CAST IRON ACCESSIBLE FEED CHECK VALVES

SPECIFICATIONS

ACCESSIBLE FEED CHECK VALVE, WITH RENEWABLE SEAT& DISC, FLANGES AS PER BS 10 TABLE 'F'

CERTIFICATE

ITEMS CAN BE SUPPLIED WITH CERTIFICATE OF MANUFACTURE AND TEST ON FORM III-C AS PER REGULATION 269 OF IBR.

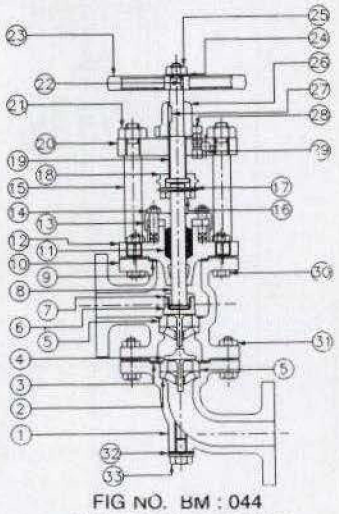


FIG NO. BM : 044
CURVED INLET, RIGHT ANGLE PATTERN

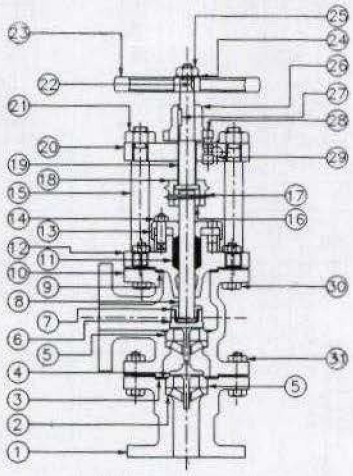


FIG NO. BM : 045
STRAIGHT INLET, RIGHT ANGLE PATTERN

STANDARD MATERIAL COMBINATION

P. NO.	QTY.	DESCRIPTION	MATERIAL	SPECIFICATIONS
1	1	CHECK VALVE BODY	CAST IRON	IBR CLAUSE 86 TO 93 Gr. A
2	1	CHECK VALVE GUIDE	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
3	1	GASKET	C.A.F.	IS 2712 Gr. W1
4	1	CHECK VALVE HEAD	LUMINA	Ni, Cu. ALLOY
5	2	VALVE SEAT RING	LUMINA	Ni, Cu ALLOY
6	1	VALVE HEAD	LUMINA	Ni, Cu ALLOY
7	1	CHECK NUT	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
8	1	LOWER STEM	13% Cr. STAINLESS STEEL	ASTMA 182 Gr. F6a OR ITS Eq.
9	1	GASKET	C.A.F.	IS 2712 Gr. W1
10	1	BODY	CAST IRON	IBR CLAUSE 86 TO 93 Gr. A
11	–	GLAND PACKING	GRAPHITED ASBESTOS	--
12	1	COVER	CAST IRON	IBR CLAUSE 86 TO 93 Gr. A
13	1	GLAND	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
14	3	STUDS & NUTS FOR GLAND	CARBON STEEL	BS 916
15	2	PILLAR	CARBON STEEL	–
16	1	LOCK RING	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
17	1	SOLID TAPER PIN	CARBON STEEL	–
18	1	STEM JOINT RING	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
19	1	UPPER STEM	13% Cr. STAINLESS STEEL	ASTMA 182 Gr. F6a OR ITS Eq.
20	1	CROSS HEAD	CARBON STEEL	--
21	2	PILLAR NUT	CARBON STEEL	BS 916
22	1	KEY FOR HANDWHEEL	CARBON STEEL	--
23	1	HANDWHEEL	CAST IRON	IBR CLAUSE 86 TO 93 Gr. A
24	1	WASHER FOR HANDWHEEL	CARBON STEEL	--
25	1	NUT FOR HANDWHEEL	CARBON STEEL	BS 916
26	1	LOCKING GUARD	CAST IRON	IBR CLAUSE 86 TO 93 Gr. A
27	1	KEYWAY FOR LOCKING GUARD	CARBON STEEL	--
28	2	PIN	CARBON STEEL	--
29	1	LOCKING PIN	CARBON STEEL	--
30	TO SUIT	BOLTS & NUTS	CARBON STEEL	BS 916
31	TO SUIT	BOLTS & NUTS	CARBON STEEL	BS 916
32	1	GASKET	C.A.F.	IS 2712 Gr. W1
33	1	DRAIN PLUG	BRONZE	IBR CLASUE 282 (a) (IV) Gr. B

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM : 42-43-44-45:96

LEADER VALVES LTD. IND. AREA, JALANDHAR-144004 (INDIA)

AN ISO 9001 : 94 COMPANY

CAST IRON ACCESSIBLE FEED CHECK VALVES

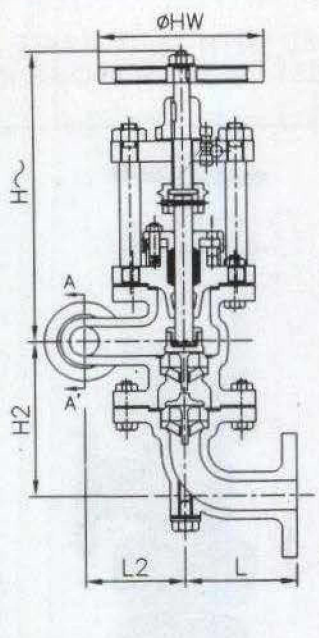
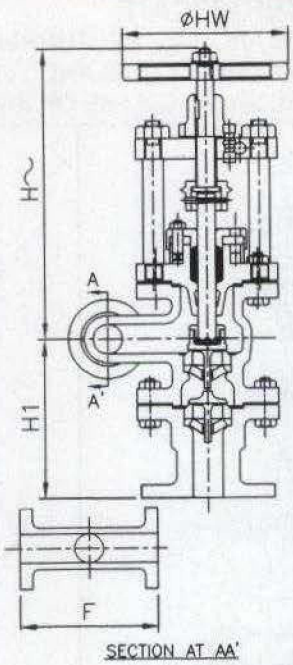


FIG NO. BM : 042



SECTION AT AA'

FIG NO. BM : 043

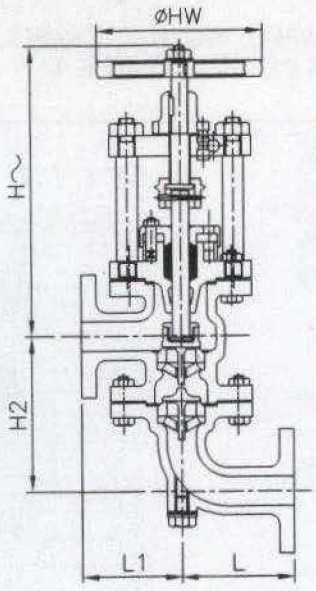


FIG NO. BM : 044

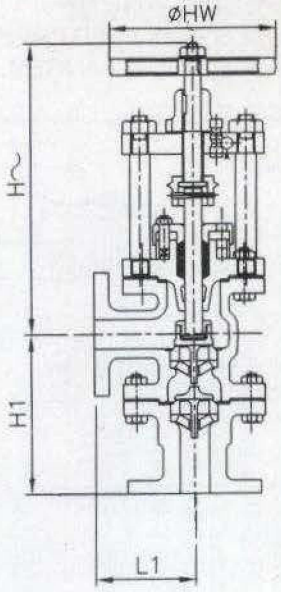


FIG NO. BM : 045

CATALOGUE NO.

ITEM	FIG NO.	END DETAILS
C.I. ACCESSIBLE FEED CHECK VALVE. ANGLE PATTERN CURVED INLET, WITH INSPECTION BRANCH	BM 042	FLENGED ENDS TO BS 10 TABLE F.
C.I. ACCESSIBLE FEED CHECK VALVE. ANGLE PATTERN, STRAIGHT INLET, WITH INSPECTION BRANCH	BM 043	FLENGED ENDS TO BS 10 TABLE F.
C.I. ACCESSIBLE FEED CHECK VALVE. ANGLE PATTERN, CURVED INLET, WITHOUT INSPECTION BRANCH	BM 044	FLENGED ENDS TO BS 10 TABLE F.
C.I. ACCESSIBLE FEED CHECK VALVE. ANGLE PATTERN, STRAIGHT INLET, WITHOUT INSPECTION BRANCH	BM 045	FLENGED ENDS TO BS 10 TABLE F.

DIMENSIONAL DATA

DN	32	40	50	65	80
NPS	$1^1/_4$	$1^1/_2$	2	$2^1/_2$	3
L	121	102	114	127	152
L1	108	114	127	152	191
L2	–	102	124	140	–
F	–	229	254	279	–
H	305	318	400	432	440
H1	162	173	202	238	238
H2	167	189	216	238	238
HW	178	178	229	229	279
ITEM CODE NOS.	BM 042 AH	BM 042 AI	BM 042 AJ	BM 042 AK	BM 042 AL
	BM 043 AH	BM 043 AI	BM 043 AJ	BM 043 AK	BM 043 AL
	BM 044 AH	BM 044 AI	BM 044 AJ	BM 044 AK	BM 044 AL
	BM 045 AH	BM 045 AI	BM 045 AJ	BM 045 AK	BM 045 AL

ITEM CODE NO.	MAX. WORKING PRESSURES	TEST PRESSURES			
		SHELL TEST (HYDROSTATIC)	SEAT TEST (HYDROSTATIC)	SEAT TEST (STEAM)	STANDARD NO.
BM 042 & BM 043 BM 044 & BM 045	188.6 psig (13 bar) AT 428° F (220° C)	377 psig	377 psig	188.6 psig	INDIAN BOILER REGULATIONS

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM : 42-43-44-45:96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

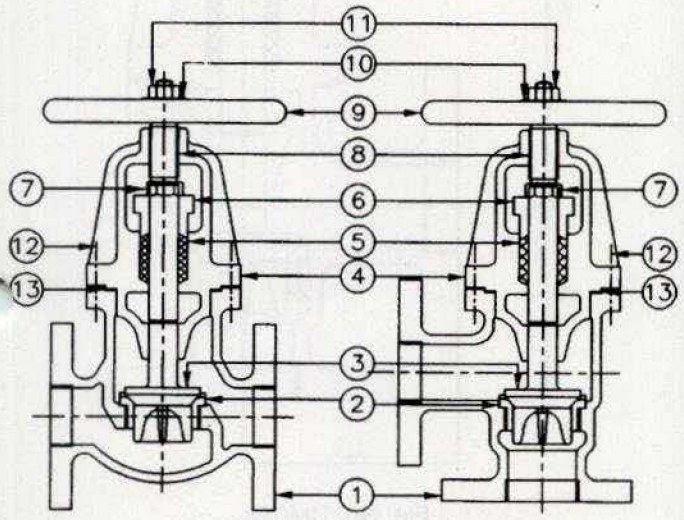
BRONZE CONTROLLABLE FEED CHECK VALVES PN16, 20

SPECIFICATIONS

Outside screw & rising stem, renewabale seat & disc, flanged ends as per BS10 table H.

CERTIFICATE-

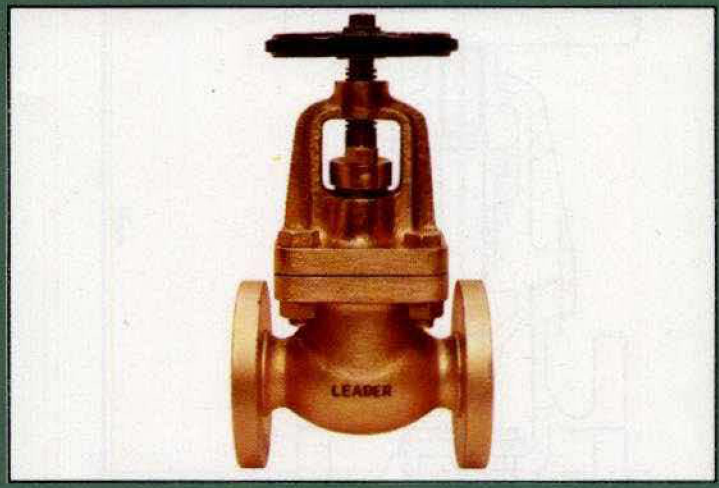
Items can be suplied with certificate of manufacture and test on form III C as per regulation 269 of IBR.

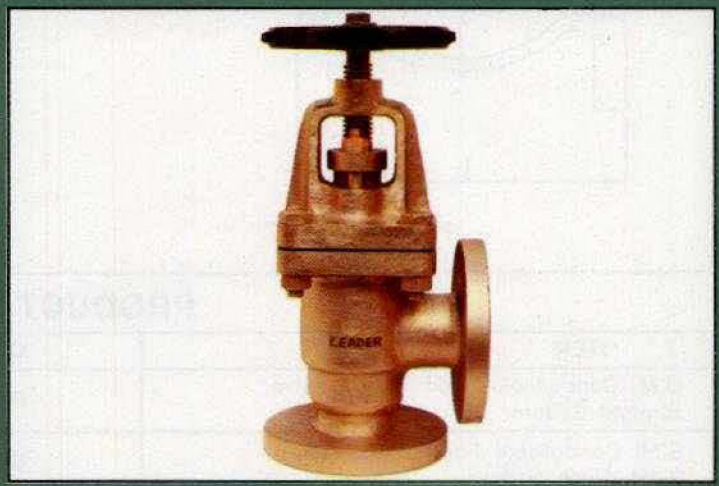


(Straight Pattern)
Fig No. BM047

(Straight Pattern)
Fig No. BM048 FF

Note :- Design of the bonnet shall be screwed in type for sizes upto 25mm & Bolted bonnet for sizes greater than 25mm.





STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIALS	SPECIFICATIONS
1	1	Body	Bronze	IBR Clause 282(a)(iv) Gr.B
2	1	Body Seat Ring	Lumina	Ni-Cu Alloy
3	1	Disc	Lumina	Ni-Cu Alloy
4	1	Bonnet	Bronze	IBR Clause 282(a)(iv) Gr.B
5	-	Gland Packing	Graphited Asbestos	Suitable for Min. Design Temp. 260°C
6.	1	Gland	Bronze	IBR Clause (282(a)(iv) Gr.B
7.	2 Each	Studs & Nuts for Gland	Carbon Steel	BS 916
8	1	Stem	S.S. (HB 200 Min.)	ASTM A182 Gr.F6a or its eq.
9	1	Handwheel	C.I.	IS 210 Gr. FG 200
10	1	Washer	Carbon Steel	-
11	1	Nut For Handwheel	Carbon Steel	BS 916
12	To suit	Studs & Nuts	Carbon Steel	BS 916
13	1	Gasket	C.A.F.	IS 2712 Gr. W/1

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM : 47-48:96

LEADER VALVES LTD. IND. AREA,
JALANDHAR - 144 004 (INDIA)

BRONZE CONTROLLABLE FEED CHECK VALVES PN16, 20

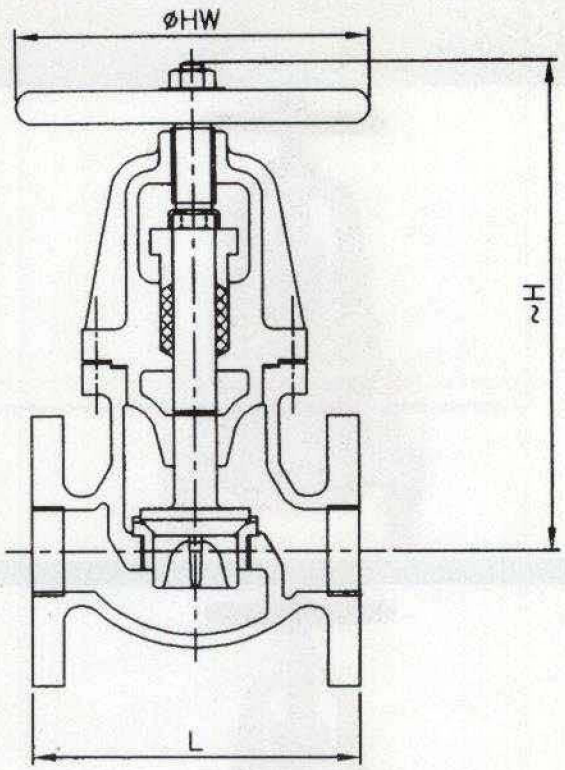


Fig. No. BM047

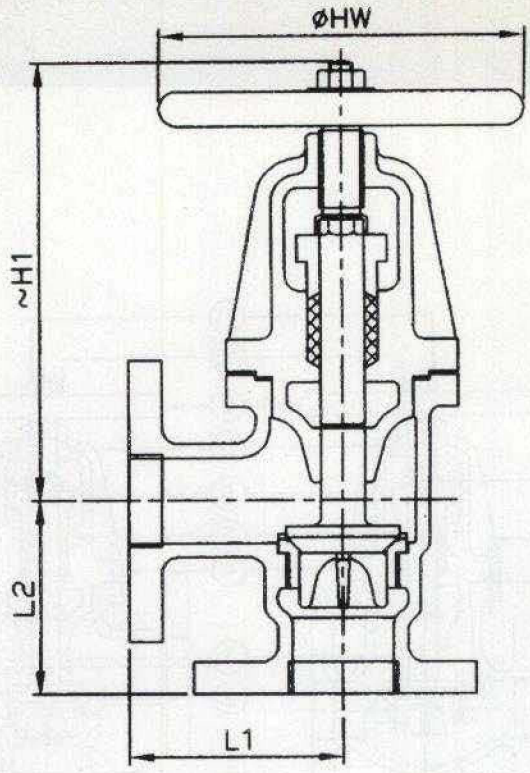


Fig. No. BM048

PRODUCT CODE NOS.

ITEM	CODE NO.	END DETAILS
G.M. Controllable Feed Check Valve, Straight Pattern	BM047 FF	Flanged Ends to BS10 Table H
G.M. Controllable Feed Check Valve, Right Angle Pattern	BM048 FF	Flanged Ends to BS10 Table H

DIMENSIONAL DATA

DN NPS	15 1/2	20 3/4	25 1	32 1-1/4	40 1-1/2	50 2	65 2-1/2	80 3	100 4
L	108	114	127	140	178	197	229	267	292
L1	73	76	82.5	95	101.5	108	120.5	133.5	-
L2	73	76	82.5	89	95	108	120.5	133.5	-
H	145	155	190	235	260	300	320	325	365
H1	130	143	175	230	235	265	285	295	-
HW	78	78	89	127	127	152	203	229	229
PRODUCT CODE NO.	BM047AD	BM047AF	BM047AG	BM047AH	BM047AI	BM047AJ	BM047AK	BM047AL	BM047AN
	BM048AD	BM048AF	BM048AG	BM048AH	BM048AI	BM048AJ	BM048AK	BM048AL	-

TEST PRESSURE

END DETAILS	MAX. WORKING PRESSURE	SHELL TEST (HYDROSTATIC)	SEAT TEST (HYDROSTATIC)	(STEAM)	CODE
Flanged Ends As Per BS10 Table H	250 psig (17.24 bar) AT 435°F(225°C)	500 psig	500 psig	250 psig	INDIAN BOILER REGULATION

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM : 47-48:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BRONZE SLEEVE PACKED WATER LEVEL GAUGES

APPLICATION

These gauges are suitable for steam pressure upto 250Lbs/sq. inch (17.24 bar) and temperature upto 435°F (225°C).

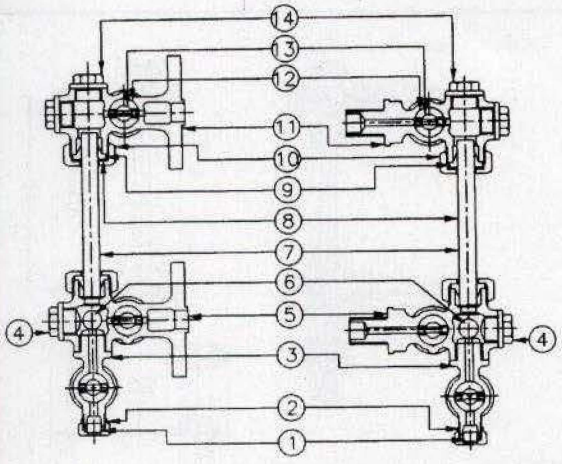


Fig. No. BM055-56

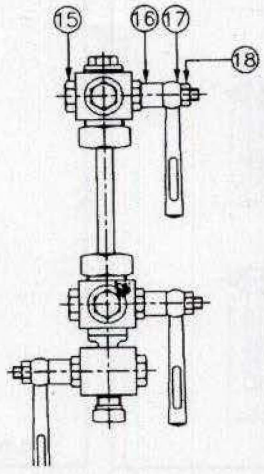


Fig. No. BM057-58

STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIAL	SPECIFICATIONS
1	1	Ring	Bronze	IBR Clause 282(a) (iv) Gr.B
2	1	Union Nut	Bronze	IBR Clause 282(a) (iv) Gr. B
3	1	Drain Cock	Bronze	IBR Clause 282(a) (iv) Gr. B
4	1	Bottom Gauge Side Nut	Bronze	IBR Clause 282(a) (iv) Gr. B
5	1	Bottom Gauge Arm	Bronze	IBR Clause 282(a) (iv) Gr. B
6	1	Ball	S.S.	ASTM A182 Gr. F304
7	1	Glass Tube	Glass	_
8	2	Washer	Bronze	IBR Clause 282(a) (iv) Gr. B
9	2	Cone	Synthetic Rubber	BS 2752 Gr. C60
10	2	Gland Nut	Bronze	IBR Clause 282(a) (iv) Gr. B
11	1	Top Gauge Arm	Bronze	IBR Clause 282(a) (iv) Gr. B
12	2	Sleeve	Moulded Asbestos	-
13	2	Stem	S.S.	ASTM A 182 Gr. F6a
14	1	Top Gauge Side Nut	Bronze	IBR Clause 282(a) (iv) Gr. B
15	2	Bottom Nut	Bronze	IBR Clause 282(a) (iv) Gr. B
16	2	Bonnet	Bronze	IBR Clause 282(a) (iv) Gr. B
17	2	Handle	Bronze	IBR Clause 282(a) (iv) Gr. B
18	2	Nut for Handle	Carbon Steel	BS 916

TEST PRESSURES

MAX. WORKING PRESSURE	SHELL TEST (HYDROSTATIC)	SEAT TEST		CODE
		(HYDROSTATIC)	(STEAM)	
250 psi (17.24 bar) at 435°F (225°C)	500 psig (34.5 bar)	500 psig	250 psig	INDIAN BOILER REGULATIONS

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. : BM55-58:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BRONZE SLEEVE PACKED WATER LEVEL GAUGES

WORKING PRINCIPLE

Each cock is fitted with a Self-adjusting inverted taper plug which forms a Seal in a renewable moulded asbestos Sleeve. This packing Sleeve can be easily positioned in the Cock by a rib which fits a corresponding groove in the body. To avoid clogging of the passage through Sleeve, it is reinforced with metallic eyelets. A ball in the lower arm cuts off water supply in the event of glass tube breakage. The glass tubes are fitted with replaceable gauge glass cones. These Gauges can also be supplied with Gauge glass protector when so required.

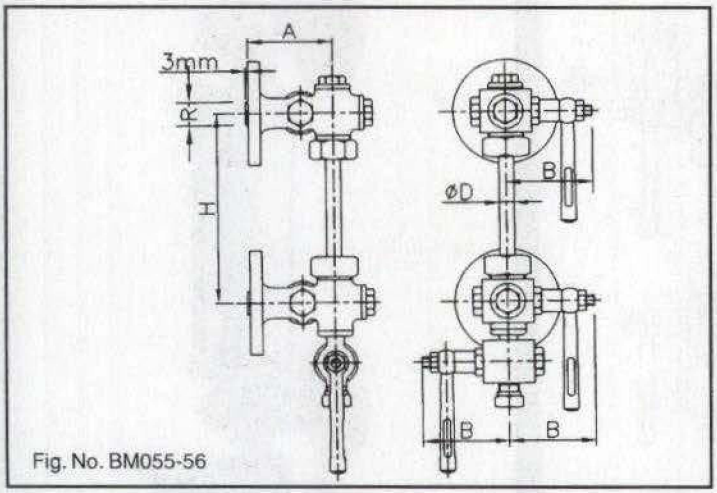


Fig. No. BM055-56

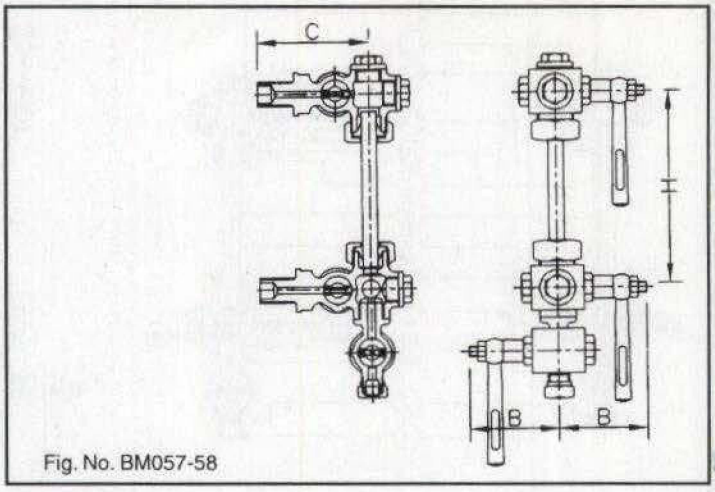


Fig. No. BM057-58

PRODUCT CODE NOS.

PRODUCT	FIG. NO.	END DETAILS
Bronze sleeve packed water level gauge, right hand type, with automatic shut off device in the water arm, Flanged Ends.	BM055	Flanges as per BS 10 Table H
Bronze sleeve packed water level gauge, right hand type, with automatic shut off device in the water arm, Flanged Ends.	BM056	Flanges as per BS 10 Table H
Bronze sleeve packed water level gauge, left hand type, with automatic shut off device in the water arm, Screwed male Ends.	BM057	Screwed Male BSP Taper Threads to BS 21
Bronze sleeve packed water level gauge, right hand type, with automatic shut off device in the water arm, Screwed male Ends.	BM058	Screwed male BSP Taper Threads to BS 21

DIMENSIONAL DATA

NPS	1/2	5/8	3/4
A	79.5	92	92
ØR	19	25.4	25.4
B	**78**	**95**	**95**
ØD	12.7	15.9	19.0
H	As per Customer's Requirement		
PRODUCT CODE NOS.	BM055AD	BM055AE	BM055AF
	BM056AD	BM056AE	BM056AF

DIMENSIONAL DATA

NPS	1/2	5/8	3/4
B	78	95	95
C	117	117	117
H	As per Customer's Requirement		
PRODUCT CODE NOS.	BM057AD	BM057AE	BM057AF
	BM058AD	BM058AE	BM058AF

INFORMATION REQUIRED WHILE ENQUIRING / ORDERING

1. Size of the Water Level Gauge
2. End connections
3. Item Code no.
4. Distance between steam and water arms.
5. Flange Drilling :- Valves are supplied with the flanges blank unless drilling particulars are specified.

NOTE : ITEMS CAN BE SUPPLIED WITH CERTIFICATE OF MANUFACTURE AND TEST ON FORM III C AS PER REGULATION 269 OF IBR

Note : The above data is subject to change without notice due to our continuing programme of product improvements.	CAT. NO. : BM55-58:96	LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BRONZE LINK TYPE PARALLEL SLIDE BLOW OFF VALVES

SPECIFICATIONS

Parallel slide, link type, renewable seat & disc

CERTIFICATE

Items can be supplied with certificate of manufacture and test on form III C as per regulation 269 of IBR

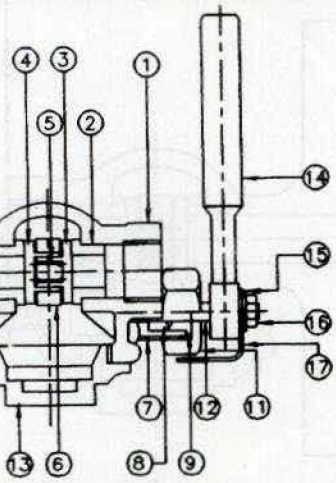
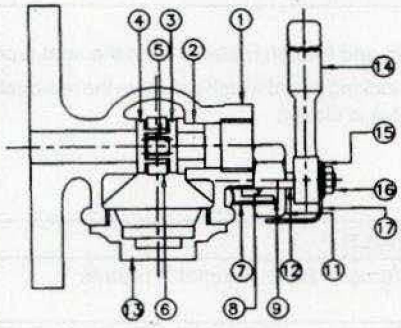
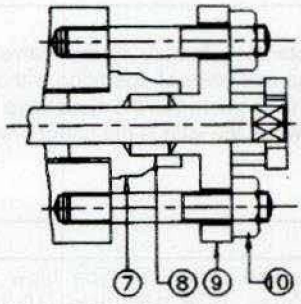


Fig. No. BM065



Stuffing Box Design for Sizez 15 mm & 20 mm.

FIG. NO. : BM066



Stuffing Box Design for Sizez 25 mm & above

STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIALS	SPECIFICATION
1	1	Body	Bronze	IBR Clause 282(a)(iv) Gr. B
2	2	Body Seat Ring	Lumina	Ni-Cu Alloy
3	1	Outlet Valve Disc	Lumina	Ni-Cu Alloy
4.	1	Inlet Valve Disc	Bronze	IBR Clause 282(a)(iv) Gr.B
5.	1	Spring	Carbon Steel	IBR Clause 307 to 314
6.	1	Lever	Bronze	IBR Clause 282(a) (iv) Gr. B
7	1	Stuffing Box	Bronze	IBR Clause 282(a) (iv) Gr. B
8.	1	Gland Packing	Asbestos	Graphited
9	1	Gland	Bronze	IBR Clause 282 (a) (iv) Gr.B
10	2 Each	Studs & nuts	Carbon steel	BS 916
11	1	Gland nut	Bronze	IBR Clause 282 (a) (iv) Gr.B
12	1	Spindle	13% Cr. Steel	ASTM A276-410 Or ASTM A182 Gr. F6a
13	1	Cover	Bronze	IBR Clause 282(a) (iv) Gr. B
14	1	Handle	C.I.	BS 1452 Gr. FG 220
15	1	Washer	Carbon Steel	BS 916
16	1	Nut for Handle	Carbon Steel	BS 916
17	1	Open Shut Indicator	Brass Sheet	-

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM:65-66:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BRONZE LINK TYPE PARALLEL SLIDE BLOW OFF VALVES

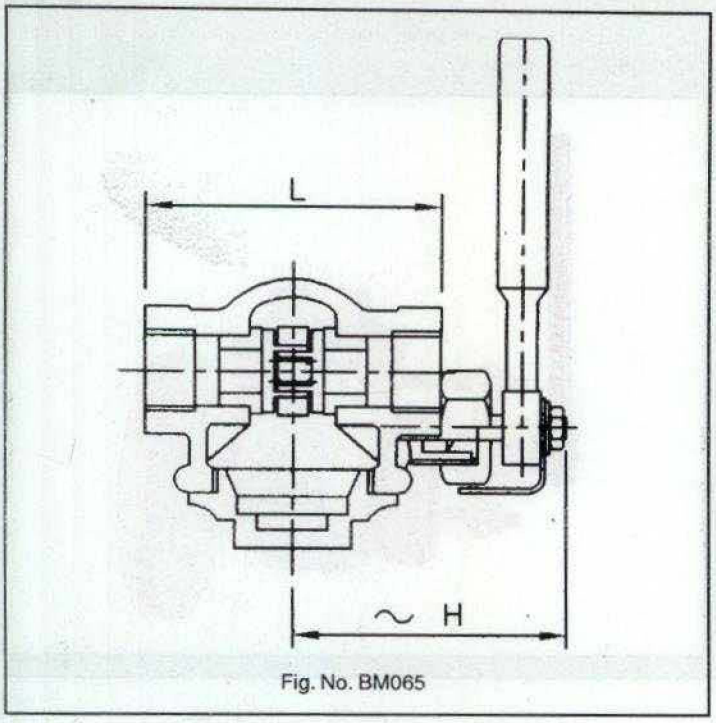


Fig. No. BM065

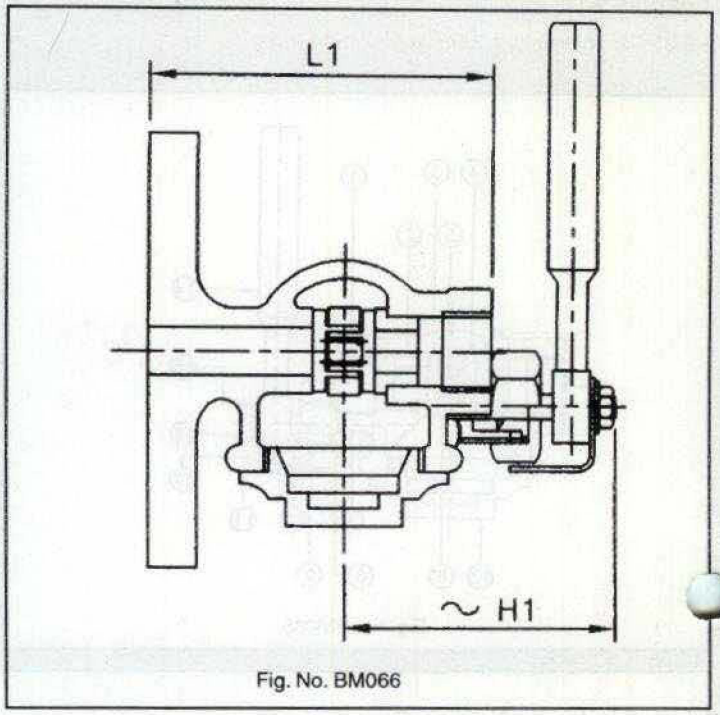


Fig. No. BM066

1. The outstanding feature of this valve is that it maintain fluid tighteness and ease of operation without the aid of any weding action. A spring between the discs keep them in close contact with the seat when the vale is not under pressure and the slide valve action removes dirt and foreign material from the seat faces.
2. The gland forms a locking guard which prevents the removal of box key unless the valve is closed.

CATALOGUE FIG. NO.

ITEM	FIG. NO.	END DETAILS
Bronze parallel slide link type blow off valve, max. BOP 150 psig (10.34 bar)	BM065	Screwed female BSP parallel Threads to BS21
Bronze parallel slide link type blow off valve, max. BOP 150 psig (10.34 bar)	BM066	One end flanged to BS 10 Table F. Other end having screwed female BSP parallel threads to BS 21

DIMENSIONAL DATA

	DN NPS	15 1/2	20 3/4	25 1	32 1 1/4
	L	76	82	102	114
	L1	89	98	121	133
	H	70	92	98	103
	H1	70	92	98	103
ITEM CODE NOS.	Screwed Female BSP Parallel Threads to BS21	BM065AD	BM065AF	BM065AG	BM067AH
	One end flanged to BS 10 table F. other end having screwed female BSP parallel threads to BS 21	BM066AD	BM066AF	BM066AG	BM068AH

TEST PRESSURE

ITEM CODE NO.	MAX. WORKING PRESSURE	SHELL TEST	SEAT TEST		CODE
		(HYDROSTATIC)	(HYDROSTATIC)	(STEAM)	
BM065 & BM 066	150 psig (10.34 bar) At 435°F (20.7 bar) Hyd.	300 psig	300 psig	150 psig	Indian Boiler Regulations

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM:65-66:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BRONZE PARALLEL SLIDE BLOW OFF VALVES

SPECIFICATIONS

PARALLEL SLIDE, RACK AND PINION OPERATED, RENEWABLE SEAT & DISC, FLANGED ENDS

CERTIFICATE

ITEMS CAN BE SUPPLIED WITH CERTIFICATE OF MANUFACTURE AND TEST ON FORM III-C AS PER REGULATION 269 OF IBR.

SALIENT FEATURES

(1) OPERATION BY MEANS OF A RACK & PINION IS SO ARRANGED AS TO GIVE FULL OPENING WITH A HALF TURN OF THE BOX KEY.

(2) THE GLAND FORMS A LOCKING GUARD WHICH PREVENTS THE REMOVAL OF BOX KEY UNLESS THE VALVE IS CLOSED.

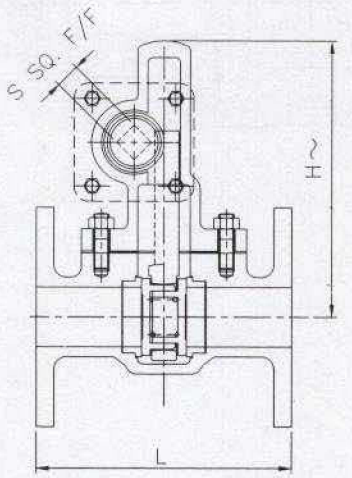


FIG NO : BM 067

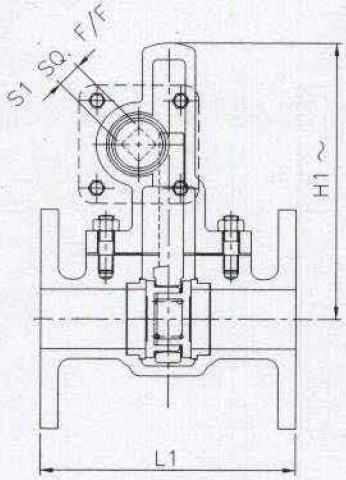
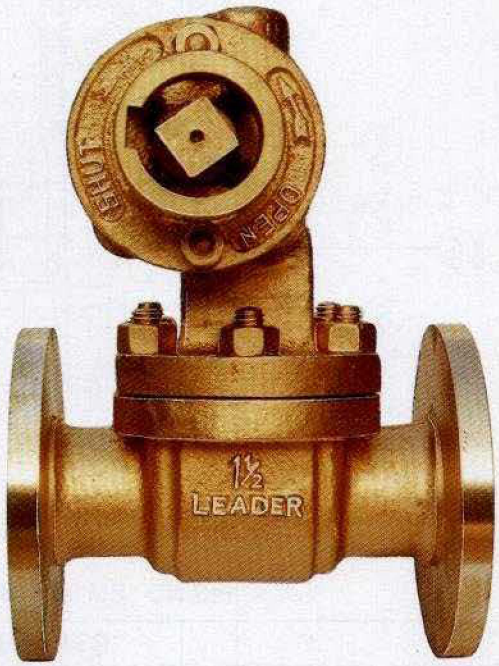


FIG NO :BM 068



CATALOGUE FIG NO.

ITEM	FIG NO.	END DETAILS
BRONZE PARALLEL SLIDE BLOW OFF VALVE MAX. BOP 150 PSIG (10.34 bar)	BM 067	FLANGED ENDS TO BS 10 TABLE F
BRONZE PARALLEL SLIDE BLOW OFF VALVE MAX. BOP 250 PSIG (17.24 bar)	BM 068	FLANGED ENDS TO BS 10 TABLE H

DIMENSIONAL DATA

DN NPS	25 1	32 $1^1/_4$	40 $1^1/_2$	50 2	65 $2^1/_2$	80 3
L	165	184	162	175	184	238
L1	168.5	187.5	181	193.5	219	254
H	140	158	178	210	242	325
H1	140	158	203	216	274	325
S	16	17.5	19	22	25.4	32
S1	16	17.5	22	25.4	28.5	35
ITEM CODE NOS.	BM 067 AG	BM 067 AH	BM 067 AI	BM 067 AJ	BM 067 AK	BM 067 AL
	BM 068 AG	BM 068 AH	BM 068 AI	BM 068 AJ	BM 068 AK	BM 068 AL

ITEM CODE NO.	MAX. WORKING PRESSURES	TEST PRESSURES			
		SHELL TEST (HYDROSTATIC)	SEAT TEST (HYDROSTATIC)	SEAT TEST (STEAM)	CODE
BM 067	150 psig (10.34. bar) AT 435°F (225°C)	300 psig	300 psig	150 psig	INDIAN BOILER REGULATION
BM 068	250 psig (17.24. bar) AT 435°F (225°C)	500 psig	500 psig	250 psig	

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM : 67-68:96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

BRONZE PARALLEL SLIDE BLOW OFF VALVES

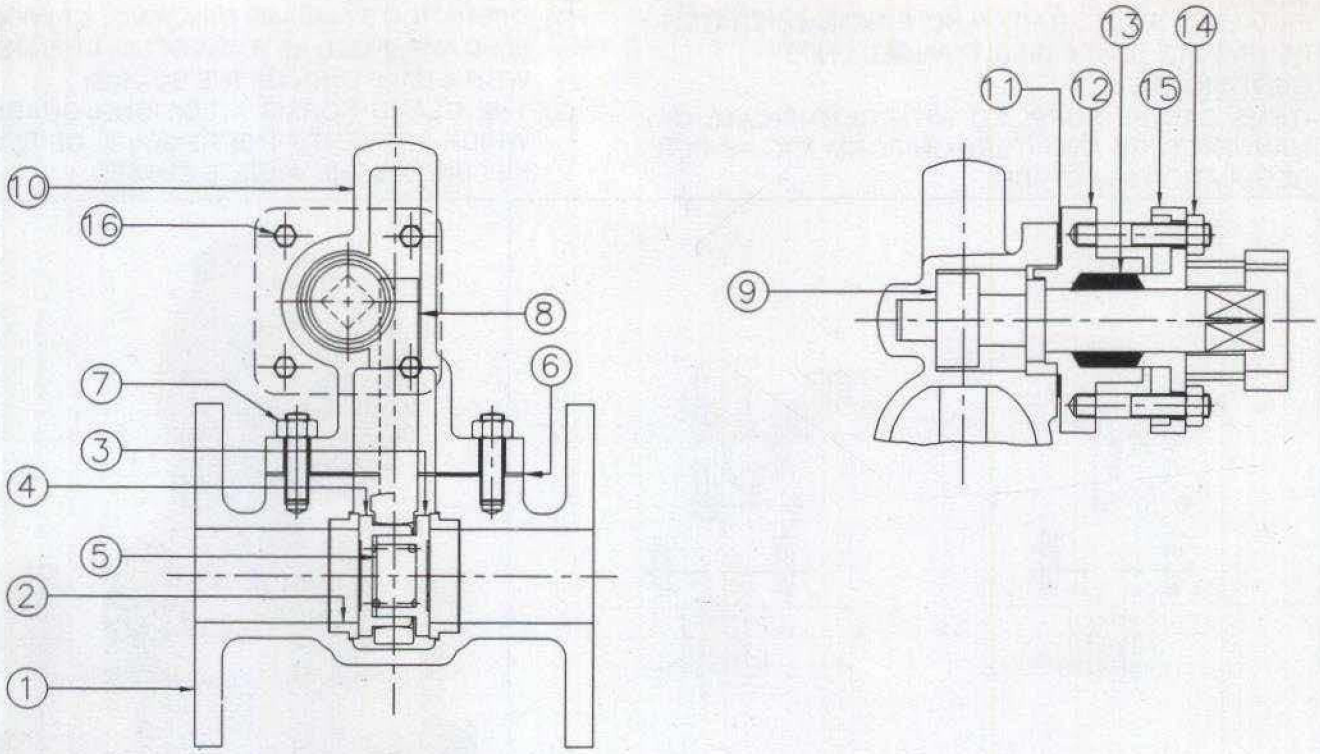


FIG NO : BM 067 / BM 068

STANDARD MATERIAL COMBINATION

P. NO.	QTY.	DESCRIPTION	MATERIAL	SPECIFICATIONS
1	1	BODY	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
2	2	BODY SEAT RING	LUMINA	Ni–Cu ALLOY
3	1	MALE DISC	LUMINA	Ni–Cu ALLOY
4	1	FEMALE DISC	LUMINA	Ni–Cu ALLOY
5	1	SPRING	CARBON STEEL	IBR CLAUSE 307 TO 314
6	1	GASKET	C.A.F.	IS 2712
7	TO SUIT	STUDS & NUTS	CARBON STEEL	BS 916
8	1	RACK	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
9	1	PINION	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
10	1	BONNET	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
11	1	GASKET	C.A.F.	IS 2712
12	1	STUFFING BOX	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
13	–	PACKING	GRAPHITED ASBESTOS	——
14	2 EACH	STUDS & NUTS	CARBON STEEL	BS 916
15	1	GLAND	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
16	4 EACH	STUDS & NUTS	CARBON STEEL	BS 916

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM : 67-68:96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

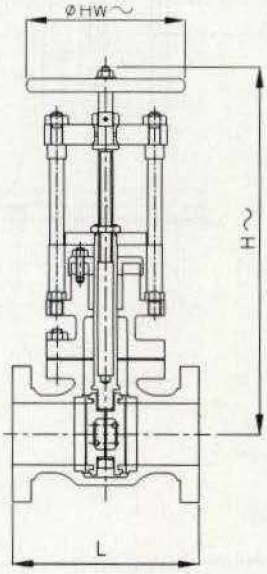
STEEL PARALLEL SLIDE VALVES

SPECIFICATIONS

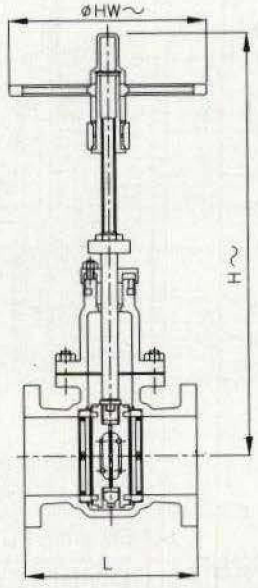
PARALLEL SLIDE DISCS, CROSSHEAD & PILLAR TYPE, RENEWABLE SEATS & DISC, FLANGES AS PER BS 10 TABLE J.

CERTIFICATE

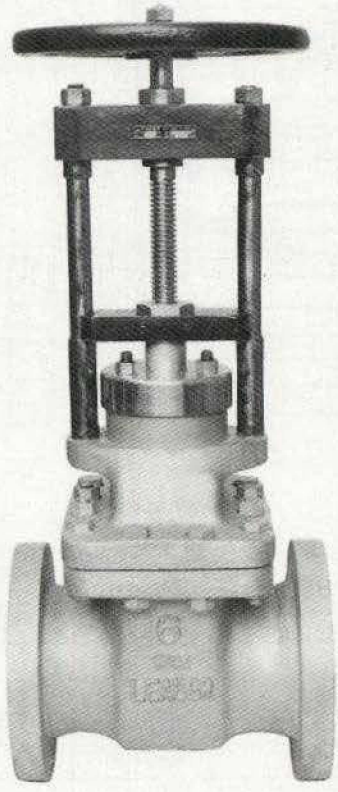
ITEMS CAN BE SUPPLIED WITH CERTIFICATE OF MANUFACTURE AND TEST ON FORM III-C AS PER REGULATION 269 OF IBR.



(FIG NO. BM 070)
(SIZES ≤ 150 MM)
C.S. PARALLEL SLIDE VALVE, OUTSIDE SCREW & NON RISING STEM.



(FIG NO. BM 071)
(SIZES > 150 MM)
C.S. PARALLEL SLIDE VALVE, OUTSIDE SCREW & RISING STEM.



CATALOGUE FIG NO.

ITEM	SIZES	FIG NO.	END DETAILS
STEEL PARALLEL SLIDE VALVE, OUTSIDE SCREW & NON RISING STEM.	≤ 150 MM	BM 070	FLANGED ENDS TO BS 10 TABLE J
STEEL PARALLEL SLIDE VALVE, OUTSIDE SCREW & RISING STEM.	> 150MM	BM 071	FLANGED ENDS TO BS 10 TABLE J

DIMENSIONAL DATA

DN	40	50	65	80	100	125	150	200	250
NPS	$1^1/_2$	2	$2^1/_2$	3	4	5	6	8	10
L	203	254	273	292	330	381	394	445	457
H	403	429	471	556	686	743	819	1118	1378
HW	178	203	203	229	330	381	381	508	559
ITEM CODE NOS.	BM 070 AI	BM 070 AJ	BM 070 AK	BM 070 AL	BM 070 AN	BM 070 AO	BM 070 AP	BM 070 AR	BM 070 AS
	BM 071 AI	BM 071 AJ	BM 071 AK	BM 071 AL	BM 071 AN	BM 071 AO	BM 071 AP	BM 071 AR	BM 071 AS

ITEM CODE NO.	MAX. WORKING PRESSURES	TEST PRESSURES			
		SHELL TEST (HYDROSTATIC)	SEAT TEST (HYDROSTATIC)	SEAT TEST (STEAM)	CODE
BM 070 & BM 071	350 psig (24.1 bar) AT 800°F (427°C)	700 psig	700 psig	250 psig	INDIAN BOILER REGULATION

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM : 70-71 : 96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

STEEL PARALLEL SLIDE VALVES

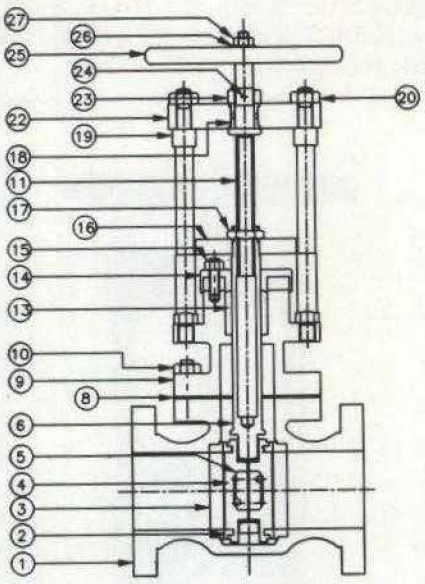


FIG NO. BM 070
(SIZES ≤ 150 MM)
C.S. PARALLEL SLIDE VALVE, OUTSIDE SCREW & NON RISING STEM.

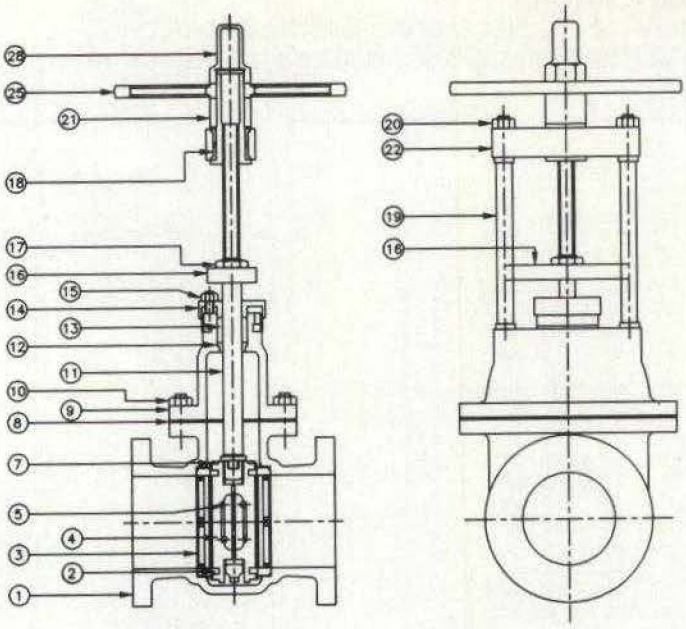


FIG NO. BM 071
(SIZES > 150 MM)
C.S. PARALLEL SLIDE VALVE, OUTSIDE SCREW & RISING STEM.

STANDARD MATERIAL COMBINATION

P. NO.	QTY.	DESCRIPTION	MATERIAL	SPECIFICATIONS
1	1	BODY	CAST STEEL	ASTM A216 Gr. WCB
2	2	DISC FACING RING	LUMINA	Ni. Cu ALLOY
3	2	BODY SEAT RING	LUMINA	Ni. Cu ALLOY
4	2	DISC	CAST STEEL	ASTM A216 Gr. WCB
5	1	SPRING	SPRING STEEL	AS PER IBR CLAUSE 307
6	1	TRUNK SPINDLE	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
7	1	DISC CLIP	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
8	1	GASKET	C.A.F.	IS 2712
9	1	BONNET	CAST STEEL	ASTM A216 Gr. WCB
10	TO SUIT	STUDS & NUTS	CARBON STEEL	BS 916
11	1	SPINDLE	13% Cr. STEEL	ASTM A 182 Gr. F6a
12	1	BUSH	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
13	1	GLAND PACKING	GRAPHITED ASBESTOS	SUITABLE FOR MAX. DESIGN TEMP. 425°C
14	1	GLAND	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
15	3 NOS. EACH	STUDS & NUTS	CARBON STEEL	BS 916
16	1	STOP MEMBER	CARBON STEEL	———
17	1	CHECK NUT	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
18	2	CROSS HEAD BUSH	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
19	2	PILLARS	CARBON STEEL	———
20	2	NUT (FOR PILLAR)	CARBON STEEL	BS 916
21	1	SPACING BLOCK	C.I.	IBR CLAUSE 86 TO 93 Gr. A.
22	1	CORSS HEAD	CARBON STEEL	———
23	1	SPINDLE HOLDING NUT	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
24	1	LOCKING PIN	CARBON STEEL	———
25	1	HANDWHEEL	C.I.	IBR CLAUSE 86 TO 93 Gr. A.
26	1	WASHER	CARBON STEEL	———
27	1	NUT	CARBON STEEL	BS 916
28	1	SPINDLE CAP	C.I.	IBR CLAUSE 86 TO 93 Gr. A.

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM :70-71 : 96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

STEEL PARALLEL SLIDE BLOW OFF VALVES

SPECIFICATIONS

PARALLEL SLIDE, RACK AND PINION OPERATED, RENEWABLE SEAT & DISC, FLANGED ENDS AS PER BS 10 TABLE J FF

CERTIFICATE

ITEMS CAN BE SUPPLIED WITH CERTIFICATE OF MANUFACTURE AND TEST ON FORM III-C AS PER REGULATION 269 OF IBR.

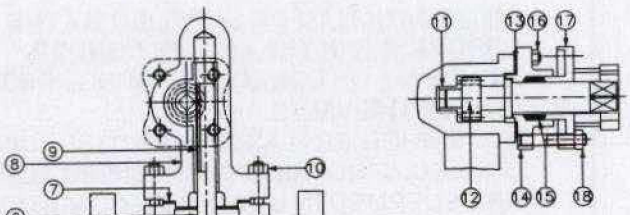
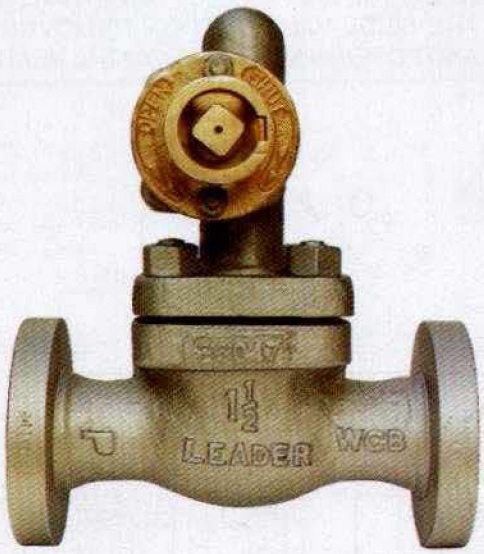


FIG NO : BM 072



STANDARD MATERIAL COMBINATION

P. NO.	QTY.	DESCRIPTION	MATERIALS	SPECIFICATIONS
1	1	BODY	CAST STEEL	ASTMA 216 GRADE WCB
2	2	BODY SEAT RING	LUMINA	Ni–Cu ALLOY
3	1	FEMALE DISC	LUMINA	Ni–Cu ALLOY
4	1	MALE DISC	LUMINA	Ni–Cu ALLOY
5	1	SPRING	CARBON STEEL	IBR CLAUSE 307 TO 314
6	1	RACK	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
7	1	GASKET	C.A.F.	IS 2712
8	1	BONNET	CAST STEEL	ASTM A 216 GRADE WCB
9	1	BUSH	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
10	TO SUIT	STUDS AND NUTS	CARBON STEEL	BS 916
11	1	BUSH	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
12	1	PINION	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
13	1	GASKET	C.A.F.	IS 2712
14	1	STUFFING BOX	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
15	–	PACKING	GRAPHITED ASBESTOS	
16	4 EACH	STUDS & NUTS FOR STUFFING BOX	CARBON STEEL	BS 916
17	1	GLAND	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B
18	2 EACH	STUDS & NUTS FOR GLAND	CARBON STEEL	BS 916

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM :72 : 96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

STEEL PARALLEL SLIDE BLOW OFF VALVES

SALIENT FEATURES

(1) THE OUTSTANDING FEATURE OF THIS VALVE IS THAT IT MAINTAINS FLUID TIGHTNESS AND EASE OF OPERATION WITHOUT THE AID OF ANY WEDGING ACTION. A SPRING BETWEEN THE DISCS KEEP THEM IN CLOSE CONTACT WITH THE SEAT WHEN THE VALVE IS NOT UNDER PRESSURE AND THE SLIDE VALVE ACTION REMOVES ANY DIRT AND FOREIGN MATTER FROM THE SEATING FACES.

(2) OPERATION BY MEANS OF A RACK & PINION IS SO ARRANGED AS TO GIVE FULL OPENING WITH A HALF TURN OF THE BOX KEY.

(3) THE GLAND FORMS A LOCKING GUARD WHICH PREVENTS THE REMOVAL OF BOX KEY UNLESS THE VALVE IS CLOSED.

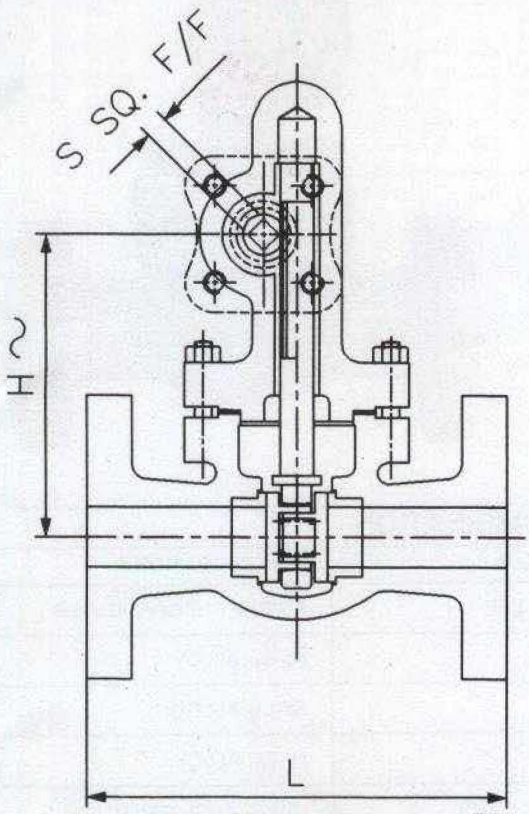


FIG NO. BM 072

INFORMATION TO BE SUPPLIED BY THE PURCHASER IN THE ENQUIRY/ORDER.

1. FIGURE NO. OR BOILER OPERATING PRESSURE
2. SIZE OF THE VALVE.
3. STATE WHETHER FLANGES ARE TO BE SUPPLIED DRILLED. IF NOTHING IS SPECIFIED FLANGES ARE SUPPLIED IN UNDRILLED CONDITION.
4. WHETHER BOX KEY IS REQUIRED.

DIMENSIONAL DATA

DN	25	32	40	50	65
NPS	1	$1^1/_4$	$1^1/_2$	2	$2^1/_2$
L	178	241	267	305	330
H	129	165	172	187	208
S	16	22	22	25.4	28.5
ITEM CODE NOS.	BM 072 AG	BM 072 AH	BM 072 AI	BM 072 AJ	BM 072 AK

ITEM CODE NO.	MAX. WORKING PRESSURES	TEST PRESSURES			
		SHELL TEST (HYDROSTATIC)	SEAT TEST (HYDROSTATIC)	SEAT TEST (STEAM)	CODE
BM 072	350 psig (24.1 bar) AT 800°F (427°C)	700 psig	700 psig	250 psig	INDIAN BOILER REGULATIONS

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM :72 : 96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

BRONZE Y-TYPE STRAINERS

PN16

SPECIFICATIONS

Y-type design, screwed in cover, screwed female BSP parallel threads to BS 21. Other form of threads can be provided on request.

CERTIFICATE

Items can be supplied with certificate of manufacture and test on form III C as per regulation 269 of IBR

SPECIAL FEATURES

"LEADER" strainers are in demand for any application where straining is required due to the following special design features :-

1) Fine finish castings to reduce pressure drop.
2) Screens are guided in the body
3) Bodies and screens required little time for cleaning.
4) Large ratio between the clear area through the strainer and pipe area to limit pressure drop to the minimum.
5) A wide variety of corrosion resistant screens are available in a wide range of perforations to provide an answer to straining problems.

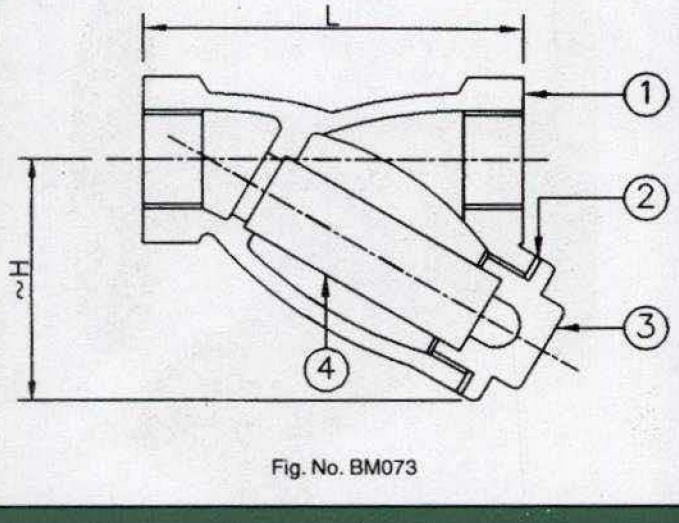


Fig. No. BM073

STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIALS	SPECIFICATIONS
1	1	Body	Bronze	BS 1400 LG2
2	1	Gasket	C.A.F.	IS 2712 Gr.W/1
3	1	Cover	Bronze	BS 1400 LG2
4	1	Screen	Stainless Steel	Type 304. (1mmØ Perforations per Sq.Inch)

DIMENSIONAL DATA

NPS	1/2	3/4	1	1-1/4	1-1/2	2
L	76	101.5	133.5	155.5	178	222
H	50	65	83	132	126	152
RC	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
PRODUCT CODE NOS.	BM073AD	BM073AF	BM073AG	BM073AH	BM073AI	BM073AD

TEST PRESSURE

PRODUCT	CODE NO.	PN DESIGNATION	TEST PRESSURE (HYDROSTATIC)	STANDARD
BRONZE Y-TYPE STRAINER	BM073	PN16	34.5BAR	BS 6755 PART-I

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM73-74:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BRONZE Y-TYPE STRAINERS

PN16

SPECIFICATIONS

Y-type design, flanges as per BS.10 table-H other types of flanges can be provided on request.

CERTIFICATE

Items can be supplied with certificate of manufacture and test on form III C as per regulation 269 of IBR

SPECIAL FEATURES

"LEADER" strainers are in demand for any application where straining is required due to the following special design features :-

1) Fine finish castings to reduce pressure drop.
2) Screens are guided in the body
3) Bodies and screens require little time for cleaning.
4) Large ratio between the clear area through the strainer and pipe area to limit pressure drop to the minimum.
5) A wide variety of corrosion resistant screens are available in a wide range of perforations to provide an answer to straining problems.

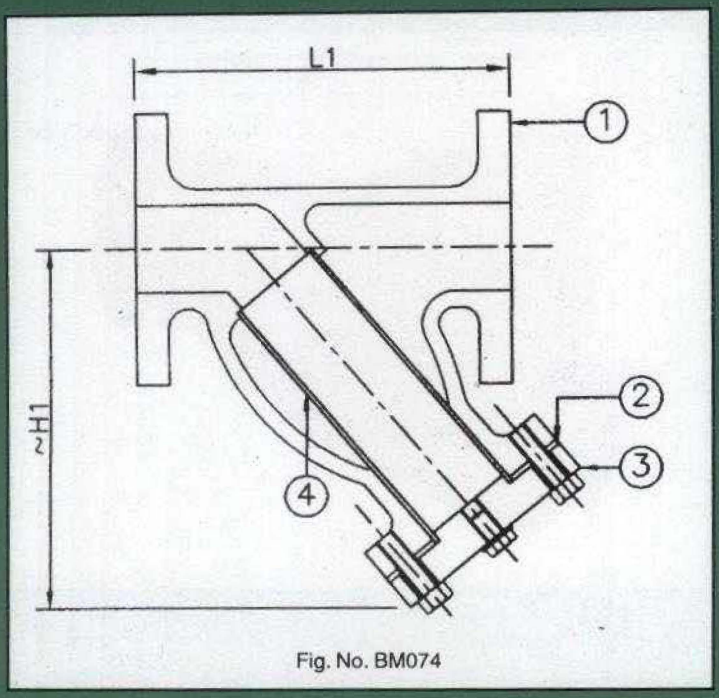


Fig. No. BM074

STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIALS	SPECIFICATION
1	1	Body	Bronze	BS 1400 LG2
2	1	Gasket	C.A.F.	IS 2712 Gr.W/1
3	1	Cover	Bronze	BS 1400 LG2
4	1	Screen	Stainless Steel	Type 304. (1mmØPerforations per Sq.Inch)
5		Studs & Nuts	Carbon Steel	BS 916

DIMENSIONAL DATA

NPS	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
L	140	140	162	193	204	204	242	264	372
H	74	96	111	140	150	218	235	260	276
PRODUCT CODE NOS.	BM074AD	BM074AF	BM074AG	BM074AH	BM074AI	BM074AJ	BM074AK	BM074AL	BM074AN

TEST PRESSURE

PRODUCT	CODE NO.	PN OR CLASS DESIGNATION	TEST PRESSURE (HYDROSTATIC)	STANDARD
BRONZE Y-TYPE STRAINER	BM074	PN16	34.5 bar	BS 6755 PART-I

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM73-74:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BASKET TYPE STRAINERS

PN16, CL-150

SPECIFICATIONS

Basket type strainer, Bolted Bonnet, Flanged ends. These strainers are available in cast iron as well as cast steel construction.

CERTIFICATE

Items Can be Supplied with Certificate of Manufacturer and Test on form III C as per Regulation 269 of IBR.

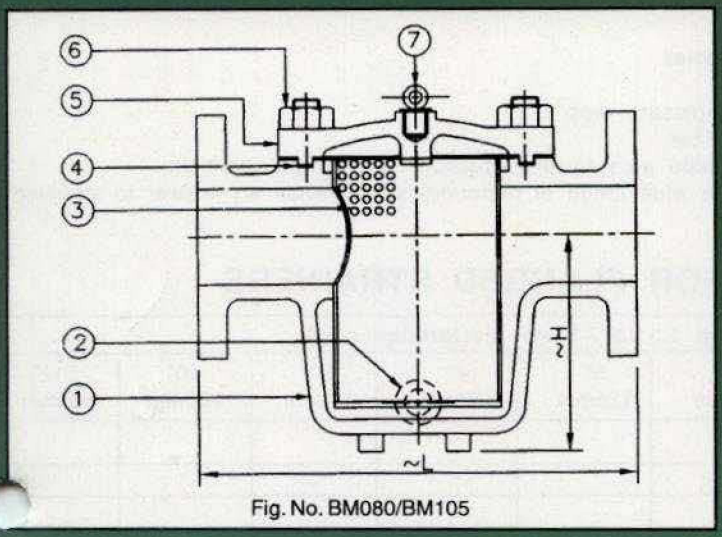
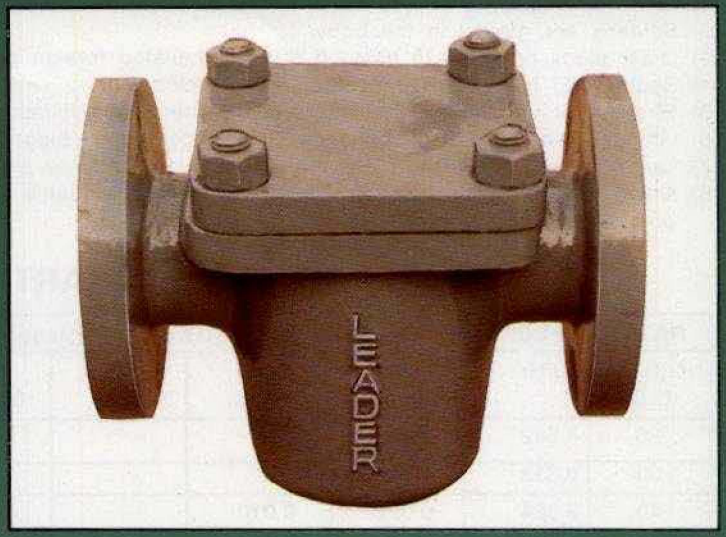


Fig. No. BM080/BM105



STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIALS	
			CAST IRON	CAST STEEL
1	1	Body	C.I. to IS 210 Gr. FG 200	C.S. to ASTM A216 Gr. WCB
2	1	Drain Plug	13% Cr. S.S. to ASTM A182 F6a	13% Cr. Steel to ASTM A182 F6a
3	1	Strainer	S.S. to AISI-304 Ø0.138"x29 holes per Sq.inch.	S.S. to AISI-304 Ø0.138"x29 holes per Sq.inch
4	1	Gasket	C.A.F. to BS 1832	C.A.F. to BS 1832
5	1	Cover	C.I. to IS 210 Gr. FG 200	C.S. to ASTM A216 Gr. WCB
6	To Suit	Stud Bolts & Nuts	Carbon Steel to BS 916	Carbon Steel to BS 916
7	1	Eye Bolts	Carbon Steel	Carbon Steel

DIMENSIONAL DATA

DN / IPS	1½" 40	2" 50	2½" 65	3" 80	4" 100	5" 125	6" 150	8" 200	10" 250	12" 300
L	142	106	134	180	200	210	230	336	390	440
H	200	227	287	310	354	403	467	559	740	849.5
PRODUCT CODE NOS.	BM080AI	BM080AJ	BM080AK	BM080AL	BM080AN	BM080AO	BM080AP	BM080AR	BM080AS	BO080AT
	BM105AI	BM105AJ	BM105AK	BM105AL	BM105AN	BM105AO	BM105AP	BM105AR	BM105AS	BO105AT

PRODUCT CODE NOS.

PRODUCT	CODE NO.	END DETAILS
C.I. Basket Type Strainer	BM080	Flanges As per BS 4504 PN 16
C.S. Basket Type Strainer	BM105	Flanges as per ASME B16.5 Class-150

TEST PRESSURE

PRODUCT	CODE NO.	PN OR CLASS	TEST PRESSURE	STANDARD
C.I. BASKET TYPE STRAINER	BM080	PN 16	26 bar	BS 6755 PAR-1
C.S. BASKET TYPE STRAINER	BM105	CL-105	30 bar	

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM80-105:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BASKET TYPE STRAINERS

PN16, CL-150

SPECIAL FEATURES

"LEADER" Strainers are in demand for any application where straining is required due to the following special design features :-

1) Fine finish castings to reduce pressure drop.
2) Screens are guided in the body.
3) Drain plugs provided to blow-off the accumulated foreign particles.
4) Bodies and baskets require little time for cleaning.
5) Straight through flow in baskets type strainers for minimum pressure drop.
6) Lifting eye-bolts and integrally cast feet provided on bigger sizes.
7) Large ratio between the clear area through the strainer and pipe area to limit pressure drop to the minimum.
8) A wide variety of corrosion resistant screens are available in a wide range of perforations to provide an answer to straining problmes.

PRESSURE DROP CHART FOR FLANGED STRAINERS

RATE OF FLOW		Pressure Drop in Kg./Cm2 [Based on 1.5 to 3.5 mm Perforation size]								
G.P.M. (U.S.)	m3/Hr.	2" 50mm	2-1/2" 65mm	3" 80mm	4" 100mm	5" 125mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm
20	4.542	0.007	-	-	-	-	-	-	-	-
30	6.813	0.017	-	-	-	-	-	-	-	-
40	9.084	0.029	0.010	-	-	-	-	-	-	-
50	11.355	0.046	0.017	0.007	-	-	-	-	-	-
60	13.626	0.067	0.023	0.010	-	-	-	-	-	-
70	15.897	0.100	0.035	0.014	-	-	-	-	-	-
80	18.168	0.120	0.042	0.019	-	-	-	-	-	-
90	20.439	0.155	0.055	0.025	0.008	-	-	-	-	-
100	22.710	0.190	0.07	0.03	0.010	-	-	-	-	-
200	45.42	-	0.30	0.130	0.042	0.018	0.008	-	-	-
300	68.13	-	0.42	0.30	0.1	0.042	0.018	-	-	-
400	90.84	-	-	0.55	0.17	0.074	0.035	0.010	-	-
500	113.55	-	-	-	0.27	0.12	0.053	0.016	-	-
600	136.26	-	-	-	0.38	0.17	0.080	0.023	0.009	-
700	158.97	-	-	-	0.53	0.23	0.11	0.032	0.013	-
800	181.68	-	-	-	0.7	0.31	0.14	0.043	0.016	0.007
900	204.39	-	-	-	-	0.39	0.183	0.056	0.021	0.009
1000	227.1	-	-	-	-	0.49	0.225	0.07	0.027	0.011
2000	254.2	-	-	-	-	-	-	0.32	0.050	0.049
3000	681.3	-	-	-	-	-	-	0.70	0.280	0.112
4000	908.4	-	-	-	-	-	-	-	0.490	0.20
5000	1135.5	-	-	-	-	-	-	-	-	0.32
6000	1362.6	-	-	-	-	-	-	-	-	0.457
7000	1589.7	-	-	-	-	-	-	-	-	0.630

INFORMATION REQUIRED ALONG-WITH ENQUIRY/ORDER

To make proper selection of the chest material and the straining element, following particulars are requested alongwith your enquiries/ order for strainers :

1) Fluid to be handled
2) Working pressure
3) Working temperature
4) Conditions of flow
5) Size

Note : Details of bigger sizes can be provided on request.

Note : The above data is subject to change without notice due to our continuing programme of product improvements.	CAT. NO. BM80-105:96	LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

SIGHT FLOW INDICATORS

PN16, 20

SPECIFICATIONS

Sight flow indicator, sir gle window with toughned glass, screwed female BSP parallel threads to BS 21. Other forms of threads can be provided on request.

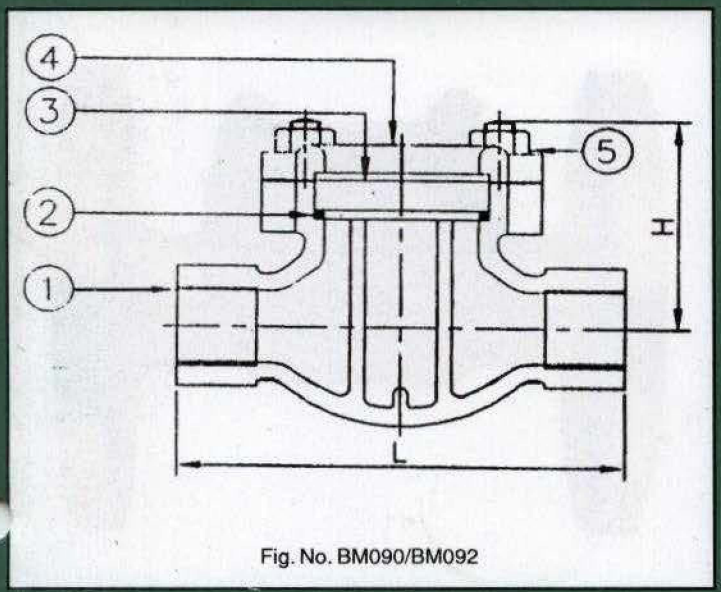


Fig. No. BM090/BM092

STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIALS	
			GUN METAL	CAST STEEL
1	1	Body	Gun Metal to BS 1400 LG2	Cast Iron to BS 1452 Gr. 220
2	2	Gasket	C.A.F.	C.A.F.
3	1	Sight Glass	Toughned Glass	Toughned Glass
4	1	Cover	Gun Metal to BS 1400 LG2	Cast Iron to BS 1452 Gr. 220
5	To suit	Studs & Nuts	Carbon Steel to BS 916	Carbon Steel to BS 916

PRODUCT CODE NOS.

PRODUCT	CODE NO.	END DETAILS
Cast Iron Sight Flow Indicator, Screwed Female Ends	BM090	Screwed Female BS Parallel Threads to BS 21
Gun Metal Sight Flow Indicator, Screwed Female Ends	BM092	Screwed Female BSP Parallel Threads to BS 21

DIMENSIONAL DATA

NPS	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
L	114	124	124	165	185	210
H	65	70	75	95	105	110
PRODUCT CODE NOS.	BM090AD	BM090AF	BM090AG	BM090AH	BM090AI	BM090AJ
	BM092AD	BM092AF	BM092AG	BM092AH	BM092AI	BM092AJ

TEST PRESSURE

PRODUCT	NOMINAL PRESSURE RATING	TESTED TO	STANDARD NO.
C.I. SIGHT FLOW INDICATOR	PN 16	24 bar (HYD)	BS 6755 PART-1
G.M. SIGHT FLOW INDICATOR	PN 20	24 bar	

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM90-92-106:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

SIGHT FLOW INDICATORS

PN16, 20

SPECIFICATIONS

Sight flow indicator, single window with toughned glass, flanged ends as per BS 4504 PN-16 other types of flanges can be provided on request.

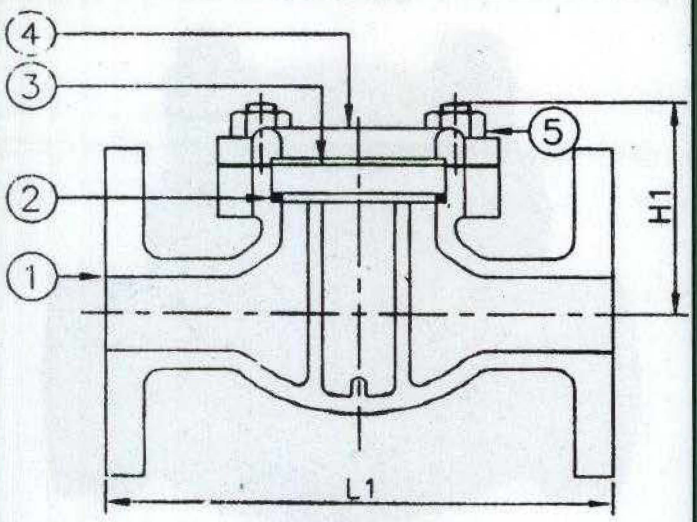
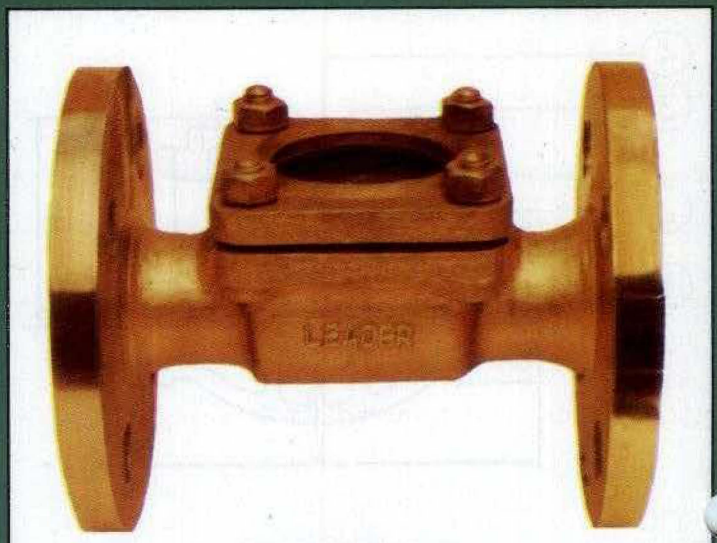


Fig. No. BM091/BM106



STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIALS	
			GUN METAL	CAST IRON
1	1	Body	Gun Metal to BS 1400 LG2	Cast Iron to BS 1452 Gr. 220
2	2	Gasket	C.A.F.	C.A.F.
3	1	Sight Glass	Toughned Glass	Toughned Glass
4	1	Cover	Gun Metal to BS 1400 LG2	Cast Iron to BS 1452 Gr. 220
5	To suit	Studs & Nuts	Carbon Steel to BS 916	Carbon Steel to BS 916

PRODUCT CODE NOS.

PRODUCT	CODE NO.	END DETAILS
Cast Iron Sight Flow Indicator, Flanged Ends	BM091	Flanges as per BS4504 PN-16
Gun Metal Sight Flow Indicator, Flanged Ends.	BM106	Flanges as per BS4504 PN-16

DIMENSIONAL DATA

NPS	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"
L	167	167	185	205	235	275	297	310	325
H	70	75	95	105	110	135	135	160	170
PRODUCT CODE NOS.	BM091AF	BM091AG	BM090AH	BM090AI	BM090AJ	BM090AK	BM090AL	BM090AN	BM090AO
	BM106AF	BM106AG	BM106AH	BM106AI	BM106AJ	BM106AK	BM106AL	BM106AN	BM106AO

TEST PRESSURE

PRODUCT	NOMINAL PRESSURE RATING	TESTED TO	STANDARD NO.
C.I. SIGHT FLOW INDICATOR	PN 16	24 bar (HYD)	BS 6755 PART-1
G.M. SIGHT FLOW INDICATOR	PN 16	24 bar (HYD)	

Note : The above data is subject to change without notice due to our continuing programme of product improvements.	CAT. NO. BM90-92-106:96	LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

BRONZE SELF STARTING INJECTOR

SPECIFICATIONS

AUTOMATIC INJECTOR SELF ACTING & RESTARTING, SCREWED BSP-BS21 MALE INLET.

CERTIFICATE

ITEMS CAN BE SUPPLIED WITH CERTIFICATE OF MANUFACTURE AND TEST ON FORM III-C AS PER REGULATION 269 OF IBR.

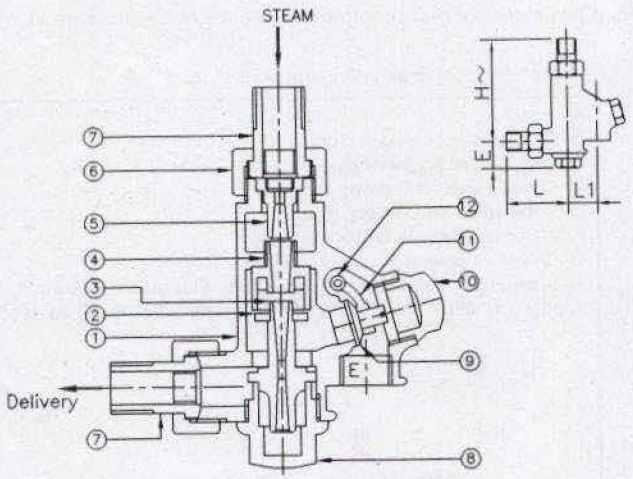


FIG NO. BM : 093

APPLICATION

These injectors are suitable for direct feed to Boilers upto a max. steam working pressure of 170 lbs/in² (11.95 Kg/Cm²) The various sizes differ somewhat as to the high and low pressures at which they work, but every size, with a lift not exceeding 3 feet (0.9144m) and water supply at the summer temperature of 74°F (23.34°C) will start at 35-40 lbs/in² Low (2.46 – 2.81 Kg/Cm²) and work upto 160 to 170 lbs/in² high (11.25 – 11.95 Kg/Cm²)

STANDARD MATERIAL COMBINATION

P. NO.	QTY.	DESCRIPTION	MATERIAL	SPECIFICATIONS
1	1	BODY	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
2	1	WASHER	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
3	1	DELIVERY JET	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
4	1	MIXING JET	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
5	1	STEAM JET	BRONZE/BRASS	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 2874 Gr.CZ 122
6	1	UNION NUT	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
7	2	TAIL PIPES	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
8	1	PLUG	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
9	1	DISC	BRONZE/BRASS	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 2874 Gr.CZ 122
10	1	CAP	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
11	1	HINGE	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2
12	1	HINGE PIN	BRONZE	IBR CLAUSE 282 (a) (iv) Gr. B/ BS 1400 Gr. LG2

DIMENSIONAL DATA

NPS	1/2	3/4	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
L	70	80	86	103	125	137
L1	34	41.5	45	59	76	92
H	121	142	173	202	253	311
E	33	38	40	47	82	78
ITEM CODE NOS.	BM 093 AD	BM 093 AF	BM 093 AG	BM 093 AH	BM 093 AI	BM 093 AJ

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM : 093 : 96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

BRONZE SELF STARTING INJECTOR

PRINCIPAL

To get continuous flow of steam from the boiler, water has to be injected into the boiler which is under steam pressure. The injector simply utilizes the latent heat of steam to impart kinetic energy to the feed water and it essentially consists of three parts.

(1) The steam JET (5) producing a jet of steam which takes the feed water into.

(2) The mixing JET (4) in which the steam mixes with the feed water and is condensed. A high velocity is imparted to the combined steam and water jet.

(3) The delivery JET (3) in which the kinetic energy of the jet is converted into sufficient pressure to overcome the boiler pressure at the feed check valve.

Automatic re-starting is obtained by providing on escape E for the steam and water if the jet is accidently broken.

INSTRUCTIONS FOR WORKING OF INJECTORS

TO START

When fixed as per the layout shown in brochure, fully open valve C on water supply and then open wide the valve on Steam pipe. If water wastes from overflow, partially close the valve on Water Supply pipe, until waste ceases, when the injector is properly at work.

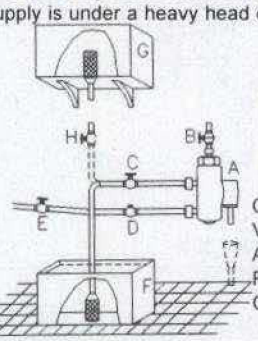
When water supply is above injector, in starting, open valve C only a half turn, and then open steam valve B, full & then open valve C. until injector is dry, the valve C being used to regulate the water to injector, Always be careful to fully open steam valves as failure to do this often causes trouble

TO STOP

Close down steam valve B, the valve on water pipe need not be shut unless the water supply flows into injector or there is a long lift or suction. In either of these cases shut down the Water valve.

A pet cock fitted into a Tee on the delivery pipe between Injector and Check Valve will be found useful for starting up on Low pressure. Open Pet Cock until injector has started. and then close. This pet Cock is also useful for draining delivery pipe in winter.

A– Injector
B–Globe valve on steam pipe
C–Globe valve on water pipe
D–Check valve on Delivery pipe
E-Globe valve on Delivery pipe
F–Water supply tank below injector
G– Water Supply tanke above injector
H–Secondary Globe valve on water pipe to regulate flow when supply is under a heavy head or taken from water pressure direct.



CONNECT THE INJECTOR IN VERTICAL POSITION AS SHOWN AND BEFORE DOING SO. DO NOT FAIL TO CAREFULLY READ THE GIVEN INSTRUCTIONS

CAPACITY CHART

Max. capacity at various steam pressures from 35-140 Lbs/in² (2.46 Kg/Cm2 – 9.84 Kg/Cm²) lifting 4Ft (1.2192 m) with water supply at 74° F(23.34°C) Sizes in mm and capacity in litres/hr are approximate.

STEAM PRESSURE		SIZE 1/2" (15 mm)		3/4" (20 mm)		1" (25 mm)		$1^1/_4$" (32 mm)		$1^1/_2$" (40 mm)		2" (50 mm)	
		IMPL		IMPL		IMPL		IMPL		IMPL		IMPL	
LBS/IN2	Kg/cm2	Galls/hr	Litres/hr	Galls/hr	Litres/hr	Galls/hr	Litres/hr	Galls/hr	Litres/hr	Galls/hr	Litres/hr	Galls/hr	Litres/hr
35	2.11	100	454	217	985	400	1816	625	2837	1167	5298	1550	7037
40	2.81	125	567	250	1135	450	2043	650	2951	1200	5448	1833	8321
50	3.52	137	621	267	1212	475	2156	762	3459	1450	6583	1983	9002
60	4.22	146	662	292	1325	487	2210	783	3554	1500	6810	2100	9534
70	4.92	150	681	292	1325	487	2210	792	3595	1500	6810	2250	10215
80	5.62	150	681	292	1325	487	2210	792	3595	1500	6810	2450	11123
90	6.33	146	662	275	1248	471	2138	775	3518	1450	6583	2500	11350
100	7.03	137	621	258	1171	458	2097	762	3459	1450	6583	2400	10896
110	7.73	133	603	254	1153	442	2006	700	3178	1408	6392	2300	10442
120	8.44	129	585	246	1116	433	1965	700	3178	1350	6129	2200	9988
130	9.14	129	585	242	1098	417	1893	675	3064	1317	5979	2100	9534
140	9.84	125	567	233	1057	400	1816	667	3028	1250	5675	2083	9456

Deduct about 3% from deliveries given in this table for every foot (0.3048m) of lift exceeding 4 ft (1.12192m)

INFORMATION TO BE FURNISHED WHEN ORDERING INJECTOR :–

1. Lowest and highest steam pressure.
2. Height of lift, if water supply is below the injector.
3. Distance to level of water above the Injector, If water is taken from overhead tank.
4. Gallons or Litres of water to be delivered/hr.
5. Temperature of feed water.

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. : BM : 093 : 96

LEADER VALVES LTD. IND. AREA, JALANDHAR -144004 (INDIA)

AN ISO 9001 : 94 COMPANY

CAST IRON VERTICAL INVERTED BUCKET TYPE STEAM TRAPS

SPECIFICATIONS

Vertically inverted bucket type, stainless steel bucket, screwed female BSP taper therads to BS 21 or flanged ends as per BS 10 table F-as applicable. Other type of end details can be provided on request.

CERTIFICATE

Items can be supplied with Certificate of Manufacturer and Test on form III C as per Regulation 269 of IBR.

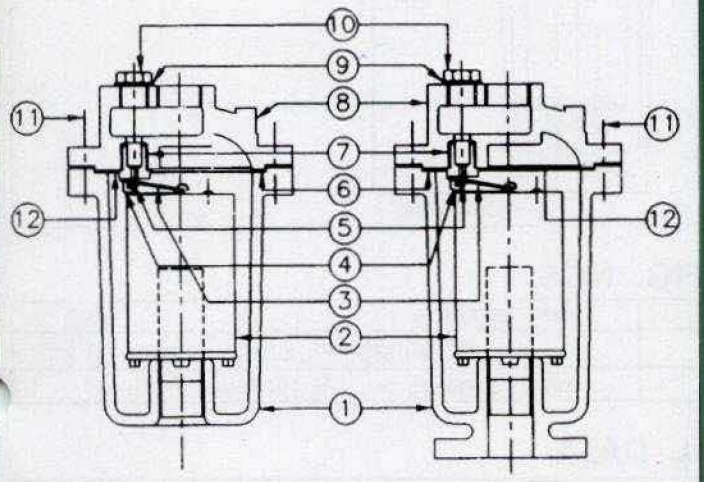


FIG. NO. BM095

FIG. NO. BM094

WORKING PRINCIPLE :

The working principle of this type of steam trap is explained below :-

1. Condensate enters under the inverted bucket and passes freely to the wide open valve at the top.
2. Steam following the condensate is trapped in the bucket; the bucket rises; lifting the valve on-to the seat. The valve remains water sealed.
3. Condensate enters the trap as the steam condenses, reducing the buoyancy of the bucket. The bucket sinks until the hooks pull on the valve lever.
4. Condensate continues to replace the steam in the bucket until the bucket buoyancy is reduced to the point that the valve is pulled off the seat and full bore discharge takes place. Air trapped in the bucket passes through the bucket vent, collects underneath the cover and is discharged ahead of the condensate. Any steam passing through the event is condensed and offsets radiation losses from the trap body.

STANDARD MATERIAL COMBINATION

P.NO.	QTY.	DESCRIPTION	MATERIAL	SPECIFICATIONS
1	1	Body	Cast Iron	IBR Clause 86 to 93 Gr. A
2	1	Bucket	Stainless Steel	Type 304
3	1	Value Lever	Stainless Steel	Type 304
4	2	Pins	Stainless Steel	Type 304
5	1	Ball	Stainless Steel	Type 304
6	1	Gasket	Steam Jointing	IS 2712 Gr. W/1
7	1	Seat	Stainless Steel	Type 304
8	1	Cover	Cast Iron	IBR Clause 86 to 93 Gr. A
9	1	Gasket	Steam Jointing	IS 2712 Gr. W/1
10	1	Plug	Bronze	IBR Clause 282(a)(IV) Gr. B
11	To Suit	Bolts & Nuts	Carbon Steel	BS 916
12	1	Guide Pins Plate	Stainless Steel	Type 304

NOTE : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. : BM94-95:96

LEADER VALVES LTD. IND. AREA
JALANDHAR - 144 004 (INDIA)

CAST IRON VERTICAL INVERTED BUCKET TYPE STEAM TRAPS

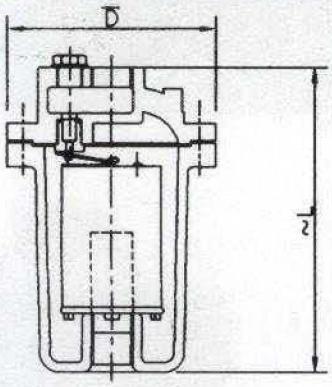


FIG. NO. BM 094

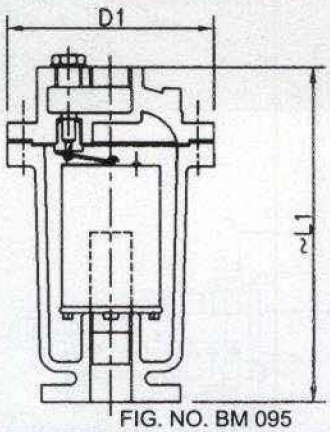


FIG. NO. BM 095

CATALOGUE FIG. NOS.

ITEM	FIG. NO.	END DETAILS
Cast Iron Inverted Bucket Type Steam Trap	BM094	Screwed Female BSP Parallel Threads To BS 21
Cast Iron Inverted Bucket Type Steam Trap	BM095	Inlet Flange as per BS 10 Table -F.

DIMENSIONAL DATA

NPS	1/2"	3/4"	1"	1-¼"	1-½"	2"
L	165	198	268	313	368	435
D	109	134	187	206	238	286
ITEM CODE NOS.	BM094AD	BM094AF	BM094AG	BM094AH	BM094AI	BM094AJ
L1	216	281	305	338	270	435
D1	109	134	187	206	238	286
ITEM CODE NOS.	BM095AD	BM095AF	BM095AG	BM095AH	BM095AI	BM095AJ

TEST PRESSURES

MAX. WORKING PRESSURE	SHELL TEST (HYDROSTATIC)	SEAT TEST (STEAM)	CODE
188.6 psig (13 bar) AT 428°F (220°C)	377 psig (26 bar)	350 psig (MAX.) (17.24 bar)	INDIAN BOILER REGULATIONS

DISCHARGE CAPACITIES :

Discharge capacities of steam traps uder different steam pressures are tabulated in kilograms per hour of hot condensate at saturated temperature corresponding to the inlet steam pressure. Steam traps operate most efficiently when the condensate load ranges between 5% and 50% of the trap capacity. Therefore select a trap with a capacity twice the calculated maximum load.

CATALOGUE FIG. NOS.

(For Continuous Discharge of Condensate at Saturated Steam Temperature)

INLET STEAM PRESSURE		INVERTED BUCKET TYPE CAPACITY IN KILOGRAMS PER HOUR					
KG/cm2 G	PSIG	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
0.70	10	400	850	1575	2600	4000	7800
1.76	25	425	850	1700	2700	4150	9000
3.52	50	380	850	1850	2850	4000	8200
5.27	75	425	1000	1725	2850	4150	8300
7.03	100	390	810	1625	2900	4700	8150
10.54	150	370	680	1575	2600	4300	8350

Note : The above data is subject to change without notice due to our continuing programme of product improvements.

CAT. NO. BM94-95:96

LEADER VALVES LTD. IND. AREA, JALANDHAR - 144 004 (INDIA)

STEEL THERMODYNAMIC STEAM TRAPS

SPECIFICATIONS

Steel Thermodynamic Type Steam Trap with Inbuilt Strainer, Screwed Female BSP Taper Threads to Bs 21/Socket Welded Ends to ASME B16.11. Other forms of threads can be provided on request.

These steam traps are suitable for max. back pressure 60% of the inlet pressure & the min. pressure differential of 10 PSI (0.7 Kg/cm²)

CERTIFICATE

Items can be supplied with certificate of manufacture and test on form III-C as per regulation 269 of IBR.

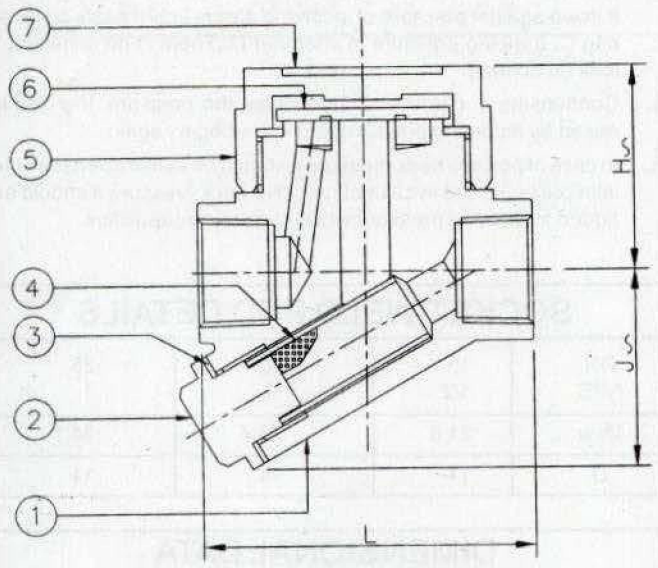
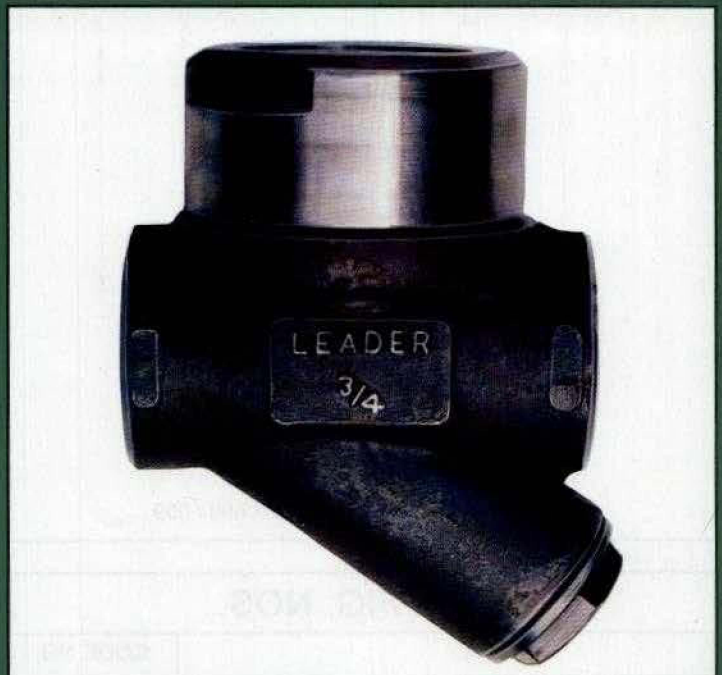


Figure no. : BM 096\BM097\BM098\BM099



STANDARD MATERIAL COMBINATION

P.No.	QTY	Description	Material		
			A 105	F6a	F304
1	1	Body	Forged Carbon Steel To ASTM A105	S.S. to ASTM A182 Gr. F6a	S.S.ASTM A182 Gr. F304
2	1	Plug	S.S. to ASTM A182 Gr. F6a	S.S. to ASTM A182 Gr. F6a	S.S. to ASTM A182 Gr. F304
3	1	Gasket	C.A.F. to B.S. 1832	C.A.F. to B.S. 1832	C.A.F. to B.S. 1832
4	1	Strainer	Type 304 with 1 mm Ø Perforation	Type 304 with 1mm Ø Perforation	Type 304 with 1 mm Ø Perforation
5	1	Cover	S.S. to ASTM A182 Gr. F6a	S.S. to ASTM A182 Gr. F6a	S.S. to ASTM A182 Gr. F304
6	1	Valve Disc	S.S. to ASTM A182 Gr. F6a	S.S. to ASTM A182 Gr. F6a	S.S. to ASTM A182 Gr. F304
7	1	Name Plate	Aluminium or S.S.	Aluminium or S.S.	Aluminimum or S.S.

TEST PRESSURE

END DETAILS	MAX. WORKING PRESSURE	SHEEL TEST (HYDROSTATIC)	SEAT TEST		CODE
			(HYDROSTATIC)	STEAM	
Threaded Ends	450 psig (31 bar) AT 750°F(399°C)	900 psig (62 bar)	900 psig (62 bar)	250 psig (17.24 bar)	INDIAN BOILER REGULATIONS
Socketwelding Ends	600 psig (41.38 bar) at 750°F (399°C)	1200 psig (82.76 bar)	1200 psig(82.76 bar)	250 psig (17.24 bar)	

NOTE: The above data is subject to change without notice due to our continuing programme of product improvements.

Cat. No. BM : 96-97-98-99 : 96

LEADER VALVES LTD. IND. AREA, JALANDHAR-144004 (INDIA)

STEEL THERMODYNAMIC STEAM TRAPS

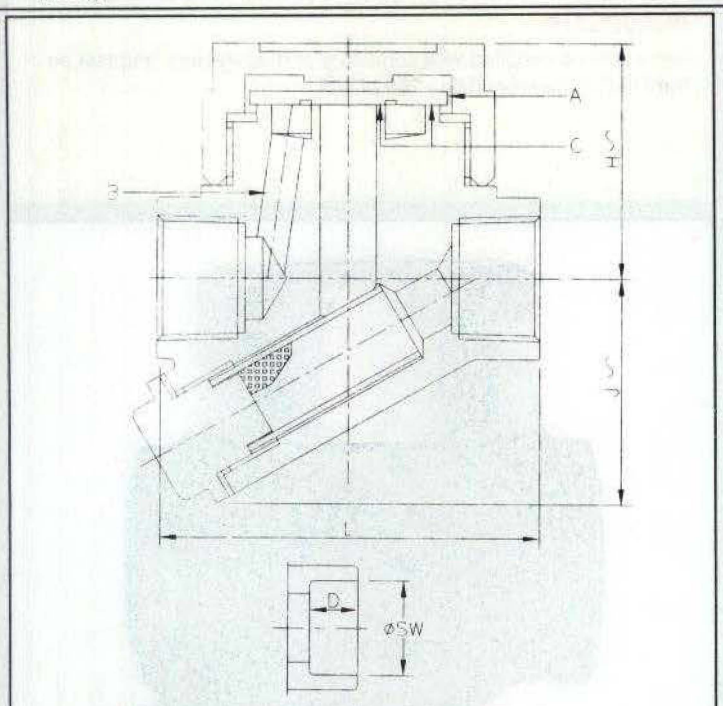


FIG. NO. BM 096 / BM 097 / BM 098 / 099

WORKING PRINCIPLE :

The working principle of this type of steam trap is explained below:-

1. Disc A is raised from seat ring C by incoming pressure, allowing instant discharge of air and condensate through outlet B.
2. High velocity of flowing flash steam creates a low pressure area under disc which forces it down towards the seat, and at the same time builds up pressure in chamber D.
3. Steam pressure in chamber D, acting on full top area of disc, forces it down against pressure of incoming steam until it seats on inner ring C, trapping pressure in chamber D. There is no continuous leak on no-load.
4. Condensate in chamber D decreases the pressure, the disc is raised by incoming pressure and cycle begins again.
5. In case of positive back pressure it should be substracted from the inlet pressure and in case of negative back pressure it should be added to the inlet pressure while computing capacities.

SOCKET WELD END DETAILS

DN NPS	15 1/2	20 ¾	25 1
Øsw	21.8	27.4	34.1
D	11	14	14

ITEM FIG. NOS.

ITEM	CODE NO.
STEAM TRAP (F304) SCREWED FEMALE ENDS	BM 096
STEAM TRAP (F304) SOCKET WELDING ENDS	BM 097
STEAM TRAP (F6a) SCREWED FEMALE ENDS	BM 098
STEAM TRAP (F6a) SOCKET WELDING ENDS	BM 099

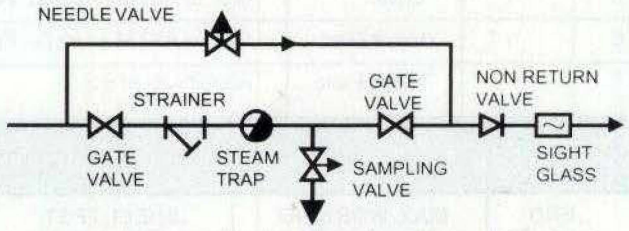
DIMENSIONAL DATA

NPS	½	¾	1
L	65	76	95
H	41	51	59
J	42	60	68
ITEM CODE NO.	BM 096 D	BM 096 F	BM 096 G
	BM 097 D	BM 097 F	BM 097 G
	BM 098 D	BM 098 F	BM 098 G
	BM 099 D	BM 099 F	BM 099 G

INLET STEAM PRESSURE		DISCHARGE CAPACITIES (IN KILOGRAMS PER HOUR)		
Kg/cm2 g	Psig	½"	¾"	1"
0.70	10	215	430	675
1.76	25	275	550	875
3.52	50	350	650	1050
5.27	75	410	750	1250
7.03	100	470	850	1350
10.54	150	575	950	1500
14.06	200	650	1050	1625
21.09	300	775	1200	1850
28.12	400	850	1250	2000
42.18	600	950	1375	2250

INSTALLATION :

The recommened installation assembly of steam trap when it is discharging into common header is shown in the sketch.



INSTALLATION SKETCH OF STEAM TRAP

STRAINER MAY NOT BE USED WHEN STEAM TRAP DESIGN INCORPORATES IN INTEGRAL STRAINER

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Cat. No. BM : 96-97-98-99 : 96

LEADER VALVES LTD. IND. AREA, JALANDHAR-144004 (INDIA)