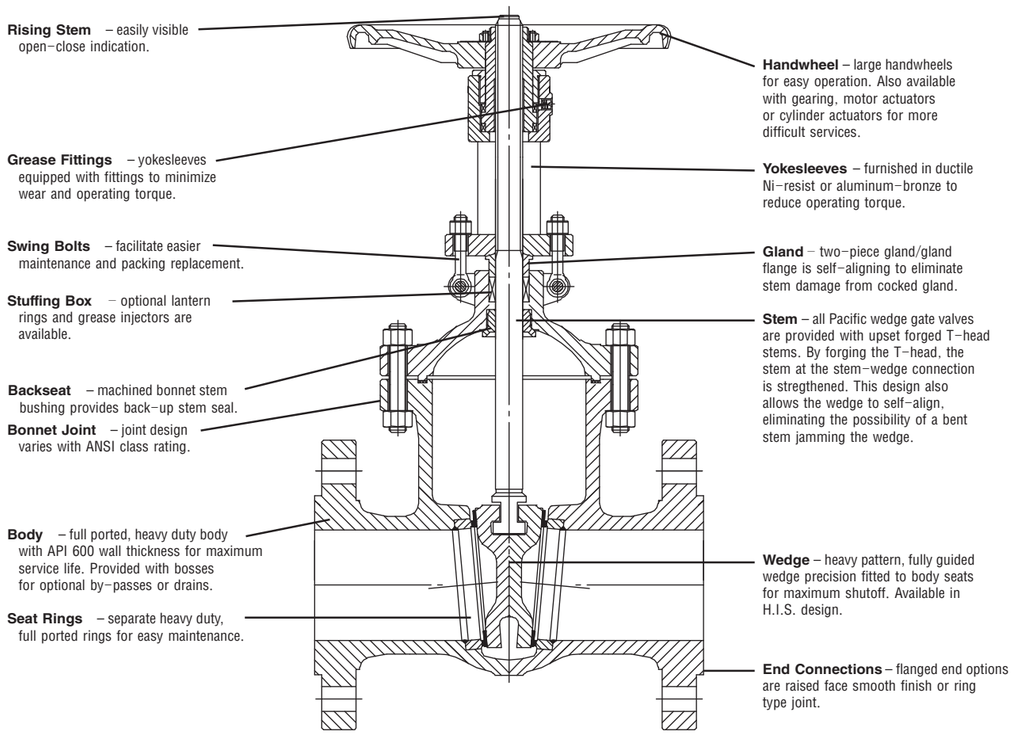
Cast Steel Bolted Bonnet Valves

CCPV

Gate Valves Major Features

Cast steel bolted bonnet gate valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of AP1–600 and ANSI B16.34. Valves are available in a complete range of body/bonnet materials and trims.



Range of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special applications they can be supplied in other grades of alloy and stainless steel. There's a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Actuator Flexibility

All valves are available with hand–wheels, gearing, electric motor actuators or pneumatic or hydraulic cylinder actuators.

Easy Maintenance

By providing a choice of wedge types, the valve can be matched up with the service conditions, thus enhancing operability and lessening the possibility of binding. Full body wedge guides assure wedge–to–seat alignment. Yokesleeve with needle bearings reduce operating torque for easy manual operation.

Easy Operation

Threaded or welded seat rings are easily accessible for repair or replacement. Packing swing bolts on most valves simplify packing replacement. All Pacifc bolted bonnet designs facilitate fast disassembly.

Longer Life

Rugged construction provides years of reliable service. Forged T–head stem/wedge design permits the wedge to self–align for extended seat life. A two piece packing gland prevents cocking and stem damage.

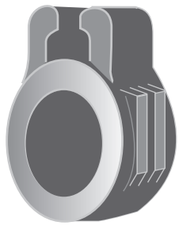
CCPV

Cast Steel Bolted Bonnet Valves

Gate Valves Optional Features

Choice of Wedge Types

Cast steel bolted bonnet gate valves are available with a full selection of wedge types to match operating service condi tions. Specify the type best suited to your service conditions.



Solid Wedge

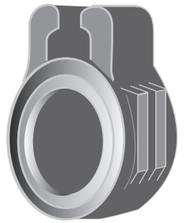
This is the most common wedge type. It is also the strongest, simplest and most economical of the various wedge types. The advantages of this wedge are that it is highly resistant to corrosion and vibration. Disadvantages are that it is not self–compensating to seat distortion caused by high temperature thermal expansion or bending moments applied to the valve by piping loads which may cause the wedge to stick in the seats.

Flex Wedge

The fex wedge is cast or machined with a cir–cumferential groove to allow the seating faces to move independently and adjust to movement of the body seats. It is used where line loads or thermal expansion of the system is likely to dis–tort the seat face in the valve. The fex wedge is especially useful to prevent sticking where valves are closed when hot and opened when cold. This type of wedge is ideally suited for steam or other high temperature services.

Split Wedge

The split wedge provides complete fexibility between the two halves of the wedge to compensate for seat distortion, especially in light weight, low pressure valves. This style is also used for high pressure gas or corrosive services. It is not recommended for high velocity fow or services where suspended particles can foul the wedge. Because of the complexity of this design, it is generally more expensive than the solid or fex designs.



High Integrity Shutoff Wedge

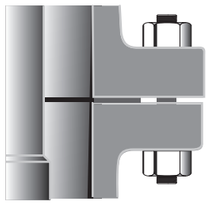
For services that require bubble tight shutoff, the High Integrity Shutoff (HIS) design is the best option. This fre safe design provides a zero leak – age barrier on both upstream and downstream seats. A full range of trim and shell materials are available for corrosive service and temperatures up to 450°F.

Standard Bonnet Joints

Body/bonnet joints on designed for rugged services with a more than adequate number of bonnet bolts. The standard joint varies, depending on valve class. These standard joints are shown.

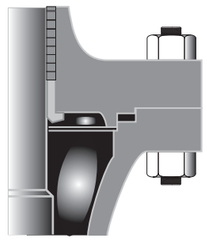
Class 150

The standard, fat, oval bonnet joint is the sim–plest and most economical confguration for low pressure services and is required to maintain ANSI face–to–face dimensions on Class 150 valves sizes 4"–36". Our standard gasket is cor–rugated metal, but fat gaskets of other materials are available when specifed. 1½" thru 3" valves are furnished with a circular male and female bonnet joint and spiral wound gasket.



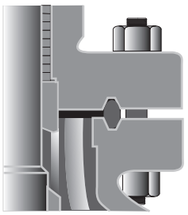
Class 300

The circular male and female bonnet joint are self– aligning and well suited for intermediate pressure classes. Our standard gasket is spiral wound. Valves in these classes are also available with double jacketed or ring joint gaskets when specifed.



Class 600–1500

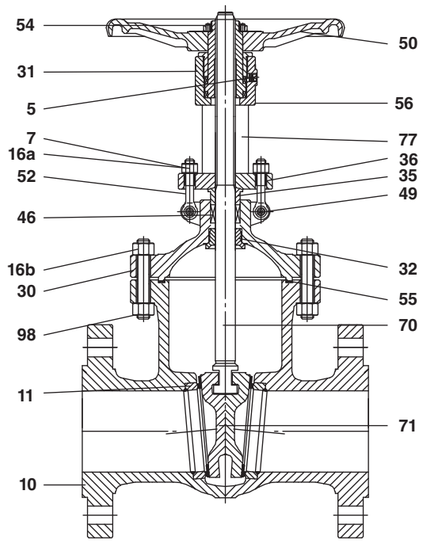
The circular ring joint bonnet seal has proven to be the best bolted high pressure bonnet joint available. The ring joint is self–aligning; the gasket may be reused unless it is physically damaged. Valves in these classes are also available with spiral wound gasket bonnet joints when specifed.



Cast Steel Bolted Bonnet Valves

CCPV

Materials of Construction: Gate Valves



	Part Name	Material
54	Handwheel Nut	Carbon Steel
50	Handwheel	Malleable or Ductile Iron
31	Yokesleeve	Ductile Ni–Resist or Aluminum–Bronze
56	Yokesleeve Jam Nut	Carbon Steel
5	Grease Fitting	Carbon Steel
77	Yoke	Carbon Steel
16a	Eyebolt Nut	Carbon Steel
36	Gland Flange	Carbon Steel
52	Eyebolt	Carbon Steel
35	Gland	300 Series SS
49	Eyebolt Pin	Carbon Steel
	Trim Parts	
32	Bonnet Stem Bushing	
70	Stem (See page 33 for Trim Materials)	
71	Wedge (See Note 1)	
11	Seat Ring (See Note 1)	

See below for balance

Note 1: Disc and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

	Part Name	Carbon Steel	LCB	LC3	WC6	WC9
46	Packing (H)	Graphitic	PTFE (A)	PTFE (A)	Graphitic	Graphitic
30	Bonnet	ASTM A216 Gr WCB	ASTM A352 Gr LCB	ASTM A352 Gr LC3	ASTM A217 Gr WC6	ASTM A217 Gr WC9
55	Bonnet Gasket					
	Class 150 (F)	Mild Steel	Corr. 304 SS	Corr. 304 SS	Corr. 304 SS	Corr. 304 SS
	Class 300	Steel (G)	304 SS (G)	304 SS (G)	304 SS (G)	304 SS (G)
	Class 600 & up	Steel ring	304 SS ring	304 SS ring	304 SS ring	304 SS ring
16b	Bonnet Stud Nuts	ASTM A194 Gr 2H	ASTM A194 Gr 7	ASTM A194 Gr 7	ASTM A194 Gr 2H	ASTM A194 Gr 2H
98	Bonnet Studs	ASTM A193 Gr B7	ASTM A320 Gr L7	ASTM A320 Gr L7	ASTM A193 Gr B7 (B)	ASTM Al93 Gr B7 (B)
10	Body	ASTM A216 Gr WCB	ASTM A352 Gr LCB	ASTM A352 Gr LC3	ASTM A217 Gr WC6	ASTM A217 Gr WC9
	Part Name	**C5**	**C12**	**CA6NM**	**CF8C**	**CF8M**
	Packing (H)	Graphitic	Graphitic	Graphitic	Graphitic	Graphitic
30	Bonnet	ASTM A217 Gr C5	ASTM A217 Gr C12	ASTM A487 Gr CA6NM	ASTM A351 Gr CF8C	ASTM A351 Gr CF8M
55	Bonnet Gasket					
	Class 150 (F)	Corr. 304 SS	Corr. 304 SS	Corr 304 SS	Corr. 347 SS	Corr. 316 SS
	Class 300	304 SS (G)	304 SS (G)	304 SS (G)	347 SS (G)	316 SS (G)
	Class 600 & up	304 SS ring	304 SS ring	304 SS ring	347 SS ring	316 SS ring
16b	Bonnet Stud Nuts	ASTM A194 Gr 2H (C)	ASTM A194 Gr 2H (C)	ASTM A194 Gr 2H	ASTM A194 Gr 2H (D)	ASTM A194 Gr 2H (E)
98	Bonnet Studs	ASTM A193 Gr B7 (C)	ASTM A193 Gr B7 (C)	ASTM A193 Gr B7	ASTM A193 Gr B7 (D)	ASTM A193 Gr B7 (E)
10	Body	ASTM A217 Gr C5	ASTM A217 Gr C12	ASTM A487 Gr CA6NM	ASTM A351 Gr CF8C	ASTM A351 Gr CF8M

(**A**) Limits std. const. to +500°F.
(**B**) Limits std. const. to +1000°F. Special const. for max. temp. between +1000°F and +110°F available on application.
(**C**) Limits std. const. to +1000°F. Special const. for max. temp. between +1000°F and +1200°F available on application.
(**D**) Limits std. const. to temp. between -20°F and +1000°F Special const. for temp. between +1000°F and +1200°F available on application.
(**E**) Limits std. const. to temp. between -20°F and +1000°F. Special const. for lower temp. or temp. between +1000°F and +1200°F available on application.
(**F**) 1½", 2" & 3" Class 150 valves use a spiral wound graphite gasket the same size as Class 300 valves.
(**G**) Spiral wound construction.
(**H**) For services over 850°F Pacifc Valves recommends special high temperature packing. Please consult factory when ordering.

THE RIGHT IS RESERVED TO CHANGE OR MODIFY PRODUCT DESIGN OR CONSTRUCTION WITHOUT PRIOR NOTICE AND WITHOUT INCURRING ANY OBLIGATION TO MAKE SUCH CHANGES AND MODIFICATIONS ON PRODUCTS PREVIOUSLY OR SUBSEQUENTLY SOLD.

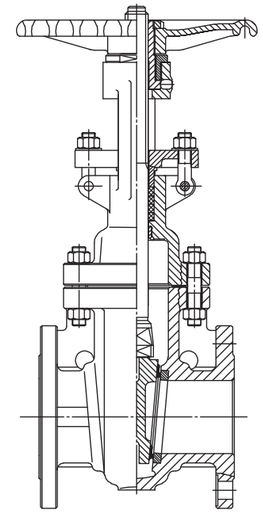
CCPV

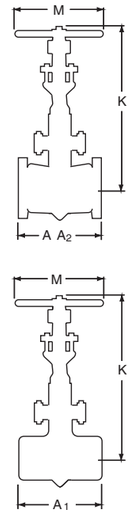
Cast Steel Bolted Bonnet Valves

Gate Valves • ANSI Class 150

FEATURES

- Full range of body/bonnet materials
- Full range of trim materials
- Choice of solid, fex or split wedge design
- Forged T-head stem
- Flanged or butt weld ends
- OS&Y construction
- Full port design
- Renewable seat rings – seal welded
- Full length wedge guides
- Meet design requirements of ANSI B16.5, B16.34, B16.25, B16.10 and AP1–600
- Optional elastomer seals for High Integrity Shutoff





DIMENSIONS and WEIGHTS

Dim	Description		VALVE SIZE (inches) 1.5	2	2.5	3	4	6	8	10	12	14	16	18	20	24	30	36
A	Face to Face Flanged Ends	in.	6.50	7.0	7.5	8.0	9.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0	18.0	20.0	24.0	28.0
		mm	165	178	191	203	229	267	292	330	356	381	406	432	457	508	610	711
A_1	End to End Weld Ends	in.	6.50	8.5	9.5	11.13	12.0	15.88	16.5	18.0	19.75	22.5	24.0	26.0	28.0	32.0	36.0	40.0
		mm	165	216	241	283	305	403	419	457	502	572	610	660	711	813	914	1016
A_2	Face to Face RTJ	in.	7.00	7.5	8.0	8.5	9.5	11.0	12.0	13.5	14.5	15.5	16.5	17.5	18.5	20.5	24.5	28.5
		mm	178	191	203	216	241	279	305	343	368	394	419	445	470	521	622	724
K	Center to Top Open	in.	12.76	14.45	15.63	18.03	22.05	30.04	37.80	45.91	53.90	59.65	71.80	74.80	83.50	98.50	126.00	140.20
		mm	324	367	397	458	560	763	960	1166	1369	1515	1824	1900	2124	2502	3200	3561
M	Handwheel Dia.	in.	10	10	10	10	10	14	14	24	24	24	24	28	28	34	34	34
		mm	254	254	254	254	254	356	356	610	610	610	610	711	711	864	864	864
	Weight Flanged Ends	lbs.	65	68	119	128	135	232	352	593	807	1053	1337	1898	2228	3350	6145	8170
		kg	29	31	54	58	62	106	160	269	366	477	606	860	1010	1518	2787	3700
	Weight Weld Ends	lbs.	61	64	115	117	127	219	338	553	682	899	1125	1704	2023	3171	5311	7790
		kg	28	29	52	53	58	100	154	251	309	408	510	772	917	1437	2409	3534

Notes:

1. Dimensions, weights and other engineering data are subject to change or modifcation. This data is not to be used for construction unless confrmed by the factory.
2. For the following valves with HIS option the center to top dimensions (open and closed) must be increased approximately 2 inches, consult factory for exact dimensions.
   4 inch, Class 150
   6 inch, Class 150
3. Consult factory for centerline to top dimensions (open and closed) for split wedge valves.
4. 1½" thru 3" furnished with round bonnet confguration.

RELATED DATA

See Technical Data section for: Temperature/pressure data: Raised face or ring joint fanges: Butt weld ends: Flow calculations (Cv).
See Actuators & Accessories section for: Bevel gear, spur gear, chain wheel, motor or cylinder actuators: Bypasses, drains or auxiliary piping: Special packing, etc.

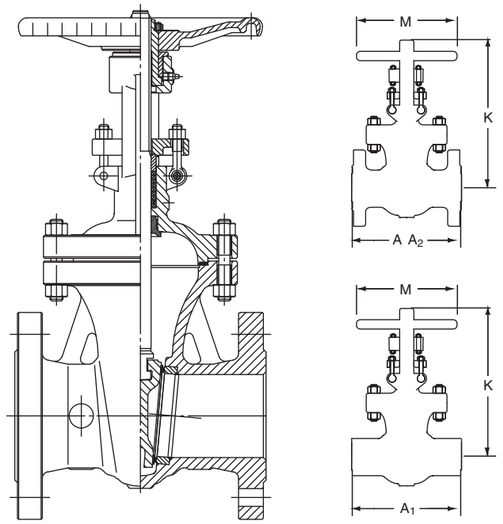
Cast Steel Bolted Bonnet Valves

CCPV

Gate Valves • ANSI Class 300

FEATURES

- Full range of body/bonnet materials
- Full range of trim materials
- Choice of solid, fex or split wedge design
- Forged T-head stem
- Flanged or butt weld ends
- OS&Y construction
- Full port design
- Renewable seat rings – seal welded
- Full length wedge guides
- Spiral wound graphitic bonnet gasket
- Male and female bonnet joint
- Anti-friction ball bearing yoke sleeve
- Meet design requirements of ANSI B16.5, B16.34, B16.25, B16.10 and AP1–600
- Optional elastomer seals for High Integrity Shutoff



DIMENSIONS and WEIGHTS

Dim	Description		VALVE SIZES (inches) 1.5	2	2.5	3	4	6	8	10	12	14	16	18	20	24	30	36
A	Face to Face Flanged Ends	in.	7.5	8.5	9.5	11.13	12.0	15.88	16.5	18.0	19.75	30.	33.0	36.0	39.0	45.0	55.0	68.0
		mm	191	216	241	283	305	403	419	457	502	762	838	914	991	1143	1397	1727
A_1	End to End Weld Ends	in.	7.5	8.5	9.5	11.13	12.0	15.88	16.5	18.0	19.75	30.0	33.0	36.0	39.0	45.0	55.0	68.0
		mm	191	216	241	283	305	403	419	457	502	762	838	914	991	1143	1397	1727
A_2	Face to Face RTJ	in.	8.0	9.13	10.13	11.75	12.63	16.5	17.13	18.63	20.38	30.63	33.63	36.63	39.63	45.88	56.0	69.13
		mm	203	232	257	299	321	419	435	473	518	775	854	930	1007	1165	1422	1756
K	Center to Top Open	in.	15.00	15.94	17.32	19.69	23.31	32.13	41.02	48.31	56.77	62.52	74.41	80.31	86.50	121.18	127.60	159.60
		mm	381	405	440	500	592	816	1042	1227	1442	1588	1890	2040	2197	3078	3241	4040
M	Handwheel Dia.	in.	10	10	10	10	14	18	24	24	24	24	28	28	28	34	34	34
		mm	254	254	254	254	356	457	610	610	610	610	711	711	711	864	864	864
	Weight Flanged Ends	lbs	67	70	126	135	215	386	658	998	1317	1915	2608	3319	4278	7529	10817	15300
		kg	30	32	57	61	98	175	297	453	597	868	1182	1504	1938	3411	4907	6940
	Weight Weld Ends	lbs	62	65	122	124	168	318	544	825	1090	1577	2224	2747	3722	6737	9500	14400
		kg	28	29	55	56	77	145	374	247	494	715	1008	1245	1687	3052	4310	6632

Notes:
1. Dimensions, weights and other engineering data are subject to change or modifcation. This data is not to be used for construction unless confrmed by the factory.
2. For the following valves with HIS option the center to top dimensions (open and closed) must be increased approximately 2 inches, consult factory for exact dimensions.
3. Consult factory for centerline to top dimensions (open and closed) for split wedge valves.

RELATED DATA

See Technical Data section for: Temperature/pressure data: Raised face or ring joint fanges: Butt weld ends: Flow calculations (Cv).
See Actuators & Accessories section for: Bevel gear, spur gear, chain wheel, motor or cylinder actuators: Bypasses, drains or auxiliary piping: Special packing, etc.

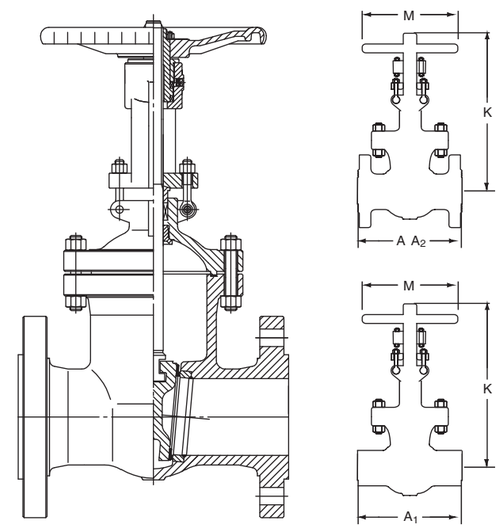
CCPV

Cast Steel Bolted Bonnet Valves

Gate Valves • ANSI Class 600

FEATURES

- Full range of body/bonnet materials
- Full range of trim materials
- Choice of solid, fex or split wedge design
- Forged T-head stem
- Flanged or butt weld ends
- OS&Y construction
- Full port design
- Renewable seat rings – seal welded
- Full length wedge guides
- Ring joint bonnet gasket
- Anti-friction ball bearing yoke sleeve
- Meet design requirements of ANSI B16.5, B16.34, B16.25, B16.10 and AP1–600
- Optional elastomer seals for High Integrity Shutoff



DIMENSIONS and WEIGHTS

Dim	Description		VALVE SIZES (inches) 1.5	2	2.5	3	4	6	8	10	12	14	16	18	20	24	30	36
A	Face to Face Flanged Ends	in.	9.5	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	65.0	82.0
		mm	241	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1651	2083
A_1	End to End Weld Ends	in.	9.5	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	65.0	82.0
		mm	241	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1651	2083
A_2	Face to Face RTJ	in.	9.5	11.63	13.13	14.13	17.13	22.13	26.13	31.13	33.13	35.13	39.13	43.13	47.25	55.37	65.5	82.63
		mm	241	295	334	359	435	562	664	791	842	892	994	1096	1200	1406	1664	2099
K	Center to Top Open	in.	–	16.65	17.99	20.12	25.00	37.72	42.44	48.86	56.69	60.09	71.06	78.11	79.92	107.00	155.98	165.38
		mm	–	419	457	511	635	958	1078	1241	1440	1628	1805	1984	2030	2718	3962	4201
M	Handwheel Dia.	in.	8	10	10	10	14	18	24	24	28	28	34	34	34	34	34	34
		mm	203	254	254	254	356	457	610	610	711	711	864	864	864	864	864	864
	Weight Flanged Ends	lbs	91	110	119	188	355	726	1175	1661	2332	2964	3668	5114	6870	8500	16000	25000
		kg	41	50	54	86	161	329	533	753	1058	1343	1662	2320	3116	3856	7256	11340
	Weight Weld Ends	lbs	62	86	116	147	278	604	1012	1386	1972	2644	3380	4400	5915	7150	14000	22000
		kg	28	39	53	67	126	274	454	628	895	1198	1532	1996	2683	3244	6350	9980

Notes:
1. Dimensions, weights and other engineering data are subject to change or modifcation. This data is not to be used for construction unless confrmed by the factory.
2. Consult factory for centerline to top dimensions (open and closed) for split wedge valves.

RELATED DATA

See Technical Data section for: Temperature/pressure data: Raised face or ring joint fanges: Butt weld ends: Flow calculations (Cv).
See Actuators & Accessories section for: Bevel gear, spur gear, chain wheel, motor or cylinder actuators: Bypasses, drains or auxiliary piping: Special packing, etc.