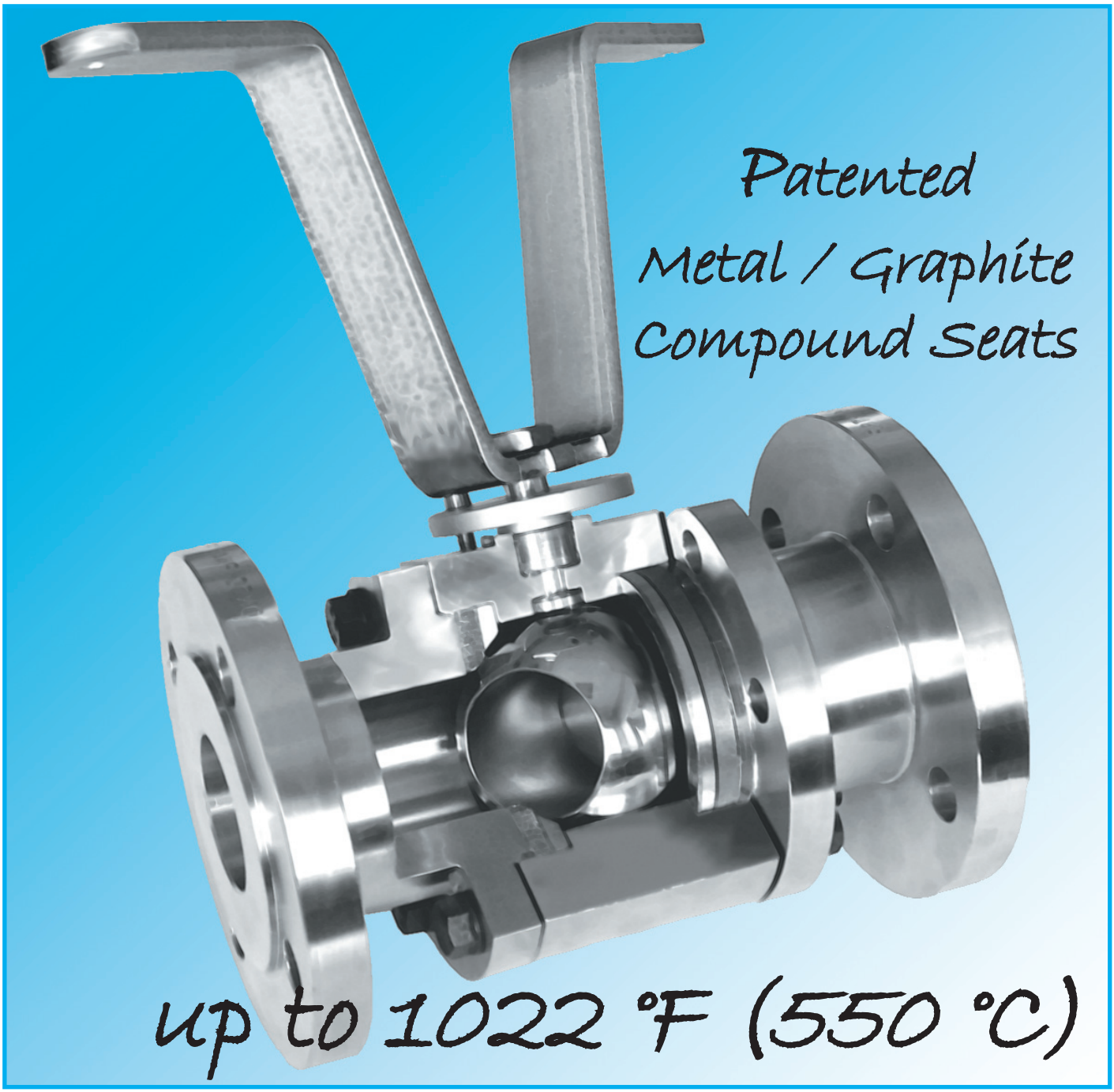
BONETTI®

BONT® HTB Ball Valves



Dimensions in English units

BONT® Ball Valves - Forged Steel

Carbon Steel – Stainless Steel
Type HTB, for High Temperature
Rating ASME B16.34 Class 300 and Class 600, fully rated (Class 150 upon request)
Rating DIN 2401 PN 40, PN 63 and PN 100
Size from ½" up to 4" (DN 15 to DN 100)

- **This Valve is unidirectional. Please ensure that the flow direction is the same as shown by the arrow on the body.**
- **Temperature for continuous service up to 1022 °F (550 °C).**
- Size: ½" to 4"
- Design Standards: ASME B16.34, B16.5
  B16.11, B16.25
  MSS SP 72, BS 5351
  DIN 2401, DIN 3239
- Fire Safe: API 6FA and BS 6775 certified
- TA Luft certified
- Split three piece body design
- Floating ball
- Body seat: patented metal/graphite compound
- Packing: adjustable graphite long life packing
- Gland: flanged type - one piece bushing
- Stem: anti blow-out
- Antistatic device: design is intrinsically antistatic
- Torque: low torque due to special seat and packing material and design
- Every valve, even if already installed, can be automated with an actuator. Valve actuator mounting according to ISO 5211

- Connections:
  - Threaded NPT to ASME B1.20.1
  - SW to ASME B16.11
  - BW to ASME B16.25
  - BW to DIN 3239

- Flanged:
  According to:
  ASME B16.34 Class 300 and Class 600
  Flanges are supplied R.F. drilled to ASME B16.5
  Face to face dimension (A) to ASME B16.10

  According to European Standards
  (UNI, DIN, AFNOR, etc.) PN 40 and PN 100
  Flanges are supplied raised faced to UNI 2229, drilled,
  Face to face dimension (A) to DIN 3202-F1 and F2

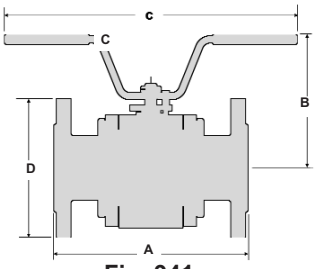


Fig. 941

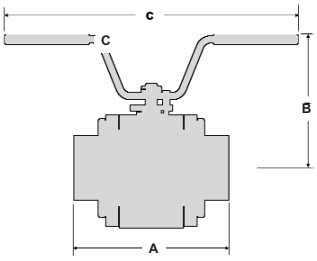


Fig. 942

BONT® Ball Valves type HTB - Full Bore

SIZE		Dimension		Threaded or SW or BW		Flanged DIN PN 40			Flanged DIN PN 63			Flanged DIN PN 100			Flanged ASME 300			Flanged ASME 600		
inches	mm	B	C	A	Weight	A	D	Weight	A	D	Weight	A	D	Weight	A	D	Weight	A	D	Weight
		In.	In.	In.	lb	In.	In.	lb	In.	In.	lb	In.	In.	lb	In.	In.	lb	In.	In.	lb
½"	15	4.331	7.087	3.543	5.5	5.118	3.740	7.7	8.268	4.134	11.0	8.268	4.134	11.0	5.5	3.740	9.5	6.5	3.740	9.9
¾"	20	5.512	8.268	3.937	7.1	5.906	4.134	10.4	9.055	5.118	14.8	9.055	5.118	14.8	6.0	4.606	11.9	7.5	4.606	13.2
1"	25	6.457	10.630	4.331	12.1	6.299	4.528	15.4	9.055	5.512	17.9	9.055	5.512	17.9	6.5	4.882	15.4	8.5	4.882	17.2
1.¼"	30	8.465	13.780	5.512	16.8	7.087	5.512	25.6	10.236	6.102	31.7	10.236	6.102	31.7	7.0	5.236	23.1	9.0	5.236	25.1
1.½"	40	8.661	13.780	5.906	23.4	7.874	5.906	34.2	10.236	6.693	44.3	10.236	6.693	49.4	7.5	6.102	33.1	9.5	6.102	38.1
2"	50	9.055	13.780	6.693	32.4	9.055	6.496	49.6	11.811	7.087	53.4	11.811	7.677	58.4	8.5	6.496	48.3	11.5	6.496	52.0
2.½"	65	9.252	19.685	8.268♣	63.9	11.417	7.283	96.3	13.386	8.071	104.1	13.386	8.661	111.6	9.5	7.480	96.3	13.0	7.480	101.4
3"	80	9.843	19.685	12.008♣	77.2	12.205	7.874	110.2	14.961	8.465	118.6	14.961	9.055	126.8	11.1	8.228	110.2	14.0	8.228	116.6

ASME Class 150 may be supplied on request. Please note that FACE TO FACE (Dimension A) for ASME 150 are as per ASME 300 - ♣ for BW type only

BONT® Ball Valves type HTB - Reduced Bore

SIZE		Dimension		Threaded or SW or BW		Flanged DIN PN 40			Flanged DIN PN 63			Flanged DIN PN 100			Flanged ASME 300			Flanged ASME 600		
inches	mm	B	C	A	Weight	A	D	Weight	A	D	Weight	A	D	Weight	A	D	Weight	A	D	Weight
		In.	In.	In.	lb	In.	In.	lb	In.	In.	lb	In.	In.	lb	In.	In.	lb	In.	In.	lb
½"	15	4.331	7.087	3.543	6.4	5.906	4.134	8.6	9.055	5.118	11.7	9.055	5.118	11.7	6.0	4.606	10.1	7.5	4.606	10.6
¾"	20	5.512	8.268	3.937	8.8	6.299	4.528	12.1	9.055	5.512	16.5	9.055	5.512	16.5	6.5	4.882	12.8	8.5	4.882	14.6
1"	25	6.457	10.630	4.331	13.2	7.087	5.512	16.5	10.236	6.102	19.4	10.236	6.102	19.4	7.0	5.236	18.7	9.0	5.236	20.9
1.¼"	30	8.465	13.780	5.512	17.9	7.874	5.906	26.5	10.236	6.693	32.0	10.236	6.693	32.0	7.5	6.102	25.4	9.5	6.102	29.8
1.½"	40	8.661	13.780	5.906	24.7	9.055	6.496	35.3	11.811	7.087	45.6	11.811	7.677	50.7	8.5	6.496	38.1	11.5	6.496	43.2
2"	50	9.055	13.780	7.520♣	37.5	11.417	7.283	52.9	13.386	8.071	57.1	13.386	8.661	63.5	9.5	7.480	55.8	13.0	7.480	60.8
2.½"	65	9.252	19.685	8.268♣	68.3	12.205	7.874	99.2	14.961	8.465	107.8	14.961	9.055	115.3	11.1	8.228	104.1	14.0	8.228	111.6
3"	80	9.843	19.685	12.008♣	83.8	13.780	9.252	114.6	16.929	9.843	123.0	16.929	10.433	131.8	12.0	10.000	119.3	17.0	10.748	126.8

ASME Class 150 may be supplied on request. Please note that FACE TO FACE (Dimension A) for ASME 150 are as per ASME 300 - ♣ for BW type only

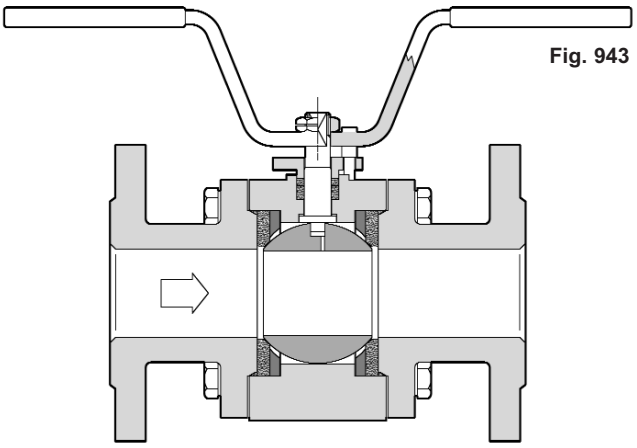


Fig. 943

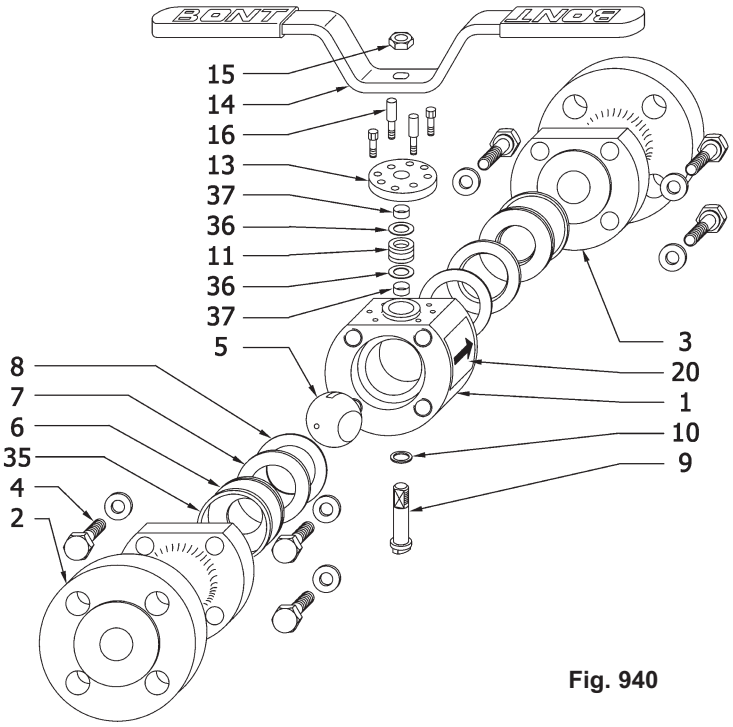


Fig. 940

Material Schedule	Material used for	
	Body and End connections	Ball and stem
52	ASTM A105	ASTM A182 F316 + S.H.
63	ASTM A182 F316	ASTM A182 F316 + S.H.

BONT® HTB ball valve is designed for high temperature, bubble tight service.
The primary innovation of this valve resides in the seat design. It is not the usual metal to metal seat, but an original patented semi-soft seat.

The main characteristics of HTB ball valves are:

-- fully rated as per applicable Standard

- suitable for any kind of fluid compatible with graphite. Particularly suitable for application on water/steam even with high pressure drop.
- nearly indefinite bubble tight seat tightness throughout the full range of operations.
- high resistance to erosion.
- very effective in the handling of fluids containing abrasives and any dirty media. The alternating metal-graphite layers of the seat sweep the ball surface cleaning it during every open-close operation.
- packing characteristics avoids any measurable fugitive emission to the environment.
- maintenance free. However if, for any reason, maintenance is ever required, the seat replacement is simple and inexpensive thanks to the low cost of the seat rings and their ability to auto-adapt to the ball. Thus eliminating the need to replace the complete ball and seat assembly as it is normally done in metal seated ball valves.
- **FIRE SAFE TEST** - Certificate No. MLN9901225/1-2.
  It is important to remark that the breakaway torque difference before and after fire test is negligible.
- **TA LUFT TEST** - Certificate No. 86T409.

  Key findings during test:
  - no need of packing retightening during tests, although it is permissible.
  - leak rates were found to be far smaller than those permitted by the Standard;
  - **test were performed at a temperature of 427 °C (800 °F)**, the limit imposed by the body material of tested valve.

  More tests at temperature of 550 °C, with different body material, have been performed with equally satisfactory results.

Item	Part	Item	Part
1	Body	11	Packing
2	End Connection Inlet	13	Gland Flange
3	End Connection Outlet	14	Handle
4	Bolt	15	Handle Nut
5	Ball	16	Gland Bolt and Stop Pin
6	Seat	20	Name Plate
7	Cushion Plate	35	Autoseal Ring ★
8	Cushion Joint	36	Spacer Ring ●
9	Stem	37	Stem Ring ●
10	Bottom Stem Joint		

★ only: on Full Bore ≥ DN 32 and ≥ ¼”
on Reduced Bore ≥ DN 40 and ≥ 1.½”
● only: on Full Bore ≥ DN 20 and ≥ ¾”
on Reduced Bore ≥ DN 25 and ≥ 1”

RATING for the Materials mentioned in this Bulletin

Max. Operating temperature according to ASME and API °F	Max. Operating pressure according to ASME and API					
	ASME Class 150 Material Sched.		ASME Class 300 Material Sched.		ASME Class 600 Material Sched.	
	52	63	52	63	52	63
-20 +100	285	275	740	720	1480	1440
200	260	235	680	620	1360	1240
300	230	215	655	560	1310	1120
400	200	195	635	515	1265	1025
500	170	170	605	480	1205	955
600	140	140	570	450	1135	900
650	125	125	550	440	1100	890
700	110	110	530	435	1060	870
750	95	95	505	425	1015	855
800	80	80	410	420	825	845
850	65	65	320	420	640	835
900	50	50	230	415	460	830
950	35	35	135	385	275	775
1000	20	20	85	365	170	700
1022	-	20	-	362	-	693

Max operating temperature according to DIN 2401		Max. Operating pressure according to DIN 2401											
		PN 40 Material Sched.				PN 63 Material Sched.				PN 100 Material Sched.			
		52		63		52		63		52		63	
°C	°F	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi
-10+20	14+68	40	580	40	580	63	914	63	914	100	1450	100	1450
120	248	40	580	40	580	63	914	63	914	100	1450	100	1450
200	392	35	507	35	507	50	725	50	725	80	1160	80	1160
250	482	32	464	32	464	45	653	45	653	70	1015	70	1015
300	572	28	406	28	406	40	580	40	580	60	870	60	870
350	662	24	348	24	348	36	522	36	522	56	812	56	812
400	752	21	304	21	304	32	464	32	464	50	725	50	725
425	797	Not stated by DIN 2401											
450	842												
500	932												
550													

Bolt circle for actuator bracket attachment
according to ISO 5211

Valve size		Flange	Dimensions (inches)							
Full Bore	Red. Bore	ISO 5211	∅ d2 f8	∅ d3	∅ d4 x e	h	A	B	C	D
½"	¾"	F03	0.984	1.417	M5x0.256	0.079	∅ 0.386	0.236	0.177	0.413
¾"	1"	F03	0.984	1.417	M5x0.315	0.118	M12	0.291	0.394	0.906
1"	1.¼"	F04	1.181	1.654	M5x0.315	0.118	M12	0.291	0.571	1.201
1.¼"	1.½"	F05	1.378	1.969	M6x0.315	0.118	M14	0.346	0.630	1.378
1.½"	2"	F05	1.378	1.969	M6x0.315	0.118	M14	0.346	0.630	1.378
2"	2.½"	F05	1.378	1.969	M6x0.315	0.118	M14	0.346	0.630	1.378
2.½"	3"	F07	2.165	2.756	M8x0.315	0.118	M24	0.709	1.063	2.402
3"	4"	F07	2.165	2.756	M8x0.315	0.118	M24	0.709	1.063	2.402

Relevant break-away torque will be supplied on request, based on the process condition.

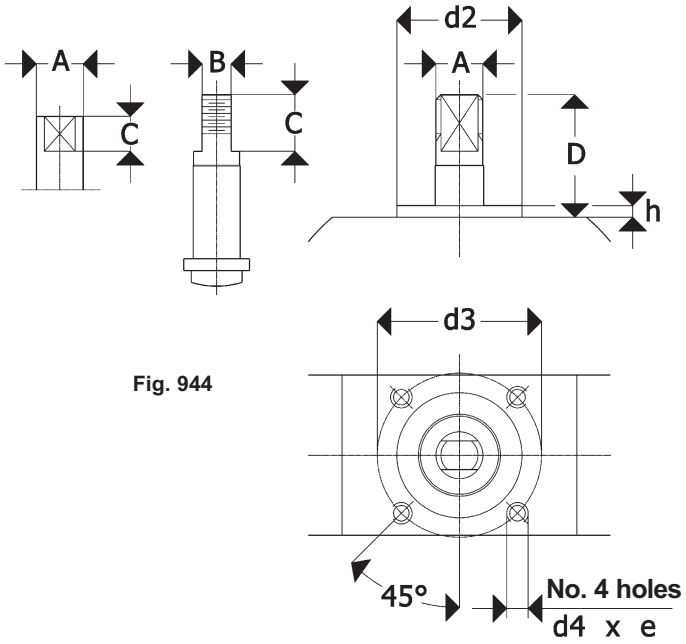


Fig. 944

Optional stem extension for insulating service

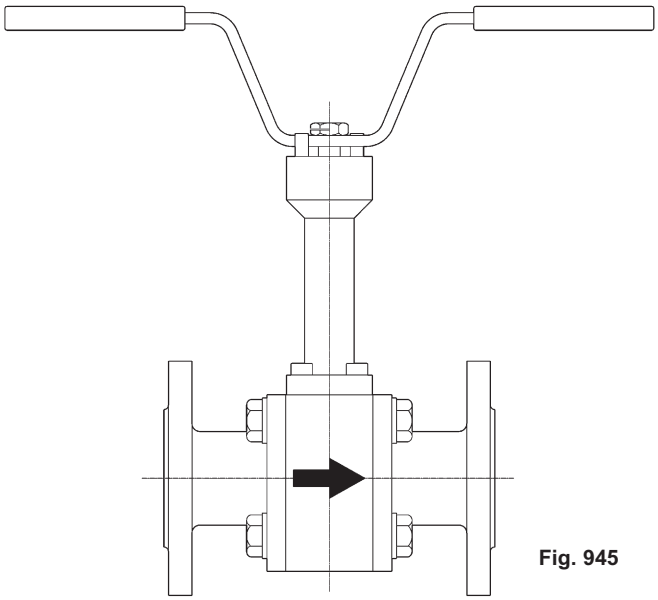


Fig. 945

CESARE BONETTI S.p.A.

I-20024 GARBAGNATE MILANESE (Italy)
Via Cesare Bonetti 17
Telephone: +3902 990721
Telefax: +3902 9952483
Internet web site: http://www.cesare-bonetti.it
E-mail: bont.post@bont.it

Domestic sales: Telephone: +39 02 99 072 333
Telefax: +39 02 99 072 300
E-mail: italia@bont.it
Export sales: Telephone: +39 02 99 072 444
Telefax: +39 02 99 072 400
E-mail: export@bont.it

Bonetti Armaturen Vertriebs GmbH
D-65549 Limburg an der Lahn (Germany)
In den Fritzenstücker, 4
Sales Office Telephone: +49 06431 598310
Telefax: +49 06431 598329
E-mail: info@bonetti.de

BONETTI (Suzhou) Level Gauges & Valves Co., Ltd.
Yuandong Gongyefang, Minsheng Road,
Shengpu District, Suzhou Industrial Park,
Jiangsu, China 215021
Sales Office Phone +86-512-6281 6390
Fax: +86-512-6281 6396
E-mail: bonettisuzhou@yahoo.com