

## DESIGN FEATURES

- Built-in ISO 5211 Direct Mounting Pad Easy Automation
- Fire Safe Design Approved
- Anti-static Devices for Ball-Stem-Body
- Blow-out Proof Stem
- Pressure Balance Hole in Ball Slot
- TA-Luft/ ISO 15848-1 Design Approved
- NACE standard MR0175 & MR0103 (Optional)
- Casting Approved by TÜV AD 2000-Merkblatt W0
- Options : 1.Actuator 2.Limit Switch 3.Positioner



## APPLICABLE STANDARDS

- Design Standard : ASME B16.34
- Frie Design : API 607 5<sup>th</sup> 2005, ISO10497
- Face To Face : ASME B16.10
- Flanged End : ASME B16.5 Class 150 / 300
- Inspection & Testing : API 598

## CV / KV VALUES

NPS	CV		KV	
	Class 150	Class 300	Class 150	Class 300
1/2	30	30	26	26
3/4	55	55	48	48
1	96	96	83	83
1 1/4	170	170	147	147
1 1/2	270	270	234	234
2	470	470	407	407
2 1/2	780	780	675	675
3	1150	1150	995	995
4	2100	2100	1817	1817
5	3500	3500	3028	3028
6	5000	5000	4325	4325
8	9500	9500	8218	8218

## WEIGHT

NPS	KV-L41/KV-L61		KV-L42/KV-L62	
	Weight (kg)	Weight (lb)	Weight (kg)	Weight (lb)
1/2	1.6	3.5	2.54	5.60
3/4	2.3	5.1	3.64	7.94
1	3.0	6.6	4.55	9.92
1 1/4	3.5	7.7	5.17	11.4
1 1/2	5.6	12.4	8.69	19.2
2	8.4	18.5	10.9	24.1
2 1/2	14.5	32.0	17.5	38.6
3	18.5	40.8	27.3	59.5
4	29.5	65.0	41.8	92.2
5	53.5	118.0	67.6	149.1
6	74.0	163.0	100.6	221.8
8	132.0	291.0	170.0	375.0

**TORQUE VALUES**

Close to Open Torque at Various Differential Pressure ( $\Delta P$ ), Standard Seats (TFM1600&PTFE)

unit : in-lb / N-m

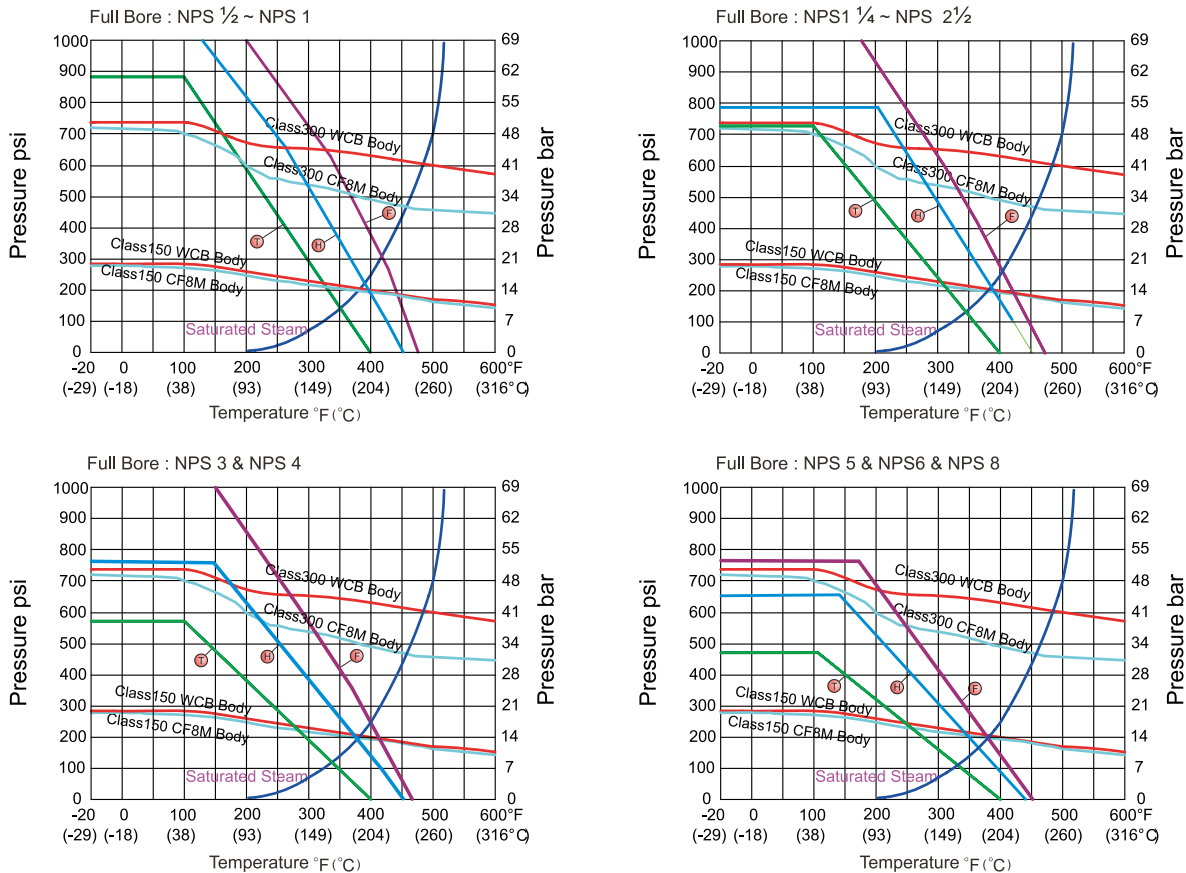
Size/ $\Delta P$	75 psig		150 psig		300 psig		700 psig	
	N-m	In-lb	N-m	In-lb	N-m	In-lb	N-m	In-lb
NPS 1/2	5	44	5	44	5	44	5	44
NPS 3/4	6	53	6	53	6	53	6	53
NPS 1	10	88	10	88	11	97	11	97
NPS 1 1/4	13	115	13	115	15	133	17	150
NPS 1 1/2	19	168	19	168	22	195	24	212
NPS 2	25	221	29	257	32	283	35	310
NPS 2 1/2	40	354	45	398	49	434	54	478
NPS 3	65	575	72	637	81	717	90	796
NPS 4	100	885	110	973	122	1080	135	1195
NPS 5	190	1681	210	1858	245	2168	285	2522
NPS 6	280	2478	306	2708	340	3009	530	4690
NPS 8	370	3274	430	3805	487	4310	760	6726

- Remark : 1.Torques will increase about 30% if seat materials are Reinforced Fiber-Glass PTFE, Carbon-filled, PTFE or EK+PTFE or EK+PTFE or TFM4215.
- 2.The torque figures at 5 bar pressure are maximum values to be tested after the valves are placed for 24 hours.
- 3.For actuator sizing, a safety factor of minimum 30% is recommended.

**TECHNICAL INFORMATION**

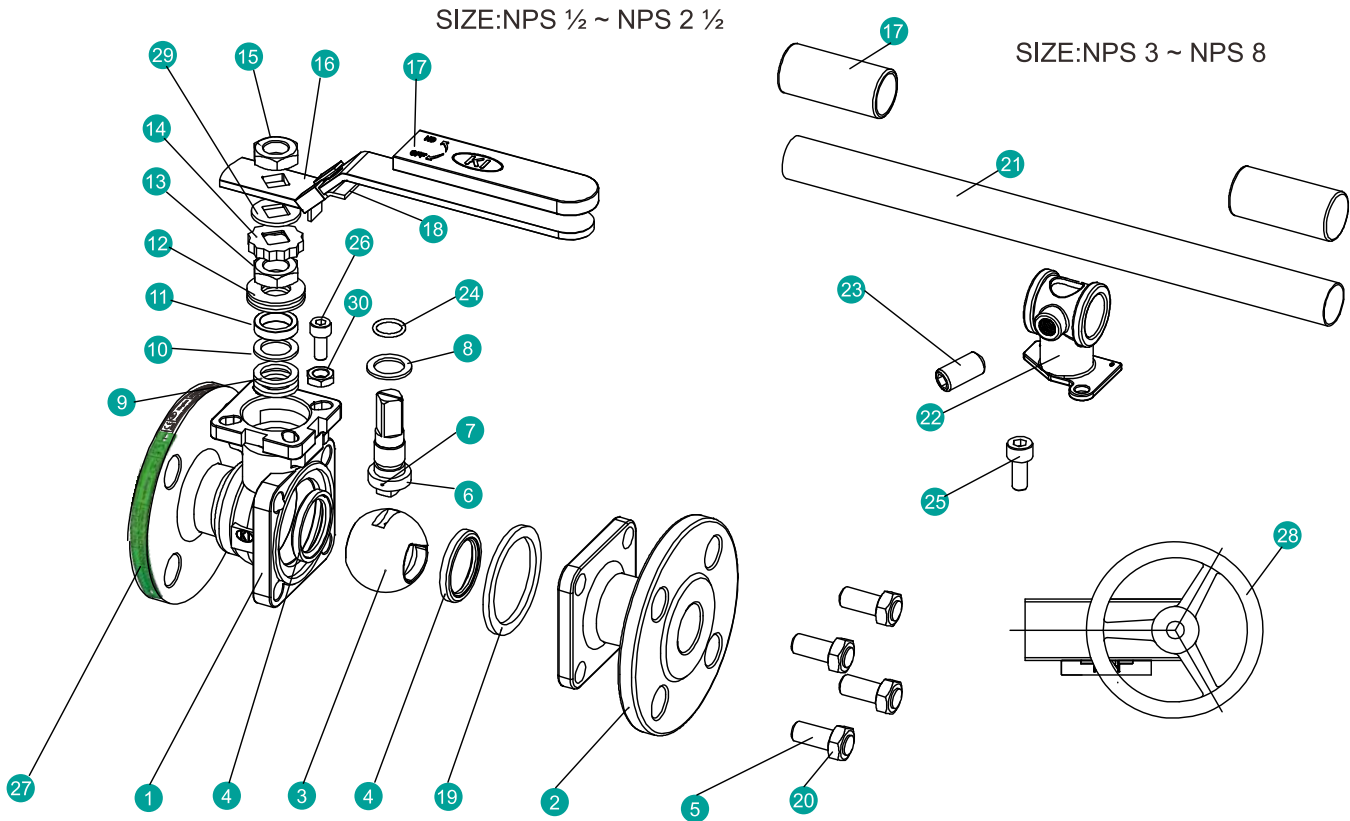
**PRESSURE - TEMPERATURE DATA**

The pressure-temperature data of ball valves is determined not only by valve shell materials but also by sealing materials used for ball seats, gland packings and flange gaskets.



Seat Materials : T PTFE H TFM1600 F TFM4215

Body Ratings: Shown above are for ASTM A351 Gr.CF8M and A216 Gr.WCB  
For ratings of other valve shell materials, please refer to the last edition of ASME B16.34.

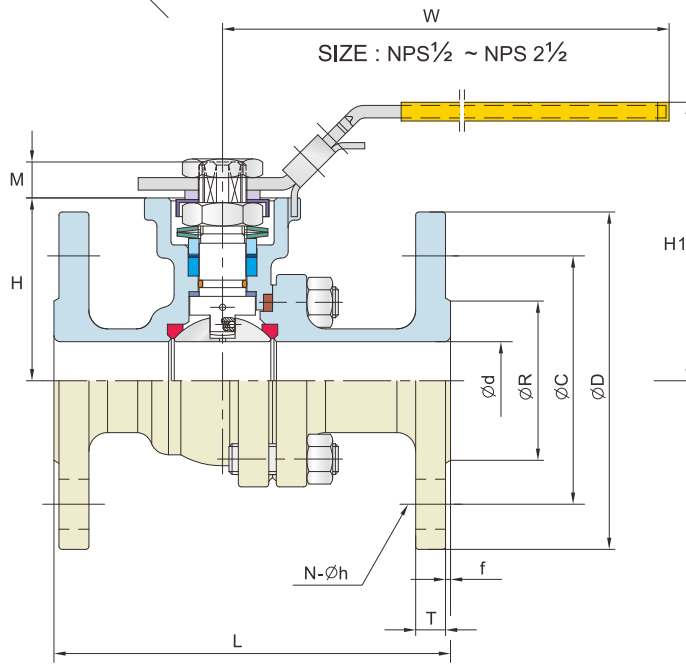
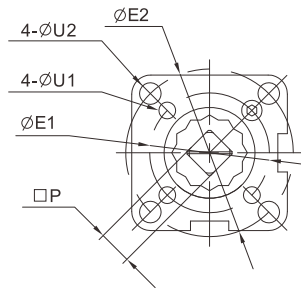


**MATERIAL OF CONSTRUCTION**

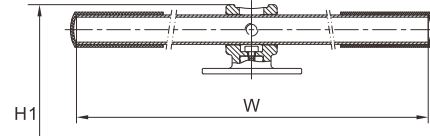
NO.	PART NAME	MATERIALS		
		ANSI	ANSI	ANSI
1	End Cap	A351-CF8M	A351-CF8	A216-WCB
2	Body	A351-CF8M	A351-CF8	A216-WCB
3	Ball	316		304
4	Ball Seat	TFM1600 / PTFE / TFM4215		
5	Bolting	A193-B8		A193-B7
6	Stem(NPS1/2-NPS5)	316		304
	Stem(NPS6)	S32205		S32205
7	Anti-Static	316		304
8	Thrust Washer	PTFE/TFM1600		
9	Stem Packing	PTFE / GRAPHITE*		
10	Bushing	50%SS+50%PTFE / 304*		
11	Gland	316		
12	Belleville Washer	301		
13	Stem Nut	A194-8		
14	Stop-lock-Cap	304		
15	Handle Nut (NPS1/2 ~ NPS2 1/2)	A194-8		
16	Lever (NPS1/2 ~ NPS2 1/2)	304		
17	Handle Sleeve	PVC		
18	Lock Device (NPS1/2 ~ NPS2 1/2)	304		
19	Body Gasket	PTFE / 316 Spiral Wound+Graphite*		
20	Bolt Nut	A194-8		A194-2H
21	Pipe Handle (NPS3 ~ NPS8)	A53+PLATED Zn		
22	Handle Adapter (NPS3 ~ NPS8)	A351-CF8		
23	Set Screwed (NPS3 ~ NPS8)	A2-70		
24	O-Ring	FKM		
25	Bolting (NPS3 ~ NPS8)	A2-70		
26	Stop Bolt	A2-70		
27	Nameplate	304		
28	Worm Gear (Optional)	Package		
29	Support Washer	304		
30	Stop Nut	A2-70		

\*Materials for KV-L61, KV-L62 Series (Fire Safe Models)

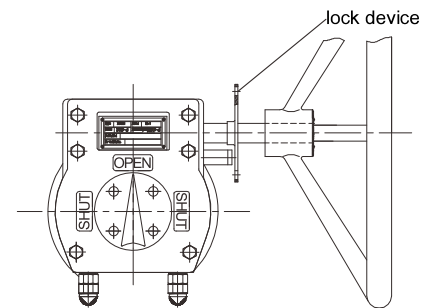
Direct Mount Pad (ISO 5211)



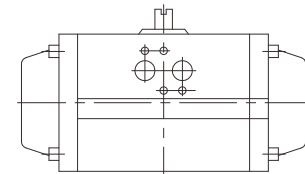
Pipe Handle Operation  
SIZE : NPS 3 ~ NPS 8



Gear Operation (Optional)  
SIZE : NPS 2 1/2 ~ NPS 8



Automation (Optional)  
SIZE : NPS 1/2 ~ NPS 8



**DIMENSION TABLE**

**ASME Class 150 DIMENSION TABLE KV-L41/KV-L61**

Unit : mm

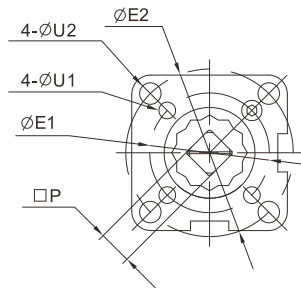
NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
1/2	15	108	35.0	89	60.5	7.9	1.5	4	16.0	49	79	147	9	9	36	42	6	6	F03~F04
3/4	20	117	43.0	99	69.8	8.6	1.5	4	16.0	53	84	147	9	9	36	50	6	7	F03~F05
1	25	127	51.0	108	79.2	9.7	1.5	4	16.0	59	90	177	11	11	42	50	6	7	F04~F05
1 1/4	32	140	63.5	117	88.9	11.2	1.5	4	16.0	71	102	177	11	11	42	70	6	9	F04~F07
1 1/2	38	165	73.2	127	98.6	12.7	1.5	4	16.0	76	110	197	14	14	50	70	7	9	F05~F07
2	50	178	92.0	152	120.6	14.2	1.5	4	19.0	82	115	197	14	14	50	70	7	9	F05~F07
2 1/2	63.5	190	104.7	178	139.7	15.7	1.5	4	19.0	102	150	267	17	17	70	102	9	11	F07~F10
3	76	203	127.0	190	152.4	17.5	1.5	4	19.0	112	176	300	17	17	70	102	9	11	F07~F10
4	100	229	157.0	229	190.5	22.4	1.5	8	19.0	140	211	400	22	22	—	102	—	11	F10
5	125	356	186.0	254	215.9	22.4	1.5	8	22.3	183	263	600	27	27	125	—	14	—	F12
6	150	394	216.0	279	241.3	23.9	1.5	8	22.3	204	284	800	27	27	125	—	14	—	F12
8	200	457	270.0	343	298.4	26.9	1.5	8	22.3	253	352	800	36	36	—	140	—	18	F14

**ASME Class 150 DIMENSION TABLE KV-L41/KV-L61**

Unit : inch

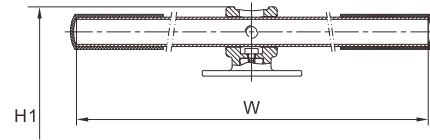
NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
1/2	0.59	4.25	1.38	3.50	2.38	0.31	0.06	4	5/8	1.93	3.11	5.79	0.354	0.30	1.42	1.65	0.24	0.24	F03~F04
3/4	0.79	4.62	1.69	3.88	2.75	0.34	0.06	4	5/8	2.09	3.31	5.79	0.354	0.35	1.42	1.97	0.24	0.28	F03~F05
1	0.98	5.00	2.01	4.25	3.12	0.38	0.06	4	5/8	2.32	3.54	6.97	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1 1/4	1.26	5.50	2.50	4.62	3.50	0.44	0.06	4	5/8	2.80	4.02	6.97	0.433	0.43	1.65	2.76	0.24	0.35	F04~F07
1 1/2	1.50	6.50	2.88	5.00	3.88	0.50	0.06	4	5/8	2.99	4.33	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2	1.97	7.00	3.62	6.00	4.75	0.56	0.06	4	3/4	3.23	4.53	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2 1/2	2.50	7.50	4.12	7.00	5.50	0.62	0.06	4	3/4	4.02	5.91	10.5	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
3	2.99	8.00	5.00	7.50	6.00	0.69	0.06	4	3/4	4.41	6.93	11.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
4	3.94	9.00	6.19	9.00	7.50	0.88	0.06	8	3/4	5.51	8.31	15.9	0.866	0.87	—	4.02	—	0.43	F10
5	4.92	14.00	7.32	10.00	8.50	0.88	0.06	8	7/8	7.20	10.35	23.7	1.063	1.06	4.92	—	0.55	—	F12
6	5.91	15.50	8.50	11.00	9.50	0.94	0.06	8	7/8	7.99	11.18	31.6	1.063	1.06	4.92	—	0.55	—	F12
8	7.87	18.00	10.63	13.50	11.75	1.06	0.06	8	7/8	9.96	13.86	31.6	1.417	1.42	—	5.51	—	0.71	F14

Direct Mount Pad (ISO 5211)



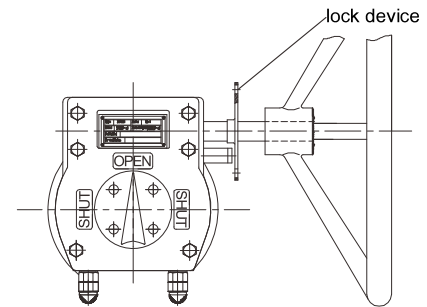
Pipe Handle Operation

SIZE : NPS 3 ~ NPS 8



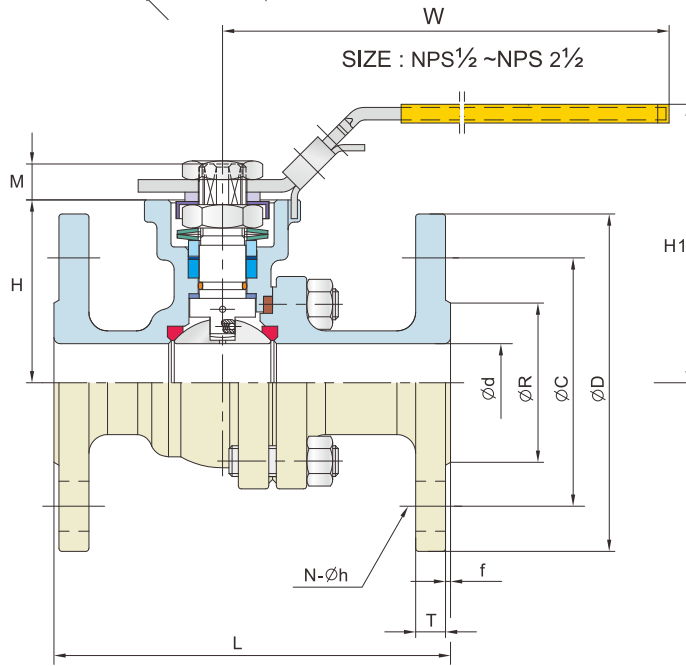
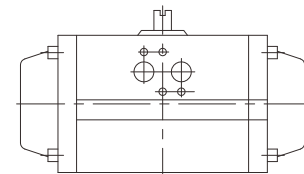
Gear Operation (Optional)

SIZE : NPS 2½ ~ NPS 8



Automation (Optional)

SIZE : NPS ½ ~ NPS 8



**DIMENSION TABLE**

**ASME Class 300 DIMENSION TABLE KV-L42/KV-L62**

Unit : mm

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
½	15	140	35.0	95	66.5	12.7	1.5	4	16.0	49	79	147	9	9	36	42	6	6	F03~F04
¾	20	152	43.0	117	82.6	14.2	1.5	4	19.0	59	89	147	9	9	36	42	6	6	F03~F04
1	25	165	51.0	124	88.9	15.7	1.5	4	19.0	64	95	177	11	11	42	50	6	7	F04~F05
1¼	32	178	63.5	133	98.6	17.5	1.5	4	19.0	71	102	177	11	11	42	50	6	7	F04~F05
1½	38	190	73.2	155	114.3	19.0	1.5	4	22.3	80	113	197	14	14	50	70	7	9	F05~F07
2	50	216	92.0	165	127.0	20.6	1.5	8	19.0	85	118	197	14	14	50	70	7	9	F05~F07
2½	63.5	241	104.7	190	149.4	23.9	1.5	8	22.3	102	150	267	17	17	70	102	9	11	F07~F10
3	76	282	127.0	210	168.1	26.9	1.5	8	22.3	112	176	300	17	17	70	102	9	11	F07~F10
4	100	305	157.0	254	200.2	30.2	1.5	8	22.3	140	211	400	22	22	—	102	—	11	F10
5	125	381	186.0	279	235.0	33.3	1.5	8	22.3	183	263	600	27	27	125	—	14	—	F12
6	150	403	216.0	318	269.7	35.1	1.5	12	22.3	204	284	800	27	27	125	—	14	—	F12
8	200	502	270.0	381	330.2	39.6	1.5	12	25.4	253	352	800	36	36	—	140	—	18	F14

**ASME Class 300 DIMENSION TABLE KV-L42/KV-L62**

Unit : inch

SIZE	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
½	0.59	5.50	1.38	3.75	2.62	0.50	0.06	4	5/8	1.93	3.11	5.77	0.354	0.32	1.42	1.65	0.24	0.24	F03~F04
¾	0.79	6.00	1.69	4.62	3.25	0.56	0.06	4	¾	2.32	3.54	5.77	0.354	0.35	1.42	1.65	0.24	0.24	F03~F04
1	0.98	6.50	2.01	4.88	3.50	0.62	0.06	4	¾	2.52	3.74	6.95	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1¼	1.26	7.00	2.50	5.25	3.88	0.69	0.06	4	¾	2.80	4.02	6.95	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1½	1.50	7.50	2.88	6.12	4.50	0.75	0.06	4	7/8	3.15	4.49	7.75	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2	1.97	8.50	3.62	6.50	5.00	0.81	0.06	8	¾	3.35	4.65	7.75	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2½	2.50	9.50	4.12	7.50	5.88	0.94	0.06	8	7/8	4.02	5.91	10.50	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
3	2.99	11.12	5.00	8.25	6.62	1.06	0.06	8	7/8	4.41	6.93	11.90	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
4	3.94	12.00	6.19	10.00	7.88	1.19	0.06	8	7/8	5.51	8.31	15.80	0.866	0.87	—	4.02	—	0.43	F10
5	4.92	15.00	7.32	11.00	9.25	1.31	0.06	8	7/8	7.20	10.35	23.70	1.063	1.06	4.92	—	0.55	—	F12
6	5.91	15.88	8.50	12.50	10.62	1.38	0.06	12	7/8	8.03	11.18	31.60	1.063	1.06	4.92	—	0.55	—	F12
8	7.87	19.75	10.63	15.00	13.00	1.56	0.06	12	1	9.96	13.86	31.60	1.417	1.42	—	5.51	—	0.71	F14