

Delta Element Steam Traps

Magnum Series Models: MAG03, MAG10,
MAG25, MAG06, MAG16

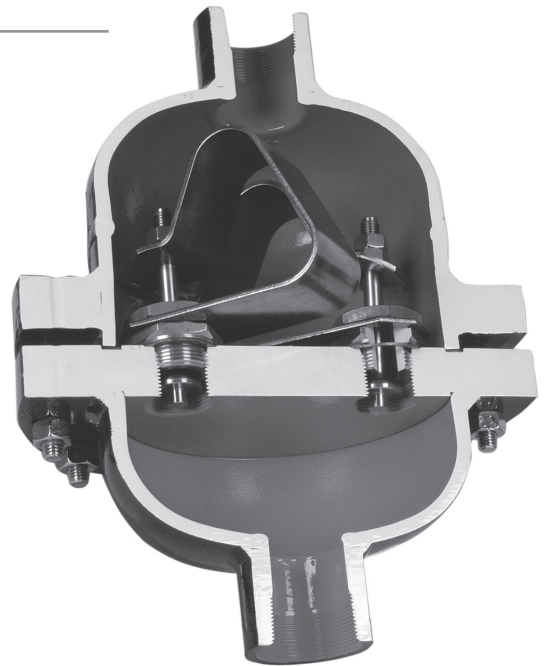
CRN: Canadian Registration Number Available

FOR LARGE PROCESS APPLICATIONS

3 Year No Live Steam Loss Guarantee

A versatile line of high capacity steam traps, Bestobell's Magnum can be supplied with up to 18 bimetallic elements for hot condensate flows as high as 149,000 pounds per hour. With five models available for differential pressures up to 320 psi (22,1 bar), you can add or remove elements to match your changing conditions.

- **Different Models to handle operating pressures from:** 30 psi (2,1 bar) to 320 psi (22,1 bar)
- **Single blade element** – long-term, trouble-free service because it's not prone to dirt build-up
- **Stainless Steel internals** – leads to longer service life since materials are highly resistant to fatigue and corrosion
- **Modulating discharge** – automatically adjusts to operating pressure and load
- **Multiple elements** – allows for variable flow conditions and the ability to add or remove elements based on future flow conditions
- **Continuous air and CO2 venting** – maximizes heat transfer while minimizing corrosion
- **High cold start-up capacity:** with cold flow capacities from 4 – 8 times higher than the hot running load capacity of the trap, process temperatures will be reached faster leading directly to savings on the bottom line



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FOR LARGE PROCESS APPLICATIONS
SPECIFICATIONS

Line Sizes: 1-1/2", 2", 2-1/2", 3", 4", 6", 8"

End Connections: Threaded, NPT, BSPT, BSPP, socket weld (1-1/2" & 2" only), raised face flanged ends: ANSI 150, 300. Flanged ends recommended for fabricated units.

MATERIALS

Body & Cover: single element units Forged Carbon Steel A105
 multi-element units fabricated Steel A234, A516, A106B

Valve Seat 303 SST & Stem: 17-4 SST

Bi-Metal: Stainless Steel NiCr

Strainer: Stainless Steel 304

Bolts: ASTM-A193, B7

Gasket: Flexible Graphite

BODY SIZE SELECTION

(Based on number of elements used to pass the required flow)

Number of Elements	1	1 - 2	3	4 - 6	7 - 10	11 - 18
Magnum 3 or 6	Use 2" GM3 or GM6	Small	Medium	Medium	Large	N/A
Magnum 10, 16, 25	Single Element body	Small	Medium	Medium	Medium	Large

SIZING THE MAGNUM SERIES
Step 1

Select model number suitable to meet the differential pressure for the maximum operating conditions from **Trap Parameters**.

Step 2

From the **Capacity Chart**, find the column that corresponds to the differential pressure. If the required hot flow capacity exceeds the capacity listed on the chart, divide the maximum flow capacity required by the capacity of the single element to determine the number of elements required (round up).

Step 3

In the **Body Size Selection Chart**, select the body necessary, based on the number of elements required (see example).

Example

50,000 gph maximum condensate flow at 100 psi differential pressure in a system with 120 psig maximum working pressure. On the **Capacity Chart** in the 100 psi column, the hot flow capacity of a one element Magnum 10 trap (maximum 120 psi) is 7,700 gph. Dividing 50,000 by 7,700 equals 6.5, rounding up, equals seven elements needed for this application. The body size needed for seven elements in a Magnum 10 trap in the **Body Size Selection Chart** is a medium body, this trap can be ordered with up to 3 additional holes plugged, if future capacity needs are expected.

TRAP PARAMETERS

Model	Max. Δ Pressure
Magnum 3	30 psi (2,1 bar)
Magnum 6	70 psi (4,8 bar)
Magnum 10	120 psi (8,3 bar)
Magnum 16	200 psi (13,8 bar)
Magnum 25	320 psi (22,1 bar)

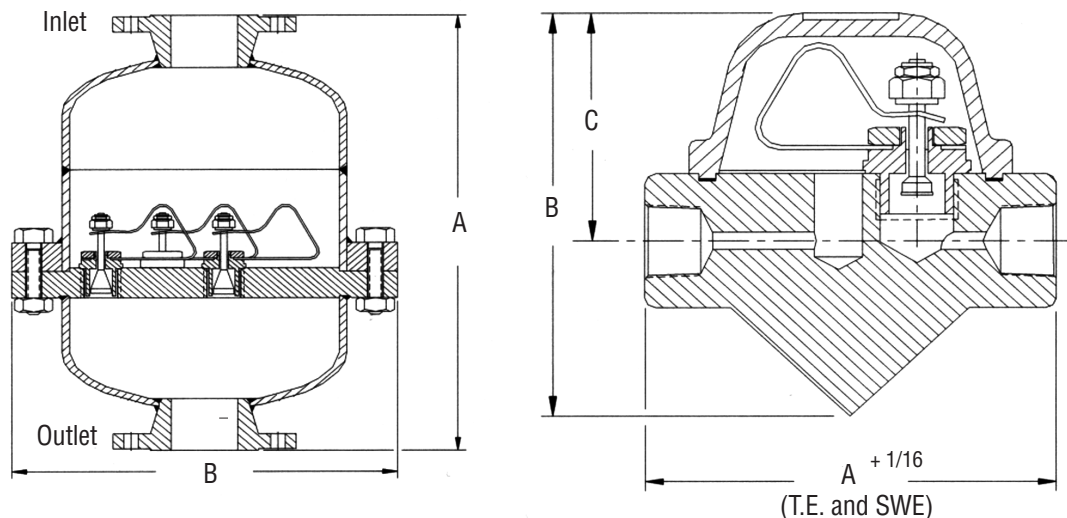
Body Size	Max Allowable Temperature	Max Allowable Pressure
Single	650°F (343°C)	750 psig (52 bar)
Small		450 psig (31 bar)
Medium		450 psig (31 bar)
Large		310 psig (21 bar)

Note: Final body pressure/temperature ratings dependant upon ratings of end connections

MAGNUM SERIES

DELTA ELEMENT STEAM TRAPS

DIMENSIONS



*All dimensions are for reference only. For more accurate dimensions, please consult factory.

INCHES

	Size	Ends	Single Element Body	Small Body	Medium Body	Large Body
A	1-1/2", 2"	NPT/SW	7.1	16.4	20.4	—
	1-1/2"	150#	11	16.2	19.6	—
	2"	150#	11	16.2	19.7	—
	1-1/2"	300#	11.5	16.2	Consult Factory	—
	2"	300#	13.4	16.2	19.7	—
	2-1/2"	FE	N/A	16.6	Consult Factory	—
	3"	FE	N/A	16.5	20.1	—
	4"	FE	N/A	16.7	20.4	—
	6"	FE	N/A	Consult Factory	20.9	24
	8"	FE	N/A	Consult Factory	Consult Factory	24
B	All	All	9.5	12.2	18.5	23.5
Wt. (lbs)	-	-	33 to 51	110	280	340

METRIC (mm)

	Size	Ends	Single Element Body	Small Body	Medium Body	Large Body
A	1-1/2", 2"	NPT/SW	180.6	415.3	518.2	—
	1-1/2"	150#	279.4	410.2	498.3	—
	2"	150#	279.4	411.5	500.9	—
	1-1/2"	300#	292.1	411.5	Consult Factory	—
	2"	300#	339.9	411.5	500.9	—
	2-1/2"	FE	N/A	421.6	Consult Factory	—
	3"	FE	N/A	417.8	510.0	—
	4"	FE	N/A	423.2	518.2	—
	6"	FE	N/A	Consult Factory	529.8	609.6
	8"	FE	N/A	Consult Factory	Consult Factory	609.6
B	All	All	241.3	309.6	469.9	596.9
Wt. (kgs)	-	-	15-23	50	127	154

Note: Contact factory for larger sizes and configurations not specifically addressed above

DELTA ELEMENT STEAM TRAPS

CAPACITY CHART: CONDENSATE CAPACITY AT DIFFERENTIAL PRESSURE

ENGLISH

Model	psi	5	10	20	30	50	70	100	120	150	200	260	320
Magnum 3	Cold start-up, lbs/hr	20000	30000	40000	50000	—	—	—	—	—	—	—	—
	Hot (Dripleg), lbs/hr	6300	7500	9000	11000	—	—	—	—	—	—	—	—
Magnum 6	Cold start-up, lbs/hr	—	15000	25000	31000	42000	46000	—	—	—	—	—	—
	Hot (Dripleg), lbs/hr	—	4400	6000	7200	8500	9200	—	—	—	—	—	—
Magnum 10	Cold start-up, lbs/hr	—	—	10000	16000	20000	26000	31000	35000	—	—	—	—
	Hot (Dripleg), lbs/hr	—	—	2600	4550	6200	6800	7700	8300	—	—	—	—
Magnum 16	Cold start-up, lbs/hr	—	—	—	—	17000	21000	26000	31000	36000	41000	—	—
	Hot (Dripleg), lbs/hr	—	—	—	—	1800	2700	3800	4750	5850	6900	—	—
Magnum 25	Cold start-up, lbs/hr	—	—	—	—	—	—	—	—	27000	33000	40000	47000
	Hot (Dripleg), lbs/hr	—	—	—	—	—	—	—	—	2800	3900	5200	6400

METRIC

Model	bar	0,34	0,69	1,38	2,07	3,45	4,83	6,90	8,28	10,34	13,79	17,93	22,07
Magnum 3	Cold start-up, kgs/hr	9072	13608	18144	22680	—	—	—	—	—	—	—	—
	Hot (Dripleg), kgs/hr	2857	3402	4062	4989	—	—	—	—	—	—	—	—
Magnum 6	Cold start-up, kgs/hr	—	6804	11340	14061	19051	20865	—	—	—	—	—	—
	Hot (Dripleg), kgs/hr	—	1995	2721	3265	3855	4173	—	—	—	—	—	—
Magnum 10	Cold start-up, kgs/hr	—	—	4536	7257	9072	11793	14061	15876	—	—	—	—
	Hot (Dripleg), kgs/hr	—	—	1179	2063	2812	3984	3492	3764	—	—	—	—
Magnum 16	Cold start-up, kgs/hr	—	—	—	—	7711	9525	11793	14061	16392	18597	—	—
	Hot (Dripleg), kgs/hr	—	—	—	—	816	1224	1723	2154	2653	3129	—	—
Magnum 25	Cold start-up, kgs/hr	—	—	—	—	—	—	—	—	12247	14968	19051	21319
	Hot (Dripleg), kgs/hr	—	—	—	—	—	—	—	—	1270	1769	2358	2903

Note: Flow rates are based on discharge to atmospheric pressure, valid for back pressures up to 20% of inlet pressure. Higher back pressure require reset of control element to obtain these capacities. Consult factory for details.

ORDERING SCHEMATIC

MODEL			6	7 & 8	9	10	11
M	A	G	1	0			

MODEL	
MAG03	Magnum 3
MAG06	Magnum 6
MAG10	Magnum 10
MAG16	Magnum 16
MAG25	Magnum 25

7 & 8		NUMBER OF ELEMENTS			
1	01	7	07	13	13
2	02	8	08	14	14
3	03	9	09	15	15
4	04	10	10	16	16
5	05	11	11	17	17
6	06	12	12	18	18

10	CONNECTIONS
1	NPT
2	FSW
3	150# Flange
4	300# Flange
8	BSPT
9	BSPP

6	BODY SIZE
1	Small
2	Medium
3	Large
4	Single

9	SIZE
6	1-1/2"
7	2"
8	2-1/2"
9	3"
B	4"
D	6"
E	8"

11	SPECIALS
0	None
A	1 – Plug
B	2 – Plug
C	3 – Plug