

META



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VALVES

PIPE

FLANGE

COUPLING

GEAR BOXES

PNEUMATIC ACTUATORS

SWITCH BOXES

DIRECT CONTROL VALVES





1-PC, 2-PC, 3-PC Ball valve flange and
Design Standard ASME B16.34

Face to Face DIN F15AF5/F7

Investment Casting

Anti-Static Device

150LB/300LB/PH10-40/10K/20K

Ball Valve

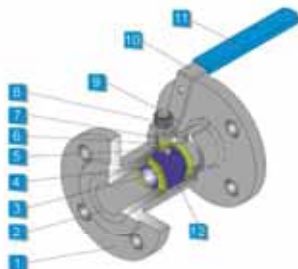
F10ABM

1-PC Ball Valve 10K/150LB Flange End, Reduce Bore

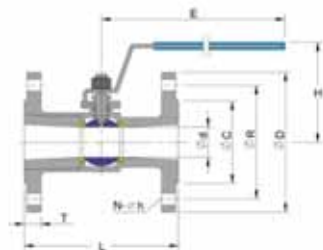
FEATURES:

- Face to Face: JIS B2002/ANSI B16.10
- Flange Standard: JIS B2239/ANSI B16.5
- Class: 150LB/10K
- Investment Casting Body
- Pressure Baffle Hole in Ball Seat
- Testing & Inspection: API 598
- Design Standard: ANSI B16.34 **[New Design]**

No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WCB
2	End Cap	CF8M	CF8	WCB
3	Body Gasket	PTFE		
4	Ball Seat	PTFE	RTFE	
5	Thrust Washer	PTFE		
6	V-Ring Packing	PTFE		
7	Stop Nut	SUS 304		
8	Stem Nut	A193-B8		
9	Stem	SUS 316	SUS 304	
10	Handle	SUS 304		
11	Handle Cover	Plastic		
12	Ball	CF8M	CF8	



Fire Safe Design Upon Requirement



Size	L	D1	H	E	10K		150LB		10K		150LB		10K		150LB	
					10K	150LB	10K	150LB	10K	150LB	10K	150LB				
1/2"	168	12	75	110	51	55	75	80.3	85	89	12	11.2	4	4	15	15
3/4"	117	15	80	120	56	43	75	70	100	88	14	11.2	4	4	15	15
1"	127	20	90	150	67	51	90	78.9	125	109	14	11.2	4	4	19	19
1-1/4"	140	25	98	150	76	64	100	89	135	117	16	12.7	4	4	19	19
1-1/2"	165	32	100	190	81	73	105	98.5	140	127	16	14.3	4	4	19	19
2"	178	38	110	190	90	92	120	120.5	155	152	16	15.9	4	4	19	19
2-1/2"	190	50	120	280	116	109	140	139.5	175	178	16	17.5	4	4	19	19
3"	203	65	130	280	128	127	160	162.5	185	190	16	18.1	4	4	19	19
4"	229	80	150	310	151	157	175	190.5	210	229	16	23.9	4	4	19	19

Ball Valve

LF10YBM

Wafer Type Stainless Steel Ball Valve
Full Port, PN16/40 (ISO Mounting Pad)

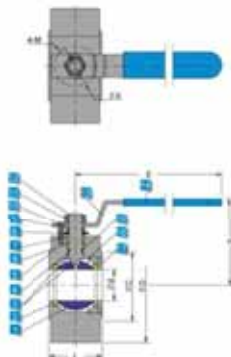
FEATURES:

- Blow-out Proof Stem
- Anti-Static Device for Ball Stem/Body
- Pressure Balance Hole in Ball Slot
- O2 Belleville Washer to Self-adjust Packing
- ISO 5211 Mounting Pad for Easy Automation
- Locking Device Spring Handle **New Design**
- Fire-Safe Design Available

STANDARD:

- Design ASME B16.34, API 608
- Wall Thickness EN12516-1
- Flange End ASME B16.5 CLASS 150/300
DIN 2553 PN10-PN40
JIS B2238 10K/20K
- Inspection & Testing API 598, EN 12298

No.	PARTS NAME	MATERIAL		
1	Ball	CF8M	CF8	
2	Ball Seat	PTFE	RP3TFE	
3	Anti-Static Device		SUS304	
4	Thrust Washer		PTFE	
5	Body	CF8M	CF8	A105
6	V-Ring Packing	PTFE	RP3TFE	
7	Gland	SUS316	SUS304	
8	Belleville Washer		SUS304	
9	Stop Nut		A194-8	
10	Location Pin		SUS304	
11	Stem Nut		SUS304	
12	Stem	SUS316	SUS304	
13	Handle		SUS304	
14	Handle Cover		Phenol	
15	O-Ring		VITON(FKM)	
16	Cap Gasket		PTFE	
17	Cap	CF8M	CF8	A105



Unit:mm

Size	DN	PN	L	DN	BC	DO	H	S	GA	N	DR	M	DR
1/2"	DN15	10-40	42	15	45	85	80	150	85	4	M12	F03	36
3/4"	DN20		44	20	88	105	85	190	75	4	M12	F04	42
1"	DN25		50	25	88	110	90	170	85	4	M12	F04	42
1-1/8"	DN32		56	32	78	140	105	170	100	4	M16	F05	50
1-1/2"	DN40		65	38	88	150	110	170	110	4	M16	F05	50
2"	DN50		80	50	150	165	120	220	125	4	M16	F07	70
2-1/2"	DN65		100	60	122	185	140	220	145	4	M16	F07	70
			2540	110	64	122	185	140	220	145	8	M16	F07
2"	DN80		100	75	138	200	155	250	160	8	M16	F10	100
			2540	134	78	138	200	155	250	160	8	M16	F10
4"	DN100	100	98	198	220	180	250	190	8	M16	F10	100	
		2540	130	102	198	220	180	250	190	8	M20	F10	100
6"	DN125	100	118	198	250	200	285	215	8	M16	F12	125	
		2540	180	122	198	250	200	285	215	8	M24	F12	125
8"	DN150	100	142	212	285	230	385	245	8	M20	F12	125	
		2540	225	142	218	300	230	385	250	8	M24	F12	125

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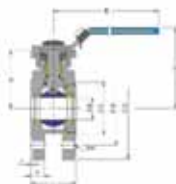
FEATURES:

- Blow-out Proof Stem
- Anti-Static Device for Ball-Stem-Body
- Pressure Balance Hole in Ball Seat
- Belleville Washer to Self-adjust Packing
- ISO 5211 Direct Mounting Pad for Easy Automation
- Locking Device Spring Handle **New Design**
- Fire-Safe Design Available

STANDARD:

- Design: ASME B16.34, API 608
- Wall Thickness: EN12516-1
- Flange End: ASME B16.5 CLASS 150/200
DIN 2653 PN10-PN40
JIS B2238 10K/20K
- Inspection & Testing: API 598, EN 12266

No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WC8
2	Thrust Washer		PTFE	
3	O-Ring	VTTCN	FKM	
4	V-Ring Packing		PTFE	
5	Grant		SUS304	
6	Belleville Washer		SUS301	
7	Stop Nut		A194-8	
8	Stop Cap		SUS301	
9	Washer		SUS304	
10	Handle		SUS304	
11	Stem Nut		A194-8	
12	Locking Device		SUS301	
13	Plastic Pin		Plastic	
14	Handle Cover		Plastic	
15	Stem	SUS316	SUS304	
16	Anti-Static Device	SUS316	SUS304	
17	Ball Seat	PTFE	SP17E	
18	gll	CF8M	CF8	
19	Body Gasket		PTFE	
20	Cap	CF8M	CF8	WC8
21	Position Bolt		SUS304	



Unit:mm

Size	PN	DN	L	2PC	2PC	H	H1	E	F	F	L/D	2PC	2PC	DN1	DN2	N	A	ISO-5211	
DN15	16-40	15	42	41	43	49	75	100	2	9	9	42	36	6	6	4	M12	F10-F14	
DN20	16-40	20	44	44	46	55	80	100	2	9	9	38	36	7	6	4	M12	F10-F14	
DN25	16-40	25	50	49	51	110	82	95	2	9	11	30	42	7	6	4	M12	F14-F16	
DN32	16-40	32	60	58	60	140	73	95	2	12	11	38	42	8	6	4	M16	F14-F16	
DN40	16-40	38	65	63	65	130	78	100	2	13	14	30	30	9	7	4	M16	F16-F18	
DN50	16-40	40	80	78	80	165	85	110	2	20	14	30	30	9	7	4	M16	F16-F18	
DN65	10/16 20/40	64	110	112	114	185	140	138	208	3	16	17	102	70	11	8	8	M16	F17-F18
DN80	10/16 20/40	76	120	122	124	200	150	148	208	3	20	17	102	70	11	8	8	M16	F17-F18
DN100	10/16 20/40	90	150	152	154	230	141	-	-	3	20	22	102	-	11	-	8	M16, M20	F19
DN125	10/16 20/40	118	180	182	184	270	175	-	-	3	22	27	126	-	14	-	8	M16, M24	F12
DN150	10/16 20/40	144	225	227	229	300	180	-	-	3	22	27	126	-	14	-	8	M20, M24	F12

Ball Valve

2-PC Stainless Steel Ball Valve/Full Port, Flange Ends,
150LBS, 300LBS (ISO Mounting Pad)

LF20ABM

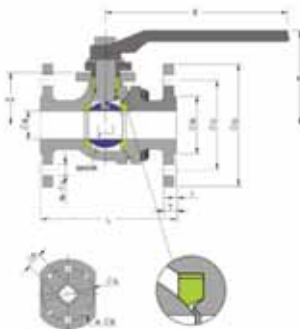
FEATURES:

- Blow-out Proof Stem
- Anti-Static Device for Ball-Stem-Body
- Pressure Balance Hole in Ball Slot
- O2 Bellville Washer to Self-adjust Packing
- ISO 5211 Mounting Pad for Easy Automation
- Fire Safe Design Available: **New Design**

STANDARD:

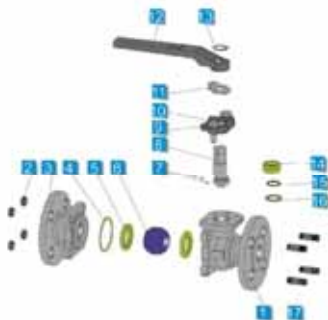
- Design ASME 16.34 API 608
- Wall Thickness ASME B16.34, EN12516-3
- Flange Ends: ASME 16.5
- Fire Safe Design Acc: API 607
- Inspection & Testing API 598, EN 12296
- Face to Face ACC ASME 16.34
- Inspection and Testing API 598, API 607

No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WCB
2	Nut		S3304	
3	Cap	CF8M	CF8	WCB
4	Cap Gasket		PTFE	
5	Ball Seat	PTFE	R-PTFE	
6	Ball	CF8M	CF8	
7	Anti-Static Device		S3304	
8	Stem		S3316	
9	Ball		S3304	
10	Stop Grand	CF8M	CF8	
11	Locking Device		S3304	
12	Handle		CF8	
13	Position Washer		S3304	
14	Stem Packing	PTFE	R-PTFE	
15	O-Ring		VTION	
16	Thrust Washer		S3304	
17	Ball		PTFE	



ISO 5211 Mounting Pad

Fire Safe Design



Unit:mm ■ ASME 150/300

Size	Pressure(LBS)	L	DL	DR	DR	DR	H	H1	E	T	1	N	DL	CF	DL	DR	ISO 5211
1/2"	150	108	15	25	51.3	55	80	37	130	8.7	2	4	15	11	42	M5	F4
	300	140			55.5	59.5			14.3				15				
3/4"	150	117	20	43	75	88.5	83	40	130	10.3	2	4	15	11	42	M5	F4
	300	142			82.5	117.4			15.9				15				
1"	150	127	25	51	73.5	105	97	45	160	11.2	2	4	15	14	50	M6	F5
	300	155			81.3	124			17.3				15				
1.5"	150	145	32	53.5	85	117	100	50	160	12.7	2	4	15	14	50	M6	F5
	300	178			98.5	133.4			18.5				15				
1.5"	150	155	38	73	95.3	127	110	52	230	14.3	2	4	15	17	70	M8	F7
	300	191.5			114.3	151.5			20.7				22.3				
2"	150	175	50	60	120.5	154.5	116	71	230	15.9	3	4	15	17	70	M8	F7
	300	218			127	165.3			22.3				15				
2.5"	150	191	65	105	145.4	191.5	145	85	280	15.4	3	4	15	16	102	M10	F10
	300	243			159.1	217.8			21.3				15				
3"	150	205	80	127	152.3	195.5	155	100	315/400	18.1	3	4	15	16	102	M10	F10
	300	252			168	209.8			28.9				22.3				
4"	150	229	100	157	190.5	235.5	175	123	315/400	23.8	3	4	15	22	102	M10	F10
	300	305			200	254			31.8				22.3				

Ball Valve

HF20DBM

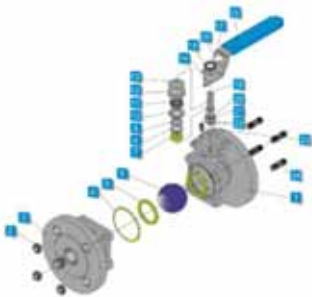
2-PC Stainless Steel Ball Valve Full Port, Flange Ends,
PN10-40 (ISO-Direct Mounting Pad)

FEATURES:

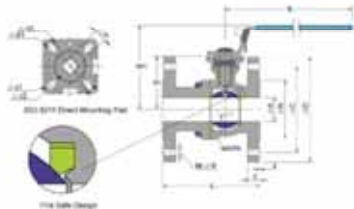
- Blow-out Proof Stem
- Anti-Static Device for Ball-Stem-Body
- Pressure Balance Hole in Ball Slot
- Belleville Washer to Self-adjust Packing
- ISO 5211 Direct Mounting Pad for Easy Automation
- Locking Device Spring Handle **New Design**

STANDARD:

- Design EN 12516-1
- Wall Thickness ASME B16.34 EN12516-3
- Flange Ends: DIN 2501 PN10-PN40
- Fire Safe Design Acc-API 607
- Flange End ASME B16.5 CLASS 150/300
DIN 2653 PN10-PN40
JIS B2238 10K/20K
- Inspection & Testing API 598, EN 12266



No.	PARTS NAME	MATERIAL
1	Body	CF8M / CF8 / WC6
2	Nut	S3304 / S3301
3	Cap	CF8M / CF8 / WC6
4	Cap Gasket	PTFE / VITON
5	Ball Seat	PTFE / R-PTFE
6	Ball	CF8M / CF8
7	Stem Packing	PTFE / R-PTFE
8	Stuffing	SUS316/SUS316F/S3304
9	Packing Grand	S3304
10	Belleville Washer	S3301
11	Stop Nut	S3304
12	Stop-Lock Cap	S3301
13	Washer	S3301
14	Position Handle	S3301
15	Stem Nut	S3301
16	Plastic Pin	Plastic
17	Locking Device	S3301
18	Handle Cover	Plastic
19	Stem	S3118 / S3304
20	O-Ring	FKM/VITON
21	Thrust Washer	S3301
22	Anti-Static Device	S3301
23	Stop Bolt	PTFE
24	Ball	S3301



Unit:mm

DN	PN	L	L1	2H	2H1	2PC	2PC1	H	H1	S	T	F	N	2FX	2H2	2H21	C1	2C2	2CP	ISO5211
DN15	1/2"	110	130	15	40	65	85	48	53	120	19	2	4	14	42	36	8	8	8	F01-F04
DN20	3/4"	120	150	20	50	75	105	54	59	120	19	2	4	14	42	36	8	8	8	F01-F04
DN25	1"	130	160	25	55	80	110	59	64	130	19	2	4	14	50	42	7	8	11	F04-F05
DN32	1 1/8"	130	160	30	70	100	140	71	76	140	19	2	4	14	50	42	7	8	11	F04-F05
DN40	1 1/2"	140	200	35	85	110	150	73	78	150	19	2	4	14	50	50	7	14	14	F01-F10
DN50	2"	150	220	50	100	125	165	85	90	160	20	3	4	14	50	50	7	14	14	F01-F10
PN65 2-1/2"	PN10/20/30/40	170	260	65	122	145	185	102	107	185	23	3	4	14	102	70	11	9	17	F7-F10
PN80 3"	PN10/20/30/40	180	310	80	138	160	200	110	115	200	27	3	4	14	102	70	11	9	17	F7-F10
PN100 4"	PN10/20/30/40	190	360	100	158	180	220	115	120	210	27	3	4	14	102	70	11	9	22	F01-F10
PN125 5"	PN10/20/30/40	225	400	125	188	210	250	125	130	232	400	3	4	14	102	125	12	14	27	F10-F12
PN150 6"	PN10/20/30/40	250	450	150	215	240	280	130	135	260	500	3	4	14	102	125	12	14	27	F10-F12

META

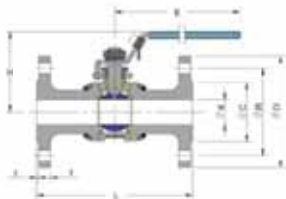
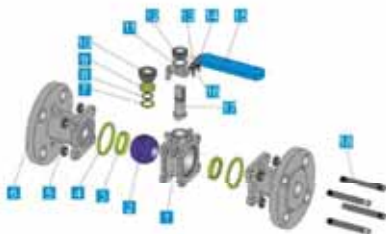
FEATURES:

- Blow-out Proof Stem
- Investment Casting Body
- Pressure Balance Hole in Ball Seat
- Reduce Port
- Various Thread Standard Available
- Locking Device Available **New Design**

STANDARD:

- Design: ASME B16.34
- Wall Thickness: 100% ASME B16.34, GB12224
- Pipe Thread: ANSI B 1.20.1, BS 2127/9
DIN 259/2999, ISO 228
- Face to Face Acc: DIN 3202-M3
- Inspection & Testing API 598

No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WCB
2	Ball	CF8M	CF8	
3	Ball Seat	PTFE	RTFE	PEEK
4	Gasket	PTFE		
5	Nut	A193-B8		
6	Cap	CF8M	CF8	WCB
7	Thrust Washer	PTFE	RTFE	
8	O-Ring	VITON	FPM	
9	Stem Packing	PTFE		
10	Stop Nut	SUS 304		
11	Spring Washer	SUS 304		
12	Stem Nut	A193-B8		
13	Plastic Pin	Plastic		
14	Handle	SUS 304		
15	Handle Cover	Plastic		
16	Locking Device	SUS 301		
17	Stem	SUS 316	SUS 304	
18	Bolt	SUS 304		



Unit:mm

Size	L		D ₁	D ₂		D ₃		H	E	F	I				
	PN16	150LB		PN16	150LB	PN16	150LB								
1/2"	130	108	15	45	45	65	60.5	95	89	75	110	14	11.2	2	2
3/4"	150	117	20	56	56	75	70	106	94	85	120	16	11.2	2	2
1"	160	127	25	66	66	88	79.5	119	108	90	130	16	11.2	2	2
1-1/4"	185	143	32	76	76	100	89	140	117	95	150	16	11.2	2	2
1-1/2"	200	161	40	86	86	110	99.5	150	127	100	160	16	11.2	2	2
2"	230	178	50	102	102	125	120.5	165	152	110	180	18	15.9	2	2
2-1/2"	260	190	60	122	122	145	139.5	185	175	120	200	18	17.8	2	2
3"	310	205	80	138	138	160	152.5	200	180	130	240	20	18.1	2	2
4"	350	229	100	158	158	180	180.5	220	220	150	310	20	23.9	2	2

Ball Valve

HF50ABM, HF50DBM
HF50JBM

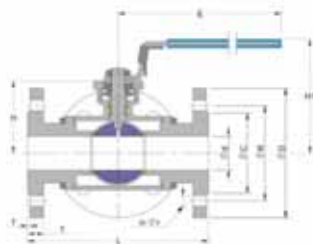
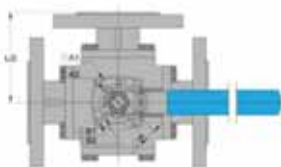
3-Way Ball Valve ISO-Direct Mounting Pad
HF50JBM DIN PN10-40, ANSI 150LB/300LB, JIS 10K/20K

FEATURES:

- Blow-out Proof Stem
- Anti-Static Device for Ball-Stem-Body
- Belleville Washer to Self-Adjust Packing
- Investment Casting Body, Cap & Handle
- ISO-Direct Mounting Pad for Easy Automation
- Pressure Balance Hole in Ball Slot
- T-Port, L-Port, Double L-Port Available

STANDARD:

- Flange End Dia 2033, PN10-40, ASME B16.5, JIS B2238
- Design EN 12516-1, ASME B16.34, API 608
- Wall Thickness ASME B16.34
- Testing Standard EN1226, API 598, JIS B2003



Flow Type For 3-Way Ball Valve



T-Port



L-Port



Double L-Port

DIN PN10-40

Size	PN	L	D1	D2	D3	D4	H	H1	E	T	γ	α	D5	CP	A1	A2	B1	B2	ISO 5211
1/2"	10-40	150	15	45	65	35	53	80	140	16	2	4	14	9	42	30	6	6	PG3-04
3/4"		184	20	58	75	105	57	85	140	18	2	4	14	9	50	36	7	6	PG3-05
1"		180	25	68	85	115	72	100	170	18	2	4	14	11	50	42	7	6	PG4-05
1-1/4"		190	32	78	100	140	77	110	170	18	2	4	16	11	75	42	9	6	PG4-07
1-1/2"		214	38	88	110	150	85	120	220	18	3	4	16	14	75	50	9	7	PG5-07
2"	232	50	102	120	160	95	125	220	20	3	4	18	14	75	50	9	7	PG5-07	

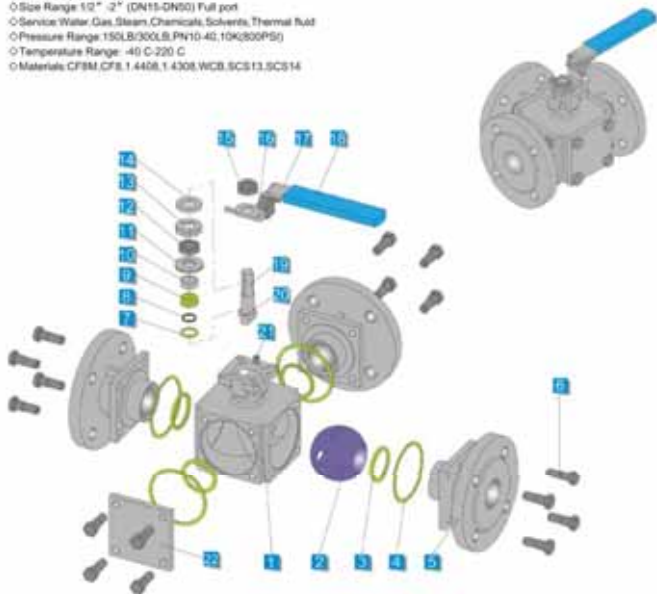
Ball Valve

HF50AEM, HF50DBM,
HF50JBM

3-Way Ball Valve ISO-Direct Mounting Pad
DIN PN10-40, ANSI 150LB/300LB, JIS 10K/20K

Technical Summary:

- Size Range 1/2" - 3" (DN15-DN50) Full port
- Service Water, Gas, Steam, Chemicals, Solvents, Thermal fluid
- Pressure Range 150LB/300LB, PN10-40, 10K/20KPSI
- Temperature Range: -40 C-220 C
- Materials CF8M, CF8, 1.4408, 1.4308, WCB, SCS13, SCS14

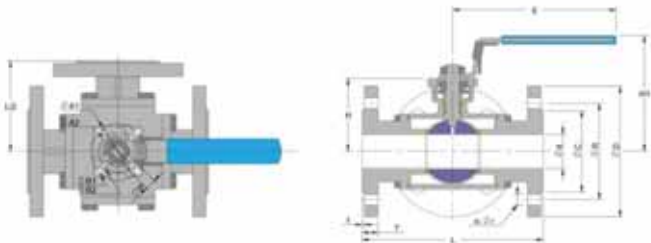


No.	PARTS NAME	MATERIAL	No.	PARTS NAME	MATERIAL
1	Body	CF8M CF8 WCB	12	Stop Nut	A194-8
2	Ball	CF8M CF8	13	Stop Cap	SUS 304
3	Ball Seat	PTFE R1TFE PEEK	14	Washer	SUS 304
4	Body Gasket	PTFE	15	Stem Nut	A194-8
5	Cap	CF8M CF8 WCB	16	Locking Device	SUS 301
6	Cap Bolt	A193-B8	17	Handle	SUS 304
7	Thrust Washer	PTFE	18	Handle Cover	
8	O-Ring	VITON(FKM)	19	Stem	SUS 316/SUS 304
9	V-Ring Packing	PTFE R1TFE	20	Anti-Static Device	SUS 301
10	Gland	SUS 304	21	Locking Pin	SUS 301
11	Belleville Washer	SUS 301	22	Stop End	CF8M CF8 WCB

Ball Valve

HF50ABM, HF50DBM,
HF50JBM

3-Way Ball Valve ISO-Direct Mounting Pad
DIN PN10-40, ANSI 150LB/300LB, JIS 10K/20K



ASME CLASS 150LB

Size	L	H	2C	2W	2D	R	H1	E	T	F	R	D ₁	CP	A1	A2	B1	B2	ISO211
1/2"	150	15	35	80.5	89	53	80	140	9.7	2	4	18	9	42	36	6	6	F03-04
3/4"	166	20	43	76	88	57	90	140	10.5	2	4	18	9	38	36	7	6	F03-05
1"	182	25	51	78	108	72	108	170	11.2	2	4	18	11	36	42	7	6	F04-06
1-1/4"	190	32	64	89	117	77	116	170	12.7	2	4	18	11	70	42	9	6	F04-07
1-1/2"	214	38	73	98.5	127	81	120	220	14.2	2	4	18	14	70	50	9	7	F05-07
2"	232	50	82	120.7	152	86	126	220	15.9	2	4	18	14	70	50	9	7	F06-07

ASME CLASS 300LB

Size	L	H	2C	2W	2D	R	H1	E	T	F	R	D ₁	CP	A1	A2	B1	B2	ISO211
1/2"	150	15	35	86.5	98	53	80	140	14.3	2	4	18	9	42	36	6	6	F03-04
3/4"	166	20	43	82.6	117	57	90	140	15.9	2	4	18	9	36	36	7	6	F03-05
1"	182	25	51	88.8	124	72	108	170	17.5	2	4	18	11	36	42	7	6	F04-06
1-1/4"	208	32	64	98.8	134	77	116	170	18.1	2	4	18	11	70	42	9	6	F04-07
1-1/2"	235	38	73	114.3	156	81	126	220	20.7	2	4	22	14	70	50	9	7	F05-07
2"	262	50	82	127.0	165	86	126	220	22.3	2	4	18	14	70	50	9	7	F06-07

JIS 10K

Size	L	H	2C	2W	2D	R	H1	E	T	F	R	D ₁	CP	A1	A2	B1	B2	ISO211
15A	150	15	51	75	85	53	80	140	12	1	4	15	9	42	36	6	6	F03-04
20A	166	20	56	75	100	57	90	140	14	1	4	15	9	36	36	7	6	F03-05
25A	182	25	67	80	125	72	108	170	14	1	4	18	11	36	42	7	6	F04-06
30A	190	32	76	100	138	77	116	170	16	2	4	18	11	70	42	9	6	F04-07
40A	212	38	81	105	140	85	126	220	16	2	4	18	14	70	50	9	7	F05-07
50A	230	50	86	120	168	86	126	220	18	2	4	18	14	70	50	9	7	F06-07

Ball Valve

T10BM

1-PC Stainless Steel Ball Valve
Reduce Port, 1000WOG PN64

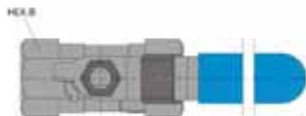
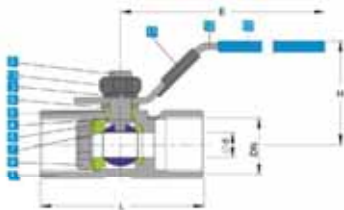
FEATURES:

- ◊Blow-out Proof Stem
- ◊Investment Casting Body
- ◊Pressure Balance Hole in Ball Slot
- ◊Reduce Port
- ◊Various Thread Standards Available
- ◊Locking Device Available **New Design**

STANDARD:

- ◊Design: ASME B16.34
- ◊Wall Thickness: 100% ASME B16.34, GB12224
- ◊Pipe Thread: ANSI B 1.20.1, BS 212779
DIN 259/2099, ISO 228
- ◊Face to Face Acc: DIN 3202-M3
- ◊Inspection & Testing API 598

No.	PARTS NAME	MATERIAL		
		CF8M	CF8	WC8
1	Body	CF8M	CF8	WC8
2	Stem	SS316	SS304	
3	Spring Washer		SS304	
4	Thrust Washer		PTFE	
5	Packing Gland		PTFE	
6	Washer		PTFE	
7	Ball	CF8M	CF8	
8	Ball Seat		PTFE	
9	End Plug	CF8M	CF8	WC8
10	Handle Cover		Plastic	
11	locking Device		SS301	
12	handle		Plastic	
13	Nut		SS301	



Unit:mm

DN	DN	L	H	E	HEX.B	End Thread
1/2"	5	35	37	75	17	BSPT
3/8"	7	44	36	65	21	
1/2"	8	39	42	80	20	BSPT
3/4"	12.5	65	45	65	20	
1"	15	72	54	110	30	DN
1 1/4"	20	77	59	150	40	
1 1/2"	25	84	63.5	160	50	WT
2"	32	100	75	190	60	

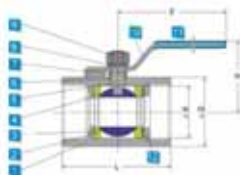
Ball Valve

QT10BM

1-PC Ball Valve 1000WOG,Reduce Bore

FEATURES:

- GB Standard
- Thread NPT,BSPBSPT,DIN
- 1000 WOG
- Forged Stainless Steel Body



Size	L	ØD	ØD	H	E
1/2"	80	10.5	33	63	120
3/4"	87	12	38	65	120
1"	73	18	43	70	120
1-1/4"	90	23	54	85	155
1-1/2"	88	25	65	88	155
2"	115	32	75	98	180



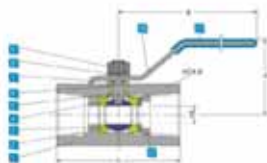
No.	PARTS NAME	MATERIAL
1	Body	SUS 316 SUS 304
2	Ball Seat	PTFE
3	Ball	SUS 316 SUS 304
4	Stem	SUS 316 SUS 304
5	Thrust Washer	PTFE
6	Stem packing	PTFE
7	Grant	SUS 304
8	Spring Washer	SUS 304
9	Stem Nut	SUS 304
10	Handle	SUS 304
11	Handle Cover	Plastic
12	End Plug	SUS 304

HT 10BM

1-PC Ball Valve Hexagon Type,Reduce Bore,2000WOG

FEATURES:

- GB Standard
- Thread NPT,BSPBSPT,DIN
- 2000 WOG
- Forged Steel Body



Size	L	ØD	H	E	HEX.B
1/2"	45	5	35	75	22
3/8"	48	6	36	75	25
1/2"	60	8	40	110	30
3/4"	65	12.5	42	110	38
1"	75	15	50	120	45
1-1/4"	90	20	50	130	50
1-1/2"	95	25	55	150	55
2"	110	32	70	150	70



No.	PARTS NAME	MATERIAL
1	Body	A105
2	Ball Seat	PTFE
3	Ball	CF8M CF8
4	Stem	SUS 316 SUS 304
5	Thrust Washer	PTFE
6	Stem packing	PTFE
7	Grant	SUS 304
8	Spring Washer	SUS 304
9	Stem Nut	A193-88
10	Handle	SUS 304
11	Handle Cover	Plastic
12	End Plug	SUS 304

Ball Valve

ET20BM

2-PC Stainless Steel Ball Valve
Full Port, 1000WOG, PN64 Economic Type

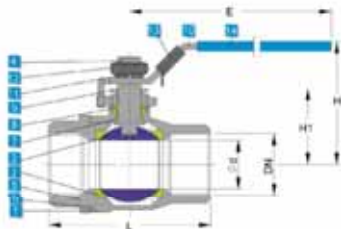
FEATURES:

- Blow-out Proof Stem
- Investment Casting Body
- Pressure Balance Hole in Ball Seat
- Full Port
- Various Thread Standard Available
- Locking Device Available **New Design**

STANDARD:

- Design: ASME B16.34, AP608
- Wall Thickness: 100%, ASME B16.34, GB12224
- Face to Face DN302-4M3
- Pipe Thread: ANSI B 1.20.1, BS 21:2779
- DIN 259/2999, ISO 228
- Inspection & Testing API 598

No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WCB
2	Ball	CF8M	CF8	
3	Ball Seat	PTFE		
4	Stem	SS316	SS304	
5	Cap	CF8M	CF8	WCB
6	Cap Seal	PTFE		
7	Thrust Washer	PTFE		
8	Stem packing	PTFE		
9	Grand Nut	SS301		
10	Handle	SS301		
11	Spring Washer	SS301		
12	Stem Nut	SS304		
13	Locking Device	SS301		
14	Handle Cover	Plastic		



Unit:mm

DN	Ø B	L	HT	H	E	Thread
1/4"	15.5	50	20.5	51.5	98	NPT MPT BSP BSP DN PT etc...
3/8"	18	60	25	58	98	
1/2"	19	75	28	64.5	120	
3/4"	20	80	30.5	67	120	
1"	21	90	33	71.5	130	
1 1/4"	32	115	44	85.5	150	
1 1/2"	38	120	54	98	170	
2"	58	140	63	107	170	
2 1/2"	63	180	80.5	133	230	
3"	78	200	91	143.5	250	
4"	100	240	118	175	305	

Ball Valve

2T20BM

2-PC Stainless Steel Ball Valve
Full Port, 2000 WOG, PN125

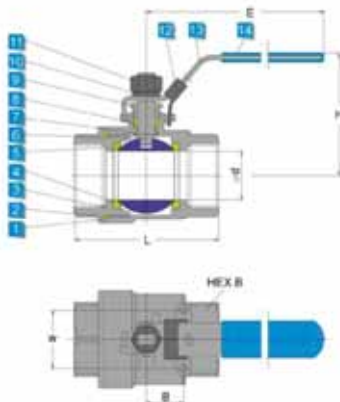
FEATURES:

- Blow-out Proof Stem
- Investment Casting Body
- Pressure Balance Hole in Ball Slot
- Full Port
- Various Thread Standard Available
- Locking Device Available **NEW DESIGN**

STANDARD:

- Design: ASME B16.34, AP608
- Wall Thickness: 100% ASME B16.34, GB12224
- Face to Face: DN320-M3
- Pipe Thread: ANSI B 1.20.1, BS 210779, DIN 2590/999, ISO 228
- Inspection & Testing: API 596

No.	PARTS NAME	MATERIAL		
		CF8M	CF8	WC8
1	Body	CF8M	CF8	WC8
2	Body Gasket	PTFE		
3	Cap	CF8M	CF8	WC8
4	Ball Seal	PTFE	RPTE	PEEK
5	Ball	CF8M	CF8	
6	Stem	SUS316	SUS304	
7	Thrust Washer	PTFE		
8	Stem Packing	PTFE	RPTE	
9	Stop Nut	SUS304		
10	Spring Washer	SUS304		
11	Stem Nut	A193-B8		
12	Locking Device	SUS301		
13	Pinch	SUS304		
14	Handle Cover	Pneil		



Size	L	D-F	H	E	W	B	Thread
1/4"	85	12.5	53	98	28.5	12.7	NPT BSP PT DN BSPT etc...
3/8"	85	12	53	98	28.5	12.7	
1/2"	82	15	58	120	28.5	12.7	
3/4"	72.5	20	68	120	34.8	22.1	
1"	81	25	75	150	34.8	22.1	
1-1/4"	95	32	80	190	38.1	23.8	
1-1/2"	105	38	90	170	38.1	23.8	
2"	120	48	100	170	38.1	23.8	
2-1/2"	160	60	120	250	55	38	
3"	178	70	145	260	55	38	

META

Ball Valve

HT200M , H3200M ,
H3203M

2-PC Stainless Steel Ball Valve Full Port,
1000WOG.PN64 (ISO-Direct Mounting Pad)

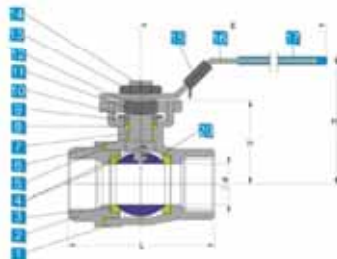
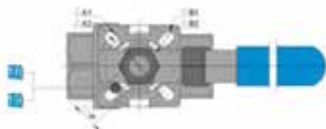
FEATURES:

- Blow-out Proof Stem
- Investment Casting Body and Cap
- Pressure Balance Hole in Ball Seat
- Full Port
- Various Thread Standard Available
- Locking Device Available. **New Design!**
- Anti-static Device For Ball-Stem Body

STANDARD:

- Design: ASME B16.34 AP608
- Wall Thickness: 100% ASME B16.34.GB12224
- Pipe Thread: ANSI B 1.20.1.BS 21/2779
DIN 259/2999/ISO 228
- Face to Face DIN3202-M3
- Inspection & Testing API 598

No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WCB
2	Cap	CF8M	CF8	WCB
3	Ball Seat	PTFE	RTFE	PEEK
4	Anti-Static Device	SUS 301		
5	Body Gasket	PTFE	RTFE	
6	Thrust Washer	RTFE	RTFE	
7	O-Ring	VITON	FKM	
8	V-Ring Packing	PTFE	RTFE	
9	Grand	SUS 304		
10	Bellville Washer	SUS 301		
11	Stop Nut	A194-6		
12	Stop Washer	SUS 304		
13	Stem Nut	SUS 304		
14	Stem	SUS 316	SUS 304	
15	Locking Device	SUS 301		
16	Handle	SUS 304		
17	Handle Cover	Plastic		
18	Locking Bolt	SUS 304		
19	Nut	SUS 304		
20	Ball	CF8M	CF8	



Unit:mm

Size	ΦA	L	H	H1	E	ΦA2	ΦA3	ΦA4	ΦA5	T/P	ISO211	HEX B	End
1/4"	13.5	50	28	50	98	36	42	8	8	9	F03-F04	21	NPT
3/8"	12	60	30	55	98	38	42	8	8	9	F03-F04	23.5	
1/2"	15	75	37	62	120	38	42	8	8	9	F03-F04	25	
3/4"	20	90	40	65	128	38	42	8	8	9	F03-F04	32	
1"	25	90	45	65	140	42	50	8	7	11	F04-F05	40	PT
1-1/4"	32	110	53	83	140	42	50	8	7	11	F04-F05	48	DN
1-1/2"	38	120	62	97	150	50	70	7	9	14	F05-F07	55	BSP
2"	48	140	70	108	180	50	70	7	9	14	F05-F07	68	END
2-1/2"	63	185	88	160	215	70	102	9	11	17	F07-F10	83	
3"	68	205	110	180	205	70	102	9	11	17	F07-F10	98	

Ball Valve

T00EM , 30EM ,
B00EM

3-PC Stainless Steel Ball Valve
Full Port, 1000WOG

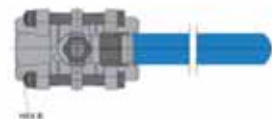
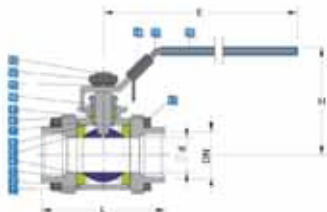
FEATURES:

- Blow-out Proof Stem
- Investment Casting Body
- Pressure Balance Hole in Ball Slot
- Full Port
- Anti-Satic Device upon request
- Various Thread Standard Available
- Locking Device Available **New Design**

STANDARD:

- Design: ASME B16.34, API 608
- Wall Thickness: 100% ASME B16.34, GR12224
- Pipe Thread: ANSI B 1.20.1 BS 21/2779,
DIN 258/2999, ISO 228
- Inspection & Testing: API 598

No.	PARTS NAME	MATERIAL		
		CF8M	CF8	WC8
1	Body	CF8M	CF8	WC8
2	Nut		SS304	
3	Cap	CF8M	CF8	WC8
4	Ball	CF8M	CF8	
5	Ball Seat	PTFE	RPTE	
6	Thrust Washer		PTFE	
7	Cap Gasket		PTFE	
8	Spring Washer		SS304	
9	Stem Packing		PTFE	
10	Nut Gland		SS304	
11	Spring Washer		SS304	
12	Nut		SS304	
13	Stem	SS304	SS316	
14	Locking Device		SS301	
15	Handle		SS304	
16	Handle Cover		Plastic	
17	Butt		SS304	



Butt Welding End



Socket End

Unit:mm

DN	L	H	E	L1	H1	L2	H2	H2.5	H2.5	H2.5	H2.5	THREAD
1/4"	60	15.5	51.5	66	70	14.2	70	12.5	18	19		NPT BSPT GSP DN PT etc...
3/8"	60	12	58	66	70	17.8	70	12.5	18	22		
1/2"	75	15	64.5	120	10	21.8	75	16	22.5	27		
3/4"	80	20	67	128	13	27.3	80	21	28	32		
1"	90	25	78.5	158	13	34	100	26	34.5	40		
1-1/4"	110	30	83.5	160	16	43.8	110	30	43	50		
1-1/2"	120	38	98	170	16	48.8	125	40	49	58		
2"	160	48	107	170	17	61.4	150	51	62	68.5		
2-1/2"	185	60	133	200	17	74	180	60	76.5	85		
3"	205	78	143.5	260	17	90	220	80	92	100		
4"	240	100	168	300	20	115.4	270	100	115.5	125		

META

Ball Valve

LT300EM , LB300EM,
LB300EM

3-PC Stainless Steel Ball Valve Full Port,
1000WOG.PN64 (ISO 5211 Mounting Pad)

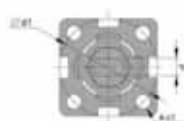
FEATURES:

- Blow-out Proof Stem
- Anti-Static Device for Ball Stem Body
- Pressure Balance Hole in Ball Slot
- Stem Slip Nut Instead of Belleville Washer for Long Life
- ISO 5211 Mounting Pad for Easy Automation
- Locking Device Spring Handle, **New Design**

STANDARD:

- Design ASME B16.34 API 608
- Wall Thickness EN12516-3
- Pipe Thread ASME B1.20.1 BS21
- DIN 2999/299 ISO228/1
- JIS B2003 ISO 711
- Butt Weld ASME B16.29(SCH 10,20,40)
- Socket Weld ASME B16.11
- Flange End ASME B16.5 CLASS 150/300
- DIN 2653 PN10-PN40
- JIS B2238 10K/20K
- Inspection & Testing API 598 EN 12266

No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WCB
2	Cap	CF8M	CF8	WCB
3	Ball	CF8M	CF8	
4	Ball Seat	PTFE	R17E	PEEK
5	Stem	SUS 316	SUS 304	
6	Nut		A193-B8	
7	Spring Washer		SUS 304	
8	Thrust Washer		PTFE	
9	O-Ring	VITON	FKM	
10	Stem Packing		PTFE	
11	Stop Nut		SUS 304	
12	Position Pin		SUS 304	
13	Spring Washer		SUS 304	
14	Stem Nut		A193-B8	
15	Locking Device		SUS 304	
16	Pin		Plastic	
17	Handle		SUS 304	
18	Handle Cover		Plastic	
19	Butt		SUS 304	



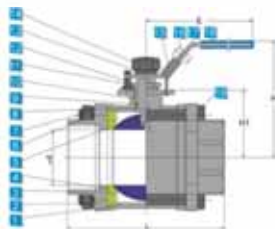
Butt Welding End



Socket End



Flange End PN10/PN16



Unit:mm

Size	DN	L	LB	LF	H	H1	S	R	C	D	N	R	LV	S	B1	B2	P	C2	Q2
1/4"	12.5	65	64	-	75	29	125	-	-	-	-	-	10	14	9.3	18	6	6	36
3/8"	12.5	65	64	-	75	29	125	-	-	-	-	-	10	18	12	18	6	6	36
1/2"	15.0	70	70	130	130	35	125	45	65	85	4	14	10	21	16	22	6	6	36
3/4"	20.0	75	85	150	85	37	135	68	78	105	4	14	14	27	21	28	6	6	36
1"	25.0	85	100	160	100	43	155	65	85	115	4	14	14	34	27	34	6	6	42
1.54"	32.0	105	115	180	100	50	165	78	100	140	4	18	16	40	35	43	6	6	42
1.52"	38.0	115	118	200	115	61	185	88	110	150	4	18	16	49	41	50	6	7	50
2"	50.0	135	145	230	120	68	185	102	125	165	4	18	17	61	53	61	6	7	50
2.52"	64.0	175	180	290	135	88	220	122	188	195	8	18	17	74	63	78	16	6	70
3"	75.0	195	213	310	149	96	220	138	199	200	8	18	17	80	78	90	16	6	70

Ball Valve

HT30BM, HS30BM,
HD30BM

3-PC Stainless Steel Ball Valve Full Port,
1000WOG, PN64 (ISO-Direct Mounting Pad)

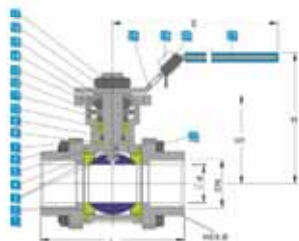
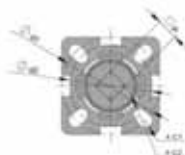
FEATURES:

- Blow-out Proof Stem
- Anti-Static Device for Ball-Stem-Body
- Pressure Balance Hole in Ball Slot
- O2 Belleville Washer to Self-adjust Packing
- ISO 5211 Direct Mounting Pad for Easy Automation
- Locking Device Spring Handle **New Design**

STANDARD:

- Design ASME B16.34, API 608
- Wall Thickness EN12516-3
- Pipe Thread ASME B1.20.1, BS21
DIN 2999/259 ISO228/1
JIS B0203 ISO 7/1
- Butt-Weld ASME B16.25(SCH 10, 20, 40)
- Socket Weld ASME B16.11
- Flange End ASME B16.5 CLASS 150/200
DIN 2653 PN10-PN40
JIS B2238 10K/20K
- Inspection & Testing API 598, EN 12266

No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WC8
2	Ball Seat	PTFE/PPTFE		
3	Anti-Static Device	SS304		
4	Cap	CF8M	CF8	WC8
5	Body Gasket	PTFE/PPTFE		
6	Spring Washer	SS304		
7	Nut	SS304		
8	Thrust Washer	PTFE		
9	O-Ring	VITON		
10	V-Ring Packing	PTFE/PPTFE		
11	Packing Gland	SS304		
12	Belleville Washer	SS301		
13	Stem Nut	A194-8		
14	Stop Cap	SS304		
15	Washer	SS304		
16	Stop Nut	SS304		
17	Stem	S31603/S316		
18	Handle	SS304		
19	Plastic Pin	Plastic		
20	Locking Device	SS301		
21	Handle Cover	Plastic		
22	Ball	SS304		



Unit:mm

DN	DN1	L	LB	LF	H	H1	E	DN11	DN12	DN13	DN14	DN15	DN16	DN17	DN18	DN19	DN20	DN21	DN22	DN23	DN24	F	F1
1/4"	10	50	70	-	75	26	98	42	38	8	8	9	10.6	18	14.2	-	-	-	-	-	-	-	-
3/8"	12	60	75	-	75	30	98	42	38	8	8	9	12.7	18	17.6	-	-	-	-	-	-	-	-
1/2"	15	75	75	130	75	37	120	42	38	8	8	9	15.8	22	21.8	41	85	90	4-14	2	14	-	-
3/4"	20	90	90	150	90	40	120	42	38	8	8	9	20.8	28	27.3	58	75	105	4-14	2	18	-	-
1"	25	90	100	180	90	49	140	50	42	7	8	11	26.7	34	34.0	68	88	115	4-14	2	18	-	-
1-1/4"	32	110	115	180	90	53	140	50	42	7	8	11	35.1	43	43.8	78	100	140	4-18	2	18	-	-
1-1/2"	38	120	125	200	100	62	150	70	50	9	7	14	40.0	50	48.0	88	110	150	4-18	3	18	-	-
2"	48	140	150	230	110	70	190	70	50	9	7	14	52.2	61	61.4	102	120	160	4-18	3	18	-	-
2-1/2"	60	160	190	190	130	88	235	102	70	11	9	17	62.7	70	74.0	122	145	185	4-18	3	18	-	-
3"	80	200	220	310	140	115	300	102	70	11	9	17	78	90	90.0	138	160	200	4-18	3	20	-	-
4"	100	240	270	350	175	130	300	102	70	11	9	22	102.4	115	115.4	158	180	220	8-18	3	20	-	-

Ball Valve

HT30BM , HS30BM ,
HD30BM

Full Port, 1000WOG, PN16/40 HT30BM ,
HS30BM , HB30BM (ISO-Direct Mounting Pad)

End Connections

many type of end connections are made to suit most customer requirements. The standard type are screwed, welded or flanged connections.

Screwed End

BSPT, NPT, BSPP, DIN 2999/258

Pipe Welding End

From SCH 5-80

Flanged End

Class 150/300 ANSI B16.5
DIN 3202-F1

Other End

available ends are Clamp-ends for Food industry,
Compression Fitting ends for Semiconductor industry,
Extended Pipe ends for Chemical industry,
Other ends are available on request.



Butt Weld



Socket Weld



Screwed



Flange



Extended tube



Clamp

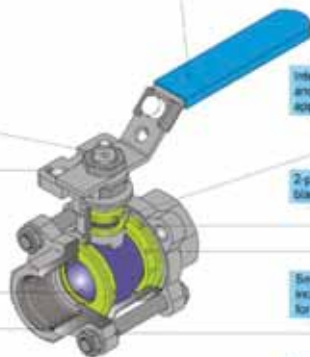
Strong enough handle indicating flow direction with optional locking device
Exactitude handle locking for ball and cap Centrally reduce pressure losing

Standard square stem
and standard length
for suitable actuator

High enough ISO
direct mounting pad
for easy assemble
Automation

High flow capacity
with avoiding pressure
reducing at full opening

Large range of end
connections for full
bore



Interchangeable seat stems
and seals for several
applications

2-pc seat design for pressure
balance in open and shut valve

Several type of ball seat
including metal seats
for control applications

More easy in-line repair
with swing out body

Ball Valve

2HT300M , 2H300EM ,
2HB300M

3-PC Stainless Steel Ball Valve Full Port,
1000WOG,PN64 (ISO-Direct Mounting Pad)

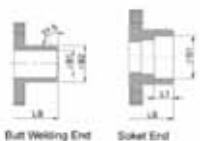
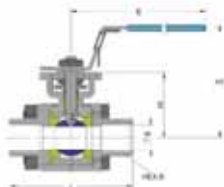
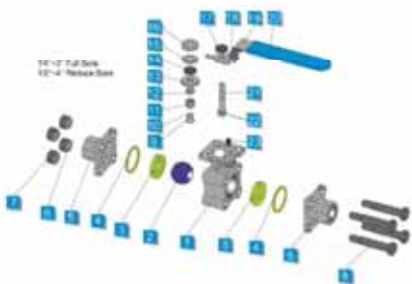
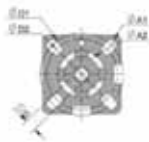
FEATURES:

- Blow-out Proof Stem
- Anti-Static Device for Ball-Stem Body
- Pressure Balance Hole in Ball Slot
- 2 Belleville Washer to Self-adjust Packing
- ISO 5211 Direct Mounting Pad for Easy Automation
- Locking Device Spring Handle **New Design**

STANDARD:

- Design: ASME B16.34, API 608
- Wall Thickness: EN12516-1
- Pipe Thread: ASME B1.20.1, BS21 DIN 2999/259 ISO228/1 JIS B0203 ISO 7/1
- Butt Weld: ASME B16.25/EN10.20.40
- Socket Weld: ASME B16.11
- Inspection & Testing: API 598, EN 12266

No.	PARTS NAME	MATERIAL
1	Body	CF8M, CF8, WCB
2	Ball	CF8M, CF8
3	Ball Seat	Reinforced PTFE
4	Cap Gasket	PTFE
5	Cap	CF8M, CF8
6	Spring Washer	SUS 304
7	Nut	SUS 304
8	Ball	SUS 304
9	Thrust Washer	PTFE
10	O-Ring	VITON
11	V-Ring Packing	Reinforced PTFE
12	Gland	SUS 304
13	Belleville Washer	SUS 301
14	Stop Nut	SUS 304
15	Stop Cap	SUS 304
16	Stem Washer	SUS 304
17	Stem Nut	SUS 304
18	Locking Device	SUS 301
19	Handle	SUS 304
20	Handle Cover	Plastic
21	Stem	SUS 316, SUS 304
22	Anti-Static Device	SUS 301
23	Stop Pin	SUS 301



Unit:mm

DN	250	150/200	150	100	75	50	40	30	20	15	10	8	6	5	4	3	2	1.5	1
1/4"	10.3	75	72	75	42	130	42	36	6	6	6	9	10.6	18	16.2	10			
3/8"	12.8	75	72	75	42	130	42	36	6	6	6	9	12.7	18	17.6	10			
1/2"	15	75	75	75	42	130	42	36	6	6	6	9	15.8	22	21.4	10			
3/4"	20	80	80	80	48.8	130	48	38	7	6	6	9	20.9	28	27.3	13			
1"	25	90	100	90	58.8	160	50	42	7	6	11	26.7	34	34.0	13				
1.1/4"	32	110	110	90	63	160	50	42	8	6	11	35.1	43	42.8	16				
1.1/2"	38	120	120	100	71.3	190	50	50	8	7	14	40.5	50	49.9	16				
2"	50	140	150	110	78	190	50	50	8	7	14	52.5	61	61.4	17				
2.1/2"	65	165	190	130	100	250	103	70	11	9	17	62.7	76	74.0	17				
3"	80	208	220	140	118	290	102	70	11	9	17	78	92	90.0	17				
4"	100		270	175	140	350	102		11		22	102.4	116	115.4	20				

Ball Valve

LT50BM

3-Way Stainless Steel Ball Valve Reduce Port.
1000WOG.PN54 (ISO 5211 Mounting Pad)

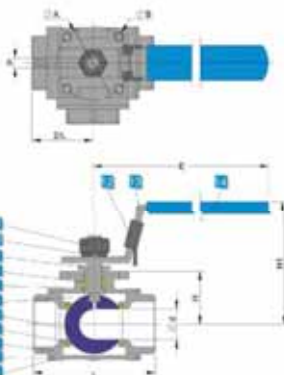
FEATURES:

- Blow-out Proof Stem
- Anti-Static Device for Ball-Stem Body
- Pressure Balance Hole in Ball Seat
- ISO 5211 Mounting Pad for Easy Automation
- Locking Device Spring Handle. [\[New Design\]](#)
- L-Port, T-Port Available
- 1/4" - 1-1/2" Full Bore, 1/2" - 2" Reduce Bore

STANDARD:

- Design: ASME B16.34, API 608
- Wall Thickness: EN12516-3
- Pipe Thread: ASME B1.20.1, BS21
DIN 2999/259, ISO225/1
JIS B0203, ISO 7/1
- Butt Weld: ASME B16.25, (SCH 10, 20, 40)
- Socket Weld: ASME B16.11
- Flange End: ASME B16.5 CLASS 150/300
DIN 2653 PN10-PN40
JIS B2238 10K/20K
- Inspection & Testing: API 598, EN 12268

NO.	PART NAME	MATERIAL	
1	Body	CF8M	CF8 WCB
2	Body Gasket	PTFE	
3	Cap	CF8M	CF8 WCB
4	Ball Seat	PTFE	RTFE PEEK
5	Ball	CF8M	CF8
6	Stem	SUS 316	SUS 304
7	Thrust Washer	PTFE	
8	Stem Packing	PTFE	PTFE
9	Stop Nut	SUS 304	
10	Spring Washer	SUS 304	
11	Stem Nut	SUS 304	
12	Locking Device	SUS 301	
13	Handle	A194-66	
14	Handle Cover	Plastic	



Unit:mm

Size	L	DN	H	H1	E	F	DA	DB	Thread
1/4"	50	8	32	60	120	7	38	M5	NPT
3/8"	50	8	32	60	120	7	38	M5	
1/2"	66	12	32	60	120	7	42	M6	
3/4"	78	15	38	68	140	9	42	M6	BSP
1"	90	20	45	78	150	9	50	M6	BSP
1-1/4"	105	25	48	85	150	11	50	M6	PT
1-1/2"	120	32	55	95	200	11	70	M6	DN
2"	140	40	68	105	200	12	70	M6	

Ball Valve

HT503M

3-Way Stainless Steel Ball Valve Reduce Port,
1000WOG,PN64 (ISO-Direct Mounting Pad)

FEATURES:

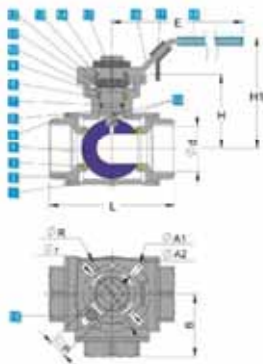
- Blow-out Proof Stem
- Anti-Static Device for Ball-Stem-Body
- Pressure Balance Hole in Ball Slot
- 2 Belleville Washer to Self-adjust Packing
- ISO B211 Direct Mounting Pad for Easy Automation
- Locking Device Spring Handle
- L-Port, T-Port Available **[New Design]**
- 1/4"-1-1/2" Full Bore, 1/2"-2" Reduce Bore

STANDARD:

- Design ASME B16.34, API 608
- Wall Thickness EN12516-3
- Pipe Thread ASME B1.20.1, BS21
DIN 2999/259 ISO228/1
JIS B0203 ISO 7/1
- Butt-Weld ASME B16.25(SCH 10,20,40)
- Socket Weld ASME B16.11
- Flange End ASME B16.5 CLASS 150/300
DIN 2653 PN10-PN40
JIS B2238 10K/20K
- Inspection & Testing API 598, EN 12266B



No.	PARTS NAME	MATERIAL		
1	Body	CF8M	CF8	WC8
2	Cap	CF8M	CF8	WC8
3	Seat	PTFE	RTFE	
4	Ball	CF8M	CF8	
5	Cap Gasket	PTFE		
6	Thrust Washer	PTFE		
7	O-Ring	Nitrile(NBR)		
8	V-Ring Packing	PTFE		
9	Gland	SUS 304		
10	Belleville Washer	SUS 301		
11	Stop Nut	A194-88		
12	Stop Washer	SUS 304		
13	Washer	SUS 304		
14	Stem Nut	SUS 304		
15	Stem	SUS 301	SUS 304	
16	Handle	SUS 304		
17	Locking Device	SUS 301		
18	Handle Cover	Plastic		
19	Anti-Static Device	SUS 301		



Unit:mm

DN	L	Ød	H	H1	E	Ø	ØP	ØR	Ø1	ØA1	ØA2	ISO 5211
1/4"	65	8	42	72	145	40	9	42	36	6	6	F03-F04
3/8"	65	8	42	72	145	40	9	42	36	6	6	F03-F04
1/2"	76	12	42	72	145	40	9	42	36	6	6	F03-F04
3/4"	80	16	49	80	145	44	9	50	36	7	6	F03-F05
1"	100	20	58.5	90	173	54	11	50	42	7	6	F04-F05
1-1/4"	110	25	62	96	173	62	11	70	42	6	6	F04-F05
1-1/2"	125	32	73.5	105	215	68	14	70	50	6	7	F05-F07
2"	145	40	82.8	110	215	82	14	70	50	6	7	F05-F07

META





1-PC, 2-PC, 3-PC Ball valve range end
Design Standard ASME B16.34

Face to Face Dflr F1F4F5F7

Investment Casting

Anti-Static Device

150LB/300LB/500LB/10K/20K

Gate Valve

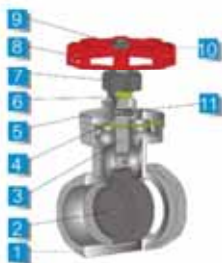
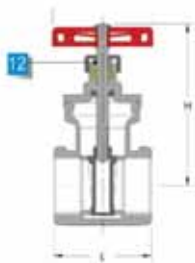
T 100M

Gate Valve 200 WOG Thread End

FEATURES:

- Pipe Thread NPT, BSPT/DIN239.
- DIN999/ISO 228
- Class 200 WOG
- Investment Casting Body and Cap
- Non-raising Stem Design
- Metal Sealing

No.	PARTS NAME	MATERIAL	
1	Body	CF8M	CF8
2	Disc	CF8M	CF8
3	Stem	SS304	SS316
4	Body Gasket	PTFE	
5	Cap	CF8M	CF8
6	Stem Seal	PTFE	
7	Stop Nut	CF8M	CF8
8	Handle	Aluminium	
9	Stem Nut	SS304	
10	Washer	SS304	
11	Stop Gasket	SS304	
12	Clend	SA304	



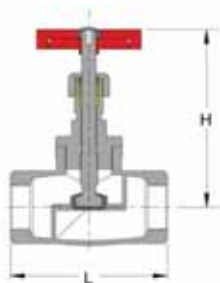
Unit:mm

Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80
L	65	80	85	75	85	95	115	130
H	96	105	115	130	145	170	210	230
WE	70	75	80	80	85	95	125	125

META

FEATURES:

- Metal Seal
- Pipe Thread NPT, BSPT
DN259, DN299,
- ISO 226 Class A
- Class 200 WOG
- Investment Casting Body
- Wheel Handle Operate



No.	PARTS NAME	MATERIAL	
1	Body	CF8M	CF8
2	Disc	CF8M	CF8
3	Cap	CF8M	CF8
4	Body Gasket	PTFE	
5	V-Ring Packing	PTFE	
6	Cap Nut	CF8M	
7	Gland	SUS304	
8	Stem	SUS218	SUS304
9	Washer	SUS304	
10	Stem Nut	SUS304	
11	Wheel Handle	Aluminum	



Unit:mm

Size	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
	DN6	DN10	DN15	DN20	DN25	DN32	DN40	DN50
L	65	65	80	80	90	100	120	140
H	80	80	80	90	100	120	130	150
E	70	70	70	70	80	80	95	95

Needle Valve

T10NM

Stainless Steel Needle Valve 6000PSI

FEATURES:

- Metal-to-metal Seat
- Above 6000PSI Pressure
- NPT Screw End
- Threaded End: ANSI B1.20.1
DIN259/DIN21999
BSP/PT

No.	PARTS NAME	MATERIAL	
1	Body	SUS 316	SUS 304
2	Stem	SUS 316	SUS 304
3	Gasket	RPTFE	VITON
4	Stem Packing	VITON	FKM
5	Cap Bonnet	SUS 316	SUS 304
6	Cap Cover	Plastic	
7	Inset Screw	SUS 304	
8	Handle	SUS 304	



Unit:mm

Size	ØDN	L	L1	B	H	E
1/8"	10.8	58	29	10	90	60
1/4"	14.1	58	29	10	90	60
3/8"	17.8	58	29	10	90	60
1/2"	21.8	60	32.5	13	95	70
3/4"	27.2	70	35	13	100	75
1"	34.1	80	40	13	110	85

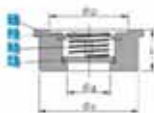
Check Valve

SF 102M

Single Plant Wafer Check Valve PN10-40

FEATURES:

- Investment Casting Body
- Flange Standard PN10/25/40 ANSI #150/#300
- Viton Sealing And Metal Sealing Available
- Material CF8M/CF8/SS316/SS304/1.4408/1.4301
- Maximum Working Temperature 400 C



No.	PARTS NAME	MATERIAL	
1	Body	CF8M	CF8
2	Stop Cap	SUS 316	SUS 304
3	Spring	SUS 304	
4	Disc	CF8M	CF8

Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
L	19	19	22	28	32	40	49	60	80	106
#1	15	20	20	32	40	50	62	77	91	138
#1	43	51	57	74	82	91	112	126	160	217
#D	25	42	46	62	71	80	100	112	135	196
F	45	55	65	76	86	100	118	135	165	
#B	53	62	73	84	94	106	126	144	184	221

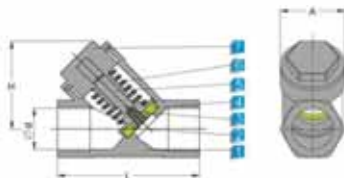


T202M

Y-Type Spring Check Valve Class 200

FEATURES:

- Investment Casting Body
- Spring Type
- Viton Sealing And Metal Sealing Available
- Material CF8M/CF8/SS316/SS304/1.4408/1.4301
- Maximum Working Temperature 400 C



No.	PARTS NAME	MATERIAL	
1	Body	CF8M	CF8
2	Washer	SUS 304	
3	Screw	GB718	
4	Disc	PPTE	METAL SEAL
5	Flare	SUS 316	SUS 304
6	Spring	SUS 304	
7	Cap	CF8M	CF8

Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
L	65	75	90	110	120	140
#1	15	20	25	32	36	45
H	44.7	52.1	55.7	70	78.5	95.5
A	31	35	45	52	61	72



META

Check Valve

SF30ZM

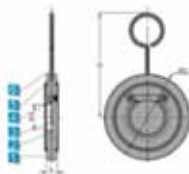
Single Door Check Valve PN10-40

FEATURES:

- Investment Casting Body
- Flange Standard PN10/25/40
- Viton Sealing And Metal Sealing Available
- Material CF8M/CF8/SS316/SS304/1.4408/1.4301
- Maximum Working Temperature: -20-520 C

No.	PARTS NAME	MATERIAL	
1	Body	CF8M	CF8
2	Flange Seal	VITON	FKM
3	Disc	SUS 316	SUS 304
4	Ball	SUS 304	
5	O-Ring	VITON	
6	Handle	SUS 304	

Size	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"
#B	30	40	52	72	93	115	137	156	230
L	19	19	19	19	19	19	28	29	36
ΦC	108	126	143	163	183	215	274	329	380
H	105	120	145	180	170	195	260	300	320



T40ZM

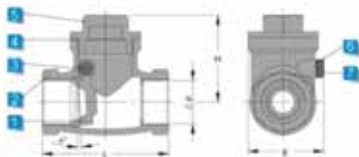
Swing Check Valve Class 200

FEATURES:

- Investment Casting Body
- Swing Type
- Viton Sealing And Metal Sealing Available
- Material CF8M/CF8/SS316/SS304/1.4408/1.4301
- Maximum Working Temperature: 400 C

No.	PARTS NAME	MATERIAL		
1	Disc	CF8M	CF8	WC8
2	Body	CF8M	CF8	WC8
3	Pin	SUS 316	SUS 304	
4	Seat	PPT8		
5	Cap	CF8M	CF8	WC8
6	Washer	SUS 304		
7	Ball	SUS 304		

Size	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
L	65	85	85	85	85	105	120	139	181	200
#B	6	12	15	20	25	32	40	50	65	80
H	43	43	43	50	60	66	75	80	99	104
C	47	47	47	56	64	64	76	84.5	117	152



META

Strainer

T103M

Y-Type Strainer PN10-40,600WOG

FEATURES:

- Face to face DN3202-M3
- Design Standard: ANSI B16.10
- Testing Standard: API 598, EN 12268
- Pipe Thread: ASME B1.20.1, BS21
DN 259/2999, ISO 228/1
JIS B0203, ISO 7/1



No.	PARTS NAME	MATERIAL	
1	Cap End	CF8M	CF8
2	Filter Screen	SUS 304	
3	Cap Gasket	PTFE	
4	Body	CF8M	CF8

Size	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
	DN8	DN10	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80
L	50	60	65	75	90	110	120	140	165	205
gDN	6	10	15	20	25	32	38	48	65	80
end	6	10	15	20	25	32	40	50	65	80
H	42	42	44.7	52.1	60.7	70	79.5	95.5	105	110

WZ-01TV

Swing Check Valve Class 200

FEATURES:

- Design Standard: ANSI B16.10
- Investment Casting Body and Cap
- Testing Standard: API 598, EN 12266
- Metal to Metal Sealing Available

No.	PARTS NAME	MATERIAL	
1	Body	CF8M	CF8
2	Cap	CF8M	CF8
3	Seat	PTFE	VITON
4	Disc	CF8M	CF8
5	Gasket	PTFE	
6	Spring	SUS 304	



Unit:mm

Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
gH	15	20	25	32	38	50
L	50	70	82	98	102	115

META

Gate Valve

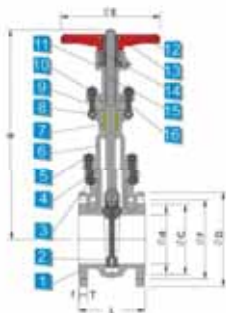
F10AGM , F10JOM

Gate Valve 10K/150LB Flange End

FEATURES:

- Face to Face: JIS B2002
- ANSI B16.10
- Flange End Standard: JIS B2239
- ANSI B16.5
- Design Standard: ANSI B16.34
- Testing Standard: API 598
- Investment Casting Body and Capsign

No.	PARTS NAME	MATERIAL	
		CF8M	CF8
1	Body	CF8M	CF8
2	Disc	CF8M	CF8
3	Nut	193-B8	
4	Gasket	PTFE	
5	Bolt	193-B8	
6	Bonnet CF8M CF8	CF8M	CF8
7	Stem Packing	PTFE	
8	Hinge Pin	SUS 304	
9	Eye Bolt	SUS 304	
10	Nut	193-B8	
11	Sleeve	Brass	
12	Wheel Handle	PCD	
13	Stem Nut	SUS 304	
14	Gland	SUS 304	
15	Stem	SUS 316	SUS 304
16	Gland	SUS 304	



Unit:mm

Size	D ₁	L	H	D ₂	10K		150LB		10K		150LB		10K		150LB	
					CF8M	CF8	CF8M	CF8	CF8M	CF8	CF8M	CF8				
1/2"	19	55	108	180	120	31	39	70	60.5	85	89	12	12.5	5	5.6	
3/4"	20	70	117	194	128	36	43	75	75	100	98	14	12.1	5	5.6	
1"	25	75	127	215	170	47	51	90	79.5	125	128	14	12.1	5	5.6	
1.50"	32	90	140	295	200	56	64	100	89	135	137	16	12.7	5	5.6	
1.50"	40	90	165	295	200	61	75	105	96.5	140	127	16	14.5	2	1.6	
2"	50	90	178	338	250	66	92	120	120.5	155	152	16	15.5	2	1.6	
2.5"	65	95	190	393	260	78	106	140	136.5	175	175	18	17.5	2	1.6	
3"	80	95	203	467	290	126	127	168	162.8	185	190	18	18.1	2	1.6	
4"	100	100	229	549	290	151	157	175	190.5	210	220	18	23.9	2	1.6	
5"	125	125	264	630	300	182	186	210	218	250	254	20	23.6	2	1.6	
6"	150	150	267	750	300	212	218	240	241.5	290	279	22	25.4	2	1.6	
8"	200	200	292	915	350	282	270	290	298.5	330	343	22	28.6	2	1.6	
10"	250	250	330	1090	400	324	324	355	362	400	406	24	30.2	2	1.6	
12"	300	300	396	1290	400	368	381	400	432	440	483	24	31.8	3	1.6	

META

META

ST PART ROTATION

Cast iron body gear box



ST part rotary valve manual actuator

ST series gear box, cast iron body. Durable structure, up to the industrial grade requirements. This series is a 90° part rotary manual driving device. It is suitable for ball valves, butterfly valves, plug valves and so on. Box with precision casting, attractive design, beautiful appearance. Using worm gear and worm to drive, worm gear with good self-locking function, internal with high performance thrust bearing to make the drive more flexible and high efficiency. The connect part of worm gear and valve stem all used in ISO5211 international standards, more convenient for valve installation. Protection grade is IP67. It can also reach IP68 under special environment. Actuator is widely used in chemical, industry, power plant, water plant, HVAC equipment and most industrial fields.



Products characteristics:

- Cast iron body (durable cast iron for your choice)
- The box is totally sealed, internal is based on the grease filling to extend the service life
- Protected steel input shaft (stainless steel for your choice)
- Durable structure
- Axial needle roller bearing
- Stroke: 90° (+/-5°) Mechanical limit

Working environment instructions:

- Shell protection Ordinary type: IP67 seal, applicable to the standard environment
- -20° ~ +120° environment for use
- Special coating (for your choice) suitable in extreme working environment and marine environment.

META

ST PART ROTATION



Material instruction

No	Name	Material	No	No	Name	Material	No
1	Hub	Grey cast iron	GG25/ASTM A48/PC20	6	Cap	Engineering Plastic	Engineering Plastic
2	Gasket	Sealed paper	PAPER	10	Worm	Carbon steel	GG40/ASTM 1045/SC
3	O ring	NBR	NBR	11	Needle bearing	Hardening steel	-
4	Worm gear	Ductile cast iron	GG40/ASTM D16-4/18PC340	12	Worm shaft	Carbon steel	GG40/ASTM 1045/SC
5	Box cap	Grey cast iron	GG25/ASTM A48/PC20	13	Hand wheel	Cast iron	Cast iron
6	Indicator	Cast iron (engineering plastic for your choice)	-	14	Limiting screw	Steel	-
7	Pin	Spring steel	-	15	Limiting nut	Steel	-
8	Pin axle	Stainless steel	SUS304				

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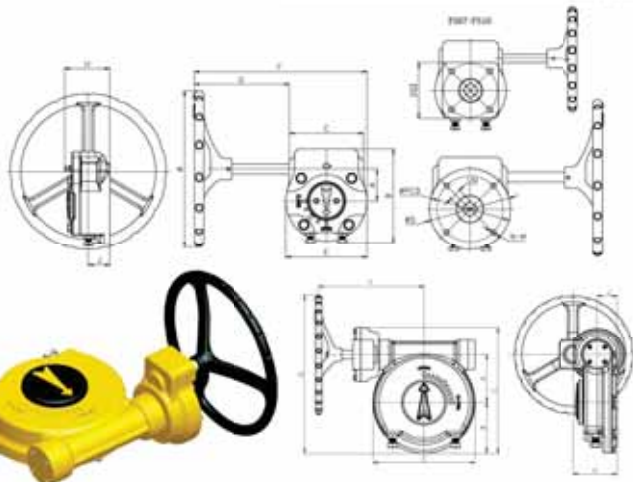
ST PART ROTATION

Dimension

Model	A	B	C	E	F	G	H	J	Ø
ST07	42	127	96	95	218	128	70	35	150
ST10	60	168	120	135	273	143	84	41	200
ST12	60	178	140	155	320	182	85	41	300
ST14	78.5	228	160	190	442	267	109	51	400
ST16	122	273	214	248	430	218	107	53	400

Connecting dimension

Model	Wash pipe outside □/Q	PCD Ø	The hole number - dia	Flange outer diameter ØD	Number of flange [D1/D2]	Speed RPM	Output torque Nm	Input torque Nm	Weight kg
ST07	□14	70	4-Ø8	70□	F07	40:1	235	25	3.4
ST10	□22	102	4-Ø10	100□	F10	36:1	570	60	7.8
ST12	□27	125	4-Ø12	150	F12	36:1	930	90	10
ST14	□36	140	4-Ø16	180	F14	30:1	1400	110	18.3
ST16	Ø63-Ø75	165	4-Ø20	210	F16	70:1	2600	150	27
ST18	Ø63-Ø75	165	4-Ø20	210	F16	140:1	5200	150	33
ST20	Ø63-Ø80	254	4-Ø16	300	F25	207:1	6000	155	65



Dimension

Model	A	B	C	E	F	G	H	J	Ø
AZ20	160	170	420	240	351	528	145	66	400

Connecting dimension

Model	Wash pipe outside □/Q	PCD Ø	The hole number - dia	Flange outer diameter ØD	Number of flange [D1/D2]	Speed RPM	Output torque Nm	Input torque Nm	Weight kg
AZ20	Ø91-Ø95	254	4-Ø16	300	F25	207:1	6000	155	65



Material instruction

No	Name	Material	Note
1	Worn gear box base	Ductile Cast iron	ASTM 65-45-12PCD4
2	O-ring	NBR	NBR
3	Worn gear	Ductile Cast iron	GG70/ASTM D100-70-01/PCD70
4	Gasket	Sealed paper	PAPER
5	Limiting screw	Steel	-
6	Worn gear box	Ductile Cast iron	ASTM 65-45-12PCD4
7	Indicator	Cast iron(Engineering Plastics for your choice)	-
8	Hand wheel	Cast iron	CAST IRON
9	Gear box cap	Grey Cast iron	GG29/ASTM A39FC2
10	Gasket	Sealed paper	PAPER
11	Copper bush	Copper	BC6
12	Input gear shaft	Carbon steel	C45/ASTM 1045/SAE
13	Flat key	Carbon steel	C45/ASTM 1045/SAE
14	Gear	Carbon steel	C45/ASTM 1045/SAE
15	Copper bush	Copper	BC6
16	Gear box	Grey Cast iron	GG29/ASTM A39FC2
17	Bearing	Bearing steel	-
18	Worn gear	Carbon steel	C45/ASTM 1045/SAE
19	Lock cap	Carbon steel	C45/ASTM 1045/SAE
20	Side cap	Carbon steel	C45/ASTM 1045/SAE

MHT SERIES

Cast iron body clutch type valve worm gear box

MHT series manual clutch type valve worm gear box

MHT series gear box, ductile cast iron body, durable structure. This series is a 90° part rotary manual drive device. This series only design for pneumatic actuator is widely used for pneumatic butterfly valve which is rotated 90° ball valve and plug valve in the system installation, commissioning and when the system loss of gas and power, it will converted into a manual operation device. The MHT series manual clutch worm gear box can also add security control function of the total gas source, and the valve control can be operated much safer. This is the indispensable part of the pneumatic valve control system, it's designed and manufactured according to the ISO5111 standard, with a reasonable structure and reliable performance.

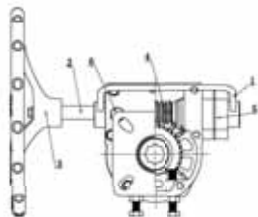


Products characteristics:

- Totally sealed box, internal is based on the grease filling to extend the service life.
- Protected steel input shaft (stainless steel for your choice)
- Ductile cast iron shell, durable structure.
- Stroke 0-90° (+/-5°) Mechanical limit.
- Convertion conversion, with the limit pin, state decelerating device 1/2" the limit pin spacing automatically to pneumatic. On the contrary, to manual.
- It can be installed total gas source security control functions.

Working environment instructions:

Shell protection Ordinary type: IP67 seal, applicable to the standard environment, -20°~ +120° use environment special coating (for your choice) suitable in extreme working environment and marine environment.



Structure and material

No	Name	Qty	Material
1	Handle	1	Stainless steel 316/304
2	Worm shaft	1	Carbon steel 45 54SiCrNi2 1945
3	Hand wheel	1	Ductile iron FC24Si/ASTM15-45-12
4	Worm	1	Carbon steel 45 54SiCrNi2 1945
5	Air source valve	1	High-quality aluminum alloy
6	Limiting screw	1	Brass
7	Worm gear	1	Ductile iron FC27SiGG70/ASTM D100-70-01
8	Cap	1	Ductile iron FC24Si/ASTM15-45-12
9	Body	1	Ductile iron FC24Si/ASTM15-45-12

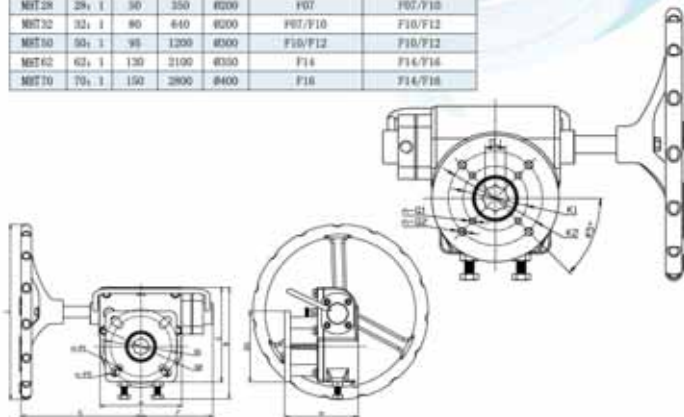
MHT SERIES

Connection data

Model	Flange connection data									
	□ J	K1	K2	h-Q1	h-Q2	D1	D2	n-P1	n-P2	
MHT 40	17	Ø50	Ø70	± 96	± 98	Ø50	Ø70	± 47	± 49	
MHT 28	22	Ø70	-	± 98	-	Ø70	Ø102	± 49	± 51	
MHT 32	22	Ø70	Ø102	± 98	± 100	Ø102	Ø125	± 49.1	± 51.4	
MHT 50	27	Ø102	Ø125	± 93	± 93	Ø102	Ø125	± 49.1	± 51.4	
MHT 62	26	Ø140	-	± 93.6	-	Ø140	Ø165	± 49.8	± 52.2	
MHT 70	40	Ø165	-	± 93	-	Ø160	Ø185	± 49.8	± 52.2	

Model	Dimension							
	A	B	C	E	F	□ G	H	
MHT 40	85	130	110	148	59	70	99	
MHT 28	112	173	145	190	115	110	114	
MHT 32	138	188	160	202	122	120	124	
MHT 50	150	206	165	204	128	120	135	
MHT 62	175	253	210	230	138	140	139	
MHT 70	241	340	280	328	148	140	184	

Model	Speed ratio	Torque (Nm)		Rated speed n	Valve connection	Actuator connection
		Input	Output			
MHT 40	40:1	30	300	Ø100	F06/F07	F06/F07
MHT 28	28:1	30	350	Ø200	F07	F07/F10
MHT 32	32:1	80	640	Ø200	F07/F10	F10/F12
MHT 50	50:1	95	1200	Ø300	F10/F12	F10/F12
MHT 62	62:1	130	2100	Ø350	F14	F14/F16
MHT 70	70:1	150	2800	Ø400	F16	F14/F16





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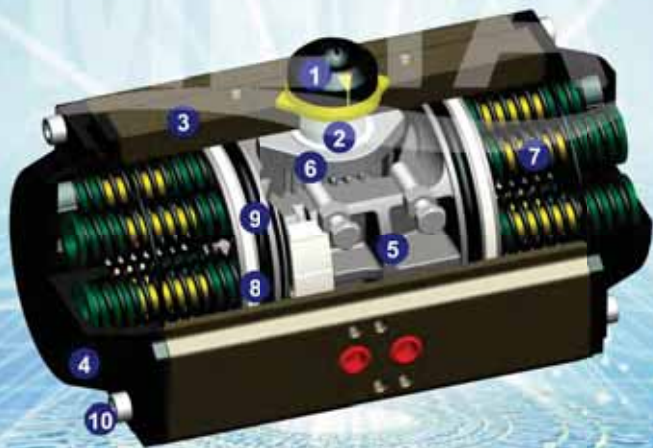
PNEUMATIC ACTUATORS



Future success belongs to the quality leader

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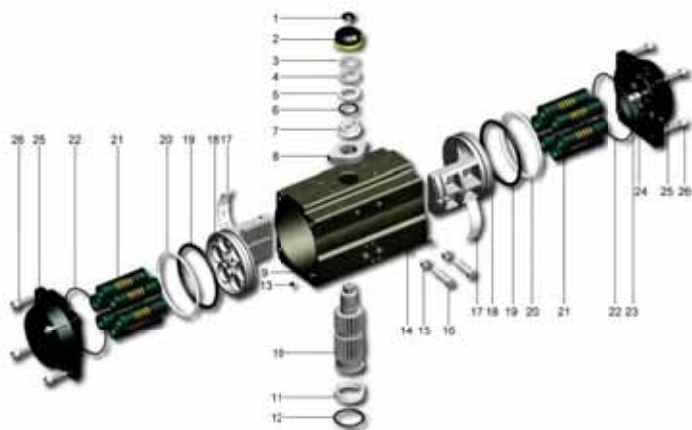
PRODUCT STRUCTURE





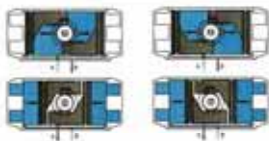
- Indicator**
In field visible indicator and standard socket in accordance to VDI/VDE3845, NAMUR could be installed and export all the accessories such as limit switch cabinet electric localizer and position sensor.
- Prion**
The prion is high-precision and integrative, made from nickelled-alloy steel, full conform to the latest standards of ISO5211, DIN3337, NAMUR, The dimensions can be customized and the stainless steel is available.
- Actuator Body**
The extruded cylinder body is made of high quality aluminum alloy with fine machined socket and hard anodized outer surface(anodisation would be provided at special occasion + teflon coating) proloing the service life and lower the coefficient of friction.
- End caps**
Die-casting aluminum powder polyester painted in different colours, Or can be sprayed PTFE coating.
- Pistons**
The twin rack pistons are made from Die-casting aluminum treated with Hard anodized or made from Cast steel with galvanization. Symmetric mounting position, long cycle life and fast operation, reversing rotation by simply inverting the pistons.
- Travel adjustment**
The two independent external travel stop adjustment bolts can adjust $\pm 5^\circ$ at both open and close directions easily and precisely.
- High performance springs**
Preloaded coating springs are made from the high quality material for resistant to corrosion and longer service life, which can be demounted safely and conveniently to satisfy different requirements of torque by changing quantity of springs.
- Bearings & Guides**
Made from low friction, long-life compound material, to avoid the direct contact between metals. The maintenance and replacement are easy and convenient.
- O-rings**
NBR rubber O-rings provide trouble-free operation at standard temperature ranges, For high and low temperature applications Viton or Silicone.
- fasteners**
All the fasteners are made of stainless steel to be resistant to corrosion for a long time.

Parts and material



No	Description	Qty	Standard Material	Position	Optional Material
1	Indicator Screw	1	Plastic		
2	Indicator	1	Plastic		
3	Spring Clip	1	Stainless Steel		
4	Thrust Washer	1	Stainless Steel		
5	Outside Washer	1	Engineering Plastic		
6	O-ring (pinion top)	1	NBR		Viton/Silicone
7	Inside Washer	1	Engineering Plastic		
8	Cap	1	Alloy Steel	Nickel plated	Stainless Steel
9	Body	1	Extruded aluminum alloy	Hard anodized (or) (see anodized by PTFE)	Stainless Steel
10	Pinion	1	Alloy Steel	Nickel plated	Stainless Steel
11	Bearing (pinion bottom)	1	Engineering Plastic		
12	O-ring (pinion bottom)	1	NBR		Viton/Silicone
13	Plug	2	NBR		Viton/Silicone
14	O-ring (Adjust screw)	2	NBR		Viton/Silicone
15	NUT (Adjust screw)	2	Stainless Steel		
16	Adjust screw	2	Stainless Steel		
17	Guide (pinion)	2	Engineering Plastic		
18	Plate	2	Cast aluminum (anodized)	anodized (or) polished	Stainless Steel
19	O-ring (pinion)	2	NBR		Viton/Silicone
20	Bearing (pinion)	2	Engineering Plastic		
21	Spring	0-12	Spring steel	Dip coating	
22	O-ring (End cap)	2	NBR		Viton/Silicone
23	Locking screw	2	Stainless Steel		
24	Locking nut	2	Stainless Steel		
25	End cap	2	Cast aluminum	Pre-der polytetra painted on	Stainless Steel
26	Cap screw	6	Stainless Steel		

Operating principle of DA double acting type

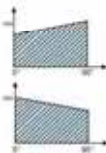
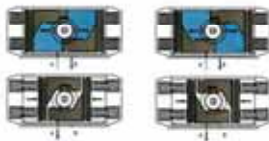


When the air source pressure comes into the cylinder body between the two pistons from air entrance (A) and pushes the pistons toward the end of the cylinder body, the air between the pistons and the ends of the cylinder body is released from air entrance (B), meanwhile the pistons drive the output shaft anticlockwise rotate ($0^{\circ} - 90^{\circ}$).

The same, when air source pressure comes into the ends of the cylinder body from air entrance (B) and pushes the pistons toward each other with the air between two pistons released from air entrance (A), the output shaft gear wheel would be driven by the racks of the pistons simultaneously to rotate clockwise ($90^{\circ} - 0^{\circ}$).

If the pistons are assembled in different direction from each other, the output shaft would turn out to rotate inverse direction, namely the double acting reverse "CCW" type.

Operating principle of SR single acting type

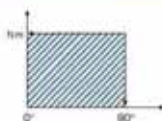


When the air source pressure comes into the cylinder body between the two pistons from air entrance (A) and pushes the pistons toward the end of the cylinder body while the springs at each end inside the cylinder body is forced to shrink with the air between the pistons and the ends of the cylinder body released from air entrance (B), in the meantime, the racks of pistons drive the output shaft gear wheel simultaneously to rotate anticlockwise ($0^{\circ} - 90^{\circ}$).

When Actuators is in loss of air. The two pistons of cylinder moved to the middle direction by elasticity of the spring. Then the air in the middle space outed from port (A). Make the two pistons rack synchronized driving the two output shaft clockwise rotate ($90^{\circ} - 0^{\circ}$).

If the pistons are assembled in different direction from each other, the output shaft would turn out to rotate in inverse direction, namely the double acting reverse "CCW" type.

Output torque of double acting actuators



Unit : Nm

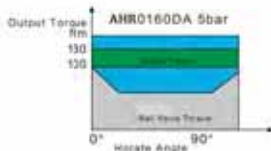
Model	Air Supply Pressure (Unit: Bar)									
	2	2.5	3	4	4.5	5	5.5	6	7	8
AHR0200A	8	10	12	16	18	20	22	24	28	32
AHR0300A	15	18	22	29	33	36	40	44	51	58
AHR0400A	20	25	30	40	45	50	55	60	70	80
AHR0500A	31	39	47	63	70	78	86	94	110	125
AHR0700A	45	56	68	90	102	113	124	135	158	181
AHR0900A	66	83	99	132	149	166	182	198	231	264
AHR01000A	100	125	150	200	225	251	276	301	361	401
AHR01300A	171	214	256	342	385	427	470	512	599	684
AHR06000A	296	372	458	612	698	784	870	956	1144	1294
AHR10000A	426	532	638	851	958	1064	1170	1277	1490	1702
AHR12000A	532	665	798	1064	1197	1330	1463	1596	1892	2128
AHR18000A	768	962	1154	1539	1731	1924	2118	2308	2691	3078

The model of the double acting actuators

An increment should be added to the identified valve torque for safe when select the pattern of the pneumatic actuator. For vapor or non-lubricant liquor medium, the increment should be up to 25% of the valve torque, 30% for non-lubricant pasting liquor medium, 40% for non-lubricant dry air medium, 60% for non-lubricant particle medium delivered by air and 20% for lubricating clean medium with low friction respectively, (the safe increment above is recommended in theory for reference).

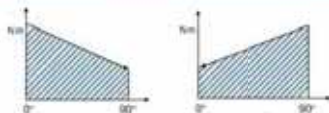
Example:

- The torque needed by valve= 100Nm
- The torque considered safety factor (1+30%) = 130N • m
- Air Supply=5Bar
- According to the above table, we can choose the minimum model is **AHR01600A**



Note: Make sure that the torque necessary to operate the valve is compatible with the actuator torque (it depends on both actuator type and air supply). please note that the requested torque depends not only on the valve, but also on the working conditions and the safety margins of the plant, too.

Output torque of spring return actuators



Air pressure		Output torque of air to springs																Unit Nm		
		3 Bar		5 Bar		8 Bar		10 Bar		15 Bar		20 Bar		25 Bar		30 Bar		Spring	Output	
Model	Spring Qty.	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° End	Start	
AHR0050	K0	6.8	3.9	7.9	4.9														6.2	4.2
	K8	5.0	2.6	7.0	4.0	11.1	8.7												7.5	5.1
	K7	6.1	3.3	6.2	3.8	10.2	7.4	14.2	11.4										8.2	5.8
	K9			5.2	3.1	3.4	6.2	13.8	10.2	8.8	10.8	13.0			20.6	17.0			10.0	8.8
	K10			4.8	2.9	7.7	3.7	11.3	7.7	15.7	11.7	18.9	15.9						11.2	7.3
	K11					6.0	2.4	10.0	6.4	14.9	10.0	18.9	14.3	21	18.2				13.7	9.2
K12								10.0	3.2	14.0	9.2	18.1	13.3	22.1	17.3			15.0	10.2	
AHR0100	K0	10.9	7.2	14.9	10.7	21.8	17.8												10.6	6.9
	K8	9.0	5.0	13.1	8.6	20.2	15.7	27.3	22.8										12.7	8.2
	K7	8.2	2.9		6.5	18.9	13.6	26.0	20.7										14.9	9.6
	K9			10.4	4.4			24.9	18.4	31.7	26.7	36.4	31.4						17.9	11.2
	K10					16.1	9.4			23.2	18.0	27.5	26.7						19.1	13.3
	K11					13.7	7.2	21.0	14.2	29.2	21.5	36.1	28.6	43.2	35.7				21.2	13.7
K12									20.3	12.1	27.6	19.7	34.7	26.4	41.8	33.6	51.3	43.0	23.3	15.1
K13									18.1	10.1	26.2	17.2	32.3	24.3	40.5	31.4		25.5	16.4	
AHR0150	K0	14.0	10.0	19.7	15.0	29.8	23.7												14.6	10.5
	K8	13.5	7.7	17.6	12.7	27.7	20.8	37.7	30.9										17.9	12.7
	K7	10.4	4.7	13.9	9.0	25.5	19.9	35.6	29.9										20.3	14.9
	K9			13.0	6.9	23.5	18.0	33.5	27.8	43.6	37.1	53.7	47.2						22.4	16.9
	K10					21.3	14.0	31.4	24.1	41.3	34.2	51.5	44.2						26.3	19.0
	K11					19.2	11.1	28.3	21.2	38.4	31.2	46.5	41.3	58.5	51.4				28.2	21.1
K12									27.2	18.2	37.3	28.3	47.3	38.4	57.4	48.3		32.3	23.2	
K13									23.1	15.2	30.1	23.4	35.2	28.3	45.3	38.3		35.3	26.3	
AHR0200	K0	21.8	15.2	26.0	21.0	43.9	34.3												22.9	16.0
	K8	19.6	10.7	27.3	18.4	42.8	33.8	64.7	49.2										32.6	22.1
	K7	16.3	6.9	24.2	15.7	39.0	29.0	60.0	45.6										37.2	26.1
	K9	13.3	5.4	21.0	9.1	36.4	26.0	51.9	39.9	67.3	54.4	82.7	70.8						41.9	29.4
	K10					32.3	19.9	49.7	35.3	64.2	50.7	78.5	66.1						46.5	31.6
	K11					30.1	15.2	45.3	30.6	61.0	46.1	76.4	61.5	91.8	76.9				51.1	34.9
K12									42.4	28.8	57.8	41.4	73.2	56.8	88.7	74.3		55.9	37.9	
K13									39.2	21.2	54.7	36.9	70.1	52.2	85.5	67.6		59.1	41.9	
AHR0300	K0	33.5	22.2	44.9	33.6	67.7	50.1												41.8	28.0
	K8	28.9	13.3	40.3	26.7	63.0	49.4	83.7	72.2										48.5	32.7
	K7	24.2	8.5	35.6	19.7	58.3	42.0	81.1	65.2										55.4	37.4
	K9			20.9	12.8	53.8	35.6	70.4	56.2	98.1	81.0	121.9	103.8						62.4	42.0
	K10					49.0	28.0	71.7	51.4	94.8	75.1	117.2	96.9	140.0	118.6				69.3	46.2
	K11					44.3	23.7	67.1	44.4	89.8	67.2	112.6	99.8	130.3	112.7				76.2	51.5
K12									62.4	37.3	80.2	60.2	107.9	83.0	130.6	105.8		81.2	56.1	
K13									57.7	30.6	70.9	51.2	103.2	79.1	126.0	98.9		85.1	60.1	
AHR0400	K0	51	33	67	49	100	80												60	40
	K8	44	23	61	29	94	72	127	100										79	44
	K7	38	13	54	29	87	62	120	95										86	57
	K9			49	19	81	52	114	80	147	119	180	151						99	63
	K10					75	42	109	75	141	108	172	141						109	70
	K11					68	32	101	62	134	96	167	131	200	164				119	76
K12									80	53	128	96	162	121	184	154		129	83	
K13									69	42	122	79	150	111	167	144		139	89	
AHR0500	K0	75	49	98	71	152	122												79	52
	K8	62	30	88	36	138	108	188	136										95	61
	K7	52	15	77	40	128	90	179	140										111	73
	K9			67	24	117	74	167	124	219	176	268	220						127	84
	K10					107	56	157	109	207	159	257	209						143	94
	K11					98	44	146	93	197	143	247	199	297	244				159	100
K12									136	77	186	127	236	177	267	228		175	110	
K13									120	61	170	111	228	161	278	212		190	120	
AHR0600	K0	120	80	172	126	298	214												130	90
	K8	112	59	164	102	281	189	327	274										146	103
	K7	96	33	139	70	224	162	310	248										162	120
	K9			120	50	200	136	292	222	378	308	464	394						209	138
	K10					189	110	273	195	365	292	457	360						225	150
	K11					172	84	258	179	344	276	430	342	518	428	600	500		240	172
K12									211	144	327	230	413	319	499	402		266	198	
K13									204	138	310	203	398	289	482	373		281	208	

SER. DESIGNATION		Output torque of air in springs																		Springs' Output			
		5 Bar				6 Bar				8 Bar				10 Bar				90°				0°	
Model	Port Size	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End				
AHR030020	K3	192	122	200	198	202	222													211	139		
	K8	165	95	222	155	205	279	499	612												233	167	
	K7	137	38	204	104	227	237	470	370												286	181	
	K8			176	62	209	126	442	328	373	461	739	594								317	227	
	K9					281	152	414	290	348	619	611	1022									380	251
	K10					293	111	367	234	520	377	602	1310	798	683							422	279
AHR100002	K3							329	232	492	338	608	758	601							484	321	
	K8							331	139	461	262	567	626	730	509						568	374	
	K7	323	221	440	328	434	541														573	300	
	K8	282	156	400	265	474	479	827	692												575	280	
	K7	252	96	360	202	374	426	767	629												636	290	
	K8			320	182	334	354	737	587	960	786	1174	994								603	320	
AHR120002	K3							454	281	707	504	920	718	1134	931						662	300	
	K8							454	281	707	504	920	718	1134	931						662	300	
	K7	390	281	523	414	598	686	827	692	880	656	1094	969	1307	1082						625	300	
	K8	325	204	468	327	524	603	747	629	827	592	1040	909	1287	1020						589	480	
	K7	282	127	413	200	479	526	996	792	587	317	860	570	1024	718	1327	927				730	480	
	K8			308	183	424	449	891	716	1197	992	1323	1248								584	273	
AHR140002	K3							569	373	836	639	1192	908	1471							680	335	
	K8							569	373	836	639	1192	908	1471							680	335	
	K7	390	281	523	414	598	686	827	692	880	656	1094	969	1307	1082						625	300	
	K8	325	204	468	327	524	603	747	629	827	592	1040	909	1287	1020						589	480	
	K7	282	127	413	200	479	526	996	792	587	317	860	570	1024	718	1327	927				730	480	
	K8			308	183	424	449	891	716	1197	992	1323	1248								584	273	
AHR160002	K3							726	485	992	731	1336	1027	1524	1281							789	360
	K8							726	485	992	731	1336	1027	1524	1281						789	360	
	K7	390	281	523	414	598	686	827	692	880	656	1094	969	1307	1082						625	300	
	K8	325	204	468	327	524	603	747	629	827	592	1040	909	1287	1020						589	480	
	K7	282	127	413	200	479	526	996	792	587	317	860	570	1024	718	1327	927				730	480	
	K8			308	183	424	449	891	716	1197	992	1323	1248								584	273	
AHR180002	K3							921	608	1227	879	1508	1163	2093	1748							820	385
	K8							921	608	1227	879	1508	1163	2093	1748							820	385
	K7	390	281	523	414	598	686	827	692	880	656	1094	969	1307	1082						625	300	
	K8	325	204	468	327	524	603	747	629	827	592	1040	909	1287	1020						589	480	
	K7	282	127	413	200	479	526	996	792	587	317	860	570	1024	718	1327	927				730	480	
	K8			308	183	424	449	891	716	1197	992	1323	1248								584	273	

The model of the spring return actuators



The suggested safety factor for spring return actuator under normal working conditions is 30% - 50%

Example:

The torque needed by valve = 100N.m

The torque considered safety factor = $100 \times (1 + 40\%) = 140\text{N.m}$

Air Supply = 5Bar

According to the table of spring return actuators' output, we find output torque of AHR0435SR K9 is:

Air stroke 0° = 273N.m

Air stroke 90° = 196N.m

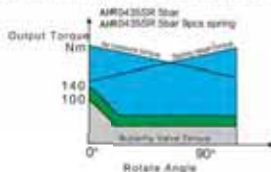
Spring stroke 90° = 232N.M

Spring stroke 0° = 155N.M

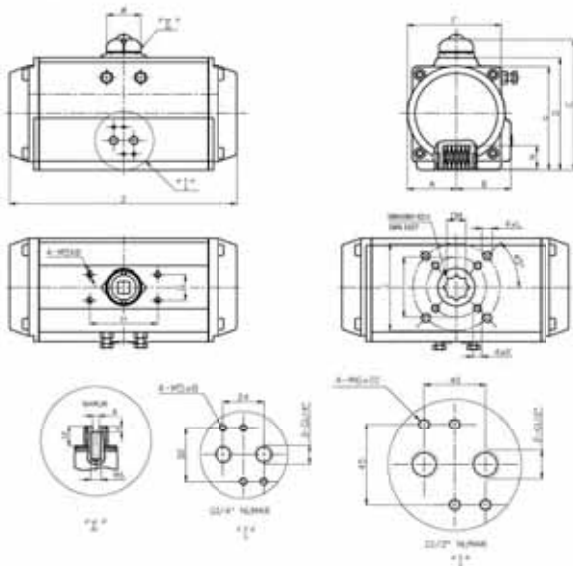
All the output torque is larger than we needed.

Attention:

During the restoration, the spring return actuators' Output torque will not be affected by the inputing air from the port B. On the contrary, it will help the restoration of springs.



Dimension



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AMR1022	30	41,5	44,5	72	87	95	30	80	80	80	Ø4x4	Ø4x10	11	14	140	Ø60	Ø40	Ø1/4"
AMR1025	36,8	46,5	49	87,8	102,8	110,8	30	80	80	80	Ø4x10	Ø4x13	14	18	172	Ø60	Ø40	Ø1/4"
AMR1028	42	53	56	98,5	119,5	131	30	80	80	80	Ø4x10	Ø4x13	14	18	202	Ø60	Ø40	Ø1/4"
AMR1033	46	57	60,5	100	126	137	30	80	80	80	Ø4x10	Ø4x13	17	22	214	Ø60	Ø40	Ø1/4"
AMR1038	50	62,5	111	116,5	136,5	147	30	80	80	80	Ø4x10	Ø4x13	17	22	240	Ø60	Ø40	Ø1/4"
AMR1048	57,5	68	123	134	154	166	30	80	80	80	Ø4x10	Ø4x16	22	28	276	Ø60	Ø40	Ø1/4"
AMR1053	62,5	74,5	135,5	151,5	165,5	177,5	30	80	80	80	Ø4x10	Ø4x16	22	28	300	Ø60	Ø40	Ø1/4"
AMR1063	75	77	161,5	173	200	197,5	30	80	80	Ø102	Ø12x16	Ø12x20	27	32	300	Ø60	Ø40	Ø1/2"
AMR1065	87	87	184,5	188	228	199	30	80	80	Ø102	Ø12x16	Ø12x25	27	32	400	Ø60	Ø40	Ø1/2"
AMR1085	100	100	216	221	261	199	30	130		Ø160		Ø16x25	36	42	520	Ø60	Ø40	Ø1/2"
AMR1105	113	113	238	246	288	219	30	130		Ø160		Ø16x25	36	42	520	Ø60	Ø40	Ø1/2"
AMR1185	130	130	264	264	319	245	30	130		Ø160		Ø16x25	40	50	650	Ø60	Ø40	Ø1/2"



Weight table

Model	AHR0020	AHR0035	AHR0050	AHR0075	AHR0110	AHR0160
(DA)	1,4kg	2kg	2,7kg	3,1kg	4,6kg	6,8kg
(SR)	1,8kg	2,1kg	2,9kg	3,6kg	5,2kg	6,9kg

Model	AHR0255	AHR0435	AHR0665	AHR1000	AHR1200	AHR1800
(DA)	8,9kg	13kg	20kg	31kg	47kg	67kg
(SR)	10,1kg	15kg	24kg	35kg	55kg	80kg

Air consumption

Air Volume Opening & Closing

Model	Air volume opening	Air volume closing
AHR0020	0,12	0,16
AHR0035	0,21	0,23
AHR0050	0,3	0,34
AHR0075	0,43	0,47
AHR0110	0,64	0,73
AHR0160	0,95	0,98

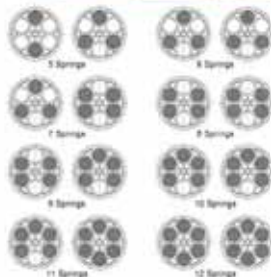
Model	Air volume opening	Air volume closing
AHR0255	1,6	1,4
AHR0435	2,5	2,2
AHR0665	3,7	3,2
AHR1000	5,9	5,4
AHR1200	7,5	7,5
AHR1800	11	9

$$\times \left(\frac{Kpa + 101,3}{101,3} \right) \times$$

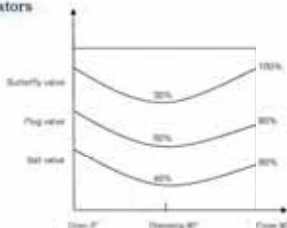
Air consumption rest with Air Supply. Air volume and Action cycle times, expressions:

$$L/Min = \text{Air volume} / (\text{Air volume Opening} + \text{Air volume closing}) \times \left(\frac{\text{Air Supply}(Kpa) + 101,3}{101,3} \right) \times \text{Action cycle times (min)}$$

Spring mounting form for spring return actuators



During selecting the spring return actuators, we can choose the more reasonable and more economical actuators, if we know the different torque needed by the valve working at opening, operating and closing.



Example:

The max torque needed by the butterfly valve = 104N.m

The torque after opened (operating) $104 \times 30\% = 32\text{N.m}$

Air Supply = 5Bar

We can select the AHR0255SR K11

output torque is:

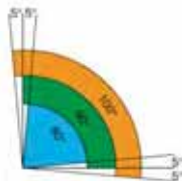
Air stroke 0° = 136N.m > 104N.m

Air stroke 90° = 78N.m > 32N.m

Spring stroke 90° = 173N.m > 32N.m

Spring stroke 0° = 115N.m > 104N.m

The above data show the actuator's torque can satisfy the requirement of the butterfly valve.



Operating conditions

1. Operating media: Dry or lubricated air, or the non-corrosive gases. The maximum particle diameter must be less than 30 μm .
2. Air supply pressure:
The minimum supply pressure is 2.5Bar
The maximum supply pressure is 8Bar
3. Operating temperature:
Standard: -20°C ~ $+80^\circ\text{C}$
Low temperature: -35°C ~ $+40^\circ\text{C}$
High temperature: -15°C ~ $+150^\circ\text{C}$
4. Travel adjustment: Have adjustment range of $\pm 5^\circ$ for the rotation at 0° and 90°
5. Application: Either indoor or outdoor

Mounting Standard



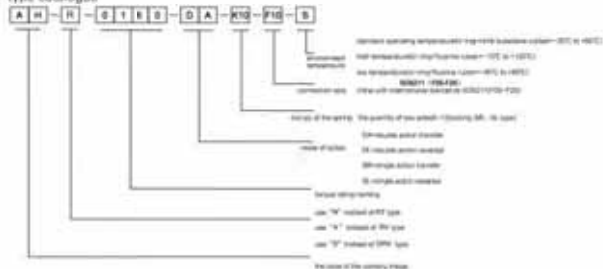
Air source connection is designed in accordance with NAMUR Standard to install solenoid valves simply.

The NAMUR drive pinion and the NAMUR top mounting connection permit direct installation of accessories such as limit switch box and positioner.

Bottom mounting connection is designed in accordance with ISO5211 and DIN3337 standards for directly install the cylinder (Pneumatic hand wheel mechanism) Or install the bracket

Model	AHR0020	AHR0035	AHR0050	AHR0075	AHR0110	AHR0160
Cylinder	Ø52	Ø63	Ø75	Ø83	Ø92	Ø105
Model	AHR0255	AHR0435	AHR0665	AHR1000	AHR1200	AHR1800
Cylinder	Ø125	Ø140	Ø160	Ø190	Ø210	Ø240

type catalogue



Each actuator is marked with a serial number, air connection and bottom mounting holes are marked for easy identification and tracking service.

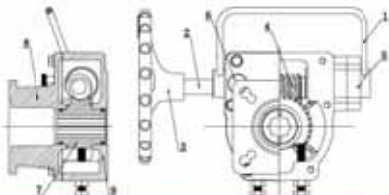
MHT manual Clutch type turbine box actuator

Our company's MHT manual Clutch type turbine box actuator are widely used for Pneumatic butterfly valve which is rotated 90°. Ball valve and plug valve, in the system installation, commissioning and when the system loss of gas and power, it will converted into a manual operation device. The MHT series manual clutch worm gear box also has a security control function of the total gas source, and the valve control can be operated much safer. This is the indispensable part of the pneumatic valve control system, it's designed and manufactured according to the ISO5211 standard, with a reasonable structure and reliable performance.



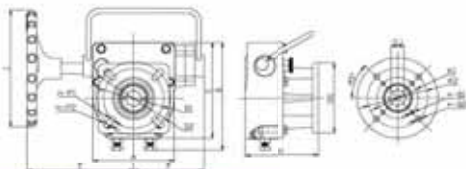
Main characteristics

1. Simple design, compact structure.
2. Ductile cast iron shell, durable.
3. Connectors with ISO5211 international standards, and install directly without bracket.
4. Convenient for automatic and manual conversion.
5. Total gas source security control functions.
6. Climate protection grade reach IP65.



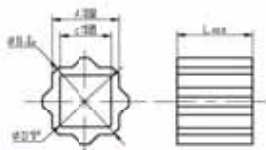
Structure and material

	Name		Material
1	Handle	1	Stainless steel
2	Row shaft	1	Carbon steel
3	Hand wheel	1	Ductile iron
4	Row	1	Carbon steel
5	Air source valve	1	Stainless steel
6	Latching piece	1	Brass
7	Worm gear	1	Ductile iron
8	Cap	1	Ductile iron
9	Body	1	Ductile iron



	T1	A1	22	ø 30	ø 40	24	32	ø 39	ø 42	ø	ø	L	ø	F	CW	ø	ø
AMB01	21	875		ø 30		210	260	ø 30	ø 32	110	170,2	140	190	200,2	2000	140,2	2000
AMB10	22	970	200	ø 30	ø 40	210	260	ø 30	ø 32	120	181,2	150	200,2	210,2	2100	150,2	2100
AMB11	22	940	210	ø 30	ø 40	210	260	ø 30	ø 32	140	190	190	200	210,2	2100	150,2	2100
AMB14	26	1040		ø 30		210	260	ø 30	ø 32	170	200	210	210	210,2	2100	150,2	2100
AMB16	26	1040		ø 40		210	260	ø 30	ø 32	210	210	210	220,2	2100	190,2	2100	

Pneumatic Accessories-internal Adapter



	A		B		C		D		E		
	mm	in	mm	in	mm	in	mm	in	mm	in	
TL14	9	14	0,551	16,2	0,717	9	0,354	12,5	0,492	16	0,630
	11	14	0,551	16,2	0,717	11	0,433	15,2	0,598	16	0,630
TL17	11	17	0,669	22,2	0,874	11	0,433	15,2	0,598	19	0,748
	14	17	0,669	22,2	0,874	14	0,551	19,2	0,756	19	0,748
TL19	11	19	0,748	25,2	0,992	11	0,433	15,2	0,598	21	0,827
	14	19	0,748	25,2	0,992	14	0,551	19,2	0,756	21	0,827
TL22	17	19	0,748	25,2	0,992	17	0,669	23,2	0,913	21	0,827
	14	22	0,896	28,2	1,110	14	0,551	19,2	0,756	24	0,945
TL27	17	22	0,896	28,2	1,110	17	0,669	23,2	0,913	24	0,945
	19	22	0,896	28,2	1,110	19	0,748	26,2	1,031	24	0,945
TL27	17	27	1,063	36,2	1,425	17	0,669	23,2	0,913	29	1,142
	19	27	1,063	36,2	1,425	19	0,748	26,2	1,031	29	1,142
TL36	22	27	1,063	36,2	1,425	22	0,866	29,2	1,150	29	1,142
	19	36	1,417	46,2	1,858	19	0,748	26,2	1,031	38	1,496
TL40	22	36	1,417	46,2	1,858	22	0,866	29,2	1,150	38	1,496
	27	36	1,417	46,2	1,858	27	1,063	37,2	1,465	38	1,496
TL40	27	46	1,811	60,2	2,370	27	1,063	37,2	1,465	48	1,890
	36	46	1,811	60,2	2,370	36	1,417	49,2	1,937	48	1,890

The function and usage of the actuator and the parts



Protection type PAL 300 Series position indicator

1. Double acting actuator: open and close the valve
2. Single action actuator (Spring return): when air or power is closed, the actuator will close the valve automatically.
3. Double-control solenoid: power to solenoid opens the valve, power to the other solenoid or open closes the valve.

This kind of solenoid possesses the memorial function (available for anti-exploding).

4. Limit switch box (signal feedback): remotely passes the signal of the valves opened and closed status (available for anti-exploding).
5. Mechanical positioner: according to the air pressure to control the medium flux (available for anti-exploding).
6. Intelligent positioner: Through the system set the valve position signal, and after the calculation process of the control software, and then control the pneumatic actuator of the intake and exhaust valve reaches the set point.
7. Clutch type manual valve actuator: Able to use manual operation in the event of the loss of air or power.



Protection type PAL 200 series limit switches



Solenoid valve



PAL-1000 Series Mechanical Locator



PAL-400 Series position indicator, explosion-proof

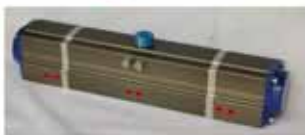
Note for order



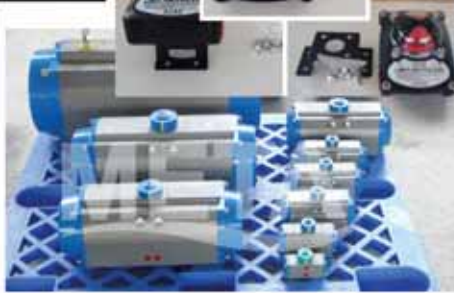
1. Pneumatic actuators: action or spring return
2. Valve working environment: the Operating temperature Standard (-20 °C to +60 °C), low temperature (-40 °C to +60 °C) High temperature (-15 °C to +150 °C)
3. Valve operating torque: using medium and open or close the required torque
4. Solenoid: dual control or single control, operating voltage, exploding or not
5. Signal feedback: mechanical or approachable, operating voltage, output-current and exploding or not
6. Positioner: pneumatic positioner or electric positioner, current signal, voltage signal, voltage signal, electric-pneumaticity switch, exploding or not
7. Three-unit of desling with air supply
8. Clutch type manual valve actuator
9. Special making
10. Domestic or imported attachment should be told.



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