043	354055	354061	354079	
		PTFE	354045	354057	354063	354081	
	CPVC	EPDM	354083	354095	354101	354119	
		FKM	354085	354097	354103	354121	
		PTFE	354087	354099	354105	354123	
1	PVC	EPDM	354417	354661	354418	354733	
		FKM	354580	354697	354436	354777	
		PTFE	354624	354715	354472	354796	
	CPVC	EPDM	354815	354896	354490	354908	
		FKM	354853	354900	354508	354913	
		PTFE	354891	354904	354544	354918	
1-1/4	PVC	EPDM	354562	354669	354426	354741	
		FKM	354606	354705	354462	354778	
		PTFE	354625	354723	354480	354797	
	CPVC	EPDM	354818	354897	354498	354909	
		FKM	354861	354901	354534	354914	
		PTFE	354892	354905	354552	354919	
1-1/2	PVC	EPDM	354570	354670	354427	354742	
		FKM	354607	354706	354463	354779	
		PTFE	354651	354724	354481	354805	
	CPVC	EPDM	354843	354898	354499	354910	
		FKM	354862	354902	354535	354915	
		PTFE	354893	354906	354553	354920	
2	PVC	EPDM	354571	354696	354435	354768	
		FKM	354615	354714	354471	354787	
		PTFE	354652	354732	354489	354806	
	CPVC	EPDM	354844	354899	354507	354911	
		FKM	354889	354903	354543	354916	
		PTFE	354894	354907	354561	354921	
2-1/2	PVC	EPDM	354579	-	-	354769	
		FKM	354616	-	-	354788	
		PTFE	354660	-	-	354814	
	CPVC	EPDM	354852	-	-	354912	
		FKM	354890	-	-	354917	
		PTFE	354895	-	-	354922	

Body Material:

- PVC
- CPVC

Size (inches):

- 1/2
- 3/4
- 1
- 1-1/4
- 1-1/2
- 2
- 2-1/2

Diaphragm:

- EPDM
- FKM
- PTFE (EPDM Backed)

Control Style:

- Pneumatic (Double Acting)
- Pneumatic (Normally Open)
- Pneumatic (Normally Closed)

End Connections:

- Spigot (IPS)
- True Union (IPS Socket)
- True Union (FNPT Threaded)
- Flanged (ANSI 150)

IPEX Part Number:

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Valve Selection – Double Acting

Valve Size (mm)	Body Material	Diaphragm Material	IPEX Part Number		Pressure Rating @ 73°F
			Double Acting Metric Spigot	True Union Metric Socket	
20	PP	EPDM	354124	354130	150 psi
		FKM	354126	354132	
		PTFE	354128	354134	
	PVDF	EPDM	354172	354883	
		FKM	354174	354885	
		PTFE	354881	354887	
25	PP	EPDM	354125	354131	
		FKM	354127	354133	
		PTFE	354129	354135	
	PVDF	EPDM	354173	354884	
		FKM	354880	354886	
		PTFE	354882	354888	
32	PP	EPDM	354923	354938	
		FKM	354928	354942	
		PTFE	354933	354946	
	PVDF	EPDM	354950	354965	
		FKM	354955	354969	
		PTFE	354960	354973	
40	PP	EPDM	354924	354939	
		FKM	354929	354943	
		PTFE	354934	354947	
	PVDF	EPDM	354951	354966	
		FKM	354956	354970	
		PTFE	354961	354974	
50	PP	EPDM	354925	354940	
		FKM	354930	354944	
		PTFE	354935	354948	
	PVDF	EPDM	354952	354967	
		FKM	354957	354971	
		PTFE	354962	354975	
63	PP	EPDM	354926	354941	
		FKM	354931	354945	
		PTFE	354936	354949	
	PVDF	EPDM	354953	354968	
		FKM	354958	354972	
		PTFE	354963	354976	
75	PP	EPDM	354927	-	
		FKM	354932	-	
		PTFE	354937	-	
	PVDF	EPDM	354954	-	
		FKM	354959	-	
		PTFE	354964	-	

Body Material:

- PP
- PVDF

Size (inches):

- 20mm
- 25mm
- 32mm
- 40mm
- 50mm
- 63mm
- 75mm

Diaphragm:

- EPDM
- FKM
- PTFE (EPDM Backed)

Control Style:

- Pneumatic (Double Acting)
- Pneumatic (Normally Open)
- Pneumatic (Normally Closed)

End Connections:

- Spigot
- True Union (Metric Socket)

IPEX Part Number:

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Valve Selection – Normally Open

Size (in)	Body Material	Diaphragm Material	IPEX Part Number Normally Open True Union				Pressure Rating @ 73°F
			IPS Spigot	IPS Socket	FNPT Threaded	ANSI 150 Flanged	
1/2	PVC	EPDM	354410	354437	354046	354455	150 psi
		FPM	354419	354443	354048	354464	
		PTFE	354428	354449	354050	354473	
	CPVC	EPDM	354482	354509	354088	354527	
		FPM	354491	354515	354090	354536	
		PTFE	354500	354521	354092	354545	
3/4	PVC	EPDM	354411	354438	354047	354456	
		FPM	354420	354444	354049	354465	
		PTFE	354429	354450	354051	354474	
	CPVC	EPDM	354483	354510	354089	354528	
		FPM	354492	354516	354091	354537	
		PTFE	354501	354522	354093	354546	
1	PVC	EPDM	354003	354439	354064	354457	
		FPM	354421	354445	354068	354466	
		PTFE	354430	354451	354072	354475	
	CPVC	EPDM	354484	354511	354106	354529	
		FPM	354493	354517	354110	354538	
		PTFE	354502	354523	354114	354547	
1-1/4	PVC	EPDM	354413	354440	354065	354458	
		FPM	354422	354446	354069	354467	
		PTFE	354431	354452	354073	354476	
	CPVC	EPDM	354485	354512	354107	354530	
		FPM	354494	354518	354111	354539	
		PTFE	354503	354524	354115	354548	
1-1/2	PVC	EPDM	354414	354441	354066	354459	
		FPM	354423	354447	354070	354468	
		PTFE	354432	354453	354074	354477	
	CPVC	EPDM	354486	354513	354108	354531	
		FPM	354495	354519	354112	354540	
		PTFE	354504	354525	354116	354549	
2	PVC	EPDM	354415	354442	354067	354460	
		FPM	354424	354448	354071	354469	
		PTFE	354433	354454	354075	354478	
	CPVC	EPDM	354487	354514	354109	354532	
		FPM	354496	354520	354113	354541	
		PTFE	354505	354526	354117	354550	
2-1/2	PVC	EPDM	354416	-	-	354461	
		FPM	354425	-	-	354470	
		PTFE	354434	-	-	354479	
	CPVC	EPDM	354488	-	-	354533	
		FPM	354497	-	-	354542	
		PTFE	354506	-	-	354551	

Body Material:

- PVC
- CPVC

Size (inches):

- 1/2
- 3/4
- 1
- 1-1/4
- 1-1/2
- 2
- 2-1/2

Diaphragm:

- EPDM
- FKM
- PTFE (EPDM Backed)

Control Style:

- Pneumatic (Double Acting)
- Pneumatic (Normally Open)
- Pneumatic (Normally Closed)

End Connections:

- Spigot (IPS)
- True Union (IPS Socket)
- True Union (FNPT Threaded)
- Flanged (ANSI 150)

IPEX Part Number:

DK Series Pneumatic Diaphragm Valves

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Valve Selection – Normally Open

Valve Size (mm)	Body Material	Diaphragm Material	Product Code		Pressure Rating @ 73°F
			Normally Open Metric Spigot	True Union Metric Socket	
20	PP	EPDM	354554	354581	150 psi
		FPM	354563	354587	
		PTFE	354572	354593	
	PVDF	EPDM	354599	354582	
		FPM	354608	354588	
		PTFE	354617	354594	
25	PP	EPDM	354555	354626	
		FPM	354564	354632	
		PTFE	354573	354638	
	PVDF	EPDM	354600	354627	
		FPM	354609	354633	
		PTFE	354618	354639	
32	PP	EPDM	354556	354583	
		FPM	354565	354589	
		PTFE	354574	354595	
	PVDF	EPDM	354601	354584	
		FPM	354610	354590	
		PTFE	354619	354596	
40	PP	EPDM	354557	354585	
		FPM	354566	354628	
		PTFE	354575	354634	
	PVDF	EPDM	354602	354640	
		FPM	354611	354629	
		PTFE	354620	354635	
50	PP	EPDM	354558	354641	
		FPM	354567	354630	
		PTFE	354576	354591	
	PVDF	EPDM	354603	354597	
		FPM	354612	354586	
		PTFE	354621	354592	
63	PP	EPDM	354559	354598	
		FPM	354568	354636	
		PTFE	354577	354642	
	PVDF	EPDM	354604	354631	
		FPM	354613	354637	
		PTFE	354622	354643	
75	PP	EPDM	354560	-	
		FPM	354569	-	
		PTFE	354578	-	
	PVDF	EPDM	354605	-	
		FPM	354614	-	
		PTFE	354623	-	

Body Material:

- PP
- PVDF

Size (inches):

- 20mm
- 25mm
- 32mm
- 40mm
- 50mm
- 63mm
- 75mm

Diaphragm:

- EPDM
- FKM
- PTFE (EPDM Backed)

Control Style:

- Pneumatic (Double Acting)
- Pneumatic (Normally Open)
- Pneumatic (Normally Closed)

End Connections:

- Spigot
- True Union (Metric Socket)

IPEX Part Number:

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Valve Selection – Normally Closed

Size (in)	Body Material	Diaphragm Material	Product Code				Pressure Rating @ 73°F
			Normally Closed		True Union		
			IPS Spigot	IPS Socket	FNPT Threaded	ANSI 150 Flanged	
1/2	PVC	EPDM	354644	354671	354136	354689	
		FPM	354653	354677	354142	354698	
		PTFE	354662	354683	354148	354707	
	CPVC	EPDM	354716	354743	354154	354761	
		FPM	354725	354749	354160	354770	
		PTFE	354734	354755	354166	354780	
3/4	PVC	EPDM	354645	354672	354137	354690	
		FPM	354654	354678	354143	354699	
		PTFE	354663	354684	354149	354708	
	CPVC	EPDM	354717	354744	354155	354762	
		FPM	354726	354750	354161	354771	
		PTFE	354735	354756	354167	354781	
1	PVC	EPDM	354646	354673	354138	354691	
		FPM	354655	354679	354144	354700	
		PTFE	354664	354685	354150	354709	
	CPVC	EPDM	354718	354745	354156	354763	
		FPM	354727	354751	354162	354772	
		PTFE	354736	354757	354168	354782	
1-1/4	PVC	EPDM	354647	354674	354139	354692	
		FPM	354656	354680	354145	354701	
		PTFE	354665	354686	354151	354710	
	CPVC	EPDM	354719	354746	354157	354764	
		FPM	354728	354752	354163	354773	
		PTFE	354737	354758	354169	354783	
1-1/2	PVC	EPDM	354648	354675	354140	354693	
		FPM	354657	354681	354146	354702	
		PTFE	354666	354687	354152	354711	
	CPVC	EPDM	354720	354747	354158	354765	
		FPM	354729	354753	354164	354774	
		PTFE	354738	354759	354170	354784	
2	PVC	EPDM	354649	354676	354141	354694	
		FPM	354658	354682	354147	354703	
		PTFE	354667	354688	354153	354712	
	CPVC	EPDM	354721	354748	354159	354766	
		FPM	354730	354754	354165	354775	
		PTFE	354739	354760	354171	354785	
2-1/2	PVC	EPDM	354650	-	-	354695	
		FPM	354659	-	-	354704	
	CPVC	PTFE	354668	-	-	354713	
		EPDM	354722	-	-	354767	
	CPVC	FPM	354731	-	-	354776	
		PTFE	354740	-	-	354786	

150 psi

Body Material:

- PVC
- CPVC

Size (inches):

- 1/2
- 3/4
- 1
- 1-1/4
- 1-1/2
- 2
- 2-1/2

Diaphragm:

- EPDM
- FKM
- PTFE (EPDM Backed)

Control Style:

- Pneumatic (Double Acting)
- Pneumatic (Normally Open)
- Pneumatic (Normally Closed)

End Connections:

- Spigot (IPS)
- True Union (IPS Socket)
- True Union (FNPT Threaded)
- Flanged (ANSI 150)

IPEX Part Number:

DK Series Pneumatic Diaphragm Valves

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Valve Selection – Normally Closed

Valve Size (mm)	Body Material	Diaphragm Material	Product Code		Pressure Rating @ 73°F
			Normally Closed	True Union Metric Socket	
20	PP	EPDM	354789	354816	150 psi
		FPM	354798	354824	
		PTFE	354807	354830	
	PVDF	EPDM	354836	354863	
		FPM	354845	354868	
		PTFE	354854	354874	
25	PP	EPDM	354790	354819	
		FPM	354799	354825	
		PTFE	354808	354831	
	PVDF	EPDM	354837	354864	
		FPM	354846	354869	
		PTFE	354855	354875	
32	PP	EPDM	354791	354820	
		FPM	354800	354826	
		PTFE	354809	354832	
	PVDF	EPDM	354838	354817	
		FPM	354847	354870	
		PTFE	354856	354876	
40	PP	EPDM	354792	354821	
		FPM	354801	354827	
		PTFE	354810	354833	
	PVDF	EPDM	354839	354865	
		FPM	354848	354871	
		PTFE	354857	354877	
50	PP	EPDM	354793	354822	
		FPM	354802	354828	
		PTFE	354811	354834	
	PVDF	EPDM	354840	354866	
		FPM	354849	354872	
		PTFE	354858	354878	
63	PP	EPDM	354794	354823	
		FPM	354803	354829	
		PTFE	354812	354835	
	PVDF	EPDM	354841	354867	
		FPM	354850	354873	
		PTFE	354859	354879	
75	PP	EPDM	354795	-	
		FPM	354804	-	
		PTFE	354813	-	
	PVDF	EPDM	354842	-	
		FPM	354851	-	
		PTFE	354860	-	

Body Material:

- PP
- PVDF

Size (inches):

- 20mm
- 25mm
- 32mm
- 40mm
- 50mm
- 63mm
- 75mm

Diaphragm:

- EPDM
- FKM
- PTFE (EPDM Backed)

Control Style:

- Pneumatic (Double Acting)
- Pneumatic (Normally Open)
- Pneumatic (Normally Closed)

End Connections:

- Spigot
- True Union (Metric Socket)

IPEX Part Number:

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Options and Accessories



Electrical Position Indicator, 1 Mechanical Switch

Valve	Dimension (in)	IPEX Part Number
DK / NC	1/2 – 3/4	154472
DK / NC	1 – 1-1/4	054953
DK / NC	1-1/2	054954
DK / NC	2 – 2-1/2	054955



Optical Position Indicator

Valve	Dimension (in)	IPEX Part Number
DK / DA-NO-NC	1 – 2-1/2	054997



Stroke Limiter

Valve	Dimension (in)	IPEX Part Number
DK / DA-NO	1/2 – 2-1/2	054994
DK / NC	1 – 1-1/2	054991
DK / NC	2 – 2-1/2	054992



Microswitch Box, 2 Electromechanical Switches (IP 65)

Valve	Dimension (in)	IPEX Part Number
DK / NO-DA	1/2 – 3/4	154474
DK / NC	1/2 – 3/4	154473
DK / NO-DA	1 – 2 1/2	054969
DK / NC	1 – 1 1/2	054967
DK / NC	2 – 2 1/2	054968



Stroke Limiter w/ Position Indicator

Valve	Dimension (in)	IPEX Part Number
DK / DA-NO-NC	1/2 – 3/4	154470
DK / DA-NO	1 – 2-1/2	053066
DK / NC	1 – 1-1/4	054999
DK / NC	1-1/2	053063
DK / NC	2 – 2-1/2	053064



Microswitch Box, 2 Inductive Switches (IP 65, NAMUR*, SAFETY CLASS: Eex ia IIC T6)

Valve	Dimension (in)	IPEX Part Number
DK / NO-DA	1/2 – 3/4	154477
DK / NC	1/2 – 3/4	154476
DK / NO-DA	1 – 2-1/2	054972
DK / NC	1 – 1-1/2	054970
DK / NC	2 – 2-1/2	054971

* to be used with an amplifier



Stroke Limiter w/ Position Indicator and Manual Override

Valve	Dimension (in)	IPEX Part Number
DK / DA-NO-NC	1/2 – 3/4	154471
DK / DA-NO*	1 – 1-1/4	053072
DK / DA-NO*	1-1/2 – 2-1/2	053073
DK / NC*	1 – 1-1/4	053069
DK / NC*	1-1/2 – 2-1/2	053071

* factory assembled

Pilot Solenoid Valve – Direct Mount, NBR Seals

Valve	Style	Voltage	Dimension (in)	IPEX Part Number
DK / DA-NO-NC	3/2 Way	24 VDC	1/2 – 2 1/2	154036
DK / DA-NO-NC	3/2 Way	110 VAC	1/2 – 2 1/2	053074
DK / DA-NO-NC	3-5/2 Way	24 VDC	1/2 – 3/4	154485
DK / DA-NO-NC	3-5/2 Way	110 VAC	1/2 – 3/4	154486
NAMUR Adapter Plate	–	–	1/2 – 3/4	154484



Pilot Solenoid Valve – Gang Mount, NBR Seals

Valve	Style	Voltage	Dimension (in)	IPEX Part Number
DK / DA-NO-NC	3/2 Way	24 VDC	1/2 – 2-1/2	154483
DK / DA-NO-NC	3/2 Way	110 VAC	1/2 – 2-1/2	053076



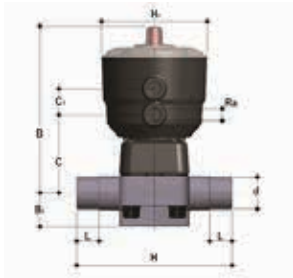
DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Dimensions - 1" to 2-1/2"

IPS Spigot Connections – Double Acting, Normally Open, Normally Closed

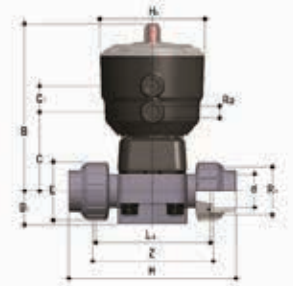
Dimension (inches)



Size	PVC/ CPVC d(in)	PP/ PVDF d(mm)	B	B ₁	C	C ₁	H	H ₁	L	R _a
1/2	0.84	20	5.83	0.98	2.60	0.94	4.88	3.82	0.63	1/4
3/4	1.05	25	5.94	1.16	2.72	0.94	5.67	3.82	0.75	1/4
1	1.32	32	6.26	1.30	3.07	0.94	6.06	3.82	0.87	1/4
1-1/4	1.66	40	6.42	1.18	3.23	0.94	6.85	3.82	1.02	1/4
1-1/2	1.90	50	8.15	1.38	4.41	0.94	7.64	4.96	1.22	1/4
2	2.38	63	9.65	1.81	5.59	0.94	8.82	6.18	1.50	1/4
2-1/2	2.88	75	9.65	1.81	5.59	0.94	11.18	6.18	1.73	1/4

IPS Socket Connections – Double Acting, Normally Open, Normally Closed

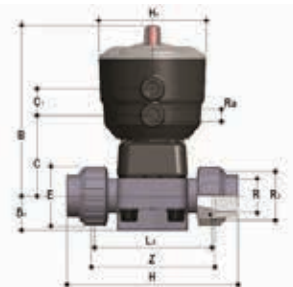
Dimension (inches)



Size	PVC/ CPVC d(in)	PP/ PVDF d(mm)	B	B ₁	C	C ₁	E	H (PVC/ CPVC)	H (PP/ PVDF)	H ₁	LA	R ₁	R _a	Z (PVC/ CPVC)	Z (PP/ PVDF)
1/2	0.84	20	5.83	0.98	2.60	0.94	1.61	5.63	5.08	3.82	3.54	1	1/4	3.86	3.94
3/4	1.05	25	5.94	1.16	2.72	0.94	1.97	6.57	6.06	3.82	4.25	1-1/4	1/4	4.53	4.57
1	1.32	32	6.26	1.30	3.07	0.94	2.28	7.09	6.61	3.82	4.57	1-1/2	1/4	4.8	4.88
1-1/4	1.66	40	6.42	1.18	3.23	0.94	2.83	8.19	7.56	3.82	5.28	2.00	1/4	5.67	5.51
1-1/2	1.90	50	8.15	1.38	4.41	0.94	3.11	9.21	8.74	4.96	6.06	2-1/4	1/4	6.46	6.30
2	2.38	63	9.65	1.81	5.59	0.94	3.86	10.71	10.47	6.18	7.24	2-3/4	1/4	7.68	7.48

FNPT Threaded Connections – Double Acting, Normally Open, Normally Closed

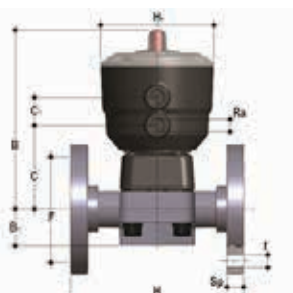
Dimension (inches)



R	B	B ₁	C	C ₁	E	H	H ₁	LA	R ₁	R _a	Z
1/2	5.83	0.98	2.60	0.94	1.61	5.16	3.82	3.54	1	1/4	3.82
3/4	5.94	1.18	2.72	0.94	1.97	5.94	3.82	4.25	1-1/4	1/4	4.65
1	6.26	1.30	3.07	0.94	2.28	6.50	3.82	4.57	1-1/2	1/4	5.00
1-1/4	6.42	1.18	3.23	0.94	2.83	7.40	3.82	5.28	2	1/4	5.71
1-1/2	8.15	1.38	4.41	0.94	3.11	8.19	4.96	6.06	2-1/4	1/4	6.50
2	9.65	1.81	5.59	0.94	3.86	9.69	6.18	7.24	2-3/4	1/4	7.68

ANSI 150 Flanged (Vanstone) Connections – Double Acting, Normally Open, Normally Closed

Dimension (inches)

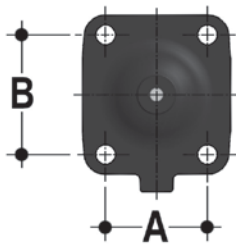
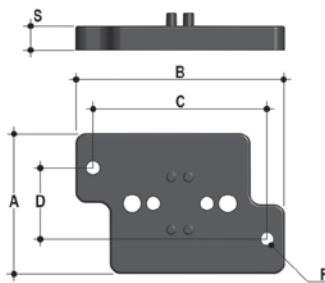
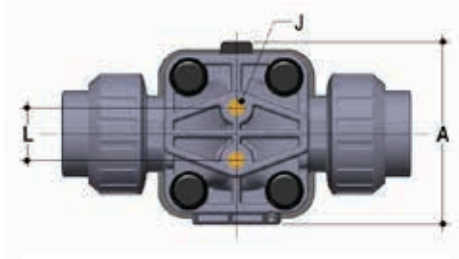


Size	B	B ₁	C	C ₁	f	H	H ₁	R _a	Sp	# holes
1/2	5.83	0.98	2.60	0.94	5/8	4.25	3.82	1/4	0.53	4
3/4	5.94	1.18	2.72	0.94	5/8	5.91	3.82	1/4	0.53	4
1	6.26	1.30	3.07	0.94	5/8	6.30	3.82	1/4	0.53	4
1-1/4	6.42	1.18	3.23	0.94	5/8	7.09	3.82	1/4	0.55	4
1-1/2	8.15	1.38	4.41	0.94	5/8	7.87	4.96	1/4	0.63	4
2	9.65	1.81	5.59	0.94	3/4	9.06	6.18	1/4	0.63	4
2-1/2	9.65	1.81	5.59	0.94	3/4	11.42	6.18	1/4	0.83	4

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Dimensions



Dimension (inches)

Size	A	L	J
1/2	2.91	0.98	M6 x 10
3/4	2.91	0.98	M6 x 10
1	3.43	0.98	M6 x 10
1-1/4	3.43	0.98	M6 x 10
1-1/2	4.49	1.75	M8 x 14
2	5.35	1.75	M8 x 14
2-1/2	5.35	1.75	M8 x 14

Wall/Panel Mounting Plate

Dimensions (inches)

Size	A	B	C	D	F	S
1/2	2.56	3.82	3.19	1.30	0.22	0.43
3/4	2.56	3.82	3.19	1.30	0.22	0.43
1	2.56	3.82	3.19	1.30	0.22	0.43
1-1/4	2.56	3.82	3.19	1.30	0.22	0.43
1-1/2	2.56	5.67	5.12	1.30	0.26	0.43
2	2.56	5.67	5.12	1.30	0.26	0.43
2-1/2	2.56	5.67	5.12	1.30	0.26	0.43

Diaphragm

Dimensions (inches)

Size (in)	Size (mm)	A	B
1/2	20	1.57	1.73
3/4	25	1.57	1.73
1	32	1.81	2.13
1-1/4	40	1.81	2.13
1-1/2	50	2.56	2.76
2	63	3.07	3.23
2-1/2	75	3.07	3.23

Weights

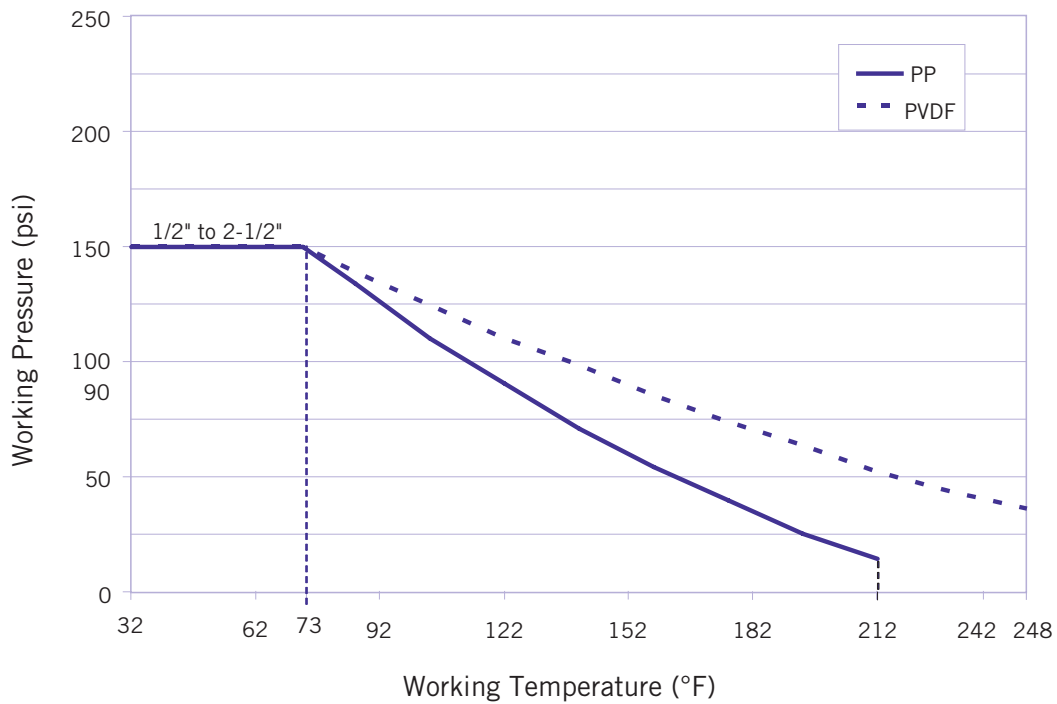
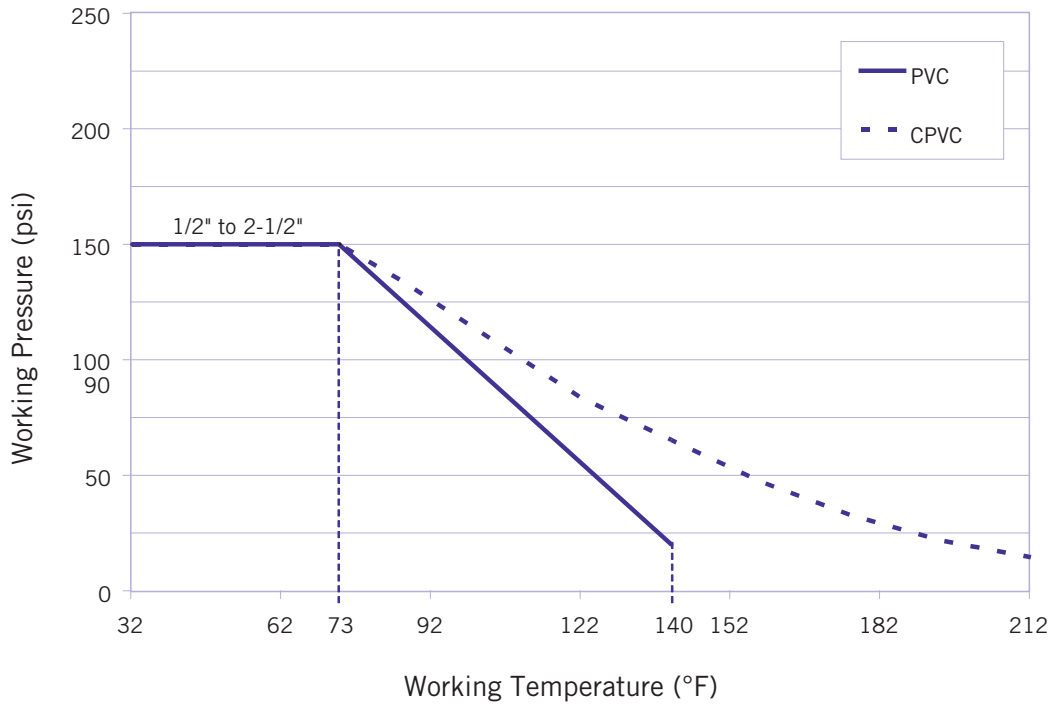
Approximate Weight (lbs)

Size	PVC / CPVC Spigot			PVC / CPVC True Union			PVC / CPVC Flanged			PP Spigot			PP True Union			PVDF Spigot			PVDF True Union		
	DA	NO	NC	DA	NO	NC	DA	NO	NC	DA	NO	NC	DA	NO	NC	DA	NO	NC	DA	NO	NC
1/2	1.27	1.53	1.53	1.36	1.62	1.62	1.77	2.04	2.04	1.20	1.47	1.47	1.25	1.52	1.52	1.35	1.61	1.61	1.47	1.73	1.73
3/4	1.32	1.58	1.58	1.49	1.76	1.76	1.93	2.22	2.22	1.23	1.50	1.50	1.36	1.62	1.62	1.42	1.68	1.68	1.66	1.92	1.92
1	1.76	2.02	2.02	2.00	2.26	2.26	2.54	2.80	2.80	1.62	1.88	1.88	1.79	2.05	2.05	1.92	2.18	2.18	2.25	2.51	2.51
1-1/4	1.85	2.12	2.12	2.27	2.54	2.54	2.98	3.22	3.22	1.69	1.95	1.95	1.98	2.24	2.24	2.05	2.32	2.32	2.63	2.89	2.89
1-1/2	4.41	4.94	5.96	4.89	6.44	6.44	5.81	6.34	7.35	4.06	4.59	5.60	4.43	4.96	5.98	4.76	5.30	6.31	5.38	5.91	6.93
2	8.15	9.12	13.05	9.00	13.90	13.90	9.81	10.78	14.71	7.89	8.86	12.79	8.18	9.14	13.07	9.12	10.09	14.01	10.25	11.22	15.15
2-1/2	8.53	9.50	13.43	-	-	-	11.14	12.10	16.03	8.22	9.19	13.12	-	-	-	9.65	10.61	14.54	-	-	-

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Pressure – Temperature Ratings

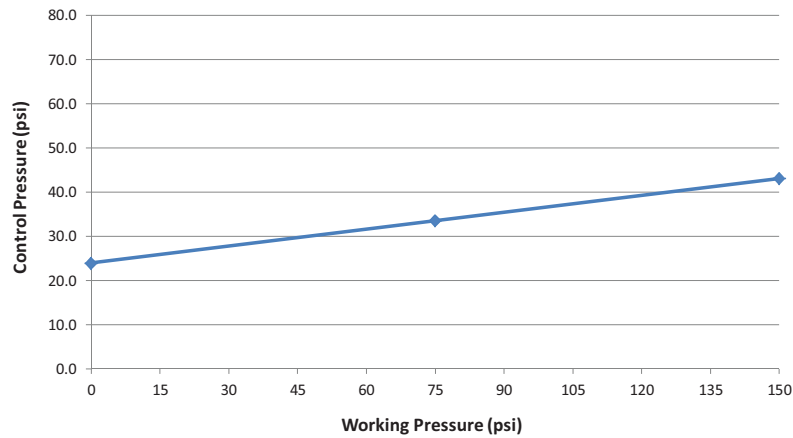


DK Series Pneumatic Diaphragm Valves

Product Data Sheet

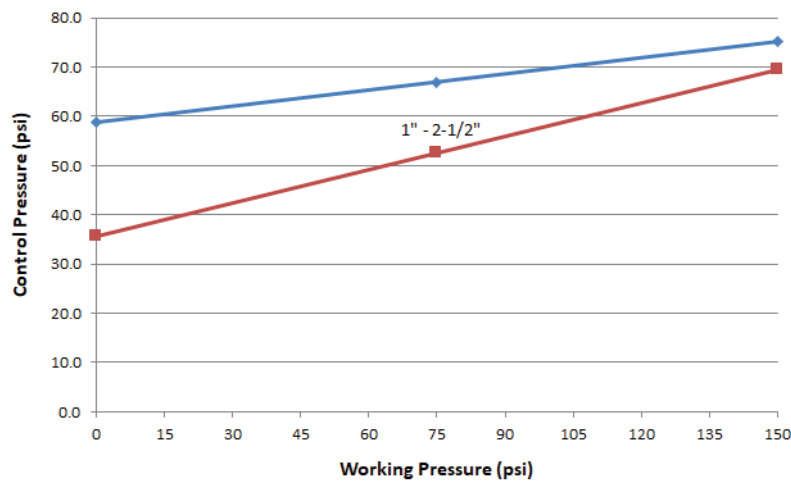
Control Pressure – 1/2" – 2-1/2"

Double Acting

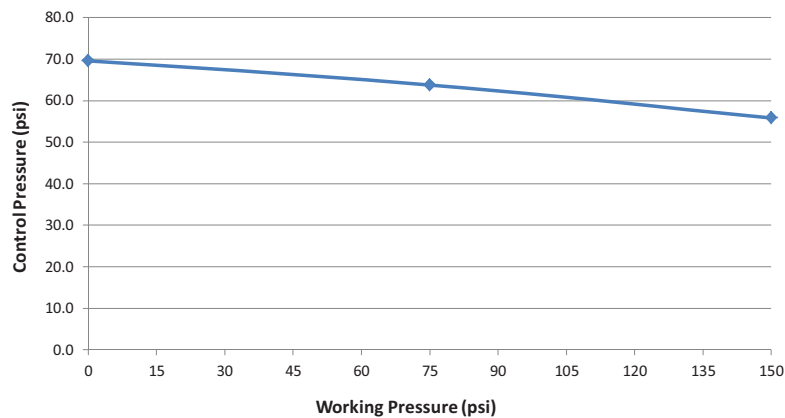


* Maximum Control Pressure - 75 psi

Normally Open



Normally Closed



* Maximum Control Pressure - 100 psi

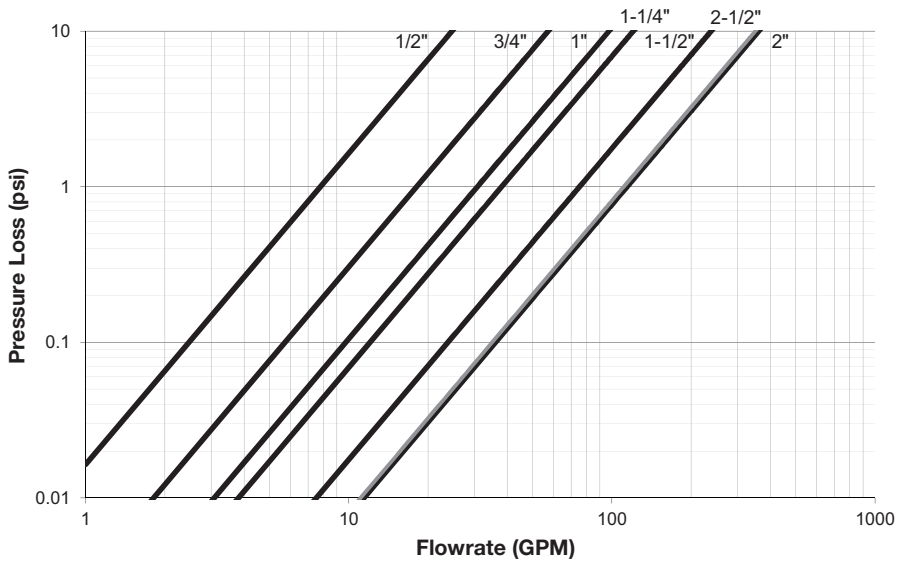
DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Flow Coefficients

Size (in)	C _v
1/2	7.8
3/4	18.1
1	30.8
1-1/4	38.1
1-1/2	75.3
2	114.2
2-1/2	110.9

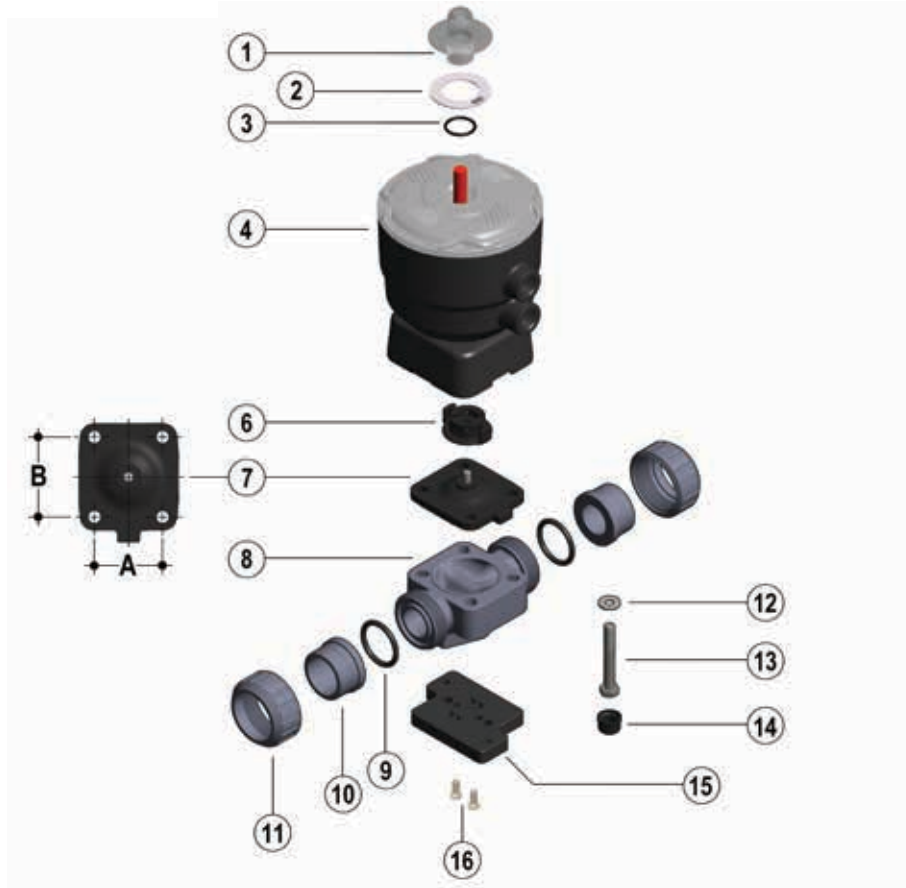
Pressure Loss Chart



DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Components



1/2" to 2-1/2" – Double Acting, Normally Open, Normally Closed

#	Component	Material	Qty
* 1	Transparent Cap	PVC	1
* 2	Labelling Plate	PVC	1
* 3	O-Ring	EPDM	1
* 4	Actuator, DA/NO/NC	GFPP	1
* 6	Compressor	IXEF®	1
* 7	Diaphragm	EPDM / FKM / PTFE	1
* 8	Valve Body	PVC / CPVC / PP / PVDF	1
* 9	Socket Seal O-Ring	EPDM / FKM	2
* 10	End Connector	PVC / CPVC / PP / PVDF	2
* 11	Union Nut	PVC / CPVC / PP / PVDF	2
* 12	Washer	SS	4
* 13	Hex Bolt	SS	4
* 14	Protective Cap	PE	4
** 15	Wall/Panel Mounting Plate	GFPP	1
** 16	Screw	SS	2

* Spare parts available.

Items 1 through 6 are supplied as an assembly

** Accessories

Contact IPEX for availability of spare components for Spigot and Flanged style valves.

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Installation Procedures

1. The valve may be installed in any position or direction.
2. Please refer to the appropriate connection style subsection:
 - a. For spigot style, solvent cement each pipe onto the ends of the valve body. **Ensure that excess solvent does not run into the body of the valve.**
 - b. For true union style, remove the union nuts and slide them onto the pipe.
 - i. For socket style, solvent cement the end connectors onto the pipe ends. For correct joining procedure, please refer to the section entitled, "Joining Methods – Solvent Cementing" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems". **Ensure that excess solvent does not run into the body of the valve. Be sure to allow sufficient cure time before continuing with the valve installation.**
 - ii. For threaded style, thread the end connectors onto the pipe ends. For correct joining procedure, please refer to the section entitled, "Joining Methods – Threading" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems".
 - iii. Ensure that the socket o-rings are properly fitted in their grooves then carefully place the valve in the system between the two end connections.
 - iv. **Tighten both union nuts. Hand tightening is typically sufficient to maintain a seal for the maximum working pressure. Over-tightening may damage the threads on the valve body and/or the union nut, and may even cause the union nut to crack.**
 - c. **For flanged style, join both flanges to the pipe flanges. For correct joining procedure, please refer to the section entitled, "Joining Methods – Flanging" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems".**
3. If anchoring is required, fix the valve to the supporting structure using the wall/panel mounting kit.
4. Connect any accessories then a suitable air supply and pilot system to the actuator. Be sure to check that both the working and control pressure are in accordance with the specifications.

DK Series Pneumatic Diaphragm Valves

Product Data Sheet

Disassembly

1. If removing the valve from an operating system, isolate the valve from the rest of the line. Be sure to depressurize and drain the valve and isolated branch.
Depressurize and disconnect the pneumatic control line before continuing with disassembly.
2. If necessary, detach the valve from the support structure by disassembling the wall/panel mounting kit attached to the bottom of the valve body (8).
3. Please refer to the appropriate connection style subsection:
 - a. For spigot style, cut the pipe on either side of the valve and remove from the line.
 - b. For true union style, loosen both union nuts and drop the valve out of the line. If retaining the socket o-rings (9), take care that they are not lost when removing the valve from the line.
 - c. For flanged style, loosen each bolt holding the valve to the pipe flanges. Please refer to the section entitled, "Joining Methods - Flanging" in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems" for a recommended bolt tightening pattern diagram. Follow the same pattern when disassembling the flanged joints then carefully remove the valve from the line.
4. Remove the protective caps (14), then loosen and remove the bolts (13) and washers (12) from the bottom of the valve body.
5. Separate the valve body (8) from the actuator (1 or 4).
6. Unscrew the diaphragm (7) and remove the compressor (6).
7. The valve components can now be checked for problems and/or replaced.

Note: All operations on equipment under pressure or containing compressed springs must be carried out under safe conditions for the operator. For safety reasons, it is not recommended to attempt to disassemble the actuator.

Assembly

Note: Before assembling the valve components, it is advisable to lubricate the o-rings with a water soluble lubricant.

Be sure to consult the "IPEX Chemical Resistance Guide" and/or other trusted resources to determine specific lubricant-rubber compatibilities.

1. Insert the compressor (6) on the actuator stem (1 or 4) aligning it correctly in its housing.
2. Screw the diaphragm (7) on the stem, aligning it correctly with its housing on the actuator.
3. Mount the actuator (1 or 4) on the valve body (8) and tighten the bolts (13) and washers (12).
4. Tighten the bolts (13) in an even (cross-like) pattern, ensuring that recommended tightening torque found on the instruction sheet is followed.
5. Replace the protection caps on the bolt heads (14).
6. Reconnect the valve to the pneumatic and electrical connections.

Note: All operations on equipment under pressure or containing compressed springs must be carried out under safe conditions for the operator. For safety reasons, it is not recommended to attempt to disassemble the actuator.

Testing and Operation

The purpose of system testing is to assess the quality of all joints and fittings to ensure that they will withstand the design working pressure, plus a safety margin, without loss of pressure or fluid. Typically, the system will be tested and assessed in sub-sections as this allows for improved isolation and remediation of potential problems. With this in mind, the testing of a specific installed valve is achieved while carrying out a test of the overall system.

An onsite pressure test procedure is outlined in the IPEX Industrial Technical Manual Series, "Volume I: Vinyl Process Piping Systems" under the section entitled, "Testing". The use of this procedure should be sufficient to assess the quality of a valve installation. **In any test or operating condition, it is important to never exceed the pressure rating of the lowest rated appurtenance in the system.**

Important points:

- **Never test thermoplastic piping systems with compressed air or other gases including air-over-water boosters.**
- When testing, do not exceed the rated maximum operating pressure of the valve.
- Avoid the rapid closure of valves to eliminate the possibility of water hammer which may cause damage to the pipeline or the valve.

Please contact IPEX customer service and technical support with regard to any concern not addressed in this data sheet or the technical manual.

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- Irrigation systems
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