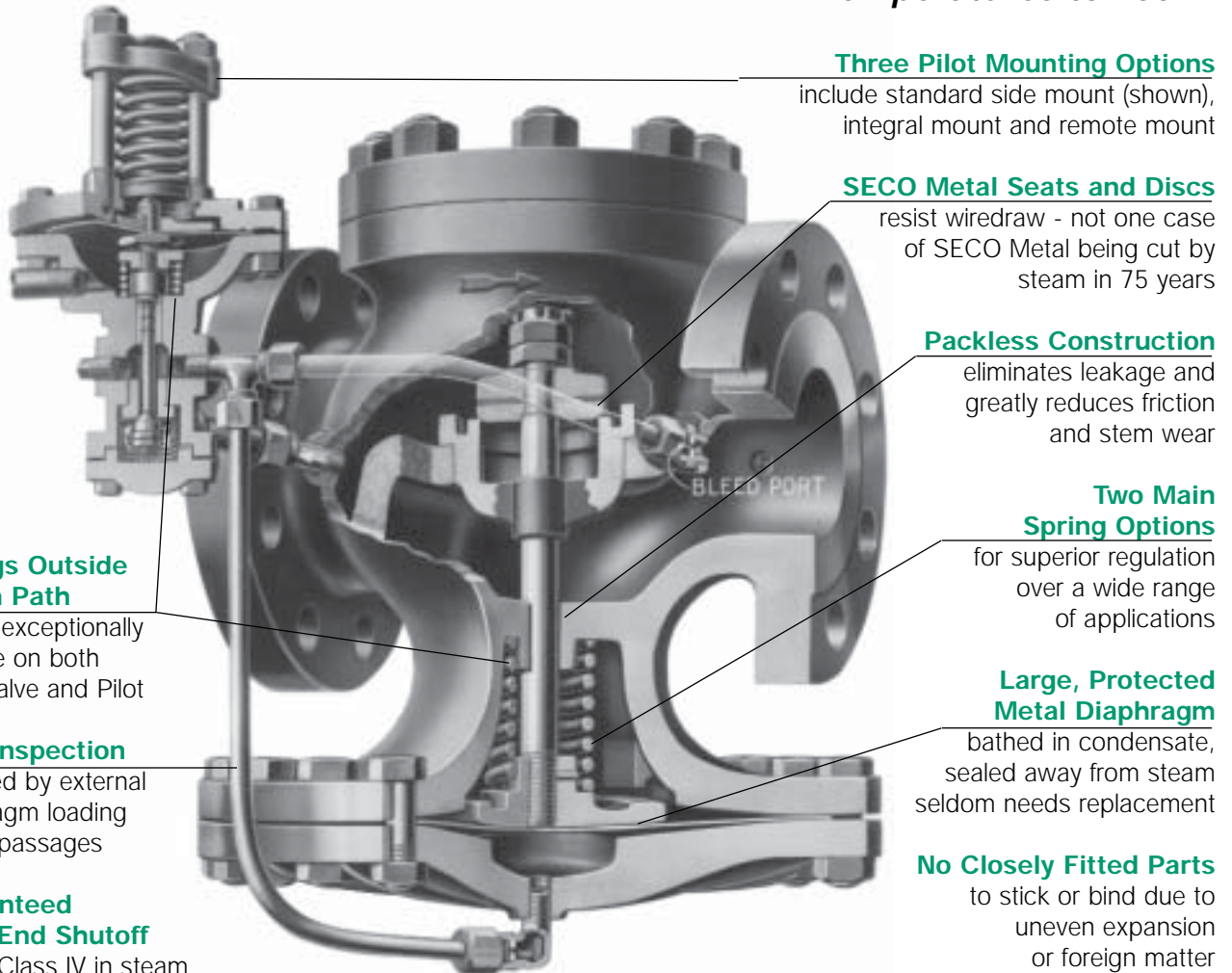


Applications

- Pressure Regulation for Steam Distribution
- Single Point or Multiple Use Applications
- Pressure Control for Steam Plants
- District Heating Systems
- Single Stage Reduction Stations
- Two Stage Reduction Stations
- Parallel Reduction Stations

Iron Horse ED Series Pressure Regulator

**Pressures To 600 PSIG
Temperatures to 750°F**



Three Pilot Mounting Options

include standard side mount (shown), integral mount and remote mount

SECO Metal Seats and Discs

resist wire draw - not one case of SECO Metal being cut by steam in 75 years

Packless Construction

eliminates leakage and greatly reduces friction and stem wear

Two Main Spring Options

for superior regulation over a wide range of applications

Large, Protected Metal Diaphragm

bathed in condensate, sealed away from steam seldom needs replacement

No Closely Fitted Parts

to stick or bind due to uneven expansion or foreign matter

Few Moving Parts

mean long service life

Springs Outside Steam Path

assure exceptionally long life on both Main Valve and Pilot

Easy Inspection

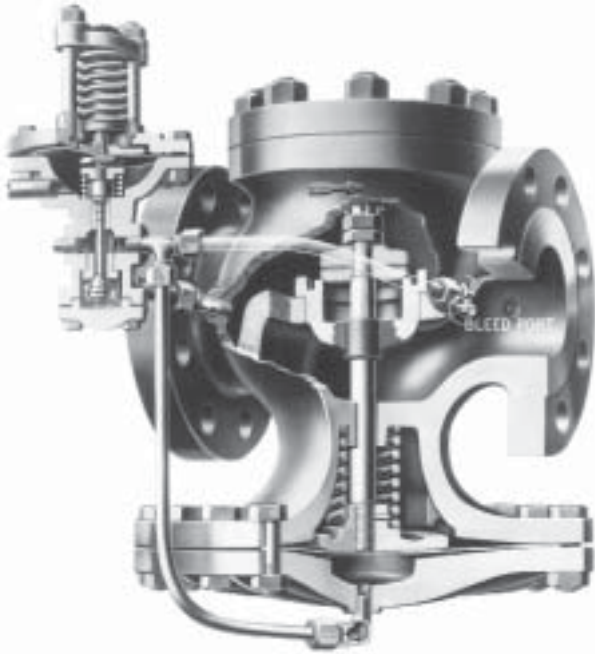
provided by external diaphragm loading steam passages

Guaranteed Dead End Shutoff

meets Class IV in steam service, even on large sizes

Patented SECOWELD Option

allows easy repair of seat ring threads damaged by high pressure applications



TYPE ED SERIES PRESSURE REGULATOR

CAST IRON or STEEL
PRESSURES to 600 PSIG at 750°F

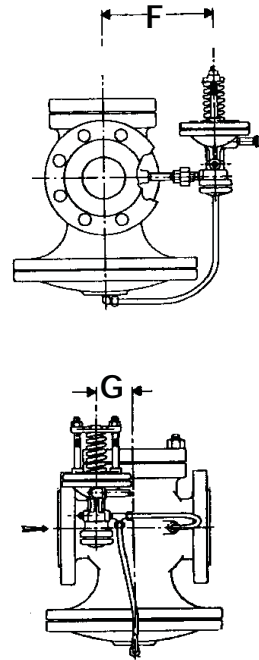
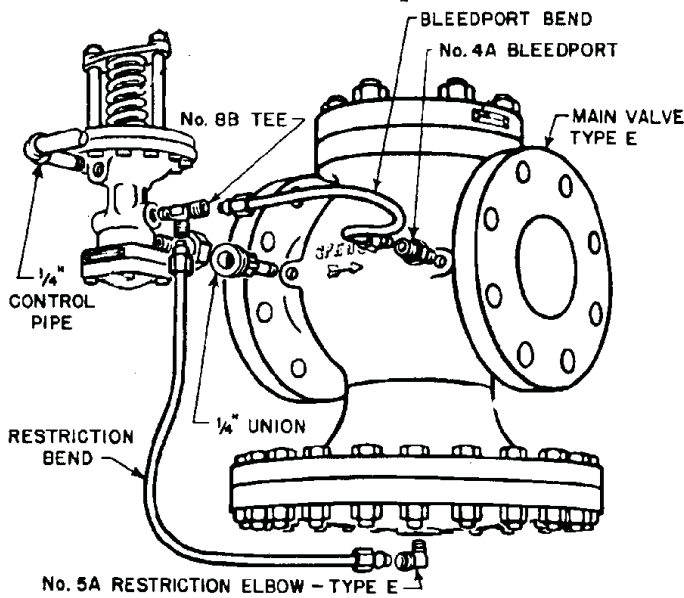
APPLICATION DATA

- Pressure Regulating for Steam Distribution
- Single Point or Multiple use Applications
- Pressure Control for Steam Plants
- District Heating Systems
- Single Stage Reductions
- Two Stage Reductions
- Parallel Reduction

TYPE ED PRESSURE REGULATOR

VALVE INFO
PAGE 28

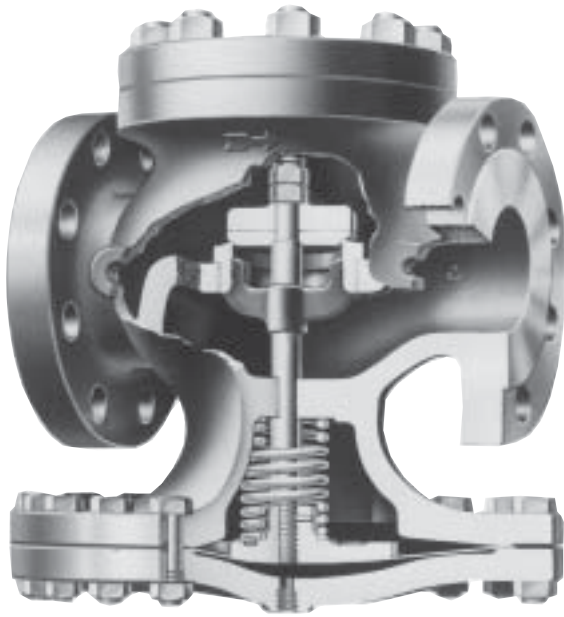
PILOT INFO
PAGE 48



Valve is tapped so that Pilot may be mounted on either side.

DIMENSIONS inches (mm)

SIZE	F	G
3/8 (10)	5 3/8 (136)	1 1/4 (32)
1/2 (15)	5 3/8 (136)	1 1/4 (32)
3/4 (20)	5 3/8 (136)	1 3/8 (35)
1 (25)	5 3/4 (146)	1 1/2 (38)
1 1/4 (32)	6 (152)	1 7/8 (48)
1 1/2 (40)	6 1/4 (159)	2 (51)
2 (60)	6 5/8 (168)	2 1/8 (54)
2 1/2 (65)	6 3/4 (171)	2 3/8 (60)
3 (80)	7 1/4 (184)	2 3/4 (70)
4 (100)	8 (203)	3 1/2 (89)
5 (125)	9 (229)	3 1/2 (89)
6 (150)	9 7/8 (251)	4 (102)
8 (200)	10 1/2 (267)	6 1/4 (159)
10 (250)	12 1/2 (318)	6 (152)
12 (300)	14 (356)	8 1/2 (216)



TYPE E MAIN VALVE

TYPE E MAIN VALVE

SIZES 3/8" – 12"

PRESSURES to 600 PSIG at 750°F

- Normally Closed
- Single Seat
- Balanced Metal Diaphragms
- Protected Main Spring
- Fluid, Gas & Vapor Applications
- Multiple Trims for Precise Sizing
- ANSI/FCI 70-2 Class IV Shutoff
- Virtually Frictionless for Long Service Life
- Packless Construction
- Easy In-line Maintenance
- Wide Variety of Pilots for Many Applications
- Minimum Operating ΔP 10 psi (.7 bar)
- Lifetime Warranty against Wiredrawing of Seat & Disc*

APPLICATION DATA

- Pressure Regulating for Steam Distribution
- Regulating for Process Control (Temperature or Pressure)
- Maintain Back Pressure or Differential Pressure
- For use with Self-contained, Pneumatic or Electronic Pilots
- Single Point or Multiple Use Applications
- Slow Start-up or Shutdown

SIZING INFO
PAGE 108

VALVE RATINGS

Valve Ends ASME/ANSI	Pressure PSIG (bar)	Temperature °F (°C)
-------------------------	------------------------	------------------------

CAST IRON

Class 250 NPT	250 (17.2)	@ 450 (232)
B16.1 Class 125 Flanged	125 (8.6)	@ 450 (232)
B16.1 Class 250 Flanged	250 (17.2)	@ 450 (232)

CAST STEEL

B16.34 Class 300 NPT	300 (21.0)	@ 600 (315)†
B16.34 Class 150 Flanged	150 (10.3)	@ 500 (260)
B16.34 Class 300 Flanged	300 (21.0)	@ 600 (315)†
B16.34 Class 600 Flanged	600 (41.4)	@ 600 (315)†

†750°F (400°C) construction available on request.
Other pressure/temperature ratings available; consult factory.
Maximum downstream pressure is 300 psi.
Canadian Registration # OC 0591.9C

Installation Tip: Add EZ Connections for ease of maintenance
SEE PAGE 42

OPTIONS

- Composition Disc See Page 42
- Parabolic Disc
- Balanced Construction
- Integral Mount Pilot
- Insulcap Insulating Jacket
- Secoweld
- High Temperature Construction
- Dashpot
- Low ΔP (LP) Main Spring
- EZ Connections

TYPICAL CONFIGURATIONS

- PRESSURE REDUCINGTYPE ED SERIES
- AIR ADJUSTEDTYPE EA SERIES
- BACK PRESSURETYPE EQ SERIES
- PUMP GOVERNORTYPE EP SERIES
- LOAD ALLOCATINGTYPE EFD
- AIR CONTROLLEDTYPE EAP60
- ELECTRONIC SLOW STARTTYPE ED208D
- SOLENOID CONTROLLEDTYPE EMD
- SOLENOID ACTUATEDTYPE EM
- DIFFERENTIALTYPE EN
- TEMPERATURE CONTROLTYPE ET SERIES

RATED FLOW COEFFICIENTS (Cv)

SEAT FACTOR	REGULATOR SIZE														
	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12
Full	1.5	2.8	5.4	8.8	14.1	19.8	31	44	74	109	169	248	444	706	1113
Full 75 %	—	2.1	4.0	6.6	10.6	14.8	23.3	33	56	82	127	186	333	530	835
Full 50 %	—	1.4	2.7	4.4	7.0	9.9	15.5	22	37	55	85	124	222	353	557
Normal	.65	1.5	4.8	7.5	10.4	14.6	17.6	24	43	78	115	151	249	377	631
Normal 75 %	—	—	—	—	—	—	—	18	33	59	87	114	187	283	474
Normal 50 %	—	—	—	—	—	—	—	12	22	39	58	76	125	189	316

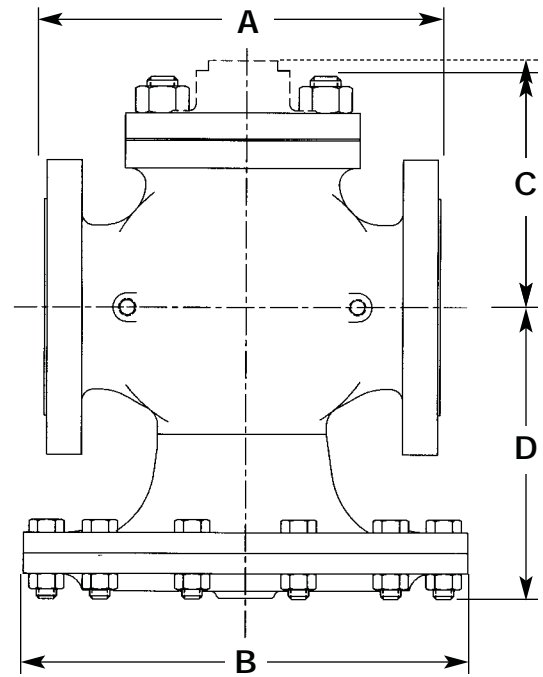
TYPE E MAIN VALVE

SPECIFICATION

The valve shall be self-operated, external pilot type, single seated, metal diaphragm actuated, normally closed design. The valve will function quickly and shut tight on dead end service. Internal parts including seats, discs, stems and diaphragms shall be of stainless steel. There shall be no springs in the steam space and no stuffing box. The valve shall be easy to maintain with all parts accessible without removal from the line.

MATERIALS OF CONSTRUCTION

Body, Cast IronASTM A126 Cl. B
 Body, Cast BronzeASTM B61 UNS C92200
 Body, Cast SteelASTM A216 WCB
 Stem303 St. Stl. ASTM A582
 Disc 3/4 - 5"420 St. Stl. ASTM A743 CA-40
 Disc 6 - 12"304 St. Stl. ASTM A167/A240
 Seat 3/4 - 5"420 St. Stl. ASTM A743 CA-40
 Seat 6 - 12"316 St. Stl. ASTM A743-79 CF-8M
 GasketNon-asbestos
 DiaphragmStainless Steel MIL-S-5059C
 SpringSteel



TYPE E MAIN VALVE

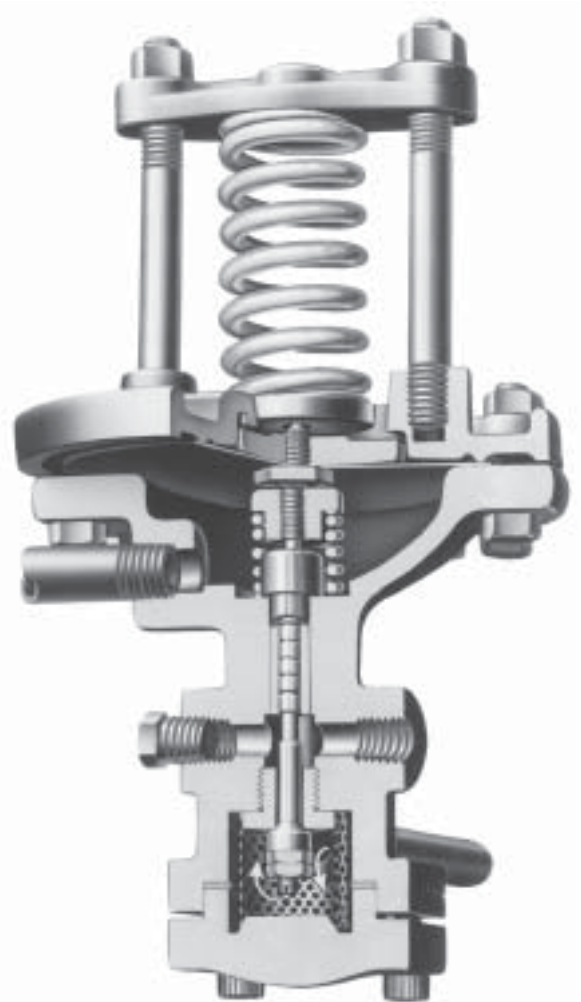
FITTINGS ON
PAGE 46

TYPE E
MAIN VALVE

DIMENSIONS inches (mm) AND WEIGHTS pounds (kg)

SIZE	FACE TO FACE DIMENSIONS					B	C					D*	APPROX. WT.			
	A						Std. Mount		Integral Mount				ANSI			
	ANSI NPT	ANSI 125,150	ANSI 250	ANSI 300	ANSI 600		ANSI 600	Cl & Brz. All	Steel	Steel 600	NPT		125,150	250,300	ANSI 600	
3/8 (10)	4 3/8 (111)	—	—	—	—	5 7/8 (149)	2 3/4 (70)	—	3 1/2 (89)	3 1/2 (89)	—	5 1/4 (133)	14 (6)	—	—	—
1/2 (12)	4 3/8 (111)	—	—	—	6 (152)	5 7/8 (149)	2 3/4 (70)	2 3/4 (70)	3 1/2 (89)	3 1/2 (89)	3 5/8 (92)	5 1/4 (133)	14 (6)	—	—	20 (9.1)
3/4 (19)	4 3/8 (111)	—	—	—	6 3/8 (162)	6 1/2 (165)	2 7/8 (73)	3 3/8 (98)	3 5/8 (92)	3 3/4 (95)	4 1/2 (114)	5 1/2 (140)	18 (8)	—	—	28 (13)
1 (25)	5 3/8 (137)	5 1/2 (140)	6 (152)	6 1/2 (165)	6 1/2 (165)	7 (178)	3 5/8 (92)	4 1/4 (108)	4 3/8 (111)	4 3/8 (111)	4 3/4 (121)	6 1/4 (159)	23 (10)	26 (12)	31 (14)	32 (15)
1 1/4 (32)	6 1/2 (165)	6 3/4 (171)	7 1/4 (184)	7 7/8 (200)	7 7/8 (200)	7 7/8 (200)	4 1/8 (105)	4 5/8 (117)	4 (102)	4 5/8 (117)	5 (127)	6 1/2 (165)	33 (15)	37 (17)	41 (19)	45 (20)
1 1/2 (38)	7 1/4 (184)	6 7/8 (175)	7 3/8 (187)	8 (203)	8 (203)	8 3/4 (222)	4 3/8 (111)	5 1/8 (130)	4 3/8 (111)	5 (127)	—	7 1/8 (181)	43 (20)	47 (21)	55 (25)	58 (26)
2 (51)	7 1/2 (191)	8 1/2 (216)	9 (229)	10 1/4 (260)	10 1/4 (260)	9 7/8 (251)	5 1/4 (133)	5 3/4 (146)	5 (127)	5 5/8 (143)	5 3/4 (146)	7 5/8 (194)	62 (28)	73 (33)	78 (35)	83 (38)
2 1/2 (64)	—	9 3/8 (238)	10 (254)	11 1/4 (286)	11 1/4 (286)	10 7/8 (276)	5 3/4 (146)	7 7/8 (200)	5 1/2 (140)	6 (152)	8 1/4 (210)	8 3/8 (213)	—	95 (43)	100 (45)	130 (59)
3 (76)	—	10 (254)	10 3/4 (273)	12 1/4 (311)	12 1/4 (311)	11 3/4 (298)	6 5/8 (168)	9 1/8 (232)	6 3/8 (162)	7 1/8 (181)	—	9 1/4 (235)	—	125 (57)	140 (64)	175 (80)
4 (102)	—	11 7/8 (302)	12 1/2 (318)	12 1/2 (318)	14 1/2 (368)	14 3/4 (375)	7 5/8 (194)	10 5/8 (270)	7 1/4 (184)	8 (203)	—	11 7/8 (302)	—	210 (95)	230 (105)	310 (141)
5 (127)	—	13 5/8 (346)	14 1/2 (368)	14 1/2 (368)	16 1/2 (419)	16 7/8 (429)	8 1/2 (216)	12 1/2 (318)	8 1/8 (206)	8 1/2 (216)	—	12 1/2 (318)	—	295 (134)	310 (141)	490 (223)
6 (152)	—	15 1/8 (384)	16 (406)	16 (406)	17 3/8 (441)	19 3/4 (502)	10 (254)	13 3/4 (349)	9 1/2 (241)	9 1/2 (241)	13 5/8 (346)	14 1/8 (359)	—	420 (191)	470 (214)	655 (298)
8 (203)	—	19 (483)	20 (508)	20 (508)	21 5/8 (549)	22 1/2 (572)	11 1/2 (292)	15 3/8 (391)	11 1/4 (286)	11 3/4 (298)	—	17 1/4 (438)	—	700 (318)	710 (323)	1070 (486)
10 (254)	—	23 5/8 (600)	25 (635)	25 (635)	—	28 (711)	13 3/4 (349)	—	—	—	—	23 3/8 (594)	—	1240 (563)	1300 (591)	—
12 (305)	—	26 1/2 (673)	28 (711)	28 (711)	—	33 (838)	15 7/8 (403)	—	—	—	—	25 1/4 (641)	—	2060 (936)	2140 (972)	—

*Add 65% to D dimension for stem removal clearance.



TYPE D PRESSURE PILOT

TYPE D PRESSURE REDUCING PILOT

CONTROLS 3 to 300 PSIG

- Self Contained
- Spring Operated
- Normally Closed
- Packless Construction
- Fluid, Gas & Vapor Applications
- Accurate Regulation Unaffected by Service Conditions
- Easy In-line Maintenance

MODELS

- **TYPE D** for ± 1 psi control of delivery pressures between 3 and 150 psi.
- **TYPE D2** for control of delivery pressures between 100 and 300 psi.
- **TYPE D5** for $\pm 1/2$ psi control of delivery pressures between 1 and 25 psi.
- **TYPE D120** for exceptionally fast response controlling delivery pressures between 5 and 150 psi.

OPTIONS

- Spring Chamber
- Adjusting Handwheel
- Composition Disc
- Integral Mount Body
- Vacuum Spring Assembly

TYPICAL CONFIGURATIONS

- PRESSURE REDUCINGTYPE ED
- PRESSURE REDUCINGTYPE E2D
- PRESSURE REDUCINGTYPE E5D
- PRESSURE REDUCINGTYPE E6D
- WATER PRESSURE REDUCING.....TYPE C34D
- TEMPERATURE & PRESSURETYPE ET14D

APPLICATION DATA

- Pressure Regulating for Steam Distribution
- Regulating for Process Control
- Can be used with Temperature Pilot to Regulate Pressure on Temperature control Application

SIZING INFO
PAGE 117

RATINGS (Maximum Inlet Conditions)

Construction	Pressure PSIG (bar)	Temperature °F (°C)
Cast Iron	250 (17.2) @	450 (232)
Cast Steel	600 (41.4) @	750 (400)

SPRING PRESSURE RANGES (PSIG)

TYPE D	TYPE D2	TYPE D5	TYPE D120
3-20 [†]	100-300	1-10	5-25
5-50 [†]		5-25	10-75
10-100			40-150
20-150			

[†]With Vacuum Spring Assembly, minimum range is 30 inches Hg; maximum is reduced by 15 PSIG.

Canadian Registration # OC 0591.9C

TYPE D PRESSURE REDUCING PILOT

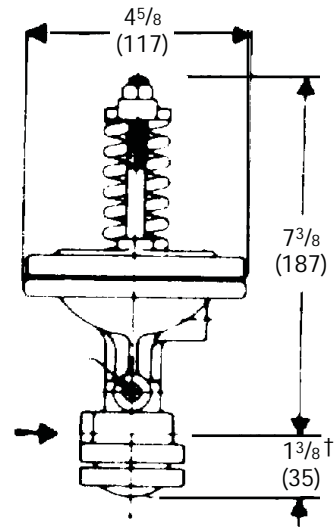
SPECIFICATION

The Pilot shall be separate from the main valve and connected to it with a male union. The Pilot shall be normally closed design with packless construction. A strainer screen shall be built into the Pilot inlet. The Pilot shall be interchangeable on all sizes of main valves.

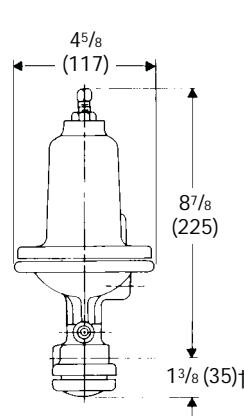
MATERIALS OF CONSTRUCTION

Body, Cast Iron	ASTM A126 CI B
Body, Cast Steel	ASTM A216 GR. WCB
Stem	303 St. Stl. ASTM A582 COND A
Disc	440 St. St. ASTM A276-75 COND A
Seat	420 St. Stl ASTM A276 COND A
Gasket	Non-Asbestos
Diaphragm	301 St. Stl. MIL-5-5059C
Spring	Inconel

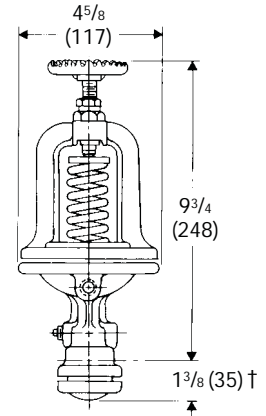
TYPE D
PRESSURE PILOT



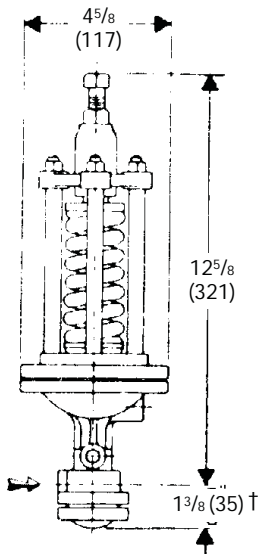
STANDARD D PILOT
7 LBS.
(3.2 KG)



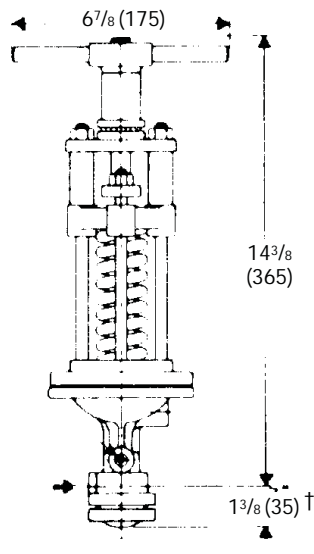
D SPRING CHAMBER
8 LBS. (3.6 KG)



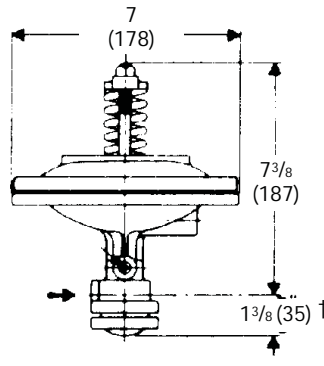
**D ADJUSTING
HANDWHEEL**
9 LBS. (4.1 KG)



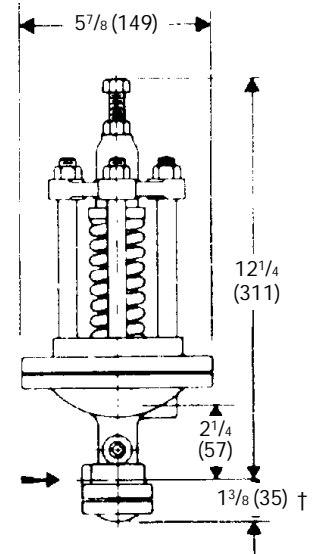
TYPE D2
10 LBS.
(4.5 KG)



**D2 ADJUSTING
HANDWHEEL**
12 LBS. (5.4 KG)



TYPE D5
14 LBS.
(6.4 KG)



TYPE D120
16 LBS.
(7.3 KG)

†For Integral Mount Pilot, this dimension is 5/8" (16).

RATED STEAM CAPACITY TABLE

TYPE E MAIN VALVE—FULL PORT

Pounds of Saturated Steam per Hour

VALVE INFO
PAGE 28

TYPE E FULL PORT
CAPACITY TABLE

PRESSURE-psig		VALVE SIZE (inches)														
INLET	REDUCED	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12
20	5-0	90	165	370	520	835	1175	1840	2610	4390	6470	10030	14715	26345	41890	66040
25	10	100	185	350	575	920	1290	2025	2870	4830	7115	11030	16185	28980	46080	72645
	5-0	100	190	365	595	955	1345	2105	2985	5025	7400	11475	16835	30140	47930	75560
30	15	105	195	380	615	990	1390	2175	3085	5190	7645	11855	17400	31150	49530	78080
	10-0	115	215	415	675	1080	1515	2370	3365	5655	8330	12920	18955	33940	53965	85075
40	25	120	220	425	695	1115	1565	2450	3475	5850	8615	13355	19600	35085	55790	87950
	20	135	250	480	780	1250	1760	2755	3905	6570	9680	15005	22020	39425	62690	98830
	15-0	140	260	505	825	1320	1850	2900	4115	6920	10195	15805	23195	41530	66035	104105
50	35	130	245	470	765	1225	1720	2695	3830	6435	9480	14700	21575	38625	61415	96820
	30	150	275	530	865	1385	1945	3045	4320	7270	10705	16600	24360	43615	69350	109330
	25	160	300	580	945	1515	2125	3325	4720	7940	11695	18130	26605	47635	75745	119410
	20-0	165	310	600	975	1560	2190	3430	4870	8185	12060	18700	27440	49125	78110	123140
60	45	140	265	510	830	1330	1865	2925	4150	6975	10280	15935	23385	41865	66570	104945
	40	160	300	575	940	1505	2115	3310	4700	7905	11645	18055	26495	47435	75425	118905
	35	175	330	630	1030	1650	2320	3630	5155	8665	12765	19790	29045	51995	82680	130345
	30-0	190	350	680	1105	1770	2490	3895	5530	9300	13700	21240	31170	55805	88735	139885
75	55	180	330	640	1045	1670	2350	3675	5215	8775	12925	20040	29405	52645	83710	131970
	50	195	365	705	1150	1840	2585	4045	5740	9655	14220	22050	32355	57930	92110	145215
	45	210	395	760	1235	1980	2785	4360	6185	10405	15325	23760	34865	62420	99255	156475
	40-0	225	420	805	1315	2105	2955	4630	6570	11050	16275	25230	37025	66285	105400	166160
100	75	225	420	810	1320	2115	2970	4655	6605	11110	16365	25370	37230	66650	105985	167080
	60	275	510	985	1610	2575	3620	5665	8045	13525	19925	30890	45330	81155	129045	203440
	50-0	295	550	1060	1725	2765	3885	6080	8630	14515	21380	33145	48640	87085	138475	218300
125	100	250	470	905	1475	2360	3315	5190	7370	12395	18255	28305	41535	74360	118235	186400
	75	335	630	1215	1980	3170	4455	6970	9895	16645	24515	38010	55775	99860	158785	250320
	65-0	360	670	1290	2100	3370	4730	7405	10510	17680	26040	40370	59245	106065	168655	265880
150	125	275	515	990	1610	2585	3625	5680	8060	13555	19970	30960	45430	81340	129335	203895
	100	370	695	1340	2185	3500	4915	7695	10920	18370	27055	41945	61555	110205	175235	276255
	80-0	425	790	1520	2480	3970	5575	8730	12390	20840	30700	47595	69845	125045	198835	313460
175	150	295	555	1065	1740	2785	3915	6130	8695	14625	21545	33405	49020	87765	139555	220005
	125	405	755	1455	2370	3800	5335	8355	11860	19945	29375	45545	66835	119660	190270	299960
	100	475	890	1715	2790	4475	6285	9835	13960	23480	34585	53625	78690	140880	224015	353155
	95-0	485	910	1750	2855	4575	6425	10055	14275	24005	35360	54820	80450	144030	229015	361045
200	150	435	810	1560	2545	4080	5725	8965	12725	21405	31525	48880	71730	128420	204200	321920
	125	515	960	1850	3015	4825	6780	10615	15065	25335	37320	57860	84910	152015	241715	381060
	110-0	550	1030	1980	3230	5175	7265	11380	16150	27160	40005	62025	91020	162960	259120	408500
225	175	460	860	1660	2710	4340	6095	9540	13540	22770	33540	52000	76310	136620	217240	342475
	150	550	1025	1975	3220	5155	7240	11335	16090	27065	39865	61810	90700	162380	258200	407055
	125-0	615	1145	2210	3600	5765	8100	12680	18000	30270	44585	69130	101440	181615	288785	455265
250	200	490	910	1755	2860	4585	6440	10080	14305	24060	35440	54945	80630	144355	229540	361865
	175	580	1085	2095	3410	5465	7675	12020	17060	28690	42255	65515	96145	172130	273700	431485
	150	655	1220	2350	3830	6135	8615	13490	19145	32200	47435	73540	107920	193210	307225	484355
	140-0	675	1265	2435	3970	6360	8930	13985	19845	33380	49165	76230	111860	200270	318445	502025

Based on 10% (2 psi minimum) accuracy of regulation.