burkert
FLUID CONTROL SYSTEMS



2/2-way Diaphragm Valve, cast valve body, weld end and Tri-Clamp® connection, DN 4-50

- Hermetical separation of fluids from the operating mechanism by diaphragm
- Zero dead volume
- Various surface finishes
- Quality certifications FDA / 3A

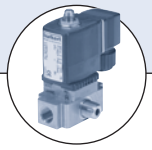
Type 2031 can be combined with...



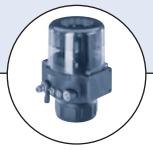
Accessory 1062
Electrical position feedback



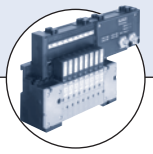
Accessory
Stroke limitation



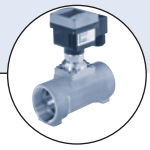
Type 6012/6014P
Pilot valve



Type 8631
TopControl ON/OFF



Type 8640/8644
Valve block



Type 8311
Pressure Sensor/ Switch

The externally piloted diaphragm valve consists of a pneumatically operated piston actuator, a diaphragm and a 2-way valve housing made of investment cast stainless steel.

The standard material of the actuator is PPS. With its favourable flow characteristics and zero dead volume, the valve housing enables high flow capacities and a variety of applications to be realized.

Technical data	
Orifice	DN 4 - 50
Body material	Cast stainless steel 316 L/1.4435
Actuator material	PPS (PA polyamide on request)
Pilot air ports	Stainless steel 1.4305
Seal materials	EPDM, PTFE/EPDM (FKM on request)
Media	Neutral gases and liquids, high purity, sterile, aggressive or abrasive fluids
Viscosity	up to viscous
Surface finish internal mechanical polished internal mechanical polished internal electro polished (others, see ordering chart)	(average surface finish) Ra ≤ 1.6 µm Ra ≤ 0.8 µm Ra ≤ 0.6 µm
Media temperature EPDM PTFE/EPDM	 -10 to +130°C Briefly up to +150°C for steam sterilisation -10 to +130°C
Ambient temperature Actuator size < 100 Actuator size ≥ 100	 +5 to +140°C +5 to +90°C Briefly up to +140°C
Control medium	neutral gases; air
Pilot pressure max.	max. 7 bar, see table p. 2
Port connections Weld end acc. Tri-Clamp® acc. Sterile threaded ends	 ▪EN ISO 1127/ISO 4200 ▪DIN 11850 Series 0 to Series 3 ▪SMS 3008 ▪ISO 2852/SMS 3017 ▪DIN 32676 ▪BS 4825 on request
Installation	As required, preferably with actuator in upright position

Applications

- Water treatment
- Biotechnology
- Food industry

Technical data

Kv-values

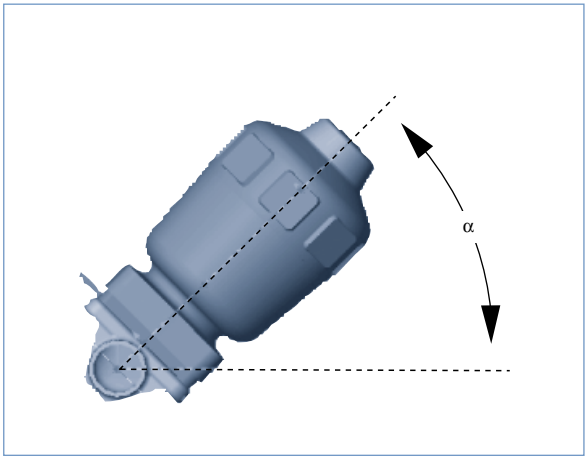
Port connection		Kv-value water	Actuator size Ø	Pilot pressure (bar)		Max. operating pressure for seal material [bar]		Weight
[mm]	[inch]	[m³/h]	[mm]	min.	max.	EPDM	PTFE/EPDM	[kg]
4/6	–	0.8	C-40	5.0	7	10	10	0.4
8	1/4	1.0	C-40	5.0	7	10	10	0.4
10	3/8”	1.0	C-40	5.0	7	10	10	0.4
15	1/2”	4.0	D-50	5.0	7	8.5	-	0.7
		4.5	E-63	5.0	7	–	10	0.9
20	3/4”	7.0	E-63	5.5	7	10	–	1.3
		7.5	F-80	5.0	7	–	10	2.0
25	1”	12.0	F-80	5.0	7	10	–	2.2
		12.0	F-80	5.5	7	–	7.5	2.2
32	1 1/4”	30.0	G-100	5.5	7	6.5	–	4.2
		30.5	H-125	5.5	7	–	10	5.7
40	1 1/2”	30.0	G-100	5.5	7	6.5	–	4.2
		30.5	H-125	5.5	7	–	10	5.7
50	2”	51.5	H-125	5.5	7	8	–	7.6
		51.5	H-125	5.5	7	-	7	7.6

Remark:
For low operating pressures we recommend reduced spring versions.

Flow rate: Kv-value water (m3/h)
Measured at +20°C, 1 bar pressure at valve inlet and free outlet.

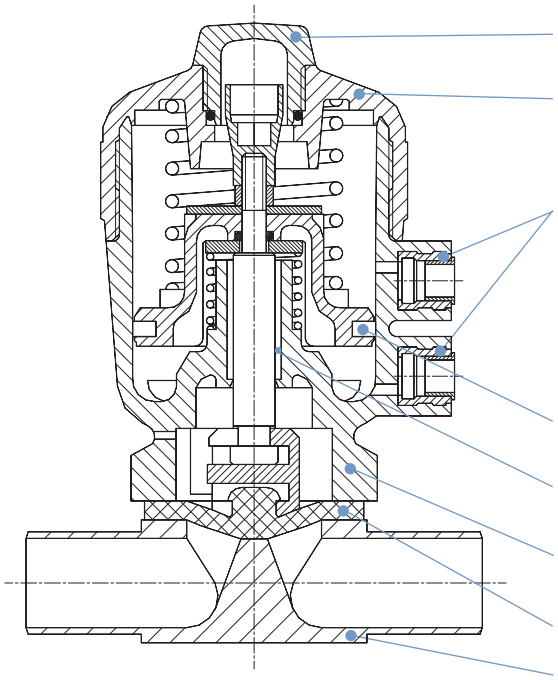
Pressure values (bar)
Gauge pressures with respect to the prevailing atmospheric pressure.

Installation for self-draining operation



α = 15 up to 35° plus 3° to 5° inclination to the pipe axis.
For detailed installation angle values, please contact your local Bürkert representative.

Materials



Visual position indicator: Polysulfon (PSU)

Actuator: PPS (PA polyamide on request)

Pilot air ports: Stainless steel 1.4305

Piston seal: FKM

Spindle guide: Sinter metal

Actuator: PPS (PA polyamide on request)

Diaphragm: EPDM or PTFE/EPDM

Valve body: Cast stainless steel 316L/1.4435

Approvals

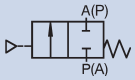
Suitable for foodstuffs / sterile applications

- The composition of the EPDM and PTFE/EPDM diaphragms corresponds to the *Code of Federal Regulations*, published by the *FDA* (Food and Drug Administration, USA).
- The EPDM diaphragms correspond to the *KTW-Recommendation* (Plastics in the Drinking Water Sector). A Manufacturer's Declaration will be supplied on request.
- The diaphragm valves are 3-A approved (3-A Sanitary Standards Symbol Administrative Council)

Ordering chart for valves (other versions on request)

Body with weld end



Control function A	Port connection [mm]	Port connection [inch]	External Ø [mm]	Kv-value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Item no.: internal/external surface: Mech. polished, Ra ≤ 1.6/6.3 µm	Mech. polished, Ra ≤ 0.8/6.3 µm	Electro polished, Ra ≤ 0.6/3.2 µm
 2/2-way, NC by spring return	**Acc. EN ISO 1127/ ISO 4200**									
	Diaphragm material EPDM									
	8	1/4"	13.5	1.0	C-40	5.0-7	10	439 538	441 215	441 216
	10	3/8"	17.2	1.0	C-40	5.0-7	10	441 238	441 239	441 240
	15	1/2"	21.3	4.0	D-50	5.0-7	8.5	441 281	441 282	441 283
	20	3/4"	26.9	7.0	E-63	5.5-7	10	441 320	441 321	441 322
	25	1"	33.7	12.0	F-80	5.5-7	10	441 363	441 364	441 365
	32	1 1/4"	42.4	30.0	G-100	5.5-7	6.5	–	551 966	553 353
	40	1 1/2"	48.3	30.0	G-100	5.5-7	6.5	441 421	441 422	441 423
	50	2"	60.3	51.5	H-125	5.5-7	8	441 476	441 477	441 478
	Diaphragm material PTFE/EPDM									
	8	1/4"	13.5	1.0	C-40	5.0-7	10	441 951	441 952	441 953
	10	3/8"	17.2	1.0	C-40	5.0-7	10	441 962	441 963	441 964
	15	1/2"	21.3	4.5	E-63	5.0-7	10	441 966	441 967	441 968
	20	3/4"	26.9	7.5	F-80	5.0-7	10	441 970	441 971	441 972
	25	1"	33.7	12.0	F-80	5.5-7	7.5	441 974	441 975	441 976
	32	1 1/4"	42.4	30.5	H-125	5.5-7	10	–	550 766	554 965
	40	1 1/2"	48.3	30.5	H-125	5.5-7	10	441 978	441 979	441 980
	50	2"	60.3	51.5	H-125	5.5-7	7	441 982	441 983	441 984
	Acc. SMS 3008									
	Diaphragm material EPDM									
	25	1"	25.0	12.0	F-80	5.5-7	10	441 367	441 368	441 369
	40	1 1/2"	38.0	30.0	G-100	5.5-7	6.5	441 425	441 426	441 427
	50	2"	51.0	51.5	H-125	5.5-7	8	441 480	441 481	441 482
	Diaphragm material PTFE/EPDM									
	25	1"	29.0	12.0	F-80	5.5-7	7.5	442 060	442 061	442 062
	40	1 1/2"	41.0	30.5	H-125	5.5-7	10	442 064	442 065	442 066
	50	2"	53.0	51.5	H-125	5.5-7	7	442 068	442 069	442 070

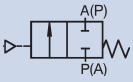
Port connection size equals the orifice diaphragm size except for port connection 32 mm. At port connection 32 mm the orifice diaphragm size equals 40 mm.

Further versions on request

- Versions with reduced spring force

Ordering chart for valves (other versions on request)

Body with weld end, *cont.*

	Port connection [mm]	Port connection [inch]	External Ø [mm]	Kv-value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Item no.: internal/external surface: Mech. polished, Ra ≤ 1.6/6.3 µm	Mech. polished, Ra ≤ 0.8/6.3 µm	Electro polished, Ra ≤ 0.6/3.2 µm
Control function A  2/2-way, NC by spring return	**Acc. DIN 11850**									
	Diaphragm material EPDM									
	Series 0									
	4	–	6.0	0.8	C-40	5.0-7	10	443 768	443 769	443 770
	6	–	8.0	0.8	C-40	5.0-7	10	443 772	443 773	443 774
	Series 2									
	10	3/8"	13.0	1.0	C-40	5.0-7	10	441 230	441 231	441 232
	15	1/2"	19.0	4.0	D-50	5.0-7	8.5	441 273	441 274	441 275
	20	3/4"	23.0	7.0	E-63	5.5-7	10	441 312	441 313	441 314
	25	1"	29.0	12.0	F-80	5.5-7	10	441 355	441 356	441 357
	32	1 1/4"	35.0	30.0	G-100	5.5-7	6.5	–	554 953	554 954
	40	1 1/2"	41.0	30.0	G-100	5.5-7	6.5	441 413	441 414	441 415
	50	2"	53.0	51.5	H-125	5.5-7	8	441 472	441 469	441 470
	Diaphragm material PTFE/EPDM									
	Series 0									
	4	–	6.0	0.8	C-40	5.0-7	10	443 776	443 777	443 778
	6	–	8.0	0.8	C-40	5.0-7	10	443 780	443 781	443 782
	Series 2									
	10	3/8"	13.0	1.0	C-40	5.0-7	10	441 777	441 778	441 779
	15	1/2"	19.0	4.5	E-63	5.0-7	10	441 793	441 794	441 795
	20	3/4"	23.0	7.5	F-80	5.0-7	10	441 865	441 866	441 867
	25	1"	29.0	12.0	F-80	5.5-7	7.5	441 884	441 885	441 886
	32	1 1/4"	35.0	30.5	H-125	5.5-7	10	–	554 955	554 956
	40	1 1/2"	41.0	30.5	H-125	5.5-7	10	441 900	441 901	441 902
	50	2"	53.0	51.5	H-125	5.5-7	7	441 955	441 956	441 957

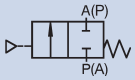
Port connection size equals the orifice diaphragm size except for port connection 32 mm. At port connection 32 mm the orifice diaphragm size equals 40 mm.

Further versions on request

- Versions with reduced spring force

Ordering chart for valves (other versions on request)

Body with Tri-Clamp® connection

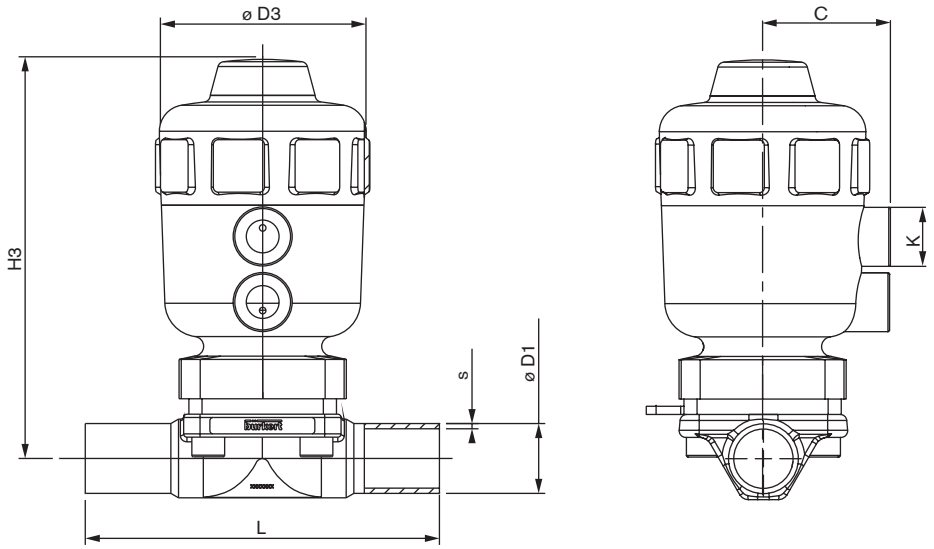
	Port connection		External Ø [mm]	Kv-value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Item no.: internal/external surface		
	[mm]	[inch]						Mech. polished, Ra ≤ 1.6/6.3 µm	Mech. polished, Ra ≤ 0.8/6.3 µm	Electro polished, Ra ≤ 0.6/3.2 µm
Control function A  2/2-way, NC by spring return	**Acc. ISO 2852 – SMS 3017**									
	Diaphragm material EPDM									
	25	1"	50.5	12.0	F-80	5.5-7	10	441 383	441 384	441 385
	40	1 1/2"	50.5	30.0	G-100	5.5-7	6.5	441 441	441 442	441 443
	50	2"	64.0	51.5	H-125	5.5-7	8	441 496	441 497	441 498
	Diaphragm material PTFE/EPDM									
	25	1"	50.5	12.0	F-80	5.5-7	7.5	442 075	442 076	442 077
	40	1 1/2"	50.5	30.5	H-125	5.5-7	10	442 079	442 080	442 081
	50	2"	64.0	51.5	H-125	5.5-7	7	442 083	442 084	442 085
	Acc. DIN 32676									
	Diaphragm material EPDM									
	15	1/2"	34.0	4.0	D-50	5.0-7	8.5	441 293	441 294	441 295
	20	3/4"	34.0	7.0	E-63	5.5-7	10	441 332	441 333	441 334
	25	1"	50.5	12.0	F-80	5.5-7	10	441 379	441 380	441 381
	40	1 1/2"	50.5	30.0	G-100	5.5-7	6.5	441 437	441 438	441 439
	50	2"	64.0	51.5	H-125	5.5-7	8	441 492	441 493	441 494
	Diaphragm material PTFE/EPDM									
	15	1/2"	34.0	4.5	E-63	5.0-7	10	442 040	442 041	442 042
	20	3/4"	34.0	7.5	F-80	5.0-7	10	442 044	442 045	442 046
	25	1"	50.5	12.0	F-80	5.5-7	7.5	442 048	442 049	442 050
	40	1 1/2"	50.5	30.5	H-125	5.5-7	10	442 052	442 053	442 054
	50	2"	64.0	51.5	H-125	5.5-7	7	442 056	442 057	442 058
	Acc. BS 4825									
	Diaphragm material EPDM									
	8	1/4"	25.0	1.0	C-40	5.0-7	10	441 246	441 247	441 248
	10	3/8"	25.0	1.0	C-40	5.0-7	10	441 254	441 255	441 256
	15	1/2"	25.0	4.0	D-50	5.0-7	8.5	441 336	441 337	441 338
	25	1"	50.5	12.0	F-80	5.5-7	10	441 387	441 388	441 389
	40	1 1/2"	50.5	30.0	G-100	5.5-7	6.5	441 445	441 446	441 447
	50	2"	64.0	51.5	H-125	5.5-7	8.0	441 500	441 501	441 502
	Diaphragm material PTFE/EPDM									
	8	3/8"	25.0	1.0	C-40	5.0-7	10	441 986	441 987	441 988
	10	1/2"	25.0	1.0	C-40	5.0-7	10	441 990	441 991	441 992
	15	3/4"	25.0	4.5	E-63	5.0-7	10	441 994	441 995	441 996
	25	1"	50.5	12.0	F-80	5.5-7	7.5	441 998	441 999	442 000
	40	1 1/2"	50.5	30.5	H-125	5.5-7	10	442 002	442 003	442 004
	50	2"	64.0	51.5	H-125	5.5-7	7.0	442 006	442 007	442 008

Further versions on request

- Versions with reduced spring force

Dimensions [mm]

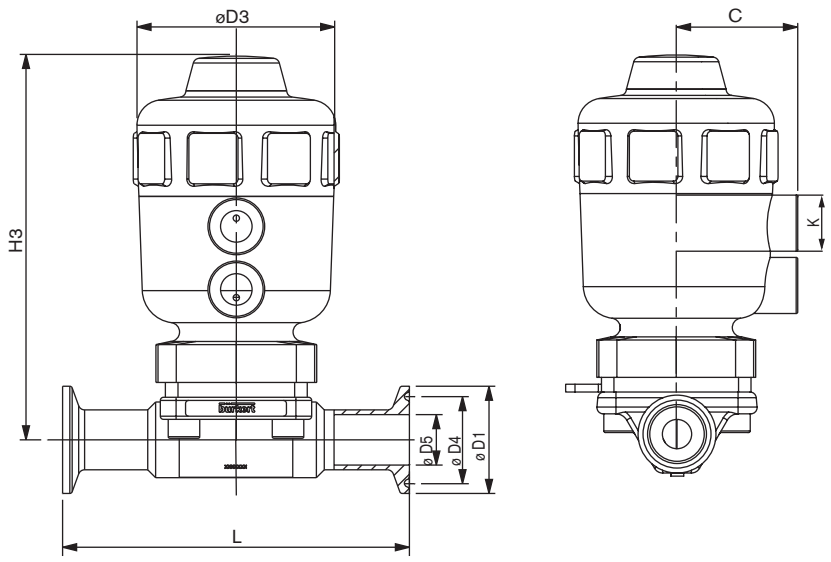
Body with weld end



Port connection		Actuator size									
[mm]	[inch]	Ø	C	K	L	H3	ØD3	ØD1	s	ØD1	s
Acc. EN ISO 1127/ISO 4200 and SMS 3008								**EN ISO 1127/ISO 4200**		**SMS 3008**	
8	1/4"	C-40	34	G 1/8	90.0	85.0	53.0	13.5	1.6	–	–
10	3/8"	C-40	34	G 1/8	90.0	85.0	53.0	17.2	1.6	–	–
15	1/2"	D-50	39	G 1/8	110.0	121.0	64.0	21.3	1.6	–	–
		E-63	52	G 1/4	110.0	138.0	80.0	21.3	1.6	–	–
20	3/4"	E-63	52	G 1/4	119.0	148.0	80.0	26.9	1.6	–	–
		F-80	60	G 1/4	119.0	174.0	101.0	26.9	1.6	–	–
25	1"	E-63	52	G 1/4	129.0	157.0	80.0	33.7	2.0	25.0	1.2
		F-80	60	G 1/4	129.0	177.0	101.0	33.7	2.0	25.0	1.2
32	1 1/4"	G-100	73	G 1/4	161.0	233.0	127.0	42.4	2.0	–	–
		H-125	86	G 1/4	161.0	272.0	153.0	42.4	2.0	–	–
40	1 1/2"	G-100	73	G 1/4	161.0	233.0	127.0	48.3	2.0	38.0	1.2
		H-125	86	G 1/4	161.0	272.0	153.0	48.3	2.0	38.0	1.2
50	2"	G-100	73	G 1/4	192.0	244.0	127.0	60.3	2.0	51.0	1.2
		H-125	86	G 1/4	192.0	278.0	153.0	60.3	2.0	51.0	1.2
Acc. DIN 11850								**DIN 11850**			
Series 0											
4	–	C-40	34	G 1/8	90.0	85.0	53.0	6.0	1.0		
6	–	C-40	34	G 1/8	90.0	85.0	53.0	8.0	1.0		
Series 2											
10	3/8"	C-40	34	G 1/8	90.0	85.0	53.0	13.0	1.5		
15	1/2"	D-50	39	G 1/8	110.0	121.0	64.0	19.0	1.5		
		E-63	52	G 1/4	110.0	138.0	80.0	19.0	1.5		
20	3/4"	E-63	52	G 1/4	119.0	148.0	80.0	23.0	1.5		
		F-80	60	G 1/4	119.0	174.0	101.0	23.0	1.5		
25	1"	E-63	52	G 1/4	129.0	157.0	80.0	29.0	1.5		
		F-80	60	G 1/4	129.0	177.0	101.0	29.0	1.5		
32	1 1/4"	G-100	73	G 1/4	161.0	233.0	127.0	35.0	1.5		
		H-125	86	G 1/4	161.0	272.0	153.0	35.0	1.5		
40	1 1/2"	G-100	73	G 1/4	161.0	233.0	127.0	41.0	1.5		
		H-125	86	G 1/4	161.0	272.0	153.0	41.0	1.5		
50	2"	G-100	73	G 1/4	192.0	244.0	127.0	53.0	1.5		
		H-125	86	G 1/4	192.0	278.0	153.0	53.0	1.5		

Dimensions [mm]

Body with Tri-Clamp® connection



Port connection [mm]	Port connection [inch]	Actuator size Ø	C	K	L	H3	ØD3	ØD1	ØD4	ØD5	ØD5
Acc. ISO 2852/SMS 3017 and SMS 3008										**ISO 2852**	**DIN 32676**
15	1/2"	D-50	39	G 1/8	110.0	121.0	64.0	34.0	27.5	–	16.0
		E-63	52	G 1/4	110.0	138.0	80.0	34.0	27.5	–	16.0
20	3/4"	E-63	52	G 1/4	119.0	148.0	80.0	34.0	27.5	–	20.0
		F-80	60	G 1/4	119.0	174.0	101.0	34.0	27.5	–	20.0
25	1"	E-63	52	G 1/4	129.0	157.0	80.0	50.5	43.5	22.6	26.0
		F-80	60	G 1/4	129.0	177.0	101.0	50.5	43.5	22.6	26.0
40	1 1/2"	G-100	73	G 1/4	161.0	233.0	127.0	50.5	43.5	35.6	38.0
		H-125	86	G 1/4	161.0	272.0	153.0	50.5	43.5	35.6	38.0
50	2"	G-100	73	G 1/4	192.0	244.0	127.0	64.0	56.5	48.6	50.0
		H-125	86	G 1/4	192.0	278.0	153.0	64.0	56.5	48.6	50.0
Acc. BS 4825										**BS 4825**	
8	3/8"	C-40	34	G 1/8	89.0	85.0	53.0	25.0	20.22	7.1	
10	1/2"	C-40	34	G 1/8	89.0	85.0	53.0	25.0	20.22	10.3	
15	3/4"	D-50	39	G 1/8	102.0	121.0	64.0	25.0	20.22	16.7	
		E-63	52	G 1/4	102.0	138.0	80.0	25.0	20.22	16.7	
25	1"	E-63	52	G 1/4	114.0	157.0	80.0	50.5	43.5	22.2	
		F-80	60	G 1/4	114.0	177.0	101.0	50.5	43.5	22.2	
40	1 1/2"	G-100	73	G 1/4	140.0	233.0	127.0	50.5	43.5	34.9	
		H-125	86	G 1/4	140.0	272.0	153.0	50.5	43.5	34.9	
50	2"	G-100	73	G 1/4	159.0	244.0	127.0	64.0	56.5	47.6	
		H-125	86	G 1/4	159.0	278.0	153.0	64.0	56.5	47.6	